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This index covers all technical items—papers, correspondence, reviews, etc.—that appeared in this periodical during 2020, and items from previous years that were commented upon or corrected in 2020. Departments and other items may also be covered if they have been judged to have archival value.

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- Bu, F.**, see Liu, H., *TIE April 2020 2607-2617*
- Bu, Q.**, Wen, H., Wen, J., Hu, Y., and Du, Y., Transient DC Bias Elimination of Dual-Active-Bridge DC-DC Converter With Improved Triple-Phase-Shift Control; *TIE Oct. 2020 8587-8598*
- Burgess, S.C.**, see Zhang, K., *TIE June 2020 4729-4740*
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- Busquets-Monge, S.**, Filba-Martinez, A., Alepuz, S., Nicolas-Apruzzese, J., Luque, A., Conesa-Roca, A., and Bordonau, J., Multibattery-Fed Neutral-Point-Clamped DC-AC Converter With SoC Balancing Control to Maximize Capacity Utilization; *TIE Jan. 2020 16-27*
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C

- Cadirci, I.**, see Yildirim, D., *TIE Aug. 2020 6290-6301*
- Cai, B.**, Shao, X., Liu, Y., Kong, X., Wang, H., Xu, H., and Ge, W., Remaining Useful Life Estimation of Structure Systems Under the Influence of Multiple Causes: Subsea Pipelines as a Case Study; *TIE July 2020 5737-5747*
- Cai, J.**, and Liu, Z., An Unsaturated Inductance Reconstruction Based Universal Sensorless Starting Control Scheme for SRM Drives; *TIE Nov. 2020 9083-9092*
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- Cao, D.**, see Lyu, X., *TIE Feb. 2020 1626-1637*
- Cao, G.**, see Chen, N., *TIE July 2020 6031-6042*
- Cao, G.**, Hu, H., Huang, S., Sun, J., and He, J., An Assistant-Mover-Based Position Estimation Method for Planar Switched Reluctance Motors; *TIE July 2020 6066-6077*
- Cao, H.**, see Wang, S., *TIE April 2020 2954-2964*
- Cao, H.**, see Wang, S., *TIE June 2020 4752-4761*
- Cao, H.**, see Wang, S., *TIE Aug. 2020 6709-6720*
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- Cao, J.**, see Sun, X., *TIE July 2020 6089-6100*
- Cao, J.**, see Yin, C., *TIE Oct. 2020 8576-8586*
- Cao, J.**, Liang, W., Wang, Y., Lee, H.P., Zhu, J., and Ren, Q., Control of a Soft Inchworm Robot With Environment Adaptation; *TIE May 2020 3809-3818*

- Cao, L.**, Chau, K.T., Lee, C.H.T., and Lam, W., Design and Analysis of a New Parallel-Hybrid-Excited Machine With Harmonic-Shift Structure; *TIE March 2020 1759-1770*
- Cao, Q.**, see Li, Y., *TIE Jan. 2020 560-568*
- Cao, R.**, Jiang, N., and Lu, M., Sensorless Control of Linear Flux-Switching Permanent Magnet Motor Based on Extended Kalman Filter; *TIE July 2020 5971-5979*
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- Cao, Y.**, see Wu, Y., *TIE March 2020 2143-2154*
- Cao, Y.**, Zhao, Q., Ye, Y., and Xiong, Y., ADR-C-Based Current Control for Grid-Tied Inverters: Design, Analysis, and Verification; *TIE Oct. 2020 8428-8437*
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- Chai, F.**, see Gan, L., *TIE Jan. 2020 421-431*
- Chai, F.**, Gan, L., and Yu, Y., Magnetic Field Analysis of an Iron-Cored Tiered Type Permanent Magnet Spherical Motor Using Modified Dynamic Reluctance Mesh Method; *TIE Aug. 2020 6742-6751*
- Chai, N.**, see Yang, M., *TIE May 2020 4172-4182*
- Chai, R.**, Tsourdos, A., Savvaris, A., Xia, Y., and Chai, S., Real-Time Reentry Trajectory Planning of Hypersonic Vehicles: A Two-Step Strategy Incorporating Fuzzy Multiobjective Transcription and Deep Neural Network; *TIE Aug. 2020 6904-6915*
- Chai, R.**, Tsourdos, A., Savvaris, A., Chai, S., Xia, Y., and Chen, C.L.P., Multiobjective Optimal Parking Maneuver Planning of Autonomous Wheeled Vehicles; *TIE Dec. 2020 10809-10821*
- Chai, S.**, see Chai, R., *TIE Aug. 2020 6904-6915*
- Chai, S.**, see Chai, R., *TIE Dec. 2020 10809-10821*
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- Chen, A.**, see Qin, C., *TIE March 2020 1956-1967*
- Chen, A.**, see Zhuang, Y., *TIE Sept. 2020 7519-7528*
- Chen, A.**, Zhang, W., Zhang, C., Huang, W., and Liu, S., A Temperature and Current Rate Adaptive Model for High-Power Lithium-Titanate Batteries Used in Electric Vehicles; *TIE Nov. 2020 9492-9502*
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- Chen, A.**, see Huai, Z., *TIE May 2020 3879-3890*
- Chen, B.**, see Wang, Y., *TIE Feb. 2020 1425-1434*
- Chen, B.**, Wang, P., Wang, Y., Zhang, S., Yang, L., and Ji, R., A Bidirectional CDT-LC Resonant DC-DC Converter With a Wide Voltage Range; *TIE March 2020 2009-2020*
- Chen, B.**, see Liu, F., *TIE March 2020 2391-2401*
- Chen, C.**, see Liu, P., *TIE Jan. 2020 254-264*
- Chen, C.**, see Liu, Y., *TIE Feb. 2020 1580-1591*
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- Chen, G.**, see Lu, J., *TIE Jan. 2020 69-79*
- Chen, G.**, see Zhang, F., *TIE Jan. 2020 308-318*
- Chen, G.**, and Yang, S., Phase Voltage Measurement for Permanent Magnet Machine Sensorless Drive Using Controller Capture Modulator; *TIE Jan. 2020 49-58*
- Chen, G.**, see Gong, C., *TIE June 2020 4453-4462*
- Chen, G.**, Liu, Y., Qing, X., and Wang, F., Synthesis of Integrated Multiport DC-DC Converters With Reduced Switches; *TIE June 2020 4536-4546*
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- Chen, G.**, see Gong, C., *TIE Oct. 2020 8131-8142*
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- Chen, H.**, Wu, X., and Shao, S., A Current-Sharing Method for Interleaved High-Frequency LLC Converter With Partial Energy Processing; *TIE Feb. 2020 1498-1507*
- Chen, H.**, Yang, J., and Xu, S., Electrothermal-Based Junction Temperature Estimation Model for Converter of Switched Reluctance Motor Drive System; *TIE Feb. 2020 874-883*
- Chen, H.**, see Li, C., *TIE April 2020 3307-3312*
- Chen, H.**, and Sun, N., Nonlinear Control of Underactuated Systems Subject to Both Actuated and Unactuated State Constraints With Experimental Verification; *TIE Sept. 2020 7702-7714*
- Chen, H.**, see Qin, Y., *TIE Dec. 2020 10865-10875*
- Chen, I.**, see Zhang, Q., *TIE March 2020 2133-2142*
- Chen, J.**, Luo, Q., Huang, J., He, Q., and Du, X., A Complete Switching Analytical Model of Low-Voltage eGaN HEMTs and Its Application in Loss Analysis; *TIE Feb. 2020 1615-1625*

- Chen, J.**, *see* Yan, C., *TIE April 2020 2875-2884*
- Chen, J.**, and Huang, J., Alternative Solution Regarding Problems of Adaptive Observer Compensating Parameters Uncertainties for Sensorless Induction Motor Drives; *TIE July 2020 5879-5888*
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- Chen, J.**, *see* Li, Y., *TIE Nov. 2020 9724-9733*
- Chen, J.**, *see* Jiang, W., *TIE Nov. 2020 9450-9459*
- Chen, J.**, *see* Liu, T., *TIE Oct. 2020 8980-8990*
- Chen, J.**, Jiang, D., Shen, Z., Sun, W., and Fang, Z., Uniform Distribution Pulsewidth Modulation Strategy for Three-Phase Converters to Reduce Conducted EMI and Switching Loss; *TIE Aug. 2020 6215-6226*
- Chen, J.**, Song, Q., and Yin, S., On the Decentralized Energy Management Strategy for the All-Electric APU of Future More Electric Aircraft Composed of Multiple Fuel Cells and Supercapacitors; *TIE Aug. 2020 6183-6194*
- Chen, J.**, *see* Chen, J., *TIE Aug. 2020 6183-6194*
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- Chen, L.**, *see* Xiao, Q., *TIE June 2020 5197-5203*
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- Chen, L.**, *see* Shen, C., *TIE Nov. 2020 9383-9392*
- Chen, L.**, Gao, F., Shen, K., Wang, Z., Tarisciotti, L., Wheeler, P., and Dragicevic, T., Predictive Control Based DC Microgrid Stabilization With the Dual Active Bridge Converter; *TIE Oct. 2020 8944-8956*
- Chen, L.**, *see* Xie, R., *TIE Aug. 2020 7034-7043*
- Chen, L.**, *see* Zhu, Z., *TIE Aug. 2020 6688-6697*
- Chen, L.**, *see* Zhang, Y., *TIE Aug. 2020 6649-6658*
- Chen, L.**, Ding, Q., Zou, Q., Chen, Z., and Li, L., DenseLightNet: A Light-Weight Vehicle Detection Network for Autonomous Driving; *TIE Dec. 2020 10600-10609*
- Chen, L.**, Cui, R., Yang, C., and Yan, W., Adaptive Neural Network Control of Underactuated Surface Vessels With Guaranteed Transient Performance: Theory and Experimental Results; *TIE May 2020 4024-4035*
- Chen, M.**, *see* Yong, K., *TIE Feb. 2020 1261-1269*
- Chen, M.**, Yin, C., and Loh, P.C., Magnetically Coupled High-Voltage-Boost Split Y-Source Inverter Without Leakage-Induced Voltage Spikes; *TIE July 2020 5444-5455*
- Chen, M.**, Sun, M., Bao, H., Hu, Y., and Bao, B., Flux-Charge Analysis of Two-Memristor-Based Chua's Circuit: Dimensionality Decreasing Model for Detecting Extreme Multistability; *TIE March 2020 2197-2206*
- Chen, N.**, Cao, G., Huang, S., and Sun, J., Sensorless Control of Planar Switched Reluctance Motors Based on Voltage Injection Combined With Core-Loss Calculation; *TIE July 2020 6031-6042*
- Chen, N.**, *see* Peng, W., *TIE March 2020 2283-2293*
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- Chen, Q.**, *see* Na, J., *TIE Jan. 2020 490-500*
- Chen, Q.**, *see* Li, H., *TIE Feb. 2020 1435-1445*
- Chen, Q.**, Xu, G., Zhai, F., and Liu, G., A Novel Spoke-Type PM Motor With Auxiliary Salient Poles for Low Torque Pulsation; *TIE June 2020 4762-4773*
- Chen, Q.**, Yan, Y., Liu, G., and Xu, G., Design of a New Fault-Tolerant Permanent Magnet Machine With Optimized Salient Ratio and Reluctance Torque Ratio; *TIE July 2020 6043-6054*
- Chen, Q.**, Gu, L., Lin, Z., and Liu, G., Extension of Space-Vector-Signal-Injection-Based MTPA Control Into SVPWM Fault-Tolerant Operation for Five-Phase IPMSM; *TIE Sept. 2020 7321-7333*
- Chen, Q.**, Xu, G., Liu, G., Zhai, F., and Eduku, S., Reduction of Torque Ripple Caused by Slot Harmonics in FSCW Spoke-Type FPM Motors by Assisted Poles; *TIE Nov. 2020 9613-9622*
- Chen, Q.**, *see* Liu, G., *TIE Oct. 2020 8599-8607*
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- Chen, R.**, *see* Wong, S., *TIE June 2020 4969-4979*
- Chen, R.**, *see* Wang, C., *TIE March 2020 1921-1931*
- Chen, S.**, Lin, S., and Toh, C., Adaptive Unbalance Compensation for a Three-Pole Active Magnetic Bearing System; *TIE March 2020 2097-2106*
- Chen, S.**, Li, H., and Tang, Y., Extending the Operating Region of Inductive Power Transfer Systems Through Dual-Side Cooperative Control; *TIE Nov. 2020 9302-9312*
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- Chen, T.**, and Shan, J., Distributed Tracking of a Class of Underactuated Lagrangian Systems With Uncertain Parameters and Actuator Faults; *TIE May 2020 4244-4253*
- Chen, T.**, Hill, D.J., and Wang, C., Distributed Fast Fault Diagnosis for Multi-machine Power Systems via Deterministic Learning; *TIE May 2020 4152-4162*
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- Chen, W.**, *see* Xu, F., *TIE Dec. 2020 10575-10586*
- Chen, X.**, *see* Zhao, W., *TIE Jan. 2020 80-90*
- Chen, X.**, Wang, J., Griffio, A., and Spagnolo, A., Thermal Modeling of Hollow Conductors for Direct Cooling of Electrical Machines; *TIE Feb. 2020 895-905*
- Chen, X.**, *see* Du, S., *TIE Feb. 2020 1233-1241*
- Chen, X.**, *see* Wang, C., *TIE Feb. 2020 1366-1375*
- Chen, X.**, and Liu, G., Sensorless Optimal Commutation Steady Speed Control Method for a Nonideal Back-EMF BLDC Motor Drive System Including Buck Converter; *TIE July 2020 6147-6157*
- Chen, X.**, *see* Liu, G., *TIE July 2020 6158-6167*
- Chen, X.**, *see* Liu, Y., *TIE July 2020 5595-5603*
- Chen, X.**, Shi, M., Zhou, J., Chen, Y., Zuo, W., Wen, J., and He, H., Distributed Cooperative Control of Multiple Hybrid Energy Storage Systems in a DC Microgrid Using Consensus Protocol; *TIE March 2020 1968-1979*
- Chen, X.**, *see* Wu, M., *TIE Oct. 2020 8788-8798*
- Chen, X.**, *see* Zhang, X., *TIE Aug. 2020 6824-6834*
- Chen, X.**, *see* Xiao, H., *TIE Aug. 2020 6806-6814*
- Chen, X.**, *see* Shi, F., *TIE Dec. 2020 10844-10855*
- Chen, X.**, Wu, W., Gao, N., Chung, H.S., Liserre, M., and Blaabjerg, F., Finite Control Set Model Predictive Control for LCL-Filtered Grid-Tied Inverter With Minimum Sensors; *TIE Dec. 2020 9980-9990*
- Chen, X.**, *see* Yu, Z., *TIE May 2020 3442-3451*
- Chen, X.**, *see* Ouyang, S., *TIE May 2020 3684-3695*
- Chen, X.**, Ren, Y., Cai, Y., Chen, J., Wang, W., and Yang, X., Spacecraft Vibration Control Based on Extended Modal Decoupling of Vernier-Gimballing Magnetically Suspension Flywheels; *TIE May 2020 4066-4076*
- Chen, X.**, Xu, W., Liu, Y., and Islam, M.R., Bearing Corrosion Failure Diagnosis of Doubly Fed Induction Generator in Wind Turbines Based on Stator Current Analysis; *TIE May 2020 3419-3430*
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- Chen, Y.**, Sun, Z., and Lam, K., An Effective Subsuperpixel-Based Approach for Background Subtraction; *TIE Jan. 2020 601-609*
- Chen, Y.**, Xu, J., Gao, Y., Lin, L., Cao, J., and Ma, H., Analysis and Design of Phase-Shift Pulse-Frequency-Modulated Full-Bridge LCC Resonant Converter; *TIE Feb. 2020 1092-1102*
- Chen, Y.**, Li, H., Qiu, Z., Wang, T.D., and Oldham, K.R., Improved Extended Kalman Filter Estimation Using Threshold Signal Detection With an MEMS Electrostatic Microscanner; *TIE Feb. 2020 1328-1336*
- Chen, Y.**, *see* Xu, J., *TIE July 2020 5959-5970*

- Chen, Y.**, see Zhou, L., *TIE July 2020* 5490-5502
- Chen, Y.**, see Yuan, Y., *TIE March 2020* 2155-2166
- Chen, Y.**, see Chen, X., *TIE March 2020* 1968-1979
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- Chen, Y.**, see Tang, Z., *TIE Oct. 2020* 8302-8311
- Chen, Y.**, see Zhong, H., *TIE Dec. 2020* 10564-10574
- Chen, Z.**, see Xu, J., *TIE Jan. 2020* 471-479
- Chen, Z.**, see Yang, X., *TIE Jan. 2020* 800-808
- Chen, Z.**, Huang, F., Yang, C., and Yao, B., Adaptive Fuzzy Backstepping Control for Stable Nonlinear Bilateral Teleoperation Manipulators With Enhanced Transparency Performance; *TIE Jan. 2020* 746-756
- Chen, Z.**, see Xiong, R., *TIE Feb. 2020* 1081-1091
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- Chen, Z.**, see Wei, J., *TIE June 2020* 4670-4679
- Chen, Z.**, see Zhao, J., *TIE June 2020* 4774-4784
- Chen, Z.**, Yang, Y., Jiang, C., Hao, J., and Zhang, L., Light Sensor Based Occupancy Estimation via Bayes Filter With Neural Networks; *TIE July 2020* 5787-5797
- Chen, Z.**, see Lin, Y., *TIE July 2020* 5604-5614
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- Chen, Z.**, see Zhang, A., *TIE Sept. 2020* 7606-7616
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- Chen, Z.**, Luo, A., and Huang, X., Euler's Formula-Based Stability Analysis for Wideband Harmonic Resonances; *TIE Nov. 2020* 9405-9417
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- Chen, Z.**, Li, X., and Li, H., Multifunction Transformer With Adjustable Magnetic Stage Based on Nanocomposite Semihard Magnets; *TIE May 2020* 4226-4234
- Chen, Z.**, Li, C., Yao, B., Yuan, M., and Yang, C., Integrated Coordinated/Synchronized Contouring Control of a Dual-Linear-Motor-Driven Gantry; *TIE May 2020* 3944-3954
- Cheng, C.**, see Tseng, K., *TIE Jan. 2020* 235-243
- Cheng, C.**, Lu, F., Zhou, Z., Li, W., Deng, Z., Li, F., and Mi, C., A Load-Independent LCC-Compensated Wireless Power Transfer System for Multiple Loads With a Compact Coupler Design; *TIE June 2020* 4507-4515
- Cheng, H.**, Wang, L., Xu, L., Ge, X., and Yang, S., An Integrated Electrified Powertrain Topology With SRG and SRM for Plug-In Hybrid Electrical Vehicle; *TIE Oct. 2020* 8231-8241
- Cheng, L.**, see Yin, Z., *TIE June 2020* 4826-4835
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- Cheng, S.**, see Zhang, Q., *TIE June 2020* 4338-4349
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- Cheng, X.**, Zhang, Y., Zhou, L., and Zheng, Y., Visual Tracking via Auto-Encoder Pair Correlation Filter; *TIE April 2020* 3288-3297
- Cheng, Y.**, see Yin, C., *TIE Oct. 2020* 8576-8586
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- Cheng, Y.**, Yu, B., Kan, C., and Wang, X., Design and Performance Study of a Brushless Doubly Fed Generator Based on Differential Modulation; *TIE Dec. 2020* 10024-10034
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- Chew, Z.J.**, and Zhu, M., Adaptive Self-Configurable Rectifier for Extended Operating Range of Piezoelectric Energy Harvesting; *TIE April 2020* 3267-3276
- Chi, R.**, Hui, Y., Zhang, S., Huang, B., and Hou, Z., Discrete-Time Extended State Observer-Based Model-Free Adaptive Control Via Local Dynamic Linearization; *TIE Oct. 2020* 8691-8701
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- Chishti, F.**, Murshid, S., and Singh, B., Weak Grid Intertie WEGS With Hybrid Generalized Integrator for Power Quality Improvement; *TIE Feb. 2020* 1113-1123
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- Chu, G.**, Wen, H., Yang, Y., and Wang, Y., Elimination of Photovoltaic Mismatching With Improved Submodule Differential Power Processing; *TIE April 2020* 2822-2833
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- Chu, S.**, see Yu, Q., *TIE Oct. 2020* 8123-8130
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- Chub, A.**, Vinnikov, D., Kosenko, R., Liivik, E., and Galkin, I., Bidirectional DC-DC Converter for Modular Residential Battery Energy Storage Systems; *TIE March 2020* 1944-1955
- Chudzik, P.**, see Steczek, M., *TIE Oct. 2020* 8197-8208
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- Costa, C.A.**, Costa, M.A.A., Turqueti, M.d.A., Rossa, A.J., Nied, A., and Nogueira, F.G., Enhanced Braking Control for the Induction Machine Using Scalar Control; *TIE Nov. 2020 9133-9142*
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- Cui, L.**, see Li, H., *TIE Sept. 2020 7736-7745*
- Cui, P.**, Zhang, G., Liu, Z., Han, B., and Wang, Q., A Second-Order Dual Mode Repetitive Control for Magnetically Suspended Rotor; *TIE June 2020 4946-4956*
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- Dai, Z.**, Yang, J., Rao, D., Zhang, J., and Zhang, Z., A Global Convergence Estimator of Grid Voltage Parameters for More Electric Aircraft; *TIE Sept. 2020 7540-7549*
- Dai, Z.**, see Mao, W., *TIE Nov. 2020 9337-9347*
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- Dang, K.**, Zhang, J., Zhou, H., Yin, S., Zhang, T., Ning, J., Zhang, Y., Bian, Z., Chen, J., Duan, X., Zhao, S., and Hao, Y., Lateral GaN Schottky Barrier Diode for Wireless High-Power Transfer Application With High RF/DC Conversion Efficiency: From Circuit Construction and Device Technologies to System Demonstration; *TIE Aug. 2020 6597-6606*
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- de Aguiar, C.R.**, Fuzato, G.H.F., Machado, R.Q., and Guerrero, J.M., An Adaptive Power Sharing Control for Management of DC Microgrids Powered by Fuel Cell and Storage System; *TIE May 2020 3726-3735*
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- de Freitas, N.B.**, Jacobina, C.B., and Cunha, M.F., Multilevel Single-Phase Converter With Two DC Links; *TIE Dec. 2020 10346-10355*
- de Jesus Romero-Troncoso, R.**, see Zamudio-Ramirez, I., *TIE June 2020 5050-5059*
- de Oliveira, C.M.R.**, de Aguiar, M.L., de Castro, A.G., Guazzelli, P.R.U., Pereira, W.C.d.A., Monteiro, J.R.B.d.A., High-Accuracy Dynamic Load Emulation Method for Electrical Drives; *TIE Sept. 2020 7239-7249*
- de Sousa, R.P.R.**, see Bahia, F.A.d.C., *TIE Aug. 2020 6387-6397*
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- Deb, S.**, Das, S., Pradhan, A.K., Banik, A., Chatterjee, B., and Dalai, S., Estimation of Contamination Level of Overhead Insulators Based on Surface Leakage Current Employing Detrended Fluctuation Analysis; *TIE July 2020 5729-5736*
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- Deif, S.**, and Daneshmand, M., Multiresonant Chipless RFID Array System for Coating Defect Detection and Corrosion Prediction; *TIE Oct. 2020 8868-8877*
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- Deng, C.**, Yong, M., Rodriguez, L.A.G., Balda, J.C., and Li, R., Passive Integration Using FMLF Technique for Integrated Boost Resonant Converters; *TIE May 2020 3756-3766*
- Deng, F.**, Liu, C., Wang, Q., Zhu, R., Cai, X., and Chen, Z., A Currentless Submodule Individual Voltage Balancing Control for Modular Multilevel Converters; *TIE Nov. 2020 9370-9382*
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- Deng, Y.**, see Li, G., *TIE Aug. 2020 6572-6582*
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- Dey, S.**, Shi, Y., Smith, K., Colclasure, A., and Li, X., From Battery Cell to Electrodes: Real-Time Estimation of Charge and Health of Individual Battery Electrodes; *TIE March 2020 2167-2175*
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- Di, X.**, see Zhang, H., *TIE Dec. 2020 10942-10950*
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- Diao, K.**, Sun, X., Lei, G., Guo, Y., and Zhu, J., Multiobjective System Level Optimization Method for Switched Reluctance Motor Drive Systems Using Finite-Element Model; *TIE Dec. 2020 10055-10064*
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- Dimitriou, N.**, Leontaris, L., Vafeiadis, T., Ioannidis, D., Wotherspoon, T., Tinker, G., and Tzouvaras, D., Fault Diagnosis in Microelectronics Attachment Via Deep Learning Analysis of 3-D Laser Scans; *TIE July 2020 5748-5757*
- Din, A.U.**, Lee, J., Hieu, N.X., and Lee, J., Dual-Mode RFID Tag IC Supporting Gen-2 and Visible RFID Modes Using a Process-Compensating Self-Calibrating Clock Generator; *TIE Jan. 2020 569-580*
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- Ding, C.**, Zhao, M., Lin, J., Jiao, J., and Liang, K., Sparsity-Based Algorithm for Condition Assessment of Rotating Machinery Using Internal Encoder Data; *TIE Sept. 2020 7982-7993*
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- Ding, D.**, Wang, G., Zhao, N., Zhang, G., and Xu, D., An Antiovervoltage Control Scheme for Electrolytic Capacitorless IPMSM Drives Based on Stator Current Vector Orientation; *TIE May 2020 3517-3527*
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- Ding, S.**, Chen, W., Mei, K., and Murray-Smith, D.J., Disturbance Observer Design for Nonlinear Systems Represented by Input-Output Models; *TIE Feb. 2020 1222-1232*
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- Du, S.**, Wu, M., Chen, X., and Cao, W., An Intelligent Control Strategy for Iron Ore Sintering Ignition Process Based on the Prediction of Ignition Temperature; *TIE Feb. 2020 1233-1241*
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- Du, W.**, Kang, M., and Pecht, M., Fault Diagnosis Using Adaptive Multifractal Detrended Fluctuation Analysis; *TIE March 2020 2272-2282*
- Du, X.**, see Chen, J., *TIE Feb. 2020 1615-1625*
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- Du, X.**, Hardt, D., and Anthony, B., Real-Time Imaging of Invisible Micron-Scale Monolayer Patterns on a Moving Web Using Condensation Figures; *TIE May 2020 4077-4087*
- Du, Y.**, Cao, W., She, J., Wu, M., Fang, M., and Kawata, S., Disturbance Rejection and Control System Design Using Improved Equivalent Input Disturbance Approach; *TIE April 2020 3013-3023*
- Du, Y.**, see Xu, J., *TIE July 2020 5959-5970*
- Du, Y.**, see Tu, H., *TIE Nov. 2020 9393-9404*
- Du, Y.**, see Bu, Q., *TIE Oct. 2020 8587-8598*
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- Duan, F.**, see Wang, J., *TIE Aug. 2020 6864-6873*
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- Duan, S.**, see Shi, L., *TIE Feb. 2020 1013-1023*
- Duan, S.**, see Liu, P., *TIE Oct. 2020 8936-8940*
- Duan, S.**, see Wang, T., *TIE Oct. 2020 8088-8099*
- Duan, S.**, see Jia, S., *TIE Aug. 2020 6450-6460*
- Duan, T.**, and Dinavahi, V., Adaptive Time-Stepping Universal Line and Machine Models for Real Time and Faster-Than-Real-Time Hardware Emulation; *TIE Aug. 2020 6173-6182*
- Duan, X.**, see Dang, K., *TIE Aug. 2020 6597-6606*

Duan, Y., Liu, M., and Dong, M., A Metric-Learning-Based Nonlinear Modeling Algorithm and Its Application in Key-Performance-Indicator Prediction; *TIE Aug. 2020* 7073-7082

Duan, Z., see Wang, J., *TIE April 2020* 3000-3012

Duan, Z., see Zhang, Q., *TIE March 2020* 2133-2142

Dubey, A., see Tu, H., *TIE Nov. 2020* 9393-9404

Dujic, D., see Stamenkovic, D., *TIE Aug. 2020* 6302-6311

Dujic, D., see Kim, S., *TIE May 2020* 3673-3683

Dung, N.A., Chiu, H., Liu, Y., and Huang, P.J., Analysis and Implementation of a High Voltage Gain 1 MHz Bidirectional DC-DC Converter; *TIE Feb. 2020* 1415-1424

Duong, M., Chun, Y., Han, P., Park, B., Bang, D., and Lee, J., Optimal Design of a Novel Single-Phase 8-Slot 8-Pole Tubular Electromagnetic Shock Absorber to Harvest Energy; *TIE Feb. 2020* 1180-1190

Duran, M.J., see Arahali, M.R., *TIE April 2020* 2523-2531

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Dutt, J.K., see Soni, T., *TIE Feb. 2020* 1160-1170

Dutta, S., and Chatterjee, K., A Coupled Inductor-Based Buck-Boost Type Grid Connected Transformerless PV Inverter Having the Ability to Control Two Subarrays Simultaneously; *TIE July 2020* 5543-5553

Dutta, S., Mazumdar, S., and Basu, K., Power Electronic Converter Based Flexible Transmission Line Emulation; *TIE Aug. 2020* 6195-6205

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Eldeeb, H.M., Abdel-Khalik, A.S., Kullick, J., and Hackl, C.M., Pre- and Post-fault Current Control of Dual Three-Phase Reluctance Synchronous Drives; *TIE May 2020* 3361-3373

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Emmei, T., see Savitski, D., *TIE Oct. 2020* 8535-8544

Erazo, D.E.G., Wallscheid, O., and Bocker, J., Improved Fusion of Permanent Magnet Temperature Estimation Techniques for Synchronous Motors Using a Kalman Filter; *TIE March 2020* 1708-1717

Erdenebat, M., see Joo, K., *TIE Aug. 2020* 6975-6985

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Ermis, M., see Yildirim, D., *TIE Aug. 2020* 6290-6301

Erturk, F., and Akin, B., Spatial Inductance Estimation for Current Loop Auto-Tuning in IPMSM Self-Commissioning; *TIE May 2020* 3911-3920

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Eslami, A., see Zhou, M., *TIE Aug. 2020* 6617-6628

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Estrada-Lopez, J.J., Abuellil, A., Costilla-Reyes, A., Abouzied, M., Yoon, S., and Sanchez-Sinencio, E., A Fully Integrated Maximum Power Tracking Combiner for Energy Harvesting IoT Applications; *TIE April 2020* 2744-2754

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Evangelou, S.A., see Yu, M., *TIE June 2020* 4741-4751

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Fabregas, E., Farias, G., Aranda-Escolastico, E., Garcia, G., Chaos, D., Dormido-Canto, S., and Bencomo, S.D., Simulation and Experimental Results of a New Control Strategy For Point Stabilization of Nonholonomic Mobile Robots; *TIE Aug. 2020* 6679-6687

Fakhim-Babaei, A., see Nourmohamadi, H., *TIE Dec. 2020* 10001-10010

Falcon, R., Rios, H., Mera, M., and Dzul, A., Attractive Ellipsoid-Based Robust Control for Quadrotor Tracking; *TIE Sept. 2020* 7851-7860

Fallah, S., see Theunissen, J., *TIE June 2020* 4877-4888

Fan, M., see Dai, Z., *TIE May 2020* 4254-4258

Fan, X., Li, D., Qu, R., Wang, C., and Fang, H., Water Cold Plates for Efficient Cooling: Verified on a Permanent-Magnet Machine With Concentrated Winding; *TIE July 2020* 5325-5336

Fan, Z., see Zou, A., *TIE Aug. 2020* 6795-6805

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Fang, G., see Geng, Z., *TIE Jan. 2020* 542-550

Fang, H., see Xu, J., *TIE July 2020* 5959-5970

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Fang, H., see Yang, C., *TIE Dec. 2020* 10856-10864

Fang, M., see Du, Y., *TIE April 2020* 3013-3023

Fang, M., Kodamana, H., and Huang, B., Real-Time Mode Diagnosis for Processes With Multiple Operating Conditions Using Switching Conditional Random Fields; *TIE June 2020* 5060-5070

Fang, S., see Wang, H., *TIE July 2020* 5626-5636

Fang, T., Zhang, X., Huang, C., He, W., Shen, L., and Ruan, X., Control Scheme to Achieve Multiple Objectives and Superior Reliability for Input-Series-Output-Parallel LCL-Type Grid-Connected Inverter System; *TIE Jan. 2020* 214-224

Fang, Y., see Ho, G.K.Y., *TIE Feb. 2020* 1605-1614

Fang, Y., see Wu, L., *TIE Sept. 2020* 7190-7201

Fang, Y., Ding, G., Wen, W., Yuan, F., Yang, Y., Fang, Z., and Lin, W., Salient Object Detection by Spatiotemporal and Semantic Features in Real-Time Video Processing Systems; *TIE Nov. 2020* 9893-9903

Fang, Y., see Wu, L., *TIE Dec. 2020* 10223-10232

Fang, Y., see Zhang, X., *TIE May 2020* 3840-3849

Fang, Y., see Zhou, Y., *TIE May 2020* 4002-4012

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Fang, Z., see Chen, J., *TIE Aug. 2020* 6215-6226

Fang, Z., see Huang, Z., *TIE Dec. 2020* 10356-10365

Fani, R., Farshidi, E., Adib, E., and Kosarian, A., Analysis, Design, and Implementation of a ZVT High Step-Up DC-DC Converter With Continuous Input Current; *TIE Dec. 2020* 10455-10463

Farah, P., see Wu, Z., *TIE April 2020* 2655-2666

Faraji, J., see Keighobadi, J., *TIE Sept. 2020* 7871-7878

Faraji, R., Farzanehfard, H., Kampitsis, G., Mattavelli, M., Matioli, E., and Esteki, M., Fully Soft-Switched High Step-Up Nonisolated Three-Port DC-DC Converter Using GaN HEMTs; *TIE Oct. 2020* 8371-8380

Farias, G., see Fabregas, E., *TIE Aug. 2020* 6679-6687

Farias, J.V.M., Cupertino, A.F., Ferreira, V.d.N., Pereira, H.A., Seleme, S.I., and Teodoroescu, R., Reliability-Oriented Design of Modular Multilevel Converters for Medium-Voltage STATCOM; *TIE Aug. 2020* 6206-6214

Farjah, E., see Naseri, F., *TIE Sept. 2020* 7963-7972

Farjah, E., see Naghizadeh, M., *TIE May 2020* 4120-4132

Farrok, O., Islam, M.R., Muttaqi, K.M., Sutanto, D., and Zhu, J., Design and Optimization of a Novel Dual-Port Linear Generator for Oceanic Wave Energy Conversion; *TIE May 2020* 3409-3418

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Feng, S., see Sui, S., *TIE Oct. 2020* 8555-8565

Feng, T., see Jia, K., *TIE Nov. 2020* 9927-9936

Feng, Y., and Chen, Z., A Game Approach to Distributed Robust Optimal Filtering With Consensus Through Multiple Sensors: Theory and Application; *TIE Nov. 2020* 9693-9702

- Feng, Y., Xue, C., Han, Q., Han, F., and Du, J., Robust Estimation for State-of-Charge and State-of-Health of Lithium-Ion Batteries Using Integral-Type Terminal Sliding-Mode Observers; *TIE May 2020 4013-4023*
- Feng, Z., see Liao, X., *TIE Oct. 2020 8526-8534*
- Feng, Z., see Zhao, G., *TIE Oct. 2020 8851-8859*
- Feng, Z., see Wu, T., *TIE May 2020 3901-3910*
- Fernandes, B.G., see Sau, S., *TIE Jan. 2020 147-158*
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- Fernandes, B.G., see S., N., *TIE July 2020 5269-5277*
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- Filba-Martinez, A., see Busquets-Monge, S., *TIE Jan. 2020 16-27*
- Filba-Martinez, A., Busquets-Monge, S., and Bordonau, J., Modulation and Capacitor Voltage Balancing Control of Multilevel NPC Dual Active Bridge DC-DC Converters; *TIE April 2020 2499-2510*
- Fischer, K., see Rannestad, B., *TIE Feb. 2020 1305-1315*
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- Foglia, G.M., see Nasab, P.S., *TIE April 2020 2711-2721*
- Fonseca, T.Q., Ribeiro, R.L.A., Rocha, T.d.O.A., Costa, F.B., and Guerrero, J.M., Voltage Grid Supporting by Using Variable Structure Adaptive Virtual Impedance for LCL-Voltage Source Converter DG Converters; *TIE Nov. 2020 9326-9336*
- Foo, G.H.B., see Zhang, X., *TIE March 2020 1813-1823*
- Foresti, G.L., see Salvati, D., *TIE Oct. 2020 8618-8628*
- Formentini, A., see Tang, M., *TIE April 2020 2689-2699*
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- Forouzannezhad, P., see Abbaspour, A., *TIE Sept. 2020 7951-7962*
- Fournier-Viger, P., see Baek, Y., *TIE Nov. 2020 9914-9926*
- Frangi, A.A., see Mussi, G., *TIE Aug. 2020 6996-7004*
- Franquelo, L.G., see Marquez, A., *TIE April 2020 2776-2785*
- Franquelo, L.G., see Vazquez, S., *TIE Sept. 2020 7410-7420*
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- Franquelo, L.G., see Majumder, M.G., *TIE Feb. 2020 960-968*
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- Fu, C., see Yu, Z., *TIE May 2020 3442-3451*
- Fu, J., see Zhao, Y., *TIE June 2020 4900-4910*
- Fu, M., Fei, C., Yang, Y., Li, Q., and Lee, F.C., A GaN-Based DC-DC Module for Railway Applications: Design Consideration and High-Frequency Digital Control; *TIE Feb. 2020 1638-1647*
- Fu, M., see Shen, K., *TIE Sept. 2020 7659-7668*
- Fu, M., see Shao, K., *TIE Aug. 2020 6659-6668*
- Fu, S., see Yin, T., *TIE Aug. 2020 7054-7064*
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- G**
- Gadgaard, K., see Rannestad, B., *TIE Feb. 2020 1305-1315*
- Gai, Y., Widmer, J.D., Steven, A., Chong, Y.C., Kimiabeigi, M., Goss, J., and Popescu, M., Numerical and Experimental Calculation of CHTC in an Oil-Based Shaft Cooling System for a High-Speed High-Power PMSM; *TIE June 2020 4371-4380*
- Galassini, A., see Wang, S., *TIE April 2020 2630-2641*
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- Galea, M., see Madonna, V., *TIE Nov. 2020 9195-9205*
- Galkin, I., see Chub, A., *TIE March 2020 1944-1955*
- Galluzzi, R., Amati, N., and Tonoli, A., Modeling, Design, and Validation of Magnetic Hysteresis Motors; *TIE Feb. 2020 1171-1179*
- Gan, C., see Guo, L., *TIE June 2020 4680-4691*
- Gan, C., see Yu, Z., *TIE June 2020 4350-4359*
- Gan, C., see Gong, C., *TIE June 2020 4453-4462*
- Gan, D., see Yuan, Y., *TIE May 2020 3830-3839*
- Gan, L., Pei, Y., and Chai, F., Tilting Torque Calculation of a Novel Tiered Type Permanent Magnet Spherical Motor; *TIE Jan. 2020 421-431*
- Gan, L., see Yuan, M., *TIE Oct. 2020 8143-8154*
- Gan, L., see Chai, F., *TIE Aug. 2020 6742-6751*
- Gan, W., Zhu, D., Hu, Z., Shi, X., Yang, L., and Chen, Y., Model Predictive Adaptive Constraint Tracking Control for Underwater Vehicles; *TIE Sept. 2020 7829-7840*
- Gandla, S., see Lee, S., *TIE Oct. 2020 8808-8816*
- Ganesan, P., see Sukhatme, Y., *TIE Dec. 2020 10121-10133*
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- Gao, D., see Zhang, X., *TIE Aug. 2020 6312-6322*
- Gao, F., see Wu, M., *TIE Feb. 2020 1254-1260*
- Gao, F., see Li, D., *TIE April 2020 3116-3125*
- Gao, F., Wang, Q., and Zou, J., Analytical Modeling of 3-D Magnetic Field and Performance in Magnetic Lead Screws Accounting for Magnetization Pattern; *TIE June 2020 4785-4796*
- Gao, F., see Lei, M., *TIE June 2020 4292-4304*
- Gao, F., see Lei, M., *TIE March 2020 1671-1683*
- Gao, F., see Liu, C., *TIE Sept. 2020 8044-8053*
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- Gao, H., see Liu, Y., *TIE June 2020 4381-4390*
- Gao, J., see Gong, C., *TIE July 2020 5913-5923*
- Gao, J., see Zhang, L., *TIE July 2020 6055-6065*
- Gao, J., Gong, C., Li, W., and Liu, J., Novel Compensation Strategy for Calculation Delay of Finite Control Set Model Predictive Current Control in PMSM; *TIE July 2020 5816-5819*
- Gao, J., see Gong, C., *TIE Oct. 2020 8131-8142*
- Gao, L., see Li, Q., *TIE Nov. 2020 9273-9291*
- Gao, M., see Zhou, D., *TIE March 2020 2337-2347*
- Gao, N., see Chen, X., *TIE Dec. 2020 9980-9990*
- Gao, R., see Zhang, A., *TIE Sept. 2020 7606-7616*
- Gao, S., Wang, Y., Guan, Y., and Xu, D., A High Step Up SEPIC-Based Converter Based on Partly Interleaved Transformer; *TIE Feb. 2020 1455-1465*
- Gao, W., see Teng, J., *TIE June 2020 4957-4968*
- Gao, W., see Zeng, X., *TIE March 2020 2186-2196*
- Gao, W., see Guo, S., *TIE Sept. 2020 8005-8015*
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- Garcia, G., see Fabregas, E., *TIE Aug. 2020 6679-6687*
- Garcia-Entrambasaguas, P., see Prieto, I.G., *TIE Sept. 2020 7228-7238*
- Garcia-Entrambasaguas, P., Gonzalez-Prieto, I., and Duran, M.J., Single-Index Open-Phase Fault Detection Method for Six-Phase Electric Drives; *TIE Dec. 2020 10233-10242*
- Garnica, M., de Vicuna, L.G., Miret, J., Castilla, M., and Guzman, R., Optimal Voltage-Support Control for Distributed Generation Inverters in RL Grid-Faulty Networks; *TIE Oct. 2020 8405-8415*

- Garro, U.**, Muxika, E., Aizpurua, J.I., and Mendicute, M., FPGA-Based Stochastic Activity Networks for Online Reliability Monitoring; *TIE June 2020* 5000-5011
- Gattere, G.**, see Mussi, G., *TIE Aug. 2020* 6996-7004
- Ge, B.**, see Han, J., *TIE May 2020* 3431-3441
- Ge, L.**, Burkhart, B., and De Doncker, R.W., Fast Iron Loss and Thermal Prediction Method for Power Density and Efficiency Improvement in Switched Reluctance Machines; *TIE June 2020* 4463-4473
- Ge, M.**, see Hu, Z., *TIE April 2020* 3216-3225
- Ge, W.**, see Cai, B., *TIE July 2020* 5737-5747
- Ge, W.**, see Tan, C., *TIE Sept. 2020* 7727-7735
- Ge, X.**, see Wang, H., *TIE July 2020* 5900-5912
- Ge, X.**, see Cheng, H., *TIE Oct. 2020* 8231-8241
- Geng, S.**, Hou, Y., Chu, M., Bai, Y., Hou, L., and Wang, H., Analysis and Computational Methods for a Reader Solenoid Coil Used in Industrial Environments; *TIE April 2020* 3298-3306
- Geng, W.**, see Zhang, Z., *TIE Sept. 2020* 7269-7279
- Geng, Z.**, Liu, L., Li, J., Liu, F., Zhang, Q., Liu, X., and Fang, G., A Constant-Current Transmission Converter for Semi-airborne Transient Electromagnetic Surveying; *TIE Jan. 2020* 542-550
- Georgoulas, G.**, see Loutas, T., *TIE June 2020* 5022-5029
- Gerada, C.**, see Huang, X.Z., *TIE Jan. 2020* 180-191
- Gerada, C.**, see Liu, X., *TIE April 2020* 2667-2677
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- Gerada, C.**, see Wang, S., *TIE April 2020* 2630-2641
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- Gerada, C.**, see Wang, X., *TIE June 2020* 4315-4325
- Gerada, C.**, see Yu, L., *TIE June 2020* 4391-4401
- Gerada, C.**, see Liu, G., *TIE July 2020* 5360-5368
- Gerada, C.**, see Zhang, T., *TIE July 2020* 5948-5958
- Gerada, C.**, see Zhang, Q., *TIE March 2020* 2133-2142
- Gerada, C.**, see Khowja, M.R., *TIE March 2020* 1844-1854
- Gerada, C.**, see Zhang, F., *TIE March 2020* 1728-1738
- Gerada, C.**, see Liu, C., *TIE Sept. 2020* 7343-7353
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- Gerada, D.**, see Liu, X., *TIE April 2020* 2667-2677
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- Gerada, D.**, see Liu, C., *TIE Sept. 2020* 7343-7353
- Gerling, D.**, see Han, Z., *TIE May 2020* 3398-3408
- Ghanbari, A.R.**, and Raie, A.A., Proposing a Multimode Switching Control Method for a Half-Bridge Converter to Improve Its Efficiency Over the Entire Load Variations; *TIE March 2020* 1910-1920
- Ghanbari, T.**, see Ahmadi, M., *TIE June 2020* 5041-5049
- Ghanbari, T.**, see Naseri, F., *TIE Sept. 2020* 7963-7972
- Ghanbari, T.**, see Naghizadeh, M., *TIE May 2020* 4120-4132
- Ghosh, R.**, Seri, P., Hebner, R.E., and Montanari, G.C., Noise Rejection and Detection of Partial Discharges Under Repetitive Impulse Supply Voltage; *TIE May 2020* 4144-4151
- Giangrande, P.**, see Madonna, V., *TIE April 2020* 2618-2629
- Giangrande, P.**, see Madonna, V., *TIE Nov. 2020* 9195-9205
- Gibson, D.**, see Yue, X., *TIE March 2020* 2411-2421
- Gietler, H.**, Kanzian, M., Unterrieder, C., Berger, A., Priewasser, R., Huemer, M., and Zangl, H., on-Time Mismatch Based System Identification Technique for Buck Converters; *TIE Sept. 2020* 7898-7908
- Gil, J.J.**, and Diaz, I., Haptic Performance Using Voltage-Mode Motor Control; *TIE Jan. 2020* 698-705
- Gilanifar, M.**, Wang, H., Sriram, L.M.K., Ozguven, E.E., and Arghandeh, R., Multitask Bayesian Spatiotemporal Gaussian Processes for Short-Term Load Forecasting; *TIE June 2020* 5132-5143
- Gill, E.**, see Zhu, L., *TIE Sept. 2020* 7746-7756
- Girones, C.**, see Samanes, J., *TIE Sept. 2020* 7499-7508
- Gladwin, D.T.**, see Nejad, S., *TIE May 2020* 3747-3755
- Glitz, E.S.**, Hsu, J., and Ordonez, M., Power Loss Estimation in LLC Synchronous Rectification Using Rectifier Current Equations; *TIE May 2020* 3696-3704
- Goh, H.H.**, see Lim, C.S., *TIE June 2020* 4578-4589
- Gohil, G.**, see Iyer, V.M., *TIE Oct. 2020* 8076-8087
- Golestan, S.**, see Ramezani, M., *TIE Jan. 2020* 319-328
- Golestan, S.**, Guerrero, J.M., and Vasquez, J.C., Is Using A Complex Control Gain in Three-Phase FLLs Reasonable?; *TIE March 2020* 2480-2484
- Golmohamadi, H.**, Keypour, R., Bak-Jensen, B., Pillai, J.R., and Khooban, M.H., Robust Self-Scheduling of Operational Processes for Industrial Demand Response Aggregators; *TIE Feb. 2020* 1387-1395
- Gomez-Lazaro, E.**, see Artigao, E., *TIE March 2020* 2262-2271
- Gomis-Bellmunt, O.**, see Sau-Bassols, J., *TIE July 2020* 5467-5478
- Gong, C.**, Hu, Y., Gan, C., Chen, G., and Alkahtani, M., Modeling, Analysis, and Attenuation of Uncontrolled Generation for IPMSM-Based Electric Vehicles in Emergency; *TIE June 2020* 4453-4462
- Gong, C.**, Hu, Y., Gao, J., Wang, Y., and Yan, L., An Improved Delay-Suppressed Sliding-Mode Observer for Sensorless Vector-Controlled PMSM; *TIE July 2020* 5913-5923
- Gong, C.**, see Gao, J., *TIE July 2020* 5816-5819
- Gong, C.**, Tuysuz, A., Flankl, M., Stolz, T., Kolar, J.W., and Habetler, T., Experimental Analysis and Optimization of a Contactless Eddy-Current-Based Speed Sensor for Smooth Conductive Surfaces; *TIE Oct. 2020* 8817-8828
- Gong, C.**, Hu, Y., Wen, H., Chen, G., Li, W., and Gao, J., Reliable Wind-ing-Bus DC-Bus Capacitor Discharge Technique Over Full-Speed Range for IPMSM Drive in Electric Vehicles Without Position Sensor; *TIE Oct. 2020* 8131-8142
- Gong, L.M.**, see Wang, L., *TIE Nov. 2020* 9164-9173
- Gong, X.**, see Zhang, M., *TIE Aug. 2020* 7094-7103
- Gong, Y.**, see Wang, Z., *TIE Sept. 2020* 7202-7216
- Gong, Z.**, van de Ven, B.A.C., Gupta, K.M., da Silva, C., Amon, C.H., Bergveld, H.J., Donkers, M.C.F.T., and Trescases, O., Distributed Control of Active Cell Balancing and Low-Voltage Bus Regulation in Electric Vehicles Using Hierarchical Model-Predictive Control; *TIE Dec. 2020* 10464-10473
- Gonzalez, J.O.**, Wu, R., Jahdi, S., and Alatise, O., Performance and Reliability Review of 650 V and 900 V Silicon and SiC Devices: MOSFETs, Cascode JFETs and IGBTs; *TIE Sept. 2020* 7375-7385
- Gonzalez-Prieto, I.**, see Garcia-Entrambasaguas, P., *TIE Dec. 2020* 10233-10242
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- Gopakumar, K.**, see Majumder, M.G., *TIE Feb. 2020* 960-968
- Gopakumar, K.**, see Majumder, M.G., *TIE Nov. 2020* 9143-9152
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- Gruber, P.**, see Theunissen, J., *TIE June 2020* 4877-4888
- Gruber, P.**, see Tavernini, D., *TIE May 2020* 3990-4001
- Gu, B.**, see Im, S., *TIE Sept. 2020* 7973-7981
- Gu, C.**, see Wang, X., *TIE June 2020* 4315-4325
- Gu, C.**, Wang, X., Zhang, F., and Deng, Z., Correction of Rotor Position Estimation Error for High-Speed Permanent Magnet Synchronous Motor Sensorless Drive System Based on Minimum-Current-Tracking Method; *TIE Oct. 2020* 8271-8280
- Gu, F.**, see Zhang, G., *TIE Nov. 2020* 9515-9525
- Gu, G.**, see Jiang, S., *TIE Jan. 2020* 647-657
- Gu, J.**, see Shi, S., *TIE Dec. 2020* 10776-10786
- Gu, K.**, see Xia, Z., *TIE March 2020* 2251-2261
- Gu, L.**, Tong, Z., Liang, W., and Rivas-Davila, J., A Multiresonant Gate Driver for High-Frequency Resonant Converters; *TIE Feb. 2020* 1405-1414
- Gu, L.**, see Chen, Q., *TIE Sept. 2020* 7321-7333
- Gu, M.**, see Li, Z., *TIE Nov. 2020* 9862-9872
- Gu, X.**, see Sun, L., *TIE May 2020* 3562-3572
- Gu, X.**, see Guo, L., *TIE May 2020* 3736-3746

- Gu, Y.**, see Wu, G., *TIE Nov. 2020 9976*
- Guan, T.**, see Xiong, C., *TIE March 2020 1695-1707*
- Guan, T.**, see Xiong, C., *TIE Nov. 2020 9059-9072*
- Guan, X.**, see Wang, J., *TIE Aug. 2020 6639-6648*
- Guan, Y.**, Wang, Y., Wang, W., and Xu, D., A 20 MHz Low-Profile DC–DC Converter With Magnetic-Free Characteristics; *TIE Feb. 2020 1555-1567*
- Guan, Y.**, see Gao, S., *TIE Feb. 2020 1455-1465*
- Guazzelli, P.R.U.**, see de Oliveira, C.M.R., *TIE Sept. 2020 7239-7249*
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- Guerrero, J.M.**, see Peng, Y., *TIE July 2020 5531-5542*
- Guerrero, J.M.**, see Golestan, S., *TIE March 2020 2480-2484*
- Guerrero, J.M.**, see Fonseca, T.Q., *TIE Nov. 2020 9326-9336*
- Guerrero, J.M.**, see Hu, J., *TIE Oct. 2020 8941-8943*
- Guerrero, J.M.**, see Lashab, A., *TIE Aug. 2020 6483-6493*
- Guerrero, J.M.**, see de Aguiar, C.R., *TIE May 2020 3726-3735*
- Gueuning, Q.**, see Kayani, H.A., *TIE Aug. 2020 7083-7093*
- Guglielmi, P.**, see Ruffo, R., *TIE Feb. 2020 863-873*
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- Guillaud, X.**, see Liu, W., *TIE Oct. 2020 8416-8427*
- Guler, N.**, see Bagheri, F., *TIE Aug. 2020 6439-6449*
- Gulur, S.**, Mahadeva Iyer, V., and Bhattacharya, S., A CM Filter Configuration for Grid-Tied Voltage Source Converters; *TIE Oct. 2020 8100-8111*
- Gulur, S.**, see Iyer, V.M., *TIE Oct. 2020 8076-8087*
- Guo, B.**, Huang, Y., Peng, F., Dong, J., and Li, Y., Analytical Modeling of Misalignment in Axial Flux Permanent Magnet Machine; *TIE June 2020 4433-4443*
- Guo, F.**, Wang, L., Wen, C., Zhang, D., and Xu, Q., Distributed Voltage Restoration and Current Sharing Control in Islanded DC Microgrid Systems Without Continuous Communication; *TIE April 2020 3043-3053*
- Guo, F.**, see Jiang, W., *TIE Nov. 2020 9450-9459*
- Guo, G.**, Song, Q., Zhao, B., Rao, H., Xu, S., Zhu, Z., and Liu, W., Series-Connected-Based Offshore Wind Farms With Full-Bridge Modular Multilevel Converter as Grid- and Generator-side Converters; *TIE April 2020 2798-2809*
- Guo, H.**, see Xu, J., *TIE July 2020 5959-5970*
- Guo, H.**, see Zhao, J., *TIE July 2020 5349-5359*
- Guo, J.**, see Zhu, L., *TIE Sept. 2020 7746-7756*
- Guo, L.**, Jin, N., Gan, C., and Luo, K., Hybrid Voltage Vector Preselection-Based Model Predictive Control for Two-Level Voltage Source Inverters to Reduce the Common-Mode Voltage; *TIE June 2020 4680-4691*
- Guo, L.**, see Wang, C., *TIE March 2020 2241-2250*
- Guo, L.**, see Yang, J., *TIE Nov. 2020 9802-9812*
- Guo, L.**, see Wang, D., *TIE Dec. 2020 10833-10843*
- Guo, L.**, Gu, X., Chu, P., Hemour, S., and Wu, K., Collaboratively Harvesting Ambient Radiofrequency and Thermal Energy; *TIE May 2020 3736-3746*
- Guo, P.**, see Zhu, Z., *TIE Jan. 2020 432-441*
- Guo, P.**, see Han, R., *TIE Nov. 2020 9028-9038*
- Guo, Q.**, see Lu, B., *TIE Aug. 2020 7005-7014*
- Guo, S.**, Zhang, B., Yang, T., Lyu, D., and Gao, W., Multitask Convolutional Neural Network With Information Fusion for Bearing Fault Diagnosis and Localization; *TIE Sept. 2020 8005-8015*
- Guo, S.**, see Huang, L., *TIE Nov. 2020 9623-9634*
- Guo, X.**, Zhong, R., Zhang, M., Ding, D., and Sun, W., Resonance Reduction by Optimal Switch Angle Selection in Switched Reluctance Motor; *TIE March 2020 1867-1877*
- Guo, X.**, Sui, S., Wang, B., and Zhang, W., A Current-Based Approach for Short-Circuit Fault Diagnosis in Closed-Loop Current Source Inverter; *TIE Sept. 2020 7941-7950*
- Guo, X.**, Yang, Y., Wang, B., and Lu, Z., Generalized Space Vector Modulation for Current Source Converter in Continuous and Discontinuous Current Modes; *TIE Nov. 2020 9348-9357*
- Guo, X.**, see Wei, Y., *TIE Nov. 2020 9153-9163*
- Guo, X.**, see Li, L., *TIE Aug. 2020 6883-6893*
- Guo, Y.**, see Xue, F., *TIE Jan. 2020 551-559*
- Guo, Y.**, see Xue, F., *TIE April 2020 3257-3266*
- Guo, Y.**, see Sun, X., *TIE July 2020 6089-6100*
- Guo, Y.**, Zhao, X., Li, J., Wang, A., and Wang, W., Blind Multiple-Input Multiple-Output Image Phase Retrieval; *TIE March 2020 2220-2230*
- Guo, Y.**, see Khan, S.A., *TIE Sept. 2020 7364-7374*
- Guo, Y.**, see Diao, K., *TIE Dec. 2020 10055-10064*
- Guo, Y.**, see Wu, T., *TIE May 2020 3901-3910*
- Guo, Z.**, Modulation Scheme of Dual Active Bridge Converter for Seamless Transitions in Multiworking Modes Compromising ZVS and Conduction Loss; *TIE Sept. 2020 7399-7409*
- Gupta, K.M.**, see Gong, Z., *TIE Dec. 2020 10464-10473*
- Gusakov, D.V.**, see Ismagilov, F.R., *TIE March 2020 1750-1758*
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H

- Ha, J.**, see Lee, K., *TIE Dec. 2020 10109-10120*
- Habetler, T.**, see Gong, C., *TIE Oct. 2020 8817-8828*
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- Hackl, C.M.**, see Eldeeb, H.M., *TIE May 2020 3361-3373*
- Haghdar, K.**, Optimal DC Source Influence on Selective Harmonic Elimination in Multilevel Inverters Using Teaching–Learning-Based Optimization; *TIE Feb. 2020 942-949*
- Hajdinjak, M.**, and Miljavec, D., Analytical Calculation of the Magnetic Field Distribution in Slotless Brushless Machines With U-Shaped Interior Permanent Magnets; *TIE Aug. 2020 6721-6731*
- Hammadi, M.**, see Mcharek, M., *TIE Aug. 2020 6752-6761*
- Han, B.**, see Cui, P., *TIE June 2020 4946-4956*
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- Han, G.**, see Tong, X., *TIE Jan. 2020 581-591*
- Han, H.**, see Li, L., *TIE Sept. 2020 8064-8071*
- Han, J.**, see He, J., *TIE July 2020 5232-5245*
- Han, J.**, Kim, T., Oh, T., Lee, S., and Dan Cho, D., Effective Disturbance Compensation Method Under Control Saturation in Discrete-Time Sliding Mode Control; *TIE July 2020 5696-5707*
- Han, J.**, see Zhang, G., *TIE Nov. 2020 9515-9525*
- Han, J.**, see Xu, J., *TIE May 2020 3788-3797*
- Han, J.**, Zheng, P., Sun, Y., Ge, B., and Li, W., Influence of Electric Shield Materials on Temperature Distribution in the End Region of a Large Water–Hydrogen–Hydrogen-Cooled Turbogenerator; *TIE May 2020 3431-3441*
- Han, M.**, see Zhao, J., *TIE July 2020 5349-5359*
- Han, P.**, see Duong, M., *TIE Feb. 2020 1180-1190*
- Han, Q.**, see Feng, Y., *TIE May 2020 4013-4023*
- Han, R.**, Xu, Q., Ding, H., Guo, P., Hu, J., Chen, Y., and Luo, A., Thermal Stress Balancing Oriented Model Predictive Control of Modular Multilevel Switching Power Amplifier; *TIE Nov. 2020 9028-9038*
- Han, S.**, see Du, B., *TIE Feb. 2020 1149-1159*
- Han, S.**, see Lee, N., *TIE Feb. 2020 1024-1035*
- Han, S.**, see Lee, H., *TIE Oct. 2020 8829-8840*
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- Han, W.**, see Liu, W., *TIE Oct. 2020 8392-8404*
- Han, Z.**, see Xue, F., *TIE April 2020 3257-3266*
- Han, Z.**, Liu, J., Yang, W., Pinhal, D.B., Reiland, N., and Gerling, D., Improved Online Maximum-Torque-Per-Ampere Algorithm for Speed Controlled Interior Permanent Magnet Synchronous Machine; *TIE May 2020 3398-3408*
- Hao, J.**, see Chen, Z., *TIE July 2020 5787-5797*
- Hao, K.**, see Xie, R., *TIE Aug. 2020 7034-7043*
- Hao, Q.**, see Jiang, F., *TIE March 2020 2076-2085*
- Hao, R.**, see Zhan, H., *TIE Dec. 2020 10897-10904*
- Hao, Y.**, see Zhao, B., *TIE Sept. 2020 7715-7726*
- Hao, Y.**, see Dang, K., *TIE Aug. 2020 6597-6606*
- Hardt, D.**, see Du, X., *TIE May 2020 4077-4087*
- Hartavi, A.E.**, see Tavernini, D., *TIE May 2020 3990-4001*
- Hassan, W.**, Abdulali, A., and Jeon, S., Authoring New Haptic Textures Based on Interpolation of Real Textures in Affective Space; *TIE Jan. 2020 667-676*

- Hassan, W.**, *see* Raza, A., *TIE Jan. 2020 736-745*
- Hatano, T.**, *see* Zhang, K., *TIE June 2020 4729-4740*
- Hatua, K.**, *see* Titus, J., *TIE Sept. 2020 7217-7227*
- Hatua, K.**, *see* Sukhatme, Y., *TIE Dec. 2020 10121-10133*
- He, D.**, *see* Luo, H., *TIE Dec. 2020 10377-10387*
- He, H.**, *see* Chen, X., *TIE March 2020 1968-1979*
- He, H.**, *see* Wang, N., *TIE Nov. 2020 9648-9658*
- He, H.**, Quan, S., Sun, F., and Wang, Y., Model Predictive Control With Lifetime Constraints Based Energy Management Strategy for Proton Exchange Membrane Fuel Cell Hybrid Power Systems; *TIE Oct. 2020 9012-9023*
- He, J.**, *see* Xue, F., *TIE Jan. 2020 551-559*
- He, J.**, *see* Xue, F., *TIE April 2020 3257-3266*
- He, J.**, Lyu, Y., Han, J., and Wang, C., An SVM Approach for Five-Phase Current Source Converters Output Current Harmonics and Common-Mode Voltage Mitigation; *TIE July 2020 5232-5245*
- He, J.**, *see* Cao, G., *TIE July 2020 6066-6077*
- He, J.**, Luo, Y., Li, M., Zhang, Y., Xu, Y., Zhang, Q., and Luo, G., A High-Performance and Economical Multiport Hybrid Direct Current Circuit Breaker; *TIE Oct. 2020 8921-8930*
- He, J.**, Dong, Z., Wang, Y., and Wang, C., Cost-Effective Islanded Electrical System With Decentralized Interleaving PWM for Converter Harmonic Reduction; *TIE Oct. 2020 8472-8483*
- He, J.**, *see* Li, H., *TIE Dec. 2020 10497-10508*
- He, J.**, *see* Wang, Y., *TIE Dec. 2020 10284-10294*
- He, K.**, *see* Peng, Y., *TIE Nov. 2020 9734-9746*
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- He, L.**, *see* Liao, X., *TIE Oct. 2020 8526-8534*
- He, M.**, *see* Zhang, Z., *TIE Nov. 2020 9227-9237*
- He, Q.**, *see* Chen, J., *TIE Feb. 2020 1615-1625*
- He, Q.**, Zeng, C., Gao, Z., and Wu, Z., Analysis and Design of the Stewart Platform-Based Parallel Support Bumper for Inertially Stabilized Platforms; *TIE May 2020 4203-4215*
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- He, S.**, *see* Li, D., *TIE April 2020 3116-3125*
- He, S.**, *see* Shi, W., *TIE Sept. 2020 7509-7518*
- He, S.**, *see* Zhang, M., *TIE Aug. 2020 7094-7103*
- He, T.**, Wu, Z., Li, D., and Wang, J., A Tuning Method of Active Disturbance Rejection Control for a Class of High-Order Processes; *TIE April 2020 3191-3201*
- He, W.**, *see* Fang, T., *TIE Jan. 2020 214-224*
- He, W.**, *see* Peng, G., *TIE April 2020 3138-3148*
- He, W.**, *see* Li, Z., *TIE April 2020 3096-3106*
- He, W.**, *see* Yin, Z., *TIE June 2020 4826-4835*
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- He, X.**, *see* Hu, S., *TIE April 2020 2544-2552*
- He, X.**, *see* Hu, S., *TIE June 2020 4590-4599*
- He, X.**, *see* Zhou, D., *TIE March 2020 2337-2347*
- He, X.**, *see* Li, G., *TIE Aug. 2020 6572-6582*
- He, X.**, *see* Meng, L., *TIE Dec. 2020 10366-10376*
- He, Y.**, *see* Wong, S., *TIE June 2020 4969-4979*
- He, Y.**, Zhang, Y., Xu, M., Wang, X., and Xiong, J., A New Hybrid Model for Electromechanical Characteristic Analysis Under SISC in Synchronous Generators; *TIE March 2020 2348-2359*
- He, Y.**, *see* Zhang, G., *TIE Nov. 2020 9515-9525*
- He, Z.**, *see* Li, Y., *TIE Jan. 2020 203-213*
- He, Z.**, *see* Hu, H., *TIE Jan. 2020 244-253*
- He, Z.**, Jiang, Z., Zhao, X., Zhang, S., and Wu, C., Sparse Template-Based 6-D Pose Estimation of Metal Parts Using a Monocular Camera; *TIE Jan. 2020 390-401*
- He, Z.**, *see* Zhao, J., *TIE March 2020 1804-1812*
- Hebner, R.E.**, *see* Ghosh, R., *TIE May 2020 4144-4151*
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- Heemels, W.P.M.H.**, *see* van Horssen, E.P., *TIE Feb. 2020 1212-1221*
- Helian, B.**, Chen, Z., and Yao, B., Precision Motion Control of a Servomotor-Pump Direct-Drive Electrohydraulic System With a Nonlinear Pump Flow Mapping; *TIE Oct. 2020 8638-8648*
- Hemour, S.**, *see* Guo, L., *TIE May 2020 3736-3746*
- Herman, J.**, Begus, S., Mihalic, P., and Bojkovski, J., Novel Method for Direct Measurement of Air Gap Anomalies in Direct-Drive Electrical Motors; *TIE March 2020 2422-2429*
- Hernandez, J.C.**, Mira, M.C., Petersen, L.P., Andersen, M.A.E., and Petersen, N.H., Zero Voltage Switching Control Method for MHz Boundary Conduction Mode Converters; *TIE Feb. 2020 1544-1554*
- Hernandez-Arias, A.N.**, *see* Pena-Eguiluz, R., *TIE Oct. 2020 8292-8301*
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- Heydari-doostabad, H.**, *see* Pourfaraj, A., *TIE April 2020 2905-2915*
- Hieu, N.X.**, *see* Din, A.U., *TIE Jan. 2020 569-580*
- Hill, D.J.**, *see* Chen, T., *TIE May 2020 4152-4162*
- Ho, C.N.M.**, *see* Siu, K.K.M., *TIE March 2020 1899-1909*
- Ho, G.K.Y.**, Fang, Y., and Pong, B.M.H., A Multiphysics Design and Optimization Method for Air-Core Planar Transformers in High-Frequency LLC Resonant Converters; *TIE Feb. 2020 1605-1614*
- Ho, S.**, *see* Wang, C., *TIE Feb. 2020 1366-1375*
- Hofmann, H.F.**, *see* Song, Z., *TIE Nov. 2020 9768-9778*
- Holtz, J.**, *see* Qi, X., *TIE June 2020 4402-4410*
- Holtz, J.**, *see* Qi, X., *TIE March 2020 1836-1843*
- Holtz, J.**, Event Driven Control of Voltage and Current Gradients of Medium Voltage IGBTs; *TIE Aug. 2020 6323-6330*
- Holweg, E.**, *see* Kerst, S., *TIE Jan. 2020 461-470*
- Hong, D.**, *see* Shin, H., *TIE Sept. 2020 7250-7259*
- Hong, J.**, *see* Wang, S., *TIE April 2020 2954-2964*
- Hong, J.**, *see* Wang, S., *TIE June 2020 4752-4761*
- Hong, J.**, *see* Wang, S., *TIE Aug. 2020 6709-6720*
- Hong, Q.**, Abdulhadi, I., Tzelepis, D., Roscoe, A., Marshall, B., and Booth, C., Realization of High Fidelity Power-Hardware-in-the-Loop Capability Using a MW-Scale Motor-Generator Set; *TIE Aug. 2020 6835-6844*
- Hong, S.**, *see* Park, J., *TIE Oct. 2020 8931-8935*
- Hong, W.**, *see* Xie, F., *TIE Nov. 2020 9601-9612*
- Honrubia-Escribano, A.**, *see* Artigao, E., *TIE March 2020 2262-2271*
- Hoori, A.O.**, Kazzaz, A.A., Khimani, R., Motai, Y., and Aved, A.J., Electric Load Forecasting Model Using a Multicolumn Deep Neural Networks; *TIE Aug. 2020 6473-6482*
- Hosseini, S.H.**, *see* Samadian, A., *TIE July 2020 5389-5397*
- Hosseini, S.H.**, *see* Mohseni, P., *TIE Sept. 2020 7386-7398*
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- Hosseini, S.H.**, *see* Nourmohamadi, H., *TIE Dec. 2020 10001-10010*
- Hosseini-Pishrobat, M.**, *see* Keighobadi, J., *TIE Sept. 2020 7871-7878*
- Hou, B.**, Zhou, B., Zhang, X., Li, X., Yi, L., Wei, Q., and Zhang, R., A Full 360° Measurement Range Liquid Capacitive Inclinometer With a Triple- Eccentric-Ring Sensing Element and Differential Detection Scheme; *TIE May 2020 4216-4225*
- Hou, H.**, Yu, X., Xu, L., Rsetam, K., and Cao, Z., Finite-Time Continuous Terminal Sliding Mode Control of Servo Motor Systems; *TIE July 2020 5647-5656*
- Hou, J.**, *see* Song, Z., *TIE Nov. 2020 9768-9778*
- Hou, L.**, *see* Geng, S., *TIE April 2020 3298-3306*
- Hou, N.**, and Li, Y., The Comprehensive Circuit-Parameter Estimating Strategies for Output-Parallel Dual-Active-Bridge DC-DC Converters With Tunable Power Sharing Control; *TIE Sept. 2020 7583-7594*
- Hou, Y.**, *see* Wang, Y., *TIE Feb. 2020 1425-1434*
- Hou, Y.**, *see* Geng, S., *TIE April 2020 3298-3306*
- Hou, Z.**, *see* Chi, R., *TIE Oct. 2020 8691-8701*
- Hsu, C.**, and Yang, S., Permanent-Magnet Machine Flux and Torque Response Under the Influence of Turn Fault; *TIE Jan. 2020 169-179*
- Hsu, H.**, *see* Tang, Z., *TIE Oct. 2020 8302-8311*
- Hsu, J.**, *see* Glitz, E.S., *TIE May 2020 3696-3704*
- Hu, C.**, *see* Huang, Y., *TIE Feb. 2020 1376-1386*
- Hu, C.**, *see* Si, X., *TIE April 2020 3202-3215*
- Hu, C.**, *see* Si, X., *TIE Nov. 2020 9635-9647*
- Hu, C.**, Pei, H., Si, X., Du, D., Pang, Z., and Wang, X., A Prognostic Model Based on DBN and Diffusion Process for Degrading Bearing; *TIE Oct. 2020 8767-8777*

- Hu, C.**, and Wang, Y., An Efficient Convolutional Neural Network Model Based on Object-Level Attention Mechanism for Casting Defect Detection on Radiography Images; *TIE Dec. 2020 10922-10930*
- Hu, C.**, see Huai, Z., *TIE May 2020 3879-3890*
- Hu, H.**, Pan, P., Song, Y., and He, Z., A Novel Controlled Frequency Band Impedance Measurement Approach for Single-Phase Railway Traction Power System; *TIE Jan. 2020 244-253*
- Hu, H.**, see Cao, G., *TIE July 2020 6066-6077*
- Hu, J.**, see Li, Y., *TIE Jan. 2020 203-213*
- Hu, J.**, see Xue, F., *TIE Jan. 2020 551-559*
- Hu, J.**, see Lu, B., *TIE Feb. 2020 1337-1347*
- Hu, J.**, see Xue, F., *TIE April 2020 3257-3266*
- Hu, J.**, see Han, R., *TIE Nov. 2020 9028-9038*
- Hu, J.**, Ioinovici, A., and Guerrero, J.M., Guest Editorial: Applications of Predictive Control in Microgrids; *TIE Oct. 2020 8941-8943*
- Hu, J.**, see Wang, B., *TIE Oct. 2020 8755-8766*
- Hu, J.**, see Huai, Z., *TIE May 2020 3879-3890*
- Hu, K.**, see Yang, Y., *TIE Aug. 2020 6365-6375*
- Hu, M.**, see Su, P., *TIE Feb. 2020 906-918*
- Hu, M.**, Hua, W., Huang, W., and Meng, J., Digital Current Control of an Asymmetrical Dual Three-Phase Flux-Switching Permanent Magnet Machine; *TIE June 2020 4281-4291*
- Hu, M.**, see Su, P., *TIE March 2020 1824-1835*
- Hu, M.**, Wang, Y., Lin, X., and Shi, Y., A Decentralized Periodic Energy Trading Framework for Pelagic Islanded Microgrids; *TIE Sept. 2020 7595-7605*
- Hu, Q.**, Han, T., and Xin, M., Three-Dimensional Guidance for Various Target Motions With Terminal Angle Constraints Using Twisting Control; *TIE Feb. 2020 1242-1253*
- Hu, Q.**, see Wang, C., *TIE March 2020 2241-2250*
- Hu, R.**, see Lin, W., *TIE Sept. 2020 7439-7450*
- Hu, S.**, Xiong, M., Liang, Z., and He, X., Torque Distributed Control Strategy for the Dual Three-Phase PMSM in Hybrid Energy Storage System Application; *TIE April 2020 2544-2552*
- Hu, S.**, Liang, Z., and He, X., Research on the Dynamic Characteristics and Regulation Method of the Energy Stored Quasi-Z-Source Inverter System; *TIE June 2020 4590-4599*
- Hu, S.**, see Song, Z., *TIE Dec. 2020 10046-10054*
- Hu, S.**, see Liu, Q., *TIE May 2020 3329-3339*
- Hu, W.**, Ruan, C., Nian, H., and Sun, D., An Improved Modulation Technique With Minimum Switching Actions Within One PWM Cycle for Open-End Winding PMSM System With Isolated DC Bus; *TIE May 2020 4259-4264*
- Hu, X.**, see Zhang, J., *TIE June 2020 5071-5080*
- Hu, X.**, Liang, W., Liu, X., and Yu, Z., A Hybrid Interleaved DC–DC Converter With a Wide Step-Up Regulation Range and Ultralow Voltage Stress; *TIE July 2020 5479-5489*
- Hu, X.**, see Si, X., *TIE Nov. 2020 9635-9647*
- Hu, X.**, see Zhang, J., *TIE May 2020 3505-3516*
- Hu, Y.**, see Lu, J., *TIE Jan. 2020 69-79*
- Hu, Y.**, see Zhang, F., *TIE Jan. 2020 308-318*
- Hu, Y.**, see Xie, L., *TIE Feb. 2020 931-941*
- Hu, Y.**, Zhang, X., Mao, W., Zhao, T., Wang, F., and Dai, Z., An Optimized Third Harmonic Injection Method for Reducing DC-Link Voltage Fluctuation and Alleviating Power Imbalance of Three-Phase Cascaded H-Bridge Photovoltaic Inverter; *TIE April 2020 2488-2498*
- Hu, Y.**, see Liu, H., *TIE April 2020 2607-2617*
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- Hu, Y.**, see Liu, Y., *TIE Sept. 2020 7167-7178*
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- Hu, Y.**, see Wang, X., *TIE Dec. 2020 10095-10108*
- Hu, Y.**, see Mao, S., *TIE May 2020 3551-3561*
- Hu, Y.**, see Shi, H., *TIE May 2020 3583-3595*
- Hu, Z.**, see Jiang, D., *TIE Feb. 2020 950-959*
- Hu, Z.**, Wang, Y., Ge, M., and Liu, J., Data-Driven Fault Diagnosis Method Based on Compressed Sensing and Improved Multiscale Network; *TIE April 2020 3216-3225*
- Hu, Z.**, see Gan, W., *TIE Sept. 2020 7829-7840*
- Hua, H.**, see Li, H., *TIE July 2020 5278-5290*
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- Hua, W.**, see Zhu, X., *TIE July 2020 5337-5348*
- Hua, W.**, see Su, P., *TIE March 2020 1824-1835*
- Hua, W.**, see Huang, W., *TIE Aug. 2020 6259-6269*
- Hua, W.**, Chen, F., Huang, W., Zhang, G., Wang, W., and Xia, W., Multivector-Based Model Predictive Control With Geometric Solution of a Five-Phase Flux-Switching Permanent Magnet Motor; *TIE Dec. 2020 10035-10045*
- Huai, Z.**, Zhang, M., Zhu, Y., Chen, A., Yang, K., Hu, C., Hu, J., Li, X., and Wang, L., A Novel Electrodynamic Reaction Sphere Prototype for Spacecraft Attitude Control; *TIE May 2020 3879-3890*
- Huang, A.Q.**, see Quan, X., *TIE Dec. 2020 10989-10995*
- Huang, B.**, see Fang, M., *TIE June 2020 5060-5070*
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- Huang, C.**, see Fang, T., *TIE Jan. 2020 214-224*
- Huang, C.**, see Kalra, G.R., *TIE Feb. 2020 1103-1112*
- Huang, C.**, and Yang, S., Sensorless Vibration Harmonic Estimation of Servo System Based on the Disturbance Torque Observer; *TIE March 2020 2122-2132*
- Huang, C.**, see Wu, T., *TIE Nov. 2020 9429-9438*
- Huang, D.**, Min, D., Jian, Y., and Li, Y., Current-Cycle Iterative Learning Control for High-Precision Position Tracking of Piezoelectric Actuator System via Active Disturbance Rejection Control for Hysteresis Compensation; *TIE Oct. 2020 8680-8690*
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- Huang, F.**, see Chen, Z., *TIE Jan. 2020 746-756*
- Huang, G.**, see Li, Y., *TIE March 2020 2360-2370*
- Huang, H.**, Zhang, T., Yang, C., and Chen, C.L.P., Motor Learning and Generalization Using Broad Learning Adaptive Neural Control; *TIE Oct. 2020 8608-8617*
- Huang, H.**, see Bao, D., *TIE Dec. 2020 10065-10074*
- Huang, H.**, see Yang, Z., *TIE May 2020 3870-3878*
- Huang, J.**, see Chen, J., *TIE Feb. 2020 1615-1625*
- Huang, J.**, Zhang, X., and Zhang, Z., Three-Step Switching Frequency Selection Criteria for the Generalized CLLC-Type DC Transformer in Hybrid AC–DC Microgrid; *TIE Feb. 2020 980-991*
- Huang, J.**, see Chen, J., *TIE July 2020 5879-5888*
- Huang, J.**, Zhang, M., Ri, S., Xiong, C., Li, Z., and Kang, Y., High-Order Disturbance-Observer-Based Sliding Mode Control for Mobile Wheeled Inverted Pendulum Systems; *TIE March 2020 2030-2041*
- Huang, J.**, see Xu, Y., *TIE Nov. 2020 9101-9111*
- Huang, J.**, and Zhang, X., Step-by-Step Threshold Design Methodology of Switching Frequency Regulation for a Generalized Resonant DC–DC Converter; *TIE Dec. 2020 10975-10980*
- Huang, K.**, see Wang, J., *TIE Feb. 2020 992-1004*
- Huang, K.**, Zhou, C., Qin, Y., and Tu, W., A Game-Theoretic Approach to Cross-Layer Security Decision-Making in Industrial Cyber-Physical Systems; *TIE March 2020 2371-2379*
- Huang, K.**, see Shao, K., *TIE Aug. 2020 6659-6668*
- Huang, K.**, see Zhou, M., *TIE Aug. 2020 6617-6628*
- Huang, L.**, see Shang, Y., *TIE April 2020 2991-2999*
- Huang, L.**, see Wang, B., *TIE April 2020 2511-2522*
- Huang, L.**, see Liu, Y., *TIE Sept. 2020 7167-7178*
- Huang, L.**, Zhu, Z.Q., Feng, J., Guo, S., Li, Y., and Shi, J.X., Novel Current Profile of Switched Reluctance Machines for Torque Density Enhancement in Low-Speed Applications; *TIE Nov. 2020 9623-9634*
- Huang, N.**, see Du, G., *TIE April 2020 2722-2733*

- Huang, N.**, see Du, G., *TIE May 2020 3472-3483*
- Huang, P.**, see Lu, Z., *TIE Jan. 2020 778-789*
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- Huang, P.**, see Zhu, Z., *TIE Aug. 2020 6688-6697*
- Huang, P.**, see Zhao, Y., *TIE Aug. 2020 6874-6882*
- Huang, P.J.**, see Dung, N.A., *TIE Feb. 2020 1415-1424*
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- Huang, S.**, see Chen, N., *TIE July 2020 6031-6042*
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- Huang, W.**, see Yan, Y., *TIE April 2020 2786-2797*
- Huang, W.**, see Liu, H., *TIE April 2020 2607-2617*
- Huang, W.**, see Hu, M., *TIE June 2020 4281-4291*
- Huang, W.**, see Chen, A., *TIE Nov. 2020 9492-9502*
- Huang, W.**, Hua, W., Chen, F., and Zhu, J., Enhanced Model Predictive Torque Control of Fault-Tolerant Five-Phase Permanent Magnet Synchronous Motor With Harmonic Restraint and Voltage Preselection; *TIE Aug. 2020 6259-6269*
- Huang, W.**, see Hua, W., *TIE Dec. 2020 10035-10045*
- Huang, X.**, see Kwan, P.W., *TIE Jan. 2020 451-460*
- Huang, X.**, Li, Z., Wen, C., and He, R., Asymptotic Parking of General Two-Trailer Systems Leveraging Singularity; *TIE Sept. 2020 7798-7807*
- Huang, X.**, see Chen, Z., *TIE Nov. 2020 9405-9417*
- Huang, X.**, see Yin, C., *TIE Oct. 2020 8576-8586*
- Huang, X.**, Liang, J., Qian, Z., and Li, J., An Iterative Estimation Algorithm of Prepositioning Focusing on the Detent Force in the Permanent Magnet Linear Synchronous Motor System; *TIE Oct. 2020 8252-8261*
- Huang, X.**, see Tan, Q., *TIE May 2020 3891-3900*
- Huang, X.Z.**, Yu, H.C., Zhou, B., Li, L.Y., Gerada, D., Gerada, C., and Qian, Z.Y., Detent-Force Minimization of Double-Sided Permanent Magnet Linear Synchronous Motor by Shifting One of the Primary Components; *TIE Jan. 2020 180-191*
- Huang, Y.**, see Na, J., *TIE Jan. 2020 490-500*
- Huang, Y.**, Ding, H., Zhang, Y., Wang, H., Cao, D., Xu, N., and Hu, C., A Motion Planning and Tracking Framework for Autonomous Vehicles Based on Artificial Potential Field Elaborated Resistance Network Approach; *TIE Feb. 2020 1376-1386*
- Huang, Y.**, see Guo, B., *TIE June 2020 4433-4443*
- Huang, Y.**, see Zhang, X., *TIE June 2020 4485-4495*
- Huang, Y.**, see Wang, X., *TIE July 2020 5657-5665*
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- Huang, Y.**, see Zhuang, Y., *TIE Nov. 2020 9471-9479*
- Huang, Y.**, see Yao, Y., *TIE Dec. 2020 10145-10155*
- Huang, Y.**, see Na, J., *TIE May 2020 3850-3859*
- Huang, Z.**, see Li, H., *TIE Dec. 2020 10497-10508*
- Huang, Z.**, Fang, Z., Lam, C., Mak, P., and Martins, R.P., Cost-Effective Compensation Design for Output Customization and Efficiency Optimization in Series/Series-Parallel Inductive Power Transfer Converter; *TIE Dec. 2020 10356-10365*
- Huemer, M.**, see Gietler, H., *TIE Sept. 2020 7898-7908*
- Hui, Q.**, Jin, K., and Zhu, X., Directional Radiation Technique for Maximum Receiving Power in Microwave Power Transmission System; *TIE Aug. 2020 6376-6386*
- Hui, S.Y.**, see Li, K.H., *TIE June 2020 5154-5160*
- Hui, S.Y.**, see Qi, W., *TIE March 2020 1878-1889*
- Hui, S.Y.R.**, see Yang, Y., *TIE Oct. 2020 9001-9011*
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- Huo, Z.**, see Liang, C., *TIE Aug. 2020 6963-6974*
- Huo, Z.**, see Luo, C., *TIE May 2020 3386-3397*
- Husev, O.**, Roncero-Clemente, C., Makovenko, E., Pimentel, S.P., Vinnikov, D., and Martins, J., Optimization and Implementation of the Proportional-Resonant Controller for Grid-Connected Inverter With Significant Computation Delay; *TIE Feb. 2020 1201-1211*
- Hussain, S.M.S.**, Aftab, M.A., Nadeem, F., Ali, I., and Ustun, T.S., Optimal Energy Routing in Microgrids With IEC 61850 Based Energy Routers; *TIE June 2020 5161-5169*
- Huyh, T.**, Lin, C., Le, T., Cho, H., Pham, T.T., Le, N., and Chao, F., A New Self-Organizing Fuzzy Cerebellar Model Articulation Controller for Uncertain Nonlinear Systems Using Overlapped Gaussian Membership Functions; *TIE Nov. 2020 9671-9682*
- Hwang, I.**, see Raza, A., *TIE Jan. 2020 736-745*
- Hwang, Y.**, Chen, J., Yang, J., and Ku, Y., A Low-EMI Continuous-Time Delta-Sigma-Modulator Buck Converter With Transient Response Eruption Techniques; *TIE Aug. 2020 6854-6863*

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- Iacchetti, M.F.**, see Marques, G.D., *TIE Oct. 2020 8175-8185*
- Ifqir, S.**, Dalil, I., Naima, A., and Said, M., Adaptive Threshold Generation for Vehicle Fault Detection Using Switched T-S Interval Observers; *TIE June 2020 5030-5040*
- Im, S.**, and Gu, B., Interturn Fault Tolerant Drive Method by Limiting Copper Loss of Interior Permanent Magnet Synchronous Motor; *TIE Sept. 2020 7973-7981*
- Iman-Eini, H.**, and Liserre, M., DC Fault Current Blocking With the Coordination of Half-Bridge MMC and the Hybrid DC Breaker; *TIE July 2020 5503-5514*
- Imthias, M.**, Raj R., K., Yadav, A.K., Gopakumar, K., Umanand, L., and Cecati, C., Minimization of Switched Capacitor Voltage Ripple in a Multilevel Dodecagonal Voltage Space Vector Structure for Drives; *TIE Jan. 2020 126-135*
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- Ioannidis, D.**, see Dimitriou, N., *TIE July 2020 5748-5757*
- Ioinovici, A.**, see Hu, J., *TIE Oct. 2020 8941-8943*
- Iqbal, A.**, Bhaskar, M.S., Meraj, M., Padmanaban, S., and Rahman, S., Closed-Loop Control and Boundary for CCM and DCM of Nonisolated Inverting $N \times$ Multilevel Boost Converter for High-Voltage Step-Up Applications; *TIE April 2020 2863-2874*
- Iqbal, A.**, see Rahman, K., *TIE Nov. 2020 9251-9259*
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- Islam, M.R.**, see Chen, X., *TIE May 2020 3419-3430*
- Islam, M.R.**, see Farrok, O., *TIE May 2020 3409-3418*
- Islam, T.**, see Kumar, S., *TIE Nov. 2020 9779-9789*
- Ismagilov, F.R.**, Papini, L., Vavilov, V.E., and Gusakov, D.V., Design and Performance of a High-Speed Permanent Magnet Generator with Amorphous Alloy Magnetic Core for Aerospace Applications; *TIE March 2020 1750-1758*
- Ito, S.**, Cigarini, F., and Schitter, G., Flux-Controlled Hybrid Reluctance Actuator for High-Precision Scanning Motion; *TIE Nov. 2020 9593-9600*
- Iturraspe, A.**, see Olaizola, J., *TIE May 2020 4088-4097*
- Iu, H.H.**, see Zhang, G., *TIE March 2020 1890-1898*
- Iu, H.H.C.**, see Yu, D., *TIE Oct. 2020 8450-8460*
- Ivanov, V.**, see Savitski, D., *TIE Oct. 2020 8535-8544*
- Ivanov, V.**, see Tavernini, D., *TIE May 2020 3990-4001*
- Iyer, V.M.**, Gulur, S., Gohil, G., and Bhattacharya, S., An Approach Towards Extreme Fast Charging Station Power Delivery for Electric Vehicles with Partial Power Processing; *TIE Oct. 2020 8076-8087*

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- Jabbari, M.**, and Mokhtari, M., High-Frequency Resonant ZVS Boost Converter With Grounded Switches and Continuous Input Current; *TIE Feb. 2020 1059-1067*
- Jacobina, C.B.**, see Bahia, F.A.d.C., *TIE Aug. 2020 6387-6397*
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- Jafari, A.**, see Singh, H., *TIE Jan. 2020 809-819*
- Jafarian, M.J.**, and Nazarzadeh, J., A TDF Model in Induction Machines for Loose Bearing Diagnosis by Neutral Voltage; *TIE Oct. 2020 8155-8163*

- Jahan, H.K.**, A New Transformerless Inverter With Leakage Current Limiting and Voltage Boosting Capabilities for Grid-Connected PV Applications; *TIE Dec. 2020 10542-10551*
- Jahdi, S.**, Hedayati, M., Stark, B.H., and Mellor, P.H., The Impact of Temperature and Switching Rate on Dynamic Transients of High-Voltage Silicon and 4H-SiC NPN BJTs: A Technology Evaluation; *TIE June 2020 4556-4566*
- Jahdi, S.**, see Gonzalez, J.O., *TIE Sept. 2020 7375-7385*
- Jain, A.K.**, see Bajjuri, N.K., *TIE May 2020 3484-3495*
- Jamaludin, J.**, Rahim, R.A., Rahiman, M.H.F., and Rohani, J.M., CCD Optical Tomography System to Detect Solid Contamination in Crystal-Clear Water; *TIE April 2020 3248-3256*
- Jana, K.C.**, see Majumdar, S., *TIE April 2020 2765-2775*
- Janaki Ramaiah, V.**, and Keerthipati, S., Hybrid PWM Scheme for Pole-Phase Modulation Induction Motor Drive Using Carrier-Based Hexagonal and Octadecagonal SVPWM; *TIE Sept. 2020 7312-7320*
- Janda, M.**, see Kroneisl, M., *TIE July 2020 5666-5676*
- Janetzko, D.**, see Singh, H., *TIE Jan. 2020 809-819*
- Jang, D.**, Shin, H., Paul, S., Chang, J., and Yun, Y., Design of a High-Force Electromechanical Actuator for Electrically Driven Lathe Machine; *TIE Nov. 2020 9526-9535*
- Jang, H.**, see Shin, K., *TIE Jan. 2020 637-646*
- Jang, J.E.**, see Shin, K., *TIE Jan. 2020 637-646*
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- Jedi, H.**, Salvatierra, T., Ayachit, A., and Kazimierzczuk, M.K., High-Frequency Single-Switch ZVS Gate Driver Based on a Class Φ_2 Resonant Inverter; *TIE June 2020 4527-4535*
- Jenney, K.**, and Pakdelian, S., Magnetic Design Aspects of the Trans-Rotary Magnetic Gear Using Quasi-Halbach Arrays; *TIE Nov. 2020 9582-9592*
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- Jeon, S.**, see Raza, A., *TIE Jan. 2020 736-745*
- Jeong, S.**, see Kim, K., *TIE Dec. 2020 10243-10252*
- Jeong, S.**, Kim, K., Kwon, O., and Kwon, B., Direct Single-Power-Conversion Bidirectional Grid-Connected Inverter Solving Commutation Problem; *TIE Dec. 2020 10335-10345*
- Jeong, S.M.**, see Yun, S., *TIE Jan. 2020 717-724*
- Jeong, U.**, and Cho, K., Control of a Bowden-Cable Actuation System With Embedded BoASensor for Soft Wearable Robots; *TIE Sept. 2020 7669-7680*
- Jeong, Y.**, Park, M., and Moon, G., High-Efficiency Zero-Voltage-Switching Totem-Pole Bridgeless Rectifier With Integrated Inrush Current Limiter Circuit; *TIE Sept. 2020 7421-7429*
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- Jia, H.**, see Xiao, Q., *TIE June 2020 5197-5203*
- Jia, K.**, see Li, Y., *TIE Nov. 2020 9480-9491*
- Jia, K.**, Wang, C., Bi, T., Feng, T., and Zhu, R., Transient Current Correlation Based Protection for DC Distribution System; *TIE Nov. 2020 9927-9936*
- Jia, S.**, and Shan, J., Finite-Time Trajectory Tracking Control of Space Manipulator Under Actuator Saturation; *TIE March 2020 2086-2096*
- Jia, S.**, Chen, C., Liu, P., and Duan, S., A Digital Phase Synchronization Method for Bidirectional Inductive Power Transfer; *TIE Aug. 2020 6450-6460*
- Jia, W.**, Xiao, L., and Zhu, D., Core-Loss Analysis of High-Speed Doubly Salient Electromagnetic Machine for Aeronautic Starter/Generator Application; *TIE Jan. 2020 59-68*
- Jia, Y.**, see Lyu, X., *TIE June 2020 5209-5212*
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- Jiang, C.**, see Zhao, G., *TIE Dec. 2020 10421-10432*
- Jiang, D.**, Li, T., Hu, Z., and Sun, H., Novel Topologies of Power Electronics Converter as Active Magnetic Bearing Drive; *TIE Feb. 2020 950-959*
- Jiang, D.**, see Chen, J., *TIE Aug. 2020 6215-6226*
- Jiang, F.**, Pourpanah, F., and Hao, Q., Design, Implementation, and Evaluation of a Neural-Network-Based Quadcopter UAV System; *TIE March 2020 2076-2085*
- Jiang, J.**, Mohagheghi, A., and Moallem, M., Energy-Efficient Supplemental LED Lighting Control for a Proof-of-Concept Greenhouse System; *TIE April 2020 3033-3042*
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- Jiang, J.**, see Wang, D., *TIE Dec. 2020 10833-10843*
- Jiang, J.**, see Zhang, X., *TIE May 2020 3840-3849*
- Jiang, K.**, Yan, F., and Zhang, H., Hydrothermal Aging Factor Estimation for Two-Cell Diesel-Engine SCR Systems via a Dual Time-Scale Unscented Kalman Filter; *TIE Jan. 2020 442-450*
- Jiang, K.**, Yan, F., and Zhang, H., Data-Driven Modeling and UFIR-Based Outlet NO_x Estimation for Diesel-Engine SCR Systems; *TIE June 2020 5012-5021*
- Jiang, L.**, see Kan, J., *TIE June 2020 4658-4669*
- Jiang, M.**, see Zhu, X., *TIE July 2020 5337-5348*
- Jiang, N.**, see Cao, R., *TIE July 2020 5971-5979*
- Jiang, Q.**, Yan, X., Yi, H., and Gao, F., Data-Driven Batch-End Quality Modeling and Monitoring Based on Optimized Sparse Partial Least Squares; *TIE May 2020 4098-4107*
- Jiang, S.**, Li, L., Xu, H., Xu, J., Gu, G., and Shull, P.B., Stretchable e-Skin Patch for Gesture Recognition on the Back of the Hand; *TIE Jan. 2020 647-657*
- Jiang, S.**, see Lyu, X., *TIE Feb. 2020 1626-1637*
- Jiang, S.**, see Wang, K., *TIE May 2020 3350-3360*
- Jiang, W.**, Wang, P., Ma, M., Wang, J., Li, J., Li, L., and Chen, K., A Novel Virtual Space Vector Modulation With Reduced Common-Mode Voltage and Eliminated Neutral Point Voltage Oscillation for Neutral Point Clamped Three-Level Inverter; *TIE Feb. 2020 884-894*
- Jiang, W.**, Zhu, C., Xue, S., Ren, K., and Yang, C., DC-Side-Fault-Tolerant Control of a Battery-Supercapacitor Hybrid Energy Storage System Based on Cascaded Multilevel Converter and Auxiliary Power Loop; *TIE Sept. 2020 7451-7460*
- Jiang, W.**, see Xu, Y., *TIE Nov. 2020 9101-9111*
- Jiang, W.**, Zhang, X., Guo, F., Chen, J., Wang, P., and Koh, L.H., Large-Signal Stability of Interleave Boost Converter System With Constant Power Load Using Sliding-Mode Control; *TIE Nov. 2020 9450-9459*
- Jiang, X.**, see Kim, T., *TIE Aug. 2020 6955-6962*
- Jiang, X.**, see Yang, S., *TIE Dec. 2020 10887-10896*
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- Jiang, Y.**, see Mao, S., *TIE May 2020 3551-3561*
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- Jiang, Z.**, see Xie, S., *TIE March 2020 2207-2219*
- Jiao, J.**, see Ding, C., *TIE Sept. 2020 7982-7993*
- Jiao, J.**, Zhao, M., and Lin, J., Unsupervised Adversarial Adaptation Network for Intelligent Fault Diagnosis; *TIE Nov. 2020 9904-9913*
- Jiao, N.**, see Mao, S., *TIE May 2020 3551-3561*
- Jiao, Z.**, see Shang, Y., *TIE April 2020 2991-2999*
- Jiao, Z.**, see Zhang, Q., *TIE March 2020 2133-2142*
- Jin, B.**, see McNeill, N., *TIE Sept. 2020 7179-7189*
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- Jin, N.**, see Wang, D., *TIE Oct. 2020 8841-8850*
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Joo, K., Park, M., Park, H., Lee, T., Kwon, K., Lim, Y., Erdenebat, M., Lee, H., Lee, G., Kim, N., and Kim, H., Light-Field Camera for Fast Switching of Time-Sequential Two-Dimensional and Three-Dimensional Image Capturing at Video Rate; *TIE Aug. 2020 6975-6985*
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Karimi, M., Majidi, M., MirSaeedi, H., Arefi, M.M., and Oskuoee, M., A Novel Application of Deep Belief Networks in Learning Partial Discharge Patterns for Classifying Corona, Surface, and Internal Discharges; *TIE April 2020 3277-3287*
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Kayani, H.A., Gueuning, Q., Goreux, N., Vanhoenacker-Janvier, D., Oestges, C., and Craeye, C., Reconfigurable Cellular Base Station Antenna Consisting of Parasitic Radiators; *TIE Aug. 2020 7083-7093*
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Kerst, S., Shyrokau, B., and Holweg, E., A Model-Based Approach for the Estimation of Bearing Forces and Moments Using Outer Ring Deformation; *TIE Jan. 2020 461-470*
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Khan, A.Q., see Luo, H., *TIE Jan. 2020 521-530*
Khan, S.A., Guo, Y., Siwakoti, Y.P., Lu, D.D., and Zhu, J., A Disturbance Rejection-Based Control Strategy for Five-Level T-Type Hybrid Power Converters With Ripple Voltage Estimation Capability; *TIE Sept. 2020 7364-7374*
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Khodamoradi, A., Liu, G., Mattavelli, P., and Messo, T., Simultaneous Identification of Multiple Control Loops in DC Microgrid Power Converters; *TIE Dec. 2020 10641-10651*
Khooban, M.H., see Golmohamadi, H., *TIE Feb. 2020 1387-1395*
Khorasany, M., Mishra, Y., and Ledwich, G., A Decentralized Bilateral Energy Trading System for Peer-to-Peer Electricity Markets; *TIE June 2020 4646-4657*
Khowja, M.R., Gerada, C., Vakil, G., Abebe, R., Odhano, S., Patel, C., and Wheeler, P., Novel Motor-Shaped Rotational Inductor for Motor Drive Applications; *TIE March 2020 1844-1854*
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Kim, J., Ryu, J., Kim, G., Lee, J., Chang, S., Lee, C., Oh, Y., and Lee, H., A Proposed Fast Charging and High-Power System for Wireless Railway Trains Adopting the Input Voltage Sharing Topology and the Balancing Control Scheme; *TIE Aug. 2020 6407-6417*
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- Kim, J.**, and Kim, B.K., Cornering Trajectory Planning Avoiding Slip for Differential-Wheeled Mobile Robots; *TIE Aug. 2020 6698-6708*
- Kim, J.**, Kim, Y., Oh, S., Choi, J., Lee, D., Cho, K., Lee, S., and Ahn, C., A 20-W Wide Bandwidth GaN HEMT Power Amplifier for VHF/UHF Applications; *TIE Dec. 2020 10905-10910*
- Kim, J.H.**, Choi, B.H., Kim, H.R., Rim, C.T., and Kim, Y., Single-Variable-Input Active Sidelobe Suppression Method for Synthesized Magnetic Field Focusing Technology and Its Optimization; *TIE Nov. 2020 9813-9823*
- Kim, J.J.**, see Park, K., *TIE March 2020 2402-2410*
- Kim, K.**, see Tran, T.V., *TIE Sept. 2020 7560-7573*
- Kim, K.**, Jeong, S., Kwon, O., and Kwon, B., Weighted Efficiency Enhancement for Single-Power-Conversion Microinverters Using Hybrid-Mode Modulation Strategy; *TIE Dec. 2020 10243-10252*
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- Kim, K.A.**, see Liu, Y., *TIE Feb. 2020 1580-1591*
- Kim, M.**, see Lee, S., *TIE Jan. 2020 276-287*
- Kim, M.**, and Lee, D.Y., Multirate Haptic Rendering Using Local Stiffness Matrix for Stable and Transparent Simulation Involving Interaction With Deformable Objects; *TIE Jan. 2020 820-828*
- Kim, M.**, Lee, S., Lee, B., Kim, J., and Kim, J., Double-Ended Active-Clamp Forward Converter With Low DC Offset Current of Transformer; *TIE Feb. 2020 1036-1047*
- Kim, M.**, see Kim, S., *TIE June 2020 4921-4933*
- Kim, N.**, see Joo, K., *TIE Aug. 2020 6975-6985*
- Kim, R.**, see Kang, S., *TIE Jan. 2020 159-168*
- Kim, S.**, see Park, W., *TIE Jan. 2020 677-685*
- Kim, S.**, Bai, C., Seok, H., Choi, H.H., and Kim, M., Bridgeless Triple-Mode Resonant AC–DC Converter: Dynamic Modeling and Controls; *TIE June 2020 4921-4933*
- Kim, S.**, see Lee, S., *TIE Oct. 2020 8808-8816*
- Kim, S.**, and Dujic, D., Extending Protection Selectivity in DC Shipboard Power Systems by Means of Additional Bus Capacitance; *TIE May 2020 3673-3683*
- Kim, S.**, see Kim, S., *TIE May 2020 3673-3683*
- Kim, T.**, see Han, J., *TIE July 2020 5696-5707*
- Kim, T.**, Cui, Z., Chang, W., Kim, H., Zhu, Y., and Jiang, X., Flexible 1–3 Composite Ultrasound Transducers With Silver-Nanowire-Based Stretchable Electrodes; *TIE Aug. 2020 6955-6962*
- Kim, Y.**, see Kim, J.H., *TIE Nov. 2020 9813-9823*
- Kim, Y.**, see Kim, J., *TIE Dec. 2020 10905-10910*
- Kimiabeigi, M.**, see Gai, Y., *TIE June 2020 4371-4380*
- King, N.K.K.**, see Li, T., *TIE April 2020 3236-3247*
- Kiselev, A.**, Catuogno, G.R., Kuznetsov, A., and Leidhold, R., Finite-Control-Set MPC for Open-Phase Fault-Tolerant Control of PM Synchronous Motor Drives; *TIE June 2020 4444-4452*
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- Koh, L.H.**, see Jiang, W., *TIE Nov. 2020 9450-9459*
- Koiwa, K.**, Li, Y., Liu, K., Zanma, T., and Tamura, J., Full Converter Control for Variable-Speed Wind Turbines Without Integral Controller or PLL; *TIE Nov. 2020 9418-9428*
- Koiwa, K.**, see Liu, K., *TIE Dec. 2020 10755-10765*
- Kolar, J.W.**, see Gong, C., *TIE Oct. 2020 8817-8828*
- Kolincio, M.**, Chrzan, P.J., and Musznicki, P., Multitransformer Primary-Side Regulated Flyback Converter for Supplying Isolated IGBT and MOSFET Drivers; *TIE Feb. 2020 1005-1012*
- Komurcugil, H.**, see Bagheri, F., *TIE Aug. 2020 6439-6449*
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- Korzonek, M.**, Tarchala, G., and Orłowska-Kowalska, T., Simple Stability Enhancement Method for Stator Current Error-Based MRAS-Type Speed Estimator for Induction Motor; *TIE July 2020 5854-5866*
- Kosarian, A.**, see Fani, R., *TIE Dec. 2020 10455-10463*
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- Kranz, T.A.I.**, see Pohren, D.H., *TIE March 2020 2440-2449*
- Kroneisl, M.**, Smidl, V., Peroutka, Z., and Janda, M., Predictive Control of IM Drive Acoustic Noise; *TIE July 2020 5666-5676*
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- Kumar, G.G.**, Sundaramoorthy, K., Karthikeyan, V., and Babaei, E., Switched Capacitor–Inductor Network Based Ultra-Gain DC–DC Converter Using Single Switch; *TIE Dec. 2020 10274-10283*
- Kumar, L.**, see Kumar, S., *TIE Nov. 2020 9779-9789*
- Kumar, S.**, Kumar, L., Islam, T., and Raina, K.K., Condition Monitoring of Transformer Breather Using a Capacitive Moisture Sensor; *TIE Nov. 2020 9779-9789*
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- Kwak, M.**, Lkhagvasuren, B., Park, J., and You, J., Parameter Identification and SOC Estimation of a Battery Under the Hysteresis Effect; *TIE Nov. 2020 9758-9767*
- Kwan, P.W.**, and Huang, X., A Pedagogical Study of Aerodynamic Feedback Control by Dielectric Barrier Discharge Plasma; *TIE Jan. 2020 451-460*
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- Lashab, A.**, Sera, D., Martins, J., and Guerrero, J.M., Dual-Input Quasi-Z-Source PV Inverter: Dynamic Modeling, Design, and Control; *TIE Aug. 2020 6483-6493*

- Latifi, M.**, Rastegarnia, A., Khalili, A., Bazzi, W.M., and Sanei, S., A Self-Governed Online Energy Management and Trading for Smart Micro/Nano-Grids; *TIE Sept. 2020 7484-7498*
- Lau, J.Y.**, Liang, W., and Tan, K.K., Motion Control for Piezoelectric-Actuator-Based Surgical Device Using Neural Network and Extended State Observer; *TIE Jan. 2020 402-412*
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- Lee, B.**, see Kim, M., *TIE Feb. 2020 1036-1047*
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- Lee, B.M.**, and Yang, H., Massive MIMO With Massive Connectivity for Industrial Internet of Things; *TIE June 2020 5187-5196*
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- Lee, D.Y.**, see Kim, M., *TIE Jan. 2020 820-828*
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- Lee, F.C.**, see Fu, M., *TIE Feb. 2020 1638-1647*
- Lee, F.C.**, see Li, V., *TIE April 2020 3157-3166*
- Lee, G.**, see Joo, K., *TIE Aug. 2020 6975-6985*
- Lee, H.**, see Nguyen, T., *TIE March 2020 1718-1727*
- Lee, H.**, Lee, C., Jeon, H., Son, J.J., Son, Y., and Han, S., Interference-Compensating Magnetometer Calibration With Estimated Measurement Noise Covariance for Application to Small-Sized UAVs; *TIE Oct. 2020 8829-8840*
- Lee, H.**, see Kim, J., *TIE Aug. 2020 6407-6417*
- Lee, H.**, see Joo, K., *TIE Aug. 2020 6975-6985*
- Lee, H.P.**, see Cao, J., *TIE May 2020 3809-3818*
- Lee, J.**, see Lee, S., *TIE Jan. 2020 276-287*
- Lee, J.**, see Din, A.U., *TIE Jan. 2020 569-580*
- Lee, J.**, see Din, A.U., *TIE Jan. 2020 569-580*
- Lee, J.**, see Duong, M., *TIE Feb. 2020 1180-1190*
- Lee, J.**, see Lee, N., *TIE Feb. 2020 1024-1035*
- Lee, J.**, Chang, P.H., and Jin, M., An Adaptive Gain Dynamics for Time Delay Control Improves Accuracy and Robustness to Significant Payload Changes for Robots; *TIE April 2020 3076-3085*
- Lee, J.**, see Baek, J., *TIE July 2020 5820-5824*
- Lee, J.**, see Luu, P.T., *TIE July 2020 5768-5777*
- Lee, J.**, see Kim, J., *TIE Aug. 2020 6407-6417*
- Lee, J.**, Kim, H., and Jung, J., Enhanced Dual-Active-Bridge DC–DC Converter for Balancing Bipolar Voltage Level of DC Distribution System; *TIE Dec. 2020 10399-10409*
- Lee, J.**, Cho, Y., and Jung, J., Single-Stage Voltage Balancer With High-Frequency Isolation for Bipolar LVDC Distribution System; *TIE May 2020 3596-3606*
- Lee, K.**, Kim, H., Yoon, J., Oh, H., Park, J., Park, B., Park, H., and Lee, Y., An Asynchronous Boost Converter With Time-Based Dual-Mode Control for Wide Load Range and High Efficiency in SSD Applications; *TIE Dec. 2020 10520-10530*
- Lee, K.**, Choi, H., and Ha, J., Power Capability Improvement of Interior Permanent Magnet Synchronous Motor Drives Using Capacitive Network; *TIE Dec. 2020 10109-10120*
- Lee, K.**, see Alsofyani, I.M., *TIE Dec. 2020 10168-10179*
- Lee, K.**, see Seo, D., *TIE May 2020 3496-3504*
- Lee, M.G.**, see Lee, S., *TIE Oct. 2020 8808-8816*
- Lee, N.**, Lee, J., Cheon, Y., Han, S., and Moon, G., A High-Power-Density Converter With a Continuous Input Current Waveform for Satellite Power Applications; *TIE Feb. 2020 1024-1035*
- Lee, S.**, Kim, M., Lee, B., and Lee, J., Impact of Rebar and Concrete on Power Dissipation of Wireless Power Transfer Systems; *TIE Jan. 2020 276-287*
- Lee, S.**, see Kim, M., *TIE Feb. 2020 1036-1047*
- Lee, S.**, see Han, J., *TIE July 2020 5696-5707*
- Lee, S.**, see Park, K., *TIE March 2020 2402-2410*
- Lee, S.**, see Thenaisic, G., *TIE Sept. 2020 8034-8043*
- Lee, S.**, Gandla, S., Naqi, M., Jung, U., Youn, H., Pyun, D., Rhee, Y., Kang, S., Kwon, H., Kim, H., Lee, M.G., and Kim, S., All-Day Mobile Healthcare Monitoring System Based on Heterogeneous Stretchable Sensors for Medical Emergency; *TIE Oct. 2020 8808-8816*
- Lee, S.**, *dq* Synchronous Reference Frame Model of A Series–Series Tuned Inductive Power Transfer System; *TIE Dec. 2020 10325-10334*
- Lee, S.**, see Lee, S., *TIE Dec. 2020 10325-10334*
- Lee, S.**, see Kim, J., *TIE Dec. 2020 10905-10910*
- Lee, S.B.**, see Park, Y., *TIE Dec. 2020 10075-10084*
- Lee, S.S.**, see Lim, C.S., *TIE June 2020 4578-4589*
- Lee, T.**, see Joo, K., *TIE Aug. 2020 6975-6985*
- Lee, W.**, see Zhuang, Y., *TIE Nov. 2020 9471-9479*
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- Lehikoinen, A.**, see Sundaria, R., *TIE Sept. 2020 7354-7363*
- Lei, G.**, see Sun, X., *TIE July 2020 6089-6100*
- Lei, G.**, see Diao, K., *TIE Dec. 2020 10055-10064*
- Lei, G.**, see Wu, T., *TIE May 2020 3901-3910*
- Lei, J.**, see Wang, Y., *TIE Dec. 2020 10284-10294*
- Lei, M.**, Li, Y., Li, Z., Zhao, C., Xu, F., Gao, F., and Wang, P., A Single-Phase Five-Branch Direct AC–AC Modular Multilevel Converter for Railway Power Conditioning; *TIE June 2020 4292-4304*
- Lei, M.**, Li, Y., Zhao, C., Li, Z., Xu, F., Gao, F., and Wang, P., Full Degree of Freedom Based Control Scheme of the Single-Phase Direct AC–AC Modular Multilevel Converter for Railway Power Conditioning Under Asymmetric Branch Conditions; *TIE March 2020 1671-1683*
- Lei, Y.**, see Xu, X., *TIE March 2020 2326-2336*
- Lei, Y.**, see Yang, B., *TIE Nov. 2020 9747-9757*
- Lei, Y.**, see Meng, L., *TIE Dec. 2020 10366-10376*
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- Lekamalage, C.K.L.**, see Li, Y., *TIE March 2020 2360-2370*
- Leon, J.I.**, see Marquez, A., *TIE April 2020 2776-2785*
- Leon, J.I.**, see Vazquez, S., *TIE Sept. 2020 7410-7420*
- Leon, J.I.**, see Marquez, A., *TIE Nov. 2020 9039-9047*
- Leontaris, L.**, see Dimitriou, N., *TIE July 2020 5748-5757*
- Lesani, H.**, see Mohiti, M., *TIE Nov. 2020 9439-9449*
- Levi, E.**, Best Papers and Distinguished Reviewers; *TIE June 2020 4269*
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- Lewandowski, M.**, see Steczek, M., *TIE Oct. 2020 8197-8208*
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- Lewicki, A.**, see Morawiec, M., *TIE July 2020 5843-5853*
- Lewicki, A.**, see Morawiec, M., *TIE July 2020 5889-5899*
- Li, B.**, see Tan, C., *TIE Sept. 2020 7727-7735*
- Li, B.**, see Wen, G., *TIE Sept. 2020 7879-7888*
- Li, B.**, see Li, H., *TIE Sept. 2020 7736-7745*
- Li, C.**, Chao, N., and Chen, H., Design and Implementation of Four-Switch Current Sensorless Control for Three-Phase PFC Converter; *TIE April 2020 3307-3312*
- Li, C.**, Zhou, M., and Wang, H., An H5-Bridge-Based Asymmetric LLC Resonant Converter With an Ultrawide Output Voltage Range; *TIE Nov. 2020 9503-9514*
- Li, C.**, see Liu, W., *TIE Oct. 2020 8416-8427*
- Li, C.**, see Chen, Z., *TIE May 2020 3944-3954*
- Li, C.**, see Zhao, X., *TIE May 2020 4108-4119*
- Li, D.**, see He, T., *TIE April 2020 3191-3201*
- Li, D.**, He, S., Xi, Y., Liu, T., Gao, F., Wang, Y., and Lu, J., Synthesis of ILC–MPC Controller With Data-Driven Approach for Constrained Batch Processes; *TIE April 2020 3116-3125*

- Li, D., Niu, F., Li, J., Li, X., and Sun, D., Gradient-Enhanced Electromagnetic Actuation System With a New Core Shape Design for Microrobot Manipulation; *TIE June 2020 4700-4710*
- Li, D., see Fan, X., *TIE July 2020 5325-5336*
- Li, D., see Ren, X., *TIE Aug. 2020 6248-6258*
- Li, F., see Wang, H., *TIE June 2020 4326-4337*
- Li, F., see Cheng, C., *TIE June 2020 4507-4515*
- Li, F., see Zhao, L., *TIE Aug. 2020 6398-6406*
- Li, F., see Peng, H., *TIE May 2020 3819-3829*
- Li, G., see Pi, M., *TIE April 2020 2936-2944*
- Li, G., see Wang, R., *TIE June 2020 4635-4645*
- Li, G., Liu, W., Joseph, T., Liang, J., and Song, Z., Double-Thyristor-Based Protection for Valve-Side Single-Phase-to-Ground Faults in HB-MMC-Based Bipolar HVDC Systems; *TIE July 2020 5810-5815*
- Li, G., see Li, H., *TIE Sept. 2020 7736-7745*
- Li, G., see Liu, W., *TIE Oct. 2020 8416-8427*
- Li, G., Yang, Y., and Qu, X., Deep Learning Approaches on Pedestrian Detection in Hazy Weather; *TIE Oct. 2020 8889-8899*
- Li, G., see Lu, B., *TIE Aug. 2020 7005-7014*
- Li, G., Ruan, J., Wang, K., Deng, Y., He, X., and Wang, Y., An Interleaved Three-Phase PWM Single-Stage Resonant Rectifier With High-Frequency Isolation; *TIE Aug. 2020 6572-6582*
- Li, G., see Zhan, S., *TIE May 2020 3932-3943*
- Li, H., Zhang, Z., Wang, S., Tang, J., Ren, X., and Chen, Q., A 300-kHz 6.6-kW SiC Bidirectional LLC Onboard Charger; *TIE Feb. 2020 1435-1445*
- Li, H., see Chen, Y., *TIE Feb. 2020 1328-1336*
- Li, H., see Wang, B., *TIE April 2020 2885-2893*
- Li, H., Zhang, X., Yang, S., and Liu, S., Unified Graphical Model of High-Frequency Signal Injection Methods for PMSM Sensorless Control; *TIE June 2020 4411-4421*
- Li, H., see Zhao, Z., *TIE June 2020 4846-4856*
- Li, H., Zhu, Z.Q., and Hua, H., Comparative Analysis of Flux Reversal Permanent Magnet Machines With Toroidal and Concentrated Windings; *TIE July 2020 5278-5290*
- Li, H., see Li, X., *TIE July 2020 5778-5786*
- Li, H., see Yang, H., *TIE March 2020 2107-2121*
- Li, H., Zhao, Y., Li, B., Li, G., and Cui, L., Torque Calculation of Permanent Magnet Spherical Motor Based on Virtual Work Method; *TIE Sept. 2020 7736-7745*
- Li, H., see Chen, S., *TIE Nov. 2020 9302-9312*
- Li, H., see Shi, F., *TIE Nov. 2020 9948-9957*
- Li, H., see Ye, Q., *TIE Aug. 2020 6531-6540*
- Li, H., Zhang, X., Peng, J., He, J., Huang, Z., and Wang, J., Cooperative CC-CV Charging of Supercapacitors Using Multicharger Systems; *TIE Dec. 2020 10497-10508*
- Li, H., see Zhang, H., *TIE Dec. 2020 10798-10808*
- Li, H., see Chen, Z., *TIE May 2020 4226-4234*
- Li, I., see Tseng, K., *TIE Jan. 2020 235-243*
- Li, J., see Geng, Z., *TIE Jan. 2020 542-550*
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- Li, J., see Jiang, W., *TIE Feb. 2020 884-894*
- Li, J., see Pan, D., *TIE Feb. 2020 1348-1356*
- Li, J., see Li, D., *TIE June 2020 4700-4710*
- Li, J., see Zhang, T., *TIE July 2020 5948-5958*
- Li, J., see Li, Y., *TIE March 2020 1932-1943*
- Li, J., see Guo, Y., *TIE March 2020 2220-2230*
- Li, J., see Liu, C., *TIE Sept. 2020 7343-7353*
- Li, J., see Li, Y., *TIE Nov. 2020 9480-9491*
- Li, J., see Liu, G., *TIE Oct. 2020 8599-8607*
- Li, J., Zhou, Q., Williams, H., and Xu, H., Back-to-Back Competitive Learning Mechanism for Fuzzy Logic Based Supervisory Control System of Hybrid Electric Vehicles; *TIE Oct. 2020 8900-8909*
- Li, J., see Huang, X., *TIE Oct. 2020 8252-8261*
- Li, J., Liu, Q., Wang, L., Wang, S., and Wang, J., Considering Operating Point Variation in 3-D Analytical Charge Model Used for Design of Low-Stiffness Permanent Magnet Vibration Isolator; *TIE Aug. 2020 6732-6741*
- Li, J., see Pan, D., *TIE May 2020 4183-4192*
- Li, J., Wang, K., and Zhang, H., Flux-Focusing Permanent Magnet Machines With Modular Consequent-Pole Rotor; *TIE May 2020 3374-3385*
- Li, J., see Dai, Z., *TIE May 2020 4254-4258*
- Li, J., see Sun, L., *TIE May 2020 3562-3572*
- Li, K., Luo, H., Yang, C., and Yin, S., Subspace-Aided Closed-Loop System Identification With Application to DC Motor System; *TIE March 2020 2304-2313*
- Li, K., see Cai, K., *TIE Sept. 2020 7789-7797*
- Li, K., see Li, S., *TIE Oct. 2020 8484-8494*
- Li, K., see Bian, Y., *TIE Dec. 2020 10744-10754*
- Li, K., see Zhou, Y., *TIE May 2020 4002-4012*
- Li, K.H., Cheung, Y.F., Jin, W., Fu, W.Y., Lee, A.T.L., Tan, S.C., Hui, S.Y., and Choi, H.W., InGaN RGB Light-Emitting Diodes With Monolithically Integrated Photodetectors for Stabilizing Color Chromaticity; *TIE June 2020 5154-5160*
- Li, L., see Jiang, S., *TIE Jan. 2020 647-657*
- Li, L., see Jiang, W., *TIE Feb. 2020 884-894*
- Li, L., see Pan, D., *TIE Feb. 2020 1348-1356*
- Li, L., Sun, Y., Han, H., Shi, G., Su, M., and Zheng, M., A Decentralized Control for Cascaded Inverters in Grid-Connected Applications; *TIE Sept. 2020 8064-8071*
- Li, L., see Yang, C., *TIE Nov. 2020 9659-9670*
- Li, L., Guo, X., and Ansari, N., SmartLoc: Smart Wireless Indoor Localization Empowered by Machine Learning; *TIE Aug. 2020 6883-6893*
- Li, L., see Chen, L., *TIE Dec. 2020 10600-10609*
- Li, L., see Zhong, H., *TIE Dec. 2020 10564-10574*
- Li, L., see Pan, D., *TIE May 2020 4183-4192*
- Li, L., see Tan, Q., *TIE May 2020 3891-3900*
- Li, L.Y., see Huang, X.Z., *TIE Jan. 2020 180-191*
- Li, M., Ouyang, Z., and Andersen, M.A.E., Analysis and Optimal Design of High-Frequency and High-Efficiency Asymmetrical Half-Bridge Flyback Converters; *TIE Oct. 2020 8312-8321*
- Li, M., see He, J., *TIE Oct. 2020 8921-8930*
- Li, N., see Yang, B., *TIE Nov. 2020 9747-9757*
- Li, P., see Ding, W., *TIE Jan. 2020 38-48*
- Li, P., see Zhang, J., *TIE Oct. 2020 8659-8669*
- Li, Q., see Ahmed, M.H., *TIE Jan. 2020 192-202*
- Li, Q., see Fu, M., *TIE Feb. 2020 1638-1647*
- Li, Q., see Yan, Y., *TIE April 2020 2786-2797*
- Li, Q., see Li, V., *TIE April 2020 3157-3166*
- Li, Q., see Wang, R., *TIE June 2020 4635-4645*
- Li, Q., see Wang, D., *TIE Sept. 2020 7260-7268*
- Li, Q., see Peng, Y., *TIE Nov. 2020 9734-9746*
- Li, Q., Meng, F., Gao, L., Zhang, H., and Du, Q., A 30-Pulse Rectifier Using Passive Voltage Harmonic Injection Method at DC Link; *TIE Nov. 2020 9273-9291*
- Li, Q., Xiao, D., Xu, Y., Zhuo, M., Zhou, X., Zhang, Y., Yu, L., and Wu, X., Non-linearity Reduction in Disk Resonator Gyroscopes Based on the Vibration Amplification Effect; *TIE Aug. 2020 6946-6954*
- Li, R., see Deng, C., *TIE May 2020 3756-3766*
- Li, R.T.H., see Siu, K.K.M., *TIE March 2020 1899-1909*
- Li, S., see Mi, X., *TIE Jan. 2020 512-520*
- Li, S., see Ramezani, M., *TIE Jan. 2020 319-328*
- Li, S., Lu, W., Yan, S., and Zhao, Z., Improving Dynamic Performance of Boost PFC Converter Using Current-Harmonic Feedforward Compensation in Synchronous Reference Frame; *TIE June 2020 4857-4866*
- Li, S., see Qi, W., *TIE March 2020 1878-1889*
- Li, S., Li, K., Xiao, E., and Wong, C., Joint SoC and SoH Estimation for Zinc-Nickel Single-Flow Batteries; *TIE Oct. 2020 8484-8494*
- Li, S., see Sun, Y., *TIE May 2020 3607-3617*
- Li, S.E., see Bian, Y., *TIE Dec. 2020 10744-10754*
- Li, T., see Jiang, D., *TIE Feb. 2020 950-959*
- Li, T., see Si, X., *TIE April 2020 3202-3215*
- Li, T., King, N.K.K., and Ren, H., Disposable FBG-Based Tridirectional Force/Torque Sensor for Aspiration Instruments in Neurosurgery; *TIE April 2020 3236-3247*

- Li, T., Pan, A., and Ren, H., A High-Resolution Triaxial Catheter Tip Force Sensor With Miniature Flexure and Suspended Optical Fibers; *TIE June 2020* 5101-5111
- Li, V., Li, Q., Lee, F.C., and Liu, P., State-Trajectory Control With Single-Cycle Response for Point-of-Load Converters; *TIE April 2020* 3157-3166
- Li, W., see Tang, Q., *TIE Jan. 2020* 136-146
- Li, W., see Cheng, C., *TIE June 2020* 4507-4515
- Li, W., see Gao, J., *TIE July 2020* 5816-5819
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- Li, W., see Ning, D., *TIE Aug. 2020* 6773-6784
- Li, W., see Wu, S., *TIE Dec. 2020* 10156-10167
- Li, W., Song, C., and Li, Z., An Accelerated Recurrent Neural Network for Visual Servo Control of a Robotic Flexible Endoscope With Joint Limit Constraint; *TIE Dec. 2020* 10787-10797
- Li, W., Wang, Q., Kang, J., and Wang, Y., Energy-Concentrating Optimization Based on Energy Distribution Characteristics of MCR WPT Systems With SS/PS Compensation; *TIE Dec. 2020* 10410-10420
- Li, W., Predefined-Time Convergent Neural Solution to Cyclical Motion Planning of Redundant Robots Under Physical Constraints; *TIE Dec. 2020* 10732-10743
- Li, W., Application of Economical Building Management System for Singapore Commercial Building; *TIE May 2020* 4235-4243
- Li, W., see Han, J., *TIE May 2020* 3431-3441
- Li, X., see Li, Y., *TIE Jan. 2020* 203-213
- Li, X., see Shang, Y., *TIE April 2020* 2991-2999
- Li, X., see Li, D., *TIE June 2020* 4700-4710
- Li, X., see Xu, J., *TIE June 2020* 4836-4845
- Li, X., see Ma, J., *TIE July 2020* 5575-5585
- Li, X., Li, H., and Dong, Y., Meta Learning for Task-Driven Video Summarization; *TIE July 2020* 5778-5786
- Li, X., see Qin, C., *TIE March 2020* 1956-1967
- Li, X., see Dey, S., *TIE March 2020* 2167-2175
- Li, X., see Wang, C., *TIE March 2020* 1921-1931
- Li, X., see Xing, X., *TIE Sept. 2020* 7470-7483
- Li, X., Zhang, W., and Wang, Y., Simultaneous Fault Estimation for Markovian Jump Systems With Generally Uncertain Transition Rates: A Reduced-Order Observer Approach; *TIE Sept. 2020* 7889-7897
- Li, X., see Liu, T., *TIE Oct. 2020* 8980-8990
- Li, X., Maurya, D., Carazo, A.V., Sanghadasa, M., and Priya, S., Tunable High-Power Multilayer Piezoelectric Transformer; *TIE Oct. 2020* 8335-8343
- Li, X., see Lu, B., *TIE Aug. 2020* 7005-7014
- Li, X., see Shu, D., *TIE Aug. 2020* 6517-6530
- Li, X., Zhang, W., Xu, N., and Ding, Q., Deep Learning-Based Machinery Fault Diagnostics With Domain Adaptation Across Sensors at Different Places; *TIE Aug. 2020* 6785-6794
- Li, X., see Xing, X., *TIE Aug. 2020* 6583-6596
- Li, X., Li, Z., Zhao, B., Lu, C., Song, Q., Zhou, Y., Rao, H., Xu, S., and Zhu, Z., HVdc Reactor Reduction Method Based on Virtual Reactor Fault Current Limiting Control of MMC; *TIE Dec. 2020* 9991-10000
- Li, X., see Chen, Z., *TIE May 2020* 4226-4234
- Li, X., see Huai, Z., *TIE May 2020* 3879-3890
- Li, X., see Hou, B., *TIE May 2020* 4216-4225
- Li, X., see Zhao, B., *TIE May 2020* 3317-3328
- Li, Y., Hu, J., Li, X., Chen, F., Xu, Q., Mai, R., and He, Z., Analysis, Design, and Experimental Verification of a Mixed High-Order Compensations-Based WPT System with Constant Current Outputs for Driving Multistring LEDs; *TIE Jan. 2020* 203-213
- Li, Y., Wang, Y., Cao, Q., Cao, J., and Qiao, D., A Self-Powered Vibration Sensor With Wide Bandwidth; *TIE Jan. 2020* 560-568
- Li, Y., see Na, J., *TIE Jan. 2020* 490-500
- Li, Y., see Wang, C., *TIE Feb. 2020* 1520-1531
- Li, Y., see Lyu, X., *TIE Feb. 2020* 1626-1637
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- Li, Y., see Guo, B., *TIE June 2020* 4433-4443
- Li, Y., see Ma, H., *TIE June 2020* 4815-4825
- Li, Y., see Lei, M., *TIE June 2020* 4292-4304
- Li, Y., see Peng, Y., *TIE July 2020* 5531-5542
- Li, Y., Li, J., Xiong, L., Zhang, X., and Xu, Z., DC Fault Detection in Meshed MTdc Systems Based on Transient Average Value of Current; *TIE March 2020* 1932-1943
- Li, Y., see Ding, Z., *TIE March 2020* 2460-2468
- Li, Y., see Lei, M., *TIE March 2020* 1671-1683
- Li, Y., Lekamalage, C.K.L., Liu, T., Chen, P., and Huang, G., Learning Representations With Local and Global Geometries Preserved for Machine Fault Diagnosis; *TIE March 2020* 2360-2370
- Li, Y., see Zhou, D., *TIE Sept. 2020* 7157-7166
- Li, Y., see Hou, N., *TIE Sept. 2020* 7583-7594
- Li, Y., see Wang, K., *TIE Nov. 2020* 9120-9132
- Li, Y., see Koiwa, K., *TIE Nov. 2020* 9418-9428
- Li, Y., Li, J., Wu, G., Xiong, L., Jia, K., and Xu, Z., DC Fault Analysis Models of Three Converter Topologies Considering Control Effects; *TIE Nov. 2020* 9480-9491
- Li, Y., Tian, H., and Li, Y.W., Generalized Phase-Shift PWM for Active-Neutral-Point-Clamped Multilevel Converter; *TIE Nov. 2020* 9048-9058
- Li, Y., Fang, H., and Chen, J., Anomaly Detection and Identification for Multiagent Systems Subjected to Physical Faults and Cyberattacks; *TIE Nov. 2020* 9724-9733
- Li, Y., see Zhou, D., *TIE Nov. 2020* 9073-9082
- Li, Y., see Huang, L., *TIE Nov. 2020* 9623-9634
- Li, Y., see Huang, D., *TIE Oct. 2020* 8680-8690
- Li, Y., see Zhang, X., *TIE Aug. 2020* 6312-6322
- Li, Y., see An, B., *TIE Aug. 2020* 6270-6279
- Li, Y., see Liu, Q., *TIE May 2020* 3329-3339
- Li, Y.W., see Zhao, B., *TIE Sept. 2020* 7715-7726
- Li, Y.W., see Li, Y., *TIE Nov. 2020* 9048-9058
- Li, Y.W., see Ding, L., *TIE Oct. 2020* 8495-8505
- Li, Z., Zheng, Z., and Outbib, R., Adaptive Prognostic of Fuel Cells by Implementing Ensemble Echo State Networks in Time-Varying Model Space; *TIE Jan. 2020* 379-389
- Li, Z., see Tong, X., *TIE Jan. 2020* 581-591
- Li, Z., Xue, B., and Wang, H., An Interleaved Secondary-Side Modulated LLC Resonant Converter for Wide Output Range Applications; *TIE Feb. 2020* 1124-1135
- Li, Z., Yuan, Y., Ke, F., He, W., and Su, C., Robust Vision-Based Tube Model Predictive Control of Multiple Mobile Robots for Leader-Follower Formation; *TIE April 2020* 3096-3106
- Li, Z., Deng, C., and Zhao, K., Human-Cooperative Control of a Wearable Walking Exoskeleton for Enhancing Climbing Stair Activities; *TIE April 2020* 3086-3095
- Li, Z., see Pi, M., *TIE April 2020* 2936-2944
- Li, Z., see Lei, M., *TIE June 2020* 4292-4304
- Li, Z., see Lei, M., *TIE March 2020* 1671-1683
- Li, Z., see Huang, J., *TIE March 2020* 2030-2041
- Li, Z., see Liu, F., *TIE March 2020* 2391-2401
- Li, Z., see Xu, X., *TIE March 2020* 2326-2336
- Li, Z., see Zeng, X., *TIE March 2020* 2186-2196
- Li, Z., see Zeng, X., *TIE March 2020* 2186-2196
- Li, Z., see Huang, X., *TIE Sept. 2020* 7798-7807
- Li, Z., see Song, Z., *TIE Nov. 2020* 9768-9778
- Li, Z., Wan, H., Deng, Y., Zhao, X., Gao, Y., Gu, M., and Song, X., A Flat-tened-Priority Framework for Mixed-Criticality Systems; *TIE Nov. 2020* 9862-9872
- Li, Z., see Liu, W., *TIE Nov. 2020* 9851-9861
- Li, Z., see Peng, Y., *TIE Nov. 2020* 9734-9746
- Li, Z., see Zhang, Z., *TIE Nov. 2020* 9227-9237
- Li, Z., see Wu, X., *TIE Aug. 2020* 6629-6638
- Li, Z., see Zhao, L., *TIE Aug. 2020* 6398-6406
- Li, Z., see Meng, L., *TIE Dec. 2020* 10366-10376
- Li, Z., see Zheng, T., *TIE Dec. 2020* 10304-10314
- Li, Z., see Li, W., *TIE Dec. 2020* 10787-10797
- Li, Z., see Li, X., *TIE Dec. 2020* 9991-10000

- Li, Z.**, see Yuan, Y., *TIE May 2020 3830-3839*
- Liang, C.**, Wang, F., Huo, Z., Shi, B., Tian, Y., Zhao, X., and Zhang, D., A 2-DOF Monolithic Compliant Rotation Platform Driven by Piezoelectric Actuators; *TIE Aug. 2020 6963-6974*
- Liang, J.**, see Balasubramaniam, S., *TIE June 2020 4623-4634*
- Liang, J.**, see Li, G., *TIE July 2020 5810-5815*
- Liang, J.**, see Liu, W., *TIE Oct. 2020 8416-8427*
- Liang, J.**, see Huang, X., *TIE Oct. 2020 8252-8261*
- Liang, K.**, see Ding, C., *TIE Sept. 2020 7982-7993*
- Liang, K.**, see Xie, F., *TIE Nov. 2020 9601-9612*
- Liang, M.**, see Wang, C., *TIE Dec. 2020 10702-10712*
- Liang, Q.**, Litvinenko, Y.A., and Stepanov, O.A., A Solution to the Attitude Problem Using Two Rotation Units of Micromechanical Gyroscopes; *TIE Feb. 2020 1357-1365*
- Liang, R.**, see Tang, Z., *TIE Oct. 2020 8302-8311*
- Liang, W.**, see Lau, J.Y., *TIE Jan. 2020 402-412*
- Liang, W.**, see Gu, L., *TIE Feb. 2020 1405-1414*
- Liang, W.**, see Ma, J., *TIE July 2020 5575-5585*
- Liang, W.**, see Hu, X., *TIE July 2020 5479-5489*
- Liang, W.**, see Cao, J., *TIE May 2020 3809-3818*
- Liang, X.**, see Wang, D., *TIE Sept. 2020 7260-7268*
- Liang, Z.**, see Hu, S., *TIE April 2020 2544-2552*
- Liang, Z.**, see Hu, S., *TIE June 2020 4590-4599*
- Liao, S.**, see Lu, B., *TIE Feb. 2020 1337-1347*
- Liao, S.**, see Lu, B., *TIE Aug. 2020 7005-7014*
- Liao, X.**, Pang, X., He, L., and Feng, Z., Dynamic Mass Isolation for Improving the Moving Efficiency of an Impact Drive Mechanism; *TIE Oct. 2020 8526-8534*
- Liao, X.**, see Zheng, T., *TIE Dec. 2020 10304-10314*
- Liese, S.**, see Siwakoti, Y.P., *TIE Dec. 2020 10485-10496*
- Liivik, E.**, see Chub, A., *TIE March 2020 1944-1955*
- Lim, C.S.**, Lee, S.S., Nutkani, I.U., Kong, X., and Goh, H.H., Near-Optimal MPC Algorithm for Actively Damped Grid-Connected PWM-VSCs With LCL Filters; *TIE June 2020 4578-4589*
- Lim, J.L.K.**, see Wu, G., *TIE Nov. 2020 9976*
- Lim, Y.**, see Park, K., *TIE March 2020 2402-2410*
- Lim, Y.**, see Joo, K., *TIE Aug. 2020 6975-6985*
- Lin, C.**, see Wang, J., *TIE Feb. 2020 992-1004*
- Lin, C.**, see Huynh, T., *TIE Nov. 2020 9671-9682*
- Lin, C.**, Deng, M., Chiu, W., Shih, L., Chang, J., Lin, Y., and Lee, C., A Pre-Bootstrapping Method for Use in Gate Driver Circuits to Improve the Scan Pulse Delay of High-Resolution TFT-LCD Systems; *TIE Aug. 2020 7015-7024*
- Lin, G.**, see Liu, Y., *TIE Feb. 2020 1580-1591*
- Lin, H.**, see Yang, H., *TIE Jan. 2020 101-114*
- Lin, H.**, see Yang, H., *TIE July 2020 5258-5268*
- Lin, H.**, see Yang, H., *TIE March 2020 2107-2121*
- Lin, J.**, see Wong, S., *TIE June 2020 4969-4979*
- Lin, J.**, see Liu, F., *TIE March 2020 2391-2401*
- Lin, J.**, see Ding, C., *TIE Sept. 2020 7982-7993*
- Lin, J.**, see Jiao, J., *TIE Nov. 2020 9904-9913*
- Lin, L.**, see Chen, Y., *TIE Feb. 2020 1092-1102*
- Lin, L.**, see Nie, J., *TIE Sept. 2020 8026-8033*
- Lin, M.**, see Shi, F., *TIE Nov. 2020 9948-9957*
- Lin, N.**, and Dinavahi, V., Electrothermal Transient Behavioral Modeling of Thyristor-Based Ultrafast Mechatronic Circuit Breaker for Real-Time DC Grid Emulation; *TIE March 2020 1660-1670*
- Lin, P.**, Zhang, C., Wang, J., Jin, C., and Wang, P., On Autonomous Large-Signal Stabilization for Islanded Multibus DC Microgrids: A Uniform Nonsmooth Control Scheme; *TIE June 2020 4600-4612*
- Lin, S.**, see Pan, D., *TIE Feb. 2020 1348-1356*
- Lin, S.**, see Chen, S., *TIE March 2020 2097-2106*
- Lin, S.**, see Pan, D., *TIE May 2020 4183-4192*
- Lin, W.**, see Wenyuan, L., *TIE June 2020 5179-5186*
- Lin, W.**, Zeng, J., Liu, J., Yan, Z., and Hu, R., Generalized Symmetrical Step-Up Multilevel Inverter Using Crisscross Capacitor Units; *TIE Sept. 2020 7439-7450*
- Lin, W.**, see Fang, Y., *TIE Nov. 2020 9893-9903*
- Lin, X.**, see Hu, M., *TIE Sept. 2020 7595-7605*
- Lin, Y.**, Chen, Z., and Yao, B., Decoupled Torque Control of Series Elastic Actuator With Adaptive Robust Compensation of Time-Varying Load-Side Dynamics; *TIE July 2020 5604-5614*
- Lin, Y.**, see Lin, C., *TIE Aug. 2020 7015-7024*
- Lin, Z.**, see Chen, Q., *TIE Sept. 2020 7321-7333*
- Lindh, P.**, see Aarniovuori, L., *TIE Oct. 2020 8242-8251*
- Ling, S.**, Wang, H., and Liu, P.X., Adaptive Fuzzy Tracking Control of Flexible-Joint Robots Based on Command Filtering; *TIE May 2020 4046-4055*
- Lipo, T.A.**, see Agha Kashkooli, M.R., *TIE Jan. 2020 28-37*
- Liserre, M.**, see Marquez, A., *TIE April 2020 2776-2785*
- Liserre, M.**, see Iman-Eini, H., *TIE July 2020 5503-5514*
- Liserre, M.**, see Marquez, A., *TIE Nov. 2020 9039-9047*
- Liserre, M.**, Raveendran, V., and Andresen, M., Graph-Theory-Based Modeling and Control for System-Level Optimization of Smart Transformers; *TIE Oct. 2020 8910-8920*
- Liserre, M.**, see Vazquez, N., *TIE Oct. 2020 8381-8391*
- Liserre, M.**, see Chen, X., *TIE Dec. 2020 9980-9990*
- Litvinenko, Y.A.**, see Liang, Q., *TIE Feb. 2020 1357-1365*
- Liu, A.**, see Zhang, W., *TIE June 2020 4991-4999*
- Liu, B.**, Ren, R., Wang, F., Costinett, D., and Zhang, Z., Winding Scheme With Fractional Layer for Differential-Mode Toroidal Inductor; *TIE Feb. 2020 1592-1604*
- Liu, B.**, see Shi, L., *TIE Feb. 2020 1013-1023*
- Liu, B.**, see Ren, R., *TIE Feb. 2020 1475-1486*
- Liu, B.**, Wei, S., Lu, J., Wang, J., and Su, G., Fast Self-Alignment Technology for Hybrid Inertial Navigation Systems Based on a New Two-Position Analytic Method; *TIE April 2020 3226-3235*
- Liu, C.**, see Luo, Y., *TIE Feb. 2020 969-979*
- Liu, C.**, Bai, H., Zhuo, S., Zhang, X., Ma, R., and Gao, F., Real-Time Simulation of Power Electronic Systems Based on Predictive Behavior; *TIE Sept. 2020 8044-8053*
- Liu, C.**, Xu, Z., Gerada, D., Li, J., Gerada, C., Chong, Y.C., Popescu, M., Goss, J., Staton, D., and Zhang, H., Experimental Investigation on Oil Spray Cooling With Hairpin Windings; *TIE Sept. 2020 7343-7353*
- Liu, C.**, see Deng, F., *TIE Nov. 2020 9370-9382*
- Liu, C.**, see Xiao, Y., *TIE Nov. 2020 9292-9301*
- Liu, D.**, see Zhao, B., *TIE April 2020 3054-3064*
- Liu, F.**, see Geng, Z., *TIE Jan. 2020 542-550*
- Liu, F.**, Lin, J., Wang, Y., Wang, S., Xu, Q., Cao, X., Li, Z., and Chen, B., Reducing Motion-Induced Noise With Mechanically Resonant Coil Sensor in a Rigid Helicopter Transient Electromagnetic System; *TIE March 2020 2391-2401*
- Liu, F.**, see Zeng, J., *TIE Nov. 2020 9260-9272*
- Liu, F.**, see Wang, B., *TIE Oct. 2020 8755-8766*
- Liu, G.**, Caldognetto, T., Mattavelli, P., and Magnone, P., Suppression of Second-Order Harmonic Current for Droop-Controlled Distributed Energy Resource Converters in DC Microgrids; *TIE Jan. 2020 358-368*
- Liu, G.**, see Ding, W., *TIE Jan. 2020 38-48*
- Liu, G.**, see Zeng, Y., *TIE April 2020 2977-2990*
- Liu, G.**, see Chen, Q., *TIE June 2020 4762-4773*
- Liu, G.**, see Chen, X., *TIE July 2020 6147-6157*
- Liu, G.**, see Chen, Q., *TIE July 2020 6043-6054*
- Liu, G.**, Chen, X., Zhou, X., and Zheng, S., Sensorless Commutation Deviation Correction of Brushless DC Motor With Three-Phase Asymmetric Back-EMF; *TIE July 2020 6158-6167*
- Liu, G.**, Liu, M., Zhang, Y., Wang, H., and Gerada, C., High-Speed Permanent Magnet Synchronous Motor Iron Loss Calculation Method Considering Multiphysics Factors; *TIE July 2020 5360-5368*
- Liu, G.**, see Chen, Q., *TIE Sept. 2020 7321-7333*
- Liu, G.**, see Chen, Q., *TIE Nov. 2020 9613-9622*
- Liu, G.**, see Zhang, G., *TIE Nov. 2020 9515-9525*
- Liu, G.**, Li, J., Zheng, S., Chen, Q., and Liu, H., Suppression of Synchronous Current Using Double Input Improved Adaptive Notch Filter Algorithm; *TIE Oct. 2020 8599-8607*
- Liu, G.**, see Khodamoradi, A., *TIE Dec. 2020 10641-10651*

- Liu, G., Wang, Y., Chen, Q., Xu, G., and Song, C., Multiobjective Deterministic and Robust Optimization Design of a New Spoke-Type Permanent Magnet Machine for the Improvement of Torque Performance; *TIE Dec. 2020 10202-10212*
- Liu, G., and Zhu, L., Lambert Compensation, Nonlinear Estimation, and Control Architecture of a Novel Optical Calibration Instrument; *TIE May 2020 4193-4202*
- Liu, G., see Zhao, B., *TIE May 2020 3317-3328*
- Liu, H., see Yang, X., *TIE Jan. 2020 800-808*
- Liu, H., see Yan, C., *TIE April 2020 2875-2884*
- Liu, H., Bu, F., Huang, W., Liu, L., Hu, Y., Degano, M., and Gerada, C., Control Strategy for Five-Phase Dual-Stator Winding Induction Starter/Generator System; *TIE April 2020 2607-2617*
- Liu, H., see Zhu, W., *TIE June 2020 4692-4699*
- Liu, H., see Wang, R., *TIE June 2020 4635-4645*
- Liu, H., see Xia, Z., *TIE March 2020 2251-2261*
- Liu, H., see Liu, G., *TIE Oct. 2020 8599-8607*
- Liu, H., Tan, C., Zhao, S., and Dong, F., Nonlinear Ultrasonic Transmissive Tomography for Low-Contrast Biphasic Medium Imaging Using Continuous-Wave Excitation; *TIE Oct. 2020 8878-8888*
- Liu, H., see Ye, G., *TIE Oct. 2020 8778-8787*
- Liu, H., see Zhou, Y., *TIE May 2020 4002-4012*
- Liu, H.H., see Qian, L., *TIE March 2020 2021-2029*
- Liu, H.W., see Zheng, S.Y., *TIE June 2020 4516-4526*
- Liu, H.X., see Bian, Y., *TIE Dec. 2020 10744-10754*
- Liu, J., see Lu, J., *TIE Jan. 2020 69-79*
- Liu, J., see Yan, Y., *TIE April 2020 2786-2797*
- Liu, J., see Ren, B., *TIE April 2020 2810-2821*
- Liu, J., see Hu, Z., *TIE April 2020 3216-3225*
- Liu, J., see Zhang, Y., *TIE July 2020 6019-6030*
- Liu, J., see Zhang, Y., *TIE July 2020 5867-5878*
- Liu, J., see Lu, J., *TIE July 2020 6101-6111*
- Liu, J., see Gao, J., *TIE July 2020 5816-5819*
- Liu, J., see Wang, Z., *TIE Sept. 2020 7681-7690*
- Liu, J., see Lin, W., *TIE Sept. 2020 7439-7450*
- Liu, J., see Zeng, J., *TIE Nov. 2020 9260-9272*
- Liu, J., see Yang, H., *TIE Oct. 2020 8969-8979*
- Liu, J., see Lu, J., *TIE Aug. 2020 6331-6341*
- Liu, J., see Zhang, H., *TIE Aug. 2020 7104-7113*
- Liu, J., see Zhao, N., *TIE Aug. 2020 6916-6926*
- Liu, J., see Han, Z., *TIE May 2020 3398-3408*
- Liu, J., see Peng, H., *TIE May 2020 3819-3829*
- Liu, J., see Ouyang, S., *TIE May 2020 3684-3695*
- Liu, K., Cao, W., and Zhao, J., Dual-Loop-Based Harmonic Current Control Strategy and Admittance Modeling for a Multimodular Parallel SAPFs System; *TIE July 2020 5456-5466*
- Liu, K., see Koiwa, K., *TIE Nov. 2020 9418-9428*
- Liu, K., see Yu, P., *TIE Oct. 2020 8670-8679*
- Liu, K., Akiba, J., Ishii, T., Huo, X., Yao, Y., Koiwa, K., and Zanma, T., Improved Robust Performance Design for Passive Uncertain Systems—Active Use of the Uncertainty Phase and Gain; *TIE Dec. 2020 10755-10765*
- Liu, K., see Dongye, Z., *TIE Dec. 2020 10315-10324*
- Liu, L., see Geng, Z., *TIE Jan. 2020 542-550*
- Liu, L., see Liu, H., *TIE April 2020 2607-2617*
- Liu, L., see Peng, Y., *TIE Nov. 2020 9734-9746*
- Liu, L., see Liu, Y., *TIE Aug. 2020 7044-7053*
- Liu, M., see Yuan, B., *TIE Feb. 2020 1466-1474*
- Liu, M., see Liu, G., *TIE July 2020 5360-5368*
- Liu, M., see Song, J., *TIE Oct. 2020 8281-8291*
- Liu, M., see Duan, Y., *TIE Aug. 2020 7073-7082*
- Liu, M., Song, J., and Ma, C., Active Class E Rectifier for DC Output Voltage Regulation in Megahertz Wireless Power Transfer Systems; *TIE May 2020 3618-3628*
- Liu, P., Chen, C., and Duan, S., An Optimized Modulation Strategy for the Three-Level DAB Converter With Five Control Degrees of Freedom; *TIE Jan. 2020 254-264*
- Liu, P., see Li, V., *TIE April 2020 3157-3166*
- Liu, P., and Duan, S., An Open-Loop Synchronization Technique With Simple Structure for Phase Error Compensation and Frequency Estimation; *TIE Oct. 2020 8936-8940*
- Liu, P., see Wang, T., *TIE Oct. 2020 8088-8099*
- Liu, P., see Jia, S., *TIE Aug. 2020 6450-6460*
- Liu, P.X., see Ling, S., *TIE May 2020 4046-4055*
- Liu, Q., see Ai, Q., *TIE Nov. 2020 9548-9559*
- Liu, Q., see Li, J., *TIE Aug. 2020 6732-6741*
- Liu, Q., Li, Y., Hu, S., and Luo, L., A Transformer Integrated Filtering System for Power Quality Improvement of Industrial DC Supply System; *TIE May 2020 3329-3339*
- Liu, R., see Pei, J., *TIE July 2020 5515-5530*
- Liu, S., see Li, H., *TIE June 2020 4411-4421*
- Liu, S., see Chen, A., *TIE Nov. 2020 9492-9502*
- Liu, S., see Xiao, Y., *TIE Nov. 2020 9292-9301*
- Liu, S., see Zhang, J., *TIE Oct. 2020 8659-8669*
- Liu, T., see Luo, H., *TIE Jan. 2020 521-530*
- Liu, T., see Pan, D., *TIE Feb. 2020 1348-1356*
- Liu, T., see Li, D., *TIE April 2020 3116-3125*
- Liu, T., see Li, Y., *TIE March 2020 2360-2370*
- Liu, T., see Ma, J., *TIE Oct. 2020 8322-8334*
- Liu, T., Chen, A., Qin, C., Chen, J., and Li, X., Double Vector Model Predictive Control to Reduce Common-Mode Voltage Without Weighting Factors for Three-Level Inverters; *TIE Oct. 2020 8980-8990*
- Liu, T., see Wang, T., *TIE Oct. 2020 8088-8099*
- Liu, T., see Pan, D., *TIE May 2020 4183-4192*
- Liu, T., see Deng, Z., *TIE May 2020 3980-3989*
- Liu, W., see Guo, G., *TIE April 2020 2798-2809*
- Liu, W., see Yin, S., *TIE July 2020 6124-6134*
- Liu, W., see Li, G., *TIE July 2020 5810-5815*
- Liu, W., Li, Z., Malekian, R., Sotelo, M.A., Ma, Z., and Li, W., A Novel Multifeature Based On-Site Calibration Method for LiDAR-IMU System; *TIE Nov. 2020 9851-9861*
- Liu, W., Chau, K.T., Lee, C.H.T., Jiang, C., Han, W., and Lam, W.H., A Wireless Dimmable Lighting System Using Variable-Power Variable-Frequency Control; *TIE Oct. 2020 8392-8404*
- Liu, W., Li, G., Liang, J., Ugalde-Loo, C.E., Li, C., and Guillaud, X., Protection of Single-Phase Fault at the Transformer Valve Side of FB-MMC-Based Bipolar HVdc Systems; *TIE Oct. 2020 8416-8427*
- Liu, W., see Wang, J., *TIE Aug. 2020 6864-6873*
- Liu, W., see Mao, S., *TIE May 2020 3551-3561*
- Liu, X., see Geng, Z., *TIE Jan. 2020 542-550*
- Liu, X., Gerada, D., Xu, Z., Corfield, M., Gerada, C., and Yu, H., Effective Thermal Conductivity Calculation and Measurement of Litz Wire Based on the Porous Metal Materials Structure; *TIE April 2020 2667-2677*
- Liu, X., see Hu, X., *TIE July 2020 5479-5489*
- Liu, X., see Sun, B., *TIE Sept. 2020 7550-7559*
- Liu, X., Zhen, S., Sun, H., and Zhao, H., A Novel Model-Based Robust Control for Position Tracking of Permanent Magnet Linear Motor; *TIE Sept. 2020 7767-7777*
- Liu, X., see Yang, J., *TIE Nov. 2020 9802-9812*
- Liu, X., see Zhao, Y., *TIE Aug. 2020 6874-6882*
- Liu, X., see Zheng, T., *TIE Dec. 2020 10304-10314*
- Liu, Y., see Yang, H., *TIE Jan. 2020 101-114*
- Liu, Y., Chen, K., Chen, C., Syu, Y., Lin, G., Kim, K.A., and Chiu, H., Quarter-Turn Transformer Design and Optimization for High Power Density 1-MHz LLC Resonant Converter; *TIE Feb. 2020 1580-1591*
- Liu, Y., see Dung, N.A., *TIE Feb. 2020 1415-1424*
- Liu, Y., Zhang, Z., Wang, C., and Gao, H., Optimization and Performance Improvement of a Hybrid Excitation Synchronous Machine With Modular Magnetic-Shunting Rotor; *TIE June 2020 4381-4390*
- Liu, Y., see Ou, J., *TIE June 2020 4422-4432*
- Liu, Y., see Chen, G., *TIE June 2020 4536-4546*
- Liu, Y., see Pei, J., *TIE July 2020 5515-5530*
- Liu, Y., see Cai, B., *TIE July 2020 5737-5747*
- Liu, Y., see Wang, H., *TIE July 2020 5900-5912*

- Liu, Y., Wang, Y., and Chen, X., Online Hysteresis Identification and Compensation for Piezoelectric Actuators; *TIE July 2020 5595-5603*
- Liu, Y., Chen, G., Hu, Y., Huang, L., and Qing, X., Magnetic Coupling Branch Based Dual-Input/Output DC–DC Converters With Improved Cross-Regulation and Soft-Switching Operation; *TIE Sept. 2020 7167-7178*
- Liu, Y., see Peng, Y., *TIE Nov. 2020 9734-9746*
- Liu, Y., see Wu, Q., *TIE Nov. 2020 9882-9892*
- Liu, Y., Zeng, Q., Tong, S., Chen, C.L.P., and Liu, L., Actuator Failure Compensation-Based Adaptive Control of Active Suspension Systems With Prescribed Performance; *TIE Aug. 2020 7044-7053*
- Liu, Y., see Chen, X., *TIE May 2020 3419-3430*
- Liu, Z., see Lu, Z., *TIE Jan. 2020 778-789*
- Liu, Z., see Cui, P., *TIE June 2020 4946-4956*
- Liu, Z., see Xing, X., *TIE Sept. 2020 7470-7483*
- Liu, Z., see Cai, J., *TIE Nov. 2020 9083-9092*
- Liu, Z., Gao, B., and Tian, G.Y., Natural Crack Diagnosis System Based on Novel L-Shaped Electromagnetic Sensing Thermography; *TIE Nov. 2020 9703-9714*
- Liu, Z., and Zhang, L., Naturally Damaged Wind Turbine Blade Bearing Fault Detection Using Novel Iterative Nonlinear Filter and Morphological Analysis; *TIE Oct. 2020 8713-8722*
- Liu, Z., see Xu, F., *TIE Dec. 2020 10575-10586*
- Liu, Z., see Yang, M., *TIE May 2020 4172-4182*
- Lkhagvasuren, B., see Kwak, M., *TIE Nov. 2020 9758-9767*
- Lofrano Dotto, F.R., Aguiar, P.R., Alexandre, F.A., Lopes, W.N., and Bianchi, E.C., In-Dressing Acoustic Map by Low-Cost Piezoelectric Transducer; *TIE Aug. 2020 6927-6936*
- Loganathan, U., see Majumder, M.G., *TIE Nov. 2020 9143-9152*
- Loganathan, U., see Majumder, M.G., *TIE Feb. 2020 960-968*
- Loh, P.C., see Chen, M., *TIE July 2020 5444-5455*
- Lohmann, C.P., see Zhou, M., *TIE Aug. 2020 6617-6628*
- Long, T., see Siwakoti, Y.P., *TIE Dec. 2020 10485-10496*
- Lopes, W.N., see Lofrano Dotto, F.R., *TIE Aug. 2020 6927-6936*
- Lopez, O., Alvarez, J., Yepes, A.G., Baneira, F., Perez-Estevéz, D., Freijedo, F.D., and Doval-Gandoy, J., Carrier-Based PWM Equivalent to Multilevel Multiphase Space Vector PWM Techniques; *TIE July 2020 5220-5231*
- Lopez-Callejas, R., see Pena-Eguiluz, R., *TIE Oct. 2020 8292-8301*
- Lou, J., see Chen, T., *TIE Sept. 2020 7841-7850*
- Loukopoulos, P., see Loutas, T., *TIE June 2020 5022-5029*
- Loutas, T., Eleftheroglou, N., Georgoulas, G., Loukopoulos, P., Mba, D., and Bennett, I., Valve Failure Prognostics in Reciprocating Compressors Utilizing Temperature Measurements, PCA-Based Data Fusion, and Probabilistic Algorithms; *TIE June 2020 5022-5029*
- Lu, B., Pickert, V., Hu, J., Wu, H., Naayagi, R.T., Kang, W., and Liao, S., Determination of Stray Inductance of Low-Inductive Laminated Planar Multiport Busbars Using Vector Synthesis Method; *TIE Feb. 2020 1337-1347*
- Lu, B., see Ye, G., *TIE Oct. 2020 8778-8787*
- Lu, B., Cheng, W., Xiong, J., Liao, S., Li, G., Guo, Q., and Li, X., Research on Measurement Method of Electric Field Intensity on Surface of Metal Conductor; *TIE Aug. 2020 7005-7014*
- Lu, C., see Li, X., *TIE Dec. 2020 9991-10000*
- Lu, D., see Yang, X., *TIE May 2020 4036-4045*
- Lu, D.D., see Khan, S.A., *TIE Sept. 2020 7364-7374*
- Lu, F., see Cheng, C., *TIE June 2020 4507-4515*
- Lu, G., see Wang, T., *TIE Jan. 2020 531-541*
- Lu, H., see Lu, Y., *TIE Jan. 2020 115-125*
- Lu, H., see Wen, Y., *TIE April 2020 2916-2924*
- Lu, H., see Yan, C., *TIE April 2020 2875-2884*
- Lu, H., see Wang, P., *TIE July 2020 5565-5574*
- Lu, J., Hu, Y., Chen, G., Wang, Z., and Liu, J., Mutual Calibration of Multiple Current Sensors With Accuracy Uncertainties in IPMSM Drives for Electric Vehicles; *TIE Jan. 2020 69-79*
- Lu, J., see Wang, J., *TIE April 2020 3000-3012*
- Lu, J., see Liu, B., *TIE April 2020 3226-3235*
- Lu, J., see Li, D., *TIE April 2020 3116-3125*
- Lu, J., Hu, Y., Liu, J., Ni, K., and Wen, H., Detrimental Effect Elimination of Current Sensor Accuracy Uncertainty for High-Precision Position Sensorless Control of Interior Permanent Magnet Synchronous Motor Drives; *TIE July 2020 6101-6111*
- Lu, J., Hu, Y., Liu, J., and Wang, Z., All Current Sensor Survivable IPMSM Drive With Reconfigurable Inverter; *TIE Aug. 2020 6331-6341*
- Lu, M., see Cao, R., *TIE July 2020 5971-5979*
- Lu, P., Yu, W., Chen, G., and Yu, X., Leaderless Consensus of Ring-Networked Mobile Robots via Distributed Saturated Control; *TIE Dec. 2020 10723-10731*
- Lu, R., see Ren, H., *TIE June 2020 4980-4990*
- Lu, W., see Li, S., *TIE June 2020 4857-4866*
- Lu, X., see Xu, F., *TIE Oct. 2020 8545-8554*
- Lu, Y., Li, J., Qu, R., Ye, D., and Lu, H., Electromagnetic Force and Vibration Study on Axial Flux Permanent Magnet Synchronous Machines With Dual Three-Phase Windings; *TIE Jan. 2020 115-125*
- Lu, Y., see Wu, J., *TIE Sept. 2020 7861-7870*
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- Lu, Z., Huang, P., and Liu, Z., Relative Impedance-Based Internal Force Control for Bimanual Robot Teleoperation With Varying Time Delay; *TIE Jan. 2020 778-789*
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- Luo, C., Wang, B., Yu, Y., Chen, C., Huo, Z., and Xu, D., Operating-Point Tracking Method for Sensorless Induction Motor Stability Enhancement in Low-Speed Regenerating Mode; *TIE May 2020 3386-3397*
- Luo, G., see He, J., *TIE Oct. 2020 8921-8930*
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- Luo, H., Yin, S., Liu, T., and Khan, A.Q., A Data-Driven Realization of the Control-Performance-Oriented Process Monitoring System; *TIE Jan. 2020 521-530*
- Luo, H., see Li, K., *TIE March 2020 2304-2313*
- Luo, H., Xu, J., He, D., and Sha, J., Pulse Train Control Strategy for CCM Boost PFC Converter With Improved Dynamic Response and Unity Power Factor; *TIE Dec. 2020 10377-10387*
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- Luo, R.C., and Perng, Y.W., Omnidirectional Touch Probe With Adaptive Maneuvering for 3-D Object Machining and Measurement Verification Applications; *TIE Feb. 2020 1136-1148*
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- Luo, Y., and Liu, C., Model Predictive Control for a Six-Phase PMSM Motor With a Reduced-Dimension Cost Function; *TIE Feb. 2020 969-979*
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- Luu, P.T., Lee, J., Kim, J., Chung, S., and Kwon, S., Magnetic Sensor Design for a Permanent Magnet Linear Motor Considering Edge-Effect; *TIE July 2020 5768-5777*
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- Lv, G., Zeng, D., and Zhou, T., Erratum to “An Advanced Equivalent Circuit Model for Linear Induction Motors” [Sep 18 7495-7503]; *TIE Dec. 2020 10996*
- Lv, J., see Zheng, T., *TIE Dec. 2020 10304-10314*
- Lyu, D., see Guo, S., *TIE Sept. 2020 8005-8015*
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Majumder, M.G., Yadav, A.K., Gopakumar, K., Raj R., K., Loganathan, U., Franquelo, L.G., A 5-Level Inverter Scheme Using Single DC Link With Reduced Number of Floating Capacitors and Switches for Open-End IM Drives; *TIE Feb. 2020 960-968*
Majumder, M.G., Rakesh, R., Imthias, M., Gopakumar, K., Loganathan, U., and Jarzyna, W., Extending the Linear Modulation Range to Full Base Speed Independent of Load Power Factor for a Multilevel Inverter Fed IM Drive; *TIE Nov. 2020 9143-9152*
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Mao, W., Zhang, X., Zhao, T., Hu, Y., Wang, F., Dai, Z., and Cao, R., Research on Power Equalization of Three-Phase Cascaded H-Bridge Photovoltaic Inverter Based on the Combination of Hybrid Modulation Strategy and Zero-Sequence Injection Methods; *TIE Nov. 2020 9337-9347*
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Marquez, A., Leon, J.I., Monopoli, V.G., Vazquez, S., Liserre, M., and Franquelo, L.G., Generalized Harmonic Control for CHB Converters With Unbalanced Cells Operation; *TIE Nov. 2020 9039-9047*
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- Masoumi, A.H.**, Sharifi, S., Monfared, M., and Karbasforooshan, M., Γ -Source Magnetic Integrated Filter for Single-Phase Grid Tied Voltage Source Converters; *TIE July 2020* 5410-5420
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- McNeill, N.**, Jin, B., Yuan, X., and Laird, I., Evaluation of the off-State Base-Emitter Voltage Requirement of the SiC BJT With a Regenerative Proportional Base Driver Circuit and Their Application in an Inverter; *TIE Sept. 2020* 7179-7189
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- Meng, F.**, see Li, Q., *TIE Nov. 2020* 9273-9291
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- Meng, L.**, Shu, Z., Lei, Y., Yan, H., Li, Z., Ma, L., Yin, X., and He, X., Optimal Input and Output Power Quality Control of Single-Phase AC-DC-DC Converter With Significant DC-Link Voltage Ripple; *TIE Dec. 2020* 10366-10376
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- Mi, X.**, Zou, Y., Li, S., and Karimi, H.R., Self-Triggered DMPC Design for Cooperative Multiagent Systems; *TIE Jan. 2020* 512-520
- Miaja, P.F.**, see Rodriguez Mendez, J., *TIE Feb. 2020* 1532-1543
- Miao, Z.**, Yao, W., and Lu, Z., Single-Cycle-Lag Compensator-Based Active Damping for Digitally Controlled LCL/LLCL-Type Grid-Connected Inverters; *TIE March 2020* 1980-1990
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- Millinger, J.**, Bacco, G., Manzolini, V., Wallmark, O., and Bianchi, N., Design and Evaluation of a Short-Circuit Rotor-Ring for Enhanced Self-Sensing Capability in a Slotless PM Motor; *TIE May 2020* 3462-3471
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- Mishra, P.**, and Maheshwari, R., A Simple Feedforward Approach to Stabilize VSI-Fed Induction Motor With Filter in RFOC; *TIE Dec. 2020* 10191-10201
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- Moieni, A.**, Wang, S., Zhang, B., and Yang, L., A Hybrid Phase Shift-Pulsewidth Modulation and Asymmetric Selective Harmonic Current Mitigation-Pulsewidth Modulation Technique to Reduce Harmonics and Inductance of Single-Phase Grid-Tied Cascaded Multilevel Converters; *TIE Dec. 2020* 10388-10398
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- Mohsenzade, S.**, Zarghani, M., and Kaboli, S., A High-Voltage Series-Stacked IGBT Switch With Active Energy Recovery Feature for Pulsed Power Applications; *TIE May 2020 3650-3661*
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- Nasab, P.S.**, Perini, R., Di Gerlando, A., Foglia, G.M., and Moallem, M., Analytical Thermal Model of Natural-Convection Cooling in Axial Flux Machines; *TIE April 2020 2711-2721*
- Nascimento, A.S.B.d.S.**, Flesch, R.C.C., and Flesch, C.A., Data-Driven Soft Sensor for the Estimation of Sound Power Levels of Refrigeration Compressors Through Vibration Measurements; *TIE Aug. 2020 7065-7072*
- Naseri, F.**, Farjah, E., Ghanbari, T., Kazemi, Z., Schaltz, E., and Schanen, J., Online Parameter Estimation for Supercapacitor State-of-Energy and State-of-Health Determination in Vehicular Applications; *TIE Sept. 2020 7963-7972*
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- Nguyen, M.L.**, and Chen, X., MPC Inspired Dynamical Output Feedback and Adaptive Feedforward Control Applied to Piezo-Actuated Positioning Systems; *TIE May 2020 3921-3931*
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- Ning, D.**, Du, H., Sun, S., Zheng, M., Li, W., Zhang, N., and Jia, Z., An Electromagnetic Variable Stiffness Device for Semiactive Seat Suspension Vibration Control; *TIE Aug. 2020 6773-6784*
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- Na, J.**, Li, Y., Huang, Y., Gao, G., and Chen, Q., Output Feedback Control of Uncertain Hydraulic Servo Systems; *TIE Jan. 2020 490-500*
- Na, J.**, Jing, B., Huang, Y., Gao, G., and Zhang, C., Unknown System Dynamics Estimator for Motion Control of Nonlinear Robotic Systems; *TIE May 2020 3850-3859*
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- Noland, J.K.**, Alves, E.F., Pardini, A., and Lundin, U., Unified Reduced Model for a Dual-Control Scheme of the High-Speed Response Brushless Excitation System of Synchronous Generators; *TIE June 2020 4474-4484*
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- Nourmohamadi, H.**, Sabahi, M., Balsara, P.T., Babaei, E., Hosseini, S.H., and Fakhim-Babaei, A., New Concept for Fault Current Limiter With Voltage Restoration Capability; *TIE Dec. 2020 10001-10010*
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- Olaizola, J.**, Bouganis, C., de Argandoña, E.S., Iturrospe, A., and Abete, J.M., Real-Time Servo Press Force Estimation Based on Dual Particle Filter; *TIE May 2020 4088-4097*
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- Osman, I.**, Xiao, D., Alam, K.S., Shakib, S.M.S.I., Akter, M.P., and Rahman, M.F., Discrete Space Vector Modulation-Based Model Predictive Torque Control With No Suboptimization; *TIE Oct. 2020 8164-8174*
- Osorio, C.R.D.**, Koch, G.G., Pinheiro, H., Oliveira, R.C.L.F., and Montagner, V.F., Robust Current Control of Grid-Tied Inverters Affected by LCL Filter Soft-Saturation; *TIE Aug. 2020 6550-6561*
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- Ostergaard, J.**, see Lyu, X., *TIE June 2020 5209-5212*
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- Outbib, R.**, see Li, Z., *TIE Jan. 2020 379-389*
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- Pan, D.**, Li, J., Jin, C., Liu, T., Lin, S., and Li, L., A New Calibration Method for Triaxial Fluxgate Magnetometer Based on Magnetic Shielding Room; *TIE May 2020 4183-4192*
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- Park, J.**, Lee, B., and Hong, S., An Output Capacitorless Low-Dropout Regulator With a Low- V_{DD} Inverting Buffer for the Mobile Application; *TIE Oct. 2020 8931-8935*
- Park, J.**, see Lee, K., *TIE Dec. 2020 10520-10530*
- Park, J.**, see Park, Y., *TIE Dec. 2020 10075-10084*
- Park, K.**, Choi, S., Chae, H.Y., Park, C.S., Lee, S., Lim, Y., Shin, H., and Kim, J.J., An Energy-Efficient Multimode Multichannel Gas-Sensor System With Learning-Based Optimization and Self-Calibration Schemes; *TIE March 2020 2402-2410*
- Park, M.**, see Jeong, Y., *TIE Sept. 2020 7421-7429*
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- Park, S.**, see Yun, S., *TIE Jan. 2020 717-724*
- Park, W.**, Shin, E., Yoo, Y., Choi, S., and Kim, S., Soft Haptic Actuator Based on Knitted PVC Gel Fabric; *TIE Jan. 2020 677-685*
- Park, Y.**, Choi, H., Shin, J., Park, J., Lee, S.B., and Jo, H., Airgap Flux Based Detection and Classification of Induction Motor Rotor and Load Defects During the Starting Transient; *TIE Dec. 2020 10075-10084*
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- Pei, H.**, see Hu, C., *TIE Oct. 2020 8767-8777*
- Pei, J.**, Yao, J., Liu, R., Zeng, D., Sun, P., Zhang, H., and Liu, Y., Characteristic Analysis and Risk Assessment for Voltage-Frequency Coupled Transient Instability of Large-Scale Grid-Connected Renewable Energy Plants During LVRT; *TIE July 2020 5515-5530*
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- Pena-Eguiluz, R.**, Flores-Fuentes, A.A., Mercado-Cabrera, A., Lopez-Callejas, R., Rodriguez-Mendez, B.G., Valencia-Alvarado, R., Jaramillo-Sierra, B., and Hernandez-Arias, A.N., Stacked Class-E Amplifier; *TIE Oct. 2020 8292-8301*
- Peng, B.**, see Zhan, H., *TIE Dec. 2020 10897-10904*
- Peng, C.**, Zhu, M., Wang, K., Ren, Y., and Deng, Z., A Two-Stage Synchronous Vibration Control for Magnetically Suspended Rotor System in the Full Speed Range; *TIE Jan. 2020 480-489*
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- Peng, F.**, see Guo, B., *TIE June 2020 4433-4443*
- Peng, F.**, see Yao, Y., *TIE Dec. 2020 10145-10155*
- Peng, G.**, Yang, C., He, W., and Chen, C.L.P., Force Sensorless Admittance Control With Neural Learning for Robots With Actuator Saturation; *TIE April 2020 3138-3148*
- Peng, H.**, Li, F., Liu, J., and Ju, Z., A Symplectic Instantaneous Optimal Control for Robot Trajectory Tracking With Differential-Algebraic Equation Models; *TIE May 2020 3819-3829*
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- Peng, Y.**, Shuai, Z., Guerrero, J.M., Li, Y., Luo, A., and Shen, Z.J., Performance Improvement of the Unbalanced Voltage Compensation in Islanded Microgrid Based on Small-Signal Analysis; *TIE July 2020 5531-5542*
- Peng, Y.**, Li, Z., He, K., Liu, Y., Li, Q., and Liu, L., Broadband Mode Decomposition and Its Application to the Quality Evaluation of Welding Inverter Power Source Signals; *TIE Nov. 2020 9734-9746*
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- Pi, M.**, Kang, Y., Xu, C., Li, G., and Li, Z., Adaptive Time-Delay Balance Control of Biped Robots; *TIE April 2020 2936-2944*
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- Pohren, D.H.**, Roque, A.d.S., Kranz, T.A.I., de Freitas, E.P., and Pereira, C.E., An Analysis of the Impact of Transient Faults on the Performance of the CAN-FD Protocol; *TIE March 2020 2440-2449*
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- Pou, J.**, see Vazquez, S., *TIE Sept. 2020 7410-7420*
- Pourfaraj, A.**, Monfared, M., and Heydari-doostabad, H., Single-Phase Dual-Mode Interleaved Multilevel Inverter for PV Applications; *TIE April 2020 2905-2915*
- Pourfaraj, A.**, see Sharifi, S., *TIE May 2020 3640-3649*
- Pourpanah, F.**, see Jiang, F., *TIE March 2020 2076-2085*
- Poznyak, A.**, see Sanchez, B., *TIE July 2020 5677-5686*
- Prabaharan, N.**, Salam, Z., Cecati, C., and Palanisamy, K., Design and Implementation of New Multilevel Inverter Topology for Trinary Sequence Using Unipolar Pulsewidth Modulation; *TIE May 2020 3573-3582*
- Prabhakaran, K.K.**, and Karthikeyan, A., Electromagnetic Torque-Based Model Reference Adaptive System Speed Estimator for Sensorless Surface Mount Permanent Magnet Synchronous Motor Drive; *TIE July 2020 5936-5947*
- Prabhakaran, P.**, and Agarwal, V., Novel Boost-SEPIC Type Interleaved DC-DC Converter for Mitigation of Voltage Imbalance in a Low-Voltage Bipolar DC Microgrid; *TIE Aug. 2020 6494-6504*
- Pradhan, A.K.**, see Deb, S., *TIE July 2020 5729-5736*
- Prakash, O.**, Samantaray, A.K., and Bhattacharyya, R., Adaptive Prognosis of Hybrid Dynamical System for Dynamic Degradation Patterns; *TIE July 2020 5717-5728*
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- Preindl, M.**, High-Performance Selective and Output Filter Techniques for Sensorless Direct Position and Speed Estimation; *TIE July 2020 6000-6009*
- Priestley, M.**, Farshadnia, M., and Fletcher, J.E., FOC Transformation for Single Open-Phase Faults in the Five-Phase Open-End Winding Topology; *TIE Feb. 2020 842-851*
- Prieto, I.G.**, Duran, M.J., Garcia-Entrambasaguas, P., and Bermudez, M., Field-Oriented Control of Multiphase Drives With Passive Fault Tolerance; *TIE Sept. 2020 7228-7238*
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- Pu, S.**, Pei, Y., and Chang, J., Decoupling Finger Joint Motion in an Exoskeletal Hand: A Design for Robot-Assisted Rehabilitation; *TIE Jan. 2020 686-697*
- Pu, S.**, Ugr, E., Yang, F., and Akin, B., *In situ* Degradation Monitoring of SiC MOSFET Based on Switching Transient Measurement; *TIE June 2020 5092-5100*
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- Qi, C.**, see Wu, M., *TIE Oct. 2020 8788-8798*
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- Qi, L.**, see Dongye, Z., *TIE Dec. 2020 10315-10324*
- Qi, S.**, see Wu, Z., *TIE April 2020 2945-2953*
- Qi, W.**, Li, S., Tan, S., and Hui, S.Y., Design Considerations for Voltage Sensorless Control of a PFC Single-Phase Rectifier Without Electrolytic Capacitors; *TIE March 2020 1878-1889*
- Qi, W.**, Zong, G., and Karimi, H.R., Sliding Mode Control for Nonlinear Stochastic Semi-Markov Switching Systems With Application to SRMM; *TIE May 2020 3955-3966*
- Qi, X.**, and Holtz, J., Modeling and Control of Low Switching Frequency High-Performance Induction Motor Drives; *TIE June 2020 4402-4410*
- Qi, X.**, and Holtz, J., The Relationship Between Root Locus and Transient Field Components of AC Machines; *TIE March 2020 1836-1843*
- Qi, Z.**, Shi, Q., and Zhang, H., Tuning of Digital PID Controllers Using Particle Swarm Optimization Algorithm for a CAN-Based DC Motor Subject to Stochastic Delays; *TIE July 2020 5637-5646*
- Qian, H.**, see Shang, Y., *TIE April 2020 2991-2999*
- Qian, L.**, and Liu, H.H., Path-Following Control of A Quadrotor UAV With A Cable-Suspended Payload Under Wind Disturbances; *TIE March 2020 2021-2029*
- Qian, Z.**, see Xie, F., *TIE Nov. 2020 9601-9612*
- Qian, Z.**, see Huang, X., *TIE Oct. 2020 8252-8261*
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- Qiao, D.**, see Li, Y., *TIE Jan. 2020 560-568*
- Qiao, J.**, see Wang, C., *TIE March 2020 2241-2250*
- Qin, C.**, Zhang, C., Xing, X., Li, X., Chen, A., and Zhang, G., Simultaneous Common-Mode Voltage Reduction and Neutral-Point Voltage Balance Scheme for the Quasi-Z-Source Three-Level T-Type Inverter; *TIE March 2020 1956-1967*
- Qin, C.**, see Xing, X., *TIE Sept. 2020 7470-7483*
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- Qin, Y.**, see Yang, Y., *TIE Oct. 2020 9001-9011*
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- Quan, L.**, see Zhao, B., *TIE Sept. 2020 7715-7726*
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- Quan, X.**, Huang, A.Q., and Yu, H., A Novel Order Reduced Synchronous Power Control for Grid-Forming Inverters; *TIE Dec. 2020 10989-10995*
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- Quan, Z.**, see Zhao, B., *TIE Sept. 2020 7715-7726*
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- Rabinovici, R.**, see Barbic, E., *TIE June 2020 5213-5216*

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- Rahimo, M.**, see Stamenkovic, D., *TIE Aug. 2020 6302-6311*
- Rahman, K.**, Meraj, M., Bhaskar, M.S., and Iqbal, A., Single-Phase Z_{AC} -Source AC–AC Converter With High Buck and Boost Voltage Conversion Capability; *TIE Nov. 2020 9251-9259*
- Rahman, M.F.**, see Zhang, X., *TIE March 2020 1813-1823*
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- Rao, D.**, see Dai, Z., *TIE Sept. 2020 7540-7549*
- Rao, G.**, Yang, X., Yu, H., Chen, K., and Xu, J., Fringe-Projection-Based Normal Direction Measurement and Adjustment for Robotic Drilling; *TIE Nov. 2020 9560-9570*
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- Rastegarnia, A.**, see Latifi, M., *TIE Sept. 2020 7484-7498*
- Rath, J.J.**, Defoort, M., Sentouh, C., Karimi, H.R., and Veluvolu, K.C., Output-Constrained Robust Sliding Mode Based Nonlinear Active Suspension Control; *TIE Dec. 2020 10652-10662*
- Rathore, A.K.**, and Vakacharla, V.R., A Simple Technique for Fundamental Harmonic Approximation Analysis in Parallel and Series–Parallel Resonant Converters; *TIE Nov. 2020 9963-9968*
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- Reddy, B.P.**, and Keerthipati, S., Multilayer Fractional Slot Pole-Phase Modulated Induction Motor Drives for Traction Applications; *TIE Nov. 2020 9112-9119*
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- Reiland, N.**, see Han, Z., *TIE May 2020 3398-3408*
- Ren, B.**, Sun, X., Yu, M., Liu, J., and Zhang, Q., Circulating Current Analysis and the Improved $D-\Sigma$ Digital Control Strategy for Multiparalleled Three-Level T-Type Grid-Connected Inverters; *TIE April 2020 2810-2821*
- Ren, B.**, Dai, J., and Zhong, Q., UDE-Based Robust Output Feedback Control With Applications to a Piezoelectric Stage; *TIE Sept. 2020 7819-7828*
- Ren, B.**, see Yang, M., *TIE May 2020 4172-4182*
- Ren, H.**, see Li, T., *TIE April 2020 3236-3247*
- Ren, H.**, Karimi, H.R., Lu, R., and Wu, Y., Synchronization of Network Systems via Aperiodic Sampled-Data Control With Constant Delay and Application to Unmanned Ground Vehicles; *TIE June 2020 4980-4990*
- Ren, H.**, see Li, T., *TIE June 2020 5101-5111*
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- Ren, Q.**, see Cao, J., *TIE May 2020 3809-3818*
- Ren, R.**, see Liu, B., *TIE Feb. 2020 1592-1604*

- Ren, R.**, Zhang, F., Liu, B., Wang, F., Chen, Z., and Wu, J., A Closed-Loop Modulation Scheme for Duty Cycle Compensation of PWM Voltage Distortion at High Switching Frequency Inverter; *TIE Feb. 2020 1475-1486*
- Ren, W.**, see Bian, Y., *TIE Dec. 2020 10744-10754*
- Ren, X.**, see Li, H., *TIE Feb. 2020 1435-1445*
- Ren, X.**, see Zhang, Z., *TIE Nov. 2020 9227-9237*
- Ren, X.**, Li, D., Qu, R., and Pei, T., Back EMF Harmonic Analysis of Permanent Magnet Magnetic Geared Machine; *TIE Aug. 2020 6248-6258*
- Ren, X.**, Wu, Y., Zhang, Z., and Chen, Q., Accurate Operation Analysis Based Variable On-time Control for 360–800 Hz CRM Boost PFC Converters; *TIE Aug. 2020 6845-6853*
- Ren, Y.**, see Peng, C., *TIE Jan. 2020 480-489*
- Ren, Y.**, see Wang, D., *TIE Oct. 2020 8841-8850*
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- Rizzoli, G.**, see Sala, G., *TIE Sept. 2020 7124-7134*
- Rizzoli, G.**, Mengoni, M., Tani, A., Serra, G., Zarri, L., and Casadei, D., Wireless Power Transfer Using a Five-Phase Wound-Rotor Induction Machine for Speed-Controlled Rotary Platforms; *TIE Aug. 2020 6237-6247*
- Robinette, T.**, see Yuan, M., *TIE Oct. 2020 8143-8154*
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- Rodriguez, L.A.G.**, see Deng, C., *TIE May 2020 3756-3766*
- Rodriguez Mendez, J.**, Lamar, D.G., Aller, D.G., Miaja, P.F., and Sebastian, J., Reproducing Multicarrier Modulation Schemes for Visible Light Communication With the Ripple Modulation Technique; *TIE Feb. 2020 1532-1543*
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- Rohani, J.M.**, see Jamaludin, J., *TIE April 2020 3248-3256*
- Ronanki, D.**, and Williamson, S.S., Failure Prediction of Submodule Capacitors in Modular Multilevel Converter by Monitoring the Intrinsic Capacitor Voltage Fluctuations; *TIE April 2020 2585-2594*
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- Roscoe, A.**, see Hong, Q., *TIE Aug. 2020 6835-6844*
- Rosero, C.X.**, Velasco, M., Marti, P., Camacho, A., Miret, J., and Castilla, M., Active Power Sharing and Frequency Regulation in Droop-Free Control for Islanded Microgrids Under Electrical and Communication Failures; *TIE Aug. 2020 6461-6472*
- Rossa, A.J.**, see Costa, C.A., *TIE Nov. 2020 9133-9142*
- Rostami, M.**, Madani, S.M., and Ademi, S., Sensorless Closed-Loop Voltage and Frequency Control of Stand-Alone DFIGs Introducing Direct Flux-Vector Control; *TIE July 2020 6078-6088*
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- Rsetam, K.**, see Hou, H., *TIE July 2020 5647-5656*
- Rsetam, K.**, Cao, Z., and Man, Z., Cascaded-Extended-State-Observer-Based Sliding-Mode Control for Underactuated Flexible Joint Robot; *TIE Dec. 2020 10822-10832*
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- Ruan, X.**, see Fang, T., *TIE Jan. 2020 214-224*
- Ruffo, R.**, Guglielmi, P., and Armando, E., Inverter Side *RL* Filter Precise Design for Motor Overvoltage Mitigation in SiC-Based Drives; *TIE Feb. 2020 863-873*
- Ryu, J.**, see Singh, H., *TIE Jan. 2020 809-819*
- Ryu, J.**, see Kim, J., *TIE Aug. 2020 6407-6417*
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- S.**, N., Nikam, S.P., Pal, S., Wankhede, A.K., and Fernandes, B.G., Performance Comparison Between PCB-Stator and Laminated-Core-Stator-Based Designs of Axial Flux Permanent Magnet Motors for High-Speed Low-Power Applications; *TIE July 2020 5269-5277*
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- Sabahi, M.**, see Nourmohamadi, H., *TIE Dec. 2020 10001-10010*
- Sabry, A.H.**, Nordin, F.H., and Abidin Ab Kadir, M.Z., Fault Detection and Diagnosis of Industrial Robot Based on Power Consumption Modeling; *TIE Sept. 2020 7929-7940*
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- Saedifard, M.**, see Song, Y., *TIE May 2020 4133-4143*
- Saha, P.**, Dey, S., and Khanra, M., Modeling and State-of-Charge Estimation of Supercapacitor Considering Leakage Effect; *TIE Jan. 2020 350-357*
- Saha, T.K.**, see Mishra, R., *TIE Oct. 2020 8991-9000*
- Sahoo, S.**, Mishra, S., Jha, S., and Singh, B., A Cooperative Adaptive Droop Based Energy Management and Optimal Voltage Regulation Scheme for DC Microgrids; *TIE April 2020 2894-2904*
- Sahoo, S.**, Peng, J.C., Devakumar, A., Mishra, S., and Dragicevic, T., On Detection of False Data in Cooperative DC Microgrids—A Discordant Element Approach; *TIE Aug. 2020 6562-6571*
- Sahoo, S.K.**, see Lan, D., *TIE Jan. 2020 4-15*
- Said, M.**, see Ifqir, S., *TIE June 2020 5030-5040*
- Sala, G.**, see Wang, X., *TIE June 2020 4315-4325*
- Sala, G.**, Mengoni, M., Rizzoli, G., Zarri, L., and Tani, A., Decoupled $d-q$ Axes Current-Sharing Control of Multi-Three-Phase Induction Machines; *TIE Sept. 2020 7124-7134*
- Salam, Z.**, see Prabakaran, N., *TIE May 2020 3573-3582*
- Salami, Y.**, see Tebianian, H., *TIE Feb. 2020 1487-1497*
- Salvador, M.A.**, de Andrade, J.M., Lazzarin, T.B., and Coelho, R.F., Nonisolated High-Step-Up DC–DC Converter Derived from Switched-Inductors and Switched-Capacitors; *TIE Oct. 2020 8506-8516*
- Salvati, D.**, Drioli, C., Ferrin, G., and Foresti, G.L., Acoustic Source Localization from Multirotor UAVs; *TIE Oct. 2020 8618-8628*
- Salvatierra, T.**, see Jedi, H., *TIE June 2020 5427-5435*
- Samadian, A.**, Hosseini, S.H., Sabahi, M., and Maalandish, M., A New Coupled Inductor Nonisolated High Step-Up Quasi Z-Source DC–DC Converter; *TIE July 2020 5389-5397*
- Samanes, J.**, Gubia, E., Juankorena, X., and Girones, C., Common-Mode and Phase-to-Ground Voltage Reduction in Back-to-Back Power Converters With Discontinuous PWM; *TIE Sept. 2020 7499-7508*
- Samantaray, A.K.**, see Prakash, O., *TIE July 2020 5717-5728*
- Samet, H.**, see Ahmadi, M., *TIE June 2020 5041-5049*
- Sanchez, B.**, Cuvas, C., Ordaz, P., Santos-Sanchez, O., and Poznyak, A., Full-Order Observer for a Class of Nonlinear Systems With Unmatched Uncertainties: Joint Attractive Ellipsoid and Sliding Mode Concepts; *TIE July 2020 5677-5686*
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- Sanei, S.**, see Latifi, M., *TIE Sept. 2020 7484-7498*
- Sanghadasa, M.**, see Li, X., *TIE Oct. 2020 8335-8343*
- Sangwan, V.**, Tan, C.M., Kapoor, D., and Chiu, H., Electromagnetic Induced Failure in GaN-HEMT High-Frequency Power Amplifier; *TIE July 2020 5708-5716*
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- Sargolzaei, A.**, see Abbaspour, A., *TIE Sept. 2020 7951-7962*

- Sariyildiz, E.**, Oboe, R., and Ohnishi, K., Disturbance Observer-Based Robust Control and Its Applications: 35th Anniversary Overview; *TIE March 2020 2042-2053*
- Sarlioglu, B.**, see Min, S.G., *TIE April 2020 2965-2976*
- Sarwat, A.I.**, see Abbaspour, A., *TIE Sept. 2020 7951-7962*
- Sato, M.**, and Toda, M., Adaptive Algorithms of Tuning and Switching Kalman and \mathcal{H}_∞ Filters and Their Application to Estimation of Ship Oscillation With Time-Varying Frequencies; *TIE Jan. 2020 501-511*
- Sato, N.**, see Xue, F., *TIE April 2020 3257-3266*
- Sau, S.**, Nikam, S.P., and Fernandes, B.G., Coupled Inductor Based Regenerative Cascaded Multicell Converter for Drives With Multilevel Voltage Operation at Both Input and Output Sides; *TIE Jan. 2020 147-158*
- Sau-Bassols, J.**, Ferrer-San-Jose, R., Prieto-Araujo, E., and Gomis-Bellmunt, O., Multiport Interline Current Flow Controller for Meshed HVDC Grids; *TIE July 2020 5467-5478*
- Savaliya, S.G.**, and Fernandes, B.G., Analysis and Experimental Validation of Bidirectional Z-Source DC Circuit Breakers; *TIE June 2020 4613-4622*
- Savitski, D.**, Ivanov, V., Augsburg, K., Emmei, T., Fuse, H., Fujimoto, H., and Fridman, L.M., Wheel Slip Control for the Electric Vehicle With In-Wheel Motors: Variable Structure and Sliding Mode Methods; *TIE Oct. 2020 8535-8544*
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- Sayyaf, N.**, and Tavazoei, M.S., Frequency Data-Based Procedure to Adjust Gain and Phase Margins and Guarantee the Uniqueness of Crossover Frequencies; *TIE March 2020 2176-2185*
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- Scicluna, K.**, Staines, C.S., and Raute, R., Sensorless Low/Zero Speed Estimation for Permanent Magnet Synchronous Machine Using a Search-Based Real-Time Commissioning Method; *TIE July 2020 6010-6018*
- Sebastian, J.**, see Rodriguez Mendez, J., *TIE Feb. 2020 1532-1543*
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- Sentouh, C.**, see Rath, J.J., *TIE Dec. 2020 10652-10662*
- Seo, D.**, Bak, Y., and Lee, K., An Improved Rotating Restart Method for a Sensorless Permanent Magnet Synchronous Motor Drive System Using Repetitive Zero Voltage Vectors; *TIE May 2020 3496-3504*
- Seo, G.**, and Le, H., S-Hybrid Step-Down DC-DC Converter—Analysis of Operation and Design Considerations; *TIE Jan. 2020 265-275*
- Seok, H.**, see Kim, S., *TIE June 2020 4921-4933*
- Sera, D.**, see Lashab, A., *TIE Aug. 2020 6483-6493*
- Sergeant, P.**, see Verbelen, F., *TIE March 2020 1739-1749*
- Seri, P.**, see Ghosh, R., *TIE May 2020 4144-4151*
- Serra, G.**, see Rizzoli, G., *TIE Aug. 2020 6237-6247*
- Sferlazza, A.**, Albea-Sanchez, C., Martinez-Salamero, L., Garcia, G., and Alonso, C., Min-Type Control Strategy of a DC-DC Synchronous Boost Converter; *TIE April 2020 3167-3179*
- Sha, J.**, see Luo, H., *TIE Dec. 2020 10377-10387*
- Shafiee, Q.**, see Abdolmaleki, B., *TIE Oct. 2020 8461-8471*
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- Shamekov, A.**, see An, Q., *TIE April 2020 2564-2573*
- Shames, I.**, see Yuan, M., *TIE Oct. 2020 8143-8154*
- Shan, G.**, and Roh, B., Performance Model for Advanced Neighbor Discovery Process in Bluetooth Low Energy 5.0-Enabled Internet of Things Networks; *TIE Dec. 2020 10965-10974*
- Shan, J.**, see Jia, S., *TIE March 2020 2086-2096*
- Shan, J.**, see Chen, T., *TIE Nov. 2020 9937-9947*
- Shan, J.**, see Chen, T., *TIE May 2020 4244-4253*
- Shang, J.**, and Chen, T., Early Classification of Alarm Floods via Exponentially Attenuated Component Analysis; *TIE Oct. 2020 8702-8712*
- Shang, Y.**, Li, X., Qian, H., Wu, S., Pan, Q., Huang, L., and Jiao, Z., A Novel Electro Hydrostatic Actuator System With Energy Recovery Module for More Electric Aircraft; *TIE April 2020 2991-2999*
- Shao, K.**, Zheng, J., Huang, K., Wang, H., Man, Z., and Fu, M., Finite-Time Control of a Linear Motor Positioner Using Adaptive Recursive Terminal Sliding Mode; *TIE Aug. 2020 6659-6668*
- Shao, S.**, see Chen, H., *TIE Feb. 2020 1498-1507*
- Shao, X.**, see Cai, B., *TIE July 2020 5737-5747*
- Sharifi, S.**, see Masoumi, A.H., *TIE July 2020 5410-5420*
- Sharifi, S.**, Monfared, M., and Babaei, M., Ferdowsi Rectifiers—Single-Phase Buck-Boost Bridgeless PFC Rectifiers With Low Semiconductor Count; *TIE Nov. 2020 9206-9214*
- Sharifi, S.**, Monfared, M., Babaei, M., and Pourfaraj, A., Highly Efficient Single-Phase Buck-Boost Variable-Frequency AC-AC Converter With Inherent Commutation Capability; *TIE May 2020 3640-3649*
- Sharma, R.**, and Das, A., Postfault Operation of Cascaded H-Bridge Converter for Equal Power Handling by the Healthy Cells; *TIE Nov. 2020 9174-9183*
- She, J.**, see Wu, M., *TIE Feb. 2020 1254-1260*
- She, J.**, see Du, Y., *TIE April 2020 3013-3023*
- She, J.**, see Wu, J., *TIE June 2020 4721-4728*
- She, J.**, see Yu, P., *TIE Oct. 2020 8670-8679*
- She, J.**, see Zhou, L., *TIE May 2020 4056-4065*
- Shen, A.**, see Tang, Q., *TIE Jan. 2020 136-146*
- Shen, C.**, and Chen, L., Dual-Input Isolated Converter With Dual-Charge-Pump Cell for High Step-Up Voltage Ratio Achievement; *TIE Nov. 2020 9383-9392*
- Shen, F.**, Hui, Y., Yan, R., Sun, C., and Xu, J., A New Penalty Domain Selection Machine Enabled Transfer Learning for Gearbox Fault Recognition; *TIE Oct. 2020 8743-8754*
- Shen, H.**, see Tang, Q., *TIE Jan. 2020 136-146*
- Shen, K.**, Wang, M., Fu, M., Yang, Y., and Yin, Z., Observability Analysis and Adaptive Information Fusion for Integrated Navigation of Unmanned Ground Vehicles; *TIE Sept. 2020 7659-7668*
- Shen, K.**, see Chen, L., *TIE Oct. 2020 8944-8956*
- Shen, L.**, see Fang, T., *TIE Jan. 2020 214-224*
- Shen, S.**, Zhang, Y., Chiu, C., and Murch, R., A Triple-Band High-Gain Multi-beam Ambient RF Energy Harvesting System Utilizing Hybrid Combining; *TIE Nov. 2020 9215-9226*
- Shen, W.**, see Xiong, R., *TIE Feb. 2020 1081-1091*
- Shen, W.**, see Wang, X., *TIE July 2020 5657-5665*
- Shen, X.**, see Xie, H., *TIE March 2020 2430-2439*
- Shen, Y.**, see Wen, Y., *TIE April 2020 2916-2924*
- Shen, Y.**, see Wang, P., *TIE July 2020 5565-5574*
- Shen, Y.**, see Wang, D., *TIE Sept. 2020 7260-7268*
- Shen, Z.**, see Chen, J., *TIE Aug. 2020 6215-6226*
- Shen, Z.J.**, see Peng, Y., *TIE July 2020 5531-5542*
- Shendge, P.D.**, see Phadke, S.B., *TIE Aug. 2020 6815-6823*
- Shi, B.**, see Liang, C., *TIE Aug. 2020 6963-6974*
- Shi, F.**, Li, H., Yang, S.X., Tuo, X., and Lin, M., Novel Maximum Likelihood Estimation of Clock Skew in One-Way Broadcast Time Synchronization; *TIE Nov. 2020 9948-9957*
- Shi, F.**, Cao, H., Zhang, X., and Chen, X., A Reinforced k -Nearest Neighbors Method With Application to Chatter Identification in High-Speed Milling; *TIE Dec. 2020 10844-10855*
- Shi, G.**, see Wang, X., *TIE June 2020 4567-4577*
- Shi, G.**, see Li, L., *TIE Sept. 2020 8064-8071*
- Shi, H.**, see Wu, X., *TIE Feb. 2020 1648-1656*
- Shi, H.**, see Tao, Y., *TIE Sept. 2020 7994-8004*
- Shi, H.**, Wen, H., Hu, Y., Yang, Y., and Wang, Y., Efficiency Optimization of DC Solid-State Transformer for Photovoltaic Power Systems; *TIE May 2020 3583-3595*
- Shi, J.**, Xu, J., Sun, J., and Yang, Y., Iterative Learning Control for Time-Varying Systems Subject to Variable Pass Lengths: Application to Robot Manipulators; *TIE Oct. 2020 8629-8637*
- Shi, J.X.**, see Huang, L., *TIE Nov. 2020 9623-9634*

- Shi, L.**, Liu, B., and Duan, S., Burst-Mode and Phase-Shift Hybrid Control Method of LLC Converters for Wide Output Range Applications; *TIE Feb. 2020 1013-1023*
- Shi, M.**, see Chen, X., *TIE March 2020 1968-1979*
- Shi, Q.**, see Qi, Z., *TIE July 2020 5637-5646*
- Shi, Q.**, see Si, X., *TIE Nov. 2020 9635-9647*
- Shi, S.**, Gu, J., Xu, S., and Min, H., Globally Fixed-Time High-Order Sliding Mode Control for New Sliding Mode Systems Subject to Mismatched Terms and Its Application; *TIE Dec. 2020 10776-10786*
- Shi, W.**, He, S., Peng, J., and Wang, J., Digital Dual-Input Doherty Configuration for Ultrawideband Application; *TIE Sept. 2020 7509-7518*
- Shi, X.**, see Gan, W., *TIE Sept. 2020 7829-7840*
- Shi, Y.**, see Yang, Y., *TIE Jan. 2020 790-799*
- Shi, Y.**, see Zhao, Y., *TIE June 2020 4900-4910*
- Shi, Y.**, see Dey, S., *TIE March 2020 2167-2175*
- Shi, Y.**, see Hu, M., *TIE Sept. 2020 7595-7605*
- Shi, Y.**, see Zhao, N., *TIE Aug. 2020 6916-6926*
- Shih, L.**, see Lin, C., *TIE Aug. 2020 7015-7024*
- Shin, E.**, see Park, W., *TIE Jan. 2020 677-685*
- Shin, H.**, see Park, K., *TIE March 2020 2402-2410*
- Shin, H.**, Chang, J., and Hong, D., Design and Characteristics Analysis of Coaxial Magnetic Gear for Contra-Rotating Propeller in Yacht; *TIE Sept. 2020 7250-7259*
- Shin, H.**, see Jang, D., *TIE Nov. 2020 9526-9535*
- Shin, J.**, see Park, Y., *TIE Dec. 2020 10075-10084*
- Shin, K.**, Kim, D., Park, H., Sim, M., Jang, H., Sohn, J.I., Cha, S.N., and Jang, J.E., Artificial Tactile Sensor With Pin-type Module for Depth Profile and Surface Topography Detection; *TIE Jan. 2020 637-646*
- Shin, Y.**, see Bang, S.S., *TIE May 2020 4163-4171*
- Shmaliy, Y.S.**, see Zhao, S., *TIE March 2020 2294-2303*
- Shmaliy, Y.S.**, see You, S.H., *TIE Dec. 2020 10713-10722*
- Shu, D.**, Wei, Y., Dinavahi, V., Wang, K., Yan, Z., and Li, X., Cosimulation of Shifted-Frequency/Dynamic Phasor and Electromagnetic Transient Models of Hybrid LCC-MMC DC Grids on Integrated CPU-GPUs; *TIE Aug. 2020 6517-6530*
- Shu, Z.**, see Meng, L., *TIE Dec. 2020 10366-10376*
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- Shuai, Z.**, see Zhou, L., *TIE July 2020 5490-5502*
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- Shyrokau, B.**, see Kerst, S., *TIE Jan. 2020 461-470*
- Si, C.**, see Tong, X., *TIE Jan. 2020 581-591*
- Si, J.**, see Xie, L., *TIE Feb. 2020 931-941*
- Si, J.**, see Su, P., *TIE Feb. 2020 906-918*
- Si, X.**, Li, T., Zhang, Q., and Hu, C., Prognostics for Linear Stochastic Degrading Systems With Survival Measurements; *TIE April 2020 3202-3215*
- Si, X.**, Ren, Z., Hu, X., Hu, C., and Shi, Q., A Novel Degradation Modeling and Prognostic Framework for Closed-Loop Systems With Degrading Actuator; *TIE Nov. 2020 9635-9647*
- Si, X.**, see Hu, C., *TIE Oct. 2020 8767-8777*
- Sigrist, L.**, Stricker, N., Bernath, D., Beutel, J., and Thiele, L., Thermoelectric Energy Harvesting From Gradients in the Earth Surface; *TIE Nov. 2020 9460-9470*
- Silva, G.V.**, de Andrade, J.M., Coelho, R.F., and Lazzarin, T.B., Switched-Capacitor Differential Boost Inverter: Design, Modeling, and Control; *TIE July 2020 5421-5431*
- Sim, M.**, see Shin, K., *TIE Jan. 2020 637-646*
- Simon, R.**, see Wu, H., *TIE March 2020 2450-2459*
- Singh, A.**, see Badoni, M., *TIE March 2020 2231-2240*
- Singh, A.K.**, Kumar, S., and Singh, B., Solar PV Energy Generation System Interfaced to Three Phase Grid With Improved Power Quality; *TIE May 2020 3798-3808*
- Singh, B.**, see Chishty, F., *TIE Feb. 2020 1113-1123*
- Singh, B.**, see Sahoo, S., *TIE April 2020 2894-2904*
- Singh, B.**, see Badoni, M., *TIE March 2020 2231-2240*
- Singh, B.**, see Vijay, M. D., *TIE Sept. 2020 7529-7539*
- Singh, B.**, see Singh, A.K., *TIE May 2020 3798-3808*
- Singh, B.**, see Kewat, S., *TIE May 2020 3705-3716*
- Singh, H.**, Janetzko, D., Jafari, A., Weber, B., Lee, C., and Ryu, J., Enhancing the Rate-Hardness of Haptic Interaction: Successive Force Augmentation Approach; *TIE Jan. 2020 809-819*
- Singh, S.**, and Sonar, S., A New SVPWM Technique to Reduce the Inductor Current Ripple of Three-Phase Z-Source Inverter; *TIE May 2020 3540-3550*
- Sirbu, A.**, see Neacsu, D.O., *TIE July 2020 5379-5388*
- Siu, K.K.M.**, Ho, C.N.M., and Li, R.T.H., A Four-Quadrant Single-Phase Grid-Connected Converter With Only Two High-Frequency Switches; *TIE March 2020 1899-1909*
- Sivadas, D.**, and Vasudevan, K., An Active Islanding Detection Strategy With Zero Nondetection Zone for Operation in Single and Multiple Inverter Mode Using GPS Synchronized Pattern; *TIE July 2020 5554-5564*
- Siwakoti, Y.P.**, see Khan, S.A., *TIE Sept. 2020 7364-7374*
- Siwakoti, Y.P.**, Palanisamy, A., Mahajan, A., Liese, S., Long, T., and Blaabjerg, F., Analysis and Design of a Novel Six-Switch Five-Level Active Boost Neutral Point Clamped Inverter; *TIE Dec. 2020 10485-10496*
- Siyang, W.**, see Wenyuan, L., *TIE June 2020 5179-5186*
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- Soh, J.**, see Kang, S., *TIE Jan. 2020 159-168*
- Sohn, J.I.**, see Shin, K., *TIE Jan. 2020 637-646*
- Soleymani, B.**, and Adib, E., A High Step-Down Buck Converter With Self-Driven Synchronous Rectifier; *TIE Dec. 2020 10266-10273*
- Solsona, J.**, see Wang, G., *TIE July 2020 5830-5842*
- Solsona, J.A.**, see Valla, M.I., *TIE July 2020 5825-5829*
- Son, J.J.**, see Lee, H., *TIE Oct. 2020 8829-8840*
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- Son, Y.**, see Yoon, S., *TIE Aug. 2020 6986-6995*
- Sonar, S.**, see Singh, S., *TIE May 2020 3540-3550*
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- Song, C.**, see Zhuang, Y., *TIE Nov. 2020 9471-9479*
- Song, C.**, see Li, W., *TIE Dec. 2020 10787-10797*
- Song, C.**, see Liu, G., *TIE Dec. 2020 10202-10212*
- Song, G.**, see Wang, C., *TIE Feb. 2020 1366-1375*
- Song, J.**, see Zhao, J., *TIE March 2020 1804-1812*
- Song, J.**, Liu, M., and Ma, C., Analysis and Design of a High-Efficiency 6.78-MHz Wireless Power Transfer System With Scalable Number of Receivers; *TIE Oct. 2020 8281-8291*
- Song, J.**, see Liu, M., *TIE May 2020 3618-3628*
- Song, K.**, see Ding, W., *TIE April 2020 2595-2606*
- Song, L.**, see Du, B., *TIE Feb. 2020 1149-1159*
- Song, Q.**, see Guo, G., *TIE April 2020 2798-2809*
- Song, Q.**, see Chen, J., *TIE Aug. 2020 6183-6194*
- Song, Q.**, see Li, X., *TIE Dec. 2020 9991-10000*
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- Song, X.**, see Li, Z., *TIE Nov. 2020 9862-9872*
- Song, Y.**, see Hu, H., *TIE Jan. 2020 244-253*
- Song, Y.**, Sun, J., Saeedifard, M., Ji, S., Zhu, L., and Meliopoulos, A.P.S., Optimum Selection of Circuit Breaker Parameters Based on Analytical Calculation of Overcurrent and Overvoltage in Multiterminal HVDC Grids; *TIE May 2020 4133-4143*
- Song, Z.**, see Zhao, Y., *TIE April 2020 2925-2935*
- Song, Z.**, see Li, G., *TIE July 2020 5810-5815*
- Song, Z.**, Park, H., Delgado, F.P., Wang, H., Li, Z., Hofmann, H.F., Sun, J., and Hou, J., Simultaneous Identification and Control for Hybrid Energy Storage System Using Model Predictive Control and Active Signal Injection; *TIE Nov. 2020 9768-9778*
- Song, Z.**, see Wei, C., *TIE Dec. 2020 10876-10886*
- Song, Z.**, Hu, S., and Zhang, R., Performance Improvement of Open-Winding PMSMs With a Discrete-Time Designed Zero-Sequence Current Controller Based on Virtual Three-Phase Expansion; *TIE Dec. 2020 10046-10054*

- Soni, T.**, Dutt, J.K., and Das, A.S., Parametric Stability Analysis of Active Magnetic Bearing Supported Rotor System With a Novel Control Law Subject to Periodic Base Motion; *TIE Feb. 2020 1160-1170*
- Sorniotti, A.**, see Theunissen, J., *TIE June 2020 4877-4888*
- Sorniotti, A.**, see Tavernini, D., *TIE May 2020 3990-4001*
- Sotelo, M.A.**, see Liu, W., *TIE Nov. 2020 9851-9861*
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- Staines, C.S.**, see Scicluna, K., *TIE July 2020 6010-6018*
- Stamenkovic, D.**, Vemulapati, U.R., Stiasny, T., Rahimo, M., and Dujic, D., IGBT Low-Current Switching—TCAD and Experimental Characterization; *TIE Aug. 2020 6302-6311*
- Stark, B.H.**, see Jahdi, S., *TIE June 2020 4556-4566*
- Staton, D.**, see Liu, C., *TIE Sept. 2020 7343-7353*
- Steczek, M.**, Chudzik, P., Lewandowski, M., and Szelag, A., PSO-Based Optimization of DC-Link Current Harmonics in Traction VSI for an Electric Vehicle; *TIE Oct. 2020 8197-8208*
- Stefanon, S.F.**, Grebogi, R.B., Freire, R.Z., Nied, A., and Meyer, L.H., Optimized Ensemble Extreme Learning Machine for Classification of Electrical Insulators Conditions; *TIE June 2020 5170-5178*
- Stepanov, O.A.**, see Liang, Q., *TIE Feb. 2020 1357-1365*
- Steven, A.**, see Gai, Y., *TIE June 2020 4371-4380*
- Stiasny, T.**, see Stamenkovic, D., *TIE Aug. 2020 6302-6311*
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- Stockman, K.**, see Verbelen, F., *TIE March 2020 1739-1749*
- Stolz, T.**, see Gong, C., *TIE Oct. 2020 8817-8828*
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- Su, C.**, see Li, Z., *TIE April 2020 3096-3106*
- Su, C.**, see Wu, J., *TIE June 2020 4721-4728*
- Su, C.**, see Zhang, X., *TIE Aug. 2020 6824-6834*
- Su, G.**, see Liu, B., *TIE April 2020 3226-3235*
- Su, M.**, see Li, L., *TIE Sept. 2020 8064-8071*
- Su, P.**, Hua, W., Hu, M., Wu, Z., Si, J., Chen, Z., and Cheng, M., Analysis of Stator Slots and Rotor Pole Pairs Combinations of Rotor-Permanent Magnet Flux-Switching Machines; *TIE Feb. 2020 906-918*
- Su, P.**, Hua, W., Hu, M., Chen, Z., Cheng, M., and Wang, W., Analysis of PM Eddy Current Loss in Rotor-PM and Stator-PM Flux-switching Machines by Air-gap Field Modulation Theory; *TIE March 2020 1824-1835*
- Su, R.**, see Zhang, Y., *TIE Dec. 2020 10911-10921*
- Su, Y.**, see Tong, X., *TIE Jan. 2020 581-591*
- Su, Y.**, Comments on “A New Adaptive Sliding-Mode Control Scheme for Application to Robot Manipulators” *TIE Aug. 2020 7116-7120*
- Sui, S.**, see Guo, X., *TIE Sept. 2020 7941-7950*
- Sui, S.**, Chen, C.L.P., Tong, S., and Feng, S., Finite-Time Adaptive Quantized Control of Stochastic Nonlinear Systems With Input Quantization: A Broad Learning System Based Identification Method; *TIE Oct. 2020 8555-8565*
- Sukhatme, Y.**, Miryala, V.K., Ganesan, P., and Hatua, K., Digitally Controlled Gate Current Source-Based Active Gate Driver for Silicon Carbide MOS-FETs; *TIE Dec. 2020 10121-10133*
- Sun, B.**, Gao, C., Liu, X., Chen, Z., and Zheng, T., Voltage-Adjustable Capacitor Isolated Solid-State Transformer; *TIE Sept. 2020 7550-7559*
- Sun, B.**, see Zheng, T., *TIE Dec. 2020 10304-10314*
- Sun, C.**, see Shen, F., *TIE Oct. 2020 8743-8754*
- Sun, C.**, see Mu, C., *TIE Dec. 2020 10951-10964*
- Sun, D.**, see Li, D., *TIE June 2020 4700-4710*
- Sun, D.**, see Wu, H., *TIE March 2020 2450-2459*
- Sun, D.**, see Hu, W., *TIE May 2020 4259-4264*
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- Sun, F.**, see He, H., *TIE Oct. 2020 9012-9023*
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- Sun, J.**, see Chen, N., *TIE July 2020 6031-6042*
- Sun, J.**, see Cao, G., *TIE July 2020 6066-6077*
- Sun, J.**, see Song, Z., *TIE Nov. 2020 9768-9778*
- Sun, J.**, see Shi, J., *TIE Oct. 2020 8629-8637*
- Sun, J.**, Sun, Z., Lam, K., and Zeng, Z., A Robust Point Set Registration Approach With Multiple Effective Constraints; *TIE Dec. 2020 10931-10941*
- Sun, J.**, see Zhao, B., *TIE May 2020 3317-3328*
- Sun, J.**, see Song, Y., *TIE May 2020 4133-4143*
- Sun, K.**, see Wang, C., *TIE Feb. 2020 1520-1531*
- Sun, K.**, see Wu, T., *TIE Nov. 2020 9429-9438*
- Sun, L.**, Adaptive Fault-Tolerant Constrained Control of Cooperative Spacecraft Rendezvous and Docking; *TIE April 2020 3107-3115*
- Sun, L.**, see Xie, H., *TIE March 2020 2430-2439*
- Sun, L.**, see Xie, H., *TIE March 2020 2065-2075*
- Sun, L.**, Taylor, J., Callegaro, A.D., and Emadi, A., Stator-PM-Based Variable Reluctance Resolver With Advantage of Motional Back-EMF; *TIE Nov. 2020 9790-9801*
- Sun, L.**, see Xue, W., *TIE Dec. 2020 10682-10692*
- Sun, L.**, Zhang, Z., Gu, X., Yu, L., and Li, J., Analysis of Reactive Power Compensation Effect of a New Hybrid Excitation Brushless DC Generator; *TIE May 2020 3562-3572*
- Sun, M.**, see Chen, M., *TIE March 2020 2197-2206*
- Sun, N.**, see Chen, H., *TIE Sept. 2020 7702-7714*
- Sun, P.**, see Pei, J., *TIE July 2020 5515-5530*
- Sun, S.**, see Ning, D., *TIE Aug. 2020 6773-6784*
- Sun, W.**, Wang, Z., Xu, D., and Wang, B., Robust Stability Improvement for Speed Sensorless Induction Motor Drive at Low Speed Range by Virtual Voltage Injection; *TIE April 2020 2642-2654*
- Sun, W.**, see Guo, X., *TIE March 2020 1867-1877*
- Sun, W.**, see Chen, J., *TIE Aug. 2020 6215-6226*
- Sun, W.**, Wang, X., and Zhang, C., A Model-Free Control Strategy for Vehicle Lateral Stability With Adaptive Dynamic Programming; *TIE Dec. 2020 10693-10701*
- Sun, X.**, see Ren, B., *TIE April 2020 2810-2821*
- Sun, X.**, see Zhang, Y., *TIE July 2020 6019-6030*
- Sun, X.**, see Yang, S., *TIE July 2020 6112-6123*
- Sun, X.**, Cao, J., Lei, G., Guo, Y., and Zhu, J., Speed Sensorless Control for Permanent Magnet Synchronous Motors Based on Finite Position Set; *TIE July 2020 6089-6100*
- Sun, X.**, see Diao, K., *TIE Dec. 2020 10055-10064*
- Sun, Y.**, see Wang, S., *TIE April 2020 2954-2964*
- Sun, Y.**, see Wang, S., *TIE June 2020 4752-4761*
- Sun, Y.**, see Xiao, D., *TIE July 2020 5924-5935*
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- Sun, Y.**, see Wang, S., *TIE Aug. 2020 6709-6720*
- Sun, Y.**, see Xu, X., *TIE Dec. 2020 10610-10620*
- Sun, Y.**, Xie, X., Zhang, L., and Li, S., A Voltage Adaptive Dynamic Harmonic Model of Nonlinear Home Appliances; *TIE May 2020 3607-3617*
- Sun, Y.**, see Han, J., *TIE May 2020 3431-3441*
- Sun, Z.**, see Chen, Y., *TIE Jan. 2020 601-609*
- Sun, Z.**, see Pan, D., *TIE Feb. 2020 1348-1356*
- Sun, Z.**, see Sun, J., *TIE Dec. 2020 10931-10941*
- Sundaramoorthy, K.**, see Kumar, G.G., *TIE Dec. 2020 10274-10283*
- Sundaria, R.**, Nair, D.G., Lehtikoinen, A., Arkkio, A., and Belahcen, A., Effect of Laser Cutting on Core Losses in Electrical Machines—Measurements and Modeling; *TIE Sept. 2020 7354-7363*
- Sutanto, D.**, see Farrok, O., *TIE May 2020 3409-3418*
- Syu, Y.**, see Liu, Y., *TIE Feb. 2020 1580-1591*
- Szczepankowski, P.**, Wheeler, P., and Bajdecki, T., Application of Analytic Signal and Smooth Interpolation in Pulsewidth Modulation for Conventional Matrix Converters; *TIE Dec. 2020 10011-10023*
- Szelag, A.**, see Steczek, M., *TIE Oct. 2020 8197-8208*

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- Tamura, J.**, see Koiwa, K., *TIE Nov. 2020 9418-9428*
- Tan, C.**, Li, B., and Ge, W., Thermal Quantitative Analysis and Design Method of Bistable Permanent Magnet Actuators Based on Multiphysics Methodology; *TIE Sept. 2020 7727-7735*

- Tan, C.**, see Liu, H., *TIE Oct. 2020 8878-8888*
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- Tan, K.K.**, see Lau, J.Y., *TIE Jan. 2020 402-412*
- Tan, K.K.**, see Ma, J., *TIE July 2020 5575-5585*
- Tan, M.**, see Wu, Z., *TIE April 2020 2945-2953*
- Tan, M.**, see Wang, Y., *TIE Sept. 2020 7629-7638*
- Tan, Q.**, Huang, X., Li, L., and Wang, M., Magnetic Field Analysis and Flux Barrier Design for Modular Permanent Magnet Linear Synchronous Motor; *TIE May 2020 3891-3900*
- Tan, S.**, see Qi, W., *TIE March 2020 1878-1889*
- Tan, S.**, see Tao, Y., *TIE Sept. 2020 7994-8004*
- Tan, S.**, see Yang, Y., *TIE Oct. 2020 9001-9011*
- Tan, S.C.**, see Li, K.H., *TIE June 2020 5154-5160*
- Tan, Y.**, and Zhao, G., Transfer Learning With Long Short-Term Memory Network for State-of-Health Prediction of Lithium-Ion Batteries; *TIE Oct. 2020 8723-8731*
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- Tang, H.**, see Xu, J., *TIE May 2020 3788-3797*
- Tang, J.**, see Li, H., *TIE Feb. 2020 1435-1445*
- Tang, M.**, Formentini, A., Odhano, S.A., and Zanchetta, P., Torque Ripple Reduction of PMSMs Using a Novel Angle-Based Repetitive Observer; *TIE April 2020 2689-2699*
- Tang, M.**, see Ding, Z., *TIE March 2020 2460-2468*
- Tang, Q.**, Shen, A., Luo, P., Shen, H., Li, W., and He, X., IPMSMs Sensorless MTPA Control Based on Virtual q -Axis Inductance by Using Virtual High-Frequency Signal Injection; *TIE Jan. 2020 136-146*
- Tang, Q.**, Qiu, W., and Zhou, Y., Classification of Complex Power Quality Disturbances Using Optimized S-Transform and Kernel SVM; *TIE Nov. 2020 9715-9723*
- Tang, R.**, see Wu, S., *TIE Dec. 2020 10156-10167*
- Tang, Y.**, see Kan, J., *TIE June 2020 4658-4669*
- Tang, Y.**, see Chen, S., *TIE Nov. 2020 9302-9312*
- Tang, Z.**, Chen, Y., Hsu, H., Liang, R., and Hung, C., An Initial States Recognition (ISR) Method for Start-Up of 1Φ BLDC Motor in Hall-Sensor-Less Fan Applications; *TIE Oct. 2020 8302-8311*
- Tani, A.**, see Sala, G., *TIE Sept. 2020 7124-7134*
- Tani, A.**, see Rizzoli, G., *TIE Aug. 2020 6237-6247*
- Tao, R.**, see Zhai, H., *TIE Feb. 2020 1270-1281*
- Tao, Y.**, Shi, H., Song, B., and Tan, S., A Novel Dynamic Weight Principal Component Analysis Method and Hierarchical Monitoring Strategy for Process Fault Detection and Diagnosis; *TIE Sept. 2020 7994-8004*
- Tao, Y.**, Ktistis, C., Zhao, Y., Yin, W., and Peyton, A.J., A Class D Power Amplifier for Multifrequency Eddy Current Testing Based on Multisimultaneous-Frequency Selective Harmonic Elimination Pulsewidth Modulation; *TIE Oct. 2020 8799-8807*
- Tarchala, G.**, see Korzonek, M., *TIE July 2020 5854-5866*
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- Tavazoei, M.S.**, see Sayyaf, N., *TIE March 2020 2176-2185*
- Tavernini, D.**, Vacca, F., Metzler, M., Savitski, D., Ivanov, V., Gruber, P., Hartavi, A.E., Dhaens, M., and Sormiotti, A., An Explicit Nonlinear Model Predictive ABS Controller for Electro-Hydraulic Braking Systems; *TIE May 2020 3990-4001*
- Taylor, J.**, see Sun, L., *TIE Nov. 2020 9790-9801*
- Tebianian, H.**, Salami, Y., Jeyasurya, B., and Quaicoe, J.E., A 13.56-MHz Full-Bridge Class-D ZVS Inverter With Dynamic Dead-Time Control for Wireless Power Transfer Systems; *TIE Feb. 2020 1487-1497*
- Teng, J.**, Gao, W., Czarkowski, D., and Jiang, Z., Optimal Tracking With Disturbance Rejection of Voltage Source Inverters; *TIE June 2020 4957-4968*
- Teodorescu, R.**, see Farias, J.V.M., *TIE Aug. 2020 6206-6214*
- Thenaisie, G.**, Park, C., and Lee, S., A Real-Time Entropy Estimation Algorithm for Lithium Batteries Based on a Combination of Kalman Filter and Nonlinear Observer; *TIE Sept. 2020 8034-8043*
- Theunissen, J.**, Sormiotti, A., Gruber, P., Fallah, S., Ricco, M., Kvasnica, M., and Dhaens, M., Regionless Explicit Model Predictive Control of Active Suspension Systems With Preview; *TIE June 2020 4877-4888*
- Thiele, L.**, see Sigrist, L., *TIE Nov. 2020 9460-9470*
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- Tian, Y.**, see Liang, C., *TIE Aug. 2020 6963-6974*
- Tighe, C.**, see Zhang, F., *TIE March 2020 1728-1738*
- Tinazzi, F.**, Carlet, P.G., Bolognani, S., and Zigliotto, M., Motor Parameter-Free Predictive Current Control of Synchronous Motors by Recursive Least-Square Self-Commissioning Model; *TIE Nov. 2020 9093-9100*
- Tinker, G.**, see Dimitriou, N., *TIE July 2020 5748-5757*
- Titus, J.**, and Hatua, K., An Induction Machine With Tapped Stator Windings for LCI-Fed Medium Voltage Drive Applications; *TIE Sept. 2020 7217-7227*
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- Tong, S.**, see Liu, Y., *TIE Aug. 2020 7044-7053*
- Tong, W.**, see Wu, S., *TIE Dec. 2020 10156-10167*
- Tong, X.**, Su, Y., Li, Z., Si, C., Han, G., Ning, J., and Yang, F., A Double-Step Unscented Kalman Filter and HMM-Based Zero-Velocity Update for Pedestrian Dead Reckoning Using MEMS Sensors; *TIE Jan. 2020 581-591*
- Tong, X.**, see Zhang, Y., *TIE July 2020 5867-5878*
- Tong, Z.**, see Gu, L., *TIE Feb. 2020 1405-1414*
- Tonoli, A.**, see Galluzzi, R., *TIE Feb. 2020 1171-1179*
- Toso, F.**, Berto, M., Alberti, L., and Marcuzzi, F., Efficient QR Updating Factorization for Sensorless Synchronous Motor Drive Based on High Frequency Voltage Injection; *TIE Dec. 2020 10213-10222*
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- Trabelsi, M.**, see Makhameh, H., *TIE May 2020 3717-3725*
- Tran, D.T.**, Ba, D.X., and Ahn, K.K., Adaptive Backstepping Sliding Mode Control for Equilibrium Position Tracking of an Electrohydraulic Elastic Manipulator; *TIE May 2020 3860-3869*
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- Trumper, D.L.**, see Noh, M., *TIE Sept. 2020 7757-7766*
- Tsai, C.**, see Yang, Y., *TIE Aug. 2020 6365-6375*
- Tseng, K.**, Li, I., and Cheng, C., Integrated Buck and Modified Push-Pull DC-DC Converter With High Step-Down Ratio; *TIE Jan. 2020 235-243*
- Tsourdos, A.**, see Chai, R., *TIE Aug. 2020 6904-6915*
- Tsourdos, A.**, see Chai, R., *TIE Dec. 2020 10809-10821*
- Tu, H.**, Du, Y., Yu, H., Dubey, A., Lukic, S., and Karsai, G., Resilient Information Architecture Platform for the Smart Grid: A Novel Open-Source Platform for Microgrid Control; *TIE Nov. 2020 9393-9404*
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- Upamanyu, K.**, and Narayanan, G., Improved Accuracy, Modeling, and Stability Analysis of Power-Hardware-in-Loop Simulation With Open-Loop Inverter as Power Amplifier; *TIE Jan. 2020 369-378*

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- Vacca, F.**, see Tavernini, D., *TIE May 2020 3990-4001*
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- Valla, M.**, see Wang, G., *TIE July 2020 5830-5842*
- Valla, M.I.**, Wang, G., and Solsona, J.A., Guest Editorial: Position Sensorless AC Motor Drives; *TIE July 2020 5825-5829*
- van de Ven, B.A.C.**, see Gong, Z., *TIE Dec. 2020 10464-10473*
- van Hooijdonk, J.A.A.**, see van Horssen, E.P., *TIE Feb. 2020 1212-1221*
- van Horssen, E.P.**, van Hooijdonk, J.A.A., Antunes, D., and Heemels, W.P.M.H., Event- and Deadline-Driven Control of a Self-Localizing Robot With Vision-Induced Delays; *TIE Feb. 2020 1212-1221*
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- Vasquez, J.C.**, see Golestan, S., *TIE March 2020 2480-2484*
- Vasu, R.**, Chattopadhyay, S.K., and Chakraborty, C., Asymmetric Cascaded H-Bridge Multilevel Inverter With Single DC Source per Phase; *TIE July 2020 5398-5409*
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- Vavilov, V.E.**, see Ismagilov, F.R., *TIE March 2020 1750-1758*
- Vazquez, N.**, and Liserre, M., Peak Current Control and Feed-Forward Compensation of a DAB Converter; *TIE Oct. 2020 8381-8391*
- Vazquez, S.**, see Marquez, A., *TIE April 2020 2776-2785*
- Vazquez, S.**, Acuna, P., Aguilera, R.P., Pou, J., Leon, J.I., and Franquelo, L.G., DC-Link Voltage-Balancing Strategy Based on Optimal Switching Sequence Model Predictive Control for Single-Phase H-NPC Converters; *TIE Sept. 2020 7410-7420*
- Vazquez, S.**, see Marquez, A., *TIE Nov. 2020 9039-9047*
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- Vemulapati, U.R.**, see Stamenkovic, D., *TIE Aug. 2020 6302-6311*
- Venkatramanan, D.**, and John, V., A Reconfigurable Solar Photovoltaic Grid-Tied Inverter Architecture for Enhanced Energy Access in Backup Power Applications; *TIE Dec. 2020 10531-10541*
- Verbelen, F.**, Abdallah, A., Vansompel, H., Stockman, K., and Sergeant, P., Sizing Methodology Based on Scaling Laws for a Permanent Magnet Electrical Variable Transmission; *TIE March 2020 1739-1749*
- Verma, B.**, and Padhy, P.K., Robust Fine Tuning of Optimal PID Controller With Guaranteed Robustness; *TIE June 2020 4911-4920*
- Vidal-Idiarte, E.**, see Marcos-Pastor, A., *TIE June 2020 5204-5208*
- Vijay, M. D.**, Singh, B., and Bhuvaneshwari, G., Sensorless SynRG Based Variable Speed Wind Generator and Single-Stage Solar PV Array Integrated Grid System With Maximum Power Extraction Capability; *TIE Sept. 2020 7529-7539*
- Vinnikov, D.**, see Husev, O., *TIE Feb. 2020 1201-1211*
- Vinnikov, D.**, see Chub, A., *TIE March 2020 1944-1955*
- Vinnikov, D.**, see Blinov, A., *TIE Dec. 2020 10552-10563*
- Vo, A.**, Fassenet, M., Kedous-Lebouc, A., Blache, F., Boudinet, C., and Vaillant, M., Novel Adaptive Controller for Effective Magnetic Measurement Under Arbitrary Magnetization; *TIE Nov. 2020 9841-9850*
- Vosoughi, N.**, Hosseini, S.H., and Sabahi, M., A New Single-Phase Transformerless Grid-Connected Inverter With Boosting Ability and Common Ground Feature; *TIE Nov. 2020 9313-9325*
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- Wallmark, O.**, see Millinger, J., *TIE Aug. 2020 6280-6289*
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- Wang, A.**, see Guo, Y., *TIE March 2020 2220-2230*
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- Wang, B.**, Wang, J., Griffio, A., and Huang, L., A Turn Fault Mitigation Strategy Based on Current Injection Technique for a Triple Three-Phase PMA SynRM; *TIE April 2020 2511-2522*
- Wang, B.**, Li, H., and Yang, H., Spatial Correlation-Based Incremental Learning for Spatiotemporal Modeling of Battery Thermal Process; *TIE April 2020 2885-2893*
- Wang, B.**, see Guo, X., *TIE Sept. 2020 7941-7950*
- Wang, B.**, see Guo, X., *TIE Nov. 2020 9348-9357*
- Wang, B.**, Dong, S., Liu, F., and Hu, J., A Simple Equivalent Temperature Rise Test Method Suitable for Safely Evaluating Thermal Limits of Motors and Power Devices Without Model Dependence; *TIE Oct. 2020 8755-8766*
- Wang, B.**, see Luo, C., *TIE May 2020 3386-3397*
- Wang, B.**, see Deng, Z., *TIE May 2020 3980-3989*
- Wang, C.**, Wang, K., Zheng, Z., Sun, K., and Li, Y., Modulation Induced Current Imbalance and Its Sensorless Control of a GaN-Based Four-Phase DC-DC Power Amplifier; *TIE Feb. 2020 1520-1531*
- Wang, C.**, Wang, N., Ho, S., Chen, X., and Song, G., Design of a New Vision-Based Method for the Bolts Looseness Detection in Flange Connections; *TIE Feb. 2020 1366-1375*
- Wang, C.**, see Wu, Z., *TIE April 2020 2655-2666*
- Wang, C.**, see Liu, Y., *TIE June 2020 4381-4390*
- Wang, C.**, see He, J., *TIE July 2020 5232-5245*
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- Wang, C.**, Guo, L., Wen, C., Hu, Q., and Qiao, J., Event-Triggered Adaptive Attitude Tracking Control for Spacecraft With Unknown Actuator Faults; *TIE March 2020 2241-2250*
- Wang, C.**, Li, X., Tian, T., Xu, Z., and Chen, R., Coordinated Control of Passive Transition from Grid-Connected to Islanded Operation for Three/Single-Phase Hybrid Multimicrogrids Considering Speed and Smoothness; *TIE March 2020 1921-1931*
- Wang, C.**, see Zhang, Z., *TIE Sept. 2020 7269-7279*
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- Wang, C.**, see He, J., *TIE Oct. 2020 8472-8483*
- Wang, C.**, Liang, M., and Chai, Y., Finite-Time Identification Algorithm for Volumetric Efficiency Map in SI Gasoline Engines; *TIE Dec. 2020 10702-10712*
- Wang, C.**, see Chen, T., *TIE May 2020 4152-4162*
- Wang, D.**, Ohnishi, K., and Xu, W., Multimodal Haptic Display for Virtual Reality: A Survey; *TIE Jan. 2020 610-623*
- Wang, D.**, Ohnishi, K., and Xu, W., Novel Emerging Sensing, Actuation, and Control Techniques for Haptic Interaction and Teleoperation; *TIE Jan. 2020 624-626*
- Wang, D.**, see Zhang, Q., *TIE June 2020 4338-4349*
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- Wang, D.**, Wang, M., Shen, Y., Li, Q., and Liang, X., Online Feedback Dead Time Compensation Strategy for Three-Level T-Type Inverters; *TIE Sept. 2020 7260-7268*
- Wang, D.**, Jin, N., Zhai, L., and Ren, Y., Measurement of Liquid Film Thickness Using Distributed Conductance Sensor in Multiphase Slug Flow; *TIE Oct. 2020 8841-8850*
- Wang, D.**, Zhou, L., Yang, Z., Cui, Y., Wang, L., Jiang, J., and Guo, L., A New Testing Method for the Dielectric Response of Oil-Immersed Transformer; *TIE Dec. 2020 10833-10843*
- Wang, F.**, see Liu, B., *TIE Feb. 2020 1592-1604*
- Wang, F.**, see Ren, R., *TIE Feb. 2020 1475-1486*

- Wang, F., see Yan, L., *TIE April 2020 2574-2584*
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- Wang, G., see Valla, M.I., *TIE July 2020 5825-5829*
- Wang, G., Valla, M., and Solsona, J., Position Sensorless Permanent Magnet Synchronous Machine Drives—A Review; *TIE July 2020 5830-5842*
- Wang, G., see Ding, D., *TIE May 2020 3517-3527*
- Wang, H., see Huang, Y., *TIE Feb. 2020 1376-1386*
- Wang, H., see Li, Z., *TIE Feb. 2020 1124-1135*
- Wang, H., see Geng, S., *TIE April 2020 3298-3306*
- Wang, H., and Li, F., Design Consideration and Characteristic Investigation of Modular Permanent Magnet Bearingless Switched Reluctance Motor; *TIE June 2020 4326-4337*
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- Wang, H., see Liu, G., *TIE July 2020 5360-5368*
- Wang, H., Ge, X., Yue, Y., and Liu, Y., Dual Phase-Locked Loop-Based Speed Estimation Scheme for Sensorless Vector Control of Linear Induction Motor Drives; *TIE July 2020 5900-5912*
- Wang, H., and Fang, S., Design of New Dual-Stator Field Modulation Machines; *TIE July 2020 5626-5636*
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- Wang, H., see Wu, Q., *TIE Nov. 2020 9882-9892*
- Wang, H., see Shao, K., *TIE Aug. 2020 6659-6668*
- Wang, H., Mi, C., Cao, Z., Zheng, J., Man, Z., Jin, X., and Tang, H., Precise Discrete-Time Steering Control for Robotic Fish Based on Data-Assisted Technique and Super-Twisting-Like Algorithm; *TIE Dec. 2020 10587-10599*
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- Wang, J., see Chen, X., *TIE Feb. 2020 895-905*
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- Wang, J., Lin, C., Huang, K., and Wong, J., The Novel Quasi-Resonant Flyback Converter With Autoregulated Structure for Parallel/Serial Input; *TIE Feb. 2020 992-1004*
- Wang, J., see He, T., *TIE April 2020 3191-3201*
- Wang, J., Wen, G., Duan, Z., and Lu, J., Stochastic Consensus Control Integrated With Performance Improvement: A Consensus Region-Based Approach; *TIE April 2020 3000-3012*
- Wang, J., see Liu, B., *TIE April 2020 3226-3235*
- Wang, J., see Wang, B., *TIE April 2020 2511-2522*
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- Wang, J., see Li, J., *TIE Aug. 2020 6732-6741*
- Wang, J., Jiang, J., Duan, F., Zhang, F., Liu, W., and Qu, X., A Novel Fast Resonance Frequency Tracking Method Based on the Admittance Circle for Ultrasonic Transducers; *TIE Aug. 2020 6864-6873*
- Wang, J., Luo, X., Wang, L., Zuo, Z., and Guan, X., Integral Sliding Mode Control Using a Disturbance Observer for Vehicle Platoons; *TIE Aug. 2020 6639-6648*
- Wang, J., Gui, Z., and Weidong, J., Comments on “Fault-Tolerant Control Strategies for T-Type Three-Level Inverters Considering Neutral-Point Voltage Oscillations” *TIE Aug. 2020 7114-7115*
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- Wang, J., and Meng, M.Q., Optimal Path Planning Using Generalized Voronoi Graph and Multiple Potential Functions; *TIE Dec. 2020 10621-10630*
- Wang, K., see Peng, C., *TIE Jan. 2020 480-489*
- Wang, K., see Wang, C., *TIE Feb. 2020 1520-1531*
- Wang, K., and Wu, Z., Oversampling Synchronous Envelope Detection for Resolver-to-Digital Conversion; *TIE June 2020 4867-4876*
- Wang, K., see Zhou, X., *TIE March 2020 1782-1791*
- Wang, K., Zheng, Z., Xu, L., and Li, Y., An Optimized Carrier-Based PWM Method and Voltage Balancing Control for Five-Level ANPC Converters; *TIE Nov. 2020 9120-9132*
- Wang, K., see Zhang, X., *TIE Aug. 2020 6312-6322*
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- Wang, K., see Li, J., *TIE May 2020 3374-3385*
- Wang, K., Zhou, B., Zhou, X., Jiang, S., and Wei, J., The Output Voltage Control Strategy for DSEG With Controlled Rectification Based on Conduction Angle Estimation; *TIE May 2020 3350-3360*
- Wang, L., see Guo, F., *TIE April 2020 3043-3053*
- Wang, L., see Zhao, J., *TIE July 2020 5349-5359*
- Wang, L., see Zhao, J., *TIE March 2020 1804-1812*
- Wang, L., Zhu, Z.Q., Bin, H., and Gong, L.M., Current Harmonics Suppression Strategy for PMSM With Nonsinusoidal Back-EMF Based on Adaptive Linear Neuron Method; *TIE Nov. 2020 9164-9173*
- Wang, L., and Chai, T., Signal Compensation Based Adaptive Cascade Control for Regrinding Processes; *TIE Oct. 2020 8732-8742*
- Wang, L., see Cheng, H., *TIE Oct. 2020 8231-8241*
- Wang, L., see Li, J., *TIE Aug. 2020 6732-6741*
- Wang, L., see Wang, J., *TIE Aug. 2020 6639-6648*
- Wang, L., see Wang, D., *TIE Dec. 2020 10833-10843*
- Wang, L., see Khan, A.A., *TIE Dec. 2020 10442-10454*
- Wang, L., see Huai, Z., *TIE May 2020 3879-3890*
- Wang, L., see Zhang, Y., *TIE May 2020 3340-3349*
- Wang, M., see Wang, D., *TIE Sept. 2020 7260-7268*
- Wang, M., see Shen, K., *TIE Sept. 2020 7659-7668*
- Wang, M., see An, B., *TIE Aug. 2020 6270-6279*
- Wang, M., Zhang, X., Zhao, T., Ma, M., Hu, Y., Wang, F., and Wang, X., Harmonic Compensation Strategy for Single-Phase Cascaded H-Bridge PV Inverter Under Unbalanced Power Conditions; *TIE Dec. 2020 10474-10484*
- Wang, M., see Tan, Q., *TIE May 2020 3891-3900*
- Wang, N., see Wang, C., *TIE Feb. 2020 1366-1375*
- Wang, N., and He, H., Dynamics-Level Finite-Time Fuzzy Monocular Visual Servo of an Unmanned Surface Vehicle; *TIE Nov. 2020 9648-9658*
- Wang, N., see Wu, G., *TIE Nov. 2020 9976*
- Wang, N., and Ki Ahn, C., Hyperbolic-Tangent LOS Guidance-Based Finite-Time Path Following of Underactuated Marine Vehicles; *TIE Oct. 2020 8566-8575*
- Wang, P., see Jiang, W., *TIE Feb. 2020 884-894*
- Wang, P., see Lei, M., *TIE June 2020 4292-4304*
- Wang, P., see Lin, P., *TIE June 2020 4600-4612*
- Wang, P., Lu, H., and Shen, Y., Flexible 3-D Helix Fabrication by In-Situ SEM Micromanipulation System; *TIE July 2020 5565-5574*
- Wang, P., see Lei, M., *TIE March 2020 1671-1683*
- Wang, P., see Chen, B., *TIE March 2020 2009-2020*
- Wang, P., see Jiang, W., *TIE Nov. 2020 9450-9459*
- Wang, P., see An, B., *TIE Aug. 2020 6270-6279*
- Wang, P., see Deng, Z., *TIE May 2020 3980-3989*
- Wang, Q., see Gao, F., *TIE June 2020 4785-4796*
- Wang, Q., see Cui, P., *TIE June 2020 4946-4956*
- Wang, Q., see Deng, F., *TIE Nov. 2020 9370-9382*
- Wang, Q., see Xie, F., *TIE Nov. 2020 9601-9612*
- Wang, Q., see Li, W., *TIE Dec. 2020 10410-10420*
- Wang, R., see Zheng, H., *TIE Feb. 2020 1293-1304*
- Wang, R., Li, Q., Li, G., and Liu, H., A Gossip-Based Distributed Algorithm for Economic Dispatch in Smart Grids With Random Communication Link Failures; *TIE June 2020 4635-4645*
- Wang, R., see Wang, Y., *TIE Sept. 2020 7629-7638*
- Wang, S., see Li, H., *TIE Feb. 2020 1435-1445*
- Wang, S., see Bao, Y., *TIE April 2020 2553-2563*
- Wang, S., Kang, J., Degano, M., Galassini, A., and Gerada, C., An Accurate Wide-Speed Range Control Method of IPMSM Considering Resistive Voltage Drop and Magnetic Saturation; *TIE April 2020 2630-2641*

- Wang, S.,** Hong, J., Sun, Y., and Cao, H., Analysis of Zeroth-Mode Slot Frequency Vibration of Integer Slot Permanent-Magnet Synchronous Motors; *TIE April 2020 2954-2964*
- Wang, S.,** Hong, J., Sun, Y., and Cao, H., Effect Comparison of Zigzag Skew PM Pole and Straight Skew Slot for Vibration Mitigation of PM Brush DC Motors; *TIE June 2020 4752-4761*
- Wang, S.,** Ahmed, K.H., Adam, G.P., Massoud, A.M., and Williams, B.W., A Novel Converter Station Structure for Improving Multiterminal HVDC System Resiliency Against AC and DC Faults; *TIE June 2020 4270-4280*
- Wang, S.,** see Abdel-Aziz, A.A., *TIE July 2020 5313-5324*
- Wang, S.,** see Xia, Z., *TIE March 2020 2251-2261*
- Wang, S.,** see Liu, F., *TIE March 2020 2391-2401*
- Wang, S.,** see Zhang, A., *TIE Sept. 2020 7606-7616*
- Wang, S.,** see Wang, Y., *TIE Sept. 2020 7629-7638*
- Wang, S.,** see Ma, J., *TIE Oct. 2020 8322-8334*
- Wang, S.,** see Li, J., *TIE Aug. 2020 6732-6741*
- Wang, S.,** see Xian, B., *TIE Aug. 2020 6669-6678*
- Wang, S.,** Hong, J., Sun, Y., Zheng, Z., and Cao, H., Filling Force Valley With Interpoles for Pole-Frequency Vibration Reduction in Surface-Mounted PM Synchronous Machines; *TIE Aug. 2020 6709-6720*
- Wang, S.,** see Moeini, A., *TIE Dec. 2020 10388-10398*
- Wang, S.X.,** see Xue, F., *TIE Jan. 2020 551-559*
- Wang, S.X.,** see Xue, F., *TIE April 2020 3257-3266*
- Wang, T.,** Lu, G., and Yan, P., A Novel Statistical Time-Frequency Analysis for Rotating Machine Condition Monitoring; *TIE Jan. 2020 531-541*
- Wang, T.,** see Yang, H., *TIE July 2020 5258-5268*
- Wang, T.,** Chen, C., Liu, P., Liu, T., Chao, Z., and Duan, S., A Hybrid Space-Vector Modulation Method for Harmonics and Current Ripple Reduction of Interleaved Vienna Rectifier; *TIE Oct. 2020 8088-8099*
- Wang, T.D.,** see Chen, Y., *TIE Feb. 2020 1328-1336*
- Wang, W.,** see Guan, Y., *TIE Feb. 2020 1555-1567*
- Wang, W.,** see Wang, X., *TIE April 2020 3149-3156*
- Wang, W.,** see Su, P., *TIE March 2020 1824-1835*
- Wang, W.,** see Guo, Y., *TIE March 2020 2220-2230*
- Wang, W.,** see Yang, C., *TIE Nov. 2020 9659-9670*
- Wang, W.,** see Hua, W., *TIE Dec. 2020 10035-10045*
- Wang, W.,** see Chen, X., *TIE May 2020 4066-4076*
- Wang, X.,** see Zhang, F., *TIE Jan. 2020 308-318*
- Wang, X.,** and Wang, W., Extended Signal-Correction Observer and Application to Aircraft Navigation; *TIE April 2020 3149-3156*
- Wang, X.,** Xia, Y., Shi, G., Xia, H., Ye, Y., and Chen, Z., Self-Powered Piezoelectric and Thermoelectric Energy Simultaneous Extraction Interface Circuit Based on Double Stack Resonance; *TIE June 2020 4567-4577*
- Wang, X.,** Sala, G., Zhang, H., Gu, C., Buticchi, G., Formentini, A., Gerada, C., and Wheeler, P., Torque Ripple Reduction in Sectorized Multi Three-Phase Machines Based on PWM Carrier Phase Shift; *TIE June 2020 4315-4325*
- Wang, X.,** Choi, T., Yue, X., Zhang, M., and Du, W., An Effective Optimization Algorithm for Application Mapping in Network-on-Chip Designs; *TIE July 2020 5798-5809*
- Wang, X.,** Huang, Y., Shen, W., Wu, F., and Gao, D., Analytic Modeling Optimal Control of Pulsed Power Supply for Accelerator Magnet; *TIE July 2020 5657-5665*
- Wang, X.,** see Ma, J., *TIE July 2020 5687-5695*
- Wang, X.,** see He, Y., *TIE March 2020 2348-2359*
- Wang, X.,** see Wang, Z., *TIE Sept. 2020 7202-7216*
- Wang, X.,** see Hu, C., *TIE Oct. 2020 8767-8777*
- Wang, X.,** see Yu, D., *TIE Oct. 2020 8450-8460*
- Wang, X.,** see Ma, J., *TIE Oct. 2020 8322-8334*
- Wang, X.,** see Gu, C., *TIE Oct. 2020 8271-8280*
- Wang, X.,** see Yu, Q., *TIE Oct. 2020 8123-8130*
- Wang, X.,** see Yang, S., *TIE Dec. 2020 10887-10896*
- Wang, X.,** see Cheng, Y., *TIE Dec. 2020 10024-10034*
- Wang, X.,** see Sun, W., *TIE Dec. 2020 10693-10701*
- Wang, X.,** see Wang, M., *TIE Dec. 2020 10474-10484*
- Wang, X.,** Wang, Z., Xu, Z., Cheng, M., and Hu, Y., Optimization of Torque Tracking Performance for Direct-Torque-Controlled PMSM Drives With Composite Torque Regulator; *TIE Dec. 2020 10095-10108*
- Wang, X.,** see Zhao, X., *TIE May 2020 4108-4119*
- Wang, X.,** see Wu, T., *TIE May 2020 3901-3910*
- Wang, Y.,** see Li, Y., *TIE Jan. 2020 560-568*
- Wang, Y.,** Chen, B., Hou, Y., Meng, Z., and Yang, Y., Analysis and Design of a 1-MHz Bidirectional Multi-CLLC Resonant DC-DC Converter With GaN Devices; *TIE Feb. 2020 1425-1434*
- Wang, Y.,** see Guan, Y., *TIE Feb. 2020 1555-1567*
- Wang, Y.,** Lucia, O., and Zhang, Z., High and Very High Frequency Power Supplies for Industrial Applications; *TIE Feb. 2020 1400-1404*
- Wang, Y.,** see Gao, S., *TIE Feb. 2020 1455-1465*
- Wang, Y.,** see Chu, G., *TIE April 2020 2822-2833*
- Wang, Y.,** see Hu, Z., *TIE April 2020 3216-3225*
- Wang, Y.,** see Li, D., *TIE April 2020 3116-3125*
- Wang, Y.,** see Yin, Z., *TIE June 2020 4826-4835*
- Wang, Y.,** see Wu, J., *TIE June 2020 4721-4728*
- Wang, Y.,** see Gong, C., *TIE July 2020 5913-5923*
- Wang, Y.,** Xu, W., Zhang, X., and Ma, W., Harmonic Analysis of Air Gap Magnetic Field in Flux-Modulation Double-Stator Electrical-Excitation Synchronous Machine; *TIE July 2020 5302-5312*
- Wang, Y.,** Xu, Y., and Zou, J., ILC-Based Voltage Compensation Method for PMSM Sensorless Control Considering Inverter Nonlinearity and Sampling Current DC Bias; *TIE July 2020 5980-5989*
- Wang, Y.,** see Liu, Y., *TIE July 2020 5595-5603*
- Wang, Y.,** see Ding, Z., *TIE March 2020 2460-2468*
- Wang, Y.,** see Chen, B., *TIE March 2020 2009-2020*
- Wang, Y.,** see Liu, F., *TIE March 2020 2391-2401*
- Wang, Y.,** see Zhang, A., *TIE Sept. 2020 7606-7616*
- Wang, Y.,** Wang, R., Wang, S., Tan, M., and Yu, J., Underwater Bioinspired Propulsion: From Inspection to Manipulation; *TIE Sept. 2020 7629-7638*
- Wang, Y.,** see Li, X., *TIE Sept. 2020 7889-7897*
- Wang, Y.,** see Hu, M., *TIE Sept. 2020 7595-7605*
- Wang, Y.,** see He, H., *TIE Oct. 2020 9012-9023*
- Wang, Y.,** see He, J., *TIE Oct. 2020 8472-8483*
- Wang, Y.,** see Li, G., *TIE Aug. 2020 6572-6582*
- Wang, Y.,** see Bao, D., *TIE Dec. 2020 10065-10074*
- Wang, Y.,** see Hu, C., *TIE Dec. 2020 10922-10930*
- Wang, Y.,** see Li, W., *TIE Dec. 2020 10410-10420*
- Wang, Y.,** see Liu, G., *TIE Dec. 2020 10202-10212*
- Wang, Y.,** Lyu, G., Wei, J., Zheng, Z., He, J., Lei, J., and Chen, K.J., Characterization of Static and Dynamic Behavior of 1200 V Normally off GaN/SiC Cascode Devices; *TIE Dec. 2020 10284-10294*
- Wang, Y.,** see Zhong, H., *TIE Dec. 2020 10564-10574*
- Wang, Y.,** see Xu, J., *TIE May 2020 3788-3797*
- Wang, Y.,** see Cao, J., *TIE May 2020 3809-3818*
- Wang, Y.,** see Shi, H., *TIE May 2020 3583-3595*
- Wang, Z.,** see Lu, J., *TIE Jan. 2020 69-79*
- Wang, Z.,** see Zhai, H., *TIE Feb. 2020 1270-1281*
- Wang, Z.,** see Sun, W., *TIE April 2020 2642-2654*
- Wang, Z.,** Cheng, L., Wang, H., Zhao, W., and Song, X., Energy Optimization by Software Prefetching for Task Granularity in GPU-Based Embedded Systems; *TIE June 2020 5120-5131*
- Wang, Z.,** see Zhang, H., *TIE June 2020 4496-4506*
- Wang, Z.,** see Yuan, Y., *TIE March 2020 2155-2166*
- Wang, Z.,** see Zhou, D., *TIE March 2020 2337-2347*
- Wang, Z.,** Wang, D., Zhang, Y., Liu, J., Wen, L., Xu, W., and Zhang, Y., A Three-Fingered Force Feedback Glove Using Fiber-Reinforced Soft Bending Actuators; *TIE Sept. 2020 7681-7690*
- Wang, Z.,** Wang, X., Yang, X., Wen, C., Gong, Y., and Hu, Y., Mitigation of DC-Link Current Ripple for Dual Three-Phase Flux-Adjustable Hybrid PMAC Drives Using Collaborative Switching Strategy; *TIE Sept. 2020 7202-7216*
- Wang, Z.,** see Ma, J., *TIE Oct. 2020 8649-8658*
- Wang, Z.,** see Chen, L., *TIE Oct. 2020 8944-8956*
- Wang, Z.,** see Lu, J., *TIE Aug. 2020 6331-6341*
- Wang, Z.,** see Wang, X., *TIE Dec. 2020 10095-10108*
- Wang, Z.,** see Zhang, H., *TIE Dec. 2020 10798-10808*
- Wankhede, A.K.,** see S., N., *TIE July 2020 5269-5277*

- Weber, B.**, *see* Singh, H., *TIE Jan. 2020 809-819*
- Wei, C.**, and Song, Z., Generalized Semisupervised Self-Optimizing Kernel Model for Quality-Related Industrial Process Monitoring; *TIE Dec. 2020 10876-10886*
- Wei, J.**, Dong, G., and Chen, Z., Lyapunov-Based Thermal Fault Diagnosis of Cylindrical Lithium-Ion Batteries; *TIE June 2020 4670-4679*
- Wei, J.**, Xue, H., Zhou, B., Zhang, Z., and Yang, T., Rotor Position Estimation Method for Brushless Synchronous Machine Based on Second-Order Generated Integrator in the Starting Mode; *TIE July 2020 6135-6146*
- Wei, J.**, *see* Wang, Y., *TIE Dec. 2020 10284-10294*
- Wei, J.**, *see* Wang, K., *TIE May 2020 3350-3360*
- Wei, Q.**, *see* Hou, B., *TIE May 2020 4216-4225*
- Wei, S.**, *see* Liu, B., *TIE April 2020 3226-3235*
- Wei, T.**, *see* Zhai, H., *TIE Feb. 2020 1270-1281*
- Wei, X.**, *see* Dongye, Z., *TIE Dec. 2020 10315-10324*
- Wei, Y.**, Luo, Q., Du, X., Altin, N., Alonso, J.M., and Mantooth, H.A., Analysis and Design of the LLC Resonant Converter With Variable Inductor Control Based on Time-Domain Analysis; *TIE July 2020 5432-5443*
- Wei, Y.**, Sun, Y., Qi, H., and Guo, X., Prediction Horizons Optimized Nonlinear Predictive Control for Permanent Magnet Synchronous Motor Position System; *TIE Nov. 2020 9153-9163*
- Wei, Y.**, *see* Wei, Y., *TIE Nov. 2020 9153-9163*
- Wei, Y.**, *see* Shu, D., *TIE Aug. 2020 6517-6530*
- Wei, Y.**, *see* Zhao, B., *TIE May 2020 3317-3328*
- Weidong, J.**, *see* Wang, J., *TIE Aug. 2020 7114-7115*
- Wen, C.**, *see* Guo, F., *TIE April 2020 3043-3053*
- Wen, C.**, *see* Wang, C., *TIE March 2020 2241-2250*
- Wen, C.**, *see* Wang, Z., *TIE Sept. 2020 7202-7216*
- Wen, C.**, *see* Huang, X., *TIE Sept. 2020 7798-7807*
- Wen, G.**, *see* Wang, J., *TIE April 2020 3000-3012*
- Wen, G.**, Chen, C.L.P., and Li, B., Optimized Formation Control Using Simplified Reinforcement Learning for a Class of Multiagent Systems With Unknown Dynamics; *TIE Sept. 2020 7879-7888*
- Wen, G.**, *see* Cheng, Y., *TIE Dec. 2020 10672-10681*
- Wen, H.**, *see* Chu, G., *TIE April 2020 2822-2833*
- Wen, H.**, *see* Lu, J., *TIE July 2020 6101-6111*
- Wen, H.**, *see* Gong, C., *TIE Oct. 2020 8131-8142*
- Wen, H.**, *see* Bu, Q., *TIE Oct. 2020 8587-8598*
- Wen, H.**, *see* Shi, H., *TIE May 2020 3583-3595*
- Wen, J.**, *see* Chen, X., *TIE March 2020 1968-1979*
- Wen, J.**, *see* Bu, Q., *TIE Oct. 2020 8587-8598*
- Wen, L.**, *see* Wang, Z., *TIE Sept. 2020 7681-7690*
- Wen, W.**, *see* Fang, Y., *TIE Nov. 2020 9893-9903*
- Wen, Y.**, Lu, H., Shen, Y., and Xie, H., Nanorobotic Manipulation System for 360° Characterization Atomic Force Microscopy; *TIE April 2020 2916-2924*
- Wen, Y.**, *see* Xie, H., *TIE March 2020 2430-2439*
- Wenyuan, L.**, Siyang, W., and Lin, W., A Multiperson Behavior Feature Generation Model Based on Noise Reduction Using WiFi; *TIE June 2020 5179-5186*
- Wheeler, P.**, *see* Wang, X., *TIE June 2020 4315-4325*
- Wheeler, P.**, *see* Khowja, M.R., *TIE March 2020 1844-1854*
- Wheeler, P.**, *see* Chen, L., *TIE Oct. 2020 8944-8956*
- Wheeler, P.**, *see* Szczepankowski, P., *TIE Dec. 2020 10011-10023*
- Wheeler, P.W.**, *see* Xiao, Q., *TIE June 2020 5197-5203*
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- Wilczynski, F.**, *see* Morawiec, M., *TIE June 2020 4305-4314*
- Williams, B.W.**, *see* Wang, S., *TIE June 2020 4270-4280*
- Williams, B.W.**, *see* Abdel-Aziz, A.A., *TIE July 2020 5313-5324*
- Williams, H.**, *see* Li, J., *TIE Oct. 2020 8900-8909*
- Williamson, S.S.**, *see* Ronanki, D., *TIE April 2020 2585-2594*
- Wiseman, J.**, *see* Xiao, D., *TIE July 2020 5924-5935*
- Wong, C.**, *see* Li, S., *TIE Oct. 2020 8484-8494*
- Wong, J.**, *see* Wang, J., *TIE Feb. 2020 992-1004*
- Wong, S.**, Lin, J., YangYang, Zhu, H., Chen, R., Zhu, L., and He, Y., Cavity Balanced and Unbalanced Diplexer Based on Triple-Mode Resonator; *TIE June 2020 4969-4979*
- Wotherspoon, T.**, *see* Dimitriou, N., *TIE July 2020 5748-5757*
- Wu, B.**, *see* Bao, D., *TIE Dec. 2020 10065-10074*
- Wu, C.**, *see* He, Z., *TIE Jan. 2020 390-401*
- Wu, C.**, Cheng, P., Nian, H., and Blaabjerg, F., Rotor Current Oriented Control Method of DFIG-DC System Without Stator Side Sensors; *TIE Nov. 2020 9958-9962*
- Wu, C.**, *see* Wu, T., *TIE May 2020 3901-3910*
- Wu, F.**, *see* Wang, X., *TIE July 2020 5657-5665*
- Wu, G.**, *see* Li, Y., *TIE Nov. 2020 9480-9491*
- Wu, G.**, Xu, J., Zhang, X., Wang, N., Yan, D., Lim, J.L.K., Zhu, Y., Li, W., and Gu, Y., Correction to “Wafer-Level Vacuum-Packaged High-Performance AlN-on-SOI Piezoelectric Resonator for Sub-100-MHz Oscillator Applications” [Apr 18 3576-3584]; *TIE Nov. 2020 9976*
- Wu, H.**, *see* Lu, B., *TIE Feb. 2020 1337-1347*
- Wu, H.**, Yan, Y., Sun, D., and Simon, R., VCA Protocol-Based Multilevel Flexible Architecture on Embedded PLCs for Visual Servo Control; *TIE March 2020 2450-2459*
- Wu, H.**, *see* Ouyang, S., *TIE May 2020 3684-3695*
- Wu, J.**, *see* Ren, R., *TIE Feb. 2020 1475-1486*
- Wu, J.**, *see* Zhao, J., *TIE June 2020 4774-4784*
- Wu, J.**, She, J., Wang, Y., and Su, C., Position and Posture Control of Planar Four-Link Underactuated Manipulator Based on Neural Network Model; *TIE June 2020 4721-4728*
- Wu, J.**, and Lu, Y., Decoupling and Optimal Control of Multilevel Buck DC-DC Converters With Inverse System Theory; *TIE Sept. 2020 7861-7870*
- Wu, J.**, Mizuno, Y., and Nakamura, K., Piezoelectric Motor Utilizing an Alumina/PZT Transducer; *TIE Aug. 2020 6762-6772*
- Wu, K.**, *see* Guo, L., *TIE May 2020 3736-3746*
- Wu, L.**, Yin, H., Wang, D., and Fang, Y., On-Load Field Prediction in SPM Machines by a Subdomain and Magnetic Circuit Hybrid Model; *TIE Sept. 2020 7190-7201*
- Wu, L.**, *see* Zhao, G., *TIE Oct. 2020 8851-8859*
- Wu, L.**, Zhu, J., and Fang, Y., A Novel Doubly-Fed Flux-Switching Permanent Magnet Machine With Armature Windings Wound on Both Stator Poles and Rotor Teeth; *TIE Dec. 2020 10223-10232*
- Wu, M.**, Gao, F., Yu, P., She, J., and Cao, W., Improve Disturbance-Rejection Performance for an Equivalent-Input-Disturbance-Based Control System by Incorporating a Proportional-Integral Observer; *TIE Feb. 2020 1254-1260*
- Wu, M.**, *see* Du, S., *TIE Feb. 2020 1233-1241*
- Wu, M.**, *see* Du, Y., *TIE April 2020 3013-3023*
- Wu, M.**, Chen, X., Qi, C., and Mu, X., Considering Losses to Enhance Circuit Model Accuracy of Ultrasonic Wireless Power Transfer System; *TIE Oct. 2020 8788-8798*
- Wu, M.**, *see* Yu, P., *TIE Oct. 2020 8670-8679*
- Wu, Q.**, *see* Yong, K., *TIE Feb. 2020 1261-1269*
- Wu, Q.**, Wang, H., Liu, Y., Zhang, L., and Gao, X., SAT: Single-Shot Adversarial Tracker; *TIE Nov. 2020 9882-9892*
- Wu, R.**, *see* Gonzalez, J.O., *TIE Sept. 2020 7375-7385*
- Wu, S.**, *see* Shang, Y., *TIE April 2020 2991-2999*
- Wu, S.**, Tong, W., Li, W., Yu, S., and Tang, R., Electromagnetic Vibration Analysis of High-Speed Permanent Magnet Synchronous Machines With Amorphous Metal Stator Cores Considering Current Harmonics; *TIE Dec. 2020 10156-10167*
- Wu, T.**, Huang, C., Chou, T., and Sun, K., Optimization of Cell Voltage and Circulating Current With Zero-Mean Current Command Injection in Modular Multilevel Converters; *TIE Nov. 2020 9429-9438*
- Wu, T.**, Feng, Z., Wu, C., Lei, G., Guo, Y., Zhu, J., and Wang, X., Multiobjective Optimization of a Tubular Coreless LPMSM Based on Adaptive Multiobjective Black Hole Algorithm; *TIE May 2020 3901-3910*
- Wu, W.**, *see* Zhou, L., *TIE July 2020 5490-5502*
- Wu, W.**, *see* Xie, F., *TIE Nov. 2020 9601-9612*
- Wu, W.**, *see* Chen, X., *TIE Dec. 2020 9980-9990*
- Wu, X.**, and Shi, H., High Efficiency High Density 1 MHz 380–12 V DCX With Low FoM Devices; *TIE Feb. 2020 1648-1656*
- Wu, X.**, *see* Chen, H., *TIE Feb. 2020 1498-1507*
- Wu, X.**, *see* Zhang, Y., *TIE Feb. 2020 832-841*
- Wu, X.**, *see* Li, Q., *TIE Aug. 2020 6946-6954*

- Wu, X.**, and Li, Z., Cooperative Manipulation of Wearable Dual-Arm Exoskeletons Using Force Communication Between Partners; *TIE Aug. 2020* 6629-6638
- Wu, Y.**, see Ren, H., *TIE June 2020* 4980-4990
- Wu, Y.**, see Kan, J., *TIE June 2020* 4658-4669
- Wu, Y.**, Ye, Y., Zhao, Q., Cao, Y., and Xiong, Y., Discrete-Time Modified UDE-Based Current Control for L+C+L-Type Grid-Tied Inverters; *TIE March 2020* 2143-2154
- Wu, Y.**, see Ren, X., *TIE Aug. 2020* 6845-6853
- Wu, Y.**, Rong, M., Yang, F., and Yi, Q., Damping HVDC Circuit Breaker With Current Commutation and Limiting Integrated; *TIE Dec. 2020* 10433-10441
- Wu, Y.**, see Wu, Y., *TIE Dec. 2020* 10433-10441
- Wu, Z.**, see Su, P., *TIE Feb. 2020* 906-918
- Wu, Z.**, see He, T., *TIE April 2020* 3191-3201
- Wu, Z.**, Zhu, Z., Wang, C., Mipo, J., Personnaz, S., and Farah, P., Analysis and Reduction of On-Load DC Winding Induced Voltage in Wound Field Switched Flux Machines; *TIE April 2020* 2655-2666
- Wu, Z.**, Yu, J., Yuan, J., Tan, M., and Qi, S., Gliding Motion Regulation of a Robotic Dolphin Based on a Controllable Fluke; *TIE April 2020* 2945-2953
- Wu, Z.**, see Wang, K., *TIE June 2020* 4867-4876
- Wu, Z.**, see He, Q., *TIE May 2020* 4203-4215

X

- Xi, J.**, see Yan, R., *TIE Feb. 2020* 1446-1454
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- Xia, H.**, see Wang, X., *TIE June 2020* 4567-4577
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- Xia, W.**, see Hua, W., *TIE Dec. 2020* 10035-10045
- Xia, Y.**, see Wang, X., *TIE June 2020* 4567-4577
- Xia, Y.**, see Chai, R., *TIE Aug. 2020* 6904-6915
- Xia, Y.**, see Zhao, K., *TIE Aug. 2020* 6894-6903
- Xia, Y.**, see Chai, R., *TIE Dec. 2020* 10809-10821
- Xia, Z.**, Gu, K., Wang, S., Liu, H., and Kwong, S., Toward Accurate Quality Estimation of Screen Content Pictures With Very Sparse Reference Information; *TIE March 2020* 2251-2261
- Xian, B.**, see Yang, S., *TIE March 2020* 2054-2064
- Xian, B.**, Wang, S., and Yang, S., An Online Trajectory Planning Approach for a Quadrotor UAV With a Slung Payload; *TIE Aug. 2020* 6669-6678
- Xiang, C.**, see Yang, C., *TIE Nov. 2020* 9659-9670
- Xiang, S.**, see Qin, Y., *TIE Dec. 2020* 10865-10875
- Xiang, Z.**, see Zhu, X., *TIE July 2020* 5337-5348
- Xiao, D.**, Nalakath, S., Sun, Y., Wiseman, J., and Emadi, A., Complex-Coefficient Adaptive Disturbance Observer for Position Estimation of IPMSMs With Robustness to DC Errors; *TIE July 2020* 5924-5935
- Xiao, D.**, see Osman, I., *TIE Oct. 2020* 8164-8174
- Xiao, D.**, see Li, Q., *TIE Aug. 2020* 6946-6954
- Xiao, E.**, see Li, S., *TIE Oct. 2020* 8484-8494
- Xiao, H.**, see An, B., *TIE Aug. 2020* 6270-6279
- Xiao, H.**, Bar-Shalom, Y., and Chen, X., A Collaborative Sensing and Model-Based Real-Time Recovery of Fast Data Flows From Sparse Measurements; *TIE Aug. 2020* 6806-6814
- Xiao, L.**, see Jia, W., *TIE Jan. 2020* 59-68
- Xiao, Q.**, Chen, L., Jia, H., Wheeler, P.W., and Dragicevic, T., Model Predictive Control for Dual Active Bridge in Naval DC Microgrids Supplying Pulsed Power Loads Featuring Fast Transition and Online Transformer Current Minimization; *TIE June 2020* 5197-5203
- Xiao, Y.**, Liu, C., Huang, Y., and Liu, S., Concurrent Wireless Power Transfer to Multiple Receivers With Additional Resonant Frequencies and Reduced Power Switches; *TIE Nov. 2020* 9292-9301
- Xie, B.**, see An, B., *TIE Aug. 2020* 6270-6279
- Xie, F.**, Qiu, C., Wang, Q., Liang, K., Hong, W., Wu, W., and Qian, Z., The Optimal Speed-Torque Control of Asynchronous Motors for Electric Cars in the Field-Weakening Region Based on the RFR; *TIE Nov. 2020* 9601-9612
- Xie, H.**, see Wen, Y., *TIE April 2020* 2916-2924
- Xie, H.**, Wen, Y., Shen, X., Zhang, H., and Sun, L., High-Speed AFM Imaging of Nanopositioning Stages Using H_∞ and Iterative Learning Control; *TIE March 2020* 2430-2439
- Xie, H.**, Meng, X., Zhang, H., and Sun, L., Development of a Magnetically Driven Microgripper for PicoNewton Force-Controlled Microscale Manipulation and Characterization; *TIE March 2020* 2065-2075
- Xie, L.**, Si, J., Hu, Y., Feng, H., and Ni, K., Characteristics Analysis of the Motions of the Two-Degree-of-Freedom Direct Drive Induction Motor; *TIE Feb. 2020* 931-941
- Xie, R.**, Hao, K., Huang, B., Chen, L., and Cai, X., Data-Driven Modeling Based on Two-Stream λ Gated Recurrent Unit Network With Soft Sensor Application; *TIE Aug. 2020* 7034-7043
- Xie, S.**, Xie, Y., Ying, H., Jiang, Z., and Gui, W., Neurofuzzy-Based Plant-Wide Hierarchical Coordinating Optimization and Control: An Application to Zinc Hydrometallurgy Plant; *TIE March 2020* 2207-2219
- Xie, S.Q.**, see Ai, Q., *TIE Nov. 2020* 9548-9559
- Xie, X.**, Lam, J., and Kwok, K., A Novel Scheme of Nonfragile Controller Design for Periodic Piecewise LTV Systems; *TIE Dec. 2020* 10766-10775
- Xie, X.**, see Sun, Y., *TIE May 2020* 3607-3617
- Xie, X.**, see Dong, H., *TIE May 2020* 3629-3639
- Xie, Y.**, see Zhang, F., *TIE Jan. 2020* 308-318
- Xie, Y.**, see Xie, S., *TIE March 2020* 2207-2219
- Xie, Z.**, see Xu, J., *TIE June 2020* 4836-4845
- Xin, M.**, see Hu, Q., *TIE Feb. 2020* 1242-1253
- Xing, X.**, see Qin, C., *TIE March 2020* 1956-1967
- Xing, X.**, Li, X., Qin, C., Liu, Z., and Zhang, C., Two-Layer Pulsewidth Modulation Strategy for Common-Mode Voltage and Current Harmonic Distortion Reduction in Vienna Rectifier; *TIE Sept. 2020* 7470-7483
- Xing, X.**, Li, X., Qin, C., Chen, J., and Zhang, C., An Optimized Zero-Sequence Voltage Injection Method for Eliminating Circulating Current and Reducing Common Mode Voltage of Parallel-Connected Three-Level Converters; *TIE Aug. 2020* 6583-6596
- Xing, Y.**, and Lv, C., Dynamic State Estimation for the Advanced Brake System of Electric Vehicles by Using Deep Recurrent Neural Networks; *TIE Nov. 2020* 9536-9547
- Xiong, C.**, see Huang, J., *TIE March 2020* 2030-2041
- Xiong, C.**, Xu, H., Guan, T., and Zhou, P., A Constant Switching Frequency Multiple-Vector-Based Model Predictive Current Control of Five-Phase PMSM With Nonsinusoidal Back EMF; *TIE March 2020* 1695-1707
- Xiong, C.**, Guan, T., Zhou, P., and Xu, H., A Fault-Tolerant FOC Strategy for Five-Phase SPMSM With Minimum Torque Ripples in the Full Torque Operation Range Under Double-Phase Open-Circuit Fault; *TIE Nov. 2020* 9059-9072
- Xiong, F.**, see Ye, C., *TIE Feb. 2020* 919-930
- Xiong, J.**, see He, Y., *TIE March 2020* 2348-2359
- Xiong, J.**, see Lu, B., *TIE Aug. 2020* 7005-7014
- Xiong, L.**, see Li, Y., *TIE March 2020* 1932-1943
- Xiong, L.**, see Li, Y., *TIE Nov. 2020* 9480-9491
- Xiong, M.**, see Hu, S., *TIE April 2020* 2544-2552
- Xiong, R.**, Yang, R., Chen, Z., Shen, W., and Sun, F., Online Fault Diagnosis of External Short Circuit for Lithium-Ion Battery Pack; *TIE Feb. 2020* 1081-1091
- Xiong, Y.**, see Wu, Y., *TIE March 2020* 2143-2154
- Xiong, Y.**, see Cao, Y., *TIE Oct. 2020* 8428-8437
- Xu, C.**, see Pi, M., *TIE April 2020* 2936-2944
- Xu, C.**, see Zhuang, Y., *TIE Sept. 2020* 7519-7528
- Xu, C.**, see Chen, T., *TIE Sept. 2020* 7841-7850
- Xu, C.**, see Zhuang, Y., *TIE Nov. 2020* 9471-9479
- Xu, D.**, see Guan, Y., *TIE Feb. 2020* 1555-1567
- Xu, D.**, see Gao, S., *TIE Feb. 2020* 1455-1465
- Xu, D.**, see Sun, W., *TIE April 2020* 2642-2654
- Xu, D.**, see Ding, D., *TIE May 2020* 3517-3527
- Xu, D.**, see Yang, M., *TIE May 2020* 4172-4182
- Xu, D.**, see Luo, C., *TIE May 2020* 3386-3397
- Xu, F.**, see Lei, M., *TIE June 2020* 4292-4304
- Xu, F.**, see Lei, M., *TIE March 2020* 1671-1683

- Xu, F.**, Lu, X., Zheng, T., and Xu, X., Motion Control of a Magnetic Levitation Actuator Based on a Wrench Model Considering Yaw Angle; *TIE Oct. 2020 8545-8554*
- Xu, F.**, Wang, H., Liu, Z., and Chen, W., Adaptive Visual Servoing for an Underwater Soft Robot Considering Refraction Effects; *TIE Dec. 2020 10575-10586*
- Xu, G.**, see Chen, Q., *TIE June 2020 4762-4773*
- Xu, G.**, see Chen, Q., *TIE July 2020 6043-6054*
- Xu, G.**, see Chen, Q., *TIE Nov. 2020 9613-9622*
- Xu, G.**, see Liu, G., *TIE Dec. 2020 10202-10212*
- Xu, H.**, see Jiang, S., *TIE Jan. 2020 647-657*
- Xu, H.**, see Cai, B., *TIE July 2020 5737-5747*
- Xu, H.**, see Xiong, C., *TIE March 2020 1695-1707*
- Xu, H.**, see Xiong, C., *TIE Nov. 2020 9059-9072*
- Xu, H.**, see Li, J., *TIE Oct. 2020 8900-8909*
- Xu, J.**, Chen, Z., and Wan, H., Lowpass-Bandpass Triplexer Integrated Switch Design Using Common Lumped-Element Triple-Resonance Resonator Technique; *TIE Jan. 2020 471-479*
- Xu, J.**, see Jiang, S., *TIE Jan. 2020 647-657*
- Xu, J.**, see Chen, Y., *TIE Feb. 2020 1092-1102*
- Xu, J.**, Li, X., Xie, Z., Fu, C., and Du, R., Design and Analysis of Inductively Coupled Power Transfer System on Mooring Buoy With Double Ultracapacitor Chargers Using Indirect Control; *TIE June 2020 4836-4845*
- Xu, J.**, Du, Y., Fang, H., Guo, H., and Chen, Y., A Robust Observer and Non-orthogonal PLL-Based Sensorless Control for Fault-Tolerant Permanent Magnet Motor With Guaranteed Postfault Performance; *TIE July 2020 5959-5970*
- Xu, J.**, see Rao, G., *TIE Nov. 2020 9560-9570*
- Xu, J.**, see Wu, G., *TIE Nov. 2020 9976*
- Xu, J.**, see Shi, J., *TIE Oct. 2020 8629-8637*
- Xu, J.**, see Shen, F., *TIE Oct. 2020 8743-8754*
- Xu, J.**, see Luo, H., *TIE Dec. 2020 10377-10387*
- Xu, J.**, Han, J., Wang, Y., Habib, S., and Tang, H., A Novel Scalar PWM Method to Reduce Leakage Current in Three-Phase Two-Level Transformerless Grid-Connected VSIs; *TIE May 2020 3788-3797*
- Xu, K.**, see Zhang, Z., *TIE Nov. 2020 9227-9237*
- Xu, L.**, see Hou, H., *TIE July 2020 5647-5656*
- Xu, L.**, see Zhao, W., *TIE July 2020 5369-5378*
- Xu, L.**, see Zhao, W., *TIE Sept. 2020 7290-7300*
- Xu, L.**, see Wang, K., *TIE Nov. 2020 9120-9132*
- Xu, L.**, see Cheng, H., *TIE Oct. 2020 8231-8241*
- Xu, M.**, see Zheng, H., *TIE Feb. 2020 1293-1304*
- Xu, M.**, see He, Y., *TIE March 2020 2348-2359*
- Xu, N.**, see Huang, Y., *TIE Feb. 2020 1376-1386*
- Xu, N.**, see Li, X., *TIE Aug. 2020 6785-6794*
- Xu, Q.**, see Li, Y., *TIE Jan. 2020 203-213*
- Xu, Q.**, see Guo, F., *TIE April 2020 3043-3053*
- Xu, Q.**, see Liu, F., *TIE March 2020 2391-2401*
- Xu, Q.**, see Han, R., *TIE Nov. 2020 9028-9038*
- Xu, S.**, see Chen, H., *TIE Feb. 2020 874-883*
- Xu, S.**, see Guo, G., *TIE April 2020 2798-2809*
- Xu, S.**, see Zhang, J., *TIE June 2020 5071-5080*
- Xu, S.**, see Zhang, H., *TIE Aug. 2020 7104-7113*
- Xu, S.**, see Yang, S., *TIE Dec. 2020 10887-10896*
- Xu, S.**, see Shi, S., *TIE Dec. 2020 10776-10786*
- Xu, S.**, see Li, X., *TIE Dec. 2020 9991-10000*
- Xu, S.**, see Zhang, J., *TIE May 2020 3505-3516*
- Xu, W.**, see Wang, D., *TIE Jan. 2020 610-623*
- Xu, W.**, see Wang, D., *TIE Jan. 2020 624-626*
- Xu, W.**, see Du, G., *TIE April 2020 2722-2733*
- Xu, W.**, see Bhattacharya, D., *TIE June 2020 4711-4720*
- Xu, W.**, see Wang, Y., *TIE July 2020 5302-5312*
- Xu, W.**, see Wang, Z., *TIE Sept. 2020 7681-7690*
- Xu, W.**, see Du, G., *TIE May 2020 3472-3483*
- Xu, W.**, see Chen, X., *TIE May 2020 3419-3430*
- Xu, X.**, Lei, Y., and Li, Z., An Incorrect Data Detection Method for Big Data Cleaning of Machinery Condition Monitoring; *TIE March 2020 2326-2336*
- Xu, X.**, see Xu, F., *TIE Oct. 2020 8545-8554*
- Xu, X.**, Sun, Y., Tian, X., and Zhou, L., A Novel Joint Angle Estimation Method for Serial Manipulator Using Micro-Electromechanical Systems Sensors; *TIE Dec. 2020 10610-10620*
- Xu, Y.**, see Zeng, D., *TIE April 2020 2734-2743*
- Xu, Y.**, see Wang, Y., *TIE July 2020 5980-5989*
- Xu, Y.**, Zhang, Z., Jiang, Y., Huang, J., and Jiang, W., Numerical Analysis of Turn-to-Turn Short Circuit Current Mitigation for Concentrated Winding Permanent Magnet Machines With Series and Parallel Connected Windings; *TIE Nov. 2020 9101-9111*
- Xu, Y.**, Zhang, Z., Bian, Z., and Yu, L., Dynamic Performance Improvement of Doubly Salient Brushless DC Generator System With Controlled Rectifier; *TIE Oct. 2020 8209-8218*
- Xu, Y.**, see He, J., *TIE Oct. 2020 8921-8930*
- Xu, Y.**, see Li, Q., *TIE Aug. 2020 6946-6954*
- Xu, Z.**, see Liu, X., *TIE April 2020 2667-2677*
- Xu, Z.**, see Bao, Y., *TIE April 2020 2553-2563*
- Xu, Z.**, see Lyu, X., *TIE June 2020 5209-5212*
- Xu, Z.**, see Zhang, T., *TIE July 2020 5948-5958*
- Xu, Z.**, see Li, Y., *TIE March 2020 1932-1943*
- Xu, Z.**, see Wang, C., *TIE March 2020 1921-1931*
- Xu, Z.**, see Zhang, F., *TIE March 2020 1728-1738*
- Xu, Z.**, see Liu, C., *TIE Sept. 2020 7343-7353*
- Xu, Z.**, see Li, Y., *TIE Nov. 2020 9480-9491*
- Xu, Z.**, see Zhang, Z., *TIE Nov. 2020 9227-9237*
- Xu, Z.**, see Wang, X., *TIE Dec. 2020 10095-10108*
- XuanYuan, Z.**, see Zhang, Y., *TIE Aug. 2020 6649-6658*
- Xue, B.**, see Li, Z., *TIE Feb. 2020 1124-1135*
- Xue, C.**, see Feng, Y., *TIE May 2020 4013-4023*
- Xue, F.**, Hu, J., Guo, Y., Han, G., Ouyang, Y., Wang, S.X., and He, J., Piezoelectric-Piezoresistive Coupling MEMS Sensors for Measurement of Electric Fields of Broad Bandwidth and Large Dynamic Range; *TIE Jan. 2020 551-559*
- Xue, F.**, Guo, Y., Sato, N., Ouyang, Y., Han, Z., Wang, S.X., Hu, J., and He, J., Drive-Current-Free Switch With Internal Transduction in a Magneto Piezo-Electronic Transistor; *TIE April 2020 3257-3266*
- Xue, H.**, see Wei, J., *TIE July 2020 6135-6146*
- Xue, S.**, see Jiang, W., *TIE Sept. 2020 7451-7460*
- Xue, W.**, Zhang, X., Sun, L., and Fang, H., Extended State Filter Based Disturbance and Uncertainty Mitigation for Nonlinear Uncertain Systems With Application to Fuel Cell Temperature Control; *TIE Dec. 2020 10682-10692*

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- Yabui, S.**, see Atsumi, T., *TIE Nov. 2020 9184-9194*
- Yadav, A.K.**, see Imthias, M., *TIE Jan. 2020 126-135*
- Yadav, A.K.**, see Majumder, M.G., *TIE Feb. 2020 960-968*
- Yaghi, M.**, and Onder Efe, M., H₂/H_∞-Neural-Based FOPID Controller Applied for Radar-Guided Missile; *TIE June 2020 4806-4814*
- Yalla, N.**, Babu A, N., and Agarwal, P., A New Three-Phase Multipoint Clamped 5L-HPFC With Reduced PSD Count and Switch Stress; *TIE April 2020 2532-2543*
- Yan, C.**, Chen, J., Liu, H., and Lu, H., Model-Based Fault Tolerant Control for the Thermal Management of PEMFC Systems; *TIE April 2020 2875-2884*
- Yan, D.**, see Wu, G., *TIE Nov. 2020 9976*
- Yan, F.**, see Jiang, K., *TIE Jan. 2020 442-450*
- Yan, F.**, see Jiang, K., *TIE June 2020 5012-5021*
- Yan, H.**, see Meng, L., *TIE Dec. 2020 10366-10376*
- Yan, H.**, see Zhang, H., *TIE Dec. 2020 10798-10808*
- Yan, J.**, see Yang, X., *TIE Jan. 2020 800-808*
- Yan, K.**, see Zhou, L., *TIE July 2020 5490-5502*
- Yan, L.**, Wang, F., Dou, M., Zhang, Z., Kennel, R., and Rodriguez, J., Active Disturbance-Rejection-Based Speed Control in Model Predictive Control for Induction Machines; *TIE April 2020 2574-2584*
- Yan, L.**, see Gong, C., *TIE July 2020 5913-5923*
- Yan, L.**, see Zhang, Q., *TIE March 2020 2133-2142*
- Yan, P.**, see Wang, T., *TIE Jan. 2020 531-541*

- Yan, R., Xi, J., and He, L., A 2–10 MHz GaN HEMTs Half-Bridge Driver With Bandgap Reference Comparator Clamping and Dual Level Shifters for Automotive Applications; *TIE Feb.* 2020 1446-1454
- Yan, R., see Shen, F., *TIE Oct.* 2020 8743-8754
- Yan, S., see Li, S., *TIE June* 2020 4857-4866
- Yan, W., see Chen, L., *TIE May* 2020 4024-4035
- Yan, X., see Jiang, Q., *TIE May* 2020 4098-4107
- Yan, Y., Li, Q., Chen, W., Huang, W., and Liu, J., Hierarchical Management Control Based on Equivalent Fitting Circle and Equivalent Energy Consumption Method for Multiple Fuel Cells Hybrid Power System; *TIE April* 2020 2786-2797
- Yan, Y., see Chen, Q., *TIE July* 2020 6043-6054
- Yan, Y., see Wu, H., *TIE March* 2020 2450-2459
- Yan, Z., see Lin, W., *TIE Sept.* 2020 7439-7450
- Yan, Z., see Shu, D., *TIE Aug.* 2020 6517-6530
- Yang, B., Lei, Y., Jia, F., Li, N., and Du, Z., A Polynomial Kernel Induced Distance Metric to Improve Deep Transfer Learning for Fault Diagnosis of Machines; *TIE Nov.* 2020 9747-9757
- Yang, C., see Chen, Z., *TIE Jan.* 2020 746-756
- Yang, C., see Peng, G., *TIE April* 2020 3138-3148
- Yang, C., see Yin, Z., *TIE June* 2020 4826-4835
- Yang, C., see Zhou, H., *TIE March* 2020 2469-2479
- Yang, C., see Li, K., *TIE March* 2020 2304-2313
- Yang, C., see Jiang, W., *TIE Sept.* 2020 7451-7460
- Yang, C., You, S., Wang, W., Li, L., and Xiang, C., A Stochastic Predictive Energy Management Strategy for Plug-in Hybrid Electric Vehicles Based on Fast Rolling Optimization; *TIE Nov.* 2020 9659-9670
- Yang, C., see Huang, H., *TIE Oct.* 2020 8608-8617
- Yang, C., and Fang, H., A New Nonlinear Model-Based Fault Detection Method Using Mann–Whitney Test; *TIE Dec.* 2020 10856-10864
- Yang, C., see Chen, L., *TIE May* 2020 4024-4035
- Yang, C., see Chen, Z., *TIE May* 2020 3944-3954
- Yang, D., Zong, G., and Karimi, H.R., H_∞ Refined Antidisturbance Control of Switched LPV Systems With Application to Aero-Engine; *TIE April* 2020 3180-3190
- Yang, F., see Tong, X., *TIE Jan.* 2020 581-591
- Yang, F., see Pu, S., *TIE June* 2020 5092-5100
- Yang, F., see Wu, Y., *TIE Dec.* 2020 10433-10441
- Yang, G., see Zhang, L., *TIE April* 2020 3065-3075
- Yang, G., see Zhang, J., *TIE June* 2020 4889-4899
- Yang, H., Lin, H., Zhu, Z.Q., Lyu, S., and Liu, Y., Design and Analysis of Novel Asymmetric-Stator-Pole Flux Reversal PM Machine; *TIE Jan.* 2020 101-114
- Yang, H., see Wang, B., *TIE April* 2020 2885-2893
- Yang, H., see Lee, B.M., *TIE June* 2020 5187-5196
- Yang, H., Lyu, S., Lin, H., Zhu, Z., Zheng, H., and Wang, T., A Novel Hybrid-Magnetic-Circuit Variable Flux Memory Machine; *TIE July* 2020 5258-5268
- Yang, H., Zhu, Z.Q., Lin, H., Li, H., and Lyu, S., Analysis of Consequent-Pole Flux Reversal Permanent Magnet Machine With Biased Flux Modulation Theory; *TIE March* 2020 2107-2121
- Yang, H., see Zhang, W., *TIE Sept.* 2020 7691-7701
- Yang, H., Zhang, Y., and Liu, J., Frequency-Adaptive Virtual Flux Estimator-Based Predictive Power Control With Suppression of Dc Voltage Ripples Under Unbalanced Network; *TIE Oct.* 2020 8969-8979
- Yang, H., see Zhao, G., *TIE Dec.* 2020 10421-10432
- Yang, J., see Ye, C., *TIE Feb.* 2020 919-930
- Yang, J., see Chen, H., *TIE Feb.* 2020 874-883
- Yang, J., see Dai, Z., *TIE Sept.* 2020 7540-7549
- Yang, J., Du, T., Liu, X., Niu, B., and Guo, L., Method and Implementation of a Bioinspired Polarization-Based Attitude and Heading Reference System by Integration of Polarization Compass and Inertial Sensors; *TIE Nov.* 2020 9802-9812
- Yang, J., and Chao, L., A Novel Orientation Recursive Algorithm Aiming at Catastrophe Signals in MWD; *TIE Nov.* 2020 9683-9692
- Yang, J., and Chao, L., Motion Characteristic Recognition of Transmission Lines Based on Inertial Measurement; *TIE Oct.* 2020 8860-8867
- Yang, J., see Zhao, N., *TIE Aug.* 2020 6916-6926
- Yang, J., see Hwang, Y., *TIE Aug.* 2020 6854-6863
- Yang, K., see Huai, Z., *TIE May* 2020 3879-3890
- Yang, L., Zhu, Z.Q., Shuang, B., and Bin, H., Adaptive Threshold Correction Strategy for Sensorless High-Speed Brushless DC Drives Considering Zero-Crossing-Point Deviation; *TIE July* 2020 5246-5257
- Yang, L., see Chen, B., *TIE March* 2020 2009-2020
- Yang, L., see Gan, W., *TIE Sept.* 2020 7829-7840
- Yang, L., see Zhang, M., *TIE Aug.* 2020 7094-7103
- Yang, L., see Moeni, A., *TIE Dec.* 2020 10388-10398
- Yang, M., Chai, N., Liu, Z., Ren, B., and Xu, D., Motor Speed Signature Analysis for Local Bearing Fault Detection With Noise Cancellation Based on Improved Drive Algorithm; *TIE May* 2020 4172-4182
- Yang, R., see Xiong, R., *TIE Feb.* 2020 1081-1091
- Yang, R., and Zheng, W.X., Output-Based Event-Triggered Predictive Control for Networked Control Systems; *TIE Dec.* 2020 10631-10640
- Yang, S., see Hsu, C., *TIE Jan.* 2020 169-179
- Yang, S., see Chen, G., *TIE Jan.* 2020 49-58
- Yang, S., see Li, H., *TIE June* 2020 4411-4421
- Yang, S., Sun, X., Ma, M., Zhang, X., and Chang, L., Fault Detection and Identification Scheme for Dual-Inverter Fed OEWM Drive; *TIE July* 2020 6112-6123
- Yang, S., and Xian, B., Energy-Based Nonlinear Adaptive Control Design for the Quadrotor UAV System With a Suspended Payload; *TIE March* 2020 2054-2064
- Yang, S., see Huang, C., *TIE March* 2020 2122-2132
- Yang, S., see Cheng, H., *TIE Oct.* 2020 8231-8241
- Yang, S., see Xian, B., *TIE Aug.* 2020 6669-6678
- Yang, S., Jiang, X., Xu, S., and Wang, X., Information Theory Based Probabilistic Approach to Blade Damage Detection of Turbomachine Using Sensor Data; *TIE Dec.* 2020 10887-10896
- Yang, S.X., see Shi, F., *TIE Nov.* 2020 9948-9957
- Yang, T., see Wei, J., *TIE July* 2020 6135-6146
- Yang, T., see Guo, S., *TIE Sept.* 2020 8005-8015
- Yang, W., see Han, Z., *TIE May* 2020 3398-3408
- Yang, X., Yan, J., Chen, Z., Ding, H., and Liu, H., A Proportional Pattern Recognition Control Scheme for Wearable A-mode Ultrasound Sensing; *TIE Jan.* 2020 800-808
- Yang, X., see Zhang, W., *TIE June* 2020 4991-4999
- Yang, X., see Zhang, K., *TIE March* 2020 2380-2390
- Yang, X., see Wang, Z., *TIE Sept.* 2020 7202-7216
- Yang, X., and Zhu, W., Design, Analysis, and Control of an XY Parallel Nanomanipulator With Multiple Actuation Modes; *TIE Sept.* 2020 7639-7648
- Yang, X., see Rao, G., *TIE Nov.* 2020 9560-9570
- Yang, X., and Zheng, X., Adaptive NN Backstepping Control Design for a 3-DOF Helicopter: Theory and Experiments; *TIE May* 2020 3967-3979
- Yang, X., see Chen, X., *TIE May* 2020 4066-4076
- Yang, X., Seethaler, R., Zhan, C., Lu, D., and Zhao, W., A Model Predictive Contouring Error Precompensation Method; *TIE May* 2020 4036-4045
- Yang, Y., Constantinescu, D., and Shi, Y., Input-to-State Stable Bilateral Teleoperation by Dynamic Interconnection and Damping Injection: Theory and Experiments; *TIE Jan.* 2020 790-799
- Yang, Y., see Wang, Y., *TIE Feb.* 2020 1425-1434
- Yang, Y., see Fu, M., *TIE Feb.* 2020 1638-1647
- Yang, Y., see Zheng, H., *TIE Feb.* 2020 1293-1304
- Yang, Y., see Chu, G., *TIE April* 2020 2822-2833
- Yang, Y., see Chen, Z., *TIE July* 2020 5787-5797
- Yang, Y., see Shen, K., *TIE Sept.* 2020 7659-7668
- Yang, Y., see Chen, T., *TIE Sept.* 2020 7841-7850
- Yang, Y., see Guo, X., *TIE Nov.* 2020 9348-9357
- Yang, Y., see Fang, Y., *TIE Nov.* 2020 9893-9903
- Yang, Y., see Shi, J., *TIE Oct.* 2020 8629-8637
- Yang, Y., see Li, G., *TIE Oct.* 2020 8889-8899
- Yang, Y., Qin, Y., Tan, S., and Hui, S.Y.R., Reducing Distribution Power Loss of Islanded AC Microgrids Using Distributed Electric Springs With Predictive Control; *TIE Oct.* 2020 9001-9011
- Yang, Y., Hu, K., and Tsai, C., Digital Battery Management Design for Point-of-Load Applications With Cell Balancing; *TIE Aug.* 2020 6365-6375

- Yang, Y.**, see Ouyang, S., *TIE May 2020 3684-3695*
- Yang, Y.**, see Shi, H., *TIE May 2020 3583-3595*
- Yang, Z.**, see Wang, D., *TIE Dec. 2020 10833-10843*
- Yang, Z.**, Zhou, X., Huang, H., Dong, J., Fan, Z., and Zhao, H., On the Suppression of the Backward Motion of a Piezo-Driven Precision Positioning Platform Designed by the Parasitic Motion Principle; *TIE May 2020 3870-3878*
- YangYang**, see Wong, S., *TIE June 2020 4969-4979*
- Yao, B.**, see Chen, Z., *TIE Jan. 2020 746-756*
- Yao, B.**, see Lin, Y., *TIE July 2020 5604-5614*
- Yao, B.**, see Helian, B., *TIE Oct. 2020 8638-8648*
- Yao, B.**, see Chen, Z., *TIE May 2020 3944-3954*
- Yao, C.**, see Zhao, X., *TIE May 2020 4108-4119*
- Yao, J.**, see Pei, J., *TIE July 2020 5515-5530*
- Yao, J.**, see Zhu, Z., *TIE Aug. 2020 6688-6697*
- Yao, T.**, see Zhao, W., *TIE Jan. 2020 80-90*
- Yao, W.**, see Miao, Z., *TIE March 2020 1980-1990*
- Yao, Y.**, see Liu, K., *TIE Dec. 2020 10755-10765*
- Yao, Y.**, Huang, Y., Peng, F., Dong, J., and Zhang, H., An Improved Deadbeat Predictive Current Control With Online Parameter Identification for Surface-Mounted PMSMs; *TIE Dec. 2020 10145-10155*
- Yazdani, M.R.**, see Mohammadi, M.R., *TIE Sept. 2020 7461-7469*
- Ye, C.**, Yang, J., Xiong, F., and Zhu, Z.Q., Relationship Between Homopolar Inductor Machine and Wound-Field Synchronous Machine; *TIE Feb. 2020 919-930*
- Ye, D.**, see Lu, Y., *TIE Jan. 2020 115-125*
- Ye, D.**, see Zhang, Z., *TIE Nov. 2020 9227-9237*
- Ye, G.**, Zhao, G., Liu, H., and Lu, B., Precise Phase Demodulation Algorithm for Sinusoidal Encoders and Resolvers; *TIE Oct. 2020 8778-8787*
- Ye, Q.**, Mo, R., and Li, H., Impedance Modeling and DC Bus Voltage Stability Assessment of a Solid-State-Transformer-Enabled Hybrid AC-DC Grid Considering Bidirectional Power Flow; *TIE Aug. 2020 6531-6540*
- Ye, Y.**, see Wang, X., *TIE June 2020 4567-4577*
- Ye, Y.**, see Wu, Y., *TIE March 2020 2143-2154*
- Ye, Y.**, see Cao, Y., *TIE Oct. 2020 8428-8437*
- Ye, Z.**, see Peng, W., *TIE March 2020 2283-2293*
- Ye, Z.**, see Yu, D., *TIE Oct. 2020 8450-8460*
- Yen, K.K.**, see Abbaspour, A., *TIE Sept. 2020 7951-7962*
- Yepes, A.G.**, see Lopez, O., *TIE July 2020 5220-5231*
- Yesilyurt, H.**, see Bodur, H., *TIE Jan. 2020 288-296*
- Yi, H.**, see Zhai, H., *TIE Feb. 2020 1270-1281*
- Yi, H.**, see Jiang, Q., *TIE May 2020 4098-4107*
- Yi, L.**, see Hou, B., *TIE May 2020 4216-4225*
- Yi, P.**, see Ma, J., *TIE Oct. 2020 8649-8658*
- Yi, Q.**, see Wu, Y., *TIE Dec. 2020 10433-10441*
- Yildirim, D.**, Aksit, M.H., Yolacan, C., Pul, T., Ermis, C., Aghdam, B.H., Cadirci, I., and Ermis, M., Full-Scale Physical Simulator of All SiC Traction Motor Drive With Onboard Supercapacitor ESS for Light-Rail Public Transportation; *TIE Aug. 2020 6290-6301*
- Yin, C.**, see Chen, M., *TIE July 2020 5444-5455*
- Yin, C.**, Dadras, S., Cheng, Y., Huang, X., Cao, J., and Malek, H., Multidimensional Fractional-Order Newton-Based Extremum Seeking for Online Light-Energy Saving Technique of Lighting System; *TIE Oct. 2020 8576-8586*
- Yin, H.**, see Zhao, C., *TIE March 2020 1999-2008*
- Yin, H.**, see Wu, L., *TIE Sept. 2020 7190-7201*
- Yin, J.**, see Zhao, G., *TIE Oct. 2020 8851-8859*
- Yin, S.**, see Luo, H., *TIE Jan. 2020 521-530*
- Yin, S.**, Xia, J., Zhao, Z., Zhao, L., Liu, W., Diao, L., and Jatskevich, J., Fast Restarting of Free-Running Induction Motors Under Speed-Sensorless Vector Control; *TIE July 2020 6124-6134*
- Yin, S.**, see Li, K., *TIE March 2020 2304-2313*
- Yin, S.**, see Chen, J., *TIE Aug. 2020 6183-6194*
- Yin, S.**, see Dang, K., *TIE Aug. 2020 6597-6606*
- Yin, T.**, Huang, D., and Fu, S., Intrinsic Determinants and Harmonic Measure of Flight Safety; *TIE Aug. 2020 7054-7064*
- Yin, W.**, see Tao, Y., *TIE Oct. 2020 8799-8807*
- Yin, X.**, and Zhao, X., Composite Hierarchical Pitch Angle Control for a Tidal Turbine Based on the Uncertainty and Disturbance Estimator; *TIE Jan. 2020 329-339*
- Yin, X.**, see Meng, L., *TIE Dec. 2020 10366-10376*
- Yin, Z.**, He, W., Kaynak, O., Yang, C., Cheng, L., and Wang, Y., Uncertainty and Disturbance Estimator-Based Control of a Flapping-Wing Aerial Vehicle With Unknown Backlash-Like Hysteresis; *TIE June 2020 4826-4835*
- Yin, Z.**, see Zhang, Y., *TIE July 2020 6019-6030*
- Yin, Z.**, see Zhang, Y., *TIE July 2020 5867-5878*
- Yin, Z.**, see Shen, K., *TIE Sept. 2020 7659-7668*
- Ying, H.**, see Xie, S., *TIE March 2020 2207-2219*
- Yokokura, Y.**, and Ohishi, K., Fine Load-Side Acceleration Control Based on Torsion Torque Sensing of Two-Inertia System; *TIE Jan. 2020 768-777*
- Yokokura, Y.**, see Phuong, T.T., *TIE Jan. 2020 757-767*
- Yolacan, C.**, see Yildirim, D., *TIE Aug. 2020 6290-6301*
- Yong, K.**, Chen, M., and Wu, Q., Anti-Disturbance Control for Nonlinear Systems Based on Interval Observer; *TIE Feb. 2020 1261-1269*
- Yong, M.**, see Deng, C., *TIE May 2020 3756-3766*
- Yoo, Y.**, see Park, W., *TIE Jan. 2020 677-685*
- Yoon, E.**, see Baek, Y., *TIE Nov. 2020 9914-9926*
- Yoon, J.**, see Lee, K., *TIE Dec. 2020 10520-10530*
- Yoon, S.**, see Estrada-Lopez, J.J., *TIE April 2020 2744-2754*
- Yoon, S.**, Son, Y., Oh, S., and Han, S., A Distortion Model of Laser Sheet for a Laser Line Scanner With Large Fan Angle; *TIE Aug. 2020 6986-6995*
- Yoshimoto, S.**, Kuroda, Y., and Oshiro, O., Tomographic Approach for Universal Tactile Imaging With Electromechanically Coupled Conductors; *TIE Jan. 2020 627-636*
- You, J.**, see Kwak, M., *TIE Nov. 2020 9758-9767*
- You, S.**, see Yang, C., *TIE Nov. 2020 9659-9670*
- You, S.H.**, Ahn, C.K., Shmaliy, Y.S., and Zhao, S., Fusion Kalman and Weighted UFIR State Estimator With Improved Accuracy; *TIE Dec. 2020 10713-10722*
- You, X.**, see Zhao, N., *TIE Aug. 2020 6916-6926*
- Youn, H.**, see Lee, S., *TIE Oct. 2020 8808-8816*
- Yu, B.**, see Cheng, Y., *TIE Dec. 2020 10024-10034*
- Yu, D.**, Wang, X., Yu, S., Ye, Z., Fernando, T., and Iu, H.H.C., A Soft-PWM Approach to Power/Signal Synchronous Transmission for SRG-Based DC Microgrids; *TIE Oct. 2020 8450-8460*
- Yu, H.**, see Liu, X., *TIE April 2020 2667-2677*
- Yu, H.**, see Rao, G., *TIE Nov. 2020 9560-9570*
- Yu, H.**, see Tu, H., *TIE Nov. 2020 9393-9404*
- Yu, H.**, see Zhan, H., *TIE Dec. 2020 10897-10904*
- Yu, H.**, see Quan, X., *TIE Dec. 2020 10989-10995*
- Yu, H.C.**, see Huang, X.Z., *TIE Jan. 2020 180-191*
- Yu, J.**, see Wu, Z., *TIE April 2020 2945-2953*
- Yu, J.**, see Wang, Y., *TIE Sept. 2020 7629-7638*
- Yu, L.**, see Zhang, J., *TIE April 2020 2700-2710*
- Yu, L.**, Zhang, Z., Bian, Z., Gerada, D., and Gerada, C., Dual-Pulse Mode Control of a High-Speed Doubly Salient Electromagnetic Machine for Loss Reduction and Speed Range Extension; *TIE June 2020 4391-4401*
- Yu, L.**, see Xu, Y., *TIE Oct. 2020 8209-8218*
- Yu, L.**, see Li, Q., *TIE Aug. 2020 6946-6954*
- Yu, L.**, see Sun, L., *TIE May 2020 3562-3572*
- Yu, M.**, see Ren, B., *TIE April 2020 2810-2821*
- Yu, M.**, Evangelou, S.A., and Dini, D., Position Control of Parallel Active Link Suspension With Backlash; *TIE June 2020 4741-4751*
- Yu, P.**, see Wu, M., *TIE Feb. 2020 1254-1260*
- Yu, P.**, Liu, K., Wu, M., and She, J., Improved Equivalent-Input-Disturbance Approach Based on H_∞ Control; *TIE Oct. 2020 8670-8679*
- Yu, Q.**, Chu, S., Li, W., Tian, L., Wang, X., and Cheng, Y., Electromagnetic Shielding Analysis of a Canned Permanent Magnet Motor; *TIE Oct. 2020 8123-8130*
- Yu, Q.**, see Zhou, M., *TIE Aug. 2020 6617-6628*
- Yu, S.**, see Yu, D., *TIE Oct. 2020 8450-8460*
- Yu, S.**, see Wu, S., *TIE Dec. 2020 10156-10167*
- Yu, S.S.**, see Zhang, G., *TIE March 2020 1890-1898*

- Yu, W.**, and Zhao, C., Broad Convolutional Neural Network Based Industrial Process Fault Diagnosis With Incremental Learning Capability; *TIE June 2020 5081-5091*
- Yu, W.**, see Lu, P., *TIE Dec. 2020 10723-10731*
- Yu, X.**, see Hou, H., *TIE July 2020 5647-5656*
- Yu, X.**, see Lu, P., *TIE Dec. 2020 10723-10731*
- Yu, Y.**, Wang, J., and Ouyang, Z., Designing Dynamic Alarm Limits and Adjusting Manipulated Variables for Multivariate Systems; *TIE March 2020 2314-2325*
- Yu, Y.**, see Chai, F., *TIE Aug. 2020 6742-6751*
- Yu, Y.**, see Zhang, Y., *TIE Dec. 2020 10911-10921*
- Yu, Y.**, see Luo, C., *TIE May 2020 3386-3397*
- Yu, Z.**, see Zhang, X., *TIE June 2020 4485-4495*
- Yu, Z.**, Kong, W., Gan, C., and Qu, R., Power Converter Topologies and Control Strategies for DC-Biased Vernier Reluctance Machines; *TIE June 2020 4350-4359*
- Yu, Z.**, see Hu, X., *TIE July 2020 5479-5489*
- Yu, Z.**, see Zeng, J., *TIE Nov. 2020 9260-9272*
- Yu, Z.**, Qin, M., Chen, X., Meng, L., Huang, Q., and Fu, C., Computationally Efficient Coordinate Transformation for Field-Oriented Control Using Phase Shift of Linear Hall-Effect Sensor Signals; *TIE May 2020 3442-3451*
- Yuan, B.**, Liu, M., Ng, W.T., and Lai, X., Hybrid Buck Converter With Constant Mode Changing Point and Smooth Mode Transition for High-Frequency Applications; *TIE Feb. 2020 1466-1474*
- Yuan, F.**, see Fang, Y., *TIE Nov. 2020 9893-9903*
- Yuan, J.**, see Wu, Z., *TIE April 2020 2945-2953*
- Yuan, M.**, Manzie, C., Good, M., Shames, I., Gan, L., Keynejad, F., and Robinet, T., Error-Bounded Reference Tracking MPC for Machines With Structural Flexibility; *TIE Oct. 2020 8143-8154*
- Yuan, M.**, see Chen, Z., *TIE May 2020 3944-3954*
- Yuan, X.**, Zhang, S., and Zhang, C., Improved Model Predictive Current Control for SPMSM Drives With Parameter Mismatch; *TIE Feb. 2020 852-862*
- Yuan, X.**, see Zhang, Y., *TIE Feb. 2020 832-841*
- Yuan, X.**, Zhang, C., and Zhang, S., Torque Ripple Suppression for Open-End Winding Permanent-Magnet Synchronous Machine Drives With Predictive Current Control; *TIE March 2020 1771-1781*
- Yuan, X.**, see McNeill, N., *TIE Sept. 2020 7179-7189*
- Yuan, Y.**, see Zhang, Y., *TIE Feb. 2020 832-841*
- Yuan, Y.**, see Li, Z., *TIE April 2020 3096-3106*
- Yuan, Y.**, and Zhang, J., A Novel Initiative Braking System With Nondegraded Fallback Level for ADAS and Autonomous Driving; *TIE June 2020 4360-4370*
- Yuan, Y.**, Zhang, P., Wang, Z., and Chen, Y., Noncooperative Event-Triggered Control Strategy Design With Round-Robin Protocol: Applications to Load Frequency Control of Circuit Systems; *TIE March 2020 2155-2166*
- Yuan, Y.**, Li, Z., Zhao, T., and Gan, D., DMP-Based Motion Generation for a Walking Exoskeleton Robot Using Reinforcement Learning; *TIE May 2020 3830-3839*
- Yue, X.**, see Wang, X., *TIE July 2020 5798-5809*
- Yue, X.**, Kiely, J., Gibson, D., and Drakakis, E.M., Charge-Based Supercapacitor Storage Estimation for Indoor Sub-mW Photovoltaic Energy Harvesting Powered Wireless Sensor Nodes; *TIE March 2020 2411-2421*
- Yue, Y.**, see Wang, H., *TIE July 2020 5900-5912*
- Yun, S.**, Park, S., Park, B., Ryu, S., Jeong, S.M., and Kyung, K., A Soft and Transparent Visuo-Haptic Interface Pursuing Wearable Devices; *TIE Jan. 2020 717-724*
- Yun, U.**, see Baek, Y., *TIE Nov. 2020 9914-9926*
- Yun, Y.**, see Jang, D., *TIE Nov. 2020 9526-9535*
- Z**
- Zahawi, B.**, see Ahmed, H.F., *TIE Dec. 2020 10253-10265*
- Zamudio-Ramirez, I.**, Antonino-Daviu, J.A., Osornio-Rios, R.A., de Jesus Romero-Troncoso, R., and Razik, H., Detection of Winding Asymmetries in Wound-Rotor Induction Motors via Transient Analysis of the External Magnetic Field; *TIE June 2020 5050-5059*
- Zanchetta, P.**, see Tang, M., *TIE April 2020 2689-2699*
- Zangl, H.**, see Gietler, H., *TIE Sept. 2020 7898-7908*
- Zanma, T.**, see Koiwa, K., *TIE Nov. 2020 9418-9428*
- Zanma, T.**, see Liu, K., *TIE Dec. 2020 10755-10765*
- Zapp, D.**, see Zhou, M., *TIE Aug. 2020 6617-6628*
- Zarghani, M.**, see Mohsenzade, S., *TIE May 2020 3650-3661*
- Zarri, L.**, see Sala, G., *TIE Sept. 2020 7124-7134*
- Zarri, L.**, see Rizzoli, G., *TIE Aug. 2020 6237-6247*
- Zega, V.**, see Mussi, G., *TIE Aug. 2020 6996-7004*
- Zeng, C.**, see He, Q., *TIE May 2020 4203-4215*
- Zeng, D.**, Zou, J., and Xu, Y., An Indirect Testing Method for the Torque Ripple of Multiunit Permanent Magnet Synchronous Machines; *TIE April 2020 2734-2743*
- Zeng, D.**, see Pei, J., *TIE July 2020 5515-5530*
- Zeng, D.**, see Lv, G., *TIE Dec. 2020 10996*
- Zeng, J.**, see Lin, W., *TIE Sept. 2020 7439-7450*
- Zeng, J.**, Yu, Z., Liu, J., and Liu, F., Triple-Compound-Full-Bridge-Based Multi-Input Converter With Wide Zero-Voltage Switching Range and Wide Conversion Gain; *TIE Nov. 2020 9260-9272*
- Zeng, J.**, see Zhou, Y., *TIE May 2020 4002-4012*
- Zeng, M.**, and Chen, Z., SOSO Boosting of the K-SVD Denoising Algorithm for Enhancing Fault-Induced Impulse Responses of Rolling Element Bearings; *TIE Feb. 2020 1282-1292*
- Zeng, Q.**, see Liu, Y., *TIE Aug. 2020 7044-7053*
- Zeng, R.**, see Zhang, X., *TIE June 2020 4485-4495*
- Zeng, T.**, Huang, S., and Chen, W., Second-Order Information Recovery in Oriented-Plane Curvature Reproduction; *TIE Jan. 2020 725-735*
- Zeng, X.**, Li, Z., Wan, J., Zhang, J., Ren, M., Gao, W., Li, Z., and Zhang, B., Embedded Hardware Artificial Neural Network Control for Global and Real-Time Imbalance Current Suppression of Parallel Connected IGBTs; *TIE March 2020 2186-2196*
- Zeng, Y.**, Cheng, M., Liu, G., and Zhao, W., Effects of Magnet Shape on Torque Capability of Surface-Mounted Permanent Magnet Machine for Servo Applications; *TIE April 2020 2977-2990*
- Zeng, Z.**, Zhang, X., and Zhang, Z., Imbalance Current Analysis and Its Suppression Methodology for Parallel SiC MOSFETs with Aid of a Differential Mode Choke; *TIE Feb. 2020 1508-1519*
- Zeng, Z.**, see Sun, J., *TIE Dec. 2020 10931-10941*
- Zeng, Z.**, see Abuellil, A., *TIE May 2020 3662-3672*
- Zengin, S.**, and Boztepe, M., A Novel Current Modulation Method to Eliminate Low-Frequency Harmonics in Single-Stage Dual Active Bridge AC-DC Converter; *TIE Feb. 2020 1048-1058*
- Zhai, F.**, see Chen, Q., *TIE June 2020 4762-4773*
- Zhai, F.**, see Chen, Q., *TIE Nov. 2020 9613-9622*
- Zhai, H.**, Zhuo, F., Zhu, C., Yi, H., Wang, Z., Tao, R., and Wei, T., An Optimal Compensation Method of Shunt Active Power Filters for System-Wide Voltage Quality Improvement; *TIE Feb. 2020 1270-1281*
- Zhai, L.**, see Wang, D., *TIE Oct. 2020 8841-8850*
- Zhan, C.**, see Yang, X., *TIE May 2020 4036-4045*
- Zhan, H.**, Zhou, W., Ran, L., Yu, H., Peng, B., and Hao, R., A High-Resolution Optical Displacement Detection Method for Piezoelectric Microvibratory Stage; *TIE Dec. 2020 10897-10904*
- Zhan, S.**, Li, G., and Bailey, C., Economic Feedback Model Predictive Control of Wave Energy Converters; *TIE May 2020 3932-3943*
- Zhang, A.**, Chen, Z., Gao, R., Wang, J., Ma, Z., Wang, S., and Wang, Y., Crowbarless Symmetrical Low-Voltage Ride Through Based on Flux Linkage Tracking For Brushless Doubly Fed Induction Generators; *TIE Sept. 2020 7606-7616*
- Zhang, B.**, see Zhang, Z., *TIE April 2020 2755-2764*
- Zhang, B.**, see Zhang, G., *TIE March 2020 1890-1898*
- Zhang, B.**, see Zeng, X., *TIE March 2020 2186-2196*
- Zhang, B.**, see Guo, S., *TIE Sept. 2020 8005-8015*
- Zhang, B.**, see Moeini, A., *TIE Dec. 2020 10388-10398*
- Zhang, C.**, see Yuan, X., *TIE Feb. 2020 852-862*
- Zhang, C.**, see Lin, P., *TIE June 2020 4600-4612*
- Zhang, C.**, see Qin, C., *TIE March 2020 1956-1967*
- Zhang, C.**, see Yuan, X., *TIE March 2020 1771-1781*
- Zhang, C.**, see Xing, X., *TIE Sept. 2020 7470-7483*

- Zhang, C., *see* Chen, A., *TIE Nov. 2020 9492-9502*
- Zhang, C., *see* Xing, X., *TIE Aug. 2020 6583-6596*
- Zhang, C., *see* Sun, W., *TIE Dec. 2020 10693-10701*
- Zhang, C., *see* Na, J., *TIE May 2020 3850-3859*
- Zhang, D., *see* Guo, F., *TIE April 2020 3043-3053*
- Zhang, D., *see* Zhu, H., *TIE Nov. 2020 9358-9369*
- Zhang, D., *see* Liang, C., *TIE Aug. 2020 6963-6974*
- Zhang, F., Xie, Y., Hu, Y., Chen, G., and Wang, X., A Hybrid Boost-Flyback/Flyback Microinverter for Photovoltaic Applications; *TIE Jan. 2020 308-318*
- Zhang, F., *see* Ren, R., *TIE Feb. 2020 1475-1486*
- Zhang, F., Gerada, D., Xu, Z., Zhang, X., Tighe, C., Zhang, H., and Gerada, C., Back-Iron Extension Thermal Benefits for Electrical Machines With Concentrated Windings; *TIE March 2020 1728-1738*
- Zhang, F., *see* Gu, C., *TIE Oct. 2020 8271-8280*
- Zhang, F., *see* Zhao, Y., *TIE Aug. 2020 6874-6882*
- Zhang, F., *see* Wang, J., *TIE Aug. 2020 6864-6873*
- Zhang, G., *see* Cui, P., *TIE June 2020 4946-4956*
- Zhang, G., *see* Qin, C., *TIE March 2020 1956-1967*
- Zhang, G., Chen, J., Yu, S.S., Qiu, D., Zhang, B., Iu, H.H., Fernando, T., and Zhang, Y., A Waveform-Subtraction Based Single-Stage Ripple-Suppression Converter Family for Multiple Waveform Generation; *TIE March 2020 1890-1898*
- Zhang, G., He, Y., Dai, B., Gu, F., Han, J., and Liu, G., Robust Control of an Aerial Manipulator Based on a Variable Inertia Parameters Model; *TIE Nov. 2020 9515-9525*
- Zhang, G., *see* Hua, W., *TIE Dec. 2020 10035-10045*
- Zhang, G., *see* Ding, D., *TIE May 2020 3517-3527*
- Zhang, H., *see* Jiang, K., *TIE Jan. 2020 442-450*
- Zhang, H., *see* Bao, Y., *TIE April 2020 2553-2563*
- Zhang, H., *see* Jiang, K., *TIE June 2020 5012-5021*
- Zhang, H., *see* Wang, X., *TIE June 2020 4315-4325*
- Zhang, H., Kou, B., and Zhou, Y., Analysis and Design of a Novel Magnetic Levitation Gravity Compensator With Low Passive Force Variation in a Large Vertical Displacement; *TIE June 2020 4797-4805*
- Zhang, H., Tong, C., and Wang, Z., Normalized Analysis and Optimal Design of DCM-LCC Resonant Converter for High-Voltage Power Supply; *TIE June 2020 4496-4506*
- Zhang, H., *see* Pei, J., *TIE July 2020 5515-5530*
- Zhang, H., *see* Qi, Z., *TIE July 2020 5637-5646*
- Zhang, H., *see* Zhang, T., *TIE July 2020 5948-5958*
- Zhang, H., *see* Zhou, H., *TIE March 2020 2469-2479*
- Zhang, H., *see* Xie, H., *TIE March 2020 2430-2439*
- Zhang, H., *see* Xie, H., *TIE March 2020 2065-2075*
- Zhang, H., *see* Zhang, F., *TIE March 2020 1728-1738*
- Zhang, H., *see* Liu, C., *TIE Sept. 2020 7343-7353*
- Zhang, H., *see* Li, Q., *TIE Nov. 2020 9273-9291*
- Zhang, H., *see* Ma, J., *TIE Oct. 2020 8649-8658*
- Zhang, H., Liu, J., and Xu, S., H-Infinity Load Frequency Control of Networked Power Systems via an Event-Triggered Scheme; *TIE Aug. 2020 7104-7113*
- Zhang, H., Di, X., and Zhang, Y., Real-Time CU-Net-Based Welding Quality Inspection Algorithm in Battery Production; *TIE Dec. 2020 10942-10950*
- Zhang, H., *see* Zhong, H., *TIE Dec. 2020 10564-10574*
- Zhang, H., *see* Yao, Y., *TIE Dec. 2020 10145-10155*
- Zhang, H., Zheng, X., Li, H., Wang, Z., and Yan, H., Active Suspension System Control With Decentralized Event-Triggered Scheme; *TIE Dec. 2020 10798-10808*
- Zhang, H., *see* Li, J., *TIE May 2020 3374-3385*
- Zhang, J., and Zhang, Y., WAVE-Based Short-Range Vehicular Localization Through Vector Match; *TIE Jan. 2020 592-600*
- Zhang, J., Zhang, Z., and Yu, L., Thermal Deformation Analysis of Water Cooling Doubly Salient Brushless DC Generator With Stator Field Winding; *TIE April 2020 2700-2710*
- Zhang, J., *see* An, Q., *TIE April 2020 2564-2573*
- Zhang, J., *see* Yuan, Y., *TIE June 2020 4360-4370*
- Zhang, J., Hu, X., Xu, S., Zhang, Y., and Chen, Z., Fault Diagnosis and Monitoring of Modular Multilevel Converter With Fast Response of Voltage Sensors; *TIE June 2020 5071-5080*
- Zhang, J., and Yang, G., Fault-Tolerant Fixed-Time Trajectory Tracking Control of Autonomous Surface Vessels With Specified Accuracy; *TIE June 2020 4889-4899*
- Zhang, J., *see* Zeng, X., *TIE March 2020 2186-2196*
- Zhang, J., *see* Dai, Z., *TIE Sept. 2020 7540-7549*
- Zhang, J., Li, P., Jin, C., Zhang, W., and Liu, S., A Novel Adaptive Kalman Filtering Approach to Human Motion Tracking With Magnetic-Inertial Sensors; *TIE Oct. 2020 8659-8669*
- Zhang, J., *see* Zhang, M., *TIE Aug. 2020 7094-7103*
- Zhang, J., *see* Zhao, K., *TIE Aug. 2020 6894-6903*
- Zhang, J., *see* Dang, K., *TIE Aug. 2020 6597-6606*
- Zhang, J., *see* Zhao, N., *TIE Aug. 2020 6916-6926*
- Zhang, J., and Qu, G., Physical Unclonable Function-Based Key Sharing via Machine Learning for IoT Security; *TIE Aug. 2020 7025-7033*
- Zhang, J., *see* Dai, Z., *TIE May 2020 4254-4258*
- Zhang, J., Jiang, Y., Hu, X., and Xu, S., A Brushless Doubly Fed Generator Based on Permanent Magnet Field Modulation; *TIE May 2020 3505-3516*
- Zhang, J.C., *see* Zheng, S.Y., *TIE June 2020 4516-4526*
- Zhang, K., Hatano, T., Herrmann, G., Antognozzi, M., Edwards, C., Nguyen, T.T., Burgess, S.C., and Miles, M., A Multimode Transverse Dynamic Force Microscope—Design, Identification, and Control; *TIE June 2020 4729-4740*
- Zhang, K., Peng, K., Ding, S.X., Chen, Z., and Yang, X., A Correlation-Based Distributed Fault Detection Method and Its Application to a Hot Tandem Rolling Mill Process; *TIE March 2020 2380-2390*
- Zhang, L., and Yang, G., Fault-Estimation-Based Output-Feedback Adaptive FTC for Uncertain Nonlinear Systems With Actuator Faults; *TIE April 2020 3065-3075*
- Zhang, L., *see* Chen, Z., *TIE July 2020 5787-5797*
- Zhang, L., Zhu, X., Gao, J., and Mao, Y., Design and Analysis of New Five-Phase Flux-Intensifying Fault-Tolerant Interior-Permanent-Magnet Motor for Sensorless Operation; *TIE July 2020 6055-6065*
- Zhang, L., *see* Wu, Q., *TIE Nov. 2020 9882-9892*
- Zhang, L., *see* Liu, Z., *TIE Oct. 2020 8713-8722*
- Zhang, L., *see* Sun, Y., *TIE May 2020 3607-3617*
- Zhang, L., *see* Dong, H., *TIE May 2020 3629-3639*
- Zhang, M., *see* Wang, X., *TIE July 2020 5798-5809*
- Zhang, M., *see* Huang, J., *TIE March 2020 2030-2041*
- Zhang, M., *see* Guo, X., *TIE March 2020 1867-1877*
- Zhang, M., Chen, J., He, S., Yang, L., Gong, X., and Zhang, J., Privacy-Preserving Database Assisted Spectrum Access for Industrial Internet of Things: A Distributed Learning Approach; *TIE Aug. 2020 7094-7103*
- Zhang, M., *see* Huai, Z., *TIE May 2020 3879-3890*
- Zhang, N., *see* Ning, D., *TIE Aug. 2020 6773-6784*
- Zhang, P., *see* Yuan, Y., *TIE March 2020 2155-2166*
- Zhang, Q., *see* Geng, Z., *TIE Jan. 2020 542-550*
- Zhang, Q., *see* Si, X., *TIE April 2020 3202-3215*
- Zhang, Q., *see* Ren, B., *TIE April 2020 2810-2821*
- Zhang, Q., Jia, Z., Cheng, S., and Wang, D., Analysis and Calculation of Radial Electromagnetic Force of Circular Winding Brushless DC Motor; *TIE June 2020 4338-4349*
- Zhang, Q., Yan, L., Duan, Z., Jiao, Z., Gerada, C., and Chen, I., High Torque Density Torque Motor With Hybrid Magnetization Pole Arrays for Jet Pipe Servo Valve; *TIE March 2020 2133-2142*
- Zhang, Q., *see* He, J., *TIE Oct. 2020 8921-8930*
- Zhang, R., *see* Zhang, Y., *TIE July 2020 6019-6030*
- Zhang, R., *see* Song, Z., *TIE Dec. 2020 10046-10054*
- Zhang, R., *see* Hou, B., *TIE May 2020 4216-4225*
- Zhang, S., *see* He, Z., *TIE Jan. 2020 390-401*
- Zhang, S., *see* Yuan, X., *TIE Feb. 2020 852-862*
- Zhang, S., *see* Chen, B., *TIE March 2020 2009-2020*
- Zhang, S., *see* Yuan, X., *TIE March 2020 1771-1781*
- Zhang, S., *see* Chi, R., *TIE Oct. 2020 8691-8701*

- Zhang, T.**, Xu, Z., Li, J., Zhang, H., and Gerada, C., A Third-Order Super-Twisting Extended State Observer for Dynamic Performance Enhancement of Sensorless IPMSM Drives; *TIE July 2020 5948-5958*
- Zhang, T.**, see Huang, H., *TIE Oct. 2020 8608-8617*
- Zhang, T.**, see Dang, K., *TIE Aug. 2020 6597-6606*
- Zhang, W.**, Zhou, K., Yang, X., and Liu, A., Sequential Fusion Estimation for Networked Multisensor Nonlinear Systems; *TIE June 2020 4991-4999*
- Zhang, W.**, see Guo, X., *TIE Sept. 2020 7941-7950*
- Zhang, W.**, Cheng, L., and Zhu, H., Suspension Force Error Source Analysis and Multidimensional Dynamic Model for a Centripetal Force Type-Magnetic Bearing; *TIE Sept. 2020 7617-7628*
- Zhang, W.**, see Li, X., *TIE Sept. 2020 7889-7897*
- Zhang, W.**, Yang, H., Cheng, L., and Zhu, H., Modeling Based on Exact Segmentation of Magnetic Field for a Centripetal Force Type-Magnetic Bearing; *TIE Sept. 2020 7691-7701*
- Zhang, W.**, see Chen, A., *TIE Nov. 2020 9492-9502*
- Zhang, W.**, see Zhang, J., *TIE Oct. 2020 8659-8669*
- Zhang, W.**, see Zhang, X., *TIE Aug. 2020 6312-6322*
- Zhang, W.**, see Li, X., *TIE Aug. 2020 6785-6794*
- Zhang, X.**, see Fang, T., *TIE Jan. 2020 214-224*
- Zhang, X.**, see Zhao, B., *TIE Feb. 2020 1568-1579*
- Zhang, X.**, see Huang, J., *TIE Feb. 2020 980-991*
- Zhang, X.**, see Zeng, Z., *TIE Feb. 2020 1508-1519*
- Zhang, X.**, see Zhao, B., *TIE Feb. 2020 1068-1080*
- Zhang, X.**, see Hu, Y., *TIE April 2020 2488-2498*
- Zhang, X.**, Yu, Z., Zhao, B., Chen, Z., Lv, G., Huang, Y., and Zeng, R., A Novel Mixture Solid-State Switch Based on IGCT With High Capacity and IGBT With High Turn-off Ability for Hybrid DC Breakers; *TIE June 2020 4485-4495*
- Zhang, X.**, see Li, H., *TIE June 2020 4411-4421*
- Zhang, X.**, see Yang, S., *TIE July 2020 6112-6123*
- Zhang, X.**, see Wang, Y., *TIE July 2020 5302-5312*
- Zhang, X.**, see Dong, T., *TIE July 2020 5615-5625*
- Zhang, X.**, see Li, Y., *TIE March 2020 1932-1943*
- Zhang, X.**, Foo, G.H.B., and Rahman, M.F., A Robust Field-Weakening Approach for Direct Torque and Flux Controlled Reluctance Synchronous Motors With Extended Constant Power Speed Region; *TIE March 2020 1813-1823*
- Zhang, X.**, see Zhang, F., *TIE March 2020 1728-1738*
- Zhang, X.**, see Liu, C., *TIE Sept. 2020 8044-8053*
- Zhang, X.**, see Wu, G., *TIE Nov. 2020 9976*
- Zhang, X.**, see Mao, W., *TIE Nov. 2020 9337-9347*
- Zhang, X.**, see Jiang, W., *TIE Nov. 2020 9450-9459*
- Zhang, X.**, see Zhao, X., *TIE Nov. 2020 9571-9581*
- Zhang, X.**, Chen, X., Zhu, G., and Su, C., Output Feedback Adaptive Motion Control and Its Experimental Verification for Time-Delay Nonlinear Systems With Asymmetric Hysteresis; *TIE Aug. 2020 6824-6834*
- Zhang, X.**, Li, Y., Wang, K., Zhang, W., and Gao, D., Model Predictive Control of the Open-winding PMSG System Based on Three-Dimensional Reference Voltage-Vector; *TIE Aug. 2020 6312-6322*
- Zhang, X.**, see Zhao, X., *TIE Aug. 2020 6342-6353*
- Zhang, X.**, see Shi, F., *TIE Dec. 2020 10844-10855*
- Zhang, X.**, see Xue, W., *TIE Dec. 2020 10682-10692*
- Zhang, X.**, see Li, H., *TIE Dec. 2020 10497-10508*
- Zhang, X.**, see Wang, M., *TIE Dec. 2020 10474-10484*
- Zhang, X.**, see Huang, J., *TIE Dec. 2020 10975-10980*
- Zhang, X.**, see Zhou, L., *TIE May 2020 4056-4065*
- Zhang, X.**, Fang, Y., Jiang, J., and Chen, X., A Novel Geometric Hierarchical Approach for Dynamic Visual Servoing of Quadrotors; *TIE May 2020 3840-3849*
- Zhang, X.**, see Zhang, X., *TIE May 2020 3840-3849*
- Zhang, X.**, see Hou, B., *TIE May 2020 4216-4225*
- Zhang, Y.**, see Zhang, J., *TIE Jan. 2020 592-600*
- Zhang, Y.**, see Huang, Y., *TIE Feb. 2020 1376-1386*
- Zhang, Y.**, Yuan, X., Wu, X., Yuan, Y., and Zhou, J., Parallel Implementation of Model Predictive Control for Multilevel Cascaded H-Bridge STATCOM With Linear Complexity; *TIE Feb. 2020 832-841*
- Zhang, Y.**, see Cheng, X., *TIE April 2020 3288-3297*
- Zhang, Y.**, see Zhang, J., *TIE June 2020 5071-5080*
- Zhang, Y.**, Yin, Z., Liu, J., Zhang, R., and Sun, X., IPMSM Sensorless Control Using High-Frequency Voltage Injection Method With Random Switching Frequency for Audible Noise Improvement; *TIE July 2020 6019-6030*
- Zhang, Y.**, see Liu, G., *TIE July 2020 5360-5368*
- Zhang, Y.**, Yin, Z., Liu, J., and Tong, X., A Novel Sliding Mode Observer With Optimized Constant Rate Reaching Law for Sensorless Control of Induction Motor; *TIE July 2020 5867-5878*
- Zhang, Y.**, see Zhang, Y., *TIE July 2020 5867-5878*
- Zhang, Y.**, see Zhang, G., *TIE March 2020 1890-1898*
- Zhang, Y.**, see He, Y., *TIE March 2020 2348-2359*
- Zhang, Y.**, see Wang, Z., *TIE Sept. 2020 7681-7690*
- Zhang, Y.**, see Wang, Z., *TIE Sept. 2020 7681-7690*
- Zhang, Y.**, see Shen, S., *TIE Nov. 2020 9215-9226*
- Zhang, Y.**, see He, J., *TIE Oct. 2020 8921-8930*
- Zhang, Y.**, see Yang, H., *TIE Oct. 2020 8969-8979*
- Zhang, Y.**, see Li, Q., *TIE Aug. 2020 6946-6954*
- Zhang, Y.**, see Dang, K., *TIE Aug. 2020 6597-6606*
- Zhang, Y.**, Chen, L., XuanYuan, Z., and Tian, W., Three-Dimensional Cooperative Mapping for Connected and Automated Vehicles; *TIE Aug. 2020 6649-6658*
- Zhang, Y.**, Yu, Y., Su, R., and Chen, J., Power Scheduling in More Electric Aircraft Based on an Optimal Adaptive Control Strategy; *TIE Dec. 2020 10911-10921*
- Zhang, Y.**, see Zhang, H., *TIE Dec. 2020 10942-10950*
- Zhang, Y.**, Wang, L., and Meng, L., An Analytical AC Resistance Calculation Method for Multiple-Conductor Feeder Cables in Aircraft Electric Power Systems; *TIE May 2020 3340-3349*
- Zhang, Z.**, see Liu, B., *TIE Feb. 2020 1592-1604*
- Zhang, Z.**, see Zhao, B., *TIE Feb. 2020 1568-1579*
- Zhang, Z.**, see Huang, J., *TIE Feb. 2020 980-991*
- Zhang, Z.**, see Wang, Y., *TIE Feb. 2020 1400-1404*
- Zhang, Z.**, see Li, H., *TIE Feb. 2020 1435-1445*
- Zhang, Z.**, see Zeng, Z., *TIE Feb. 2020 1508-1519*
- Zhang, Z.**, see Zhang, J., *TIE April 2020 2700-2710*
- Zhang, Z.**, see Yan, L., *TIE April 2020 2574-2584*
- Zhang, Z.**, and Zhang, B., Angular-Misalignment Insensitive Omnidirectional Wireless Power Transfer; *TIE April 2020 2755-2764*
- Zhang, Z.**, see Liu, Y., *TIE June 2020 4381-4390*
- Zhang, Z.**, see Yu, L., *TIE June 2020 4391-4401*
- Zhang, Z.**, see Wei, J., *TIE July 2020 6135-6146*
- Zhang, Z.**, see Dai, Z., *TIE Sept. 2020 7540-7549*
- Zhang, Z.**, Wang, C., and Geng, W., Design and Optimization of Halbach-Array PM Rotor for High-Speed Axial-Flux Permanent Magnet Machine With Ironless Stator; *TIE Sept. 2020 7269-7279*
- Zhang, Z.**, see Ai, Q., *TIE Nov. 2020 9548-9559*
- Zhang, Z.**, see Xu, Y., *TIE Nov. 2020 9101-9111*
- Zhang, Z.**, Xu, K., Li, Z., Ye, D., Xu, Z., He, M., and Ren, X., 1-kV Input 1-MHz GaN Stacked Bridge LLC Converters; *TIE Nov. 2020 9227-9237*
- Zhang, Z.**, see Xu, Y., *TIE Oct. 2020 8209-8218*
- Zhang, Z.**, and Pang, H., Continuously Adjustable Capacitor for Multiple-Pickup Wireless Power Transfer Under Single-Power-Induced Energy Field; *TIE Aug. 2020 6418-6427*
- Zhang, Z.**, see Ren, X., *TIE Aug. 2020 6845-6853*
- Zhang, Z.**, see Zhou, L., *TIE May 2020 4056-4065*
- Zhang, Z.**, see Sun, L., *TIE May 2020 3562-3572*
- Zhao, B.**, Zhang, X., and Zhang, Z., Sequential Offline-Online-Offline Measurement Approach for High-Frequency LCLC Resonant Converters in the TWTA Applications; *TIE Feb. 2020 1568-1579*
- Zhao, B.**, and Zhang, X., An Efficiency-Oriented Two-Stage Optimal Design Methodology of High-Frequency LCLC Resonant Converters for Space Travelling-Wave Tube Amplifier Applications; *TIE Feb. 2020 1068-1080*
- Zhao, B.**, and Liu, D., Event-Triggered Decentralized Tracking Control of Modular Reconfigurable Robots Through Adaptive Dynamic Programming; *TIE April 2020 3054-3064*
- Zhao, B.**, see Guo, G., *TIE April 2020 2798-2809*

- Zhao, B.**, see Zhang, X., *TIE June 2020 4485-4495*
- Zhao, B.**, see Dong, T., *TIE July 2020 5615-5625*
- Zhao, B.**, Quan, Z., Li, Y.W., Quan, L., Hao, Y., and Ding, L., A Hybrid-Driven Elevator System With Energy Regeneration and Safety Enhancement; *TIE Sept. 2020 7715-7726*
- Zhao, B.**, see Li, X., *TIE Dec. 2020 9991-10000*
- Zhao, B.**, Li, X., Wei, Y., An, F., Sun, J., Liu, G., and Zhao, Y., Modular Hybrid-Full-Bridge DC Transformer With Full-Process Matching Switching Strategy for MVDC Power Distribution Application; *TIE May 2020 3317-3328*
- Zhao, C.**, see Lei, M., *TIE June 2020 4292-4304*
- Zhao, C.**, see Yu, W., *TIE June 2020 5081-5091*
- Zhao, C.**, see Zhao, S., *TIE March 2020 2294-2303*
- Zhao, C.**, see Lei, M., *TIE March 2020 1671-1683*
- Zhao, C.**, Yin, H., and Ma, C., Equivalent Series Resistance-based Real-time Control of Battery-Ultracapacitor Hybrid Energy Storage Systems; *TIE March 2020 1999-2008*
- Zhao, D.**, Stobart, R., and Mason, B., Real-Time Energy Management of the Electric Turbocharger Based on Explicit Model Predictive Control; *TIE April 2020 3126-3137*
- Zhao, G.**, see Tan, Y., *TIE Oct. 2020 8723-8731*
- Zhao, G.**, see Ye, G., *TIE Oct. 2020 8778-8787*
- Zhao, G.**, Yin, J., Wu, L., and Feng, Z., Ultrastable and Low-Noise Self-Compensation Method for Circuit Thermal Drift of Eddy Current Sensors Based on Analog Multiplier; *TIE Oct. 2020 8851-8859*
- Zhao, G.**, Yang, H., and Jiang, C., Direct Seamless Transfer Strategy by Limiting Voltage Drop of Interface Filter in Energy Storage Equipment of Microgrid; *TIE Dec. 2020 10421-10432*
- Zhao, H.**, see Liu, X., *TIE Sept. 2020 7767-7777*
- Zhao, H.**, see Zhuang, Y., *TIE Sept. 2020 7519-7528*
- Zhao, H.**, see Yang, Z., *TIE May 2020 3870-3878*
- Zhao, J.**, see Zhao, Y., *TIE June 2020 4900-4910*
- Zhao, J.**, Chen, Z., Zhu, B., and Wu, J., Precise Active Brake-Pressure Control for a Novel Electro-Booster Brake System; *TIE June 2020 4774-4784*
- Zhao, J.**, Guo, H., Wang, L., and Han, M., Computer Modeling of the Eddy Current Losses of Metal Fasteners in Rotor Slots of a Large Nuclear Steam Turbine Generator Based on Finite-Element Method and Deep Gaussian Process Regression; *TIE July 2020 5349-5359*
- Zhao, J.**, see Liu, K., *TIE July 2020 5456-5466*
- Zhao, J.**, Wang, L., Dong, F., He, Z., and Song, J., Robust High Bandwidth Current Regulation for Permanent Magnet Synchronous Linear Motor Drivers by Using Two-Degree-of-Freedom Controller and Thrust Ripple Observer; *TIE March 2020 1804-1812*
- Zhao, K.**, see Li, Z., *TIE April 2020 3086-3095*
- Zhao, K.**, Zhang, J., Ma, D., and Xia, Y., Composite Disturbance Rejection Attitude Control for Quadrotor With Unknown Disturbance; *TIE Aug. 2020 6894-6903*
- Zhao, L.**, see Yin, S., *TIE July 2020 6124-6134*
- Zhao, L.**, Li, F., Zhuang, Z., Li, Z., and Luo, Z., A Dual Half-Bridge Converter With Current Doubler Rectifier; *TIE Aug. 2020 6398-6406*
- Zhao, M.**, see Ding, C., *TIE Sept. 2020 7982-7993*
- Zhao, M.**, see Jiao, J., *TIE Nov. 2020 9904-9913*
- Zhao, N.**, Liu, J., Shi, Y., Yang, J., Zhang, J., and You, X., Mode Analysis and Fault-Tolerant Method of Open-Circuit Fault for a Dual Active-Bridge DC-DC Converter; *TIE Aug. 2020 6916-6926*
- Zhao, N.**, see Ding, D., *TIE May 2020 3517-3527*
- Zhao, Q.**, see Wu, Y., *TIE March 2020 2143-2154*
- Zhao, Q.**, see Cao, Y., *TIE Oct. 2020 8428-8437*
- Zhao, Q.**, see Mu, C., *TIE Dec. 2020 10951-10964*
- Zhao, S.**, Shmaliy, Y.S., Ahn, C.K., and Zhao, C., Probabilistic Monitoring of Correlated Sensors for Nonlinear Processes in State Space; *TIE March 2020 2294-2303*
- Zhao, S.**, see Liu, H., *TIE Oct. 2020 8878-8888*
- Zhao, S.**, see Dang, K., *TIE Aug. 2020 6597-6606*
- Zhao, S.**, see You, S.H., *TIE Dec. 2020 10713-10722*
- Zhao, T.**, see Du, B., *TIE Feb. 2020 1149-1159*
- Zhao, T.**, see Hu, Y., *TIE April 2020 2488-2498*
- Zhao, T.**, see Mao, W., *TIE Nov. 2020 9337-9347*
- Zhao, T.**, see Wang, M., *TIE Dec. 2020 10474-10484*
- Zhao, T.**, see Yuan, Y., *TIE May 2020 3830-3839*
- Zhao, W.**, Ma, A., Ji, J., Chen, X., and Yao, T., Multiobjective Optimization of a Double-Side Linear Vernier PM Motor Using Response Surface Method and Differential Evolution; *TIE Jan. 2020 80-90*
- Zhao, W.**, see Zeng, Y., *TIE April 2020 2977-2990*
- Zhao, W.**, see Wang, Z., *TIE June 2020 5120-5131*
- Zhao, W.**, Pan, X., Ji, J., Xu, L., and Zheng, J., Analysis of PM Eddy Current Loss in Four-Phase Fault-Tolerant Flux-Switching Permanent-Magnet Machines by Air-Gap Magnetic Field Modulation Theory; *TIE July 2020 5369-5378*
- Zhao, W.**, Du, K., and Xu, L., Design Considerations of Fault-Tolerant Permanent Magnet Vernier Machine; *TIE Sept. 2020 7290-7300*
- Zhao, W.**, see Yang, X., *TIE May 2020 4036-4045*
- Zhao, X.**, see Yin, X., *TIE Jan. 2020 329-339*
- Zhao, X.**, see He, Z., *TIE Jan. 2020 390-401*
- Zhao, X.**, see Guo, Y., *TIE March 2020 2220-2230*
- Zhao, X.**, see Li, Z., *TIE Nov. 2020 9862-9872*
- Zhao, X.**, Niu, S., Zhang, X., and Fu, W., Design of a New Relieving-DC-Saturation Hybrid Reluctance Machine for Fault-Tolerant In-Wheel Direct Drive; *TIE Nov. 2020 9571-9581*
- Zhao, X.**, see Liang, C., *TIE Aug. 2020 6963-6974*
- Zhao, X.**, Niu, S., Zhang, X., and Fu, W., A New Relieving-DC-Saturation Hybrid Excitation Vernier Machine for HEV Starter Generator Application; *TIE Aug. 2020 6342-6353*
- Zhao, X.**, and Niu, S., A New Slot-PM Vernier Reluctance Machine With Enhanced Zero-Sequence Current Excitation for Electric Vehicle Propulsion; *TIE May 2020 3528-3539*
- Zhao, X.**, Yao, C., Zhou, Z., Li, C., Wang, X., Zhu, T., and Abu-Siada, A., Experimental Evaluation of Transformer Internal Fault Detection Based on $V-I$ Characteristics; *TIE May 2020 4108-4119*
- Zhao, Y.**, Song, Z., Ma, T., and Dai, J.S., Optimization of Stiffness to Achieve Increased Bandwidth and Torque Resolution in Nonlinear Stiffness Actuators; *TIE April 2020 2925-2935*
- Zhao, Y.**, Zhao, J., Fu, J., Shi, Y., and Chen, C., Rate Bumpless Transfer Control for Switched Linear Systems With Stability and Its Application to Aero-Engine Control Design; *TIE June 2020 4900-4910*
- Zhao, Y.**, see Zhou, D., *TIE March 2020 2337-2347*
- Zhao, Y.**, see Li, H., *TIE Sept. 2020 7736-7745*
- Zhao, Y.**, see Tao, Y., *TIE Oct. 2020 8799-8807*
- Zhao, Y.**, Zhang, F., Huang, P., and Liu, X., Impulsive Super-Twisting Sliding Mode Control for Space Debris Capturing via Tethered Space Net Robot; *TIE Aug. 2020 6874-6882*
- Zhao, Y.**, see Zhao, B., *TIE May 2020 3317-3328*
- Zhao, Z.**, see Li, S., *TIE June 2020 4857-4866*
- Zhao, Z.**, Ahn, C.K., and Li, H., Boundary Antidisturbance Control of a Spatially Nonlinear Flexible String System; *TIE June 2020 4846-4856*
- Zhao, Z.**, see Yin, S., *TIE July 2020 6124-6134*
- Zhen, S.**, see Liu, X., *TIE Sept. 2020 7767-7777*
- Zheng, B.**, Gao, X., and Pan, R., Sucker Rod Pump Working State Diagnosis Using Motor Data and Hidden Conditional Random Fields; *TIE Sept. 2020 7919-7928*
- Zheng, H.**, Wang, R., Yang, Y., Li, Y., and Xu, M., Intelligent Fault Identification Based on Multisource Domain Generalization Towards Actual Diagnosis Scenario; *TIE Feb. 2020 1293-1304*
- Zheng, H.**, see Yang, H., *TIE July 2020 5258-5268*
- Zheng, J.**, see Zhao, W., *TIE July 2020 5369-5378*
- Zheng, J.**, see Shao, K., *TIE Aug. 2020 6659-6668*
- Zheng, J.**, see Wang, H., *TIE Dec. 2020 10587-10599*
- Zheng, M.**, see Li, L., *TIE Sept. 2020 8064-8071*
- Zheng, M.**, see Ning, D., *TIE Aug. 2020 6773-6784*
- Zheng, P.**, see Han, J., *TIE May 2020 3431-3441*
- Zheng, S.**, see Liu, G., *TIE July 2020 6158-6167*
- Zheng, S.**, see Liu, G., *TIE Oct. 2020 8599-8607*
- Zheng, S.Y.**, Zhang, J.C., and Liu, H.W., A Fault-Tolerant Wideband Amplifier Based on Distributed Amplification Topology; *TIE June 2020 4516-4526*
- Zheng, T.**, see Sun, B., *TIE Sept. 2020 7550-7559*

- Zheng, T.**, see Xu, F., *TIE Oct. 2020 8545-8554*
- Zheng, T.**, Gao, C., Liu, X., Liao, X., Li, Z., Sun, B., and Lv, J., A Novel High-Voltage DC Transformer Based on Diode-Clamped Modular Multi-level Converters With Voltage Self-Balancing Capability; *TIE Dec. 2020 10304-10314*
- Zheng, W.X.**, see Yang, R., *TIE Dec. 2020 10631-10640*
- Zheng, X.**, see Zhang, H., *TIE Dec. 2020 10798-10808*
- Zheng, X.**, see Yang, X., *TIE May 2020 3967-3979*
- Zheng, Y.**, see Cheng, X., *TIE April 2020 3288-3297*
- Zheng, Z.**, see Li, Z., *TIE Jan. 2020 379-389*
- Zheng, Z.**, see Wang, C., *TIE Feb. 2020 1520-1531*
- Zheng, Z.**, see Wang, K., *TIE Nov. 2020 9120-9132*
- Zheng, Z.**, see Wang, S., *TIE Aug. 2020 6709-6720*
- Zheng, Z.**, see Wang, Y., *TIE Dec. 2020 10284-10294*
- Zhong, H.**, Miao, Z., Wang, Y., Mao, J., Li, L., Zhang, H., Chen, Y., and Fierro, R., A Practical Visual Servo Control for Aerial Manipulation Using a Spherical Projection Model; *TIE Dec. 2020 10564-10574*
- Zhong, Q.**, see Ren, B., *TIE Sept. 2020 7819-7828*
- Zhong, Q.**, see Amin, M., *TIE Sept. 2020 7574-7582*
- Zhong, R.**, see Guo, X., *TIE March 2020 1867-1877*
- Zhou, B.**, see Huang, X.Z., *TIE Jan. 2020 180-191*
- Zhou, B.**, see Wei, J., *TIE July 2020 6135-6146*
- Zhou, B.**, see Zhou, X., *TIE March 2020 1782-1791*
- Zhou, B.**, see Hou, B., *TIE May 2020 4216-4225*
- Zhou, B.**, see Wang, K., *TIE May 2020 3350-3360*
- Zhou, C.**, see Huang, K., *TIE March 2020 2371-2379*
- Zhou, C.**, see Ding, Z., *TIE March 2020 2460-2468*
- Zhou, D.**, Zhao, Y., Wang, Z., He, X., and Gao, M., Review on Diagnosis Techniques for Intermittent Faults in Dynamic Systems; *TIE March 2020 2337-2347*
- Zhou, D.**, Jiang, C., Quan, Z., and Li, Y., Vector Shifted Model Predictive Power Control of Three-Level Neutral-Point-Clamped Rectifiers; *TIE Sept. 2020 7157-7166*
- Zhou, D.**, Quan, Z., and Li, Y., Model Predictive Control of a Nine-Level Internal Parallel Multilevel Converter With Phase-Shifted Pulsewidth Modulation; *TIE Nov. 2020 9073-9082*
- Zhou, F.**, see Dong, T., *TIE July 2020 5615-5625*
- Zhou, H.**, Zhang, H., and Yang, C., Hybrid-Model-Based Intelligent Optimization of Ironmaking Process; *TIE March 2020 2469-2479*
- Zhou, H.**, see Dang, K., *TIE Aug. 2020 6597-6606*
- Zhou, J.**, see Zhang, Y., *TIE Feb. 2020 832-841*
- Zhou, J.**, see Chen, X., *TIE March 2020 1968-1979*
- Zhou, J.**, see Zhuang, Y., *TIE Sept. 2020 7519-7528*
- Zhou, J.**, see Zhuang, Y., *TIE Nov. 2020 9471-9479*
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- An Adaptive Gain Dynamics for Time Delay Control Improves Accuracy and Robustness to Significant Payload Changes for Robots. *Lee, J.*, +, *TIE April 2020 3076-3085*
- Application of Sliding Switching Functions in Backstepping Based Speed Observer of Induction Machine. *Morawiec, M.*, +, *TIE July 2020 5843-5853*
- Boundary Antidisturbance Control of a Spatially Nonlinear Flexible String System. *Zhao, Z.*, +, *TIE June 2020 4846-4856*
- Comments on "A New Adaptive Sliding-Mode Control Scheme for Application to Robot Manipulators". *Su, Y.*, *TIE Aug. 2020 7116-7120*
- Complex-Coefficient Adaptive Disturbance Observer for Position Estimation of IPMSMs With Robustness to DC Errors. *Xiao, D.*, +, *TIE July 2020 5924-5935*
- Decoupled Torque Control of Series Elastic Actuator With Adaptive Robust Compensation of Time-Varying Load-Side Dynamics. *Lin, Y.*, +, *TIE July 2020 5604-5614*
- Design, Implementation, and Evaluation of a Neural-Network-Based Quadcopter UAV System. *Jiang, F.*, +, *TIE March 2020 2076-2085*
- Discrete-Time Extended State Observer-Based Model-Free Adaptive Control Via Local Dynamic Linearization. *Chi, R.*, +, *TIE Oct. 2020 8691-8701*
- Distributed Control of Multiple Flexible Manipulators With Unknown Disturbances and Dead-Zone Input. *Chen, T.*, +, *TIE Nov. 2020 9937-9947*
- Distributed Tracking of a Class of Underactuated Lagrangian Systems With Uncertain Parameters and Actuator Faults. *Chen, T.*, +, *TIE May 2020 4244-4253*
- Dynamics-Level Finite-Time Fuzzy Monocular Visual Servo of an Unmanned Surface Vehicle. *Wang, N.*, +, *TIE Nov. 2020 9648-9658*
- Elimination of Photovoltaic Mismatching With Improved Submodule Differential Power Processing. *Chu, G.*, +, *TIE April 2020 2822-2833*
- Energy-Based Nonlinear Adaptive Control Design for the Quadrotor UAV System With a Suspended Payload. *Yang, S.*, +, *TIE March 2020 2054-2064*
- Event-Triggered Adaptive Attitude Tracking Control for Spacecraft With Unknown Actuator Faults. *Wang, C.*, +, *TIE March 2020 2241-2250*
- Event-Triggered Decentralized Tracking Control of Modular Reconfigurable Robots Through Adaptive Dynamic Programming. *Zhao, B.*, +, *TIE April 2020 3054-3064*
- Fault-Estimation-Based Output-Feedback Adaptive FTC for Uncertain Nonlinear Systems With Actuator Faults. *Zhang, L.*, +, *TIE April 2020 3065-3075*
- Fault-Tolerant Fixed-Time Trajectory Tracking Control of Autonomous Surface Vessels With Specified Accuracy. *Zhang, J.*, +, *TIE June 2020 4889-4899*
- Finite-Time Adaptive Quantized Control of Stochastic Nonlinear Systems With Input Quantization: A Broad Learning System Based Identification Method. *Sui, S.*, +, *TIE Oct. 2020 8555-8565*
- Finite-Time Identification Algorithm for Volumetric Efficiency Map in SI Gasoline Engines. *Wang, C.*, +, *TIE Dec. 2020 10702-10712*
- Finite-Time Trajectory Tracking Control of Space Manipulator Under Actuator Saturation. *Jia, S.*, +, *TIE March 2020 2086-2096*
- Force Sensorless Admittance Control With Neural Learning for Robots With Actuator Saturation. *Peng, G.*, +, *TIE April 2020 3138-3148*
- Frequency Adaptive Grid Voltage Sensorless Control of LCL-Filtered Inverter Based on Extended Model Observer. *Tran, T.V.*, +, *TIE Sept. 2020 7560-7573*
- Frequency-Adaptive Virtual Flux Estimator-Based Predictive Power Control With Suppression of Dc Voltage Ripples Under Unbalanced Network. *Yang, H.*, +, *TIE Oct. 2020 8969-8979*
- From Battery Cell to Electrodes: Real-Time Estimation of Charge and Health of Individual Battery Electrodes. *Dey, S.*, +, *TIE March 2020 2167-2175*
- Full-Order Observer for a Class of Nonlinear Systems With Unmatched Uncertainties: Joint Attractive Ellipsoid and Sliding Mode Concepts. *Sanchez, B.*, +, *TIE July 2020 5677-5686*
- H-Infinity Load Frequency Control of Networked Power Systems via an Event-Triggered Scheme. *Zhang, H.*, +, *TIE Aug. 2020 7104-7113*
- High-Order Model-Free Adaptive Iterative Learning Control of Pneumatic Artificial Muscle With Enhanced Convergence. *Ai, Q.*, +, *TIE Nov. 2020 9548-9559*
- Human-Cooperative Control of a Wearable Walking Exoskeleton for Enhancing Climbing Stair Activities. *Li, Z.*, +, *TIE April 2020 3086-3095*
- Impulsive Super-Twisting Sliding Mode Control for Space Debris Capturing via Tethered Space Net Robot. *Zhao, Y.*, +, *TIE Aug. 2020 6874-6882*

- Motor Learning and Generalization Using Broad Learning Adaptive Neural Control. *Huang, H.*, +, *TIE Oct. 2020 8608-8617*
- MPC Inspired Dynamical Output Feedback and Adaptive Feedforward Control Applied to Piezo-Actuated Positioning Systems. *Nguyen, M.L.*, +, *TIE May 2020 3921-3931*
- Multiobjective Optimal Parking Maneuver Planning of Autonomous Wheeled Vehicles. *Chai, R.*, +, *TIE Dec. 2020 10809-10821*
- Novel Adaptive Controller for Effective Magnetic Measurement Under Arbitrary Magnetization. *Vo, A.*, +, *TIE Nov. 2020 9841-9850*
- Online Hysteresis Identification and Compensation for Piezoelectric Actuators. *Liu, Y.*, +, *TIE July 2020 5595-5603*
- Optimal Model-Free Output Synchronization of Heterogeneous Multiagent Systems Under Switching Topologies. *Mu, C.*, +, *TIE Dec. 2020 10951-10964*
- Optimal Tracking With Disturbance Rejection of Voltage Source Inverters. *Teng, J.*, +, *TIE June 2020 4957-4968*
- Optimized Formation Control Using Simplified Reinforcement Learning for a Class of Multiagent Systems With Unknown Dynamics. *Wen, G.*, +, *TIE Sept. 2020 7879-7888*
- Output Feedback Adaptive Motion Control and Its Experimental Verification for Time-Delay Nonlinear Systems With Asymmetric Hysteresis. *Zhang, X.*, +, *TIE Aug. 2020 6824-6834*
- Output Feedback Control of Uncertain Hydraulic Servo Systems. *Na, J.*, +, *TIE Jan. 2020 490-500*
- Performance-Improved Implementation of the SISO Adaptive Predictive Control Algorithm for Embedded Systems. *Cruz-Malagon, I.D.L.*, +, *TIE Sept. 2020 8054-8063*
- Power Quality Enhancement Using Euclidean Direction Search Based Control Technique. *Badoni, M.*, +, *TIE March 2020 2231-2240*
- Power Scheduling in More Electric Aircraft Based on an Optimal Adaptive Control Strategy. *Zhang, Y.*, +, *TIE Dec. 2020 10911-10921*
- Precision Motion Control of a Servomotor-Pump Direct-Drive Electrohydraulic System With a Nonlinear Pump Flow Mapping. *Helian, B.*, +, *TIE Oct. 2020 8638-8648*
- Quasi-Proportional-Resonant Controller Based Adaptive Position Observer for Sensorless Control of PMSM Drives Under Low Carrier Ratio. *An, Q.*, +, *TIE April 2020 2564-2573*
- Relative Impedance-Based Internal Force Control for Bimanual Robot Teleoperation With Varying Time Delay. *Lu, Z.*, +, *TIE Jan. 2020 778-789*
- Robust High Bandwidth Current Regulation for Permanent Magnet Synchronous Linear Motor Drivers by Using Two-Degree-of-Freedom Controller and Thrust Ripple Observer. *Zhao, J.*, +, *TIE March 2020 1804-1812*
- Sensor-Based Control Using an Image Point and Distance Features for Rivet-in-Hole Insertion. *Zhu, W.*, +, *TIE June 2020 4692-4699*
- Sensorless Rotor Position Estimation of Doubly Fed Induction Generator Based on Backstepping Technique. *Morawiec, M.*, +, *TIE July 2020 5889-5899*
- Signal Compensation Based Adaptive Cascade Control for Regrinding Processes. *Wang, L.*, +, *TIE Oct. 2020 8732-8742*
- Synthesis of ILC-MPC Controller With Data-Driven Approach for Constrained Batch Processes. *Li, D.*, +, *TIE April 2020 3116-3125*
- Three-Dimensional Guidance for Various Target Motions With Terminal Angle Constraints Using Twisting Control. *Hu, Q.*, +, *TIE Feb. 2020 1242-1253*
- Torque Ripple Suppression for Open-End Winding Permanent-Magnet Synchronous Machine Drives With Predictive Current Control. *Yuan, X.*, +, *TIE March 2020 1771-1781*
- Uncertainty and Disturbance Estimator-Based Control of a Flapping-Wing Aerial Vehicle With Unknown Backlash-Like Hysteresis. *Yin, Z.*, +, *TIE June 2020 4826-4835*
- Unknown System Dynamics Estimator for Motion Control of Nonlinear Robotic Systems. *Na, J.*, +, *TIE May 2020 3850-3859*
- Adaptive filters**
- Suppression of Synchronous Current Using Double Input Improved Adaptive Notch Filter Algorithm. *Liu, G.*, +, *TIE Oct. 2020 8599-8607*
- Adaptive Kalman filters**
- A Novel Adaptive Kalman Filtering Approach to Human Motion Tracking With Magnetic-Inertial Sensors. *Zhang, J.*, +, *TIE Oct. 2020 8659-8669*
- Observability Analysis and Adaptive Information Fusion for Integrated Navigation of Unmanned Ground Vehicles. *Shen, K.*, +, *TIE Sept. 2020 7659-7668*
- Adhesion**
- All-Day Mobile Healthcare Monitoring System Based on Heterogeneous Stretchable Sensors for Medical Emergency. *Lee, S.*, +, *TIE Oct. 2020 8808-8816*
- Development of a Magnetically Driven Microgripper for PicoNewton Force-Controlled Microscale Manipulation and Characterization. *Xie, H.*, +, *TIE March 2020 2065-2075*
- Adhesives**
- Fault Diagnosis in Microelectronics Attachment Via Deep Learning Analysis of 3-D Laser Scans. *Dimitriou, N.*, +, *TIE July 2020 5748-5757*
- Aerodynamics**
- A Pedagogical Study of Aerodynamic Feedback Control by Dielectric Barrier Discharge Plasma. *Kwan, P.W.*, +, *TIE Jan. 2020 451-460*
- Acoustic Source Localization From Multirotor UAVs. *Salvati, D.*, +, *TIE Oct. 2020 8618-8628*
- Aerospace components**
- Uncertainty and Disturbance Estimator-Based Control of a Flapping-Wing Aerial Vehicle With Unknown Backlash-Like Hysteresis. *Yin, Z.*, +, *TIE June 2020 4826-4835*
- Aerospace computing**
- Extended Signal-Correction Observer and Application to Aircraft Navigation. *Wang, X.*, +, *TIE April 2020 3149-3156*
- Aerospace control**
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- Aerospace engines**
- H_{∞} Refined Antidisturbance Control of Switched LPV Systems With Application to Aero-Engine. *Yang, D.*, +, *TIE April 2020 3180-3190*
- Rate Bumpless Transfer Control for Switched Linear Systems With Stability and Its Application to Aero-Engine Control Design. *Zhao, Y.*, +, *TIE June 2020 4900-4910*
- Aerospace industry**
- Design and Performance of a High-Speed Permanent Magnet Generator with Amorphous Alloy Magnetic Core for Aerospace Applications. *Ismagilov, F.R.*, +, *TIE March 2020 1750-1758*
- Aerospace robotics**
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- Impulsive Super-Twisting Sliding Mode Control for Space Debris Capturing via Tethered Space Net Robot. *Zhao, Y.*, +, *TIE Aug. 2020 6874-6882*
- Aerospace safety**
- Intrinsic Determinants and Harmonic Measure of Flight Safety. *Yin, T.*, +, *TIE Aug. 2020 7054-7064*
- Affective computing**
- Authoring New Haptic Textures Based on Interpolation of Real Textures in Affective Space. *Hassan, W.*, +, *TIE Jan. 2020 667-676*
- Affine transforms**
- A Robust Point Set Registration Approach With Multiple Effective Constraints. *Sun, J.*, +, *TIE Dec. 2020 10931-10941*
- Aging**
- In situ* Degradation Monitoring of SiC MOSFET Based on Switching Transient Measurement. *Pu, S.*, +, *TIE June 2020 5092-5100*
- Hydrothermal Aging Factor Estimation for Two-Cell Diesel-Engine SCR Systems via a Dual Time-Scale Unscented Kalman Filter. *Jiang, K.*, +, *TIE Jan. 2020 442-450*
- Thermal Overload and Insulation Aging of Short Duty Cycle, Aerospace Motors. *Madonna, V.*, +, *TIE April 2020 2618-2629*
- Transfer Learning With Long Short-Term Memory Network for State-of-Health Prediction of Lithium-Ion Batteries. *Tan, Y.*, +, *TIE Oct. 2020 8723-8731*
- Air gaps**
- Γ -Source Magnetic Integrated Filter for Single-Phase Grid Tied Voltage Source Converters. *Masoumi, A.H.*, +, *TIE July 2020 5410-5420*

- A New Hybrid Model for Electromechanical Characteristic Analysis Under SISC in Synchronous Generators. *He, Y.*, +, *TIE March 2020 2348-2359*
- A Simplified Equivalent Circuit Method for Induction Machine Nonintrusive Field Efficiency Estimation. *Aminu, M.*, +, *TIE Sept. 2020 7301-7311*
- Airgap Flux Based Detection and Classification of Induction Motor Rotor and Load Defects During the Starting Transient. *Park, Y.*, +, *TIE Dec. 2020 10075-10084*
- An Initial States Recognition (ISR) Method for Start-Up of 1 Φ BLDC Motor in Hall-Sensor-Less Fan Applications. *Tang, Z.*, +, *TIE Oct. 2020 8302-8311*
- Analysis of Consequent-Pole Flux Reversal Permanent Magnet Machine With Biased Flux Modulation Theory. *Yang, H.*, +, *TIE March 2020 2107-2121*
- Analysis of PM Eddy Current Loss in Four-Phase Fault-Tolerant Flux-Switching Permanent-Magnet Machines by Air-Gap Magnetic Field Modulation Theory. *Zhao, W.*, +, *TIE July 2020 5369-5378*
- Analysis of PM Eddy Current Loss in Rotor-PM and Stator-PM Flux-switching Machines by Air-gap Field Modulation Theory. *Su, P.*, +, *TIE March 2020 1824-1835*
- Analytical Calculation of the Magnetic Field Distribution in Slotless Brushless Machines With U-Shaped Interior Permanent Magnets. *Hajdinjak, M.*, +, *TIE Aug. 2020 6721-6731*
- Analytical Modeling of 3-D Magnetic Field and Performance in Magnetic Lead Screws Accounting for Magnetization Pattern. *Gao, F.*, +, *TIE June 2020 4785-4796*
- Analytical Modeling of Misalignment in Axial Flux Permanent Magnet Machine. *Guo, B.*, +, *TIE June 2020 4433-4443*
- Design and Analysis of a New Parallel-Hybrid-Excited Machine With Harmonic-Shift Structure. *Cao, L.*, +, *TIE March 2020 1759-1770*
- Design and Analysis of New Five-Phase Flux-Intensifying Fault-Tolerant Interior-Permanent-Magnet Motor for Sensorless Operation. *Zhang, L.*, +, *TIE July 2020 6055-6065*
- Design and Optimization of a Flux-Modulated Permanent Magnet Motor Based on an Airgap-Harmonic-Orientated Design Methodology. *Zhu, X.*, +, *TIE July 2020 5337-5348*
- Design Consideration and Characteristic Investigation of Modular Permanent Magnet Bearingless Switched Reluctance Motor. *Wang, H.*, +, *TIE June 2020 4326-4337*
- Design Considerations of Fault-Tolerant Permanent Magnet Vernier Machine. *Zhao, W.*, +, *TIE Sept. 2020 7290-7300*
- Design of New Dual-Stator Field Modulation Machines. *Wang, H.*, +, *TIE July 2020 5626-5636*
- Design, Analysis, and Impacts of Sinusoidal LC Filter on Pulsewidth Modulated Inverter Fed-Induction Motor Drive. *Mishra, P.*, +, *TIE April 2020 2678-2688*
- Effects of Design Parameters on the Multiphysics Performance of High-Speed Permanent Magnet Machines. *Du, G.*, +, *TIE May 2020 3472-3483*
- Electromagnetic Shielding Analysis of a Canned Permanent Magnet Motor. *Yu, Q.*, +, *TIE Oct. 2020 8123-8130*
- Flux-Focusing Permanent Magnet Machines With Modular Consequent-Pole Rotor. *Li, J.*, +, *TIE May 2020 3374-3385*
- Harmonic Analysis of Air Gap Magnetic Field in Flux-Modulation Double-Stator Electrical-Excitation Synchronous Machine. *Wang, Y.*, +, *TIE July 2020 5302-5312*
- Homopolar Bearingless Slice Motor With Flux-Biasing Halbach Arrays. *Noh, M.*, +, *TIE Sept. 2020 7757-7766*
- Magnetic Design Aspects of the Trans-Rotary Magnetic Gear Using Quasi-Halbach Arrays. *Jenney, K.*, +, *TIE Nov. 2020 9582-9592*
- Magnetic Field Analysis and Flux Barrier Design for Modular Permanent Magnet Linear Synchronous Motor. *Tan, Q.*, +, *TIE May 2020 3891-3900*
- Multilayer Fractional Slot Pole-Phase Modulated Induction Motor Drives for Traction Applications. *Reddy, B.P.*, +, *TIE Nov. 2020 9112-9119*
- Novel Method for Direct Measurement of Air Gap Anomalies in Direct-Drive Electrical Motors. *Herman, J.*, +, *TIE March 2020 2422-2429*
- Optimal Design of a Novel Single-Phase 8-Slot 8-Pole Tubular Electromagnetic Shock Absorber to Harvest Energy. *Duong, M.*, +, *TIE Feb. 2020 1180-1190*
- Relationship Between Homopolar Inductor Machine and Wound-Field Synchronous Machine. *Ye, C.*, +, *TIE Feb. 2020 919-930*
- Suspension Force Error Source Analysis and Multidimensional Dynamic Model for a Centripetal Force Type-Magnetic Bearing. *Zhang, W.*, +, *TIE Sept. 2020 7617-7628*
- Tilting Torque Calculation of a Novel Tiered Type Permanent Magnet Spherical Motor. *Gan, L.*, +, *TIE Jan. 2020 421-431*
- Air pollution**
- An Integrated Electrified Powertrain Topology With SRG and SRM for Plug-In Hybrid Electrical Vehicle. *Cheng, H.*, +, *TIE Oct. 2020 8231-8241*
- Data-Driven Modeling and UFIR-Based Outlet NO_x Estimation for Diesel-Engine SCR Systems. *Jiang, K.*, +, *TIE June 2020 5012-5021*
- Real-Time Energy Management of the Electric Turbocharger Based on Explicit Model Predictive Control. *Zhao, D.*, +, *TIE April 2020 3126-3137*
- Air pollution control**
- Hydrothermal Aging Factor Estimation for Two-Cell Diesel-Engine SCR Systems via a Dual Time-Scale Unscented Kalman Filter. *Jiang, K.*, +, *TIE Jan. 2020 442-450*
- Aircraft**
- A High-Frequency Link Matrix Rectifier With a Pure Capacitive Output Filter in a Discontinuous Conduction Mode. *Lan, D.*, +, *TIE Jan. 2020 4-15*
- A Novel Electro Hydrostatic Actuator System With Energy Recovery Module for More Electric Aircraft. *Shang, Y.*, +, *TIE April 2020 2991-2999*
- High Torque Density Torque Motor With Hybrid Magnetization Pole Arrays for Jet Pipe Servo Valve. *Zhang, Q.*, +, *TIE March 2020 2133-2142*
- Intrinsic Determinants and Harmonic Measure of Flight Safety. *Yin, T.*, +, *TIE Aug. 2020 7054-7064*
- Power Scheduling in More Electric Aircraft Based on an Optimal Adaptive Control Strategy. *Zhang, Y.*, +, *TIE Dec. 2020 10911-10921*
- Aircraft control**
- Adaptive NN Backstepping Control Design for a 3-DOF Helicopter: Theory and Experiments. *Yang, X.*, +, *TIE May 2020 3967-3979*
- An Online Trajectory Planning Approach for a Quadrotor UAV With a Slung Payload. *Xian, B.*, +, *TIE Aug. 2020 6669-6678*
- Composite Disturbance Rejection Attitude Control for Quadrotor With Unknown Disturbance. *Zhao, K.*, +, *TIE Aug. 2020 6894-6903*
- Extended Signal-Correction Observer and Application to Aircraft Navigation. *Wang, X.*, +, *TIE April 2020 3149-3156*
- On the Decentralized Energy Management Strategy for the All-Electric APU of Future More Electric Aircraft Composed of Multiple Fuel Cells and Supercapacitors. *Chen, J.*, +, *TIE Aug. 2020 6183-6194*
- Path-Following Control of A Quadrotor UAV With A Cable-Suspended Payload Under Wind Disturbances. *Qian, L.*, +, *TIE March 2020 2021-2029*
- Real-Time Reentry Trajectory Planning of Hypersonic Vehicles: A Two-Step Strategy Incorporating Fuzzy Multiobjective Transcription and Deep Neural Network. *Chai, R.*, +, *TIE Aug. 2020 6904-6915*
- Three-Dimensional Guidance for Various Target Motions With Terminal Angle Constraints Using Twisting Control. *Hu, Q.*, +, *TIE Feb. 2020 1242-1253*
- Uncertainty and Disturbance Estimator-Based Control of a Flapping-Wing Aerial Vehicle With Unknown Backlash-Like Hysteresis. *Yin, Z.*, +, *TIE June 2020 4826-4835*
- Aircraft landing guidance**
- Real-Time Reentry Trajectory Planning of Hypersonic Vehicles: A Two-Step Strategy Incorporating Fuzzy Multiobjective Transcription and Deep Neural Network. *Chai, R.*, +, *TIE Aug. 2020 6904-6915*
- Aircraft navigation**
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- Aircraft power systems**
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- An Analytical AC Resistance Calculation Method for Multiple-Conductor Feeder Cables in Aircraft Electric Power Systems. *Zhang, Y.*, +, *TIE May 2020 3340-3349*
- Design Considerations of Sequential Switching Shunt Regulator for High-Power Applications. *Zhu, H.*, +, *TIE Nov. 2020 9358-9369*

Dynamic Performance Improvement of Doubly Salient Brushless DC Generator System With Controlled Rectifier. *Xu, Y., +, TIE Oct. 2020 8209-8218*

Numerical Analysis of Turn-to-Turn Short Circuit Current Mitigation for Concentrated Winding Permanent Magnet Machines With Series and Parallel Connected Windings. *Xu, Y., +, TIE Nov. 2020 9101-9111*

Thermal Overload and Insulation Aging of Short Duty Cycle, Aerospace Motors. *Madonna, V., +, TIE April 2020 2618-2629*

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Early Classification of Alarm Floods via Exponentially Attenuated Component Analysis. *Shang, J., +, TIE Oct. 2020 8702-8712*

Alumina

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Aluminum alloys

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Aluminum nitride

Correction to "Wafer-Level Vacuum-Packaged High-Performance AlN-on-SOI Piezoelectric Resonator for Sub-100-MHz Oscillator Applications" [Apr 18 3576-3584]. *Wu, G., +, TIE Nov. 2020 9976*

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Hydrothermal Aging Factor Estimation for Two-Cell Diesel-Engine SCR Systems via a Dual Time-Scale Unscented Kalman Filter. *Jiang, K., +, TIE Jan. 2020 442-450*

Amorphous magnetic materials

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Experimental Study of the Amorphous Magnetic Material for High-Speed Sleeve-Free PM Rotor Application. *Ou, J., +, TIE June 2020 4422-4432*

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A Pre-Bootstrapping Method for Use in Gate Driver Circuits to Improve the Scan Pulse Delay of High-Resolution TFT-LCD Systems. *Lin, C., +, TIE Aug. 2020 7015-7024*

Amplitude modulation

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Unified Graphical Model of High-Frequency Signal Injection Methods for PMSM Sensorless Control. *Li, H., +, TIE June 2020 4411-4421*

Analog multipliers

Ultrastable and Low-Noise Self-Compensation Method for Circuit Thermal Drift of Eddy Current Sensors Based on Analog Multiplier. *Zhao, G., +, TIE Oct. 2020 8851-8859*

Analog-digital conversion

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Angular measurement

A Double-Step Unscented Kalman Filter and HMM-Based Zero-Velocity Update for Pedestrian Dead Reckoning Using MEMS Sensors. *Tong, X., +, TIE Jan. 2020 581-591*

A Novel Joint Angle Estimation Method for Serial Manipulator Using Micro-Electromechanical Systems Sensors. *Xu, X., +, TIE Dec. 2020 10610-10620*

A Solution to the Attitude Problem Using Two Rotation Units of Micromechanical Gyroscopes. *Liang, Q., +, TIE Feb. 2020 1357-1365*

Improved Extended Kalman Filter Estimation Using Threshold Signal Detection With an MEMS Electrostatic Microscanner. *Chen, Y., +, TIE Feb. 2020 1328-1336*

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A Novel Hybrid-Magnetic-Circuit Variable Flux Memory Machine. *Yang, H., +, TIE July 2020 5258-5268*

A Robust Observer and Nonorthogonal PLL-Based Sensorless Control for Fault-Tolerant Permanent Magnet Motor With Guaranteed Postfault Performance. *Xu, J., +, TIE July 2020 5959-5970*

A Two-Stage Synchronous Vibration Control for Magnetically Suspended Rotor System in the Full Speed Range. *Peng, C., +, TIE Jan. 2020 480-489*

Application of Sliding Switching Functions in Backstepping Based Speed Observer of Induction Machine. *Morawiec, M., +, TIE July 2020 5843-5853*

Dual Phase-Locked Loop-Based Speed Estimation Scheme for Sensorless Vector Control of Linear Induction Motor Drives. *Wang, H., +, TIE July 2020 5900-5912*

Electromagnetic Torque-Based Model Reference Adaptive System Speed Estimator for Sensorless Surface Mount Permanent Magnet Synchronous Motor Drive. *Prabhakaran, K.K., +, TIE July 2020 5936-5947*

Electromagnetic Vibration Analysis of High-Speed Permanent Magnet Synchronous Machines With Amorphous Metal Stator Cores Considering Current Harmonics. *Wu, S., +, TIE Dec. 2020 10156-10167*

Enhanced Performance of Constant Frequency Torque Controller-Based Direct Torque Control of Induction Machines with Increased Torque-Loop Bandwidth. *Alsifyani, I.M., +, TIE Dec. 2020 10168-10179*

Fast Restarting of Free-Running Induction Motors Under Speed-Sensorless Vector Control. *Yin, S., +, TIE July 2020 6124-6134*

Fixed-Time Attitude Tracking Control for Rigid Spacecraft Without Angular Velocity Measurements. *Zou, A., +, TIE Aug. 2020 6795-6805*

High-Accuracy Dynamic Load Emulation Method for Electrical Drives. *de Oliveira, C.M.R., +, TIE Sept. 2020 7239-7249*

Improved Iterative Learning Control Strategy for Surface-Mounted Permanent Magnet Synchronous Motor Drives. *Mohammed, S.A.Q., +, TIE Dec. 2020 10134-10144*

Motor Speed Signature Analysis for Local Bearing Fault Detection With Noise Cancellation Based on Improved Drive Algorithm. *Yang, M., +, TIE May 2020 4172-4182*

Operating-Point Tracking Method for Sensorless Induction Motor Stability Enhancement in Low-Speed Regenerating Mode. *Luo, C., +, TIE May 2020 3386-3397*

Position Sensorless Permanent Magnet Synchronous Machine Drives—A Review. *Wang, G., +, TIE July 2020 5830-5842*

Quasi-Proportional-Resonant Controller Based Adaptive Position Observer for Sensorless Control of PMSM Drives Under Low Carrier Ratio. *An, Q., +, TIE April 2020 2564-2573*

Robust Stability Improvement for Speed Sensorless Induction Motor Drive at Low Speed Range by Virtual Voltage Injection. *Sun, W., +, TIE April 2020 2642-2654*

Sensorless Low/Zero Speed Estimation for Permanent Magnet Synchronous Machine Using a Search-Based Real-Time Commissioning Method. *Sci-cluna, K., +, TIE July 2020 6010-6018*

Simple Stability Enhancement Method for Stator Current Error-Based MRAS-Type Speed Estimator for Induction Motor. *Korzonek, M., +, TIE July 2020 5854-5866*

Speed Sensorless Control for Permanent Magnet Synchronous Motors Based on Finite Position Set. *Sun, X., +, TIE July 2020 6089-6100*

The Optimal Speed-Torque Control of Asynchronous Motors for Electric Cars in the Field-Weakening Region Based on the RFR. *Xie, F., +, TIE Nov. 2020 9601-9612*

Angular velocity measurement

Sensor Glove Based on Novel Inertial Sensor Fusion Control Algorithm for 3-D Real-Time Hand Gestures Measurements. *Chang, H., +, TIE Jan. 2020 658-666*

Anodization

Condition Monitoring of Transformer Breather Using a Capacitive Moisture Sensor. *Kumar, S., +, TIE Nov. 2020 9779-9789*

Ant colony optimization

Optimal DC Source Influence on Selective Harmonic Elimination in Multi-level Inverters Using Teaching–Learning-Based Optimization. *Haghdar, K.*, *TIE Feb. 2020 942-949*

Antenna arrays

Reconfigurable Cellular Base Station Antenna Consisting of Parasitic Radiators. *Kayani, H.A.*, +, *TIE Aug. 2020 7083-7093*

Antenna radiation patterns

Directional Radiation Technique for Maximum Receiving Power in Microwave Power Transmission System. *Hui, Q.*, +, *TIE Aug. 2020 6376-6386*

Reconfigurable Cellular Base Station Antenna Consisting of Parasitic Radiators. *Kayani, H.A.*, +, *TIE Aug. 2020 7083-7093*

Antennas

A Triple-Band High-Gain Multibeam Ambient RF Energy Harvesting System Utilizing Hybrid Combining. *Shen, S.*, +, *TIE Nov. 2020 9215-9226*

Approximation theory

A New Self-Organizing Fuzzy Cerebellar Model Articulation Controller for Uncertain Nonlinear Systems Using Overlapped Gaussian Membership Functions. *Huynh, T.*, +, *TIE Nov. 2020 9671-9682*

A Real-Time Entropy Estimation Algorithm for Lithium Batteries Based on a Combination of Kalman Filter and Nonlinear Observer. *Thenaisie, G.*, +, *TIE Sept. 2020 8034-8043*

A Simple Equivalent Temperature Rise Test Method Suitable for Safely Evaluating Thermal Limits of Motors and Power Devices Without Model Dependence. *Wang, B.*, +, *TIE Oct. 2020 8755-8766*

Complex-Coefficient Adaptive Disturbance Observer for Position Estimation of IPMSMs With Robustness to DC Errors. *Xiao, D.*, +, *TIE July 2020 5924-5935*

Data-Driven Modeling and UFIR-Based Outlet NO_x Estimation for Diesel-Engine SCR Systems. *Jiang, K.*, +, *TIE June 2020 5012-5021*

Power Loss Estimation in LLC Synchronous Rectification Using Rectifier Current Equations. *Glitz, E.S.*, +, *TIE May 2020 3696-3704*

Arc welding

Robust PMDC Motor Control for Accurate Wire Feeding in GMAW Using Back EMF. *Paul, A.K.*, *TIE Jan. 2020 413-420*

Arcs (electric)

A New Method for Detecting Series Arc Fault in Photovoltaic Systems Based on the Blind-Source Separation. *Ahmadi, M.*, +, *TIE June 2020 5041-5049*

Array signal processing

Acoustic Source Localization From Multirotor UAVs. *Salvati, D.*, +, *TIE Oct. 2020 8618-8628*

Artificial bee colony algorithm

Optimal DC Source Influence on Selective Harmonic Elimination in Multi-level Inverters Using Teaching–Learning-Based Optimization. *Haghdar, K.*, *TIE Feb. 2020 942-949*

Artificial satellites

A High-Power-Density Converter With a Continuous Input Current Waveform for Satellite Power Applications. *Lee, N.*, +, *TIE Feb. 2020 1024-1035*

Design Considerations of Sequential Switching Shunt Regulator for High-Power Applications. *Zhu, H.*, +, *TIE Nov. 2020 9358-9369*

Spacecraft Vibration Control Based on Extended Modal Decoupling of Vernier-Gimballing Magnetically Suspension Flywheels. *Chen, X.*, +, *TIE May 2020 4066-4076*

Assembling

A Full 360° Measurement Range Liquid Capacitive Inclinometer With a Triple- Eccentric-Ring Sensing Element and Differential Detection Scheme. *Hou, B.*, +, *TIE May 2020 4216-4225*

Real-Time CU-Net-Based Welding Quality Inspection Algorithm in Battery Production. *Zhang, H.*, +, *TIE Dec. 2020 10942-10950*

Reduced-Order Thermal Observer for Power Modules Temperature Estimation. *Dong, X.*, +, *TIE Dec. 2020 10085-10094*

Asymptotic stability

A Novel Geometric Hierarchical Approach for Dynamic Visual Servoing of Quadrotors. *Zhang, X.*, +, *TIE May 2020 3840-3849*

Adaptive Algorithms of Tuning and Switching Kalman and \mathcal{H}_∞ Filters and Their Application to Estimation of Ship Oscillation With Time-Varying Frequencies. *Sato, M.*, +, *TIE Jan. 2020 501-511*

Adaptive Threshold Generation for Vehicle Fault Detection Using Switched T–S Interval Observers. *Ifqir, S.*, +, *TIE June 2020 5030-5040*

Asymptotic Parking of General Two-Trailer Systems Leveraging Singularity. *Huang, X.*, +, *TIE Sept. 2020 7798-7807*

Event-Triggered Decentralized Tracking Control of Modular Reconfigurable Robots Through Adaptive Dynamic Programming. *Zhao, B.*, +, *TIE April 2020 3054-3064*

Path-Following Control of A Quadrotor UAV With A Cable-Suspended Payload Under Wind Disturbances. *Qian, L.*, +, *TIE March 2020 2021-2029*

Repetitive Control Meets Continuous Zero Phase Error Tracking Controller for Precise Tracking of B-Spline Trajectories. *Biagiotti, L.*, +, *TIE Sept. 2020 7808-7818*

Asynchronous generators

Bearing Corrosion Failure Diagnosis of Doubly Fed Induction Generator in Wind Turbines Based on Stator Current Analysis. *Chen, X.*, +, *TIE May 2020 3419-3430*

Collaborative Control and Allocation Method of RSC and GSC for DFIG System to Suppress High-Frequency Resonance and Harmonics. *Pang, B.*, +, *TIE Dec. 2020 10509-10519*

Control Strategy for Five-Phase Dual-Stator Winding Induction Starter/Generator System. *Liu, H.*, +, *TIE April 2020 2607-2617*

Crowbarless Symmetrical Low-Voltage Ride Through Based on Flux Linkage Tracking For Brushless Doubly Fed Induction Generators. *Zhang, A.*, +, *TIE Sept. 2020 7606-7616*

Improved Direct Torque Control for a DFIG under Symmetrical Voltage Dip With Transient Flux Damping. *Agha Kashkooli, M.R.*, +, *TIE Jan. 2020 28-37*

In-Service Wind Turbine DFIG Diagnosis Using Current Signature Analysis. *Artigao, E.*, +, *TIE March 2020 2262-2271*

Minimum-Loss Control Strategy for a Dual-VSI DFIG DC System. *Marques, G.D.*, +, *TIE Oct. 2020 8175-8185*

Rotor Current Oriented Control Method of DFIG-DC System Without Stator Side Sensors. *Wu, C.*, +, *TIE Nov. 2020 9958-9962*

Sensorless Closed-Loop Voltage and Frequency Control of Stand-Alone DFIGs Introducing Direct Flux-Vector Control. *Rostami, M.*, +, *TIE July 2020 6078-6088*

Sensorless Rotor Position Estimation of Doubly Fed Induction Generator Based on Backstepping Technique. *Morawiec, M.*, +, *TIE July 2020 5889-5899*

Asynchronous machines

A TDF Model in Induction Machines for Loose Bearing Diagnosis by Neutral Voltage. *Jafarian, M.J.*, +, *TIE Oct. 2020 8155-8163*

Active Disturbance-Rejection-Based Speed Control in Model Predictive Control for Induction Machines. *Yan, L.*, +, *TIE April 2020 2574-2584*

An Improved Torque Density Pseudo Six-Phase Induction Machine Using a Quadruple Three-Phase Stator Winding. *Abdel-Khalik, A.S.*, +, *TIE March 2020 1855-1866*

Application of Sliding Switching Functions in Backstepping Based Speed Observer of Induction Machine. *Morawiec, M.*, +, *TIE July 2020 5843-5853*

Decoupled $d-q$ Axes Current-Sharing Control of Multi-Three-Phase Induction Machines. *Sala, G.*, +, *TIE Sept. 2020 7124-7134*

Effect of Laser Cutting on Core Losses in Electrical Machines—Measurements and Modeling. *Sundaria, R.*, +, *TIE Sept. 2020 7354-7363*

Regenerative Test for Multiple Three-Phase Machines With Even Number of Neutral Points. *Abduallah, A.A.*, +, *TIE March 2020 1684-1694*

Atomic force microscopy

A Multimode Transverse Dynamic Force Microscope—Design, Identification, and Control. *Zhang, K.*, +, *TIE June 2020 4729-4740*

Development of a Magnetically Driven Microgripper for PicoNewton Force-Controlled Microscale Manipulation and Characterization. *Xie, H.*, +, *TIE March 2020 2065-2075*

High-Speed AFM Imaging of Nanopositioning Stages Using H_∞ and Iterative Learning Control. *Xie, H.*, +, *TIE March 2020 2430-2439*

Nanorobotic Manipulation System for 360° Characterization Atomic Force Microscopy. *Wen, Y.*, +, *TIE April 2020 2916-2924*

Attitude control

- A Novel Adaptive Kalman Filtering Approach to Human Motion Tracking With Magnetic-Inertial Sensors. *Zhang, J.*, +, *TIE Oct. 2020 8659-8669*
- A Novel Electrodynamic Reaction Sphere Prototype for Spacecraft Attitude Control. *Huai, Z.*, +, *TIE May 2020 3879-3890*
- A Novel Geometric Hierarchical Approach for Dynamic Visual Servoing of Quadrotors. *Zhang, X.*, +, *TIE May 2020 3840-3849*
- Composite Disturbance Rejection Attitude Control for Quadrotor With Unknown Disturbance. *Zhao, K.*, +, *TIE Aug. 2020 6894-6903*
- Event-Triggered Adaptive Attitude Tracking Control for Spacecraft With Unknown Actuator Faults. *Wang, C.*, +, *TIE March 2020 2241-2250*
- Extended Signal-Correction Observer and Application to Aircraft Navigation. *Wang, X.*, +, *TIE April 2020 3149-3156*
- Fixed-Time Attitude Tracking Control for Rigid Spacecraft Without Angular Velocity Measurements. *Zou, A.*, +, *TIE Aug. 2020 6795-6805*
- Path-Following Control of A Quadrotor UAV With A Cable-Suspended Payload Under Wind Disturbances. *Qian, L.*, +, *TIE March 2020 2021-2029*
- Real-Time Reentry Trajectory Planning of Hypersonic Vehicles: A Two-Step Strategy Incorporating Fuzzy Multiobjective Transcription and Deep Neural Network. *Chai, R.*, +, *TIE Aug. 2020 6904-6915*
- Suppression of Synchronous Current Using Double Input Improved Adaptive Notch Filter Algorithm. *Liu, G.*, +, *TIE Oct. 2020 8599-8607*

Attitude measurement

- A Novel Joint Angle Estimation Method for Serial Manipulator Using Micro-Electromechanical Systems Sensors. *Xu, X.*, +, *TIE Dec. 2020 10610-10620*
- A Solution to the Attitude Problem Using Two Rotation Units of Micromechanical Gyroscopes. *Liang, Q.*, +, *TIE Feb. 2020 1357-1365*
- Design and Experimental Evaluation of Immersion and Invariance Observer for Low-Cost Attitude-Heading Reference System. *Keighobadi, J.*, +, *TIE Sept. 2020 7871-7878*
- Method and Implementation of a Bioinspired Polarization-Based Attitude and Heading Reference System by Integration of Polarization Compass and Inertial Sensors. *Yang, J.*, +, *TIE Nov. 2020 9802-9812*

Audio signal processing

- A Multiperson Behavior Feature Generation Model Based on Noise Reduction Using WiFi. *Wenyuan, L.*, +, *TIE June 2020 5179-5186*

Authoring systems

- Authoring New Haptic Textures Based on Interpolation of Real Textures in Affective Space. *Hassan, W.*, +, *TIE Jan. 2020 667-676*

Automatic optical inspection

- Classification of Faults in Multicore Cable via Time-Frequency Domain Reflectometry. *Bang, S.S.*, +, *TIE May 2020 4163-4171*
- Real-Time CU-Net-Based Welding Quality Inspection Algorithm in Battery Production. *Zhang, H.*, +, *TIE Dec. 2020 10942-10950*

Automobiles

- An Explicit Nonlinear Model Predictive ABS Controller for Electro-Hydraulic Braking Systems. *Tavernini, D.*, +, *TIE May 2020 3990-4001*
- Position Control of Parallel Active Link Suspension With Backlash. *Yu, M.*, +, *TIE June 2020 4741-4751*
- Regionless Explicit Model Predictive Control of Active Suspension Systems With Preview. *Theunissen, J.*, +, *TIE June 2020 4877-4888*

Automotive components

- Precise Active Brake-Pressure Control for a Novel Electro-Booster Brake System. *Zhao, J.*, +, *TIE June 2020 4774-4784*

Automotive electrics

- Assessment of an Improved Finite Control Set Model Predictive Current Controller for Automotive Propulsion Applications. *Andersson, A.*, +, *TIE Jan. 2020 91-100*

Automotive electronics

- An Analysis of the Impact of Transient Faults on the Performance of the CAN-FD Protocol. *Pohren, D.H.*, +, *TIE March 2020 2440-2449*
- Multiphysical Design Approach for Automotive Electronic Throttle Body. *Mcharek, M.*, +, *TIE Aug. 2020 6752-6761*
- Performance and Reliability Review of 650 V and 900 V Silicon and SiC Devices: MOSFETs, Cascode JFETs and IGBTs. *Gonzalez, J.O.*, +, *TIE Sept. 2020 7375-7385*

Automotive engineering

- An Analysis of the Impact of Transient Faults on the Performance of the CAN-FD Protocol. *Pohren, D.H.*, +, *TIE March 2020 2440-2449*

Autonomous aerial vehicles

- A Novel Geometric Hierarchical Approach for Dynamic Visual Servoing of Quadrotors. *Zhang, X.*, +, *TIE May 2020 3840-3849*
- A Practical Visual Servo Control for Aerial Manipulation Using a Spherical Projection Model. *Zhong, H.*, +, *TIE Dec. 2020 10564-10574*
- Acoustic Source Localization From Multirotor UAVs. *Salvati, D.*, +, *TIE Oct. 2020 8618-8628*
- An Online Trajectory Planning Approach for a Quadrotor UAV With a Slung Payload. *Xian, B.*, +, *TIE Aug. 2020 6669-6678*
- Design, Implementation, and Evaluation of a Neural-Network-Based Quadcopter UAV System. *Jiang, F.*, +, *TIE March 2020 2076-2085*
- Energy-Based Nonlinear Adaptive Control Design for the Quadrotor UAV System With a Suspended Payload. *Yang, S.*, +, *TIE March 2020 2054-2064*
- Interference-Compensating Magnetometer Calibration With Estimated Measurement Noise Covariance for Application to Small-Sized UAVs. *Lee, H.*, +, *TIE Oct. 2020 8829-8840*
- Path-Following Control of A Quadrotor UAV With A Cable-Suspended Payload Under Wind Disturbances. *Qian, L.*, +, *TIE March 2020 2021-2029*
- Robust Control of an Aerial Manipulator Based on a Variable Inertia Parameters Model. *Zhang, G.*, +, *TIE Nov. 2020 9515-9525*

Autonomous underwater vehicles

- Dynamics-Level Finite-Time Fuzzy Monocular Visual Servo of an Unmanned Surface Vehicle. *Wang, N.*, +, *TIE Nov. 2020 9648-9658*

Autoregressive processes

- A Collaborative Sensing and Model-Based Real-Time Recovery of Fast Data Flows From Sparse Measurements. *Xiao, H.*, +, *TIE Aug. 2020 6806-6814*
- Data-Driven Modeling and UFIR-Based Outlet NO_x Estimation for Diesel-Engine SCR Systems. *Jiang, K.*, +, *TIE June 2020 5012-5021*
- Sparsity-Based Algorithm for Condition Assessment of Rotating Machinery Using Internal Encoder Data. *Ding, C.*, +, *TIE Sept. 2020 7982-7993*

Avalanche breakdown

- Characterization of Static and Dynamic Behavior of 1200 V Normally off GaN/SiC Cascode Devices. *Wang, Y.*, +, *TIE Dec. 2020 10284-10294*

Avionics

- A Robust Frequency Estimation Method for Aircraft Grids Under Distorted Conditions. *Dai, Z.*, +, *TIE May 2020 4254-4258*
- Peak Current Control and Feed-Forward Compensation of a DAB Converter. *Vazquez, N.*, +, *TIE Oct. 2020 8381-8391*
- Power Scheduling in More Electric Aircraft Based on an Optimal Adaptive Control Strategy. *Zhang, Y.*, +, *TIE Dec. 2020 10911-10921*

Awards

- Best Papers and Distinguished Reviewers. *Levi, E.*, *TIE June 2020 4269*

Axles

- An Incorrect Data Detection Method for Big Data Cleaning of Machinery Condition Monitoring. *Xu, X.*, +, *TIE March 2020 2326-2336*
- Assessment of an Improved Finite Control Set Model Predictive Current Controller for Automotive Propulsion Applications. *Andersson, A.*, +, *TIE Jan. 2020 91-100*

B**Backpropagation**

- Meta Learning for Task-Driven Video Summarization. *Li, X.*, +, *TIE July 2020 5778-5786*
- Position and Posture Control of Planar Four-Link Underactuated Manipulator Based on Neural Network Model. *Wu, J.*, +, *TIE June 2020 4721-4728*

Baluns

- Cavity Balanced and Unbalanced Diplexer Based on Triple-Mode Resonator. *Wong, S.*, +, *TIE June 2020 4969-4979*

Band-pass filters

- Cavity Balanced and Unbalanced Diplexer Based on Triple-Mode Resonator. *Wong, S.*, +, *TIE June 2020 4969-4979*
- Disturbance Injection Based Decentralized Identification of Accidental Islanding. *Murugesan, S.*, +, *TIE May 2020 3767-3775*

Lowpass–Bandpass Triplexer Integrated Switch Design Using Common Lumped-Element Triple-Resonance Resonator Technique. *Xu, J.*, +, *TIE Jan. 2020 471-479*

Bang-bang control

Cornering Trajectory Planning Avoiding Slip for Differential-Wheeled Mobile Robots. *Kim, J.*, +, *TIE Aug. 2020 6698-6708*

Barkhausen effect

A Pedagogical Study of Aerodynamic Feedback Control by Dielectric Barrier Discharge Plasma. *Kwan, P.W.*, +, *TIE Jan. 2020 451-460*

A Self-Starting Class-E Power Oscillator With an Inverting Gate Driver. *Ahmadi, M.M.*, +, *TIE Oct. 2020 8344-8354*

Batch processing (industrial)

Data-Driven Batch-End Quality Modeling and Monitoring Based on Optimized Sparse Partial Least Squares. *Jiang, Q.*, +, *TIE May 2020 4098-4107*

Synthesis of ILC–MPC Controller With Data-Driven Approach for Constrained Batch Processes. *Li, D.*, +, *TIE April 2020 3116-3125*

Battery chargers

A 300-kHz 6.6-kW SiC Bidirectional LLC Onboard Charger. *Li, H.*, +, *TIE Feb. 2020 1435-1445*

An Approach Towards Extreme Fast Charging Station Power Delivery for Electric Vehicles with Partial Power Processing. *Iyer, V.M.*, +, *TIE Oct. 2020 8076-8087*

An Integrated Electrified Powertrain Topology With SRG and SRM for Plug-In Hybrid Electrical Vehicle. *Cheng, H.*, +, *TIE Oct. 2020 8231-8241*

Cooperative CC–CV Charging of Supercapacitors Using Multicharger Systems. *Li, H.*, +, *TIE Dec. 2020 10497-10508*

Design and Analysis of Inductively Coupled Power Transfer System on Mooring Buoy With Double Ultracapacitor Chargers Using Indirect Control. *Xu, J.*, +, *TIE June 2020 4836-4845*

S-Hybrid Step-Down DC–DC Converter—Analysis of Operation and Design Considerations. *Seo, G.*, +, *TIE Jan. 2020 265-275*

Soft Switching Bidirectional Converter for Reflex Charger With Minimum Switches. *Ahmadi, F.*, +, *TIE Oct. 2020 8355-8362*

Battery management systems

A Cooperative Adaptive Droop Based Energy Management and Optimal Voltage Regulation Scheme for DC Microgrids. *Sahoo, S.*, +, *TIE April 2020 2894-2904*

A Temperature and Current Rate Adaptive Model for High-Power Lithium-Titanate Batteries Used in Electric Vehicles. *Chen, A.*, +, *TIE Nov. 2020 9492-9502*

Digital Battery Management Design for Point-of-Load Applications With Cell Balancing. *Yang, Y.*, +, *TIE Aug. 2020 6365-6375*

Distributed Control of Active Cell Balancing and Low-Voltage Bus Regulation in Electric Vehicles Using Hierarchical Model-Predictive Control. *Gong, Z.*, +, *TIE Dec. 2020 10464-10473*

From Battery Cell to Electrodes: Real-Time Estimation of Charge and Health of Individual Battery Electrodes. *Dey, S.*, +, *TIE March 2020 2167-2175*

Joint SoC and SoH Estimation for Zinc–Nickel Single-Flow Batteries. *Li, S.*, +, *TIE Oct. 2020 8484-8494*

Model Predictive Control With Lifetime Constraints Based Energy Management Strategy for Proton Exchange Membrane Fuel Cell Hybrid Power Systems. *He, H.*, +, *TIE Oct. 2020 9012-9023*

Online Battery State of Power Prediction Using PRBS and Extended Kalman Filter. *Nejad, S.*, +, *TIE May 2020 3747-3755*

Online Fault Diagnosis of External Short Circuit for Lithium-Ion Battery Pack. *Xiong, R.*, +, *TIE Feb. 2020 1081-1091*

Parameter Identification and SOC Estimation of a Battery Under the Hysteresis Effect. *Kwak, M.*, +, *TIE Nov. 2020 9758-9767*

Robust Estimation for State-of-Charge and State-of-Health of Lithium-Ion Batteries Using Integral-Type Terminal Sliding-Mode Observers. *Feng, Y.*, +, *TIE May 2020 4013-4023*

Simultaneous Identification and Control for Hybrid Energy Storage System Using Model Predictive Control and Active Signal Injection. *Song, Z.*, +, *TIE Nov. 2020 9768-9778*

Spatial Correlation-Based Incremental Learning for Spatiotemporal Modeling of Battery Thermal Process. *Wang, B.*, +, *TIE April 2020 2885-2893*

Battery powered vehicles

A Proposed Fast Charging and High-Power System for Wireless Railway Trains Adopting the Input Voltage Sharing Topology and the Balancing Control Scheme. *Kim, J.*, +, *TIE Aug. 2020 6407-6417*

A Stochastic Predictive Energy Management Strategy for Plug-in Hybrid Electric Vehicles Based on Fast Rolling Optimization. *Yang, C.*, +, *TIE Nov. 2020 9659-9670*

An Approach Towards Extreme Fast Charging Station Power Delivery for Electric Vehicles with Partial Power Processing. *Iyer, V.M.*, +, *TIE Oct. 2020 8076-8087*

An Integrated Electrified Powertrain Topology With SRG and SRM for Plug-In Hybrid Electrical Vehicle. *Cheng, H.*, +, *TIE Oct. 2020 8231-8241*

Distributed Control of Active Cell Balancing and Low-Voltage Bus Regulation in Electric Vehicles Using Hierarchical Model-Predictive Control. *Gong, Z.*, +, *TIE Dec. 2020 10464-10473*

Modeling, Analysis, and Attenuation of Uncontrolled Generation for IPMSM-Based Electric Vehicles in Emergency. *Gong, C.*, +, *TIE June 2020 4453-4462*

Online Fault Diagnosis of External Short Circuit for Lithium-Ion Battery Pack. *Xiong, R.*, +, *TIE Feb. 2020 1081-1091*

Online Parameter Estimation for Supercapacitor State-of-Energy and State-of-Health Determination in Vehicular Applications. *Naseri, F.*, +, *TIE Sept. 2020 7963-7972*

Battery storage plants

Bidirectional DC–DC Converter for Modular Residential Battery Energy Storage Systems. *Chub, A.*, +, *TIE March 2020 1944-1955*

Multibattery-Fed Neutral-Point-Clamped DC–AC Converter With SoC Balancing Control to Maximize Capacity Utilization. *Busquets-Monge, S.*, +, *TIE Jan. 2020 16-27*

Simultaneous Identification and Control for Hybrid Energy Storage System Using Model Predictive Control and Active Signal Injection. *Song, Z.*, +, *TIE Nov. 2020 9768-9778*

Bayes methods

A Multiphysics Design and Optimization Method for Air-Core Planar Transformers in High-Frequency LLC Resonant Converters. *Ho, G.K.Y.*, +, *TIE Feb. 2020 1605-1614*

A Novel Hierarchical Detection and Isolation Framework for Quality-Related Multiple Faults in Large-Scale Processes. *Ma, L.*, +, *TIE Feb. 2020 1316-1327*

Bayesian Deep-Learning-Based Health Prognostics Toward Prognostics Uncertainty. *Peng, W.*, +, *TIE March 2020 2283-2293*

Information Theory Based Probabilistic Approach to Blade Damage Detection of Turbomachine Using Sensor Data. *Yang, S.*, +, *TIE Dec. 2020 10887-10896*

Light Sensor Based Occupancy Estimation via Bayes Filter With Neural Networks. *Chen, Z.*, +, *TIE July 2020 5787-5797*

Multitask Bayesian Spatiotemporal Gaussian Processes for Short-Term Load Forecasting. *Gilanifar, M.*, +, *TIE June 2020 5132-5143*

Probabilistic Monitoring of Correlated Sensors for Nonlinear Processes in State Space. *Zhao, S.*, +, *TIE March 2020 2294-2303*

Remaining Useful Life Estimation of Structure Systems Under the Influence of Multiple Causes: Subsea Pipelines as a Case Study. *Cai, B.*, +, *TIE July 2020 5737-5747*

Beam steering

A Collaborative Sensing and Model-Based Real-Time Recovery of Fast Data Flows From Sparse Measurements. *Xiao, H.*, +, *TIE Aug. 2020 6806-6814*

Beams (structures)

Design and Trajectory Tracking of a Nanometric Ultra-Fast Tool Servo. *Zhu, Z.*, +, *TIE Jan. 2020 432-441*

Behavioral sciences computing

A Multiperson Behavior Feature Generation Model Based on Noise Reduction Using WiFi. *Wenyuan, L.*, +, *TIE June 2020 5179-5186*

Belief networks

A Novel Application of Deep Belief Networks in Learning Partial Discharge Patterns for Classifying Corona, Surface, and Internal Discharges. *Karimi, M.*, +, *TIE April 2020 3277-3287*

A Prognostic Model Based on DBN and Diffusion Process for Degradation Bearing. *Hu, C.*, +, *TIE Oct. 2020 8767-8777*

Remaining Useful Life Estimation of Structure Systems Under the Influence of Multiple Causes: Subsea Pipelines as a Case Study. *Cai, B., +, TIE July 2020 5737-5747*

Bending

A Three-Fingered Force Feedback Glove Using Fiber-Reinforced Soft Bending Actuators. *Wang, Z., +, TIE Sept. 2020 7681-7690*

Design and Trajectory Tracking of a Nanometric Ultra-Fast Tool Servo. *Zhu, Z., +, TIE Jan. 2020 432-441*

Effect Comparison of Zigzag Skew PM Pole and Straight Skew Slot for Vibration Mitigation of PM Brush DC Motors. *Wang, S., +, TIE June 2020 4752-4761*

Flexible 1–3 Composite Ultrasound Transducers With Silver-Nanowire-Based Stretchable Electrodes. *Kim, T., +, TIE Aug. 2020 6955-6962*

On the Suppression of the Backward Motion of a Piezo-Driven Precision Positioning Platform Designed by the Parasitic Motion Principle. *Yang, Z., +, TIE May 2020 3870-3878*

Piezoelectric Motor Utilizing an Alumina/PZT Transducer. *Wu, J., +, TIE Aug. 2020 6762-6772*

Binary sequences

Online Battery State of Power Prediction Using PRBS and Extended Kalman Filter. *Nejad, S., +, TIE May 2020 3747-3755*

Simultaneous Identification of Multiple Control Loops in DC Microgrid Power Converters. *Khodamoradi, A., +, TIE Dec. 2020 10641-10651*

Biological tissues

A High-Resolution Triaxial Catheter Tip Force Sensor With Miniature Flexure and Suspended Optical Fibers. *Li, T., +, TIE June 2020 5101-5111*

Disposable FBG-Based Tridirectional Force/Torque Sensor for Aspiration Instruments in Neurosurgery. *Li, T., +, TIE April 2020 3236-3247*

Biomagnetism

Gradient-Enhanced Electromagnetic Actuation System With a New Core Shape Design for Microrobot Manipulation. *Li, D., +, TIE June 2020 4700-4710*

Biomechanics

A Proportional Pattern Recognition Control Scheme for Wearable A-mode Ultrasound Sensing. *Yang, X., +, TIE Jan. 2020 800-808*

A Three-Fingered Force Feedback Glove Using Fiber-Reinforced Soft Bending Actuators. *Wang, Z., +, TIE Sept. 2020 7681-7690*

Sparse Machine Learning Discovery of Dynamic Differential Equation of an Esophageal Swallowing Robot. *Bhattacharya, D., +, TIE June 2020 4711-4720*

Stretchable e-Skin Patch for Gesture Recognition on the Back of the Hand. *Jiang, S., +, TIE Jan. 2020 647-657*

Voluntary and FES-Induced Finger Movement Estimation Using Muscle Deformation Features. *Zhou, Y., +, TIE May 2020 4002-4012*

Biomedical electronics

All-Day Mobile Healthcare Monitoring System Based on Heterogeneous Stretchable Sensors for Medical Emergency. *Lee, S., +, TIE Oct. 2020 8808-8816*

Biomedical engineering

Flexible 3-D Helix Fabrication by In-Situ SEM Micromanipulation System. *Wang, P., +, TIE July 2020 5565-5574*

Biomedical equipment

All-Day Mobile Healthcare Monitoring System Based on Heterogeneous Stretchable Sensors for Medical Emergency. *Lee, S., +, TIE Oct. 2020 8808-8816*

Disposable FBG-Based Tridirectional Force/Torque Sensor for Aspiration Instruments in Neurosurgery. *Li, T., +, TIE April 2020 3236-3247*

Biomedical measurement

A High-Resolution Triaxial Catheter Tip Force Sensor With Miniature Flexure and Suspended Optical Fibers. *Li, T., +, TIE June 2020 5101-5111*

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Biomedical transducers

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Biomimetics

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All-Day Mobile Healthcare Monitoring System Based on Heterogeneous Stretchable Sensors for Medical Emergency. *Lee, S., +, TIE Oct. 2020 8808-8816*

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Bragg gratings

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- Control of Antilock Braking Systems Using Disturbance Observer With a Novel Nonlinear Sliding Surface. *Phadke, S.B.*, +, *TIE Aug. 2020 6815-6823*
- Dynamic State Estimation for the Advanced Brake System of Electric Vehicles by Using Deep Recurrent Neural Networks. *Xing, Y.*, +, *TIE Nov. 2020 9536-9547*
- Enhanced Braking Control for the Induction Machine Using Scalar Control. *Costa, C.A.*, +, *TIE Nov. 2020 9133-9142*
- Precise Active Brake-Pressure Control for a Novel Electro-Booster Brake System. *Zhao, J.*, +, *TIE June 2020 4774-4784*

Bridge circuits

- 1-kV Input 1-MHz GaN Stacked Bridge LLC Converters. *Zhang, Z.*, +, *TIE Nov. 2020 9227-9237*
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- A 2–10 MHz GaN HEMTs Half-Bridge Driver With Bandgap Reference Comparator Clamping and Dual Level Shifters for Automotive Applications. *Yan, R.*, +, *TIE Feb. 2020 1446-1454*
- A 30-Pulse Rectifier Using Passive Voltage Harmonic Injection Method at DC Link. *Li, Q.*, +, *TIE Nov. 2020 9273-9291*
- A Closed-Loop Modulation Scheme for Duty Cycle Compensation of PWM Voltage Distortion at High Switching Frequency Inverter. *Ren, R.*, +, *TIE Feb. 2020 1475-1486*
- A Dual Half-Bridge Converter With Current Doubler Rectifier. *Zhao, L.*, +, *TIE Aug. 2020 6398-6406*
- A High-Frequency Link Matrix Rectifier With a Pure Capacitive Output Filter in a Discontinuous Conduction Mode. *Lan, D.*, +, *TIE Jan. 2020 4-15*
- A Hybrid Phase Shift-Pulsewidth Modulation and Asymmetric Selective Harmonic Current Mitigation-Pulsewidth Modulation Technique to Reduce Harmonics and Inductance of Single-Phase Grid-Tied Cascaded Multilevel Converters. *Moeini, A.*, +, *TIE Dec. 2020 10388-10398*
- A Novel Boost Active Bridge-Based Inductive Power Transfer System. *Kalra, G.R.*, +, *TIE Feb. 2020 1103-1112*
- A Novel Converter Station Structure for Improving Multiterminal HVDC System Resiliency Against AC and DC Faults. *Wang, S.*, +, *TIE June 2020 4270-4280*
- A Novel Current Modulation Method to Eliminate Low-Frequency Harmonics in Single-Stage Dual Active Bridge AC–DC Converter. *Zengin, S.*, +, *TIE Feb. 2020 1048-1058*
- A PWM ZVS High-Frequency-Link Three-Phase Inverter With T-Type NPC Unfolder. *Pal, A.*, +, *TIE Sept. 2020 7146-7156*
- An Approach Towards Extreme Fast Charging Station Power Delivery for Electric Vehicles with Partial Power Processing. *Iyer, V.M.*, +, *TIE Oct. 2020 8076-8087*

- An Interleaved Secondary-Side Modulated LLC Resonant Converter for Wide Output Range Applications. *Li, Z.*, +, *TIE Feb. 2020 1124-1135*
- An Optimized Modulation Strategy for the Three-Level DAB Converter With Five Control Degrees of Freedom. *Liu, P.*, +, *TIE Jan. 2020 254-264*
- Analysis and Design of a 1-MHz Bidirectional Multi-CLLC Resonant DC–DC Converter With GaN Devices. *Wang, Y.*, +, *TIE Feb. 2020 1425-1434*
- Analysis and Optimal Design of High-Frequency and High-Efficiency Asymmetrical Half-Bridge Flyback Converters. *Li, M.*, +, *TIE Oct. 2020 8312-8321*
- Bidirectional DC–DC Converter for Modular Residential Battery Energy Storage Systems. *Chub, A.*, +, *TIE March 2020 1944-1955*
- Bidirectional Isolated Current-Source DAB Converter With Extended ZVS/ZCS Range and Reduced Energy Circulation for Storage Applications. *Blinov, A.*, +, *TIE Dec. 2020 10552-10563*
- DC Fault Current Blocking With the Coordination of Half-Bridge MMC and the Hybrid DC Breaker. *Iman-Eini, H.*, +, *TIE July 2020 5503-5514*
- DC Voltage Control Strategy of Three-Terminal Medium-Voltage Power Electronic Transformer-Based Soft Normally Open Points. *Ouyang, S.*, +, *TIE May 2020 3684-3695*
- Determination of Stray Inductance of Low-Inductive Laminated Planar Multiport Busbars Using Vector Synthesis Method. *Lu, B.*, +, *TIE Feb. 2020 1337-1347*
- Direct Torque Control Techniques of Three-Level H-Bridge Inverter Fed Induction Motor for Torque Ripple Reduction at Low Speed Operations. *Naganathan, P.*, +, *TIE Oct. 2020 8262-8270*
- DLFCR Reduction Based on Power Predictive Scheme for Full-Bridge Photovoltaic Microinverter. *Kan, J.*, +, *TIE June 2020 4658-4669*
- Double-Thyristor-Based Protection for Valve-Side Single-Phase-to-Ground Faults in HB-MMC-Based Bipolar HVDC Systems. *Li, G.*, +, *TIE July 2020 5810-5815*
- Electrothermal-Based Junction Temperature Estimation Model for Converter of Switched Reluctance Motor Drive System. *Chen, H.*, +, *TIE Feb. 2020 874-883*
- Enhanced Dual-Active-Bridge DC–DC Converter for Balancing Bipolar Voltage Level of DC Distribution System. *Lee, J.*, +, *TIE Dec. 2020 10399-10409*
- Enhanced Floating Capacitor Voltage Balancing Schemes for Single-Source Seven-Level Inverters With Capacitor Fed H-Bridge Units. *Davis, T.T.*, +, *TIE Aug. 2020 6227-6236*
- Extending the Linear Modulation Range to Full Base Speed Independent of Load Power Factor for a Multilevel Inverter Fed IM Drive. *Majumder, M.G.*, +, *TIE Nov. 2020 9143-9152*
- Fault Detection and Identification Scheme for Dual-Inverter Fed OEWM Drive. *Yang, S.*, +, *TIE July 2020 6112-6123*
- Generalized Harmonic Control for CHB Converters With Unbalanced Cells Operation. *Marquez, A.*, +, *TIE Nov. 2020 9039-9047*
- Harmonic Compensation Strategy for Single-Phase Cascaded H-Bridge PV Inverter Under Unbalanced Power Conditions. *Wang, M.*, +, *TIE Dec. 2020 10474-10484*
- Impedance Modeling and DC Bus Voltage Stability Assessment of a Solid-State-Transformer-Enabled Hybrid AC–DC Grid Considering Bidirectional Power Flow. *Ye, Q.*, +, *TIE Aug. 2020 6531-6540*
- Magnetically Coupled High-Voltage-Boost Split Y-Source Inverter Without Leakage-Induced Voltage Spikes. *Chen, M.*, +, *TIE July 2020 5444-5455*
- Minimization of Switched Capacitor Voltage Ripple in a Multilevel Dodecagonal Voltage Space Vector Structure for Drives. *Imthias, M.*, +, *TIE Jan. 2020 126-135*
- Mode Analysis and Fault-Tolerant Method of Open-Circuit Fault for a Dual Active-Bridge DC–DC Converter. *Zhao, N.*, +, *TIE Aug. 2020 6916-6926*
- Model Predictive Control for Dual Active Bridge in Naval DC Microgrids Supplying Pulsed Power Loads Featuring Fast Transition and Online Transformer Current Minimization. *Xiao, Q.*, +, *TIE June 2020 5197-5203*
- Modular Hybrid-Full-Bridge DC Transformer With Full-Process Matching Switching Strategy for MVdc Power Distribution Application. *Zhao, B.*, +, *TIE May 2020 3317-3328*

- Modulation and Capacitor Voltage Balancing Control of Multilevel NPC Dual Active Bridge DC–DC Converters. *Filba-Martinez, A.*, +, *TIE April 2020 2499-2510*
- Modulation and Voltage Balancing of a Five-Level Series-Connected Multilevel Inverter With Reduced Isolated Direct Current Sources. *Dekka, A.*, +, *TIE Oct. 2020 8219-8230*
- Modulation Scheme of Dual Active Bridge Converter for Seamless Transitions in Multiworking Modes Compromising ZVS and Conduction Loss. *Guo, Z.*, *TIE Sept. 2020 7399-7409*
- Multisampling Method for Single-Phase Grid-Connected Cascaded H-Bridge Inverters. *Ma, J.*, +, *TIE Oct. 2020 8322-8334*
- Optimal DC Source Influence on Selective Harmonic Elimination in Multilevel Inverters Using Teaching–Learning-Based Optimization. *Haghdar, K.*, *TIE Feb. 2020 942-949*
- Parallel Implementation of Model Predictive Control for Multilevel Cascaded H-Bridge STATCOM With Linear Complexity. *Zhang, Y.*, +, *TIE Feb. 2020 832-841*
- Pole Balancing and Thermal Management in Multiterminal HVdc Grids Using Single H-Bridge-Based Current Flow Controllers. *Balasubramaniam, S.*, +, *TIE June 2020 4623-4634*
- Predictive Control Based DC Microgrid Stabilization With the Dual Active Bridge Converter. *Chen, L.*, +, *TIE Oct. 2020 8944-8956*
- Protection of Single-Phase Fault at the Transformer Valve Side of FB-MMC-Based Bipolar HVdc Systems. *Liu, W.*, +, *TIE Oct. 2020 8416-8427*
- Self-Powered Piezoelectric and Thermoelectric Energy Simultaneous Extraction Interface Circuit Based on Double Stack Resonance. *Wang, X.*, +, *TIE June 2020 4567-4577*
- Sensorless Control of Planar Switched Reluctance Motors Based on Voltage Injection Combined With Core-Loss Calculation. *Chen, N.*, +, *TIE July 2020 6031-6042*
- Single-Stage Voltage Balancer With High-Frequency Isolation for Bipolar LVDC Distribution System. *Lee, J.*, +, *TIE May 2020 3596-3606*
- Synthesis of Integrated Multiport DC–DC Converters With Reduced Switches. *Chen, G.*, +, *TIE June 2020 4536-4546*
- The Comprehensive Circuit-Parameter Estimating Strategies for Output-Parallel Dual-Active-Bridge DC–DC Converters With Tunable Power Sharing Control. *Hou, N.*, +, *TIE Sept. 2020 7583-7594*
- Transient DC Bias Elimination of Dual-Active-Bridge DC–DC Converter With Improved Triple-Phase-Shift Control. *Bu, Q.*, +, *TIE Oct. 2020 8587-8598*
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- Adaptive Threshold Correction Strategy for Sensorless High-Speed Brushless DC Drives Considering Zero-Crossing-Point Deviation. *Yang, L.*, +, *TIE July 2020 5246-5257*
- An Initial States Recognition (ISR) Method for Start-Up of 1Φ BLDC Motor in Hall-Sensor-Less Fan Applications. *Tang, Z.*, +, *TIE Oct. 2020 8302-8311*
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- A New Relieving-DC-Saturation Hybrid Excitation Vernier Machine for HEV Starter Generator Application. *Zhao, X.*, +, *TIE Aug. 2020 6342-6353*
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- Analytical Calculation of the Magnetic Field Distribution in Slotless Brushless Machines With U-Shaped Interior Permanent Magnets. *Hajdiniak, M.*, +, *TIE Aug. 2020 6721-6731*
- Crowbarless Symmetrical Low-Voltage Ride Through Based on Flux Linkage Tracking For Brushless Doubly Fed Induction Generators. *Zhang, A.*, +, *TIE Sept. 2020 7606-7616*
- Design and Implementation of Parameter Estimation and Start Control of Brushless Synchronous Starter/Generators Under Sudden Excitation Change. *Mao, S.*, +, *TIE May 2020 3551-3561*
- Design and Performance Study of a Brushless Doubly Fed Generator Based on Differential Modulation. *Cheng, Y.*, +, *TIE Dec. 2020 10024-10034*
- Dynamic Performance Improvement of Doubly Salient Brushless DC Generator System With Controlled Rectifier. *Xu, Y.*, +, *TIE Oct. 2020 8209-8218*
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- Unified Reduced Model for a Dual-Control Scheme of the High-Speed Response Brushless Excitation System of Synchronous Generators. *Noland, J.K.*, +, *TIE June 2020 4474-4484*
- Buffer circuits**
- An Output Capacitorless Low-Dropout Regulator With a Low- V_{DD} Inverting Buffer for the Mobile Application. *Park, J.*, +, *TIE Oct. 2020 8931-8935*
- Building management systems**
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- A New Calibration Method for Triaxial Fluxgate Magnetometer Based on Magnetic Shielding Room. *Pan, D.*, +, *TIE May 2020 4183-4192*
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- Dual-Mode RFID Tag IC Supporting Gen-2 and Visible RFID Modes Using a Process-Compensating Self-Calibrating Clock Generator. *Din, A.U.*, +, *TIE Jan. 2020 569-580*
- Interference-Compensating Magnetometer Calibration With Estimated Measurement Noise Covariance for Application to Small-Sized UAVs. *Lee, H.*, +, *TIE Oct. 2020 8829-8840*

Lambert Compensation, Nonlinear Estimation, and Control Architecture of a Novel Optical Calibration Instrument. *Liu, G.*, +, *TIE May 2020 4193-4202*

Mutual Calibration of Multiple Current Sensors With Accuracy Uncertainties in IPMSM Drives for Electric Vehicles. *Lu, J.*, +, *TIE Jan. 2020 69-79*

Novel Method for Direct Measurement of Air Gap Anomalies in Direct-Drive Electrical Motors. *Herman, J.*, +, *TIE March 2020 2422-2429*

Oversampling Synchronous Envelope Detection for Resolver-to-Digital Conversion. *Wang, K.*, +, *TIE June 2020 4867-4876*

Robust Vision-Based Tube Model Predictive Control of Multiple Mobile Robots for Leader-Follower Formation. *Li, Z.*, +, *TIE April 2020 3096-3106*

Virtual Temperature Detection of Semiconductors in a Megawatt Field Converter. *Rannestad, B.*, +, *TIE Feb. 2020 1305-1315*

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Adaptive Visual Servoing for an Underwater Soft Robot Considering Refraction Effects. *Xu, F.*, +, *TIE Dec. 2020 10575-10586*

Dynamics-Level Finite-Time Fuzzy Monocular Visual Servo of an Unmanned Surface Vehicle. *Wang, N.*, +, *TIE Nov. 2020 9648-9658*

Natural Crack Diagnosis System Based on Novel L-Shaped Electromagnetic Sensing Thermography. *Liu, Z.*, +, *TIE Nov. 2020 9703-9714*

Novel Method for Direct Measurement of Air Gap Anomalies in Direct-Drive Electrical Motors. *Herman, J.*, +, *TIE March 2020 2422-2429*

Optical Gas Imaging With Uncooled Thermal Imaging Camera - Impact of Warm Filters and Elevated Background Temperature. *Olbrycht, R.*, +, *TIE Nov. 2020 9824-9832*

Real-Time Imaging of Invisible Micron-Scale Monolayer Patterns on a Moving Web Using Condensation Figures. *Du, X.*, +, *TIE May 2020 4077-4087*

Robust Vision-Based Tube Model Predictive Control of Multiple Mobile Robots for Leader-Follower Formation. *Li, Z.*, +, *TIE April 2020 3096-3106*

Sensor-Based Control Using an Image Point and Distance Features for Rivet-in-Hole Insertion. *Zhu, W.*, +, *TIE June 2020 4692-4699*

Sparse Template-Based 6-D Pose Estimation of Metal Parts Using a Monocular Camera. *He, Z.*, +, *TIE Jan. 2020 390-401*

Cantilevers

A Multimode Transverse Dynamic Force Microscope—Design, Identification, and Control. *Zhang, K.*, +, *TIE June 2020 4729-4740*

Development of a Magnetically Driven Microgripper for PicoNewton Force-Controlled Microscale Manipulation and Characterization. *Xie, H.*, +, *TIE March 2020 2065-2075*

Capacitance

A 20 MHz Low-Profile DC–DC Converter With Magnetic-Free Characteristics. *Guan, Y.*, +, *TIE Feb. 2020 1555-1567*

A High Step Up SEPIC-Based Converter Based on Partly Interleaved Transformer. *Gao, S.*, +, *TIE Feb. 2020 1455-1465*

Analysis and Optimal Design of High-Frequency and High-Efficiency Asymmetrical Half-Bridge Flyback Converters. *Li, M.*, +, *TIE Oct. 2020 8312-8321*

Extending Protection Selectivity in DC Shipboard Power Systems by Means of Additional Bus Capacitance. *Kim, S.*, +, *TIE May 2020 3673-3683*

Failure Prediction of Submodule Capacitors in Modular Multilevel Converter by Monitoring the Intrinsic Capacitor Voltage Fluctuations. *Ronanki, D.*, +, *TIE April 2020 2585-2594*

High Efficiency High Density 1 MHz 380–12 V DCX With Low FoM Devices. *Wu, X.*, +, *TIE Feb. 2020 1648-1656*

Minimization of Abnormal Output Voltage Rising for LLC Resonant Converter at Very Light Load. *Kim, C.*, *TIE Dec. 2020 10295-10303*

Minimum DC-Link Capacitance for Single-Phase Applications With Power Factor Correction. *Marcos-Pastor, A.*, +, *TIE June 2020 5204-5208*

Three-Step Switching Frequency Selection Criteria for the Generalized CLLC-Type DC Transformer in Hybrid AC–DC Microgrid. *Huang, J.*, +, *TIE Feb. 2020 980-991*

Winding Scheme With Fractional Layer for Differential-Mode Toroidal Inductor. *Liu, B.*, +, *TIE Feb. 2020 1592-1604*

Capacitance measurement

A Full 360° Measurement Range Liquid Capacitive Inclinometer With a Triple- Eccentric-Ring Sensing Element and Differential Detection Scheme. *Hou, B.*, +, *TIE May 2020 4216-4225*

An Outlook on Potentialities and Limits in Using Epitaxial Polysilicon for MEMS Real-Time Clocks. *Mussi, G.*, +, *TIE Aug. 2020 6996-7004*

Nonlinearity Reduction in Disk Resonator Gyroscopes Based on the Vibration Amplification Effect. *Li, Q.*, +, *TIE Aug. 2020 6946-6954*

Capacitive sensors

A Full 360° Measurement Range Liquid Capacitive Inclinometer With a Triple- Eccentric-Ring Sensing Element and Differential Detection Scheme. *Hou, B.*, +, *TIE May 2020 4216-4225*

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Condition Monitoring of Transformer Breather Using a Capacitive Moisture Sensor. *Kumar, S.*, +, *TIE Nov. 2020 9779-9789*

Improved Extended Kalman Filter Estimation Using Threshold Signal Detection With an MEMS Electrostatic Microscanner. *Chen, Y.*, +, *TIE Feb. 2020 1328-1336*

Nonlinearity Reduction in Disk Resonator Gyroscopes Based on the Vibration Amplification Effect. *Li, Q.*, +, *TIE Aug. 2020 6946-6954*

Capacitor switching

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Capacitors

Γ -Source Magnetic Integrated Filter for Single-Phase Grid Tied Voltage Source Converters. *Masoumi, A.H.*, +, *TIE July 2020 5410-5420*

Accurate Operation Analysis Based Variable On-time Control for 360–800 Hz CRM Boost PFC Converters. *Ren, X.*, +, *TIE Aug. 2020 6845-6853*

Analysis and Design of a Novel Six-Switch Five-Level Active Boost Neutral Point Clamped Inverter. *Siwakoti, Y.P.*, +, *TIE Dec. 2020 10485-10496*

Asymmetric Cascaded H-Bridge Multilevel Inverter With Single DC Source per Phase. *Vasu, R.*, +, *TIE July 2020 5398-5409*

Continuously Adjustable Capacitor for Multiple-Pickup Wireless Power Transfer Under Single-Power-Induced Energy Field. *Zhang, Z.*, +, *TIE Aug. 2020 6418-6427*

Generalized Symmetrical Step-Up Multilevel Inverter Using Crisscross Capacitor Units. *Lin, W.*, +, *TIE Sept. 2020 7439-7450*

Minimization of Switched Capacitor Voltage Ripple in a Multilevel Dodecagonal Voltage Space Vector Structure for Drives. *Imthias, M.*, +, *TIE Jan. 2020 126-135*

Single-Cycle-Lag Compensator-Based Active Damping for Digitally Controlled LCL/LLCL-Type Grid-Connected Inverters. *Miao, Z.*, +, *TIE March 2020 1980-1990*

Study and Analysis of Pulsating and Nonpulsating Input and Output Current of Ultrahigh-Voltage Gain Hybrid DC–DC Converters. *Andrade, A.M.S.S.*, +, *TIE May 2020 3776-3787*

The Output Voltage Control Strategy for DSEG With Controlled Rectification Based on Conduction Angle Estimation. *Wang, K.*, +, *TIE May 2020 3350-3360*

Carbon compounds

An Integrated Electrified Powertrain Topology With SRG and SRM for Plug-In Hybrid Electrical Vehicle. *Cheng, H.*, +, *TIE Oct. 2020 8231-8241*

Carbon steel

Multiresonant Chipless RFID Array System for Coating Defect Detection and Corrosion Prediction. *Deif, S.*, +, *TIE Oct. 2020 8868-8877*

Cardiology

A High-Resolution Triaxial Catheter Tip Force Sensor With Miniature Flexure and Suspended Optical Fibers. *Li, T.*, +, *TIE June 2020 5101-5111*

Carrier sense multiple access

SCSMA: A Smart CSMA/CA Using Blind Learning for Wireless Sensor Networks. *Nguyen, T.T.*, +, *TIE Dec. 2020 10981-10988*

Cartography

Three-Dimensional Cooperative Mapping for Connected and Automated Vehicles. *Zhang, Y.*, +, *TIE Aug. 2020 6649-6658*

Cascade control

A Decentralized Control for Cascaded Inverters in Grid-Connected Applications. *Li, L.*, +, *TIE Sept. 2020 8064-8071*

- Cascaded-Extended-State-Observer-Based Sliding-Mode Control for Under-actuated Flexible Joint Robot. *Rsetam, K.*, +, *TIE Dec. 2020 10822-10832*
- Full Converter Control for Variable-Speed Wind Turbines Without Integral Controller or PLL. *Koiwa, K.*, +, *TIE Nov. 2020 9418-9428*
- Full Degree of Freedom Based Control Scheme of the Single-Phase Direct AC-AC Modular Multilevel Converter for Railway Power Conditioning Under Asymmetric Branch Conditions. *Lei, M.*, +, *TIE March 2020 1671-1683*
- Precise Active Brake-Pressure Control for a Novel Electro-Booster Brake System. *Zhao, J.*, +, *TIE June 2020 4774-4784*
- Signal Compensation Based Adaptive Cascade Control for Regrinding Processes. *Wang, L.*, +, *TIE Oct. 2020 8732-8742*
- Cascade networks**
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- Cascade systems**
- A Novel Geometric Hierarchical Approach for Dynamic Visual Servoing of Quadrotors. *Zhang, X.*, +, *TIE May 2020 3840-3849*
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- Path-Following Control of A Quadrotor UAV With A Cable-Suspended Payload Under Wind Disturbances. *Qian, L.*, +, *TIE March 2020 2021-2029*
- Casting**
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- Catalysis**
- Data-Driven Modeling and UFIR-Based Outlet NO_x Estimation for Diesel-Engine SCR Systems. *Jiang, K.*, +, *TIE June 2020 5012-5021*
- Hydrothermal Aging Factor Estimation for Two-Cell Diesel-Engine SCR Systems via a Dual Time-Scale Unscented Kalman Filter. *Jiang, K.*, +, *TIE Jan. 2020 442-450*
- Catalysts**
- Hydrothermal Aging Factor Estimation for Two-Cell Diesel-Engine SCR Systems via a Dual Time-Scale Unscented Kalman Filter. *Jiang, K.*, +, *TIE Jan. 2020 442-450*
- Catheters**
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- Centralized control**
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- Cerebellar model arithmetic computers**
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- Massive MIMO With Massive Connectivity for Industrial Internet of Things. *Lee, B.M.*, +, *TIE June 2020 5187-5196*
- Chaos**
- Back-to-Back Competitive Learning Mechanism for Fuzzy Logic Based Supervisory Control System of Hybrid Electric Vehicles. *Li, J.*, +, *TIE Oct. 2020 8900-8909*
- Charge pump circuits**
- Dual-Input Isolated Converter With Dual-Charge-Pump Cell for High Step-Up Voltage Ratio Achievement. *Shen, C.*, +, *TIE Nov. 2020 9383-9392*
- Chemical industry**
- Designing Dynamic Alarm Limits and Adjusting Manipulated Variables for Multivariate Systems. *Yu, Y.*, +, *TIE March 2020 2314-2325*
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- Chemical variables measurement**
- Optical Gas Imaging With Uncooled Thermal Imaging Camera - Impact of Warm Filters and Elevated Background Temperature. *Olbrycht, R.*, +, *TIE Nov. 2020 9824-9832*
- Chirp modulation**
- A Novel Controlled Frequency Band Impedance Measurement Approach for Single-Phase Railway Traction Power System. *Hu, H.*, +, *TIE Jan. 2020 244-253*
- Chua's circuit**
- Flux-Charge Analysis of Two-Memristor-Based Chua's Circuit: Dimensionality Decreasing Model for Detecting Extreme Multistability. *Chen, M.*, +, *TIE March 2020 2197-2206*
- Circuit breakers**
- A High-Performance and Economical Multiport Hybrid Direct Current Circuit Breaker. *He, J.*, +, *TIE Oct. 2020 8921-8930*
- A Novel Mixture Solid-State Switch Based on IGCT With High Capacity and IGBT With High Turn-off Ability for Hybrid DC Breakers. *Zhang, X.*, +, *TIE June 2020 4485-4495*
- Analysis and Experimental Validation of Bidirectional Z-Source DC Circuit Breakers. *Savaliya, S.G.*, +, *TIE June 2020 4613-4622*
- Coupled Inductance Model of Full-Bridge Modules in Hybrid High Voltage Direct Current Circuit Breakers. *Dongye, Z.*, +, *TIE Dec. 2020 10315-10324*
- Damping HVDC Circuit Breaker With Current Commutation and Limiting Integrated. *Wu, Y.*, +, *TIE Dec. 2020 10433-10441*
- DC Fault Current Blocking With the Coordination of Half-Bridge MMC and the Hybrid DC Breaker. *Iman-Eini, H.*, +, *TIE July 2020 5503-5514*
- Double-Thyristor-Based Protection for Valve-Side Single-Phase-to-Ground Faults in HB-MMC-Based Bipolar HVDC Systems. *Li, G.*, +, *TIE July 2020 5810-5815*
- Electrothermal Transient Behavioral Modeling of Thyristor-Based Ultrafast Mechatronic Circuit Breaker for Real-Time DC Grid Emulation. *Lin, N.*, +, *TIE March 2020 1660-1670*
- Optimum Selection of Circuit Breaker Parameters Based on Analytical Calculation of Overcurrent and Overvoltage in Multiterminal HVDC Grids. *Song, Y.*, +, *TIE May 2020 4133-4143*
- Circuit feedback**
- A Self-Starting Class-E Power Oscillator With an Inverting Gate Driver. *Ahmadi, M.M.*, +, *TIE Oct. 2020 8344-8354*
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- Fault Diagnosis and Monitoring of Modular Multilevel Converter With Fast Response of Voltage Sensors. *Zhang, J.*, +, *TIE June 2020 5071-5080*
- Circuit simulation**
- Real-Time Simulation of Power Electronic Systems Based on Predictive Behavior. *Liu, C.*, +, *TIE Sept. 2020 8044-8053*
- Circuit stability**
- A Pedagogical Study of Aerodynamic Feedback Control by Dielectric Barrier Discharge Plasma. *Kwan, P.W.*, +, *TIE Jan. 2020 451-460*
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- Circuit theory**
- Energy-Concentrating Optimization Based on Energy Distribution Characteristics of MCR WPT Systems With SS/PS Compensation. *Li, W.*, +, *TIE Dec. 2020 10410-10420*

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- A 2–10 MHz GaN HEMTs Half-Bridge Driver With Bandgap Reference Comparator Clamping and Dual Level Shifters for Automotive Applications. *Yan, R.*, +, *TIE Feb. 2020 1446-1454*
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- An Outlook on Potentialities and Limits in Using Epitaxial Polysilicon for MEMS Real-Time Clocks. *Mussi, G.*, +, *TIE Aug. 2020 6996-7004*
- Dual-Mode RFID Tag IC Supporting Gen-2 and Visible RFID Modes Using a Process-Compensating Self-Calibrating Clock Generator. *Din, A.U.*, +, *TIE Jan. 2020 569-580*

Closed loop systems

- dq* Synchronous Reference Frame Model of A Series–Series Tuned Inductive Power Transfer System. *Lee, S.*, +, *TIE Dec. 2020 10325-10334*
- A 2-DOF Monolithic Compliant Rotation Platform Driven by Piezoelectric Actuators. *Liang, C.*, +, *TIE Aug. 2020 6963-6974*
- A Closed-Loop Modulation Scheme for Duty Cycle Compensation of PWM Voltage Distortion at High Switching Frequency Inverter. *Ren, R.*, +, *TIE Feb. 2020 1475-1486*
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- A Current-Based Approach for Short-Circuit Fault Diagnosis in Closed-Loop Current Source Inverter. *Guo, X.*, +, *TIE Sept. 2020 7941-7950*
- A Data-Driven Realization of the Control-Performance-Oriented Process Monitoring System. *Luo, H.*, +, *TIE Jan. 2020 521-530*
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- A Novel Degradation Modeling and Prognostic Framework for Closed-Loop Systems With Degrading Actuator. *Si, X.*, +, *TIE Nov. 2020 9635-9647*
- A Novel Geometric Hierarchical Approach for Dynamic Visual Servoing of Quadrotors. *Zhang, X.*, +, *TIE May 2020 3840-3849*
- A Novel Scheme of Nonfragile Controller Design for Periodic Piecewise LTV Systems. *Xie, X.*, +, *TIE Dec. 2020 10766-10775*
- A Pedagogical Study of Aerodynamic Feedback Control by Dielectric Barrier Discharge Plasma. *Kwan, P.W.*, +, *TIE Jan. 2020 451-460*
- Actuator Failure Compensation-Based Adaptive Control of Active Suspension Systems With Prescribed Performance. *Liu, Y.*, +, *TIE Aug. 2020 7044-7053*
- Adaptive Fault-Tolerant Constrained Control of Cooperative Spacecraft Rendezvous and Docking. *Sun, L.*, *TIE April 2020 3107-3115*
- Adaptive Fuzzy Tracking Control of Flexible-Joint Robots Based on Command Filtering. *Ling, S.*, +, *TIE May 2020 4046-4055*
- Adaptive Neural Network Control of Underactuated Surface Vessels With Guaranteed Transient Performance: Theory and Experimental Results. *Chen, L.*, +, *TIE May 2020 4024-4035*
- Adaptive NN Backstepping Control Design for a 3-DOF Helicopter: Theory and Experiments. *Yang, X.*, +, *TIE May 2020 3967-3979*
- Adaptive Threshold Generation for Vehicle Fault Detection Using Switched T–S Interval Observers. *Ifqir, S.*, +, *TIE June 2020 5030-5040*
- Adaptive Time-Delay Balance Control of Biped Robots. *Pi, M.*, +, *TIE April 2020 2936-2944*
- ADRC-Based Current Control for Grid-Tied Inverters: Design, Analysis, and Verification. *Cao, Y.*, +, *TIE Oct. 2020 8428-8437*
- Asymmetric Cascaded H-Bridge Multilevel Inverter With Single DC Source per Phase. *Vasu, R.*, +, *TIE July 2020 5398-5409*
- Attractive Ellipsoid-Based Robust Control for Quadrotor Tracking. *Falcon, R.*, +, *TIE Sept. 2020 7851-7860*
- Bidirectional DC–DC Converter for Modular Residential Battery Energy Storage Systems. *Chub, A.*, +, *TIE March 2020 1944-1955*
- Cascaded-Extended-State-Observer-Based Sliding-Mode Control for Underactuated Flexible Joint Robot. *Rsetam, K.*, +, *TIE Dec. 2020 10822-10832*
- Closed-Loop Control and Boundary for CCM and DCM of Nonisolated Inverting $N \times$ Multilevel Boost Converter for High-Voltage Step-Up Applications. *Iqbal, A.*, +, *TIE April 2020 2863-2874*

- Composite Disturbance Rejection Attitude Control for Quadrotor With Unknown Disturbance. *Zhao, K.*, +, *TIE Aug. 2020 6894-6903*
- Cooperative CC–CV Charging of Supercapacitors Using Multicharger Systems. *Li, H.*, +, *TIE Dec. 2020 10497-10508*
- Cooperative Manipulation of Wearable Dual-Arm Exoskeletons Using Force Communication Between Partners. *Wu, X.*, +, *TIE Aug. 2020 6629-6638*
- Cost-Effective Islanded Electrical System With Decentralized Interleaving PWM for Converter Harmonic Reduction. *He, J.*, +, *TIE Oct. 2020 8472-8483*
- DC-Link Voltage-Balancing Strategy Based on Optimal Switching Sequence Model Predictive Control for Single-Phase H-NPC Converters. *Vazquez, S.*, +, *TIE Sept. 2020 7410-7420*
- Design and Analysis of Inductively Coupled Power Transfer System on Mooring Buoy With Double Ultracapacitor Chargers Using Indirect Control. *Xu, J.*, +, *TIE June 2020 4836-4845*
- Design and Control of a Piezoelectrically Actuated Fast Tool Servo for Diamond Turning of Microstructured Surfaces. *Zhu, Z.*, +, *TIE Aug. 2020 6688-6697*
- Design of a LQR-Based Boost Converter Controller for Energy Savings. *Neacsu, D.O.*, +, *TIE July 2020 5379-5388*
- Design of Robust Discretized Sliding Mode Controller: Analysis and Application to Buck Converters. *Cheng, Y.*, +, *TIE Dec. 2020 10672-10681*
- Design, Analysis, and Impacts of Sinusoidal LC Filter on Pulsewidth Modulated Inverter Fed-Induction Motor Drive. *Mishra, P.*, +, *TIE April 2020 2678-2688*
- Development of an Improved Input-Parallel Output-Series Buck-Boost Converter and Its Closed-Loop Control. *Rana, N.*, +, *TIE Aug. 2020 6428-6438*
- Energy-Based Nonlinear Adaptive Control Design for the Quadrotor UAV System With a Suspended Payload. *Yang, S.*, +, *TIE March 2020 2054-2064*
- Energy-Efficient Supplemental LED Lighting Control for a Proof-of-Concept Greenhouse System. *Jiang, J.*, +, *TIE April 2020 3033-3042*
- Event Driven Control of Voltage and Current Gradients of Medium Voltage IGBTs. *Holtz, J.*, *TIE Aug. 2020 6323-6330*
- Event-Triggered Decentralized Tracking Control of Modular Reconfigurable Robots Through Adaptive Dynamic Programming. *Zhao, B.*, +, *TIE April 2020 3054-3064*
- Experimental Analysis and Optimization of a Contactless Eddy-Current-Based Speed Sensor for Smooth Conductive Surfaces. *Gong, C.*, +, *TIE Oct. 2020 8817-8828*
- Fault-Estimation-Based Output-Feedback Adaptive FTC for Uncertain Nonlinear Systems With Actuator Faults. *Zhang, L.*, +, *TIE April 2020 3065-3075*
- Finite-Time Adaptive Quantized Control of Stochastic Nonlinear Systems With Input Quantization: A Broad Learning System Based Identification Method. *Sui, S.*, +, *TIE Oct. 2020 8555-8565*
- Force Sensorless Admittance Control With Neural Learning for Robots With Actuator Saturation. *Peng, G.*, +, *TIE April 2020 3138-3148*
- Frequency-Adaptive Virtual Flux Estimator-Based Predictive Power Control With Suppression of Dc Voltage Ripples Under Unbalanced Network. *Yang, H.*, +, *TIE Oct. 2020 8969-8979*
- Full-Order Observer for a Class of Nonlinear Systems With Unmatched Uncertainties: Joint Attractive Ellipsoid and Sliding Mode Concepts. *Sanchez, B.*, +, *TIE July 2020 5677-5686*
- High-Order Disturbance-Observer-Based Sliding Mode Control for Mobile Wheeled Inverted Pendulum Systems. *Huang, J.*, +, *TIE March 2020 2030-2041*
- Impedance-Based Harmonic Current Suppression Method for VSG Connected to Distorted Grid. *Zhou, L.*, +, *TIE July 2020 5490-5502*
- Improve Disturbance-Rejection Performance for an Equivalent-Input-Disturbance-Based Control System by Incorporating a Proportional-Integral Observer. *Wu, M.*, +, *TIE Feb. 2020 1254-1260*
- Improved Accuracy, Modeling, and Stability Analysis of Power-Hardware-in-Loop Simulation With Open-Loop Inverter as Power Amplifier. *Upamanyu, K.*, +, *TIE Jan. 2020 369-378*
- Improved Equivalent-Input-Disturbance Approach Based on H_∞ Control. *Yu, P.*, +, *TIE Oct. 2020 8670-8679*

- Modulation Scheme of Dual Active Bridge Converter for Seamless Transitions in Multiworking Modes Compromising ZVS and Conduction Loss. *Guo, Z.*, *TIE Sept. 2020 7399-7409*
- MPC Inspired Dynamical Output Feedback and Adaptive Feedforward Control Applied to Piezo-Actuated Positioning Systems. *Nguyen, M.L.*, +, *TIE May 2020 3921-3931*
- Nonlinear Control of Underactuated Systems Subject to Both Actuated and Unactuated State Constraints With Experimental Verification. *Chen, H.*, +, *TIE Sept. 2020 7702-7714*
- Online Feedback Dead Time Compensation Strategy for Three-Level T-Type Inverters. *Wang, D.*, +, *TIE Sept. 2020 7260-7268*
- Optimal Tracking With Disturbance Rejection of Voltage Source Inverters. *Teng, J.*, +, *TIE June 2020 4957-4968*
- Output-Based Event-Triggered Predictive Control for Networked Control Systems. *Yang, R.*, +, *TIE Dec. 2020 10631-10640*
- Postfault Operation of Cascaded H-Bridge Converter for Equal Power Handling by the Healthy Cells. *Sharma, R.*, +, *TIE Nov. 2020 9174-9183*
- Research on the Dynamic Characteristics and Regulation Method of the Energy Stored Quasi-Z-Source Inverter System. *Hu, S.*, +, *TIE June 2020 4590-4599*
- Robust Current Control of Grid-Tied Inverters Affected by LCL Filter Soft-Saturation. *Osorio, C.R.D.*, +, *TIE Aug. 2020 6550-6561*
- Sensorless Closed-Loop Voltage and Frequency Control of Stand-Alone DFIGs Introducing Direct Flux-Vector Control. *Rostami, M.*, +, *TIE July 2020 6078-6088*
- Sensorless Low/Zero Speed Estimation for Permanent Magnet Synchronous Machine Using a Search-Based Real-Time Commissioning Method. *Sci-chuna, K.*, +, *TIE July 2020 6010-6018*
- Simple Stability Enhancement Method for Stator Current Error-Based MRAS-Type Speed Estimator for Induction Motor. *Korzonek, M.*, +, *TIE July 2020 5854-5866*
- Simulation and Experimental Results of a New Control Strategy For Point Stabilization of Nonholonomic Mobile Robots. *Fabregas, E.*, +, *TIE Aug. 2020 6679-6687*
- Single-Stage Voltage Balancer With High-Frequency Isolation for Bipolar LVDC Distribution System. *Lee, J.*, +, *TIE May 2020 3596-3606*
- Sliding Mode Control for Nonlinear Stochastic Semi-Markov Switching Systems With Application to SRMM. *Qi, W.*, +, *TIE May 2020 3955-3966*
- Subspace-Aided Closed-Loop System Identification With Application to DC Motor System. *Li, K.*, +, *TIE March 2020 2304-2313*
- Suppression of Harmonic Vibration in Magnetically Suspended Centrifugal Compressor Using Zero-Phase Odd-Harmonic Repetitive Controller. *Cai, K.*, +, *TIE Sept. 2020 7789-7797*
- Switched-Capacitor Differential Boost Inverter: Design, Modeling, and Control. *Silva, G.V.*, +, *TIE July 2020 5421-5431*
- The Optimal Speed-Torque Control of Asynchronous Motors for Electric Cars in the Field-Weakening Region Based on the RFR. *Xie, F.*, +, *TIE Nov. 2020 9601-9612*
- Uncertainty and Disturbance Estimator-Based Control of a Flapping-Wing Aerial Vehicle With Unknown Backlash-Like Hysteresis. *Yin, Z.*, +, *TIE June 2020 4826-4835*
- Underwater Bioinspired Propulsion: From Inspection to Manipulation. *Wang, Y.*, +, *TIE Sept. 2020 7629-7638*
- Unknown System Dynamics Estimator for Motion Control of Nonlinear Robotic Systems. *Na, J.*, +, *TIE May 2020 3850-3859*
- Weighted Efficiency Enhancement for Single-Power-Conversion Microinverters Using Hybrid-Mode Modulation Strategy. *Kim, K.*, +, *TIE Dec. 2020 10243-10252*
- Cloud computing**
- Profile-Guided Three-Phase Virtual Resource Management for Energy Efficiency of Data Centers. *Ding, Z.*, +, *TIE March 2020 2460-2468*
- CMOS integrated circuits**
- A 2–10 MHz GaN HEMTs Half-Bridge Driver With Bandgap Reference Comparator Clamping and Dual Level Shifters for Automotive Applications. *Yan, R.*, +, *TIE Feb. 2020 1446-1454*
- A Fully Integrated Maximum Power Tracking Combiner for Energy Harvesting IoT Applications. *Estrada-Lopez, J.J.*, +, *TIE April 2020 2744-2754*
- A Low-EMI Continuous-Time Delta-Sigma-Modulator Buck Converter With Transient Response Eruption Techniques. *Hwang, Y.*, +, *TIE Aug. 2020 6854-6863*
- An Asynchronous Boost Converter With Time-Based Dual-Mode Control for Wide Load Range and High Efficiency in SSD Applications. *Lee, K.*, +, *TIE Dec. 2020 10520-10530*
- An Energy-Efficient Multimode Multichannel Gas-Sensor System With Learning-Based Optimization and Self-Calibration Schemes. *Park, K.*, +, *TIE March 2020 2402-2410*
- An Output Capacitorless Low-Dropout Regulator With a Low- V_{DD} Inverting Buffer for the Mobile Application. *Park, J.*, +, *TIE Oct. 2020 8931-8935*
- Design of Monolithic All-NMOS Three-Level Three-phase Switched-Capacitor Power Converter for Industrial Environmental Sensor Conditioning. *Chen, L.*, +, *TIE Nov. 2020 9873-9881*
- Dual-Mode RFID Tag IC Supporting Gen-2 and Visible RFID Modes Using a Process-Compensating Self-Calibrating Clock Generator. *Din, A.U.*, +, *TIE Jan. 2020 569-580*
- Multiple-Input Harvesting Power Management Unit With Enhanced Boosting Scheme for IoT Applications. *Abuellil, A.*, +, *TIE May 2020 3662-3672*
- Coatings**
- Multiresonant Chipless RFID Array System for Coating Defect Detection and Corrosion Prediction. *Deif, S.*, +, *TIE Oct. 2020 8868-8877*
- Cobalt alloys**
- Mitigation of DC-Link Current Ripple for Dual Three-Phase Flux-Adjustable Hybrid PMAC Drives Using Collaborative Switching Strategy. *Wang, Z.*, +, *TIE Sept. 2020 7202-7216*
- Coercive force**
- A Novel Hybrid-Magnetic-Circuit Variable Flux Memory Machine. *Yang, H.*, +, *TIE July 2020 5258-5268*
- Mitigation of DC-Link Current Ripple for Dual Three-Phase Flux-Adjustable Hybrid PMAC Drives Using Collaborative Switching Strategy. *Wang, Z.*, +, *TIE Sept. 2020 7202-7216*
- Coils**
- A Load-Independent LCC-Compensated Wireless Power Transfer System for Multiple Loads With a Compact Coupler Design. *Cheng, C.*, +, *TIE June 2020 4507-4515*
- A New Calibration Method for Triaxial Fluxgate Magnetometer Based on Magnetic Shielding Room. *Pan, D.*, +, *TIE May 2020 4183-4192*
- A Self-Powered Vibration Sensor With Wide Bandwidth. *Li, Y.*, +, *TIE Jan. 2020 560-568*
- Active Class E Rectifier for DC Output Voltage Regulation in Megahertz Wireless Power Transfer Systems. *Liu, M.*, +, *TIE May 2020 3618-3628*
- Analysis, Design, and Experimental Verification of a Mixed High-Order Compensations-Based WPT System with Constant Current Outputs for Driving Multistring LEDs. *Li, Y.*, +, *TIE Jan. 2020 203-213*
- Analytical Thermal Model of Natural-Convection Cooling in Axial Flux Machines. *Nasab, P.S.*, +, *TIE April 2020 2711-2721*
- Angular-Misalignment Insensitive Omnidirectional Wireless Power Transfer. *Zhang, Z.*, +, *TIE April 2020 2755-2764*
- Energy-Concentrating Optimization Based on Energy Distribution Characteristics of MCR WPT Systems With SS/PS Compensation. *Li, W.*, +, *TIE Dec. 2020 10410-10420*
- Impact of Rebar and Concrete on Power Dissipation of Wireless Power Transfer Systems. *Lee, S.*, +, *TIE Jan. 2020 276-287*
- Range-Adaptive Wireless Power Transfer Based on Differential Coupling Using Multiple Bidirectional Coils. *Zhuang, Y.*, +, *TIE Sept. 2020 7519-7528*
- Reducing Motion-Induced Noise With Mechanically Resonant Coil Sensor in a Rigid Helicopter Transient Electromagnetic System. *Liu, F.*, +, *TIE March 2020 2391-2401*
- Research on the Design Method of Uniform Magnetic Field Coil Based on the MSR. *Pan, D.*, +, *TIE Feb. 2020 1348-1356*
- Single-Variable-Input Active Sidelobe Suppression Method for Synthesized Magnetic Field Focusing Technology and Its Optimization. *Kim, J.H.*, +, *TIE Nov. 2020 9813-9823*

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- A Motion Planning and Tracking Framework for Autonomous Vehicles Based on Artificial Potential Field Elaborated Resistance Network Approach. *Huang, Y.*, +, *TIE Feb. 2020 1376-1386*
- A Robot Gripper With Variable Stiffness Actuation for Enhancing Collision Safety. *Memar, A.H.*, +, *TIE Aug. 2020 6607-6616*
- Cornering Trajectory Planning Avoiding Slip for Differential-Wheeled Mobile Robots. *Kim, J.*, +, *TIE Aug. 2020 6698-6708*
- Optimal Path Planning Using Generalized Voronoi Graph and Multiple Potential Functions. *Wang, J.*, +, *TIE Dec. 2020 10621-10630*

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- Development of a Magnetically Driven Microgripper for PicoNewton Force-Controlled Microscale Manipulation and Characterization. *Xie, H.*, +, *TIE March 2020 2065-2075*

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- Adaptive Internal Model-Based Harmonic Control for Active Torsional Vibration Reduction. *Vadamalu, R.S.*, +, *TIE April 2020 3024-3032*
- An Intelligent Control Strategy for Iron Ore Sintering Ignition Process Based on the Prediction of Ignition Temperature. *Du, S.*, +, *TIE Feb. 2020 1233-1241*

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- A PWM ZVS High-Frequency-Link Three-Phase Inverter With T-Type NPC Unfolder. *Pal, A.*, +, *TIE Sept. 2020 7146-7156*
- A Reliable Single-Phase Bipolar Buck-Boost Direct PWM AC-AC Converter With Continuous Input/Output Currents. *Ahmed, H.F.*, +, *TIE Dec. 2020 10253-10265*
- An Enhanced Strategy to Inhibit Commutation Failure in Line-Commutated Converters. *Mirsaeidi, S.*, +, *TIE Jan. 2020 340-349*
- Common-Mode and Phase-to-Ground Voltage Reduction in Back-to-Back Power Converters With Discontinuous PWM. *Samanes, J.*, +, *TIE Sept. 2020 7499-7508*
- Coupled Inductance Model of Full-Bridge Modules in Hybrid High Voltage Direct Current Circuit Breakers. *Dongye, Z.*, +, *TIE Dec. 2020 10315-10324*
- Damping HVDC Circuit Breaker With Current Commutation and Limiting Integrated. *Wu, Y.*, +, *TIE Dec. 2020 10433-10441*
- Sensorless Commutation Deviation Correction of Brushless DC Motor With Three-Phase Asymmetric Back-EMF. *Liu, G.*, +, *TIE July 2020 6158-6167*
- Sensorless Optimal Commutation Steady Speed Control Method for a Non-ideal Back-EMF BLDC Motor Drive System Including Buck Converter. *Chen, X.*, +, *TIE July 2020 6147-6157*
- Stacked Class-E Amplifier. *Pena-Eguiluz, R.*, +, *TIE Oct. 2020 8292-8301*

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- Method and Implementation of a Bioinspired Polarization-Based Attitude and Heading Reference System by Integration of Polarization Compass and Inertial Sensors. *Yang, J.*, +, *TIE Nov. 2020 9802-9812*

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- A Closed-Loop Modulation Scheme for Duty Cycle Compensation of PWM Voltage Distortion at High Switching Frequency Inverter. *Ren, R.*, +, *TIE Feb. 2020 1475-1486*
- A Distortion Model of Laser Sheet for a Laser Line Scanner With Large Fan Angle. *Yoon, S.*, +, *TIE Aug. 2020 6986-6995*
- A Novel Dead Zone Reaching Law of Discrete-Time Sliding Mode Control With Disturbance Compensation. *Ma, H.*, +, *TIE June 2020 4815-4825*
- Actuator Failure Compensation-Based Adaptive Control of Active Suspension Systems With Prescribed Performance. *Liu, Y.*, +, *TIE Aug. 2020 7044-7053*
- Adaptive Internal Model-Based Harmonic Control for Active Torsional Vibration Reduction. *Vadamalu, R.S.*, +, *TIE April 2020 3024-3032*
- Adaptive Unbalance Compensation for a Three-Pole Active Magnetic Bearing System. *Chen, S.*, +, *TIE March 2020 2097-2106*
- An Improved Delay-Suppressed Sliding-Mode Observer for Sensorless Vector-Controlled PMSM. *Gong, C.*, +, *TIE July 2020 5913-5923*

- An Optimal Compensation Method of Shunt Active Power Filters for System-Wide Voltage Quality Improvement. *Zhai, H.*, +, *TIE Feb. 2020 1270-1281*
- An Output Capacitorless Low-Dropout Regulator With a Low- V_{DD} Inverting Buffer for the Mobile Application. *Park, J.*, +, *TIE Oct. 2020 8931-8935*
- Analysis, Design, and Experimental Verification of a Mixed High-Order Compensations-Based WPT System with Constant Current Outputs for Driving Multistring LEDs. *Li, Y.*, +, *TIE Jan. 2020 203-213*
- Collaborative Control and Allocation Method of RSC and GSC for DFIG System to Suppress High-Frequency Resonance and Harmonics. *Pang, B.*, +, *TIE Dec. 2020 10509-10519*
- Control of a Bowden-Cable Actuation System With Embedded BoASensor for Soft Wearable Robots. *Jeong, U.*, +, *TIE Sept. 2020 7669-7680*
- Cost-Effective Compensation Design for Output Customization and Efficiency Optimization in Series/Series-Parallel Inductive Power Transfer Converter. *Huang, Z.*, +, *TIE Dec. 2020 10356-10365*
- Current-Cycle Iterative Learning Control for High-Precision Position Tracking of Piezoelectric Actuator System via Active Disturbance Rejection Control for Hysteresis Compensation. *Huang, D.*, +, *TIE Oct. 2020 8680-8690*
- Decoupled Torque Control of Series Elastic Actuator With Adaptive Robust Compensation of Time-Varying Load-Side Dynamics. *Lin, Y.*, +, *TIE July 2020 5604-5614*
- Design and Control of a Piezoelectrically Actuated Fast Tool Servo for Diamond Turning of Microstructured Surfaces. *Zhu, Z.*, +, *TIE Aug. 2020 6688-6697*
- Dual-Loop-Based Harmonic Current Control Strategy and Admittance Modeling for a Multimodular Parallel SAPFs System. *Liu, K.*, +, *TIE July 2020 5456-5466*
- Effective Disturbance Compensation Method Under Control Saturation in Discrete-Time Sliding Mode Control. *Han, J.*, +, *TIE July 2020 5696-5707*
- High-Accuracy Dynamic Load Emulation Method for Electrical Drives. *de Oliveira, C.M.R.*, +, *TIE Sept. 2020 7239-7249*
- ILC-Based Voltage Compensation Method for PMSM Sensorless Control Considering Inverter Nonlinearity and Sampling Current DC Bias. *Wang, Y.*, +, *TIE July 2020 5980-5989*
- Lambert Compensation, Nonlinear Estimation, and Control Architecture of a Novel Optical Calibration Instrument. *Liu, G.*, +, *TIE May 2020 4193-4202*
- Motion Control of a Magnetic Levitation Actuator Based on a Wrench Model Considering Yaw Angle. *Xu, F.*, +, *TIE Oct. 2020 8545-8554*
- Novel Compensation Strategy for Calculation Delay of Finite Control Set Model Predictive Current Control in PMSM. *Gao, J.*, +, *TIE July 2020 5816-5819*
- Online Feedback Dead Time Compensation Strategy for Three-Level T-Type Inverters. *Wang, D.*, +, *TIE Sept. 2020 7260-7268*
- Online Hysteresis Identification and Compensation for Piezoelectric Actuators. *Liu, Y.*, +, *TIE July 2020 5595-5603*
- Peak Current Control and Feed-Forward Compensation of a DAB Converter. *Vazquez, N.*, +, *TIE Oct. 2020 8381-8391*
- Performance Improvement of the Unbalanced Voltage Compensation in Islanded Microgrid Based on Small-Signal Analysis. *Peng, Y.*, +, *TIE July 2020 5531-5542*
- Precise Phase Demodulation Algorithm for Sinusoidal Encoders and Resolvers. *Ye, G.*, +, *TIE Oct. 2020 8778-8787*
- Precision Motion Control of a Servomotor-Pump Direct-Drive Electrohydraulic System With a Nonlinear Pump Flow Mapping. *Helian, B.*, +, *TIE Oct. 2020 8638-8648*
- Repetitive Control Meets Continuous Zero Phase Error Tracking Controller for Precise Tracking of B-Spline Trajectories. *Biagiotti, L.*, +, *TIE Sept. 2020 7808-7818*
- Robust High Bandwidth Current Regulation for Permanent Magnet Synchronous Linear Motor Drivers by Using Two-Degree-of-Freedom Controller and Thrust Ripple Observer. *Zhao, J.*, +, *TIE March 2020 1804-1812*
- Signal Compensation Based Adaptive Cascade Control for Regrinding Processes. *Wang, L.*, +, *TIE Oct. 2020 8732-8742*

Single-Cycle-Lag Compensator-Based Active Damping for Digitally Controlled LCL/LLCL-Type Grid-Connected Inverters. *Miao, Z.*, +, *TIE March 2020 1980-1990*

Ultrastable and Low-Noise Self-Compensation Method for Circuit Thermal Drift of Eddy Current Sensors Based on Analog Multiplier. *Zhao, G.*, +, *TIE Oct. 2020 8851-8859*

Compliance control

A Modular Wearable Finger Interface for Cutaneous and Kinesthetic Interaction: Control and Evaluation. *Chinello, F.*, +, *TIE Jan. 2020 706-716*

Compressors

Data-Driven Soft Sensor for the Estimation of Sound Power Levels of Refrigeration Compressors Through Vibration Measurements. *Nascimento, A.S.B.d.S.*, +, *TIE Aug. 2020 7065-7072*

Real-Time Energy Management of the Electric Turbocharger Based on Explicit Model Predictive Control. *Zhao, D.*, +, *TIE April 2020 3126-3137*

Suppression of Harmonic Vibration in Magnetically Suspended Centrifugal Compressor Using Zero-Phase Odd-Harmonic Repetitive Controller. *Cai, K.*, +, *TIE Sept. 2020 7789-7797*

Valve Failure Prognostics in Reciprocating Compressors Utilizing Temperature Measurements, PCA-Based Data Fusion, and Probabilistic Algorithms. *Loutas, T.*, +, *TIE June 2020 5022-5029*

Computational complexity

A Collaborative Sensing and Model-Based Real-Time Recovery of Fast Data Flows From Sparse Measurements. *Xiao, H.*, +, *TIE Aug. 2020 6806-6814*

An Effective Optimization Algorithm for Application Mapping in Network-on-Chip Designs. *Wang, X.*, +, *TIE July 2020 5798-5809*

Fringe-Projection-Based Normal Direction Measurement and Adjustment for Robotic Drilling. *Rao, G.*, +, *TIE Nov. 2020 9560-9570*

Parallel Implementation of Model Predictive Control for Multilevel Cascaded H-Bridge STATCOM With Linear Complexity. *Zhang, Y.*, +, *TIE Feb. 2020 832-841*

Performance-Improved Implementation of the SISO Adaptive Predictive Control Algorithm for Embedded Systems. *Cruz-Malagon, I.D.L.*, +, *TIE Sept. 2020 8054-8063*

Reduced-Order Thermal Observer for Power Modules Temperature Estimation. *Dong, X.*, +, *TIE Dec. 2020 10085-10094*

Visual Tracking via Auto-Encoder Pair Correlation Filter. *Cheng, X.*, +, *TIE April 2020 3288-3297*

Computational fluid dynamics

Numerical and Experimental Calculation of CHTC in an Oil-Based Shaft Cooling System for a High-Speed High-Power PMSM. *Gai, Y.*, +, *TIE June 2020 4371-4380*

Reduced-Order Thermal Observer for Power Modules Temperature Estimation. *Dong, X.*, +, *TIE Dec. 2020 10085-10094*

Thermal Modeling of Hollow Conductors for Direct Cooling of Electrical Machines. *Chen, X.*, +, *TIE Feb. 2020 895-905*

Water Cold Plates for Efficient Cooling: Verified on a Permanent-Magnet Machine With Concentrated Winding. *Fan, X.*, +, *TIE July 2020 5325-5336*

Computational geometry

A Robust Point Set Registration Approach With Multiple Effective Constraints. *Sun, J.*, +, *TIE Dec. 2020 10931-10941*

Optimal Path Planning Using Generalized Voronoi Graph and Multiple Potential Functions. *Wang, J.*, +, *TIE Dec. 2020 10621-10630*

Computer centers

Optimization of High-Density and High-Efficiency Switched-Tank Converter for Data Center Applications. *Lyu, X.*, +, *TIE Feb. 2020 1626-1637*

Profile-Guided Three-Phase Virtual Resource Management for Energy Efficiency of Data Centers. *Ding, Z.*, +, *TIE March 2020 2460-2468*

Computer network security

An Intelligent Data-Driven Model to Secure Intravehicle Communications Based on Machine Learning. *Al-Saud, M.*, +, *TIE June 2020 5112-5119*

On Detection of False Data in Cooperative DC Microgrids—A Discordant Element Approach. *Sahoo, S.*, +, *TIE Aug. 2020 6562-6571*

Physical Unclonable Function-Based Key Sharing via Machine Learning for IoT Security. *Zhang, J.*, +, *TIE Aug. 2020 7025-7033*

Computer simulation

Classification of Complex Power Quality Disturbances Using Optimized S-Transform and Kernel SVM. *Tang, Q.*, +, *TIE Nov. 2020 9715-9723*

Computer vision

Design of a New Vision-Based Method for the Bolts Looseness Detection in Flange Connections. *Wang, C.*, +, *TIE Feb. 2020 1366-1375*

Real-Time CU-Net-Based Welding Quality Inspection Algorithm in Battery Production. *Zhang, H.*, +, *TIE Dec. 2020 10942-10950*

SCSCN: A Separated Channel-Spatial Convolution Net With Attention for Single-View Reconstruction. *Ma, J.*, +, *TIE Oct. 2020 8649-8658*

Sparse Template-Based 6-D Pose Estimation of Metal Parts Using a Monocular Camera. *He, Z.*, +, *TIE Jan. 2020 390-401*

Visual Tracking via Auto-Encoder Pair Correlation Filter. *Cheng, X.*, +, *TIE April 2020 3288-3297*

Computerized instrumentation

An Energy-Efficient Multimode Multichannel Gas-Sensor System With Learning-Based Optimization and Self-Calibration Schemes. *Park, K.*, +, *TIE March 2020 2402-2410*

Fault Detection and Diagnosis of Industrial Robot Based on Power Consumption Modeling. *Sabry, A.H.*, +, *TIE Sept. 2020 7929-7940*

Computerized monitoring

A Data-Driven Realization of the Control-Performance-Oriented Process Monitoring System. *Luo, H.*, +, *TIE Jan. 2020 521-530*

Computerized numerical control

A Model Predictive Contouring Error Precompensation Method. *Yang, X.*, +, *TIE May 2020 4036-4045*

A Reinforced k -Nearest Neighbors Method With Application to Chatter Identification in High-Speed Milling. *Shi, F.*, +, *TIE Dec. 2020 10844-10855*

Design of a High-Force Electromechanical Actuator for Electrically Driven Lathe Machine. *Jang, D.*, +, *TIE Nov. 2020 9526-9535*

Concave programming

A Decentralized Periodic Energy Trading Framework for Pelagic Islanded Microgrids. *Hu, M.*, +, *TIE Sept. 2020 7595-7605*

Blind Multiple-Input Multiple-Output Image Phase Retrieval. *Guo, Y.*, +, *TIE March 2020 2220-2230*

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SDDNet: Real-Time Crack Segmentation. *Choi, W.*, +, *TIE Sept. 2020 8016-8025*

Condition monitoring

In situ Degradation Monitoring of SiC MOSFET Based on Switching Transient Measurement. *Pu, S.*, +, *TIE June 2020 5092-5100*

A Model-Based Approach for the Estimation of Bearing Forces and Moments Using Outer Ring Deformation. *Kerst, S.*, +, *TIE Jan. 2020 461-470*

A Novel Statistical Time-Frequency Analysis for Rotating Machine Condition Monitoring. *Wang, T.*, +, *TIE Jan. 2020 531-541*

A Prognostic Model Based on DBN and Diffusion Process for Degrading Bearing. *Hu, C.*, +, *TIE Oct. 2020 8767-8777*

Adaptive Prognosis of Hybrid Dynamical System for Dynamic Degradation Patterns. *Prakash, O.*, +, *TIE July 2020 5717-5728*

An Incorrect Data Detection Method for Big Data Cleaning of Machinery Condition Monitoring. *Xu, X.*, +, *TIE March 2020 2326-2336*

Bayesian Deep-Learning-Based Health Prognostics Toward Prognostics Uncertainty. *Peng, W.*, +, *TIE March 2020 2283-2293*

Condition Monitoring of Transformer Breather Using a Capacitive Moisture Sensor. *Kumar, S.*, +, *TIE Nov. 2020 9779-9789*

Deep Learning-Based Machinery Fault Diagnostics With Domain Adaptation Across Sensors at Different Places. *Li, X.*, +, *TIE Aug. 2020 6785-6794*

Design of a New Vision-Based Method for the Bolts Looseness Detection in Flange Connections. *Wang, C.*, +, *TIE Feb. 2020 1366-1375*

Information Theory Based Probabilistic Approach to Blade Damage Detection of Turbomachine Using Sensor Data. *Yang, S.*, +, *TIE Dec. 2020 10887-10896*

Learning Representations With Local and Global Geometries Preserved for Machine Fault Diagnosis. *Li, Y.*, +, *TIE March 2020 2360-2370*

Naturally Damaged Wind Turbine Blade Bearing Fault Detection Using Novel Iterative Nonlinear Filter and Morphological Analysis. *Liu, Z.*, +, *TIE Oct. 2020 8713-8722*

- Online Parameter Estimation for Supercapacitor State-of-Energy and State-of-Health Determination in Vehicular Applications. *Naseri, F.*, +, *TIE Sept. 2020 7963-7972*
- Prognostics for Linear Stochastic Degrading Systems With Survival Measurements. *Si, X.*, +, *TIE April 2020 3202-3215*
- SDDNet: Real-Time Crack Segmentation. *Choi, W.*, +, *TIE Sept. 2020 8016-8025*
- Valve Failure Prognostics in Reciprocating Compressors Utilizing Temperature Measurements, PCA-Based Data Fusion, and Probabilistic Algorithms. *Loutas, T.*, +, *TIE June 2020 5022-5029*
- Conductors (electric)**
- An Analytical AC Resistance Calculation Method for Multiple-Conductor Feeder Cables in Aircraft Electric Power Systems. *Zhang, Y.*, +, *TIE May 2020 3340-3349*
- Research on Measurement Method of Electric Field Intensity on Surface of Metal Conductor. *Lu, B.*, +, *TIE Aug. 2020 7005-7014*
- Thermal Modeling of Hollow Conductors for Direct Cooling of Electrical Machines. *Chen, X.*, +, *TIE Feb. 2020 895-905*
- Confined flow**
- Thermal Modeling of Hollow Conductors for Direct Cooling of Electrical Machines. *Chen, X.*, +, *TIE Feb. 2020 895-905*
- Conformal mapping**
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- Constant current sources**
- Synthesis of Integrated Multiport DC–DC Converters With Reduced Switches. *Chen, G.*, +, *TIE June 2020 4536-4546*
- Contamination**
- Condition Monitoring of Transformer Breather Using a Capacitive Moisture Sensor. *Kumar, S.*, +, *TIE Nov. 2020 9779-9789*
- Continuous systems**
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- Continuous time systems**
- Adaptive Threshold Generation for Vehicle Fault Detection Using Switched T–S Interval Observers. *Ifqir, S.*, +, *TIE June 2020 5030-5040*
- Improved Accuracy, Modeling, and Stability Analysis of Power-Hardware-in-Loop Simulation With Open-Loop Inverter as Power Amplifier. *Upamanyu, K.*, +, *TIE Jan. 2020 369-378*
- Synchronization of Network Systems via Aperiodic Sampled-Data Control With Constant Delay and Application to Unmanned Ground Vehicles. *Ren, H.*, +, *TIE June 2020 4980-4990*
- Control engineering computing**
- on-Time Mismatch Based System Identification Technique for Buck Converters. *Gietler, H.*, +, *TIE Sept. 2020 7898-7908*
- A Collaborative Sensing and Model-Based Real-Time Recovery of Fast Data Flows From Sparse Measurements. *Xiao, H.*, +, *TIE Aug. 2020 6806-6814*
- A GaN-Based DC–DC Module for Railway Applications: Design Consideration and High-Frequency Digital Control. *Fu, M.*, +, *TIE Feb. 2020 1638-1647*
- A Model-Free Control Strategy for Vehicle Lateral Stability With Adaptive Dynamic Programming. *Sun, W.*, +, *TIE Dec. 2020 10693-10701*
- Adaptive Algorithms of Tuning and Switching Kalman and \mathcal{H}_∞ Filters and Their Application to Estimation of Ship Oscillation With Time-Varying Frequencies. *Sato, M.*, +, *TIE Jan. 2020 501-511*
- Computationally Efficient Coordinate Transformation for Field-Oriented Control Using Phase Shift of Linear Hall-Effect Sensor Signals. *Yu, Z.*, +, *TIE May 2020 3442-3451*
- Design of a High-Force Electromechanical Actuator for Electrically Driven Lathe Machine. *Jang, D.*, +, *TIE Nov. 2020 9526-9535*
- Directional Radiation Technique for Maximum Receiving Power in Microwave Power Transmission System. *Hui, Q.*, +, *TIE Aug. 2020 6376-6386*
- DMP-Based Motion Generation for a Walking Exoskeleton Robot Using Reinforcement Learning. *Yuan, Y.*, +, *TIE May 2020 3830-3839*
- Extended Signal-Correction Observer and Application to Aircraft Navigation. *Wang, X.*, +, *TIE April 2020 3149-3156*
- Improving Dynamic Performance of Boost PFC Converter Using Current-Harmonic Feedforward Compensation in Synchronous Reference Frame. *Li, S.*, +, *TIE June 2020 4857-4866*
- Novel Emerging Sensing, Actuation, and Control Techniques for Haptic Interaction and Teleoperation. *Wang, D.*, +, *TIE Jan. 2020 624-626*
- On the Decentralized Energy Management Strategy for the All-Electric APU of Future More Electric Aircraft Composed of Multiple Fuel Cells and Supercapacitors. *Chen, J.*, +, *TIE Aug. 2020 6183-6194*
- Parallel Implementation of Model Predictive Control for Multilevel Cascaded H-Bridge STATCOM With Linear Complexity. *Zhang, Y.*, +, *TIE Feb. 2020 832-841*
- VCA Protocol-Based Multilevel Flexible Architecture on Embedded PLCs for Visual Servo Control. *Wu, H.*, +, *TIE March 2020 2450-2459*
- Control nonlinearities**
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- Adaptive Backstepping Sliding Mode Control for Equilibrium Position Tracking of an Electrohydraulic Elastic Manipulator. *Tran, D.T.*, +, *TIE May 2020 3860-3869*
- Adaptive Fuzzy Backstepping Control for Stable Nonlinear Bilateral Teleoperation Manipulators With Enhanced Transparency Performance. *Chen, Z.*, +, *TIE Jan. 2020 746-756*
- Adaptive Fuzzy Tracking Control of Flexible-Joint Robots Based on Command Filtering. *Ling, S.*, +, *TIE May 2020 4046-4055*
- Adaptive Neural Network Control of Underactuated Surface Vessels With Guaranteed Transient Performance: Theory and Experimental Results. *Chen, L.*, +, *TIE May 2020 4024-4035*
- Adaptive NN Backstepping Control Design for a 3-DOF Helicopter: Theory and Experiments. *Yang, X.*, +, *TIE May 2020 3967-3979*
- Application of Sliding Switching Functions in Backstepping Based Speed Observer of Induction Machine. *Morawiec, M.*, +, *TIE July 2020 5843-5853*
- Cooperative Manipulation of Wearable Dual-Arm Exoskeletons Using Force Communication Between Partners. *Wu, X.*, +, *TIE Aug. 2020 6629-6638*
- Dynamics-Level Finite-Time Fuzzy Monocular Visual Servo of an Unmanned Surface Vehicle. *Wang, N.*, +, *TIE Nov. 2020 9648-9658*
- Event-Triggered Adaptive Attitude Tracking Control for Spacecraft With Unknown Actuator Faults. *Wang, C.*, +, *TIE March 2020 2241-2250*
- Fault-Estimation-Based Output-Feedback Adaptive FTC for Uncertain Nonlinear Systems With Actuator Faults. *Zhang, L.*, +, *TIE April 2020 3065-3075*
- Finite-Time Trajectory Tracking Control of Space Manipulator Under Actuator Saturation. *Jia, S.*, +, *TIE March 2020 2086-2096*
- ILC-Based Voltage Compensation Method for PMSM Sensorless Control Considering Inverter Nonlinearity and Sampling Current DC Bias. *Wang, Y.*, +, *TIE July 2020 5980-5989*
- Motion Control for Piezoelectric-Actuator-Based Surgical Device Using Neural Network and Extended State Observer. *Lau, J.Y.*, +, *TIE Jan. 2020 402-412*
- Optimal Tracking With Disturbance Rejection of Voltage Source Inverters. *Teng, J.*, +, *TIE June 2020 4957-4968*
- Output Feedback Adaptive Motion Control and Its Experimental Verification for Time-Delay Nonlinear Systems With Asymmetric Hysteresis. *Zhang, X.*, +, *TIE Aug. 2020 6824-6834*
- Output Feedback Control of Uncertain Hydraulic Servo Systems. *Na, J.*, +, *TIE Jan. 2020 490-500*
- Precision Motion Control of a Servomotor-Pump Direct-Drive Electrohydraulic System With a Nonlinear Pump Flow Mapping. *Helian, B.*, +, *TIE Oct. 2020 8638-8648*
- Sensorless Rotor Position Estimation of Doubly Fed Induction Generator Based on Backstepping Technique. *Morawiec, M.*, +, *TIE July 2020 5889-5899*
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- A Data-Driven Realization of the Control-Performance-Oriented Process Monitoring System. *Luo, H.*, +, *TIE Jan. 2020 521-530*

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- H₂/H_∞-Neural-Based FOPID Controller Applied for Radar-Guided Missile. *Yaghi, M.*, +, *TIE June 2020 4806-4814*
- dq Synchronous Reference Frame Model of A Series-Series Tuned Inductive Power Transfer System. *Lee, S.*, +, *TIE Dec. 2020 10325-10334*
- A Collaborative Sensing and Model-Based Real-Time Recovery of Fast Data Flows From Sparse Measurements. *Xiao, H.*, +, *TIE Aug. 2020 6806-6814*
- A Digital Phase Synchronization Method for Bidirectional Inductive Power Transfer. *Jia, S.*, +, *TIE Aug. 2020 6450-6460*
- A Model-Free Control Strategy for Vehicle Lateral Stability With Adaptive Dynamic Programming. *Sun, W.*, +, *TIE Dec. 2020 10693-10701*
- A New Self-Organizing Fuzzy Cerebellar Model Articulation Controller for Uncertain Nonlinear Systems Using Overlapped Gaussian Membership Functions. *Huynh, T.*, +, *TIE Nov. 2020 9671-9682*
- A Novel Dead Zone Reaching Law of Discrete-Time Sliding Mode Control With Disturbance Compensation. *Ma, H.*, +, *TIE June 2020 4815-4825*
- A Novel Geometric Hierarchical Approach for Dynamic Visual Servoing of Quadrotors. *Zhang, X.*, +, *TIE May 2020 3840-3849*
- A Novel Initiative Braking System With Nondegraded Fallback Level for ADAS and Autonomous Driving. *Yuan, Y.*, +, *TIE June 2020 4360-4370*
- A Novel Model-Based Robust Control for Position Tracking of Permanent Magnet Linear Motor. *Liu, X.*, +, *TIE Sept. 2020 7767-7777*
- A Novel Scheme of Nonfragile Controller Design for Periodic Piecewise LTV Systems. *Xie, X.*, +, *TIE Dec. 2020 10766-10775*
- A Reconfigurable Solar Photovoltaic Grid-Tied Inverter Architecture for Enhanced Energy Access in Backup Power Applications. *Venkatramanan, D.*, +, *TIE Dec. 2020 10531-10541*
- A Second-Order Dual Mode Repetitive Control for Magnetically Suspended Rotor. *Cui, P.*, +, *TIE June 2020 4946-4956*
- A Symplectic Instantaneous Optimal Control for Robot Trajectory Tracking With Differential-Algebraic Equation Models. *Peng, H.*, +, *TIE May 2020 3819-3829*
- A Tuning Method of Active Disturbance Rejection Control for a Class of High-Order Processes. *He, T.*, +, *TIE April 2020 3191-3201*
- A Two-Stage Synchronous Vibration Control for Magnetically Suspended Rotor System in the Full Speed Range. *Peng, C.*, +, *TIE Jan. 2020 480-489*
- Active Disturbance-Rejection-Based Speed Control in Model Predictive Control for Induction Machines. *Yan, L.*, +, *TIE April 2020 2574-2584*
- Actuator Failure Compensation-Based Adaptive Control of Active Suspension Systems With Prescribed Performance. *Liu, Y.*, +, *TIE Aug. 2020 7044-7053*
- Adaptive Backstepping Sliding Mode Control for Equilibrium Position Tracking of an Electrohydraulic Elastic Manipulator. *Tran, D.T.*, +, *TIE May 2020 3860-3869*
- Adaptive Fault-Tolerant Constrained Control of Cooperative Spacecraft Rendezvous and Docking. *Sun, L.*, *TIE April 2020 3107-3115*
- Adaptive Fuzzy Backstepping Control for Stable Nonlinear Bilateral Telemotion Manipulators With Enhanced Transparency Performance. *Chen, Z.*, +, *TIE Jan. 2020 746-756*
- Adaptive Fuzzy Tracking Control of Flexible-Joint Robots Based on Command Filtering. *Ling, S.*, +, *TIE May 2020 4046-4055*
- Adaptive Neural Network Control of Underactuated Surface Vessels With Guaranteed Transient Performance: Theory and Experimental Results. *Chen, L.*, +, *TIE May 2020 4024-4035*
- Adaptive NN Backstepping Control Design for a 3-DOF Helicopter: Theory and Experiments. *Yang, X.*, +, *TIE May 2020 3967-3979*
- Adaptive Threshold Generation for Vehicle Fault Detection Using Switched T-S Interval Observers. *Ifqir, S.*, +, *TIE June 2020 5030-5040*
- Adaptive Time-Delay Balance Control of Biped Robots. *Pi, M.*, +, *TIE April 2020 2936-2944*
- Adaptive Unbalance Compensation for a Three-Pole Active Magnetic Bearing System. *Chen, S.*, +, *TIE March 2020 2097-2106*
- Adaptive Visual Servoing for an Underwater Soft Robot Considering Refraction Effects. *Xu, F.*, +, *TIE Dec. 2020 10575-10586*
- ADRC-Based Current Control for Grid-Tied Inverters: Design, Analysis, and Verification. *Cao, Y.*, +, *TIE Oct. 2020 8428-8437*
- An Effective Sliding Mode Control Design for a Grid-Connected PUC7 Multilevel Inverter. *Makhamreh, H.*, +, *TIE May 2020 3717-3725*
- Application of Sliding Switching Functions in Backstepping Based Speed Observer of Induction Machine. *Morawiec, M.*, +, *TIE July 2020 5843-5853*
- Attractive Ellipsoid-Based Robust Control for Quadrotor Tracking. *Falcon, R.*, +, *TIE Sept. 2020 7851-7860*
- Boundary Antidisturbance Control of a Spatially Nonlinear Flexible String System. *Zhao, Z.*, +, *TIE June 2020 4846-4856*
- Bridgeless Triple-Mode Resonant AC-DC Converter: Dynamic Modeling and Controls. *Kim, S.*, +, *TIE June 2020 4921-4933*
- Cascaded-Extended-State-Observer-Based Sliding-Mode Control for Underactuated Flexible Joint Robot. *Rsetam, K.*, +, *TIE Dec. 2020 10822-10832*
- Composite Disturbance Rejection Attitude Control for Quadrotor With Unknown Disturbance. *Zhao, K.*, +, *TIE Aug. 2020 6894-6903*
- Composite Hierarchical Pitch Angle Control for a Tidal Turbine Based on the Uncertainty and Disturbance Estimator. *Yin, X.*, +, *TIE Jan. 2020 329-339*
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- Current Harmonics Suppression Strategy for PMSM With Nonsinusoidal Back-EMF Based on Adaptive Linear Neuron Method. *Wang, L.*, +, *TIE Nov. 2020 9164-9173*
- DC-Link Voltage-Balancing Strategy Based on Optimal Switching Sequence Model Predictive Control for Single-Phase H-NPC Converters. *Vazquez, S.*, +, *TIE Sept. 2020 7410-7420*
- DC-Side-Fault-Tolerant Control of a Battery-Supercapacitor Hybrid Energy Storage System Based on Cascaded Multilevel Converter and Auxiliary Power Loop. *Jiang, W.*, +, *TIE Sept. 2020 7451-7460*
- Decoupled Torque Control of Series Elastic Actuator With Adaptive Robust Compensation of Time-Varying Load-Side Dynamics. *Lin, Y.*, +, *TIE July 2020 5604-5614*
- Decoupling and Optimal Control of Multilevel Buck DC-DC Converters With Inverse System Theory. *Wu, J.*, +, *TIE Sept. 2020 7861-7870*
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Haptic Performance Using Voltage-Mode Motor Control. *Gil, J.J., +, TIE Jan. 2020 698-705*

Input-to-State Stable Bilateral Teleoperation by Dynamic Interconnection and Damping Injection: Theory and Experiments. *Yang, Y., +, TIE Jan. 2020 790-799*

Near-Optimal MPC Algorithm for Actively Damped Grid-Connected PWM-VSCs With LCL Filters. *Lim, C.S., +, TIE June 2020 4578-4589*

Research on the Dynamic Characteristics and Regulation Method of the Energy Stored Quasi-Z-Source Inverter System. *Hu, S., +, TIE June 2020 4590-4599*

Single-Cycle-Lag Compensator-Based Active Damping for Digitally Controlled LCL/LLCL-Type Grid-Connected Inverters. *Miao, Z., +, TIE March 2020 1980-1990*

The Relationship Between Root Locus and Transient Field Components of AC Machines. *Qi, X., +, TIE March 2020 1836-1843*

Data acquisition

Light-Field Camera for Fast Switching of Time-Sequential Two-Dimensional and Three-Dimensional Image Capturing at Video Rate. *Joo, K., +, TIE Aug. 2020 6975-6985*

Motor Speed Signature Analysis for Local Bearing Fault Detection With Noise Cancellation Based on Improved Drive Algorithm. *Yang, M., +, TIE May 2020 4172-4182*

Data analysis

Adaptive Prognostic of Fuel Cells by Implementing Ensemble Echo State Networks in Time-Varying Model Space. *Li, Z., +, TIE Jan. 2020 379-389*

Deep Learning-Based Machinery Fault Diagnostics With Domain Adaptation Across Sensors at Different Places. *Li, X., +, TIE Aug. 2020 6785-6794*

Data gloves

A Three-Fingered Force Feedback Glove Using Fiber-Reinforced Soft Bending Actuators. *Wang, Z., +, TIE Sept. 2020 7681-7690*

Data handling

Data-Driven Modeling Based on Two-Stream λ Gated Recurrent Unit Network With Soft Sensor Application. *Xie, R., +, TIE Aug. 2020 7034-7043*

Data mining

Uncertainty-Based Pattern Mining for Maximizing Profit of Manufacturing Plants With List Structure. *Baek, Y., +, TIE Nov. 2020 9914-9926*

Data privacy

Privacy-Preserving Database Assisted Spectrum Access for Industrial Internet of Things: A Distributed Learning Approach. *Zhang, M., +, TIE Aug. 2020 7094-7103*

Data reduction

Generalized Semisupervised Self-Optimizing Kernel Model for Quality-Related Industrial Process Monitoring. *Wei, C., +, TIE Dec. 2020 10876-10886*

Data structures

Learning Representations With Local and Global Geometries Preserved for Machine Fault Diagnosis. *Li, Y., +, TIE March 2020 2360-2370*

Database management systems

Uncertainty-Based Pattern Mining for Maximizing Profit of Manufacturing Plants With List Structure. *Baek, Y., +, TIE Nov. 2020 9914-9926*

Daylighting

Energy-Efficient Supplemental LED Lighting Control for a Proof-of-Concept Greenhouse System. *Jiang, J., +, TIE April 2020 3033-3042*

DC distribution systems

Enhanced Dual-Active-Bridge DC-DC Converter for Balancing Bipolar Voltage Level of DC Distribution System. *Lee, J., +, TIE Dec. 2020 10399-10409*

DC generators

Analysis of Reactive Power Compensation Effect of a New Hybrid Excitation Brushless DC Generator. *Sun, L., +, TIE May 2020 3562-3572*

Dynamic Performance Improvement of Doubly Salient Brushless DC Generator System With Controlled Rectifier. *Xu, Y., +, TIE Oct. 2020 8209-8218*

Extending Protection Selectivity in DC Shipboard Power Systems by Means of Additional Bus Capacitance. *Kim, S., +, TIE May 2020 3673-3683*

Thermal Deformation Analysis of Water Cooling Doubly Salient Brushless DC Generator With Stator Field Winding. *Zhang, J., +, TIE April 2020 2700-2710*

DC motor drives

Adaptive Threshold Correction Strategy for Sensorless High-Speed Brushless DC Drives Considering Zero-Crossing-Point Deviation. *Yang, L., +, TIE July 2020 5246-5257*

Integrated-Power-Control-Strategy-Based Electrolytic Capacitor-Less Back-to-Back Converter for Variable Frequency Speed Control System. *Bao, D., +, TIE Dec. 2020 10065-10074*

Sensorless Optimal Commutation Steady Speed Control Method for a Non-ideal Back-EMF BLDC Motor Drive System Including Buck Converter. *Chen, X., +, TIE July 2020 6147-6157*

DC motors

A Data-Driven Realization of the Control-Performance-Oriented Process Monitoring System. *Luo, H., +, TIE Jan. 2020 521-530*

Effect Comparison of Zigzag Skew PM Pole and Straight Skew Slot for Vibration Mitigation of PM Brush DC Motors. *Wang, S., +, TIE June 2020 4752-4761*

Haptic Performance Using Voltage-Mode Motor Control. *Gil, J.J., +, TIE Jan. 2020 698-705*

Robust PMDC Motor Control for Accurate Wire Feeding in GMAW Using Back EMF. *Paul, A.K., TIE Jan. 2020 413-420*

Subspace-Aided Closed-Loop System Identification With Application to DC Motor System. *Li, K., +, TIE March 2020 2304-2313*

Tuning of Digital PID Controllers Using Particle Swarm Optimization Algorithm for a CAN-Based DC Motor Subject to Stochastic Delays. *Qi, Z., +, TIE July 2020 5637-5646*

DC transformers

A Novel High-Voltage DC Transformer Based on Diode-Clamped Modular Multilevel Converters With Voltage Self-Balancing Capability. *Zheng, T., +, TIE Dec. 2020 10304-10314*

- Modular Hybrid-Full-Bridge DC Transformer With Full-Process Matching Switching Strategy for MVdc Power Distribution Application. *Zhao, B.*, +, *TIE May 2020 3317-3328*
- DC-AC power converters**
- A 300-kHz 6.6-kW SiC Bidirectional LLC Onboard Charger. *Li, H.*, +, *TIE Feb. 2020 1435-1445*
- A PWM ZVS High-Frequency-Link Three-Phase Inverter With T-Type NPC Unfolder. *Pal, A.*, +, *TIE Sept. 2020 7146-7156*
- A Waveform-Subtraction Based Single-Stage Ripple-Suppression Converter Family for Multiple Waveform Generation. *Zhang, G.*, +, *TIE March 2020 1890-1898*
- Comparative Analysis of an MV Neutral Point Clamped AC-CHB Converter With DC Fault Ride-Through Capability. *Collins, C.T.*, +, *TIE April 2020 2834-2843*
- Evaluation of the off-State Base-Emitter Voltage Requirement of the SiC BJT With a Regenerative Proportional Base Driver Circuit and Their Application in an Inverter. *McNeill, N.*, +, *TIE Sept. 2020 7179-7189*
- Implementation of an Optimum Reduced Components Multicell Multilevel Inverter (MC-MLI) for Lower Standing Voltage. *Majumdar, S.*, +, *TIE April 2020 2765-2775*
- Multibattery-Fed Neutral-Point-Clamped DC-AC Converter With SoC Balancing Control to Maximize Capacity Utilization. *Busquets-Monge, S.*, +, *TIE Jan. 2020 16-27*
- Real-Time Simulation of Power Electronic Systems Based on Predictive Behavior. *Liu, C.*, +, *TIE Sept. 2020 8044-8053*
- Suppression of Second-Order Harmonic Current for Droop-Controlled Distributed Energy Resource Converters in DC Microgrids. *Liu, G.*, +, *TIE Jan. 2020 358-368*
- DC-DC power converters**
- 1-kV Input 1-MHz GaN Stacked Bridge LLC Converters. *Zhang, Z.*, +, *TIE Nov. 2020 9227-9237*
- A 20 MHz Low-Profile DC-DC Converter With Magnetic-Free Characteristics. *Guan, Y.*, +, *TIE Feb. 2020 1555-1567*
- A 300-kHz 6.6-kW SiC Bidirectional LLC Onboard Charger. *Li, H.*, +, *TIE Feb. 2020 1435-1445*
- A Bidirectional CDT-LC Resonant DC-DC Converter With a Wide Voltage Range. *Chen, B.*, +, *TIE March 2020 2009-2020*
- A Current-Sharing Method for Interleaved High-Frequency LLC Converter With Partial Energy Processing. *Chen, H.*, +, *TIE Feb. 2020 1498-1507*
- A Dual Half-Bridge Converter With Current Doubler Rectifier. *Zhao, L.*, +, *TIE Aug. 2020 6398-6406*
- A GaN-Based DC-DC Module for Railway Applications: Design Consideration and High-Frequency Digital Control. *Fu, M.*, +, *TIE Feb. 2020 1638-1647*
- A High Efficiency Nonisolated Buck-Boost Converter Based on ZETA Converter. *Banaei, M.R.*, +, *TIE March 2020 1991-1998*
- A High-Power-Density Converter With a Continuous Input Current Waveform for Satellite Power Applications. *Lee, N.*, +, *TIE Feb. 2020 1024-1035*
- A High-Voltage Series-Stacked IGBT Switch With Active Energy Recovery Feature for Pulsed Power Applications. *Mohsenzade, S.*, +, *TIE May 2020 3650-3661*
- A Hybrid Interleaved DC-DC Converter With a Wide Step-Up Regulation Range and Ultralow Voltage Stress. *Hu, X.*, +, *TIE July 2020 5479-5489*
- A Low-EMI Continuous-Time Delta-Sigma-Modulator Buck Converter With Transient Response Eruption Techniques. *Hwang, Y.*, +, *TIE Aug. 2020 6854-6863*
- A New and Modular Active Snubber Cell for Inverters. *Bodur, H.*, +, *TIE Jan. 2020 288-296*
- A New Coupled Inductor Nonisolated High Step-Up Quasi Z-Source DC-DC Converter. *Samadian, A.*, +, *TIE July 2020 5389-5397*
- A New Soft Switching DC-DC Converter With High Voltage Gain Capability. *Mohseni, P.*, +, *TIE Sept. 2020 7386-7398*
- A Novel Current Modulation Method to Eliminate Low-Frequency Harmonics in Single-Stage Dual Active Bridge AC-DC Converter. *Zengin, S.*, +, *TIE Feb. 2020 1048-1058*
- A Novel High Step-Up High Efficiency Interleaved DC-DC Converter With Coupled Inductor and Built-In Transformer for Renewable Energy Systems. *Nouri, T.*, +, *TIE Aug. 2020 6505-6516*
- A Reconfigurable Solar Photovoltaic Grid-Tied Inverter Architecture for Enhanced Energy Access in Backup Power Applications. *Venkatramanan, D.*, +, *TIE Dec. 2020 10531-10541*
- A Waveform-Subtraction Based Single-Stage Ripple-Suppression Converter Family for Multiple Waveform Generation. *Zhang, G.*, +, *TIE March 2020 1890-1898*
- An Approach Towards Extreme Fast Charging Station Power Delivery for Electric Vehicles with Partial Power Processing. *Iyer, V.M.*, +, *TIE Oct. 2020 8076-8087*
- An Interleaved Three-Phase PWM Single-Stage Resonant Rectifier With High-Frequency Isolation. *Li, G.*, +, *TIE Aug. 2020 6572-6582*
- An Optimized Modulation Strategy for the Three-Level DAB Converter With Five Control Degrees of Freedom. *Liu, P.*, +, *TIE Jan. 2020 254-264*
- An Ultra-High Step-Up DC-DC Converter With Extendable Voltage Gain and Soft-Switching Capability. *Alavi, P.*, +, *TIE Nov. 2020 9238-9250*
- Analysis and Design of a 1-MHz Bidirectional Multi-CLLC Resonant DC-DC Converter With GaN Devices. *Wang, Y.*, +, *TIE Feb. 2020 1425-1434*
- Analysis and Design of a High-Efficiency 6.78-MHz Wireless Power Transfer System With Scalable Number of Receivers. *Song, J.*, +, *TIE Oct. 2020 8281-8291*
- Analysis and Implementation of a High Voltage Gain 1 MHz Bidirectional DC-DC Converter. *Dung, N.A.*, +, *TIE Feb. 2020 1415-1424*
- Analysis, Design, and Implementation of a ZVT High Step-Up DC-DC Converter With Continuous Input Current. *Fani, R.*, +, *TIE Dec. 2020 10455-10463*
- Bidirectional DC-DC Converter for Modular Residential Battery Energy Storage Systems. *Chub, A.*, +, *TIE March 2020 1944-1955*
- Bidirectional Isolated Current-Source DAB Converter With Extended ZVS/ZCS Range and Reduced Energy Circulation for Storage Applications. *Blinov, A.*, +, *TIE Dec. 2020 10552-10563*
- Cooperative and Dynamically Weighted Model Predictive Control of a 3-Level Uninterruptible Power Supply With Improved Performance and Dynamic Response. *Caseiro, L.M.A.*, +, *TIE June 2020 4934-4945*
- Decoupling and Optimal Control of Multilevel Buck DC-DC Converters With Inverse System Theory. *Wu, J.*, +, *TIE Sept. 2020 7861-7870*
- Design of Robust Discretized Sliding Mode Controller: Analysis and Application to Buck Converters. *Cheng, Y.*, +, *TIE Dec. 2020 10672-10681*
- Digital Battery Management Design for Point-of-Load Applications With Cell Balancing. *Yang, Y.*, +, *TIE Aug. 2020 6365-6375*
- DLFCR Reduction Based on Power Predictive Scheme for Full-Bridge Photovoltaic Microinverter. *Kan, J.*, +, *TIE June 2020 4658-4669*
- Double-Ended Active-Clamp Forward Converter With Low DC Offset Current of Transformer. *Kim, M.*, +, *TIE Feb. 2020 1036-1047*
- Effective Hold-Up Time Extension Method Using Fan Control in Server Power Systems. *Baek, J.*, +, *TIE July 2020 5820-5824*
- Enhanced Dual-Active-Bridge DC-DC Converter for Balancing Bipolar Voltage Level of DC Distribution System. *Lee, J.*, +, *TIE Dec. 2020 10399-10409*
- Full-Scale Physical Simulator of All SiC Traction Motor Drive With Onboard Supercapacitor ESS for Light-Rail Public Transportation. *Yildirim, D.*, +, *TIE Aug. 2020 6290-6301*
- Fully Soft-Switched High Step-Up Nonisolated Three-Port DC-DC Converter Using GaN HEMTs. *Faraji, R.*, +, *TIE Oct. 2020 8371-8380*
- Hybrid Buck Converter With Constant Mode Changing Point and Smooth Mode Transition for High-Frequency Applications. *Yuan, B.*, +, *TIE Feb. 2020 1466-1474*
- IGCT Low-Current Switching—TCAD and Experimental Characterization. *Stamenkovic, D.*, +, *TIE Aug. 2020 6302-6311*
- Impedance Modeling and DC Bus Voltage Stability Assessment of a Solid-State-Transformer-Enabled Hybrid AC-DC Grid Considering Bidirectional Power Flow. *Ye, Q.*, +, *TIE Aug. 2020 6531-6540*
- Integrated Buck and Modified Push-Pull DC-DC Converter With High Step-Down Ratio. *Tseng, K.*, +, *TIE Jan. 2020 235-243*

- Large-Signal Stability of Interleave Boost Converter System With Constant Power Load Using Sliding-Mode Control. *Jiang, W.*, +, *TIE Nov. 2020* 9450-9459
- Magnetic Coupling Branch Based Dual-Input/Output DC–DC Converters With Improved Cross-Regulation and Soft-Switching Operation. *Liu, Y.*, +, *TIE Sept. 2020* 7167-7178
- Min-Type Control Strategy of a DC–DC Synchronous Boost Converter. *Sferlazza, A.*, +, *TIE April 2020* 3167-3179
- Mode Analysis and Fault-Tolerant Method of Open-Circuit Fault for a Dual Active-Bridge DC–DC Converter. *Zhao, N.*, +, *TIE Aug. 2020* 6916-6926
- Modular Hybrid-Full-Bridge DC Transformer With Full-Process Matching Switching Strategy for MVdc Power Distribution Application. *Zhao, B.*, +, *TIE May 2020* 3317-3328
- Modulation and Capacitor Voltage Balancing Control of Multilevel NPC Dual Active Bridge DC–DC Converters. *Filba-Martinez, A.*, +, *TIE April 2020* 2499-2510
- Modulation Induced Current Imbalance and Its Sensorless Control of a GaN-Based Four-Phase DC–DC Power Amplifier. *Wang, C.*, +, *TIE Feb. 2020* 1520-1531
- Multiport Interline Current Flow Controller for Meshed HVDC Grids. *Sau-Bassols, J.*, +, *TIE July 2020* 5467-5478
- Nonisolated High-Step-Up DC–DC Converter Derived from Switched-Inductors and Switched-Capacitors. *Salvador, M.A.*, +, *TIE Oct. 2020* 8506-8516
- Novel Boost-SEPIC Type Interleaved DC–DC Converter for Mitigation of Voltage Imbalance in a Low-Voltage Bipolar DC Microgrid. *Prabhakaran, P.*, +, *TIE Aug. 2020* 6494-6504
- On Autonomous Large-Signal Stabilization for Islanded Multibus DC Microgrids: A Uniform Nonsmooth Control Scheme. *Lin, P.*, +, *TIE June 2020* 4600-4612
- Optimal Input and Output Power Quality Control of Single-Phase AC–DC–DC Converter With Significant DC-Link Voltage Ripple. *Meng, L.*, +, *TIE Dec. 2020* 10366-10376
- Parallel Nine-Phase Generator Control in a Medium-Voltage DC Wind System. *Beik, O.*, +, *TIE Oct. 2020* 8112-8122
- Peak Current Control and Feed-Forward Compensation of a DAB Converter. *Vazquez, N.*, +, *TIE Oct. 2020* 8381-8391
- Power Loss Estimation in LLC Synchronous Rectification Using Rectifier Current Equations. *Glitz, E.S.*, +, *TIE May 2020* 3696-3704
- Predictive Control Based DC Microgrid Stabilization With the Dual Active Bridge Converter. *Chen, L.*, +, *TIE Oct. 2020* 8944-8956
- S-Hybrid Step-Down DC–DC Converter—Analysis of Operation and Design Considerations. *Seo, G.*, +, *TIE Jan. 2020* 265-275
- Soft Switching Bidirectional Converter for Reflex Charger With Minimum Switches. *Ahmadi, F.*, +, *TIE Oct. 2020* 8355-8362
- Soft-Switched High Step-Up Quasi-Z-Source DC–DC Converter. *Poorali, B.*, +, *TIE June 2020* 4547-4555
- Soft-Switching Bidirectional Buck/Boost Converter With a Lossless Passive Snubber. *Mohammadi, M.R.*, +, *TIE Oct. 2020* 8363-8370
- State-Trajectory Control With Single-Cycle Response for Point-of-Load Converters. *Li, V.*, +, *TIE April 2020* 3157-3166
- Step-by-Step Threshold Design Methodology of Switching Frequency Regulation for a Generalized Resonant DC–DC Converter. *Huang, J.*, +, *TIE Dec. 2020* 10975-10980
- Study and Analysis of Pulsating and Nonpulsating Input and Output Current of Ultrahigh-Voltage Gain Hybrid DC–DC Converters. *Andrade, A.M.S.S.*, +, *TIE May 2020* 3776-3787
- Suppression of Second-Order Harmonic Current for Droop-Controlled Distributed Energy Resource Converters in DC Microgrids. *Liu, G.*, +, *TIE Jan. 2020* 358-368
- Switched Capacitor–Inductor Network Based Ultra-Gain DC–DC Converter Using Single Switch. *Kumar, G.G.*, +, *TIE Dec. 2020* 10274-10283
- Switched-Capacitor Differential Boost Inverter: Design, Modeling, and Control. *Silva, G.V.*, +, *TIE July 2020* 5421-5431
- Synthesis of Integrated Multiport DC–DC Converters With Reduced Switches. *Chen, G.*, +, *TIE June 2020* 4536-4546
- The Comprehensive Circuit-Parameter Estimating Strategies for Output-Parallel Dual-Active-Bridge DC–DC Converters With Tunable Power Sharing Control. *Hou, N.*, +, *TIE Sept. 2020* 7583-7594
- Transient DC Bias Elimination of Dual-Active-Bridge DC–DC Converter With Improved Triple-Phase-Shift Control. *Bu, Q.*, +, *TIE Oct. 2020* 8587-8598
- Tunable High-Power Multilayer Piezoelectric Transformer. *Li, X.*, +, *TIE Oct. 2020* 8335-8343
- Voltage-Adjustable Capacitor Isolated Solid-State Transformer. *Sun, B.*, +, *TIE Sept. 2020* 7550-7559
- Decentralized control**
- A Decentralized Control for Cascaded Inverters in Grid-Connected Applications. *Li, L.*, +, *TIE Sept. 2020* 8064-8071
- Active Suspension System Control With Decentralized Event-Triggered Scheme. *Zhang, H.*, +, *TIE Dec. 2020* 10798-10808
- Cooperative CC–CV Charging of Supercapacitors Using Multicharger Systems. *Li, H.*, +, *TIE Dec. 2020* 10497-10508
- Event-Triggered Decentralized Tracking Control of Modular Reconfigurable Robots Through Adaptive Dynamic Programming. *Zhao, B.*, +, *TIE April 2020* 3054-3064
- On the Decentralized Energy Management Strategy for the All-Electric APU of Future More Electric Aircraft Composed of Multiple Fuel Cells and Supercapacitors. *Chen, J.*, +, *TIE Aug. 2020* 6183-6194
- Voltage Grid Supporting by Using Variable Structure Adaptive Virtual Impedance for LCL-Voltage Source Converter DG Converters. *Fonseca, T.Q.*, +, *TIE Nov. 2020* 9326-9336
- Decision making**
- A Game-Theoretic Approach to Cross-Layer Security Decision-Making in Industrial Cyber-Physical Systems. *Huang, K.*, +, *TIE March 2020* 2371-2379
- Application of Economical Building Management System for Singapore Commercial Building. *Li, W.*, *TIE May 2020* 4235-4243
- Decoding**
- Massive MIMO With Massive Connectivity for Industrial Internet of Things. *Lee, B.M.*, +, *TIE June 2020* 5187-5196
- Decomposition**
- A Novel Joint Angle Estimation Method for Serial Manipulator Using Micro-Electromechanical Systems Sensors. *Xu, X.*, +, *TIE Dec. 2020* 10610-10620
- Deformation**
- A Model-Based Approach for the Estimation of Bearing Forces and Moments Using Outer Ring Deformation. *Kerst, S.*, +, *TIE Jan. 2020* 461-470
- Sparse Machine Learning Discovery of Dynamic Differential Equation of an Esophageal Swallowing Robot. *Bhattacharya, D.*, +, *TIE June 2020* 4711-4720
- Delay estimation**
- Adaptive Time-Delay Balance Control of Biped Robots. *Pi, M.*, +, *TIE April 2020* 2936-2944
- Novel Maximum Likelihood Estimation of Clock Skew in One-Way Broadcast Time Synchronization. *Shi, F.*, +, *TIE Nov. 2020* 9948-9957
- Super-Twisting Algorithm-Based Time-Varying Delay Estimation With External Signal. *Deng, Y.*, +, *TIE Dec. 2020* 10663-10671
- Delay filters**
- A Second-Order Dual Mode Repetitive Control for Magnetically Suspended Rotor. *Cui, P.*, +, *TIE June 2020* 4946-4956
- Delay systems**
- Output Feedback Adaptive Motion Control and Its Experimental Verification for Time-Delay Nonlinear Systems With Asymmetric Hysteresis. *Zhang, X.*, +, *TIE Aug. 2020* 6824-6834
- Super-Twisting Algorithm-Based Time-Varying Delay Estimation With External Signal. *Deng, Y.*, +, *TIE Dec. 2020* 10663-10671
- Delays**
- Adaptive Fuzzy Backstepping Control for Stable Nonlinear Bilateral Teleoperation Manipulators With Enhanced Transparency Performance. *Chen, Z.*, +, *TIE Jan. 2020* 746-756
- An Adaptive Gain Dynamics for Time Delay Control Improves Accuracy and Robustness to Significant Payload Changes for Robots. *Lee, J.*, +, *TIE April 2020* 3076-3085

- An Improved Delay-Suppressed Sliding-Mode Observer for Sensorless Vector-Controlled PMSM. *Gong, C.*, +, *TIE July 2020 5913-5923*
- Event- and Deadline-Driven Control of a Self-Localizing Robot With Vision-Induced Delays. *van Horssen, E.P.*, +, *TIE Feb. 2020 1212-1221*
- Input-to-State Stable Bilateral Teleoperation by Dynamic Interconnection and Damping Injection: Theory and Experiments. *Yang, Y.*, +, *TIE Jan. 2020 790-799*
- Novel Compensation Strategy for Calculation Delay of Finite Control Set Model Predictive Current Control in PMSM. *Gao, J.*, +, *TIE July 2020 5816-5819*
- Optimization and Implementation of the Proportional-Resonant Controller for Grid-Connected Inverter With Significant Computation Delay. *Husev, O.*, +, *TIE Feb. 2020 1201-1211*
- Output Feedback Adaptive Motion Control and Its Experimental Verification for Time-Delay Nonlinear Systems With Asymmetric Hysteresis. *Zhang, X.*, +, *TIE Aug. 2020 6824-6834*
- Output-Based Event-Triggered Predictive Control for Networked Control Systems. *Yang, R.*, +, *TIE Dec. 2020 10631-10640*
- Performance Improvement of Open-Winding PMSMs With a Discrete-Time Designed Zero-Sequence Current Controller Based on Virtual Three-Phase Expansion. *Song, Z.*, +, *TIE Dec. 2020 10046-10054*
- Position Sensorless Control of Switched Reluctance Motors Using Reference and Virtual Flux Linkage With One-Phase Current Sensor in Medium and High Speed. *Ding, W.*, +, *TIE April 2020 2595-2606*
- Power Loss Estimation in LLC Synchronous Rectification Using Rectifier Current Equations. *Glitz, E.S.*, +, *TIE May 2020 3696-3704*
- Relative Impedance-Based Internal Force Control for Bimanual Robot Teleoperation With Varying Time Delay. *Lu, Z.*, +, *TIE Jan. 2020 778-789*
- Single-Cycle-Lag Compensator-Based Active Damping for Digitally Controlled LCL/LLCL-Type Grid-Connected Inverters. *Miao, Z.*, +, *TIE March 2020 1980-1990*
- Small-Signal Modeling of the Incremental Optical Encoder for Motor Control. *Vazquez-Gutierrez, Y.*, +, *TIE May 2020 3452-3461*
- Synchronization of Network Systems via Aperiodic Sampled-Data Control With Constant Delay and Application to Unmanned Ground Vehicles. *Ren, H.*, +, *TIE June 2020 4980-4990*
- Torque Ripple Reduction of PMSMs Using a Novel Angle-Based Repetitive Observer. *Tang, M.*, +, *TIE April 2020 2689-2699*
- Torque Ripple Suppression for Open-End Winding Permanent-Magnet Synchronous Machine Drives With Predictive Current Control. *Yuan, X.*, +, *TIE March 2020 1771-1781*
- Tuning of Digital PID Controllers Using Particle Swarm Optimization Algorithm for a CAN-Based DC Motor Subject to Stochastic Delays. *Qi, Z.*, +, *TIE July 2020 5637-5646*
- Delta-sigma modulation**
- A Low-EMI Continuous-Time Delta-Sigma-Modulator Buck Converter With Transient Response Eruption Techniques. *Hwang, Y.*, +, *TIE Aug. 2020 6854-6863*
- Demagnetization**
- A Novel Hybrid-Magnetic-Circuit Variable Flux Memory Machine. *Yang, H.*, +, *TIE July 2020 5258-5268*
- Magnetic Design Aspects of the Trans-Rotary Magnetic Gear Using Quasi-Halbach Arrays. *Jenney, K.*, +, *TIE Nov. 2020 9582-9592*
- Power Loss and Thermal Analysis for High-Power High-Speed Permanent Magnet Machines. *Du, G.*, +, *TIE April 2020 2722-2733*
- Demand side management**
- A Simplified Equivalent Circuit Method for Induction Machine Nonintrusive Field Efficiency Estimation. *Aminu, M.*, +, *TIE Sept. 2020 7301-7311*
- Robust Self-Scheduling of Operational Processes for Industrial Demand Response Aggregators. *Golmohamadi, H.*, +, *TIE Feb. 2020 1387-1395*
- Demodulation**
- A Soft-PWM Approach to Power/Signal Synchronous Transmission for SRG-Based DC Microgrids. *Yu, D.*, +, *TIE Oct. 2020 8450-8460*
- AM Modulation Signal Estimation Allowing Further Research on Sources of Voltage Fluctuations. *Kuwalek, P.*, *TIE Aug. 2020 6937-6945*
- Efficient QR Updating Factorization for Sensorless Synchronous Motor Drive Based on High Frequency Voltage Injection. *Toso, F.*, +, *TIE Dec. 2020 10213-10222*
- IPMSM Sensorless Control Using High-Frequency Voltage Injection Method With Random Switching Frequency for Audible Noise Improvement. *Zhang, Y.*, +, *TIE July 2020 6019-6030*
- Oversampling Synchronous Envelope Detection for Resolver-to-Digital Conversion. *Wang, K.*, +, *TIE June 2020 4867-4876*
- Precise Phase Demodulation Algorithm for Sinusoidal Encoders and Resolvers. *Ye, G.*, +, *TIE Oct. 2020 8778-8787*
- Density measurement**
- Novel Method for Direct Measurement of Air Gap Anomalies in Direct-Drive Electrical Motors. *Herman, J.*, +, *TIE March 2020 2422-2429*
- Design engineering**
- An Electromagnetic Variable Stiffness Device for Semiactive Seat Suspension Vibration Control. *Ning, D.*, +, *TIE Aug. 2020 6773-6784*
- Design and Characteristics Analysis of Coaxial Magnetic Gear for Contra-Rotating Propeller in Yacht. *Shin, H.*, +, *TIE Sept. 2020 7250-7259*
- Design of a High-Force Electromechanical Actuator for Electrically Driven Lathe Machine. *Jang, D.*, +, *TIE Nov. 2020 9526-9535*
- Effects of Design Parameters on the Multiphysics Performance of High-Speed Permanent Magnet Machines. *Du, G.*, +, *TIE May 2020 3472-3483*
- Multifidelity Surrogate Assisted Rapid Design of Transverse-Flux Permanent Magnet Linear Synchronous Motor. *Ahmed, S.*, +, *TIE Sept. 2020 7280-7289*
- Dexterous manipulators**
- A Three-Fingered Force Feedback Glove Using Fiber-Reinforced Soft Bending Actuators. *Wang, Z.*, +, *TIE Sept. 2020 7681-7690*
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- A Novel Order Reduced Synchronous Power Control for Grid-Forming Inverters. *Quan, X.*, +, *TIE Dec. 2020 10989-10995*
- Active Disturbance-Rejection-Based Speed Control in Model Predictive Control for Induction Machines. *Yan, L.*, +, *TIE April 2020 2574-2584*
- Cooperative and Dynamically Weighted Model Predictive Control of a 3-Level Uninterruptible Power Supply With Improved Performance and Dynamic Response. *Caseiro, L.M.A.*, +, *TIE June 2020 4934-4945*
- Development of an Improved Input-Parallel Output-Series Buck-Boost Converter and Its Closed-Loop Control. *Rana, N.*, +, *TIE Aug. 2020 6428-6438*
- Dual-Loop-Based Harmonic Current Control Strategy and Admittance Modeling for a Multimodular Parallel SAPFs System. *Liu, K.*, +, *TIE July 2020 5456-5466*
- Dynamic Performance Improvement of Doubly Salient Brushless DC Generator System With Controlled Rectifier. *Xu, Y.*, +, *TIE Oct. 2020 8209-8218*
- High and Very High Frequency Power Supplies for Industrial Applications. *Wang, Y.*, +, *TIE Feb. 2020 1400-1404*
- Improving Dynamic Performance of Boost PFC Converter Using Current-Harmonic Feedforward Compensation in Synchronous Reference Frame. *Li, S.*, +, *TIE June 2020 4857-4866*
- Induction Machine Parameters Determination and the Impact of Stator/Rotor Leakage Split Ratio on Its Performance. *Masadeh, M.A.*, +, *TIE July 2020 5291-5301*
- On Autonomous Large-Signal Stabilization for Islanded Multibus DC Microgrids: A Uniform Nonsmooth Control Scheme. *Lin, P.*, +, *TIE June 2020 4600-4612*
- Optimization of Torque Tracking Performance for Direct-Torque-Controlled PMSM Drives With Composite Torque Regulator. *Wang, X.*, +, *TIE Dec. 2020 10095-10108*
- Peak Current Control and Feed-Forward Compensation of a DAB Converter. *Vazquez, N.*, +, *TIE Oct. 2020 8381-8391*
- Pulse Train Control Strategy for CCM Boost PFC Converter With Improved Dynamic Response and Unity Power Factor. *Luo, H.*, +, *TIE Dec. 2020 10377-10387*
- Reducing Distribution Power Loss of Islanded AC Microgrids Using Distributed Electric Springs With Predictive Control. *Yang, Y.*, +, *TIE Oct. 2020 9001-9011*
- Single-Stage High-Efficiency 48/1 V Sigma Converter With Integrated Magnetics. *Ahmed, M.H.*, +, *TIE Jan. 2020 192-202*

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- Analysis and Calculation of Radial Electromagnetic Force of Circular Winding Brushless DC Motor. *Zhang, Q.*, +, *TIE June 2020 4338-4349*

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- Enhanced Braking Control for the Induction Machine Using Scalar Control. *Costa, C.A.*, +, *TIE Nov. 2020 9133-9142*
- Sucker Rod Pump Working State Diagnosis Using Motor Data and Hidden Conditional Random Fields. *Zheng, B.*, +, *TIE Sept. 2020 7919-7928*

- The Optimal Speed-Torque Control of Asynchronous Motors for Electric Cars in the Field-Weakening Region Based on the RFR. *Xie, F.*, +, *TIE Nov. 2020 9601-9612*

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- A New Single-Phase Transformerless Grid-Connected Inverter With Boosting Ability and Common Ground Feature. *Vosoughi, N.*, +, *TIE Nov. 2020 9313-9325*
- DC Microgrid Grounding Impact on Power Electronic Interfaces in Fault Condition. *Naghizadeh, M.*, +, *TIE May 2020 4120-4132*
- Protection of Single-Phase Fault at the Transformer Valve Side of FB-MMC-Based Bipolar HVdc Systems. *Liu, W.*, +, *TIE Oct. 2020 8416-8427*
- Transient Current Correlation Based Protection for DC Distribution System. *Jia, K.*, +, *TIE Nov. 2020 9927-9936*

Eddy current losses

- Analysis of PM Eddy Current Loss in Four-Phase Fault-Tolerant Flux-Switching Permanent-Magnet Machines by Air-Gap Magnetic Field Modulation Theory. *Zhao, W.*, +, *TIE July 2020 5369-5378*
- Analysis of PM Eddy Current Loss in Rotor-PM and Stator-PM Flux-switching Machines by Air-gap Field Modulation Theory. *Su, P.*, +, *TIE March 2020 1824-1835*
- Computer Modeling of the Eddy Current Losses of Metal Fasteners in Rotor Slots of a Large Nuclear Steam Turbine Generator Based on Finite-Element Method and Deep Gaussian Process Regression. *Zhao, J.*, +, *TIE July 2020 5349-5359*
- Core-Loss Analysis of High-Speed Doubly Salient Electromagnetic Machine for Aeronautic Starter/Generator Application. *Jia, W.*, +, *TIE Jan. 2020 59-68*
- Electromagnetic Shielding Analysis of a Canned Permanent Magnet Motor. *Yu, Q.*, +, *TIE Oct. 2020 8123-8130*
- High-Speed Permanent Magnet Synchronous Motor Iron Loss Calculation Method Considering Multiphysics Factors. *Liu, G.*, +, *TIE July 2020 5360-5368*
- Impact of Rebar and Concrete on Power Dissipation of Wireless Power Transfer Systems. *Lee, S.*, +, *TIE Jan. 2020 276-287*

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- A Class D Power Amplifier for Multifrequency Eddy Current Testing Based on Multisimultaneous-Frequency Selective Harmonic Elimination Pulse-width Modulation. *Tao, Y.*, +, *TIE Oct. 2020 8799-8807*
- Natural Crack Diagnosis System Based on Novel L-Shaped Electromagnetic Sensing Thermography. *Liu, Z.*, +, *TIE Nov. 2020 9703-9714*

Eddy currents

- Computer Modeling of the Eddy Current Losses of Metal Fasteners in Rotor Slots of a Large Nuclear Steam Turbine Generator Based on Finite-Element Method and Deep Gaussian Process Regression. *Zhao, J.*, +, *TIE July 2020 5349-5359*
- Core-Loss Analysis of High-Speed Doubly Salient Electromagnetic Machine for Aeronautic Starter/Generator Application. *Jia, W.*, +, *TIE Jan. 2020 59-68*
- Electromagnetic Induced Failure in GaN-HEMT High-Frequency Power Amplifier. *Sangwan, V.*, +, *TIE July 2020 5708-5716*
- Experimental Analysis and Optimization of a Contactless Eddy-Current-Based Speed Sensor for Smooth Conductive Surfaces. *Gong, C.*, +, *TIE Oct. 2020 8817-8828*

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- Design of a New Vision-Based Method for the Bolts Looseness Detection in Flange Connections. *Wang, C.*, +, *TIE Feb. 2020 1366-1375*

Eigenvalues and eigenfunctions

- A Gossip-Based Distributed Algorithm for Economic Dispatch in Smart Grids With Random Communication Link Failures. *Wang, R.*, +, *TIE June 2020 4635-4645*
- A New Method for Detecting Series Arc Fault in Photovoltaic Systems Based on the Blind-Source Separation. *Ahmadi, M.*, +, *TIE June 2020 5041-5049*
- Euler's Formula-Based Stability Analysis for Wideband Harmonic Resonances. *Chen, Z.*, +, *TIE Nov. 2020 9405-9417*

Parametric Stability Analysis of Active Magnetic Bearing Supported Rotor System With a Novel Control Law Subject to Periodic Base Motion. *Soni, T.*, +, *TIE Feb. 2020 1160-1170*

The Relationship Between Root Locus and Transient Field Components of AC Machines. *Qi, X.*, +, *TIE March 2020 1836-1843*

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Electromagnetic Vibration Analysis of High-Speed Permanent Magnet Synchronous Machines With Amorphous Metal Stator Cores Considering Current Harmonics. *Wu, S.*, +, *TIE Dec. 2020 10156-10167*

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Adaptive Backstepping Sliding Mode Control for Equilibrium Position Tracking of an Electrohydraulic Elastic Manipulator. *Tran, D.T.*, +, *TIE May 2020 3860-3869*

Analysis and Design of the Stewart Platform-Based Parallel Support Bumper for Inertially Stabilized Platforms. *He, Q.*, +, *TIE May 2020 4203-4215*

Design and Trajectory Tracking of a Nanometric Ultra-Fast Tool Servo. *Zhu, Z.*, +, *TIE Jan. 2020 432-441*

Haptic Performance Using Voltage-Mode Motor Control. *Gil, J.J.*, +, *TIE Jan. 2020 698-705*

On the Suppression of the Backward Motion of a Piezo-Driven Precision Positioning Platform Designed by the Parasitic Motion Principle. *Yang, Z.*, +, *TIE May 2020 3870-3878*

Elastomers

Control of a Soft Inchworm Robot With Environment Adaptation. *Cao, J.*, +, *TIE May 2020 3809-3818*

Disposable FBG-Based Tridirectional Force/Torque Sensor for Aspiration Instruments in Neurosurgery. *Li, T.*, +, *TIE April 2020 3236-3247*

Electric actuators

Design of a High-Force Electromechanical Actuator for Electrically Driven Lathe Machine. *Jang, D.*, +, *TIE Nov. 2020 9526-9535*

Flux-Controlled Hybrid Reluctance Actuator for High-Precision Scanning Motion. *Ito, S.*, +, *TIE Nov. 2020 9593-9600*

Wireless Power Transfer Using a Five-Phase Wound-Rotor Induction Machine for Speed-Controlled Rotary Platforms. *Rizzoli, G.*, +, *TIE Aug. 2020 6237-6247*

Electric current control

Γ -Source Magnetic Integrated Filter for Single-Phase Grid Tied Voltage Source Converters. *Masoumi, A.H.*, +, *TIE July 2020 5410-5420*

dq Synchronous Reference Frame Model of A Series-Series Tuned Inductive Power Transfer System. *Lee, S.*, +, *TIE Dec. 2020 10325-10334*

A 13.56-MHz Full-Bridge Class-D ZVS Inverter With Dynamic Dead-Time Control for Wireless Power Transfer Systems. *Tebianian, H.*, +, *TIE Feb. 2020 1487-1497*

A Closed-Loop Modulation Scheme for Duty Cycle Compensation of PWM Voltage Distortion at High Switching Frequency Inverter. *Ren, R.*, +, *TIE Feb. 2020 1475-1486*

A Constant Switching Frequency Multiple-Vector-Based Model Predictive Current Control of Five-Phase PMSM With Nonsinusoidal Back EMF. *Xiong, C.*, +, *TIE March 2020 1695-1707*

A Coupled Inductor-Based Buck-Boost Type Grid Connected Transformerless PV Inverter Having the Ability to Control Two Subarrays Simultaneously. *Dutta, S.*, +, *TIE July 2020 5543-5553*

A Current-Based Approach for Short-Circuit Fault Diagnosis in Closed-Loop Current Source Inverter. *Guo, X.*, +, *TIE Sept. 2020 7941-7950*

A Disturbance Rejection-Based Control Strategy for Five-Level T-Type Hybrid Power Converters With Ripple Voltage Estimation Capability. *Khan, S.A.*, +, *TIE Sept. 2020 7364-7374*

A Fault-Tolerant FOC Strategy for Five-Phase SPMSM With Minimum Torque Ripples in the Full Torque Operation Range Under Double-Phase Open-Circuit Fault. *Xiong, C.*, +, *TIE Nov. 2020 9059-9072*

A Four-Quadrant Single-Phase Grid-Connected Converter With Only Two High-Frequency Switches. *Siu, K.K.M.*, +, *TIE March 2020 1899-1909*

A Hybrid Control Strategy of Hybrid-Excitation Switched Reluctance Motor for Torque Ripple Reduction and Constant Power Extension. *Ding, W.*, +, *TIE Jan. 2020 38-48*

A Load-Independent LCC-Compensated Wireless Power Transfer System for Multiple Loads With a Compact Coupler Design. *Cheng, C.*, +, *TIE June 2020 4507-4515*

A New Single-Phase Transformerless Grid-Connected Inverter With Boosting Ability and Common Ground Feature. *Vosoughi, N.*, +, *TIE Nov. 2020 9313-9325*

A New Slot-PM Vernier Reluctance Machine With Enhanced Zero-Sequence Current Excitation for Electric Vehicle Propulsion. *Zhao, X.*, +, *TIE May 2020 3528-3539*

A New Three-Phase Multipoint Clamped 5L-HPFC With Reduced PSD Count and Switch Stress. *Yalla, N.*, +, *TIE April 2020 2532-2543*

A Novel Scalar PWM Method to Reduce Leakage Current in Three-Phase Two-Level Transformerless Grid-Connected VSIs. *Xu, J.*, +, *TIE May 2020 3788-3797*

A Simple Feedforward Approach to Stabilize VSI-Fed Induction Motor With Filter in RFOC. *Mishra, P.*, +, *TIE Dec. 2020 10191-10201*

ADRC-Based Current Control for Grid-Tied Inverters: Design, Analysis, and Verification. *Cao, Y.*, +, *TIE Oct. 2020 8428-8437*

An Advanced Voltage Support Scheme Considering the Impact of Zero-Sequence Voltage Under Microgrid Faults Using Model Predictive Control. *Mohapatra, S.R.*, +, *TIE Oct. 2020 8957-8968*

An Effective Sliding Mode Control Design for a Grid-Connected PUC7 Multilevel Inverter. *Makhamreh, H.*, +, *TIE May 2020 3717-3725*

An Enhanced Strategy to Inhibit Commutation Failure in Line-Commutated Converters. *Mirsaeidi, S.*, +, *TIE Jan. 2020 340-349*

An Improved Deadbeat Predictive Current Control With Online Parameter Identification for Surface-Mounted PMSMs. *Yao, Y.*, +, *TIE Dec. 2020 10145-10155*

An SVM Approach for Five-Phase Current Source Converters Output Current Harmonics and Common-Mode Voltage Mitigation. *He, J.*, +, *TIE July 2020 5232-5245*

Analytic Modeling Optimal Control of Pulsed Power Supply for Accelerator Magnet. *Wang, X.*, +, *TIE July 2020 5657-5665*

Assessment of an Improved Finite Control Set Model Predictive Current Controller for Automotive Propulsion Applications. *Andersson, A.*, +, *TIE Jan. 2020 91-100*

Circulating Current Analysis and the Improved D- Σ Digital Control Strategy for Multiparalleled Three-Level T-Type Grid-Connected Inverters. *Ren, B.*, +, *TIE April 2020 2810-2821*

Control Scheme to Achieve Multiple Objectives and Superior Reliability for Input-Series-Output-Parallel LCL-Type Grid-Connected Inverter System. *Fang, T.*, +, *TIE Jan. 2020 214-224*

Coupled Inductor Based Regenerative Cascaded Multicell Converter for Drives With Multilevel Voltage Operation at Both Input and Output Sides. *Sau, S.*, +, *TIE Jan. 2020 147-158*

Crowbarless Symmetrical Low-Voltage Ride Through Based on Flux Linkage Tracking For Brushless Doubly Fed Induction Generators. *Zhang, A.*, +, *TIE Sept. 2020 7606-7616*

DC Fault Analysis Models of Three Converter Topologies Considering Control Effects. *Li, Y.*, +, *TIE Nov. 2020 9480-9491*

DC-Link Voltage-Balancing Strategy Based on Optimal Switching Sequence Model Predictive Control for Single-Phase H-NPC Converters. *Vazquez, S.*, +, *TIE Sept. 2020 7410-7420*

Decoupled $d-q$ Axes Current-Sharing Control of Multi-Three-Phase Induction Machines. *Sala, G.*, +, *TIE Sept. 2020 7124-7134*

Design and Implementation of Four-Switch Current Sensorless Control for Three-Phase PFC Converter. *Li, C.*, +, *TIE April 2020 3307-3312*

Design and Implementation of Parameter Estimation and Start Control of Brushless Synchronous Starter/Generators Under Sudden Excitation Change. *Mao, S.*, +, *TIE May 2020 3551-3561*

Digital Current Control of an Asymmetrical Dual Three-Phase Flux-Switching Permanent Magnet Machine. *Hu, M.*, +, *TIE June 2020 4281-4291*

Direct Single-Power-Conversion Bidirectional Grid-Connected Inverter Solving Commutation Problem. *Jeong, S.*, +, *TIE Dec. 2020 10335-10345*

Discrete-Time Modified UDE-Based Current Control for L+C+L-Type Grid-Tied Inverters. *Wu, Y.*, +, *TIE March 2020 2143-2154*

Distributed Voltage Restoration and Current Sharing Control in Islanded DC Microgrid Systems Without Continuous Communication. *Guo, F.*, +, *TIE April 2020 3043-3053*

- Dual-Loop-Based Harmonic Current Control Strategy and Admittance Modeling for a Multimodular Parallel SAPFs System. *Liu, K., +, TIE July 2020 5456-5466*
- Dual-Pulse Mode Control of a High-Speed Doubly Salient Electromagnetic Machine for Loss Reduction and Speed Range Extension. *Yu, L., +, TIE June 2020 4391-4401*
- Efficient QR Updating Factorization for Sensorless Synchronous Motor Drive Based on High Frequency Voltage Injection. *Toso, F., +, TIE Dec. 2020 10213-10222*
- Electromagnetic Vibration Analysis of High-Speed Permanent Magnet Synchronous Machines With Amorphous Metal Stator Cores Considering Current Harmonics. *Wu, S., +, TIE Dec. 2020 10156-10167*
- Embedded Hardware Artificial Neural Network Control for Global and Real-Time Imbalance Current Suppression of Parallel Connected IGBTs. *Zeng, X., +, TIE March 2020 2186-2196*
- Enhanced Braking Control for the Induction Machine Using Scalar Control. *Costa, C.A., +, TIE Nov. 2020 9133-9142*
- Enhanced Performance of Constant Frequency Torque Controller-Based Direct Torque Control of Induction Machines with Increased Torque-Loop Bandwidth. *Alsofyani, I.M., +, TIE Dec. 2020 10168-10179*
- Event Driven Control of Voltage and Current Gradients of Medium Voltage IGBTs. *Holtz, J., TIE Aug. 2020 6323-6330*
- Finite Control Set Model Predictive Control for LCL-Filtered Grid-Tied Inverter With Minimum Sensors. *Chen, X., +, TIE Dec. 2020 9980-9990*
- Finite-Control-Set MPC for Open-Phase Fault-Tolerant Control of PM Synchronous Motor Drives. *Kiselev, A., +, TIE June 2020 4444-4452*
- Flux-Controlled Hybrid Reluctance Actuator for High-Precision Scanning Motion. *Ito, S., +, TIE Nov. 2020 9593-9600*
- FOC Transformation for Single Open-Phase Faults in the Five-Phase Open-End Winding Topology. *Priestley, M., +, TIE Feb. 2020 842-851*
- Frequency Adaptive Grid Voltage Sensorless Control of LCL-Filtered Inverter Based on Extended Model Observer. *Tran, T.V., +, TIE Sept. 2020 7560-7573*
- Generalized Space Vector Modulation for Current Source Converter in Continuous and Discontinuous Current Modes. *Guo, X., +, TIE Nov. 2020 9348-9357*
- HVdc Reactor Reduction Method Based on Virtual Reactor Fault Current Limiting Control of MMC. *Li, X., +, TIE Dec. 2020 9991-10000*
- Impedance-Based Harmonic Current Suppression Method for VSG Connected to Distorted Grid. *Zhou, L., +, TIE July 2020 5490-5502*
- Improved Direct Torque Control for a DFIG under Symmetrical Voltage Dip With Transient Flux Damping. *Agha Kashkooli, M.R., +, TIE Jan. 2020 28-37*
- Improved Model Predictive Current Control for SPMSM Drives With Parameter Mismatch. *Yuan, X., +, TIE Feb. 2020 852-862*
- Improving Dynamic Performance of Boost PFC Converter Using Current-Harmonic Feedforward Compensation in Synchronous Reference Frame. *Li, S., +, TIE June 2020 4857-4866*
- Magnetic-Integrated Multipulse Rectifier Transformer With a Tight Impedance Equalizing Strategy for Power Quality Improvement of DC Traction Power Supply System. *An, B., +, TIE Aug. 2020 6270-6279*
- Min-Type Control Strategy of a DC-DC Synchronous Boost Converter. *Sferlazza, A., +, TIE April 2020 3167-3179*
- Minimum DC-Link Capacitance for Single-Phase Applications With Power Factor Correction. *Marcos-Pastor, A., +, TIE June 2020 5204-5208*
- Model Predictive Control for a Six-Phase PMSM Motor With a Reduced-Dimension Cost Function. *Luo, Y., +, TIE Feb. 2020 969-979*
- Model Predictive Control of a Nine-Level Internal Parallel Multilevel Converter With Phase-Shifted Pulsewidth Modulation. *Zhou, D., +, TIE Nov. 2020 9073-9082*
- Modeling and Control of Low Switching Frequency High-Performance Induction Motor Drives. *Qi, X., +, TIE June 2020 4402-4410*
- Modulation and Voltage Balancing of a Five-Level Series-Connected Multilevel Inverter With Reduced Isolated Direct Current Sources. *Dekka, A., +, TIE Oct. 2020 8219-8230*
- Motor Parameter-Free Predictive Current Control of Synchronous Motors by Recursive Least-Square Self-Commissioning Model. *Tinazzi, F., +, TIE Nov. 2020 9093-9100*
- Multiport Interline Current Flow Controller for Meshed HVDC Grids. *Sau-Bassols, J., +, TIE July 2020 5467-5478*
- Multisampling Method for Single-Phase Grid-Connected Cascaded H-Bridge Inverters. *Ma, J., +, TIE Oct. 2020 8322-8334*
- Multivector-Based Model Predictive Control With Geometric Solution of a Five-Phase Flux-Switching Permanent Magnet Motor. *Hua, W., +, TIE Dec. 2020 10035-10045*
- Near-Optimal MPC Algorithm for Actively Damped Grid-Connected PWM-VSCs With LCL Filters. *Lim, C.S., +, TIE June 2020 4578-4589*
- Novel Compensation Strategy for Calculation Delay of Finite Control Set Model Predictive Current Control in PMSM. *Gao, J., +, TIE July 2020 5816-5819*
- Optimization and Implementation of the Proportional-Resonant Controller for Grid-Connected Inverter With Significant Computation Delay. *Husev, O., +, TIE Feb. 2020 1201-1211*
- Optimization and Performance Improvement of a Hybrid Excitation Synchronous Machine With Modular Magnetic-Shunting Rotor. *Liu, Y., +, TIE June 2020 4381-4390*
- Optimization of Cell Voltage and Circulating Current With Zero-Mean Current Command Injection in Modular Multilevel Converters. *Wu, T., +, TIE Nov. 2020 9429-9438*
- Peak Current Control and Feed-Forward Compensation of a DAB Converter. *Vazquez, N., +, TIE Oct. 2020 8381-8391*
- Performance Improvement of Open-Winding PMSMs With a Discrete-Time Designed Zero-Sequence Current Controller Based on Virtual Three-Phase Expansion. *Song, Z., +, TIE Dec. 2020 10046-10054*
- Pole Balancing and Thermal Management in Multiterminal HVdc Grids Using Single H-Bridge-Based Current Flow Controllers. *Balasubramanian, S., +, TIE June 2020 4623-4634*
- Pre- and Postfault Current Control of Dual Three-Phase Reluctance Synchronous Drives. *Eldeeb, H.M., +, TIE May 2020 3361-3373*
- Precise Active Brake-Pressure Control for a Novel Electro-Booster Brake System. *Zhao, J., +, TIE June 2020 4774-4784*
- Predictive Control Based DC Microgrid Stabilization With the Dual Active Bridge Converter. *Chen, L., +, TIE Oct. 2020 8944-8956*
- Proposing a Multimode Switching Control Method for a Half-Bridge Converter to Improve Its Efficiency Over the Entire Load Variations. *Ghanbari, A.R., +, TIE March 2020 1910-1920*
- PSO-Based Optimization of DC-Link Current Harmonics in Traction VSI for an Electric Vehicle. *Steczek, M., +, TIE Oct. 2020 8197-8208*
- Pulse Train Control Strategy for CCM Boost PFC Converter With Improved Dynamic Response and Unity Power Factor. *Luo, H., +, TIE Dec. 2020 10377-10387*
- Reliable Winding-Based DC-Bus Capacitor Discharge Technique Over Full-Speed Range for IPMSM Drive in Electric Vehicles Without Position Sensor. *Gong, C., +, TIE Oct. 2020 8131-8142*
- Research on the Dynamic Characteristics and Regulation Method of the Energy Stored Quasi-Z-Source Inverter System. *Hu, S., +, TIE June 2020 4590-4599*
- Robust Current Control of Grid-Tied Inverters Affected by LCL Filter Soft-Saturation. *Osorio, C.R.D., +, TIE Aug. 2020 6550-6561*
- Robust High Bandwidth Current Regulation for Permanent Magnet Synchronous Linear Motor Drivers by Using Two-Degree-of-Freedom Controller and Thrust Ripple Observer. *Zhao, J., +, TIE March 2020 1804-1812*
- Sensorless Control Strategy for IPMSM to Reduce Audible Noise by Variable Frequency Current Injection. *Du, B., +, TIE Feb. 2020 1149-1159*
- Sensorless Low/Zero Speed Estimation for Permanent Magnet Synchronous Machine Using a Search-Based Real-Time Commissioning Method. *Sci-chuna, K., +, TIE July 2020 6010-6018*
- Sensorless Optimal Commutation Steady Speed Control Method for a Non-ideal Back-EMF BLDC Motor Drive System Including Buck Converter. *Chen, X., +, TIE July 2020 6147-6157*

- Series-Connected-Based Offshore Wind Farms With Full-Bridge Modular Multilevel Converter as Grid- and Generator-side Converters. *Guo, G.*, +, *TIE April 2020 2798-2809*
- Simple Fundamental Current Estimation and Smooth Transition Between Synchronous Optimal PWM and Asynchronous SVM. *Birda, A.*, +, *TIE Aug. 2020 6354-6364*
- Single-Phase Dual-Mode Interleaved Multilevel Inverter for PV Applications. *Pourfaraj, A.*, +, *TIE April 2020 2905-2915*
- Soft Switching Bidirectional Converter for Reflex Charger With Minimum Switches. *Ahmadi, F.*, +, *TIE Oct. 2020 8355-8362*
- Spatial Inductance Estimation for Current Loop Auto-Tuning in IPMSM Self-Commissioning. *Erturk, F.*, +, *TIE May 2020 3911-3920*
- Torque Distributed Control Strategy for the Dual Three-Phase PMSM in Hybrid Energy Storage System Application. *Hu, S.*, +, *TIE April 2020 2544-2552*
- Torque Ripple Suppression for Open-End Winding Permanent-Magnet Synchronous Machine Drives With Predictive Current Control. *Yuan, X.*, +, *TIE March 2020 1771-1781*
- Electric current measurement**
- Motor Speed Signature Analysis for Local Bearing Fault Detection With Noise Cancellation Based on Improved Drive Algorithm. *Yang, M.*, +, *TIE May 2020 4172-4182*
- Ultrastable and Low-Noise Self-Compensation Method for Circuit Thermal Drift of Eddy Current Sensors Based on Analog Multiplier. *Zhao, G.*, +, *TIE Oct. 2020 8851-8859*
- Electric drives**
- A Turn Fault Mitigation Strategy Based on Current Injection Technique for a Triple Three-Phase PMA SynRM. *Wang, B.*, +, *TIE April 2020 2511-2522*
- Assessment of an Improved Finite Control Set Model Predictive Current Controller for Automotive Propulsion Applications. *Andersson, A.*, +, *TIE Jan. 2020 91-100*
- Common-Mode and Phase-to-Ground Voltage Reduction in Back-to-Back Power Converters With Discontinuous PWM. *Samanes, J.*, +, *TIE Sept. 2020 7499-7508*
- Design of a New Relieving-DC-Saturation Hybrid Reluctance Machine for Fault-Tolerant In-Wheel Direct Drive. *Zhao, X.*, +, *TIE Nov. 2020 9571-9581*
- Field-Oriented Control of Multiphase Drives With Passive Fault Tolerance. *Prieto, I.G.*, +, *TIE Sept. 2020 7228-7238*
- High-Accuracy Dynamic Load Emulation Method for Electrical Drives. *de Oliveira, C.M.R.*, +, *TIE Sept. 2020 7239-7249*
- Permanent-Magnet Machine Flux and Torque Response Under the Influence of Turn Fault. *Hsu, C.*, +, *TIE Jan. 2020 169-179*
- Pre- and Postfault Current Control of Dual Three-Phase Reluctance Synchronous Drives. *Eldeeb, H.M.*, +, *TIE May 2020 3361-3373*
- Sensorless Control of Linear Flux-Switching Permanent Magnet Motor Based on Extended Kalman Filter. *Cao, R.*, +, *TIE July 2020 5971-5979*
- Single-Index Open-Phase Fault Detection Method for Six-Phase Electric Drives. *Garcia-Entrambasaguas, P.*, +, *TIE Dec. 2020 10233-10242*
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- Electric fields**
- Drive-Current-Free Switch With Internal Transduction in a Magneto Piezo-Electronic Transistor. *Xue, F.*, +, *TIE April 2020 3257-3266*
- Energy-Concentrating Optimization Based on Energy Distribution Characteristics of MCR WPT Systems With SS/PS Compensation. *Li, W.*, +, *TIE Dec. 2020 10410-10420*
- Research on Measurement Method of Electric Field Intensity on Surface of Metal Conductor. *Lu, B.*, +, *TIE Aug. 2020 7005-7014*
- Electric fuses**
- Extending Protection Selectivity in DC Shipboard Power Systems by Means of Additional Bus Capacitance. *Kim, S.*, +, *TIE May 2020 3673-3683*
- Electric generators**
- Core-Loss Analysis of High-Speed Doubly Salient Electromagnetic Machine for Aeronautic Starter/Generator Application. *Jia, W.*, +, *TIE Jan. 2020 59-68*
- Design and Optimization of a Novel Dual-Port Linear Generator for Oceanic Wave Energy Conversion. *Farrok, O.*, +, *TIE May 2020 3409-3418*
- The Output Voltage Control Strategy for DSEG With Controlled Rectification Based on Conduction Angle Estimation. *Wang, K.*, +, *TIE May 2020 3350-3360*
- Electric heating**
- Condition Monitoring of Transformer Breather Using a Capacitive Moisture Sensor. *Kumar, S.*, +, *TIE Nov. 2020 9779-9789*
- Electric impedance**
- A CM Filter Configuration for Grid-Tied Voltage Source Converters. *Gulur, S.*, +, *TIE Oct. 2020 8100-8111*
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Profile-Guided Three-Phase Virtual Resource Management for Energy Efficiency of Data Centers. *Ding, Z.*, +, *TIE March 2020 2460-2468*

Suppression of Harmonic Vibration in Magnetically Suspended Centrifugal Compressor Using Zero-Phase Odd-Harmonic Repetitive Controller. *Cai, K.*, +, *TIE Sept. 2020 7789-7797*

Voltage-Source Converter Energy Efficiency Classification in Accordance With IEC 61800-9-2. *Aarniovuori, L.*, +, *TIE Oct. 2020 8242-8251*

Energy consumption

A Hybrid-Driven Elevator System With Energy Regeneration and Safety Enhancement. *Zhao, B.*, +, *TIE Sept. 2020 7715-7726*

A Self-Governed Online Energy Management and Trading for Smart Micro/Nano-Grids. *Latifi, M.*, +, *TIE Sept. 2020 7484-7498*

A Stochastic Predictive Energy Management Strategy for Plug-in Hybrid Electric Vehicles Based on Fast Rolling Optimization. *Yang, C.*, +, *TIE Nov. 2020 9659-9670*

Hierarchical Management Control Based on Equivalent Fitting Circle and Equivalent Energy Consumption Method for Multiple Fuel Cells Hybrid Power System. *Yan, Y.*, +, *TIE April 2020 2786-2797*

Model Predictive Control With Lifetime Constraints Based Energy Management Strategy for Proton Exchange Membrane Fuel Cell Hybrid Power Systems. *He, H.*, +, *TIE Oct. 2020 9012-9023*

Energy harvesting

A Fully Integrated Maximum Power Tracking Combiner for Energy Harvesting IoT Applications. *Estrada-Lopez, J.J.*, +, *TIE April 2020 2744-2754*

A Self-Powered Vibration Sensor With Wide Bandwidth. *Li, Y.*, +, *TIE Jan. 2020 560-568*

A Triple-Band High-Gain Multibeam Ambient RF Energy Harvesting System Utilizing Hybrid Combining. *Shen, S.*, +, *TIE Nov. 2020 9215-9226*

Adaptive Self-Configurable Rectifier for Extended Operating Range of Piezoelectric Energy Harvesting. *Chew, Z.J.*, +, *TIE April 2020 3267-3276*

An Electromagnetic Variable Stiffness Device for Semiactive Seat Suspension Vibration Control. *Ning, D.*, +, *TIE Aug. 2020 6773-6784*

Charge-Based Supercapacitor Storage Estimation for Indoor Sub-mW Photovoltaic Energy Harvesting Powered Wireless Sensor Nodes. *Yue, X.*, +, *TIE March 2020 2411-2421*

Collaboratively Harvesting Ambient Radiofrequency and Thermal Energy. *Guo, L.*, +, *TIE May 2020 3736-3746*

Improving Current Transformer-Based Energy Extraction From AC Power Lines by Manipulating Magnetic Field. *Zhuang, Y.*, +, *TIE Nov. 2020 9471-9479*

Lateral GaN Schottky Barrier Diode for Wireless High-Power Transfer Application With High RF/DC Conversion Efficiency: From Circuit Construction and Device Technologies to System Demonstration. *Dang, K.*, +, *TIE Aug. 2020 6597-6606*

Mileage-Responsive Wind Power Smoothing. *Lyu, X.*, +, *TIE June 2020 5209-5212*

Multiple-Input Harvesting Power Management Unit With Enhanced Boosting Scheme for IoT Applications. *Abuallil, A.*, +, *TIE May 2020 3662-3672*

Optimal Design of a Novel Single-Phase 8-Slot 8-Pole Tubular Electromagnetic Shock Absorber to Harvest Energy. *Duong, M.*, +, *TIE Feb. 2020 1180-1190*

Self-Powered Piezoelectric and Thermoelectric Energy Simultaneous Extraction Interface Circuit Based on Double Stack Resonance. *Wang, X.*, +, *TIE June 2020 4567-4577*

Thermoelectric Energy Harvesting From Gradients in the Earth Surface. *Sigrist, L.*, +, *TIE Nov. 2020 9460-9470*

Energy management systems

A Cooperative Adaptive Droop Based Energy Management and Optimal Voltage Regulation Scheme for DC Microgrids. *Sahoo, S.*, +, *TIE April 2020 2894-2904*

A Self-Governed Online Energy Management and Trading for Smart Micro/Nano-Grids. *Latifi, M.*, +, *TIE Sept. 2020 7484-7498*

A Stochastic Predictive Energy Management Strategy for Plug-in Hybrid Electric Vehicles Based on Fast Rolling Optimization. *Yang, C.*, +, *TIE Nov. 2020 9659-9670*

Dynamic State Estimation for the Advanced Brake System of Electric Vehicles by Using Deep Recurrent Neural Networks. *Xing, Y.*, +, *TIE Nov. 2020 9536-9547*

Model Predictive Control With Lifetime Constraints Based Energy Management Strategy for Proton Exchange Membrane Fuel Cell Hybrid Power Systems. *He, H.*, +, *TIE Oct. 2020 9012-9023*

On the Decentralized Energy Management Strategy for the All-Electric APU of Future More Electric Aircraft Composed of Multiple Fuel Cells and Supercapacitors. *Chen, J.*, +, *TIE Aug. 2020 6183-6194*

Online Parameter Estimation for Supercapacitor State-of-Energy and State-of-Health Determination in Vehicular Applications. *Naseri, F.*, +, *TIE Sept. 2020 7963-7972*

Real-Time Energy Management of the Electric Turbocharger Based on Explicit Model Predictive Control. *Zhao, D.*, +, *TIE April 2020 3126-3137*

Energy storage

A Cooperative Adaptive Droop Based Energy Management and Optimal Voltage Regulation Scheme for DC Microgrids. *Sahoo, S.*, +, *TIE April 2020 2894-2904*

A Fully Integrated Maximum Power Tracking Combiner for Energy Harvesting IoT Applications. *Estrada-Lopez, J.J.*, +, *TIE April 2020 2744-2754*

A Proposed Fast Charging and High-Power System for Wireless Railway Trains Adopting the Input Voltage Sharing Topology and the Balancing Control Scheme. *Kim, J.*, +, *TIE Aug. 2020 6407-6417*

Analysis and Design of a 1-MHz Bidirectional Multi-CLLC Resonant DC-DC Converter With GaN Devices. *Wang, Y.*, +, *TIE Feb. 2020 1425-1434*

Coordinated Control of Passive Transition from Grid-Connected to Islanded Operation for Three/Single-Phase Hybrid Multimicrogrids Considering Speed and Smoothness. *Wang, C.*, +, *TIE March 2020 1921-1931*

Direct Seamless Transfer Strategy by Limiting Voltage Drop of Interface Filter in Energy Storage Equipment of Microgrid. *Zhao, G.*, +, *TIE Dec. 2020 10421-10432*

Extending Protection Selectivity in DC Shipboard Power Systems by Means of Additional Bus Capacitance. *Kim, S.*, +, *TIE May 2020 3673-3683*

Integrated-Power-Control-Strategy-Based Electrolytic Capacitor-Less Back-to-Back Converter for Variable Frequency Speed Control System. *Bao, D.*, +, *TIE Dec. 2020 10065-10074*

Model Predictive Control for Dual Active Bridge in Naval DC Microgrids Supplying Pulsed Power Loads Featuring Fast Transition and Online Transformer Current Minimization. *Xiao, Q.*, +, *TIE June 2020 5197-5203*

Power Scheduling in More Electric Aircraft Based on an Optimal Adaptive Control Strategy. *Zhang, Y.*, +, *TIE Dec. 2020 10911-10921*

Reducing Distribution Power Loss of Islanded AC Microgrids Using Distributed Electric Springs With Predictive Control. *Yang, Y.*, +, *TIE Oct. 2020 9001-9011*

Research on the Dynamic Characteristics and Regulation Method of the Energy Stored Quasi-Z-Source Inverter System. *Hu, S.*, +, *TIE June 2020 4590-4599*

Switched-Capacitor Differential Boost Inverter: Design, Modeling, and Control. *Silva, G.V.*, +, *TIE July 2020 5421-5431*

Torque Distributed Control Strategy for the Dual Three-Phase PMSM in Hybrid Energy Storage System Application. *Hu, S.*, +, *TIE April 2020 2544-2552*

Entropy

A Real-Time Entropy Estimation Algorithm for Lithium Batteries Based on a Combination of Kalman Filter and Nonlinear Observer. *Thenaisie, G.*, +, *TIE Sept. 2020 8034-8043*

Information Theory Based Probabilistic Approach to Blade Damage Detection of Turbomachine Using Sensor Data. *Yang, S.*, +, *TIE Dec. 2020 10887-10896*

Entry, descent and landing (spacecraft)

Real-Time Reentry Trajectory Planning of Hypersonic Vehicles: A Two-Step Strategy Incorporating Fuzzy Multiobjective Transcription and Deep Neural Network. *Chai, R.*, +, *TIE Aug. 2020 6904-6915*

Environmental legislation

Hydrothermal Aging Factor Estimation for Two-Cell Diesel-Engine SCR Systems via a Dual Time-Scale Unscented Kalman Filter. *Jiang, K.*, +, *TIE Jan. 2020 442-450*

Equivalent circuits

A New Testing Method for the Dielectric Response of Oil-Immersed Transformer. *Wang, D.*, +, *TIE Dec. 2020 10833-10843*

A Simplified Equivalent Circuit Method for Induction Machine Nonintrusive Field Efficiency Estimation. *Aminu, M.*, +, *TIE Sept. 2020 7301-7311*

A Temperature and Current Rate Adaptive Model for High-Power Lithium-Titanate Batteries Used in Electric Vehicles. *Chen, A.*, +, *TIE Nov. 2020 9492-9502*

A Voltage Adaptive Dynamic Harmonic Model of Nonlinear Home Appliances. *Sun, Y.*, +, *TIE May 2020 3607-3617*

Considering Losses to Enhance Circuit Model Accuracy of Ultrasonic Wireless Power Transfer System. *Wu, M.*, +, *TIE Oct. 2020 8788-8798*

Coupled Inductance Model of Full-Bridge Modules in Hybrid High Voltage Direct Current Circuit Breakers. *Dongye, Z.*, +, *TIE Dec. 2020 10315-10324*

Design Considerations of Fault-Tolerant Permanent Magnet Vernier Machine. *Zhao, W.*, +, *TIE Sept. 2020 7290-7300*

Development of a Three-Dimensional Magnetic Equivalent Circuit Model for Axial Flux Machines. *Alipour-Sarabi, R.*, +, *TIE July 2020 5758-5767*

Dual-Loop-Based Harmonic Current Control Strategy and Admittance Modeling for a Multimodular Parallel SAPFs System. *Liu, K.*, +, *TIE July 2020 5456-5466*

Erratum to "An Advanced Equivalent Circuit Model for Linear Induction Motors" [Sep 18 7495-7503]. *Lv, G.*, +, *TIE Dec. 2020 10996*

Joint SoC and SoH Estimation for Zinc-Nickel Single-Flow Batteries. *Li, S.*, +, *TIE Oct. 2020 8484-8494*

Modeling and State-of-Charge Estimation of Supercapacitor Considering Leakage Effect. *Saha, P.*, +, *TIE Jan. 2020 350-357*

Online Battery State of Power Prediction Using PRBS and Extended Kalman Filter. *Nejad, S.*, +, *TIE May 2020 3747-3755*

Online Fault Diagnosis of External Short Circuit for Lithium-Ion Battery Pack. *Xiong, R.*, +, *TIE Feb. 2020 1081-1091*

Performance Analysis of Induction-Based Reaction Spheres. *Zhu, L.*, +, *TIE Sept. 2020 7746-7756*

Permanent-Magnet Machine Flux and Torque Response Under the Influence of Turn Fault. *Hsu, C.*, +, *TIE Jan. 2020 169-179*

Switched-Capacitor Differential Boost Inverter: Design, Modeling, and Control. *Silva, G.V.*, +, *TIE July 2020 5421-5431*

Erosion

Remaining Useful Life Estimation of Structure Systems Under the Influence of Multiple Causes: Subsea Pipelines as a Case Study. *Cai, B.*, +, *TIE July 2020 5737-5747*

Error compensation

Active Disturbance-Rejection-Based Speed Control in Model Predictive Control for Induction Machines. *Yan, L.*, +, *TIE April 2020 2574-2584*

An Open-Loop Synchronization Technique With Simple Structure for Phase Error Compensation and Frequency Estimation. *Liu, P.*, +, *TIE Oct. 2020 8936-8940*

Fast Self-Alignment Technology for Hybrid Inertial Navigation Systems Based on a New Two-Position Analytic Method. *Liu, B.*, +, *TIE April 2020 3226-3235*

Hybrid Voltage Vector Preselection-Based Model Predictive Control for Two-Level Voltage Source Inverters to Reduce the Common-Mode Voltage. *Guo, L.*, +, *TIE June 2020 4680-4691*

Error correction

Electric Load Forecasting Model Using a Multicolumn Deep Neural Networks. *Hoori, A.O.*, +, *TIE Aug. 2020 6473-6482*

Estimation theory

A Novel Joint Angle Estimation Method for Serial Manipulator Using Micro-Electromechanical Systems Sensors. *Xu, X.*, +, *TIE Dec. 2020 10610-10620*

Anti-Disturbance Control for Nonlinear Systems Based on Interval Observer. *Yong, K.*, +, *TIE Feb. 2020 1261-1269*

Robust Estimation for State-of-Charge and State-of-Health of Lithium-Ion Batteries Using Integral-Type Terminal Sliding-Mode Observers. *Feng, Y.*, +, *TIE May 2020 4013-4023*

Tomographic Approach for Universal Tactile Imaging With Electromechanically Coupled Conductors. *Yoshimoto, S.*, +, *TIE Jan. 2020 627-636*

Etching

Real-Time Imaging of Invisible Micron-Scale Monolayer Patterns on a Moving Web Using Condensation Figures. *Du, X.*, +, *TIE May 2020 4077-4087*

Evolutionary computation

An Effective Optimization Algorithm for Application Mapping in Network-on-Chip Designs. *Wang, X.*, +, *TIE July 2020 5798-5809*

Multiobjective Optimal Parking Maneuver Planning of Autonomous Wheeled Vehicles. *Chai, R.*, +, *TIE Dec. 2020 10809-10821*

Multiobjective Optimization of a Double-Side Linear Vernier PM Motor Using Response Surface Method and Differential Evolution. *Zhao, W.*, +, *TIE Jan. 2020 80-90*

Multiobjective Optimization of a Tubular Coreless LPMSM Based on Adaptive Multiobjective Black Hole Algorithm. *Wu, T.*, +, *TIE May 2020 3901-3910*

Excited states

A Hybrid Control Strategy of Hybrid-Excitation Switched Reluctance Motor for Torque Ripple Reduction and Constant Power Extension. *Ding, W.*, +, *TIE Jan. 2020 38-48*

Exhaust systems

Hydrothermal Aging Factor Estimation for Two-Cell Diesel-Engine SCR Systems via a Dual Time-Scale Unscented Kalman Filter. *Jiang, K.*, +, *TIE Jan. 2020 442-450*

Real-Time Energy Management of the Electric Turbocharger Based on Explicit Model Predictive Control. *Zhao, D.*, +, *TIE April 2020 3126-3137*

Expectation-maximization algorithms

A Robust Point Set Registration Approach With Multiple Effective Constraints. *Sun, J.*, +, *TIE Dec. 2020 10931-10941*

Prognostics for Linear Stochastic Degrading Systems With Survival Measurements. *Si, X.*, +, *TIE April 2020 3202-3215*

Real-Time Mode Diagnosis for Processes With Multiple Operating Conditions Using Switching Conditional Random Fields. *Fang, M.*, +, *TIE June 2020 5060-5070*

Eye

Towards Robotic-Assisted Subretinal Injection: A Hybrid Parallel-Serial Robot System Design and Preliminary Evaluation. *Zhou, M.*, +, *TIE Aug. 2020 6617-6628*

F**Fabrics**

Soft Haptic Actuator Based on Knitted PVC Gel Fabric. *Park, W.*, +, *TIE Jan. 2020 677-685*

Failure (mechanical)

Condition Monitoring of Transformer Breather Using a Capacitive Moisture Sensor. *Kumar, S.*, +, *TIE Nov. 2020 9779-9789*

Information Theory Based Probabilistic Approach to Blade Damage Detection of Turbomachine Using Sensor Data. *Yang, S.*, +, *TIE Dec. 2020 10887-10896*

Macroscopic-Microscopic Attention in LSTM Networks Based on Fusion Features for Gear Remaining Life Prediction. *Qin, Y.*, +, *TIE Dec. 2020 10865-10875*

Failure analysis

A Prognostic Model Based on DBN and Diffusion Process for Degrading Bearing. *Hu, C.*, +, *TIE Oct. 2020 8767-8777*

A TDF Model in Induction Machines for Loose Bearing Diagnosis by Neutral Voltage. *Jafarian, M.J.*, +, *TIE Oct. 2020 8155-8163*

- A Time-Saving Approach for the Thermal Lifetime Evaluation of Low-Voltage Electrical Machines. *Madonna, V.*, +, *TIE Nov. 2020 9195-9205*
- Bearing Corrosion Failure Diagnosis of Doubly Fed Induction Generator in Wind Turbines Based on Stator Current Analysis. *Chen, X.*, +, *TIE May 2020 3419-3430*
- Classification of Faults in Multicore Cable via Time-Frequency Domain Reflectometry. *Bang, S.S.*, +, *TIE May 2020 4163-4171*
- Coordinated Control of Passive Transition from Grid-Connected to Islanded Operation for Three/Single-Phase Hybrid Multimicrogrids Considering Speed and Smoothness. *Wang, C.*, +, *TIE March 2020 1921-1931*
- Design, Analysis, and Impacts of Sinusoidal LC Filter on Pulsewidth Modulated Inverter Fed-Induction Motor Drive. *Mishra, P.*, +, *TIE April 2020 2678-2688*
- Electromagnetic Induced Failure in GaN-HEMT High-Frequency Power Amplifier. *Sangwan, V.*, +, *TIE July 2020 5708-5716*
- Failure Prediction of Submodule Capacitors in Modular Multilevel Converter by Monitoring the Intrinsic Capacitor Voltage Fluctuations. *Ronanki, D.*, +, *TIE April 2020 2585-2594*
- Naturally Damaged Wind Turbine Blade Bearing Fault Detection Using Novel Iterative Nonlinear Filter and Morphological Analysis. *Liu, Z.*, +, *TIE Oct. 2020 8713-8722*
- Prognostics for Linear Stochastic Degrading Systems With Survival Measurements. *Si, X.*, +, *TIE April 2020 3202-3215*
- Remaining Useful Life Estimation of Structure Systems Under the Influence of Multiple Causes: Subsea Pipelines as a Case Study. *Cai, B.*, +, *TIE July 2020 5737-5747*
- Valve Failure Prognostics in Reciprocating Compressors Utilizing Temperature Measurements, PCA-Based Data Fusion, and Probabilistic Algorithms. *Loutas, T.*, +, *TIE June 2020 5022-5029*
- Virtual Temperature Detection of Semiconductors in a Megawatt Field Converter. *Rannestad, B.*, +, *TIE Feb. 2020 1305-1315*
- Fans**
- An Initial States Recognition (ISR) Method for Start-Up of 1 Φ BLDC Motor in Hall-Sensor-Less Fan Applications. *Tang, Z.*, +, *TIE Oct. 2020 8302-8311*
- Effective Hold-Up Time Extension Method Using Fan Control in Server Power Systems. *Baek, J.*, +, *TIE July 2020 5820-5824*
- Fast Fourier transforms**
- Detection of Winding Asymmetries in Wound-Rotor Induction Motors via Transient Analysis of the External Magnetic Field. *Zamudio-Ramirez, I.*, +, *TIE June 2020 5050-5059*
- Fasteners**
- Analytical Modeling of 3-D Magnetic Field and Performance in Magnetic Lead Screws Accounting for Magnetization Pattern. *Gao, F.*, +, *TIE June 2020 4785-4796*
- Computer Modeling of the Eddy Current Losses of Metal Fasteners in Rotor Slots of a Large Nuclear Steam Turbine Generator Based on Finite-Element Method and Deep Gaussian Process Regression. *Zhao, J.*, +, *TIE July 2020 5349-5359*
- Design of a New Vision-Based Method for the Bolts Looseness Detection in Flange Connections. *Wang, C.*, +, *TIE Feb. 2020 1366-1375*
- Fatigue**
- Remaining Useful Life Estimation of Structure Systems Under the Influence of Multiple Causes: Subsea Pipelines as a Case Study. *Cai, B.*, +, *TIE July 2020 5737-5747*
- Fatigue cracks**
- Natural Crack Diagnosis System Based on Novel L-Shaped Electromagnetic Sensing Thermography. *Liu, Z.*, +, *TIE Nov. 2020 9703-9714*
- Fault current limiters**
- HVdc Reactor Reduction Method Based on Virtual Reactor Fault Current Limiting Control of MMC. *Li, X.*, +, *TIE Dec. 2020 9991-10000*
- New Concept for Fault Current Limiter With Voltage Restoration Capability. *Nourmohamadi, H.*, +, *TIE Dec. 2020 10001-10010*
- Fault currents**
- A High-Performance and Economical Multiport Hybrid Direct Current Circuit Breaker. *He, J.*, +, *TIE Oct. 2020 8921-8930*
- Damping HVDC Circuit Breaker With Current Commutation and Limiting Integrated. *Wu, Y.*, +, *TIE Dec. 2020 10433-10441*
- DC Fault Analysis Models of Three Converter Topologies Considering Control Effects. *Li, Y.*, +, *TIE Nov. 2020 9480-9491*
- DC Fault Current Blocking With the Coordination of Half-Bridge MMC and the Hybrid DC Breaker. *Iman-Eini, H.*, +, *TIE July 2020 5503-5514*
- DC Fault Detection in Meshed MTdc Systems Based on Transient Average Value of Current. *Li, Y.*, +, *TIE March 2020 1932-1943*
- Transient Current Correlation Based Protection for DC Distribution System. *Jia, K.*, +, *TIE Nov. 2020 9927-9936*
- Fault diagnosis**
- A Correlation-Based Distributed Fault Detection Method and Its Application to a Hot Tandem Rolling Mill Process. *Zhang, K.*, +, *TIE March 2020 2380-2390*
- A Current-Based Approach for Short-Circuit Fault Diagnosis in Closed-Loop Current Source Inverter. *Guo, X.*, +, *TIE Sept. 2020 7941-7950*
- A Data-Driven Realization of the Control-Performance-Oriented Process Monitoring System. *Luo, H.*, +, *TIE Jan. 2020 521-530*
- A New Nonlinear Model-Based Fault Detection Method Using Mann-Whitney Test. *Yang, C.*, +, *TIE Dec. 2020 10856-10864*
- A New Penalty Domain Selection Machine Enabled Transfer Learning for Gearbox Fault Recognition. *Shen, F.*, +, *TIE Oct. 2020 8743-8754*
- A Novel Degradation Modeling and Prognostic Framework for Closed-Loop Systems With Degrading Actuator. *Si, X.*, +, *TIE Nov. 2020 9635-9647*
- A Novel Dynamic Weight Principal Component Analysis Method and Hierarchical Monitoring Strategy for Process Fault Detection and Diagnosis. *Tao, Y.*, +, *TIE Sept. 2020 7994-8004*
- A Novel Hierarchical Detection and Isolation Framework for Quality-Related Multiple Faults in Large-Scale Processes. *Ma, L.*, +, *TIE Feb. 2020 1316-1327*
- A Novel Joint Angle Estimation Method for Serial Manipulator Using Micro-Electromechanical Systems Sensors. *Xu, X.*, +, *TIE Dec. 2020 10610-10620*
- A Polynomial Kernel Induced Distance Metric to Improve Deep Transfer Learning for Fault Diagnosis of Machines. *Yang, B.*, +, *TIE Nov. 2020 9747-9757*
- A TDF Model in Induction Machines for Loose Bearing Diagnosis by Neutral Voltage. *Jafarian, M.J.*, +, *TIE Oct. 2020 8155-8163*
- Adaptive Prognosis of Hybrid Dynamical System for Dynamic Degradation Patterns. *Prakash, O.*, +, *TIE July 2020 5717-5728*
- Airgap Flux Based Detection and Classification of Induction Motor Rotor and Load Defects During the Starting Transient. *Park, Y.*, +, *TIE Dec. 2020 10075-10084*
- Analysis and Experimental Validation of Bidirectional Z-Source DC Circuit Breakers. *Savaliya, S.G.*, +, *TIE June 2020 4613-4622*
- Anomaly Detection and Identification for Multiagent Systems Subjected to Physical Faults and Cyberattacks. *Li, Y.*, +, *TIE Nov. 2020 9724-9733*
- Bearing Corrosion Failure Diagnosis of Doubly Fed Induction Generator in Wind Turbines Based on Stator Current Analysis. *Chen, X.*, +, *TIE May 2020 3419-3430*
- Broad Convolutional Neural Network Based Industrial Process Fault Diagnosis With Incremental Learning Capability. *Yu, W.*, +, *TIE June 2020 5081-5091*
- Broadband Mode Decomposition and Its Application to the Quality Evaluation of Welding Inverter Power Source Signals. *Peng, Y.*, +, *TIE Nov. 2020 9734-9746*
- Data-Driven Fault Diagnosis Method Based on Compressed Sensing and Improved Multiscale Network. *Hu, Z.*, +, *TIE April 2020 3216-3225*
- Data-Driven Soft Sensor for the Estimation of Sound Power Levels of Refrigeration Compressors Through Vibration Measurements. *Nascimento, A.S.B.d.S.*, +, *TIE Aug. 2020 7065-7072*
- Deep Learning-Based Machinery Fault Diagnostics With Domain Adaptation Across Sensors at Different Places. *Li, X.*, +, *TIE Aug. 2020 6785-6794*
- Detection of Winding Asymmetries in Wound-Rotor Induction Motors via Transient Analysis of the External Magnetic Field. *Zamudio-Ramirez, I.*, +, *TIE June 2020 5050-5059*
- Distributed Fast Fault Diagnosis for Multimachine Power Systems via Deterministic Learning. *Chen, T.*, +, *TIE May 2020 4152-4162*

- Early Classification of Alarm Floods via Exponentially Attenuated Component Analysis. *Shang, J.*, +, *TIE Oct. 2020 8702-8712*
- Experimental Evaluation of Transformer Internal Fault Detection Based on $V-I$ Characteristics. *Zhao, X.*, +, *TIE May 2020 4108-4119*
- Fault Detection and Diagnosis of Industrial Robot Based on Power Consumption Modeling. *Sabry, A.H.*, +, *TIE Sept. 2020 7929-7940*
- Fault Detection and Identification Scheme for Dual-Inverter Fed OEWM Drive. *Yang, S.*, +, *TIE July 2020 6112-6123*
- Fault Diagnosis and Monitoring of Modular Multilevel Converter With Fast Response of Voltage Sensors. *Zhang, J.*, +, *TIE June 2020 5071-5080*
- Fault Diagnosis in Microelectronics Attachment Via Deep Learning Analysis of 3-D Laser Scans. *Dimitriou, N.*, +, *TIE July 2020 5748-5757*
- Fault Diagnosis Using Adaptive Multifractal Detrended Fluctuation Analysis. *Du, W.*, +, *TIE March 2020 2272-2282*
- HVdc Reactor Reduction Method Based on Virtual Reactor Fault Current Limiting Control of MMC. *Li, X.*, +, *TIE Dec. 2020 9991-10000*
- In-Service Wind Turbine DFIG Diagnosis Using Current Signature Analysis. *Artigao, E.*, +, *TIE March 2020 2262-2271*
- Intelligent Fault Identification Based on Multisource Domain Generalization Towards Actual Diagnosis Scenario. *Zheng, H.*, +, *TIE Feb. 2020 1293-1304*
- Interturn Fault Tolerant Drive Method by Limiting Copper Loss of Interior Permanent Magnet Synchronous Motor. *Im, S.*, +, *TIE Sept. 2020 7973-7981*
- Learning Representations With Local and Global Geometries Preserved for Machine Fault Diagnosis. *Li, Y.*, +, *TIE March 2020 2360-2370*
- Lyapunov-Based Thermal Fault Diagnosis of Cylindrical Lithium-Ion Batteries. *Wei, J.*, +, *TIE June 2020 4670-4679*
- Model-Based Fault Tolerant Control for the Thermal Management of PEMFC Systems. *Yan, C.*, +, *TIE April 2020 2875-2884*
- Motor Speed Signature Analysis for Local Bearing Fault Detection With Noise Cancellation Based on Improved Drive Algorithm. *Yang, M.*, +, *TIE May 2020 4172-4182*
- Multitask Convolutional Neural Network With Information Fusion for Bearing Fault Diagnosis and Localization. *Guo, S.*, +, *TIE Sept. 2020 8005-8015*
- Natural Crack Diagnosis System Based on Novel L-Shaped Electromagnetic Sensing Thermography. *Liu, Z.*, +, *TIE Nov. 2020 9703-9714*
- Naturally Damaged Wind Turbine Blade Bearing Fault Detection Using Novel Iterative Nonlinear Filter and Morphological Analysis. *Liu, Z.*, +, *TIE Oct. 2020 8713-8722*
- Online Fault Diagnosis of External Short Circuit for Lithium-Ion Battery Pack. *Xiong, R.*, +, *TIE Feb. 2020 1081-1091*
- Permanent-Magnet Machine Flux and Torque Response Under the Influence of Turn Fault. *Hsu, C.*, +, *TIE Jan. 2020 169-179*
- Real-Time CU-Net-Based Welding Quality Inspection Algorithm in Battery Production. *Zhang, H.*, +, *TIE Dec. 2020 10942-10950*
- Real-Time Mode Diagnosis for Processes With Multiple Operating Conditions Using Switching Conditional Random Fields. *Fang, M.*, +, *TIE June 2020 5060-5070*
- Review on Diagnosis Techniques for Intermittent Faults in Dynamic Systems. *Zhou, D.*, +, *TIE March 2020 2337-2347*
- Single-Index Open-Phase Fault Detection Method for Six-Phase Electric Drives. *Garcia-Entrambasaguas, P.*, +, *TIE Dec. 2020 10233-10242*
- SOSO Boosting of the K-SVD Denoising Algorithm for Enhancing Fault-Induced Impulse Responses of Rolling Element Bearings. *Zeng, M.*, +, *TIE Feb. 2020 1282-1292*
- Unsupervised Adversarial Adaptation Network for Intelligent Fault Diagnosis. *Jiao, J.*, +, *TIE Nov. 2020 9904-9913*
- Fault location**
- Classification of Faults in Multicore Cable via Time-Frequency Domain Reflectometry. *Bang, S.S.*, +, *TIE May 2020 4163-4171*
- DC Fault Detection in Meshed MTdc Systems Based on Transient Average Value of Current. *Li, Y.*, +, *TIE March 2020 1932-1943*
- Optimum Selection of Circuit Breaker Parameters Based on Analytical Calculation of Overcurrent and Overvoltage in Multiterminal HVDC Grids. *Song, Y.*, +, *TIE May 2020 4133-4143*
- Transient Current Correlation Based Protection for DC Distribution System. *Jia, K.*, +, *TIE Nov. 2020 9927-9936*
- Fault tolerance**
- A Fault-Tolerant Wideband Amplifier Based on Distributed Amplification Topology. *Zheng, S.Y.*, +, *TIE June 2020 4516-4526*
- A Novel Doubly-Fed Flux-Switching Permanent Magnet Machine With Armature Windings Wound on Both Stator Poles and Rotor Teeth. *Wu, L.*, +, *TIE Dec. 2020 10223-10232*
- An Improved Torque Density Pseudo Six-Phase Induction Machine Using a Quadruple Three-Phase Stator Winding. *Abdel-Khalik, A.S.*, +, *TIE March 2020 1855-1866*
- Analysis of PM Eddy Current Loss in Four-Phase Fault-Tolerant Flux-Switching Permanent-Magnet Machines by Air-Gap Magnetic Field Modulation Theory. *Zhao, W.*, +, *TIE July 2020 5369-5378*
- Design and Analysis of New Five-Phase Flux-Intensifying Fault-Tolerant Interior-Permanent-Magnet Motor for Sensorless Operation. *Zhang, L.*, +, *TIE July 2020 6055-6065*
- Design Considerations of Fault-Tolerant Permanent Magnet Vernier Machine. *Zhao, W.*, +, *TIE Sept. 2020 7290-7300*
- Design of a New Fault-Tolerant Permanent Magnet Machine With Optimized Salient Ratio and Reluctance Torque Ratio. *Chen, Q.*, +, *TIE July 2020 6043-6054*
- Design of a New Relieving-DC-Saturation Hybrid Reluctance Machine for Fault-Tolerant In-Wheel Direct Drive. *Zhao, X.*, +, *TIE Nov. 2020 9571-9581*
- Fault Detection and Identification Scheme for Dual-Inverter Fed OEWM Drive. *Yang, S.*, +, *TIE July 2020 6112-6123*
- Interturn Fault Tolerant Drive Method by Limiting Copper Loss of Interior Permanent Magnet Synchronous Motor. *Im, S.*, +, *TIE Sept. 2020 7973-7981*
- Mitigation of DC-Link Current Ripple for Dual Three-Phase Flux-Adjustable Hybrid PMAC Drives Using Collaborative Switching Strategy. *Wang, Z.*, +, *TIE Sept. 2020 7202-7216*
- Mode Analysis and Fault-Tolerant Method of Open-Circuit Fault for a Dual Active-Bridge DC-DC Converter. *Zhao, N.*, +, *TIE Aug. 2020 6916-6926*
- Novel Topologies of Power Electronics Converter as Active Magnetic Bearing Drive. *Jiang, D.*, +, *TIE Feb. 2020 950-959*
- Observability Analysis and Adaptive Information Fusion for Integrated Navigation of Unmanned Ground Vehicles. *Shen, K.*, +, *TIE Sept. 2020 7659-7668*
- Postfault Operation of Cascaded H-Bridge Converter for Equal Power Handling by the Healthy Cells. *Sharma, R.*, +, *TIE Nov. 2020 9174-9183*
- Fault tolerant control**
- A Fault-Tolerant FOC Strategy for Five-Phase SPMSM With Minimum Torque Ripples in the Full Torque Operation Range Under Double-Phase Open-Circuit Fault. *Xiong, C.*, +, *TIE Nov. 2020 9059-9072*
- A Novel Degradation Modeling and Prognostic Framework for Closed-Loop Systems With Degrading Actuator. *Si, X.*, +, *TIE Nov. 2020 9635-9647*
- A Novel Fault-Tolerant Technique for Active-Neutral-Point-Clamped Inverter Using Carrier-Based PWM. *Azer, P.*, +, *TIE March 2020 1792-1803*
- Adaptive Fault-Tolerant Constrained Control of Cooperative Spacecraft Rendezvous and Docking. *Sun, L.*, *TIE April 2020 3107-3115*
- Adaptive Threshold Generation for Vehicle Fault Detection Using Switched T-S Interval Observers. *Ifqir, S.*, +, *TIE June 2020 5030-5040*
- Comments on "Fault-Tolerant Control Strategies for T-Type Three-Level Inverters Considering Neutral-Point Voltage Oscillations". *Wang, J.*, +, *TIE Aug. 2020 7114-7115*
- DC-Side-Fault-Tolerant Control of a Battery-Supercapacitor Hybrid Energy Storage System Based on Cascaded Multilevel Converter and Auxiliary Power Loop. *Jiang, W.*, +, *TIE Sept. 2020 7451-7460*
- Enhanced Model Predictive Torque Control of Fault-Tolerant Five-Phase Permanent Magnet Synchronous Motor With Harmonic Restraint and Voltage Preselection. *Huang, W.*, +, *TIE Aug. 2020 6259-6269*
- Extension of Space-Vector-Signal-Injection-Based MTPA Control Into SVPWM Fault-Tolerant Operation for Five-Phase IPMSM. *Chen, Q.*, +, *TIE Sept. 2020 7321-7333*

Fault-Estimation-Based Output-Feedback Adaptive FTC for Uncertain Nonlinear Systems With Actuator Faults. *Zhang, L.*, +, *TIE April 2020 3065-3075*

Field-Oriented Control of Multiphase Drives With Passive Fault Tolerance. *Prieto, I.G.*, +, *TIE Sept. 2020 7228-7238*

Finite-Control-Set MPC for Open-Phase Fault-Tolerant Control of PM Synchronous Motor Drives. *Kiselev, A.*, +, *TIE June 2020 4444-4452*

Model-Based Fault Tolerant Control for the Thermal Management of PEMFC Systems. *Yan, C.*, +, *TIE April 2020 2875-2884*

Reliable Winding-Based DC-Bus Capacitor Discharge Technique Over Full-Speed Range for IPMSM Drive in Electric Vehicles Without Position Sensor. *Gong, C.*, +, *TIE Oct. 2020 8131-8142*

Simultaneous Fault Estimation for Markovian Jump Systems With Generally Uncertain Transition Rates: A Reduced-Order Observer Approach. *Li, X.*, +, *TIE Sept. 2020 7889-7897*

Single-Index Open-Phase Fault Detection Method for Six-Phase Electric Drives. *Garcia-Entrambasaguas, P.*, +, *TIE Dec. 2020 10233-10242*

Feature extraction

A Multiperson Behavior Feature Generation Model Based on Noise Reduction Using WiFi. *Wenyuan, L.*, +, *TIE June 2020 5179-5186*

A Novel Application of Deep Belief Networks in Learning Partial Discharge Patterns for Classifying Corona, Surface, and Internal Discharges. *Karimi, M.*, +, *TIE April 2020 3277-3287*

A Prognostic Model Based on DBN and Diffusion Process for Degrading Bearing. *Hu, C.*, +, *TIE Oct. 2020 8767-8777*

A Reinforced k -Nearest Neighbors Method With Application to Chatter Identification in High-Speed Milling. *Shi, F.*, +, *TIE Dec. 2020 10844-10855*

An Incorrect Data Detection Method for Big Data Cleaning of Machinery Condition Monitoring. *Xu, X.*, +, *TIE March 2020 2326-2336*

Broad Convolutional Neural Network Based Industrial Process Fault Diagnosis With Incremental Learning Capability. *Yu, W.*, +, *TIE June 2020 5081-5091*

Data-Driven Fault Diagnosis Method Based on Compressed Sensing and Improved Multiscale Network. *Hu, Z.*, +, *TIE April 2020 3216-3225*

Deep Learning Approaches on Pedestrian Detection in Hazy Weather. *Li, G.*, +, *TIE Oct. 2020 8889-8899*

Fault Diagnosis Using Adaptive Multifractal Detrended Fluctuation Analysis. *Du, W.*, +, *TIE March 2020 2272-2282*

Image Superresolution via Dense Discriminative Network. *Ma, J.*, +, *TIE July 2020 5687-5695*

Improved Classification Scheme Using Fused Wavelet Packet Transform Based Features for Intelligent Myoelectric Prostheses. *Pancholi, S.*, +, *TIE Oct. 2020 8517-8525*

Macroscopic–Microscopic Attention in LSTM Networks Based on Fusion Features for Gear Remaining Life Prediction. *Qin, Y.*, +, *TIE Dec. 2020 10865-10875*

Salient Object Detection by Spatiotemporal and Semantic Features in Real-Time Video Processing Systems. *Fang, Y.*, +, *TIE Nov. 2020 9893-9903*

SCSCN: A Separated Channel-Spatial Convolution Net With Attention for Single-View Reconstruction. *Ma, J.*, +, *TIE Oct. 2020 8649-8658*

SDDNet: Real-Time Crack Segmentation. *Choi, W.*, +, *TIE Sept. 2020 8016-8025*

Sparse Template-Based 6-D Pose Estimation of Metal Parts Using a Monocular Camera. *He, Z.*, +, *TIE Jan. 2020 390-401*

Sparsity-Based Algorithm for Condition Assessment of Rotating Machinery Using Internal Encoder Data. *Ding, C.*, +, *TIE Sept. 2020 7982-7993*

Feature selection

Authoring New Haptic Textures Based on Interpolation of Real Textures in Affective Space. *Hassan, W.*, +, *TIE Jan. 2020 667-676*

Feedback

A Feedback-Based Passive Islanding Detection Technique for One-Cycle-Controlled Single-Phase Inverter Used in Photovoltaic Systems. *Reddy, V.R.*, +, *TIE Aug. 2020 6541-6549*

A Model-Free Control Strategy for Vehicle Lateral Stability With Adaptive Dynamic Programming. *Sun, W.*, +, *TIE Dec. 2020 10693-10701*

A Modular Wearable Finger Interface for Cutaneous and Kinesthetic Interaction: Control and Evaluation. *Chinello, F.*, +, *TIE Jan. 2020 706-716*

A New Self-Organizing Fuzzy Cerebellar Model Articulation Controller for Uncertain Nonlinear Systems Using Overlapped Gaussian Membership Functions. *Huynh, T.*, +, *TIE Nov. 2020 9671-9682*

A Novel Degradation Modeling and Prognostic Framework for Closed-Loop Systems With Degrading Actuator. *Si, X.*, +, *TIE Nov. 2020 9635-9647*

A Novel Geometric Hierarchical Approach for Dynamic Visual Servoing of Quadrotors. *Zhang, X.*, +, *TIE May 2020 3840-3849*

A Pedagogical Study of Aerodynamic Feedback Control by Dielectric Barrier Discharge Plasma. *Kwan, P.W.*, +, *TIE Jan. 2020 451-460*

Adaptive Neural Network Control of Underactuated Surface Vessels With Guaranteed Transient Performance: Theory and Experimental Results. *Chen, L.*, +, *TIE May 2020 4024-4035*

Bridgeless Triple-Mode Resonant AC–DC Converter: Dynamic Modeling and Controls. *Kim, S.*, +, *TIE June 2020 4921-4933*

Composite Disturbance Rejection Attitude Control for Quadrotor With Unknown Disturbance. *Zhao, K.*, +, *TIE Aug. 2020 6894-6903*

Control of a Soft Inchworm Robot With Environment Adaptation. *Cao, J.*, +, *TIE May 2020 3809-3818*

Design of Robust Discretized Sliding Mode Controller: Analysis and Application to Buck Converters. *Cheng, Y.*, +, *TIE Dec. 2020 10672-10681*

Dual-Loop-Based Harmonic Current Control Strategy and Admittance Modeling for a Multimodular Parallel SAPFs System. *Liu, K.*, +, *TIE July 2020 5456-5466*

Dynamics-Level Finite-Time Fuzzy Monocular Visual Servo of an Unmanned Surface Vehicle. *Wang, N.*, +, *TIE Nov. 2020 9648-9658*

Electromagnetic Torque-Based Model Reference Adaptive System Speed Estimator for Sensorless Surface Mount Permanent Magnet Synchronous Motor Drive. *Prabhakaran, K.K.*, +, *TIE July 2020 5936-5947*

Error-Bounded Reference Tracking MPC for Machines With Structural Flexibility. *Yuan, M.*, +, *TIE Oct. 2020 8143-8154*

Extended State Filter Based Disturbance and Uncertainty Mitigation for Nonlinear Uncertain Systems With Application to Fuel Cell Temperature Control. *Xue, W.*, +, *TIE Dec. 2020 10682-10692*

Fault-Estimation-Based Output-Feedback Adaptive FTC for Uncertain Nonlinear Systems With Actuator Faults. *Zhang, L.*, +, *TIE April 2020 3065-3075*

Feedback Control of Multiphase Induction Machines With Backstepping Technique. *Morawiec, M.*, +, *TIE June 2020 4305-4314*

Finite-Time Adaptive Quantized Control of Stochastic Nonlinear Systems With Input Quantization: A Broad Learning System Based Identification Method. *Sui, S.*, +, *TIE Oct. 2020 8555-8565*

Flexible 3-D Helix Fabrication by In-Situ SEM Micromanipulation System. *Wang, P.*, +, *TIE July 2020 5565-5574*

Flux-Controlled Hybrid Reluctance Actuator for High-Precision Scanning Motion. *Ito, S.*, +, *TIE Nov. 2020 9593-9600*

From Battery Cell to Electrodes: Real-Time Estimation of Charge and Health of Individual Battery Electrodes. *Dey, S.*, +, *TIE March 2020 2167-2175*

Full-Order Observer for a Class of Nonlinear Systems With Unmatched Uncertainties: Joint Attractive Ellipsoid and Sliding Mode Concepts. *Sanchez, B.*, +, *TIE July 2020 5677-5686*

High-Accuracy Quartz Crystal Resonance DP Instrument. *Nie, J.*, +, *TIE Sept. 2020 8026-8033*

Homopolar Bearingless Slice Motor With Flux-Biasing Halbach Arrays. *Noh, M.*, +, *TIE Sept. 2020 7757-7766*

Improve Disturbance-Rejection Performance for an Equivalent-Input-Disturbance-Based Control System by Incorporating a Proportional-Integral Observer. *Wu, M.*, +, *TIE Feb. 2020 1254-1260*

Improving Dynamic Performance of Boost PFC Converter Using Current-Harmonic Feedforward Compensation in Synchronous Reference Frame. *Li, S.*, +, *TIE June 2020 4857-4866*

Input-to-State Stable Bilateral Teleoperation by Dynamic Interconnection and Damping Injection: Theory and Experiments. *Yang, Y.*, +, *TIE Jan. 2020 790-799*

Model Predictive Adaptive Constraint Tracking Control for Underwater Vehicles. *Gan, W.*, +, *TIE Sept. 2020 7829-7840*

- MPC Inspired Dynamical Output Feedback and Adaptive Feedforward Control Applied to Piezo-Actuated Positioning Systems. *Nguyen, M.L.*, +, *TIE May 2020 3921-3931*
- Online Feedback Dead Time Compensation Strategy for Three-Level T-Type Inverters. *Wang, D.*, +, *TIE Sept. 2020 7260-7268*
- Operating-Point Tracking Method for Sensorless Induction Motor Stability Enhancement in Low-Speed Regenerating Mode. *Luo, C.*, +, *TIE May 2020 3386-3397*
- Optimal Input and Output Power Quality Control of Single-Phase AC–DC–DC Converter With Significant DC-Link Voltage Ripple. *Meng, L.*, +, *TIE Dec. 2020 10366-10376*
- Optimal Tracking With Disturbance Rejection of Voltage Source Inverters. *Teng, J.*, +, *TIE June 2020 4957-4968*
- Output Feedback Adaptive Motion Control and Its Experimental Verification for Time-Delay Nonlinear Systems With Asymmetric Hysteresis. *Zhang, X.*, +, *TIE Aug. 2020 6824-6834*
- Output Feedback Control of Uncertain Hydraulic Servo Systems. *Na, J.*, +, *TIE Jan. 2020 490-500*
- Output-Constrained Robust Sliding Mode Based Nonlinear Active Suspension Control. *Rath, J.J.*, +, *TIE Dec. 2020 10652-10662*
- Perceptually Correct Haptic Rendering in Mid-Air Using Ultrasound Phased Array. *Raza, A.*, +, *TIE Jan. 2020 736-745*
- Precise Active Brake-Pressure Control for a Novel Electro-Booster Brake System. *Zhao, J.*, +, *TIE June 2020 4774-4784*
- Rate Bumpless Transfer Control for Switched Linear Systems With Stability and Its Application to Aero-Engine Control Design. *Zhao, Y.*, +, *TIE June 2020 4900-4910*
- Robust PMDC Motor Control for Accurate Wire Feeding in GMAW Using Back EMF. *Paul, A.K.*, *TIE Jan. 2020 413-420*
- Sensorless Optimal Commutation Steady Speed Control Method for a Non-ideal Back-EMF BLDC Motor Drive System Including Buck Converter. *Chen, X.*, +, *TIE July 2020 6147-6157*
- Single-Cycle-Lag Compensator-Based Active Damping for Digitally Controlled LCL/LLCL-Type Grid-Connected Inverters. *Miao, Z.*, +, *TIE March 2020 1980-1990*
- Small-Signal Modeling of the Incremental Optical Encoder for Motor Control. *Vazquez-Gutierrez, Y.*, +, *TIE May 2020 3452-3461*
- Spatial Inductance Estimation for Current Loop Auto-Tuning in IPMSM Self-Commissioning. *Erturk, F.*, +, *TIE May 2020 3911-3920*
- Tuning of Digital PID Controllers Using Particle Swarm Optimization Algorithm for a CAN-Based DC Motor Subject to Stochastic Delays. *Qi, Z.*, +, *TIE July 2020 5637-5646*
- UDE-Based Robust Output Feedback Control With Applications to a Piezoelectric Stage. *Ren, B.*, +, *TIE Sept. 2020 7819-7828*
- Uncertainty and Disturbance Estimator-Based Control of a Flapping-Wing Aerial Vehicle With Unknown Backlash-Like Hysteresis. *Yin, Z.*, +, *TIE June 2020 4826-4835*
- Feedforward**
- dq* Synchronous Reference Frame Model of A Series–Series Tuned Inductive Power Transfer System. *Lee, S.*, +, *TIE Dec. 2020 10325-10334*
- A Closed-Loop Modulation Scheme for Duty Cycle Compensation of PWM Voltage Distortion at High Switching Frequency Inverter. *Ren, R.*, +, *TIE Feb. 2020 1475-1486*
- A Simple Feedforward Approach to Stabilize VSI-Fed Induction Motor With Filter in RFOC. *Mishra, P.*, +, *TIE Dec. 2020 10191-10201*
- ADRC-Based Current Control for Grid-Tied Inverters: Design, Analysis, and Verification. *Cao, Y.*, +, *TIE Oct. 2020 8428-8437*
- An Output Capacitorless Low-Dropout Regulator With a Low- V_{DD} Inverting Buffer for the Mobile Application. *Park, J.*, +, *TIE Oct. 2020 8931-8935*
- Control of a Bowden-Cable Actuation System With Embedded BoASensor for Soft Wearable Robots. *Jeong, U.*, +, *TIE Sept. 2020 7669-7680*
- Control of a Soft Inchworm Robot With Environment Adaptation. *Cao, J.*, +, *TIE May 2020 3809-3818*
- Current Harmonics Suppression Strategy for PMSM With Nonsinusoidal Back-EMF Based on Adaptive Linear Neuron Method. *Wang, L.*, +, *TIE Nov. 2020 9164-9173*
- Design and Control of a Piezoelectrically Actuated Fast Tool Servo for Diamond Turning of Microstructured Surfaces. *Zhu, Z.*, +, *TIE Aug. 2020 6688-6697*
- Dual-Loop-Based Harmonic Current Control Strategy and Admittance Modeling for a Multimodular Parallel SAPFs System. *Liu, K.*, +, *TIE July 2020 5456-5466*
- Flexible 3-D Helix Fabrication by In-Situ SEM Micromanipulation System. *Wang, P.*, +, *TIE July 2020 5565-5574*
- Flux-Controlled Hybrid Reluctance Actuator for High-Precision Scanning Motion. *Ito, S.*, +, *TIE Nov. 2020 9593-9600*
- High-Accuracy Dynamic Load Emulation Method for Electrical Drives. *de Oliveira, C.M.R.*, +, *TIE Sept. 2020 7239-7249*
- ILC-Based Voltage Compensation Method for PMSM Sensorless Control Considering Inverter Nonlinearity and Sampling Current DC Bias. *Wang, Y.*, +, *TIE July 2020 5980-5989*
- Improved Reweighted Zero-Attracting Quaternion-Valued LMS Algorithm for Islanded Distributed Generation System at IM Load. *Kewat, S.*, +, *TIE May 2020 3705-3716*
- Improving Dynamic Performance of Boost PFC Converter Using Current-Harmonic Feedforward Compensation in Synchronous Reference Frame. *Li, S.*, +, *TIE June 2020 4857-4866*
- Integrated Coordinated/Synchronized Contouring Control of a Dual-Linear-Motor-Driven Gantry. *Chen, Z.*, +, *TIE May 2020 3944-3954*
- MPC Inspired Dynamical Output Feedback and Adaptive Feedforward Control Applied to Piezo-Actuated Positioning Systems. *Nguyen, M.L.*, +, *TIE May 2020 3921-3931*
- Optimal Input and Output Power Quality Control of Single-Phase AC–DC–DC Converter With Significant DC-Link Voltage Ripple. *Meng, L.*, +, *TIE Dec. 2020 10366-10376*
- Precise Active Brake-Pressure Control for a Novel Electro-Booster Brake System. *Zhao, J.*, +, *TIE June 2020 4774-4784*
- Repetitive Control Meets Continuous Zero Phase Error Tracking Controller for Precise Tracking of B-Spline Trajectories. *Biagiotti, L.*, +, *TIE Sept. 2020 7808-7818*
- Signal Compensation Based Adaptive Cascade Control for Regrinding Processes. *Wang, L.*, +, *TIE Oct. 2020 8732-8742*
- Underwater Bioinspired Propulsion: From Inspection to Manipulation. *Wang, Y.*, +, *TIE Sept. 2020 7629-7638*
- Weak Grid Intertie WEGS With Hybrid Generalized Integrator for Power Quality Improvement. *Chishti, F.*, +, *TIE Feb. 2020 1113-1123*
- Feedforward neural networks**
- Light Sensor Based Occupancy Estimation via Bayes Filter With Neural Networks. *Chen, Z.*, +, *TIE July 2020 5787-5797*
- Fermentation**
- Data-Driven Batch-End Quality Modeling and Monitoring Based on Optimized Sparse Partial Least Squares. *Jiang, Q.*, +, *TIE May 2020 4098-4107*
- Ferrites**
- A Multiphysics Design and Optimization Method for Air-Core Planar Transformers in High-Frequency LLC Resonant Converters. *Ho, G.K.Y.*, +, *TIE Feb. 2020 1605-1614*
- Ferromagnetic materials**
- A New Calibration Method for Triaxial Fluxgate Magnetometer Based on Magnetic Shielding Room. *Pan, D.*, +, *TIE May 2020 4183-4192*
- Fiber optic sensors**
- A High-Resolution Triaxial Catheter Tip Force Sensor With Miniature Flexure and Suspended Optical Fibers. *Li, T.*, +, *TIE June 2020 5101-5111*
- Disposable FBG-Based Tridirectional Force/Torque Sensor for Aspiration Instruments in Neurosurgery. *Li, T.*, +, *TIE April 2020 3236-3247*
- Field effect transistor switches**
- 1-kV Input 1-MHz GaN Stacked Bridge LLC Converters. *Zhang, Z.*, +, *TIE Nov. 2020 9227-9237*
- Field effect transistors**
- A Fault-Tolerant Wideband Amplifier Based on Distributed Amplification Topology. *Zheng, S.Y.*, +, *TIE June 2020 4516-4526*
- A High-Power-Density Converter With a Continuous Input Current Waveform for Satellite Power Applications. *Lee, N.*, +, *TIE Feb. 2020 1024-1035*

Analysis and Design of a 1-MHz Bidirectional Multi-*CLLC* Resonant DC–DC Converter With GaN Devices. Wang, Y., +, *TIE Feb. 2020 1425-1434*
 Drive-Current-Free Switch With Internal Transduction in a Magneto Piezo-Electronic Transistor. Xue, F., +, *TIE April 2020 3257-3266*

Field programmable gate arrays

A Class D Power Amplifier for Multifrequency Eddy Current Testing Based on Multisimultaneous-Frequency Selective Harmonic Elimination Pulse-width Modulation. Tao, Y., +, *TIE Oct. 2020 8799-8807*

A Cooperative Adaptive Droop Based Energy Management and Optimal Voltage Regulation Scheme for DC Microgrids. Sahoo, S., +, *TIE April 2020 2894-2904*

A Flattened-Priority Framework for Mixed-Criticality Systems. Li, Z., +, *TIE Nov. 2020 9862-9872*

A Multimode Transverse Dynamic Force Microscope—Design, Identification, and Control. Zhang, K., +, *TIE June 2020 4729-4740*

Adaptive Time-Stepping Universal Line and Machine Models for Real Time and Faster-Than-Real-Time Hardware Emulation. Duan, T., +, *TIE Aug. 2020 6173-6182*

Carrier-Based PWM Equivalent to Multilevel Multiphase Space Vector PWM Techniques. Lopez, O., +, *TIE July 2020 5220-5231*

Digital Battery Management Design for Point-of-Load Applications With Cell Balancing. Yang, Y., +, *TIE Aug. 2020 6365-6375*

Electromagnetic Torque-Based Model Reference Adaptive System Speed Estimator for Sensorless Surface Mount Permanent Magnet Synchronous Motor Drive. Prabhakaran, K.K., +, *TIE July 2020 5936-5947*

Electrothermal Transient Behavioral Modeling of Thyristor-Based Ultrafast Mechatronic Circuit Breaker for Real-Time DC Grid Emulation. Lin, N., +, *TIE March 2020 1660-1670*

Embedded Hardware Artificial Neural Network Control for Global and Real-Time Imbalance Current Suppression of Parallel Connected IGBTs. Zeng, X., +, *TIE March 2020 2186-2196*

FPGA-Based Stochastic Activity Networks for Online Reliability Monitoring. Garro, U., +, *TIE June 2020 5000-5011*

Generalized Space Vector Modulation for Current Source Converter in Continuous and Discontinuous Current Modes. Guo, X., +, *TIE Nov. 2020 9348-9357*

High-Speed AFM Imaging of Nanopositioning Stages Using H_{∞} and Iterative Learning Control. Xie, H., +, *TIE March 2020 2430-2439*

Parallel Implementation of Model Predictive Control for Multilevel Cascaded H-Bridge STATCOM With Linear Complexity. Zhang, Y., +, *TIE Feb. 2020 832-841*

Power Electronic Converter Based Flexible Transmission Line Emulation. Dutta, S., +, *TIE Aug. 2020 6195-6205*

Precise Phase Demodulation Algorithm for Sinusoidal Encoders and Resolvers. Ye, G., +, *TIE Oct. 2020 8778-8787*

Real-Time Servo Press Force Estimation Based on Dual Particle Filter. Olaizola, J., +, *TIE May 2020 4088-4097*

Real-Time Simulation of Power Electronic Systems Based on Predictive Behavior. Liu, C., +, *TIE Sept. 2020 8044-8053*

Single-Phase Z_{AC} -Source AC–AC Converter With High Buck and Boost Voltage Conversion Capability. Rahman, K., +, *TIE Nov. 2020 9251-9259*

Filament lamps

Energy-Efficient Supplemental LED Lighting Control for a Proof-of-Concept Greenhouse System. Jiang, J., +, *TIE April 2020 3033-3042*

Filled polymers

Flexible 1–3 Composite Ultrasound Transducers With Silver-Nanowire-Based Stretchable Electrodes. Kim, T., +, *TIE Aug. 2020 6955-6962*

Filtering theory

A Game Approach to Distributed Robust Optimal Filtering With Consensus Through Multiple Sensors: Theory and Application. Feng, Y., +, *TIE Nov. 2020 9693-9702*

A Novel Orientation Recursive Algorithm Aiming at Catastrophe Signals in MWD. Yang, J., +, *TIE Nov. 2020 9683-9692*

Broadband Mode Decomposition and Its Application to the Quality Evaluation of Welding Inverter Power Source Signals. Peng, Y., +, *TIE Nov. 2020 9734-9746*

Extended State Filter Based Disturbance and Uncertainty Mitigation for Nonlinear Uncertain Systems With Application to Fuel Cell Temperature Control. Xue, W., +, *TIE Dec. 2020 10682-10692*

Fast Self-Alignment Technology for Hybrid Inertial Navigation Systems Based on a New Two-Position Analytic Method. Liu, B., +, *TIE April 2020 3226-3235*

High-Performance Selective and Output Filter Techniques for Sensorless Direct Position and Speed Estimation. Preindl, M., *TIE July 2020 6000-6009*

Is Using A Complex Control Gain in Three-Phase FLLs Reasonable?. Golestan, S., +, *TIE March 2020 2480-2484*

Sequential Fusion Estimation for Networked Multisensor Nonlinear Systems. Zhang, W., +, *TIE June 2020 4991-4999*

Sparsity-Based Algorithm for Condition Assessment of Rotating Machinery Using Internal Encoder Data. Ding, C., +, *TIE Sept. 2020 7982-7993*

Visual Tracking via Auto-Encoder Pair Correlation Filter. Cheng, X., +, *TIE April 2020 3288-3297*

WAVE-Based Short-Range Vehicular Localization Through Vector Match. Zhang, J., +, *TIE Jan. 2020 592-600*

Finite element analysis

A 2-DOF Monolithic Compliant Rotation Platform Driven by Piezoelectric Actuators. Liang, C., +, *TIE Aug. 2020 6963-6974*

A Brushless Doubly Fed Generator Based on Permanent Magnet Field Modulation. Zhang, J., +, *TIE May 2020 3505-3516*

A Full 360° Measurement Range Liquid Capacitive Inclinometer With a Triple- Eccentric-Ring Sensing Element and Differential Detection Scheme. Hou, B., +, *TIE May 2020 4216-4225*

A New Hybrid Model for Electromechanical Characteristic Analysis Under SISC in Synchronous Generators. He, Y., +, *TIE March 2020 2348-2359*

A New Relieving-DC-Saturation Hybrid Excitation Vernier Machine for HEV Starter Generator Application. Zhao, X., +, *TIE Aug. 2020 6342-6353*

A New Slot-PM Vernier Reluctance Machine With Enhanced Zero-Sequence Current Excitation for Electric Vehicle Propulsion. Zhao, X., +, *TIE May 2020 3528-3539*

A Novel Concept of Ribless Synchronous Reluctance Motor for Enhanced Torque Capability. Bao, Y., +, *TIE April 2020 2553-2563*

A Novel Electrodynamic Reaction Sphere Prototype for Spacecraft Attitude Control. Huai, Z., +, *TIE May 2020 3879-3890*

A Novel Hybrid-Magnetic-Circuit Variable Flux Memory Machine. Yang, H., +, *TIE July 2020 5258-5268*

A Turn Fault Mitigation Strategy Based on Current Injection Technique for a Triple Three-Phase PMA SynRM. Wang, B., +, *TIE April 2020 2511-2522*

Analysis and Reduction of On-Load DC Winding Induced Voltage in Wound Field Switched Flux Machines. Wu, Z., +, *TIE April 2020 2655-2666*

Analysis of PM Eddy Current Loss in Four-Phase Fault-Tolerant Flux-Switching Permanent-Magnet Machines by Air-Gap Magnetic Field Modulation Theory. Zhao, W., +, *TIE July 2020 5369-5378*

Analysis of Stator Slots and Rotor Pole Pairs Combinations of Rotor-Permanent Magnet Flux-Switching Machines. Su, P., +, *TIE Feb. 2020 906-918*

Analysis of Zeroth-Mode Slot Frequency Vibration of Integer Slot Permanent-Magnet Synchronous Motors. Wang, S., +, *TIE April 2020 2954-2964*

Analytical Modeling of 3-D Magnetic Field and Performance in Magnetic Lead Screws Accounting for Magnetization Pattern. Gao, F., +, *TIE June 2020 4785-4796*

Analytical Modeling of Misalignment in Axial Flux Permanent Magnet Machine. Guo, B., +, *TIE June 2020 4433-4443*

Analytical Prediction and Multiconstrained Nonlinear Optimization of Slotted Linear PM Motors Taking Into Account Two-Dimensional End Effects. Min, S.G., +, *TIE April 2020 2965-2976*

Characteristics Analysis of the Motions of the Two-Degree-of-Freedom Direct Drive Induction Motor. Xie, L., +, *TIE Feb. 2020 931-941*

Comparative Analysis of Flux Reversal Permanent Magnet Machines With Toroidal and Concentrated Windings. Li, H., +, *TIE July 2020 5278-5290*

Computer Modeling of the Eddy Current Losses of Metal Fasteners in Rotor Slots of a Large Nuclear Steam Turbine Generator Based on Finite-Element Method and Deep Gaussian Process Regression. Zhao, J., +, *TIE July 2020 5349-5359*

- Considering Operating Point Variation in 3-D Analytical Charge Model Used for Design of Low-Stiffness Permanent Magnet Vibration Isolator. *Li, J.*, +, *TIE Aug. 2020 6732-6741*
- Design and Analysis of a New Parallel-Hybrid-Excited Machine With Harmonic-Shift Structure. *Cao, L.*, +, *TIE March 2020 1759-1770*
- Design and Analysis of New Five-Phase Flux-Intensifying Fault-Tolerant Interior-Permanent-Magnet Motor for Sensorless Operation. *Zhang, L.*, +, *TIE July 2020 6055-6065*
- Design and Analysis of Novel Asymmetric-Stator-Pole Flux Reversal PM Machine. *Yang, H.*, +, *TIE Jan. 2020 101-114*
- Design and Characteristics Analysis of Coaxial Magnetic Gear for Contra-Rotating Propeller in Yacht. *Shin, H.*, +, *TIE Sept. 2020 7250-7259*
- Design and Control of a Piezoelectrically Actuated Fast Tool Servo for Diamond Turning of Microstructured Surfaces. *Zhu, Z.*, +, *TIE Aug. 2020 6688-6697*
- Design and Evaluation of a Short-Circuit Rotor-Ring for Enhanced Self-Sensing Capability in a Slotless PM Motor. *Millinger, J.*, +, *TIE May 2020 3462-3471*
- Design and Optimization of a Novel Dual-Port Linear Generator for Oceanic Wave Energy Conversion. *Farrok, O.*, +, *TIE May 2020 3409-3418*
- Design and Optimization of Halbach-Array PM Rotor for High-Speed Axial-Flux Permanent Magnet Machine With Ironless Stator. *Zhang, Z.*, +, *TIE Sept. 2020 7269-7279*
- Design and Performance Study of a Brushless Doubly Fed Generator Based on Differential Modulation. *Cheng, Y.*, +, *TIE Dec. 2020 10024-10034*
- Design and Trajectory Tracking of a Nanometric Ultra-Fast Tool Servo. *Zhu, Z.*, +, *TIE Jan. 2020 432-441*
- Design Considerations of Fault-Tolerant Permanent Magnet Vernier Machine. *Zhao, W.*, +, *TIE Sept. 2020 7290-7300*
- Design of a New Fault-Tolerant Permanent Magnet Machine With Optimized Salient Ratio and Reluctance Torque Ratio. *Chen, Q.*, +, *TIE July 2020 6043-6054*
- Design of a New Relieving-DC-Saturation Hybrid Reluctance Machine for Fault-Tolerant In-Wheel Direct Drive. *Zhao, X.*, +, *TIE Nov. 2020 9571-9581*
- Design of New Dual-Stator Field Modulation Machines. *Wang, H.*, +, *TIE July 2020 5626-5636*
- Design, Analysis, and Control of an XY Parallel Nanomanipulator With Multiple Actuation Modes. *Yang, X.*, +, *TIE Sept. 2020 7639-7648*
- Detent-Force Minimization of Double-Sided Permanent Magnet Linear Synchronous Motor by Shifting One of the Primary Components. *Huang, X.Z.*, +, *TIE Jan. 2020 180-191*
- Development of a Three-Dimensional Magnetic Equivalent Circuit Model for Axial Flux Machines. *Alipour-Sarabi, R.*, +, *TIE July 2020 5758-5767*
- Digital Current Control of an Asymmetrical Dual Three-Phase Flux-Switching Permanent Magnet Machine. *Hu, M.*, +, *TIE June 2020 4281-4291*
- Dual-Pulse Mode Control of a High-Speed Doubly Salient Electromagnetic Machine for Loss Reduction and Speed Range Extension. *Yu, L.*, +, *TIE June 2020 4391-4401*
- Dynamic Performance Improvement of Doubly Salient Brushless DC Generator System With Controlled Rectifier. *Xu, Y.*, +, *TIE Oct. 2020 8209-8218*
- Effect Comparison of Zigzag Skew PM Pole and Straight Skew Slot for Vibration Mitigation of PM Brush DC Motors. *Wang, S.*, +, *TIE June 2020 4752-4761*
- Effect of Laser Cutting on Core Losses in Electrical Machines—Measurements and Modeling. *Sundaria, R.*, +, *TIE Sept. 2020 7354-7363*
- Effects of Magnet Shape on Torque Capability of Surface-Mounted Permanent Magnet Machine for Servo Applications. *Zeng, Y.*, +, *TIE April 2020 2977-2990*
- Electromagnetic Force and Vibration Study on Axial Flux Permanent Magnet Synchronous Machines With Dual Three-Phase Windings. *Lu, Y.*, +, *TIE Jan. 2020 115-125*
- Electromagnetic Vibration Analysis of High-Speed Permanent Magnet Synchronous Machines With Amorphous Metal Stator Cores Considering Current Harmonics. *Wu, S.*, +, *TIE Dec. 2020 10156-10167*
- Electrothermal-Based Junction Temperature Estimation Model for Converter of Switched Reluctance Motor Drive System. *Chen, H.*, +, *TIE Feb. 2020 874-883*
- Experimental Analysis and Optimization of a Contactless Eddy-Current-Based Speed Sensor for Smooth Conductive Surfaces. *Gong, C.*, +, *TIE Oct. 2020 8817-8828*
- Fast Iron Loss and Thermal Prediction Method for Power Density and Efficiency Improvement in Switched Reluctance Machines. *Ge, L.*, +, *TIE June 2020 4463-4473*
- Filling Force Valley With Interpoles for Pole-Frequency Vibration Reduction in Surface-Mounted PM Synchronous Machines. *Wang, S.*, +, *TIE Aug. 2020 6709-6720*
- Flux-Focusing Permanent Magnet Machines With Modular Consequent-Pole Rotor. *Li, J.*, +, *TIE May 2020 3374-3385*
- Gradient-Enhanced Electromagnetic Actuation System With a New Core Shape Design for Microrobot Manipulation. *Li, D.*, +, *TIE June 2020 4700-4710*
- Harmonic Analysis of Air Gap Magnetic Field in Flux-Modulation Double-Stator Electrical-Excitation Synchronous Machine. *Wang, Y.*, +, *TIE July 2020 5302-5312*
- High-Speed Permanent Magnet Synchronous Motor Iron Loss Calculation Method Considering Multiphysics Factors. *Liu, G.*, +, *TIE July 2020 5360-5368*
- Hybrid PWM Scheme for Pole-Phase Modulation Induction Motor Drive Using Carrier-Based Hexagonal and Octadecagonal SVPWM. *Janaki Ramaiah, V.*, +, *TIE Sept. 2020 7312-7320*
- Impact of Rebar and Concrete on Power Dissipation of Wireless Power Transfer Systems. *Lee, S.*, +, *TIE Jan. 2020 276-287*
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- Magnetic Design Aspects of the Trans-Rotary Magnetic Gear Using Quasi-Halbach Arrays. *Jenney, K.*, +, *TIE Nov. 2020 9582-9592*
- Magnetic Field Analysis and Flux Barrier Design for Modular Permanent Magnet Linear Synchronous Motor. *Tan, Q.*, +, *TIE May 2020 3891-3900*
- Magnetic Field Analysis of an Iron-Cored Tiered Type Permanent Magnet Spherical Motor Using Modified Dynamic Reluctance Mesh Method. *Chai, F.*, +, *TIE Aug. 2020 6742-6751*
- Measurement of Liquid Film Thickness Using Distributed Conductance Sensor in Multiphase Slug Flow. *Wang, D.*, +, *TIE Oct. 2020 8841-8850*
- Modeling, Design, and Validation of Magnetic Hysteresis Motors. *Galluzzi, R.*, +, *TIE Feb. 2020 1171-1179*
- Multifidelity Surrogate Assisted Rapid Design of Transverse-Flux Permanent Magnet Linear Synchronous Motor. *Ahmed, S.*, +, *TIE Sept. 2020 7280-7289*
- Multilayer Fractional Slot Pole-Phase Modulated Induction Motor Drives for Traction Applications. *Reddy, B.P.*, +, *TIE Nov. 2020 9112-9119*
- Multiojective Deterministic and Robust Optimization Design of a New Spoke-Type Permanent Magnet Machine for the Improvement of Torque Performance. *Liu, G.*, +, *TIE Dec. 2020 10202-10212*
- Multiojective Optimization of a Double-Side Linear Vernier PM Motor Using Response Surface Method and Differential Evolution. *Zhao, W.*, +, *TIE Jan. 2020 80-90*
- Multiojective Optimization of a Tubular Coreless LPMSM Based on Adaptive Multiojective Black Hole Algorithm. *Wu, T.*, +, *TIE May 2020 3901-3910*
- Multiojective System Level Optimization Method for Switched Reluctance Motor Drive Systems Using Finite-Element Model. *Diao, K.*, +, *TIE Dec. 2020 10055-10064*
- Novel Current Profile of Switched Reluctance Machines for Torque Density Enhancement in Low-Speed Applications. *Huang, L.*, +, *TIE Nov. 2020 9623-9634*
- Numerical Analysis of Turn-to-Turn Short Circuit Current Mitigation for Concentrated Winding Permanent Magnet Machines With Series and Parallel Connected Windings. *Xu, Y.*, +, *TIE Nov. 2020 9101-9111*

On the Suppression of the Backward Motion of a Piezo-Driven Precision Positioning Platform Designed by the Parasitic Motion Principle. *Yang, Z.*, +, *TIE May 2020 3870-3878*

On-Load Field Prediction in SPM Machines by a Subdomain and Magnetic Circuit Hybrid Model. *Wu, L.*, +, *TIE Sept. 2020 7190-7201*

Optimization and Performance Improvement of a Hybrid Excitation Synchronous Machine With Modular Magnetic-Shunting Rotor. *Liu, Y.*, +, *TIE June 2020 4381-4390*

Performance Comparison Between PCB-Stator and Laminated-Core-Stator-Based Designs of Axial Flux Permanent Magnet Motors for High-Speed Low-Power Applications. *S., N.*, +, *TIE July 2020 5269-5277*

Permanent-Magnet Machine Flux and Torque Response Under the Influence of Turn Fault. *Hsu, C.*, +, *TIE Jan. 2020 169-179*

Power Loss and Thermal Analysis for High-Power High-Speed Permanent Magnet Machines. *Du, G.*, +, *TIE April 2020 2722-2733*

Pre- and Postfault Current Control of Dual Three-Phase Reluctance Synchronous Drives. *Eldeeb, H.M.*, +, *TIE May 2020 3361-3373*

Relationship Between Homopolar Inductor Machine and Wound-Field Synchronous Machine. *Ye, C.*, +, *TIE Feb. 2020 919-930*

Research on the Design Method of Uniform Magnetic Field Coil Based on the MSR. *Pan, D.*, +, *TIE Feb. 2020 1348-1356*

Single-Variable-Input Active Sidelobe Suppression Method for Synthesized Magnetic Field Focusing Technology and Its Optimization. *Kim, J.H.*, +, *TIE Nov. 2020 9813-9823*

Sizing Methodology Based on Scaling Laws for a Permanent Magnet Electrical Variable Transmission. *Verbelen, F.*, +, *TIE March 2020 1739-1749*

Thermal Deformation Analysis of Water Cooling Doubly Salient Brushless DC Generator With Stator Field Winding. *Zhang, J.*, +, *TIE April 2020 2700-2710*

Tilting Torque Calculation of a Novel Tiered Type Permanent Magnet Spherical Motor. *Gan, L.*, +, *TIE Jan. 2020 421-431*

Torque Ripple Reduction in Sectorized Multi Three-Phase Machines Based on PWM Carrier Phase Shift. *Wang, X.*, +, *TIE June 2020 4315-4325*

Unified Reduced Model for a Dual-Control Scheme of the High-Speed Response Brushless Excitation System of Synchronous Generators. *Noland, J.K.*, +, *TIE June 2020 4474-4484*

Water Cold Plates for Efficient Cooling: Verified on a Permanent-Magnet Machine With Concentrated Winding. *Fan, X.*, +, *TIE July 2020 5325-5336*

FIR filters

AM Modulation Signal Estimation Allowing Further Research on Sources of Voltage Fluctuations. *Kawalek, P.*, *TIE Aug. 2020 6937-6945*

Data-Driven Modeling and UFIR-Based Outlet NO_x Estimation for Diesel-Engine SCR Systems. *Jiang, K.*, +, *TIE June 2020 5012-5021*

Fusion Kalman and Weighted UFIR State Estimator With Improved Accuracy. *You, S.H.*, +, *TIE Dec. 2020 10713-10722*

High-Performance Selective and Output Filter Techniques for Sensorless Direct Position and Speed Estimation. *Preindl, M.*, *TIE July 2020 6000-6009*

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Performance-Improved Implementation of the SISO Adaptive Predictive Control Algorithm for Embedded Systems. *Cruz-Malagon, I.D.L.*, +, *TIE Sept. 2020 8054-8063*

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Generalized Harmonic Control for CHB Converters With Unbalanced Cells Operation. *Marquez, A.*, +, *TIE Nov. 2020 9039-9047*

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All-Day Mobile Healthcare Monitoring System Based on Heterogeneous Stretchable Sensors for Medical Emergency. *Lee, S.*, +, *TIE Oct. 2020 8808-8816*

Flexible 1–3 Composite Ultrasound Transducers With Silver-Nanowire-Based Stretchable Electrodes. *Kim, T.*, +, *TIE Aug. 2020 6955-6962*

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An Accelerated Recurrent Neural Network for Visual Servo Control of a Robotic Flexible Endoscope With Joint Limit Constraint. *Li, W.*, +, *TIE Dec. 2020 10787-10797*

Cascaded-Extended-State-Observer-Based Sliding-Mode Control for Under-actuated Flexible Joint Robot. *Rsetam, K.*, +, *TIE Dec. 2020 10822-10832*

Distributed Control of Multiple Flexible Manipulators With Unknown Disturbances and Dead-Zone Input. *Chen, T.*, +, *TIE Nov. 2020 9937-9947*

Floating point arithmetic

DenseLightNet: A Light-Weight Vehicle Detection Network for Autonomous Driving. *Chen, L.*, +, *TIE Dec. 2020 10600-10609*

Floods

Early Classification of Alarm Floods via Exponentially Attenuated Component Analysis. *Shang, J.*, +, *TIE Oct. 2020 8702-8712*

Flow batteries

Joint SoC and SoH Estimation for Zinc–Nickel Single-Flow Batteries. *Li, S.*, +, *TIE Oct. 2020 8484-8494*

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A Pedagogical Study of Aerodynamic Feedback Control by Dielectric Barrier Discharge Plasma. *Kwan, P.W.*, +, *TIE Jan. 2020 451-460*

An Intelligent Control Strategy for Iron Ore Sintering Ignition Process Based on the Prediction of Ignition Temperature. *Du, S.*, +, *TIE Feb. 2020 1233-1241*

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Measurement of Liquid Film Thickness Using Distributed Conductance Sensor in Multiphase Slug Flow. *Wang, D.*, +, *TIE Oct. 2020 8841-8850*

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Fault Diagnosis Using Adaptive Multifractal Detrended Fluctuation Analysis. *Du, W.*, +, *TIE March 2020 2272-2282*

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A Tuning Method of Active Disturbance Rejection Control for a Class of High-Order Processes. *He, T.*, +, *TIE April 2020 3191-3201*

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A New Calibration Method for Triaxial Fluxgate Magnetometer Based on Magnetic Shielding Room. *Pan, D.*, +, *TIE May 2020 4183-4192*

Flywheels

Full-Scale Physical Simulator of All SiC Traction Motor Drive With Onboard Supercapacitor ESS for Light-Rail Public Transportation. *Yildirim, D.*, +, *TIE Aug. 2020 6290-6301*

Relationship Between Homopolar Inductor Machine and Wound-Field Synchronous Machine. *Ye, C.*, +, *TIE Feb. 2020 919-930*

Spacecraft Vibration Control Based on Extended Modal Decoupling of Vernier-Gimbaling Magnetically Suspension Flywheels. *Chen, X.*, +, *TIE May 2020 4066-4076*

Focused ion beam technology

Electromagnetic Induced Failure in GaN-HEMT High-Frequency Power Amplifier. *Sangwan, V.*, +, *TIE July 2020 5708-5716*

Force control

Adaptive Unbalance Compensation for a Three-Pole Active Magnetic Bearing System. *Chen, S.*, +, *TIE March 2020 2097-2106*

An Iterative Estimation Algorithm of Prepositioning Focusing on the Detent Force in the Permanent Magnet Linear Synchronous Motor System. *Huang, X.*, +, *TIE Oct. 2020 8252-8261*

Decoupled Torque Control of Series Elastic Actuator With Adaptive Robust Compensation of Time-Varying Load-Side Dynamics. *Lin, Y.*, +, *TIE July 2020 5604-5614*

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Fine Sensorless Force Control Realization Based on Dither Periodic Component Elimination Kalman Filter and Wide Band Disturbance Observer. *Phuong, T.T.*, +, *TIE Jan. 2020 757-767*

Force Sensorless Admittance Control With Neural Learning for Robots With Actuator Saturation. *Peng, G.*, +, *TIE April 2020 3138-3148*

Periodic/Aperiodic Motion Control Using Periodic/Aperiodic Separation Filter. *Muramatsu, H.*, +, *TIE Sept. 2020 7649-7658*

Real-Time Servo Press Force Estimation Based on Dual Particle Filter. *Olaizola, J.*, +, *TIE May 2020 4088-4097*

Relative Impedance-Based Internal Force Control for Bimanual Robot Teleoperation With Varying Time Delay. *Lu, Z., +, TIE Jan. 2020 778-789*

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A Three-Fingered Force Feedback Glove Using Fiber-Reinforced Soft Bending Actuators. *Wang, Z., +, TIE Sept. 2020 7681-7690*

Adaptive Fuzzy Backstepping Control for Stable Nonlinear Bilateral Teleoperation Manipulators With Enhanced Transparency Performance. *Chen, Z., +, TIE Jan. 2020 746-756*

Multirate Haptic Rendering Using Local Stiffness Matrix for Stable and Transparent Simulation Involving Interaction With Deformable Objects. *Kim, M., +, TIE Jan. 2020 820-828*

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A Multimode Transverse Dynamic Force Microscope—Design, Identification, and Control. *Zhang, K., +, TIE June 2020 4729-4740*

A Three-Fingered Force Feedback Glove Using Fiber-Reinforced Soft Bending Actuators. *Wang, Z., +, TIE Sept. 2020 7681-7690*

Disposable FBG-Based Tridirectional Force/Torque Sensor for Aspiration Instruments in Neurosurgery. *Li, T., +, TIE April 2020 3236-3247*

Force sensors

A High-Resolution Triaxial Catheter Tip Force Sensor With Miniature Flexure and Suspended Optical Fibers. *Li, T., +, TIE June 2020 5101-5111*

A Multimode Transverse Dynamic Force Microscope—Design, Identification, and Control. *Zhang, K., +, TIE June 2020 4729-4740*

Development of a Magnetically Driven Microgripper for PicoNewton Force-Controlled Microscale Manipulation and Characterization. *Xie, H., +, TIE March 2020 2065-2075*

Disposable FBG-Based Tridirectional Force/Torque Sensor for Aspiration Instruments in Neurosurgery. *Li, T., +, TIE April 2020 3236-3247*

Fine Sensorless Force Control Realization Based on Dither Periodic Component Elimination Kalman Filter and Wide Band Disturbance Observer. *Phuong, T.T., +, TIE Jan. 2020 757-767*

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A GaN-Based DC–DC Module for Railway Applications: Design Consideration and High-Frequency Digital Control. *Fu, M., +, TIE Feb. 2020 1638-1647*

A Novel Controlled Frequency Band Impedance Measurement Approach for Single-Phase Railway Traction Power System. *Hu, H., +, TIE Jan. 2020 244-253*

A Wireless Dimmable Lighting System Using Variable-Power Variable-Frequency Control. *Liu, W., +, TIE Oct. 2020 8392-8404*

Active Power Sharing and Frequency Regulation in Droop-Free Control for Islanded Microgrids Under Electrical and Communication Failures. *Rosero, C.X., +, TIE Aug. 2020 6461-6472*

An Active-Clamping ZVS Interleaved Buck/Boost Bidirectional Converter With One Auxiliary Switch. *Mohammadi, M.R., TIE Sept. 2020 7430-7438*

Dual-Loop-Based Harmonic Current Control Strategy and Admittance Modeling for a Multimodular Parallel SAFs System. *Liu, K., +, TIE July 2020 5456-5466*

Enhanced Performance of Constant Frequency Torque Controller-Based Direct Torque Control of Induction Machines with Increased Torque-Loop Bandwidth. *Alsofyani, I.M., +, TIE Dec. 2020 10168-10179*

H-Infinity Load Frequency Control of Networked Power Systems via an Event-Triggered Scheme. *Zhang, H., +, TIE Aug. 2020 7104-7113*

Improved Reweighted Zero-Attracting Quaternion-Valued LMS Algorithm for Islanded Distributed Generation System at IM Load. *Kewat, S., +, TIE May 2020 3705-3716*

Modulation Induced Current Imbalance and Its Sensorless Control of a GaN-Based Four-Phase DC–DC Power Amplifier. *Wang, C., +, TIE Feb. 2020 1520-1531*

Noncooperative Event-Triggered Control Strategy Design With Round-Robin Protocol: Applications to Load Frequency Control of Circuit Systems. *Yuan, Y., +, TIE March 2020 2155-2166*

Online Kron Reduction for Economical Frequency Control of Microgrids. *Abdolmaleki, B., +, TIE Oct. 2020 8461-8471*

Optimal Input and Output Power Quality Control of Single-Phase AC–DC–DC Converter With Significant DC-Link Voltage Ripple. *Meng, L., +, TIE Dec. 2020 10366-10376*

Realization of High Fidelity Power-Hardware-in-the-Loop Capability Using a MW-Scale Motor-Generator Set. *Hong, Q., +, TIE Aug. 2020 6835-6844*

Resilient Control Design for Load Frequency Control System Under False Data Injection Attacks. *Abbaspour, A., +, TIE Sept. 2020 7951-7962*

Robust PMDC Motor Control for Accurate Wire Feeding in GMAW Using Back EMF. *Paul, A.K., TIE Jan. 2020 413-420*

Rotor Current Oriented Control Method of DFIG-DC System Without Stator Side Sensors. *Wu, C., +, TIE Nov. 2020 9958-9962*

Sensorless Closed-Loop Voltage and Frequency Control of Stand-Alone DFIGs Introducing Direct Flux-Vector Control. *Rostami, M., +, TIE July 2020 6078-6088*

Single-Phase Z_{AC} -Source AC–AC Converter With High Buck and Boost Voltage Conversion Capability. *Rahman, K., +, TIE Nov. 2020 9251-9259*

State-Trajectory Control With Single-Cycle Response for Point-of-Load Converters. *Li, V., +, TIE April 2020 3157-3166*

Step-by-Step Threshold Design Methodology of Switching Frequency Regulation for a Generalized Resonant DC–DC Converter. *Huang, J., +, TIE Dec. 2020 10975-10980*

Two-Stage Robust Optimization for Resilient Operation of Microgrids Considering Hierarchical Frequency Control Structure. *Mohiti, M., +, TIE Nov. 2020 9439-9449*

Weighted Efficiency Enhancement for Single-Power-Conversion Microinverters Using Hybrid-Mode Modulation Strategy. *Kim, K., +, TIE Dec. 2020 10243-10252*

Frequency converters

Voltage-Source Converter Energy Efficiency Classification in Accordance With IEC 61800-9-2. *Aarniovuori, L., +, TIE Oct. 2020 8242-8251*

Frequency estimation

on-Time Mismatch Based System Identification Technique for Buck Converters. *Gietler, H., +, TIE Sept. 2020 7898-7908*

A Global Convergence Estimator of Grid Voltage Parameters for More Electric Aircraft. *Dai, Z., +, TIE Sept. 2020 7540-7549*

A Robust Frequency Estimation Method for Aircraft Grids Under Distorted Conditions. *Dai, Z., +, TIE May 2020 4254-4258*

An Open-Loop Synchronization Technique With Simple Structure for Phase Error Compensation and Frequency Estimation. *Liu, P., +, TIE Oct. 2020 8936-8940*

Fast Phase Angle Jump Estimation to Improve the Convergence Time of the GDSC-PLL. *Andrade, D.S.d.S., +, TIE April 2020 2852-2862*

Frequency-Adaptive Virtual Flux Estimator-Based Predictive Power Control With Suppression of Dc Voltage Ripples Under Unbalanced Network. *Yang, H., +, TIE Oct. 2020 8969-8979*

Sensorless Vibration Harmonic Estimation of Servo System Based on the Disturbance Torque Observer. *Huang, C., +, TIE March 2020 2122-2132*

Frequency locked loops

Is Using A Complex Control Gain in Three-Phase FLLs Reasonable?. *Golestani, S., +, TIE March 2020 2480-2484*

Sensorless SynRG Based Variable Speed Wind Generator and Single-Stage Solar PV Array Integrated Grid System With Maximum Power Extraction Capability. *Vijay, M. D., +, TIE Sept. 2020 7529-7539*

Frequency modulation

Analysis and Design of the LLC Resonant Converter With Variable Inductor Control Based on Time-Domain Analysis. *Wei, Y.*, +, *TIE July 2020 5432-5443*

Frequency response

dq Synchronous Reference Frame Model of A Series-Series Tuned Inductive Power Transfer System. *Lee, S.*, +, *TIE Dec. 2020 10325-10334*

Experimental Evaluation of Transformer Internal Fault Detection Based on *V-I* Characteristics. *Zhao, X.*, +, *TIE May 2020 4108-4119*

Tunable High-Power Multilayer Piezoelectric Transformer. *Li, X.*, +, *TIE Oct. 2020 8335-8343*

Frequency-domain analysis

Dual-Loop-Based Harmonic Current Control Strategy and Admittance Modeling for a Multimodular Parallel SAPFs System. *Liu, K.*, +, *TIE July 2020 5456-5466*

Frequency Data-Based Procedure to Adjust Gain and Phase Margins and Guarantee the Uniqueness of Crossover Frequencies. *Sayyaf, N.*, +, *TIE March 2020 2176-2185*

Modulation Induced Current Imbalance and Its Sensorless Control of a GaN-Based Four-Phase DC-DC Power Amplifier. *Wang, C.*, +, *TIE Feb. 2020 1520-1531*

Naturally Damaged Wind Turbine Blade Bearing Fault Detection Using Novel Iterative Nonlinear Filter and Morphological Analysis. *Liu, Z.*, +, *TIE Oct. 2020 8713-8722*

PSO-Based Optimization of DC-Link Current Harmonics in Traction VSI for an Electric Vehicle. *Steczek, M.*, +, *TIE Oct. 2020 8197-8208*

Voltage-Source Converter Energy Efficiency Classification in Accordance With IEC 61800-9-2. *Aarniovuori, L.*, +, *TIE Oct. 2020 8242-8251*

Friction

An Explicit Nonlinear Model Predictive ABS Controller for Electro-Hydraulic Braking Systems. *Tavernini, D.*, +, *TIE May 2020 3990-4001*

Control of a Bowden-Cable Actuation System With Embedded BoASensor for Soft Wearable Robots. *Jeong, U.*, +, *TIE Sept. 2020 7669-7680*

Control of Antilock Braking Systems Using Disturbance Observer With a Novel Nonlinear Sliding Surface. *Phadke, S.B.*, +, *TIE Aug. 2020 6815-6823*

Fine Sensorless Force Control Realization Based on Dither Periodic Component Elimination Kalman Filter and Wide Band Disturbance Observer. *Phuong, T.T.*, +, *TIE Jan. 2020 757-767*

On the Suppression of the Backward Motion of a Piezo-Driven Precision Positioning Platform Designed by the Parasitic Motion Principle. *Yang, Z.*, +, *TIE May 2020 3870-3878*

Precise Active Brake-Pressure Control for a Novel Electro-Booster Brake System. *Zhao, J.*, +, *TIE June 2020 4774-4784*

Tilting Torque Calculation of a Novel Tiered Type Permanent Magnet Spherical Motor. *Gan, L.*, +, *TIE Jan. 2020 421-431*

Fuel cell vehicles

Adaptive Prognostic of Fuel Cells by Implementing Ensemble Echo State Networks in Time-Varying Model Space. *Li, Z.*, +, *TIE Jan. 2020 379-389*

Hierarchical Management Control Based on Equivalent Fitting Circle and Equivalent Energy Consumption Method for Multiple Fuel Cells Hybrid Power System. *Yan, Y.*, +, *TIE April 2020 2786-2797*

Fuel cells

A PWM ZVS High-Frequency-Link Three-Phase Inverter With T-Type NPC Unfolder. *Pal, A.*, +, *TIE Sept. 2020 7146-7156*

Hierarchical Management Control Based on Equivalent Fitting Circle and Equivalent Energy Consumption Method for Multiple Fuel Cells Hybrid Power System. *Yan, Y.*, +, *TIE April 2020 2786-2797*

On the Decentralized Energy Management Strategy for the All-Electric APU of Future More Electric Aircraft Composed of Multiple Fuel Cells and Supercapacitors. *Chen, J.*, +, *TIE Aug. 2020 6183-6194*

Fuel economy

A Stochastic Predictive Energy Management Strategy for Plug-in Hybrid Electric Vehicles Based on Fast Rolling Optimization. *Yang, C.*, +, *TIE Nov. 2020 9659-9670*

Back-to-Back Competitive Learning Mechanism for Fuzzy Logic Based Supervisory Control System of Hybrid Electric Vehicles. *Li, J.*, +, *TIE Oct. 2020 8900-8909*

Fuel systems

Real-Time Energy Management of the Electric Turbocharger Based on Explicit Model Predictive Control. *Zhao, D.*, +, *TIE April 2020 3126-3137*

Function approximation

Motion Control for Piezoelectric-Actuator-Based Surgical Device Using Neural Network and Extended State Observer. *Lau, J.Y.*, +, *TIE Jan. 2020 402-412*

Output Feedback Control of Uncertain Hydraulic Servo Systems. *Na, J.*, +, *TIE Jan. 2020 490-500*

Fuzzy control

A New Self-Organizing Fuzzy Cerebellar Model Articulation Controller for Uncertain Nonlinear Systems Using Overlapped Gaussian Membership Functions. *Huynh, T.*, +, *TIE Nov. 2020 9671-9682*

A Novel Initiative Braking System With Nondegraded Fallback Level for ADAS and Autonomous Driving. *Yuan, Y.*, +, *TIE June 2020 4360-4370*

Actuator Failure Compensation-Based Adaptive Control of Active Suspension Systems With Prescribed Performance. *Liu, Y.*, +, *TIE Aug. 2020 7044-7053*

Adaptive Fuzzy Backstepping Control for Stable Nonlinear Bilateral Teleoperation Manipulators With Enhanced Transparency Performance. *Chen, Z.*, +, *TIE Jan. 2020 746-756*

Adaptive Fuzzy Tracking Control of Flexible-Joint Robots Based on Command Filtering. *Ling, S.*, +, *TIE May 2020 4046-4055*

Adaptive Threshold Generation for Vehicle Fault Detection Using Switched T-S Interval Observers. *Ifqir, S.*, +, *TIE June 2020 5030-5040*

Back-to-Back Competitive Learning Mechanism for Fuzzy Logic Based Supervisory Control System of Hybrid Electric Vehicles. *Li, J.*, +, *TIE Oct. 2020 8900-8909*

Dynamics-Level Finite-Time Fuzzy Monocular Visual Servo of an Unmanned Surface Vehicle. *Wang, N.*, +, *TIE Nov. 2020 9648-9658*

Fuzzy Space Partitioning Based on Hyperplanes Defined by Eigenvectors for Takagi-Sugeno Fuzzy Model Identification. *Dovzan, D.*, +, *TIE June 2020 5144-5153*

Output Feedback Adaptive Motion Control and Its Experimental Verification for Time-Delay Nonlinear Systems With Asymmetric Hysteresis. *Zhang, X.*, +, *TIE Aug. 2020 6824-6834*

Position and Posture Control of Planar Four-Link Underactuated Manipulator Based on Neural Network Model. *Wu, J.*, +, *TIE June 2020 4721-4728*

Real-Time Reentry Trajectory Planning of Hypersonic Vehicles: A Two-Step Strategy Incorporating Fuzzy Multiobjective Transcription and Deep Neural Network. *Chai, R.*, +, *TIE Aug. 2020 6904-6915*

Robust High Bandwidth Current Regulation for Permanent Magnet Synchronous Linear Motor Drivers by Using Two-Degree-of-Freedom Controller and Thrust Ripple Observer. *Zhao, J.*, +, *TIE March 2020 1804-1812*

Signal Compensation Based Adaptive Cascade Control for Regrinding Processes. *Wang, L.*, +, *TIE Oct. 2020 8732-8742*

Weak Grid Intertie WEGS With Hybrid Generalized Integrator for Power Quality Improvement. *Chishti, F.*, +, *TIE Feb. 2020 1113-1123*

Fuzzy logic

Back-to-Back Competitive Learning Mechanism for Fuzzy Logic Based Supervisory Control System of Hybrid Electric Vehicles. *Li, J.*, +, *TIE Oct. 2020 8900-8909*

Fuzzy neural networks

A New Self-Organizing Fuzzy Cerebellar Model Articulation Controller for Uncertain Nonlinear Systems Using Overlapped Gaussian Membership Functions. *Huynh, T.*, +, *TIE Nov. 2020 9671-9682*

Neurofuzzy-Based Plant-Wide Hierarchical Coordinating Optimization and Control: An Application to Zinc Hydrometallurgy Plant. *Xie, S.*, +, *TIE March 2020 2207-2219*

Fuzzy set theory

Data-Driven Modeling and UFIR-Based Outlet NO_x Estimation for Diesel-Engine SCR Systems. *Jiang, K.*, +, *TIE June 2020 5012-5021*

Fuzzy Space Partitioning Based on Hyperplanes Defined by Eigenvectors for Takagi-Sugeno Fuzzy Model Identification. *Dovzan, D.*, +, *TIE June 2020 5144-5153*

Fuzzy systems

Output Feedback Control of Uncertain Hydraulic Servo Systems. *Na, J.*, +, *TIE Jan. 2020 490-500*

G

Gait analysis

DMP-Based Motion Generation for a Walking Exoskeleton Robot Using Reinforcement Learning. *Yuan, Y.*, +, *TIE May 2020 3830-3839*

Human-Cooperative Control of a Wearable Walking Exoskeleton for Enhancing Climbing Stair Activities. *Li, Z.*, +, *TIE April 2020 3086-3095*

Gallium compounds

1-kV Input 1-MHz GaN Stacked Bridge LLC Converters. *Zhang, Z.*, +, *TIE Nov. 2020 9227-9237*

A 2–10 MHz GaN HEMTs Half-Bridge Driver With Bandgap Reference Comparator Clamping and Dual Level Shifters for Automotive Applications. *Yan, R.*, +, *TIE Feb. 2020 1446-1454*

A 20-W Wide Bandwidth GaN HEMT Power Amplifier for VHF/UHF Applications. *Kim, J.*, +, *TIE Dec. 2020 10905-10910*

A Complete Switching Analytical Model of Low-Voltage eGaN HEMTs and Its Application in Loss Analysis. *Chen, J.*, +, *TIE Feb. 2020 1615-1625*

A GaN-Based DC–DC Module for Railway Applications: Design Consideration and High-Frequency Digital Control. *Fu, M.*, +, *TIE Feb. 2020 1638-1647*

A High Step Up SEPIC-Based Converter Based on Partly Interleaved Transformer. *Gao, S.*, +, *TIE Feb. 2020 1455-1465*

Analysis and Design of a 1-MHz Bidirectional Multi-CLLC Resonant DC–DC Converter With GaN Devices. *Wang, Y.*, +, *TIE Feb. 2020 1425-1434*

Analysis and Implementation of a High Voltage Gain 1 MHz Bidirectional DC–DC Converter. *Dung, N.A.*, +, *TIE Feb. 2020 1415-1424*

Characterization of Static and Dynamic Behavior of 1200 V Normally off GaN/SiC Cascode Devices. *Wang, Y.*, +, *TIE Dec. 2020 10284-10294*

Electromagnetic Induced Failure in GaN-HEMT High-Frequency Power Amplifier. *Sangwan, V.*, +, *TIE July 2020 5708-5716*

Fully Soft-Switched High Step-Up Nonisolated Three-Port DC–DC Converter Using GaN HEMTs. *Faraji, R.*, +, *TIE Oct. 2020 8371-8380*

High and Very High Frequency Power Supplies for Industrial Applications. *Wang, Y.*, +, *TIE Feb. 2020 1400-1404*

High Efficiency High Density 1 MHz 380–12 V DCX With Low FoM Devices. *Wu, X.*, +, *TIE Feb. 2020 1648-1656*

InGaN RGB Light-Emitting Diodes With Monolithically Integrated Photodetectors for Stabilizing Color Chromaticity. *Li, K.H.*, +, *TIE June 2020 5154-5160*

Lateral GaN Schottky Barrier Diode for Wireless High-Power Transfer Application With High RF/DC Conversion Efficiency: From Circuit Construction and Device Technologies to System Demonstration. *Dang, K.*, +, *TIE Aug. 2020 6597-6606*

Modulation Induced Current Imbalance and Its Sensorless Control of a GaN-Based Four-Phase DC–DC Power Amplifier. *Wang, C.*, +, *TIE Feb. 2020 1520-1531*

Performance and Reliability Review of 650 V and 900 V Silicon and SiC Devices: MOSFETs, Cascode JFETs and IGBTs. *Gonzalez, J.O.*, +, *TIE Sept. 2020 7375-7385*

Single-Stage High-Efficiency 48/1 V Sigma Converter With Integrated Magnetics. *Ahmed, M.H.*, +, *TIE Jan. 2020 192-202*

Game theory

A Decentralized Periodic Energy Trading Framework for Pelagic Islanded Microgrids. *Hu, M.*, +, *TIE Sept. 2020 7595-7605*

A Game Approach to Distributed Robust Optimal Filtering With Consensus Through Multiple Sensors: Theory and Application. *Feng, Y.*, +, *TIE Nov. 2020 9693-9702*

A Self-Governed Online Energy Management and Trading for Smart Micro/Nano-Grids. *Latifi, M.*, +, *TIE Sept. 2020 7484-7498*

Privacy-Preserving Database Assisted Spectrum Access for Industrial Internet of Things: A Distributed Learning Approach. *Zhang, M.*, +, *TIE Aug. 2020 7094-7103*

Unsupervised Adversarial Adaptation Network for Intelligent Fault Diagnosis. *Jiao, J.*, +, *TIE Nov. 2020 9904-9913*

Gas insulated substations

Research on Measurement Method of Electric Field Intensity on Surface of Metal Conductor. *Lu, B.*, +, *TIE Aug. 2020 7005-7014*

Gas sensors

An Energy-Efficient Multimode Multichannel Gas-Sensor System With Learning-Based Optimization and Self-Calibration Schemes. *Park, K.*, +, *TIE March 2020 2402-2410*

Optical Gas Imaging With Uncooled Thermal Imaging Camera - Impact of Warm Filters and Elevated Background Temperature. *Olbrycht, R.*, +, *TIE Nov. 2020 9824-9832*

Gaussian distribution

Iterative Learning Control for Time-Varying Systems Subject to Variable Pass Lengths: Application to Robot Manipulators. *Shi, J.*, +, *TIE Oct. 2020 8629-8637*

Gaussian noise

Extended Signal-Correction Observer and Application to Aircraft Navigation. *Wang, X.*, +, *TIE April 2020 3149-3156*

Gaussian processes

A New Self-Organizing Fuzzy Cerebellar Model Articulation Controller for Uncertain Nonlinear Systems Using Overlapped Gaussian Membership Functions. *Huynh, T.*, +, *TIE Nov. 2020 9671-9682*

A Proportional Pattern Recognition Control Scheme for Wearable A-mode Ultrasound Sensing. *Yang, X.*, +, *TIE Jan. 2020 800-808*

A Robust Point Set Registration Approach With Multiple Effective Constraints. *Sun, J.*, +, *TIE Dec. 2020 10931-10941*

Computer Modeling of the Eddy Current Losses of Metal Fasteners in Rotor Slots of a Large Nuclear Steam Turbine Generator Based on Finite-Element Method and Deep Gaussian Process Regression. *Zhao, J.*, +, *TIE July 2020 5349-5359*

Multitask Bayesian Spatiotemporal Gaussian Processes for Short-Term Load Forecasting. *Gilanifar, M.*, +, *TIE June 2020 5132-5143*

Novel Maximum Likelihood Estimation of Clock Skew in One-Way Broadcast Time Synchronization. *Shi, F.*, +, *TIE Nov. 2020 9948-9957*

Salient Object Detection by Spatiotemporal and Semantic Features in Real-Time Video Processing Systems. *Fang, Y.*, +, *TIE Nov. 2020 9893-9903*

Gears

A New Penalty Domain Selection Machine Enabled Transfer Learning for Gearbox Fault Recognition. *Shen, F.*, +, *TIE Oct. 2020 8743-8754*

A Polynomial Kernel Induced Distance Metric to Improve Deep Transfer Learning for Fault Diagnosis of Machines. *Yang, B.*, +, *TIE Nov. 2020 9747-9757*

An Electromagnetic Variable Stiffness Device for Semiactive Seat Suspension Vibration Control. *Ning, D.*, +, *TIE Aug. 2020 6773-6784*

An Incorrect Data Detection Method for Big Data Cleaning of Machinery Condition Monitoring. *Xu, X.*, +, *TIE March 2020 2326-2336*

Design and Characteristics Analysis of Coaxial Magnetic Gear for Contra-Rotating Propeller in Yacht. *Shin, H.*, +, *TIE Sept. 2020 7250-7259*

Fine Load-Side Acceleration Control Based on Torsion Torque Sensing of Two-Inertia System. *Yokokura, Y.*, +, *TIE Jan. 2020 768-777*

Haptic Performance Using Voltage-Mode Motor Control. *Gil, J.J.*, +, *TIE Jan. 2020 698-705*

Macroscopic–Microscopic Attention in LSTM Networks Based on Fusion Features for Gear Remaining Life Prediction. *Qin, Y.*, +, *TIE Dec. 2020 10865-10875*

Magnetic Design Aspects of the Trans-Rotary Magnetic Gear Using Quasi-Halbach Arrays. *Jenney, K.*, +, *TIE Nov. 2020 9582-9592*

Unsupervised Adversarial Adaptation Network for Intelligent Fault Diagnosis. *Jiao, J.*, +, *TIE Nov. 2020 9904-9913*

Gels

Soft Haptic Actuator Based on Knitted PVC Gel Fabric. *Park, W.*, +, *TIE Jan. 2020 677-685*

Generalization (artificial intelligence)

Meta Learning for Task-Driven Video Summarization. *Li, X.*, +, *TIE July 2020 5778-5786*

Genetic algorithms

H₂/H_∞-Neural-Based FOPID Controller Applied for Radar-Guided Missile. *Yaghi, M.*, +, *TIE June 2020 4806-4814*

An Efficiency-Oriented Two-Stage Optimal Design Methodology of High-Frequency LCLC Resonant Converters for Space Travelling-Wave Tube Amplifier Applications. *Zhao, B.*, +, *TIE Feb. 2020 1068-1080*

Considering Operating Point Variation in 3-D Analytical Charge Model Used for Design of Low-Stiffness Permanent Magnet Vibration Isolator. *Li, J.*, +, *TIE Aug. 2020 6732-6741*

Design and Optimization of a Novel Dual-Port Linear Generator for Oceanic Wave Energy Conversion. *Farrok, O.*, +, *TIE May 2020 3409-3418*

Flux-Focusing Permanent Magnet Machines With Modular Consequent-Pole Rotor. *Li, J.*, +, *TIE May 2020 3374-3385*

Hybrid-Model-Based Intelligent Optimization of Ironmaking Process. *Zhou, H.*, +, *TIE March 2020 2469-2479*

Multiobjective System Level Optimization Method for Switched Reluctance Motor Drive Systems Using Finite-Element Model. *Diao, K.*, +, *TIE Dec. 2020 10055-10064*

Optimal DC Source Influence on Selective Harmonic Elimination in Multi-level Inverters Using Teaching-Learning-Based Optimization. *Haghdar, K.*, *TIE Feb. 2020 942-949*

Geometric programming

A Novel Multifeature Based On-Site Calibration Method for LiDAR-IMU System. *Liu, W.*, +, *TIE Nov. 2020 9851-9861*

Geometrical optics

A Distortion Model of Laser Sheet for a Laser Line Scanner With Large Fan Angle. *Yoon, S.*, +, *TIE Aug. 2020 6986-6995*

Geometry

A Practical Visual Servo Control for Aerial Manipulation Using a Spherical Projection Model. *Zhong, H.*, +, *TIE Dec. 2020 10564-10574*

An Initial States Recognition (ISR) Method for Start-Up of 1 Φ BLDC Motor in Hall-Sensor-Less Fan Applications. *Tang, Z.*, +, *TIE Oct. 2020 8302-8311*

Analytical Modeling of Misalignment in Axial Flux Permanent Magnet Machine. *Guo, B.*, +, *TIE June 2020 4433-4443*

Multivector-Based Model Predictive Control With Geometric Solution of a Five-Phase Flux-Switching Permanent Magnet Motor. *Hua, W.*, +, *TIE Dec. 2020 10035-10045*

Natural Crack Diagnosis System Based on Novel L-Shaped Electromagnetic Sensing Thermography. *Liu, Z.*, +, *TIE Nov. 2020 9703-9714*

Gesture recognition

A Proportional Pattern Recognition Control Scheme for Wearable A-mode Ultrasound Sensing. *Yang, X.*, +, *TIE Jan. 2020 800-808*

Stretchable e-Skin Patch for Gesture Recognition on the Back of the Hand. *Jiang, S.*, +, *TIE Jan. 2020 647-657*

Global Positioning System

An Active Islanding Detection Strategy With Zero Nondetection Zone for Operation in Single and Multiple Inverter Mode Using GPS Synchronized Pattern. *Sivadas, D.*, +, *TIE July 2020 5554-5564*

WAVE-Based Short-Range Vehicular Localization Through Vector Match. *Zhang, J.*, +, *TIE Jan. 2020 592-600*

Gold

Real-Time Imaging of Invisible Micron-Scale Monolayer Patterns on a Moving Web Using Condensation Figures. *Du, X.*, +, *TIE May 2020 4077-4087*

Gradient methods

A Decentralized Bilateral Energy Trading System for Peer-to-Peer Electricity Markets. *Khorasany, M.*, +, *TIE June 2020 4646-4657*

Adaptive NN Backstepping Control Design for a 3-DOF Helicopter: Theory and Experiments. *Yang, X.*, +, *TIE May 2020 3967-3979*

Blind Multiple-Input Multiple-Output Image Phase Retrieval. *Guo, Y.*, +, *TIE March 2020 2220-2230*

Multiobjective Optimal Parking Maneuver Planning of Autonomous Wheeled Vehicles. *Chai, R.*, +, *TIE Dec. 2020 10809-10821*

Optimized Formation Control Using Simplified Reinforcement Learning for a Class of Multiagent Systems With Unknown Dynamics. *Wen, G.*, +, *TIE Sept. 2020 7879-7888*

Graph theory

A Novel Statistical Time-Frequency Analysis for Rotating Machine Condition Monitoring. *Wang, T.*, +, *TIE Jan. 2020 531-541*

Active Power Sharing and Frequency Regulation in Droop-Free Control for Islanded Microgrids Under Electrical and Communication Failures. *Rosero, C.X.*, +, *TIE Aug. 2020 6461-6472*

An Effective Optimization Algorithm for Application Mapping in Network-on-Chip Designs. *Wang, X.*, +, *TIE July 2020 5798-5809*

Graph-Theory-Based Modeling and Control for System-Level Optimization of Smart Transformers. *Liserre, M.*, +, *TIE Oct. 2020 8910-8920*

Optimal Path Planning Using Generalized Voronoi Graph and Multiple Potential Functions. *Wang, J.*, +, *TIE Dec. 2020 10621-10630*

Stochastic Consensus Control Integrated With Performance Improvement: A Consensus Region-Based Approach. *Wang, J.*, +, *TIE April 2020 3000-3012*

Graphics processing units

Cosimulation of Shifted-Frequency/Dynamic Phasor and Electromagnetic Transient Models of Hybrid LCC-MMC DC Grids on Integrated CPU-GPUs. *Shu, D.*, +, *TIE Aug. 2020 6517-6530*

Energy Optimization by Software Prefetching for Task Granularity in GPU-Based Embedded Systems. *Wang, Z.*, +, *TIE June 2020 5120-5131*

Greenhouses

Energy-Efficient Supplemental LED Lighting Control for a Proof-of-Concept Greenhouse System. *Jiang, J.*, +, *TIE April 2020 3033-3042*

Grinding

In-Dressing Acoustic Map by Low-Cost Piezoelectric Transducer. *Lofrano Dotto, F.R.*, +, *TIE Aug. 2020 6927-6936*

Signal Compensation Based Adaptive Cascade Control for Regrinding Processes. *Wang, L.*, +, *TIE Oct. 2020 8732-8742*

Grinding machines

In-Dressing Acoustic Map by Low-Cost Piezoelectric Transducer. *Lofrano Dotto, F.R.*, +, *TIE Aug. 2020 6927-6936*

Grippers

A Practical Visual Servo Control for Aerial Manipulation Using a Spherical Projection Model. *Zhong, H.*, +, *TIE Dec. 2020 10564-10574*

A Robot Gripper With Variable Stiffness Actuation for Enhancing Collision Safety. *Memar, A.H.*, +, *TIE Aug. 2020 6607-6616*

Development of a Magnetically Driven Microgripper for PicoNewton Force-Controlled Microscale Manipulation and Characterization. *Xie, H.*, +, *TIE March 2020 2065-2075*

Gyroscopes

A Novel Adaptive Kalman Filtering Approach to Human Motion Tracking With Magnetic-Inertial Sensors. *Zhang, J.*, +, *TIE Oct. 2020 8659-8669*

A Novel Orientation Recursive Algorithm Aiming at Catastrophe Signals in MWD. *Yang, J.*, +, *TIE Nov. 2020 9683-9692*

A Solution to the Attitude Problem Using Two Rotation Units of Micromechanical Gyroscopes. *Liang, Q.*, +, *TIE Feb. 2020 1357-1365*

Interference-Compensating Magnetometer Calibration With Estimated Measurement Noise Covariance for Application to Small-Sized UAVs. *Lee, H.*, +, *TIE Oct. 2020 8829-8840*

Motion Characteristic Recognition of Transmission Lines Based on Inertial Measurement. *Yang, J.*, +, *TIE Oct. 2020 8860-8867*

Nonlinearity Reduction in Disk Resonator Gyroscopes Based on the Vibration Amplification Effect. *Li, Q.*, +, *TIE Aug. 2020 6946-6954*

Suppression of Synchronous Current Using Double Input Improved Adaptive Notch Filter Algorithm. *Liu, G.*, +, *TIE Oct. 2020 8599-8607*

H

H ∞ control

H $_2$ /H ∞ -Neural-Based FOPID Controller Applied for Radar-Guided Missile. *Yaghi, M.*, +, *TIE June 2020 4806-4814*

Active Suspension System Control With Decentralized Event-Triggered Scheme. *Zhang, H.*, +, *TIE Dec. 2020 10798-10808*

Adaptive Algorithms of Tuning and Switching Kalman and H ∞ Filters and Their Application to Estimation of Ship Oscillation With Time-Varying Frequencies. *Sato, M.*, +, *TIE Jan. 2020 501-511*

H-Infinity Load Frequency Control of Networked Power Systems via an Event-Triggered Scheme. *Zhang, H.*, +, *TIE Aug. 2020 7104-7113*

High-Speed AFM Imaging of Nanopositioning Stages Using H ∞ and Iterative Learning Control. *Xie, H.*, +, *TIE March 2020 2430-2439*

Position Control of Parallel Active Link Suspension With Backlash. *Yu, M.*, +, *TIE June 2020 4741-4751*

Robust Control of an Aerial Manipulator Based on a Variable Inertia Parameters Model. *Zhang, G.*, +, *TIE Nov. 2020 9515-9525*

- Stochastic Consensus Control Integrated With Performance Improvement: A Consensus Region-Based Approach. *Wang, J.*, +, *TIE April 2020 3000-3012*
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- A Game Approach to Distributed Robust Optimal Filtering With Consensus Through Multiple Sensors: Theory and Application. *Feng, Y.*, +, *TIE Nov. 2020 9693-9702*
- Adaptive Algorithms of Tuning and Switching Kalman and H_∞ Filters and Their Application to Estimation of Ship Oscillation With Time-Varying Frequencies. *Sato, M.*, +, *TIE Jan. 2020 501-511*
- Hall effect transducers**
- Computationally Efficient Coordinate Transformation for Field-Oriented Control Using Phase Shift of Linear Hall-Effect Sensor Signals. *Yu, Z.*, +, *TIE May 2020 3442-3451*
- Magnetic Sensor Design for a Permanent Magnet Linear Motor Considering Edge-Effect. *Luu, P.T.*, +, *TIE July 2020 5768-5777*
- Novel Method for Direct Measurement of Air Gap Anomalies in Direct-Drive Electrical Motors. *Herman, J.*, +, *TIE March 2020 2422-2429*
- Haptic interfaces**
- A Modular Wearable Finger Interface for Cutaneous and Kinesthetic Interaction: Control and Evaluation. *Chinello, F.*, +, *TIE Jan. 2020 706-716*
- A Soft and Transparent Visuo-Haptic Interface Pursuing Wearable Devices. *Yun, S.*, +, *TIE Jan. 2020 717-724*
- A Three-Fingered Force Feedback Glove Using Fiber-Reinforced Soft Bending Actuators. *Wang, Z.*, +, *TIE Sept. 2020 7681-7690*
- Artificial Tactile Sensor With Pin-type Module for Depth Profile and Surface Topography Detection. *Shin, K.*, +, *TIE Jan. 2020 637-646*
- Authoring New Haptic Textures Based on Interpolation of Real Textures in Affine Space. *Hassan, W.*, +, *TIE Jan. 2020 667-676*
- Enhancing the Rate-Hardness of Haptic Interaction: Successive Force Augmentation Approach. *Singh, H.*, +, *TIE Jan. 2020 809-819*
- Haptic Performance Using Voltage-Mode Motor Control. *Gil, J.J.*, +, *TIE Jan. 2020 698-705*
- Multimodal Haptic Display for Virtual Reality: A Survey. *Wang, D.*, +, *TIE Jan. 2020 610-623*
- Multirate Haptic Rendering Using Local Stiffness Matrix for Stable and Transparent Simulation Involving Interaction With Deformable Objects. *Kim, M.*, +, *TIE Jan. 2020 820-828*
- Novel Emerging Sensing, Actuation, and Control Techniques for Haptic Interaction and Teleoperation. *Wang, D.*, +, *TIE Jan. 2020 624-626*
- Perceptually Correct Haptic Rendering in Mid-Air Using Ultrasound Phased Array. *Raza, A.*, +, *TIE Jan. 2020 736-745*
- Second-Order Information Recovery in Oriented-Plane Curvature Reproduction. *Zeng, T.*, +, *TIE Jan. 2020 725-735*
- Soft Haptic Actuator Based on Knitted PVC Gel Fabric. *Park, W.*, +, *TIE Jan. 2020 677-685*
- Hard disks**
- Quadruple-Stage Actuator System for Magnetic-Head Positioning System in Hard Disk Drives. *Atsumi, T.*, +, *TIE Nov. 2020 9184-9194*
- Hardware-in-the loop simulation**
- A Correlation-Based Distributed Fault Detection Method and Its Application to a Hot Tandem Rolling Mill Process. *Zhang, K.*, +, *TIE March 2020 2380-2390*
- A Game-Theoretic Approach to Cross-Layer Security Decision-Making in Industrial Cyber-Physical Systems. *Huang, K.*, +, *TIE March 2020 2371-2379*
- Adaptive Time-Stepping Universal Line and Machine Models for Real Time and Faster-Than-Real-Time Hardware Emulation. *Duan, T.*, +, *TIE Aug. 2020 6173-6182*
- Back-to-Back Competitive Learning Mechanism for Fuzzy Logic Based Supervisory Control System of Hybrid Electric Vehicles. *Li, J.*, +, *TIE Oct. 2020 8900-8909*
- Dual-Input Quasi-Z-Source PV Inverter: Dynamic Modeling, Design, and Control. *Lashab, A.*, +, *TIE Aug. 2020 6483-6493*
- Impedance Modeling and DC Bus Voltage Stability Assessment of a Solid-State-Transformer-Enabled Hybrid AC–DC Grid Considering Bidirectional Power Flow. *Ye, Q.*, +, *TIE Aug. 2020 6531-6540*
- Model Predictive Control With Lifetime Constraints Based Energy Management Strategy for Proton Exchange Membrane Fuel Cell Hybrid Power Systems. *He, H.*, +, *TIE Oct. 2020 9012-9023*
- On the Decentralized Energy Management Strategy for the All-Electric APU of Future More Electric Aircraft Composed of Multiple Fuel Cells and Supercapacitors. *Chen, J.*, +, *TIE Aug. 2020 6183-6194*
- Realization of High Fidelity Power-Hardware-in-the-Loop Capability Using a MW-Scale Motor-Generator Set. *Hong, Q.*, +, *TIE Aug. 2020 6835-6844*
- Harmonic analysis**
- A Simple Technique for Fundamental Harmonic Approximation Analysis in Parallel and Series–Parallel Resonant Converters. *Rathore, A.K.*, +, *TIE Nov. 2020 9963-9968*
- Analysis and Design of the LLC Resonant Converter With Variable Inductor Control Based on Time-Domain Analysis. *Wei, Y.*, +, *TIE July 2020 5432-5443*
- Back EMF Harmonic Analysis of Permanent Magnet Magnetic Geared Machine. *Ren, X.*, +, *TIE Aug. 2020 6248-6258*
- Design and Analysis of a New Parallel-Hybrid-Excited Machine With Harmonic-Shift Structure. *Cao, L.*, +, *TIE March 2020 1759-1770*
- Effects of Magnet Shape on Torque Capability of Surface-Mounted Permanent Magnet Machine for Servo Applications. *Zeng, Y.*, +, *TIE April 2020 2977-2990*
- Harmonic Analysis of Air Gap Magnetic Field in Flux-Modulation Double-Stator Electrical-Excitation Synchronous Machine. *Wang, Y.*, +, *TIE July 2020 5302-5312*
- Phase Voltage Measurement for Permanent Magnet Machine Sensorless Drive Using Controller Capture Modulator. *Chen, G.*, +, *TIE Jan. 2020 49-58*
- Pre- and Postfault Current Control of Dual Three-Phase Reluctance Synchronous Drives. *Eldeeb, H.M.*, +, *TIE May 2020 3361-3373*
- Harmonic distortion**
- A 30-Pulse Rectifier Using Passive Voltage Harmonic Injection Method at DC Link. *Li, Q.*, +, *TIE Nov. 2020 9273-9291*
- A Hybrid Phase Shift-Pulsewidth Modulation and Asymmetric Selective Harmonic Current Mitigation-Pulsewidth Modulation Technique to Reduce Harmonics and Inductance of Single-Phase Grid-Tied Cascaded Multilevel Converters. *Moeini, A.*, +, *TIE Dec. 2020 10388-10398*
- A Hybrid Space-Vector Modulation Method for Harmonics and Current Ripple Reduction of Interleaved Vienna Rectifier. *Wang, T.*, +, *TIE Oct. 2020 8088-8099*
- A New Transformerless Inverter With Leakage Current Limiting and Voltage Boosting Capabilities for Grid-Connected PV Applications. *Jahan, H.K.*, *TIE Dec. 2020 10542-10551*
- A Robust Frequency Estimation Method for Aircraft Grids Under Distorted Conditions. *Dai, Z.*, +, *TIE May 2020 4254-4258*
- Accurate Operation Analysis Based Variable On-time Control for 360–800 Hz CRM Boost PFC Converters. *Ren, X.*, +, *TIE Aug. 2020 6845-6853*
- An Interleaved Three-Phase PWM Single-Stage Resonant Rectifier With High-Frequency Isolation. *Li, G.*, +, *TIE Aug. 2020 6572-6582*
- Cascaded Transformer Multilevel Inverters With Asymmetrical Turns Ratios Based on NPC. *Bahia, F.A.d.C.*, +, *TIE Aug. 2020 6387-6397*
- Closed-Form Analytic Expression of Total Harmonic Distortion in Single-Phase Multilevel Inverters With Staircase Modulation. *Barbie, E.*, +, *TIE June 2020 5213-5216*
- Coupled Inductor Based Regenerative Cascaded Multicell Converter for Drives With Multilevel Voltage Operation at Both Input and Output Sides. *Sau, S.*, +, *TIE Jan. 2020 147-158*
- Design and Implementation of New Multilevel Inverter Topology for Tertiary Sequence Using Unipolar Pulsewidth Modulation. *Prabaharan, N.*, +, *TIE May 2020 3573-3582*
- Discrete-Time Modified UDE-Based Current Control for L+C+L-Type Grid-Tied Inverters. *Wu, Y.*, +, *TIE March 2020 2143-2154*
- Extension of Space-Vector-Signal-Injection-Based MTPA Control Into SVPWM Fault-Tolerant Operation for Five-Phase IPMSM. *Chen, Q.*, +, *TIE Sept. 2020 7321-7333*
- Ferdowsi Rectifiers—Single-Phase Buck-Boost Bridgeless PFC Rectifiers With Low Semiconductor Count. *Sharifi, S.*, +, *TIE Nov. 2020 9206-9214*

- Frequency Adaptive Grid Voltage Sensorless Control of *LCL*-Filtered Inverter Based on Extended Model Observer. *Tran, T.V.*, +, *TIE Sept. 2020* 7560-7573
- Generalized Harmonic Control for CHB Converters With Unbalanced Cells Operation. *Marquez, A.*, +, *TIE Nov. 2020* 9039-9047
- Generalized Space Vector Modulation for Current Source Converter in Continuous and Discontinuous Current Modes. *Guo, X.*, +, *TIE Nov. 2020* 9348-9357
- Hybrid Voltage Vector Preselection-Based Model Predictive Control for Two-Level Voltage Source Inverters to Reduce the Common-Mode Voltage. *Guo, L.*, +, *TIE June 2020* 4680-4691
- ILC-Based Voltage Compensation Method for PMSM Sensorless Control Considering Inverter Nonlinearity and Sampling Current DC Bias. *Wang, Y.*, +, *TIE July 2020* 5980-5989
- Improving Dynamic Performance of Boost PFC Converter Using Current-Harmonic Feedforward Compensation in Synchronous Reference Frame. *Li, S.*, +, *TIE June 2020* 4857-4866
- Integrated-Power-Control-Strategy-Based Electrolytic Capacitor-Less Back-to-Back Converter for Variable Frequency Speed Control System. *Bao, D.*, +, *TIE Dec. 2020* 10065-10074
- LQR Control of Single-Phase Grid-Tied PUC5 Inverter With *LCL* Filter. *Arab, N.*, +, *TIE Jan. 2020* 297-307
- Magnetic Sensor Design for a Permanent Magnet Linear Motor Considering Edge-Effect. *Luu, P.T.*, +, *TIE July 2020* 5768-5777
- Minimum DC-Link Capacitance for Single-Phase Applications With Power Factor Correction. *Marcos-Pastor, A.*, +, *TIE June 2020* 5204-5208
- Novel Motor-Shaped Rotational Inductor for Motor Drive Applications. *Khowja, M.R.*, +, *TIE March 2020* 1844-1854
- Optimal Dynamic Harmonic Extraction and Suppression in Power Conditioning Applications. *Ornelas-Tellez, F.*, +, *TIE Sept. 2020* 7909-7918
- Optimal Input and Output Power Quality Control of Single-Phase AC–DC–DC Converter With Significant DC-Link Voltage Ripple. *Meng, L.*, +, *TIE Dec. 2020* 10366-10376
- Research on Power Equalization of Three-Phase Cascaded H-Bridge Photovoltaic Inverter Based on the Combination of Hybrid Modulation Strategy and Zero-Sequence Injection Methods. *Mao, W.*, +, *TIE Nov. 2020* 9337-9347
- Sampling-Time Harmonic Control for Cascaded H-Bridge Converters With Thermal Control. *Marquez, A.*, +, *TIE April 2020* 2776-2785
- Switched-Capacitor Differential Boost Inverter: Design, Modeling, and Control. *Silva, G.V.*, +, *TIE July 2020* 5421-5431
- Two-Layer Pulsewidth Modulation Strategy for Common-Mode Voltage and Current Harmonic Distortion Reduction in Vienna Rectifier. *Xing, X.*, +, *TIE Sept. 2020* 7470-7483
- Weak Grid Intertie WEGS With Hybrid Generalized Integrator for Power Quality Improvement. *Chishti, F.*, +, *TIE Feb. 2020* 1113-1123

Harmonics

- Analysis of Consequent-Pole Flux Reversal Permanent Magnet Machine With Biased Flux Modulation Theory. *Yang, H.*, +, *TIE March 2020* 2107-2121

Harmonics suppression

- A 30-Pulse Rectifier Using Passive Voltage Harmonic Injection Method at DC Link. *Li, Q.*, +, *TIE Nov. 2020* 9273-9291
- A Class D Power Amplifier for Multifrequency Eddy Current Testing Based on Multisimultaneous-Frequency Selective Harmonic Elimination Pulsewidth Modulation. *Tao, Y.*, +, *TIE Oct. 2020* 8799-8807
- A Robust Frequency Estimation Method for Aircraft Grids Under Distorted Conditions. *Dai, Z.*, +, *TIE May 2020* 4254-4258
- A Voltage Adaptive Dynamic Harmonic Model of Nonlinear Home Appliances. *Sun, Y.*, +, *TIE May 2020* 3607-3617
- An SVM Approach for Five-Phase Current Source Converters Output Current Harmonics and Common-Mode Voltage Mitigation. *He, J.*, +, *TIE July 2020* 5232-5245
- Analysis of PM Eddy Current Loss in Four-Phase Fault-Tolerant Flux-Switching Permanent-Magnet Machines by Air-Gap Magnetic Field Modulation Theory. *Zhao, W.*, +, *TIE July 2020* 5369-5378

- Collaborative Control and Allocation Method of RSC and GSC for DFIG System to Suppress High-Frequency Resonance and Harmonics. *Pang, B.*, +, *TIE Dec. 2020* 10509-10519
- Current Harmonics Suppression Strategy for PMSM With Nonsinusoidal Back-EMF Based on Adaptive Linear Neuron Method. *Wang, L.*, +, *TIE Nov. 2020* 9164-9173
- Imbalance Current Analysis and Its Suppression Methodology for Parallel SiC MOSFETs with Aid of a Differential Mode Choke. *Zeng, Z.*, +, *TIE Feb. 2020* 1508-1519
- Magnetic-Integrated Multipulse Rectifier Transformer With a Tight Impedance Equalizing Strategy for Power Quality Improvement of DC Traction Power Supply System. *An, B.*, +, *TIE Aug. 2020* 6270-6279
- Optimal DC Source Influence on Selective Harmonic Elimination in Multi-level Inverters Using Teaching–Learning-Based Optimization. *Haghdar, K.*, *TIE Feb. 2020* 942-949
- Postfault Operation of Cascaded H-Bridge Converter for Equal Power Handling by the Healthy Cells. *Sharma, R.*, +, *TIE Nov. 2020* 9174-9183
- Power Quality Enhancement Using Euclidean Direction Search Based Control Technique. *Badoni, M.*, +, *TIE March 2020* 2231-2240
- PSO-Based Optimization of DC-Link Current Harmonics in Traction VSI for an Electric Vehicle. *Steczek, M.*, +, *TIE Oct. 2020* 8197-8208
- Reduction of Torque Ripple Caused by Slot Harmonics in FSCW Spoke-Type FPM Motors by Assisted Poles. *Chen, Q.*, +, *TIE Nov. 2020* 9613-9622
- Resonance Reduction by Optimal Switch Angle Selection in Switched Reluctance Motor. *Guo, X.*, +, *TIE March 2020* 1867-1877
- Simultaneous DC Current Balance and CMV Reduction for Parallel CSC System With Interleaved Carrier-Based SPWM. *Ding, L.*, +, *TIE Oct. 2020* 8495-8505
- Suppression of Harmonic Vibration in Magnetically Suspended Centrifugal Compressor Using Zero-Phase Odd-Harmonic Repetitive Controller. *Cai, K.*, +, *TIE Sept. 2020* 7789-7797

Hazards

- Intrinsic Determinants and Harmonic Measure of Flight Safety. *Yin, T.*, +, *TIE Aug. 2020* 7054-7064

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- All-Day Mobile Healthcare Monitoring System Based on Heterogeneous Stretchable Sensors for Medical Emergency. *Lee, S.*, +, *TIE Oct. 2020* 8808-8816

Heat recovery

- Model Predictive Control With Lifetime Constraints Based Energy Management Strategy for Proton Exchange Membrane Fuel Cell Hybrid Power Systems. *He, H.*, +, *TIE Oct. 2020* 9012-9023

Heat sinks

- A CM Filter Configuration for Grid-Tied Voltage Source Converters. *Gulur, S.*, +, *TIE Oct. 2020* 8100-8111
- Electrothermal-Based Junction Temperature Estimation Model for Converter of Switched Reluctance Motor Drive System. *Chen, H.*, +, *TIE Feb. 2020* 874-883

Heat transfer

- A Simple Equivalent Temperature Rise Test Method Suitable for Safely Evaluating Thermal Limits of Motors and Power Devices Without Model Dependence. *Wang, B.*, +, *TIE Oct. 2020* 8755-8766
- A Tuning Method of Active Disturbance Rejection Control for a Class of High-Order Processes. *He, T.*, +, *TIE April 2020* 3191-3201
- Numerical and Experimental Calculation of CHTC in an Oil-Based Shaft Cooling System for a High-Speed High-Power PMSM. *Gai, Y.*, +, *TIE June 2020* 4371-4380

Helicopters

- Acoustic Source Localization From Multicopter UAVs. *Salvati, D.*, +, *TIE Oct. 2020* 8618-8628
- Adaptive NN Backstepping Control Design for a 3-DOF Helicopter: Theory and Experiments. *Yang, X.*, +, *TIE May 2020* 3967-3979
- An Online Trajectory Planning Approach for a Quadrotor UAV With a Slung Payload. *Xian, B.*, +, *TIE Aug. 2020* 6669-6678
- Attractive Ellipsoid-Based Robust Control for Quadrotor Tracking. *Falcon, R.*, +, *TIE Sept. 2020* 7851-7860

Composite Disturbance Rejection Attitude Control for Quadrotor With Unknown Disturbance. *Zhao, K.*, +, *TIE Aug. 2020 6894-6903*

Design, Implementation, and Evaluation of a Neural-Network-Based Quadrotor UAV System. *Jiang, F.*, +, *TIE March 2020 2076-2085*

Path-Following Control of A Quadrotor UAV With A Cable-Suspended Payload Under Wind Disturbances. *Qian, L.*, +, *TIE March 2020 2021-2029*

Reducing Motion-Induced Noise With Mechanically Resonant Coil Sensor in a Rigid Helicopter Transient Electromagnetic System. *Liu, F.*, +, *TIE March 2020 2391-2401*

HEMT circuits

Fully Soft-Switched High Step-Up Nonisolated Three-Port DC–DC Converter Using GaN HEMTs. *Faraji, R.*, +, *TIE Oct. 2020 8371-8380*

Hessian matrices

Multidimensional Fractional-Order Newton-Based Extremum Seeking for Online Light-Energy Saving Technique of Lighting System. *Yin, C.*, +, *TIE Oct. 2020 8576-8586*

Hidden Markov models

Real-Time Mode Diagnosis for Processes With Multiple Operating Conditions Using Switching Conditional Random Fields. *Fang, M.*, +, *TIE June 2020 5060-5070*

Valve Failure Prognostics in Reciprocating Compressors Utilizing Temperature Measurements, PCA-Based Data Fusion, and Probabilistic Algorithms. *Loutas, T.*, +, *TIE June 2020 5022-5029*

High electron mobility transistors

A 2–10 MHz GaN HEMTs Half-Bridge Driver With Bandgap Reference Comparator Clamping and Dual Level Shifters for Automotive Applications. *Yan, R.*, +, *TIE Feb. 2020 1446-1454*

A 20-W Wide Bandwidth GaN HEMT Power Amplifier for VHF/UHF Applications. *Kim, J.*, +, *TIE Dec. 2020 10905-10910*

A Complete Switching Analytical Model of Low-Voltage eGaN HEMTs and Its Application in Loss Analysis. *Chen, J.*, +, *TIE Feb. 2020 1615-1625*

Electromagnetic Induced Failure in GaN-HEMT High-Frequency Power Amplifier. *Sangwan, V.*, +, *TIE July 2020 5708-5716*

Performance and Reliability Review of 650 V and 900 V Silicon and SiC Devices: MOSFETs, Cascode JFETs and IGBTs. *Gonzalez, J.O.*, +, *TIE Sept. 2020 7375-7385*

High-frequency transformers

A High-Frequency Link Matrix Rectifier With a Pure Capacitive Output Filter in a Discontinuous Conduction Mode. *Lan, D.*, +, *TIE Jan. 2020 4-15*

An Interleaved Three-Phase PWM Single-Stage Resonant Rectifier With High-Frequency Isolation. *Li, G.*, +, *TIE Aug. 2020 6572-6582*

Multitransformer Primary-Side Regulated Flyback Converter for Supplying Isolated IGBT and MOSFET Drivers. *Kolincio, M.*, +, *TIE Feb. 2020 1005-1012*

Voltage-Adjustable Capacitor Isolated Solid-State Transformer. *Sun, B.*, +, *TIE Sept. 2020 7550-7559*

Hilbert spaces

A Robust Point Set Registration Approach With Multiple Effective Constraints. *Sun, J.*, +, *TIE Dec. 2020 10931-10941*

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Hinges

Design and Trajectory Tracking of a Nanometric Ultra-Fast Tool Servo. *Zhu, Z.*, +, *TIE Jan. 2020 432-441*

On the Suppression of the Backward Motion of a Piezo-Driven Precision Positioning Platform Designed by the Parasitic Motion Principle. *Yang, Z.*, +, *TIE May 2020 3870-3878*

Homopolar motors

Homopolar Bearingless Slice Motor With Flux-Biasing Halbach Arrays. *Noh, M.*, +, *TIE Sept. 2020 7757-7766*

Hot rolling

A Correlation-Based Distributed Fault Detection Method and Its Application to a Hot Tandem Rolling Mill Process. *Zhang, K.*, +, *TIE March 2020 2380-2390*

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Design of a New Vision-Based Method for the Bolts Looseness Detection in Flange Connections. *Wang, C.*, +, *TIE Feb. 2020 1366-1375*

Human computer interaction

A Three-Fingered Force Feedback Glove Using Fiber-Reinforced Soft Bending Actuators. *Wang, Z.*, +, *TIE Sept. 2020 7681-7690*

Multimodal Haptic Display for Virtual Reality: A Survey. *Wang, D.*, +, *TIE Jan. 2020 610-623*

Stretchable e-Skin Patch for Gesture Recognition on the Back of the Hand. *Jiang, S.*, +, *TIE Jan. 2020 647-657*

Human-robot interaction

Cooperative Manipulation of Wearable Dual-Arm Exoskeletons Using Force Communication Between Partners. *Wu, X.*, +, *TIE Aug. 2020 6629-6638*

Decoupled Torque Control of Series Elastic Actuator With Adaptive Robust Compensation of Time-Varying Load-Side Dynamics. *Lin, Y.*, +, *TIE July 2020 5604-5614*

Human-Cooperative Control of a Wearable Walking Exoskeleton for Enhancing Climbing Stair Activities. *Li, Z.*, +, *TIE April 2020 3086-3095*

Humidity measurement

High-Accuracy Quartz Crystal Resonance DP Instrument. *Nie, J.*, +, *TIE Sept. 2020 8026-8033*

Humidity sensors

All-Day Mobile Healthcare Monitoring System Based on Heterogeneous Stretchable Sensors for Medical Emergency. *Lee, S.*, +, *TIE Oct. 2020 8808-8816*

HVDC power converters

A Novel Converter Station Structure for Improving Multiterminal HVDC System Resiliency Against AC and DC Faults. *Wang, S.*, +, *TIE June 2020 4270-4280*

A Single-Phase Five-Branch Direct AC–AC Modular Multilevel Converter for Railway Power Conditioning. *Lei, M.*, +, *TIE June 2020 4292-4304*

An Enhanced Strategy to Inhibit Commutation Failure in Line-Commutated Converters. *Mirsaeidi, S.*, +, *TIE Jan. 2020 340-349*

Cosimulation of Shifted-Frequency/Dynamic Phasor and Electromagnetic Transient Models of Hybrid LCC-MMC DC Grids on Integrated CPU–GPUs. *Shu, D.*, +, *TIE Aug. 2020 6517-6530*

Damping HVDC Circuit Breaker With Current Commutation and Limiting Integrated. *Wu, Y.*, +, *TIE Dec. 2020 10433-10441*

DC Fault Analysis Models of Three Converter Topologies Considering Control Effects. *Li, Y.*, +, *TIE Nov. 2020 9480-9491*

DC Fault Current Blocking With the Coordination of Half-Bridge MMC and the Hybrid DC Breaker. *Iman-Eini, H.*, +, *TIE July 2020 5503-5514*

DC Fault Detection in Meshed MTdc Systems Based on Transient Average Value of Current. *Li, Y.*, +, *TIE March 2020 1932-1943*

Double-Thyristor-Based Protection for Valve-Side Single-Phase-to-Ground Faults in HB-MMC-Based Bipolar HVDC Systems. *Li, G.*, +, *TIE July 2020 5810-5815*

Electrothermal Transient Behavioral Modeling of Thyristor-Based Ultrafast Mechatronic Circuit Breaker for Real-Time DC Grid Emulation. *Lin, N.*, +, *TIE March 2020 1660-1670*

Fault Diagnosis and Monitoring of Modular Multilevel Converter With Fast Response of Voltage Sensors. *Zhang, J.*, +, *TIE June 2020 5071-5080*

HVdc Reactor Reduction Method Based on Virtual Reactor Fault Current Limiting Control of MMC. *Li, X.*, +, *TIE Dec. 2020 9991-10000*

Multiport Interline Current Flow Controller for Meshed HVDC Grids. *Sau-Bassols, J.*, +, *TIE July 2020 5467-5478*

Optimization of Cell Voltage and Circulating Current With Zero-Mean Current Command Injection in Modular Multilevel Converters. *Wu, T.*, +, *TIE Nov. 2020 9429-9438*

Optimum Selection of Circuit Breaker Parameters Based on Analytical Calculation of Overcurrent and Overvoltage in Multiterminal HVDC Grids. *Song, Y.*, +, *TIE May 2020 4133-4143*

Parallel Nine-Phase Generator Control in a Medium-Voltage DC Wind System. *Beik, O.*, +, *TIE Oct. 2020 8112-8122*

Pole Balancing and Thermal Management in Multiterminal HVdc Grids Using Single H-Bridge-Based Current Flow Controllers. *Balasubramaniam, S.*, +, *TIE June 2020 4623-4634*

Protection of Single-Phase Fault at the Transformer Valve Side of FB-MMC-Based Bipolar HVdc Systems. *Liu, W.*, +, *TIE Oct. 2020 8416-8427*

Reliability-Oriented Design of Modular Multilevel Converters for Medium-Voltage STATCOM. *Farias, J.V.M.*, +, *TIE Aug. 2020 6206-6214*

Series-Connected-Based Offshore Wind Farms With Full-Bridge Modular Multilevel Converter as Grid- and Generator-side Converters. *Guo, G.*, +, *TIE April 2020 2798-2809*

HVDC power transmission

A High-Performance and Economical Multiport Hybrid Direct Current Circuit Breaker. *He, J.*, +, *TIE Oct. 2020 8921-8930*

A Novel Converter Station Structure for Improving Multiterminal HVDC System Resiliency Against AC and DC Faults. *Wang, S.*, +, *TIE June 2020 4270-4280*

Damping HVDC Circuit Breaker With Current Commutation and Limiting Integrated. *Wu, Y.*, +, *TIE Dec. 2020 10433-10441*

DC Fault Analysis Models of Three Converter Topologies Considering Control Effects. *Li, Y.*, +, *TIE Nov. 2020 9480-9491*

Double-Thyristor-Based Protection for Valve-Side Single-Phase-to-Ground Faults in HB-MMC-Based Bipolar HVDC Systems. *Li, G.*, +, *TIE July 2020 5810-5815*

HVdc Reactor Reduction Method Based on Virtual Reactor Fault Current Limiting Control of MMC. *Li, X.*, +, *TIE Dec. 2020 9991-10000*

Multiport Interline Current Flow Controller for Meshed HVDC Grids. *Sau-Bassols, J.*, +, *TIE July 2020 5467-5478*

Optimum Selection of Circuit Breaker Parameters Based on Analytical Calculation of Overcurrent and Overvoltage in Multiterminal HVDC Grids. *Song, Y.*, +, *TIE May 2020 4133-4143*

Parallel Nine-Phase Generator Control in a Medium-Voltage DC Wind System. *Beik, O.*, +, *TIE Oct. 2020 8112-8122*

Protection of Single-Phase Fault at the Transformer Valve Side of FB-MMC-Based Bipolar HVdc Systems. *Liu, W.*, +, *TIE Oct. 2020 8416-8427*

Hybrid electric vehicles

A New Relieving-DC-Saturation Hybrid Excitation Vernier Machine for HEV Starter Generator Application. *Zhao, X.*, +, *TIE Aug. 2020 6342-6353*

A Stochastic Predictive Energy Management Strategy for Plug-in Hybrid Electric Vehicles Based on Fast Rolling Optimization. *Yang, C.*, +, *TIE Nov. 2020 9659-9670*

An Integrated Electrified Powertrain Topology With SRG and SRM for Plug-In Hybrid Electrical Vehicle. *Cheng, H.*, +, *TIE Oct. 2020 8231-8241*

Back-to-Back Competitive Learning Mechanism for Fuzzy Logic Based Supervisory Control System of Hybrid Electric Vehicles. *Li, J.*, +, *TIE Oct. 2020 8900-8909*

Hierarchical Management Control Based on Equivalent Fitting Circle and Equivalent Energy Consumption Method for Multiple Fuel Cells Hybrid Power System. *Yan, Y.*, +, *TIE April 2020 2786-2797*

Real-Time Energy Management of the Electric Turbocharger Based on Explicit Model Predictive Control. *Zhao, D.*, +, *TIE April 2020 3126-3137*

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Hierarchical Management Control Based on Equivalent Fitting Circle and Equivalent Energy Consumption Method for Multiple Fuel Cells Hybrid Power System. *Yan, Y.*, +, *TIE April 2020 2786-2797*

Model Predictive Control With Lifetime Constraints Based Energy Management Strategy for Proton Exchange Membrane Fuel Cell Hybrid Power Systems. *He, H.*, +, *TIE Oct. 2020 9012-9023*

Hydraulic actuators

A Novel Electro Hydrostatic Actuator System With Energy Recovery Module for More Electric Aircraft. *Shang, Y.*, +, *TIE April 2020 2991-2999*

Output Feedback Control of Uncertain Hydraulic Servo Systems. *Na, J.*, +, *TIE Jan. 2020 490-500*

Output-Constrained Robust Sliding Mode Based Nonlinear Active Suspension Control. *Rath, J.J.*, +, *TIE Dec. 2020 10652-10662*

Hydraulic systems

A Hybrid-Driven Elevator System With Energy Regeneration and Safety Enhancement. *Zhao, B.*, +, *TIE Sept. 2020 7715-7726*

A Novel Initiative Braking System With Nondegraded Fallback Level for ADAS and Autonomous Driving. *Yuan, Y.*, +, *TIE June 2020 4360-4370*

Precision Motion Control of a Servomotor-Pump Direct-Drive Electrohydraulic System With a Nonlinear Pump Flow Mapping. *Helian, B.*, +, *TIE Oct. 2020 8638-8648*

Regionless Explicit Model Predictive Control of Active Suspension Systems With Preview. *Theunissen, J.*, +, *TIE June 2020 4877-4888*

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Euler's Formula-Based Stability Analysis for Wideband Harmonic Resonances. *Chen, Z.*, +, *TIE Nov. 2020 9405-9417*

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Current-Cycle Iterative Learning Control for High-Precision Position Tracking of Piezoelectric Actuator System via Active Disturbance Rejection Control for Hysteresis Compensation. *Huang, D.*, +, *TIE Oct. 2020 8680-8690*

Design and Control of a Piezoelectrically Actuated Fast Tool Servo for Diamond Turning of Microstructured Surfaces. *Zhu, Z.*, +, *TIE Aug. 2020 6688-6697*

Online Hysteresis Identification and Compensation for Piezoelectric Actuators. *Liu, Y.*, +, *TIE July 2020 5595-5603*

Optimization of Torque Tracking Performance for Direct-Torque-Controlled PMSM Drives With Composite Torque Regulator. *Wang, X.*, +, *TIE Dec. 2020 10095-10108*

Output Feedback Adaptive Motion Control and Its Experimental Verification for Time-Delay Nonlinear Systems With Asymmetric Hysteresis. *Zhang, X.*, +, *TIE Aug. 2020 6824-6834*

Hysteresis motor drives

Optimization of Torque Tracking Performance for Direct-Torque-Controlled PMSM Drives With Composite Torque Regulator. *Wang, X.*, +, *TIE Dec. 2020 10095-10108*

Hysteresis motors

Modeling, Design, and Validation of Magnetic Hysteresis Motors. *Galluzzi, R.*, +, *TIE Feb. 2020 1171-1179*

I

Identification

Subspace-Aided Closed-Loop System Identification With Application to DC Motor System. *Li, K.*, +, *TIE March 2020 2304-2313*

IEC standards

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An Analysis of the Impact of Transient Faults on the Performance of the CAN-FD Protocol. *Pohren, D.H.*, +, *TIE March 2020 2440-2449*

Optimal Energy Routing in Microgrids With IEC 61850 Based Energy Routers. *Hussain, S.M.S.*, +, *TIE June 2020 5161-5169*

Voltage-Source Converter Energy Efficiency Classification in Accordance With IEC 61800-9-2. *Aarniovuori, L.*, +, *TIE Oct. 2020 8242-8251*

IEEE publishing

Best Papers and Distinguished Reviewers. *Levi, E.*, *TIE June 2020 4269*

IEEE standards

A Hybrid Phase Shift-Pulsewidth Modulation and Asymmetric Selective Harmonic Current Mitigation-Pulsewidth Modulation Technique to Reduce Harmonics and Inductance of Single-Phase Grid-Tied Cascaded Multilevel Converters. *Moieni, A.*, +, *TIE Dec. 2020 10388-10398*

Resilient Information Architecture Platform for the Smart Grid: A Novel Open-Source Platform for Microgrid Control. *Tu, H.*, +, *TIE Nov. 2020 9393-9404*

Weak Grid Inertie WEGS With Hybrid Generalized Integrator for Power Quality Improvement. *Chishti, F.*, +, *TIE Feb. 2020 1113-1123*

Ignition

An Intelligent Control Strategy for Iron Ore Sintering Ignition Process Based on the Prediction of Ignition Temperature. *Du, S.*, +, *TIE Feb. 2020 1233-1241*

Finite-Time Identification Algorithm for Volumetric Efficiency Map in SI Gasoline Engines. *Wang, C.*, +, *TIE Dec. 2020 10702-10712*

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An Efficient Convolutional Neural Network Model Based on Object-Level Attention Mechanism for Casting Defect Detection on Radiography Images. *Hu, C.*, +, *TIE Dec. 2020 10922-10930*

Deep Learning Approaches on Pedestrian Detection in Hazy Weather. *Li, G.*, +, *TIE Oct. 2020 8889-8899*

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Nonlinear Ultrasonic Transmissive Tomography for Low-Contrast Biphasic Medium Imaging Using Continuous-Wave Excitation. *Liu, H., +, TIE Oct. 2020 8878-8888*

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A Novel Adaptive Kalman Filtering Approach to Human Motion Tracking With Magnetic-Inertial Sensors. *Zhang, J., +, TIE Oct. 2020 8659-8669*

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 Sparse Machine Learning Discovery of Dynamic Differential Equation of an Esophageal Swallowing Robot. *Bhattacharya, D., +, TIE June 2020 4711-4720*

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Classification of Faults in Multicore Cable via Time-Frequency Domain Reflectometry. *Bang, S.S., +, TIE May 2020 4163-4171*

Data-Driven Fault Diagnosis Method Based on Compressed Sensing and Improved Multiscale Network. *Hu, Z., +, TIE April 2020 3216-3225*

Flexible 3-D Helix Fabrication by In-Situ SEM Micromanipulation System. *Wang, P., +, TIE July 2020 5565-5574*

In-Dressing Acoustic Map by Low-Cost Piezoelectric Transducer. *Lofrano Dotto, F.R., +, TIE Aug. 2020 6927-6936*

Real-Time Imaging of Invisible Micron-Scale Monolayer Patterns on a Moving Web Using Condensation Figures. *Du, X., +, TIE May 2020 4077-4087*

Toward Accurate Quality Estimation of Screen Content Pictures With Very Sparse Reference Information. *Xia, Z., +, TIE March 2020 2251-2261*

Image recognition

Design of a New Vision-Based Method for the Bolts Looseness Detection in Flange Connections. *Wang, C., +, TIE Feb. 2020 1366-1375*

Image reconstruction

A Distortion Model of Laser Sheet for a Laser Line Scanner With Large Fan Angle. *Yoon, S., +, TIE Aug. 2020 6986-6995*

A Novel Adaptive Kalman Filtering Approach to Human Motion Tracking With Magnetic-Inertial Sensors. *Zhang, J., +, TIE Oct. 2020 8659-8669*

CCD Optical Tomography System to Detect Solid Contamination in Crystal-Clear Water. *Jamaludin, J., +, TIE April 2020 3248-3256*

Light-Field Camera for Fast Switching of Time-Sequential Two-Dimensional and Three-Dimensional Image Capturing at Video Rate. *Joo, K., +, TIE Aug. 2020 6975-6985*

Nonlinear Ultrasonic Transmissive Tomography for Low-Contrast Biphasic Medium Imaging Using Continuous-Wave Excitation. *Liu, H., +, TIE Oct. 2020 8878-8888*

SCSCN: A Separated Channel-Spatial Convolution Net With Attention for Single-View Reconstruction. *Ma, J., +, TIE Oct. 2020 8649-8658*

Image representation

A Multiperson Behavior Feature Generation Model Based on Noise Reduction Using WiFi. *Wenyuan, L., +, TIE June 2020 5179-5186*

An Effective Subsuperpixel-Based Approach for Background Subtraction. *Chen, Y., +, TIE Jan. 2020 601-609*

SCSCN: A Separated Channel-Spatial Convolution Net With Attention for Single-View Reconstruction. *Ma, J., +, TIE Oct. 2020 8649-8658*

SDDNet: Real-Time Crack Segmentation. *Choi, W., +, TIE Sept. 2020 8016-8025*

Image resolution

Image Superresolution via Dense Discriminative Network. *Ma, J., +, TIE July 2020 5687-5695*

Light-Field Camera for Fast Switching of Time-Sequential Two-Dimensional and Three-Dimensional Image Capturing at Video Rate. *Joo, K., +, TIE Aug. 2020 6975-6985*

Nonlinear Ultrasonic Transmissive Tomography for Low-Contrast Biphasic Medium Imaging Using Continuous-Wave Excitation. *Liu, H., +, TIE Oct. 2020 8878-8888*

Image retrieval

Blind Multiple-Input Multiple-Output Image Phase Retrieval. *Guo, Y., +, TIE March 2020 2220-2230*

Image segmentation

SDDNet: Real-Time Crack Segmentation. *Choi, W., +, TIE Sept. 2020 8016-8025*

Image sensors

Light-Field Camera for Fast Switching of Time-Sequential Two-Dimensional and Three-Dimensional Image Capturing at Video Rate. *Joo, K., +, TIE Aug. 2020 6975-6985*

Image sequences

Adaptive Visual Servoing for an Underwater Soft Robot Considering Refraction Effects. *Xu, F., +, TIE Dec. 2020 10575-10586*

An Effective Subsuperpixel-Based Approach for Background Subtraction. *Chen, Y., +, TIE Jan. 2020 601-609*

Salient Object Detection by Spatiotemporal and Semantic Features in Real-Time Video Processing Systems. *Fang, Y., +, TIE Nov. 2020 9893-9903*

Impact (mechanical)

Dynamic Mass Isolation for Improving the Moving Efficiency of an Impact Drive Mechanism. *Liao, X., +, TIE Oct. 2020 8526-8534*

Impedance

Correction to "Wafer-Level Vacuum-Packaged High-Performance AlN-on-SOI Piezoelectric Resonator for Sub-100-MHz Oscillator Applications" [Apr 18 3576-3584]. *Wu, G., +, TIE Nov. 2020 9976*

Impedance converters

Dual-Input Quasi-Z-Source PV Inverter: Dynamic Modeling, Design, and Control. *Lashab, A., +, TIE Aug. 2020 6483-6493*

Impedance matching

A Triple-Band High-Gain Multibeam Ambient RF Energy Harvesting System Utilizing Hybrid Combining. *Shen, S., +, TIE Nov. 2020 9215-9226*

Thermoelectric Energy Harvesting From Gradients in the Earth Surface. *Sigrist, L., +, TIE Nov. 2020 9460-9470*

Impedance matrix

Electrothermal-Based Junction Temperature Estimation Model for Converter of Switched Reluctance Motor Drive System. *Chen, H., +, TIE Feb. 2020 874-883*

Independent component analysis

A New Penalty Domain Selection Machine Enabled Transfer Learning for Gearbox Fault Recognition. *Shen, F., +, TIE Oct. 2020 8743-8754*

Blind Multiple-Input Multiple-Output Image Phase Retrieval. *Guo, Y., +, TIE March 2020 2220-2230*

Indium compounds

InGaN RGB Light-Emitting Diodes With Monolithically Integrated Photodetectors for Stabilizing Color Chromaticity. *Li, K.H., +, TIE June 2020 5154-5160*

Indoor environment

Light Sensor Based Occupancy Estimation via Bayes Filter With Neural Networks. *Chen, Z., +, TIE July 2020 5787-5797*

Indoor radio

SmartLoc: Smart Wireless Indoor Localization Empowered by Machine Learning. *Li, L., +, TIE Aug. 2020 6883-6893*

Inductance

A High Step Up SEPIC-Based Converter Based on Partly Interleaved Transformer. *Gao, S., +, TIE Feb. 2020 1455-1465*

A Hybrid Boost-Flyback/Flyback Microinverter for Photovoltaic Applications. *Zhang, F., +, TIE Jan. 2020 308-318*

A New Soft Switching DC-DC Converter With High Voltage Gain Capability. *Mohseni, P., +, TIE Sept. 2020 7386-7398*

Active Class E Rectifier for DC Output Voltage Regulation in Megahertz Wireless Power Transfer Systems. *Liu, M., +, TIE May 2020 3618-3628*

An Ultra-High Step-Up DC-DC Converter With Extendable Voltage Gain and Soft-Switching Capability. *Alavi, P., +, TIE Nov. 2020 9238-9250*

An Unsaturated Inductance Reconstruction Based Universal Sensorless Starting Control Scheme for SRM Drives. *Cai, J., +, TIE Nov. 2020 9083-9092*

Coupled Inductance Model of Full-Bridge Modules in Hybrid High Voltage Direct Current Circuit Breakers. *Dongye, Z., +, TIE Dec. 2020 10315-10324*

Determination of Stray Inductance of Low-Inductive Laminated Planar Multiport Busbars Using Vector Synthesis Method. *Lu, B., +, TIE Feb. 2020 1337-1347*

- Dual-Pulse Mode Control of a High-Speed Doubly Salient Electromagnetic Machine for Loss Reduction and Speed Range Extension. *Yu, L.*, +, *TIE June 2020 4391-4401*
- Imbalance Current Analysis and Its Suppression Methodology for Parallel SiC MOSFETs with Aid of a Differential Mode Choke. *Zeng, Z.*, +, *TIE Feb. 2020 1508-1519*
- Integrated Buck and Modified Push–Pull DC–DC Converter With High Step-Down Ratio. *Tseng, K.*, +, *TIE Jan. 2020 235-243*
- Inverter Side *RL* Filter Precise Design for Motor Overvoltage Mitigation in SiC-Based Drives. *Ruffo, R.*, +, *TIE Feb. 2020 863-873*
- Modeling, Analysis, and Attenuation of Uncontrolled Generation for IPMSM-Based Electric Vehicles in Emergency. *Gong, C.*, +, *TIE June 2020 4453-4462*
- Multifunction Transformer With Adjustable Magnetic Stage Based on Nanocomposite Semihard Magnets. *Chen, Z.*, +, *TIE May 2020 4226-4234*
- Numerical Analysis of Turn-to-Turn Short Circuit Current Mitigation for Concentrated Winding Permanent Magnet Machines With Series and Parallel Connected Windings. *Xu, Y.*, +, *TIE Nov. 2020 9101-9111*
- Optimization and Performance Improvement of a Hybrid Excitation Synchronous Machine With Modular Magnetic-Shunting Rotor. *Liu, Y.*, +, *TIE June 2020 4381-4390*
- Relationship Between Homopolar Inductor Machine and Wound-Field Synchronous Machine. *Ye, C.*, +, *TIE Feb. 2020 919-930*
- Spatial Inductance Estimation for Current Loop Auto-Tuning in IPMSM Self-Commissioning. *Erturk, F.*, +, *TIE May 2020 3911-3920*
- Winding Scheme With Fractional Layer for Differential-Mode Toroidal Inductor. *Liu, B.*, +, *TIE Feb. 2020 1592-1604*

Induction heating

- Highly Efficient Single-Phase Buck–Boost Variable-Frequency AC–AC Converter With Inherent Commutation Capability. *Sharifi, S.*, +, *TIE May 2020 3640-3649*

Induction motor drives

- A 5-Level Inverter Scheme Using Single DC Link With Reduced Number of Floating Capacitors and Switches for Open-End IM Drives. *Majumder, M.G.*, +, *TIE Feb. 2020 960-968*
- A Novel Sliding Mode Observer With Optimized Constant Rate Reaching Law for Sensorless Control of Induction Motor. *Zhang, Y.*, +, *TIE July 2020 5867-5878*
- A Reliable Single-Phase Bipolar Buck–Boost Direct PWM AC–AC Converter With Continuous Input/Output Currents. *Ahmed, H.F.*, +, *TIE Dec. 2020 10253-10265*
- A Simple Feedforward Approach to Stabilize VSI-Fed Induction Motor With Filter in RFOC. *Mishra, P.*, +, *TIE Dec. 2020 10191-10201*
- Alternative Solution Regarding Problems of Adaptive Observer Compensating Parameters Uncertainties for Sensorless Induction Motor Drives. *Chen, J.*, +, *TIE July 2020 5879-5888*
- An Induction Machine With Tapped Stator Windings for LCI-Fed Medium Voltage Drive Applications. *Titus, J.*, +, *TIE Sept. 2020 7217-7227*
- Assessing Variable Sampling Time Controllers for Five-Phase Induction Motor Drives. *Arahal, M.R.*, +, *TIE April 2020 2523-2531*
- Characteristics Analysis of the Motions of the Two-Degree-of-Freedom Direct Drive Induction Motor. *Xie, L.*, +, *TIE Feb. 2020 931-941*
- Design, Analysis, and Impacts of Sinusoidal *LC* Filter on Pulsewidth Modulated Inverter Fed-Induction Motor Drive. *Mishra, P.*, +, *TIE April 2020 2678-2688*
- Direct Torque Control Techniques of Three-Level H-Bridge Inverter Fed Induction Motor for Torque Ripple Reduction at Low Speed Operations. *Naganathan, P.*, +, *TIE Oct. 2020 8262-8270*
- Discrete Space Vector Modulation-Based Model Predictive Torque Control With No Suboptimization. *Osman, I.*, +, *TIE Oct. 2020 8164-8174*
- Dual Phase-Locked Loop-Based Speed Estimation Scheme for Sensorless Vector Control of Linear Induction Motor Drives. *Wang, H.*, +, *TIE July 2020 5900-5912*
- Enhanced Performance of Constant Frequency Torque Controller–Based Direct Torque Control of Induction Machines with Increased Torque-Loop Bandwidth. *Alsofyani, I.M.*, +, *TIE Dec. 2020 10168-10179*

- Extending the Linear Modulation Range to Full Base Speed Independent of Load Power Factor for a Multilevel Inverter Fed IM Drive. *Majumder, M.G.*, +, *TIE Nov. 2020 9143-9152*
- Fast Restarting of Free-Running Induction Motors Under Speed-Sensorless Vector Control. *Yin, S.*, +, *TIE July 2020 6124-6134*
- Fault Detection and Identification Scheme for Dual-Inverter Fed OEWM Drive. *Yang, S.*, +, *TIE July 2020 6112-6123*
- Feedback Control of Multiphase Induction Machines With Backstepping Technique. *Morawiec, M.*, +, *TIE June 2020 4305-4314*
- Hybrid PWM Scheme for Pole-Phase Modulation Induction Motor Drive Using Carrier-Based Hexagonal and Octadecagonal SVPWM. *Janaki Ramaiah, V.*, +, *TIE Sept. 2020 7312-7320*
- Minimization of Current Ripple and Switching Losses in Double-Inverter Fed Wound Rotor Induction Machine Drive Using PWM Techniques. *Bajjuri, N.K.*, +, *TIE May 2020 3484-3495*
- Minimization of Switched Capacitor Voltage Ripple in a Multilevel Dodecagonal Voltage Space Vector Structure for Drives. *Imthias, M.*, +, *TIE Jan. 2020 126-135*
- Modeling and Control of Low Switching Frequency High-Performance Induction Motor Drives. *Qi, X.*, +, *TIE June 2020 4402-4410*
- Multilayer Fractional Slot Pole-Phase Modulated Induction Motor Drives for Traction Applications. *Reddy, B.P.*, +, *TIE Nov. 2020 9112-9119*
- Online Feedback Dead Time Compensation Strategy for Three-Level T-Type Inverters. *Wang, D.*, +, *TIE Sept. 2020 7260-7268*
- Operating-Point Tracking Method for Sensorless Induction Motor Stability Enhancement in Low-Speed Regenerating Mode. *Luo, C.*, +, *TIE May 2020 3386-3397*
- Predictive Control of IM Drive Acoustic Noise. *Kroneisl, M.*, +, *TIE July 2020 5666-5676*
- PSO-Based Optimization of DC-Link Current Harmonics in Traction VSI for an Electric Vehicle. *Steczek, M.*, +, *TIE Oct. 2020 8197-8208*
- Robust Stability Improvement for Speed Sensorless Induction Motor Drive at Low Speed Range by Virtual Voltage Injection. *Sun, W.*, +, *TIE April 2020 2642-2654*
- Simple Stability Enhancement Method for Stator Current Error-Based MRAS-Type Speed Estimator for Induction Motor. *Korzonek, M.*, +, *TIE July 2020 5854-5866*

Induction motors

- dq* Synchronous Reference Frame Model of A Series–Series Tuned Inductive Power Transfer System. *Lee, S.*, +, *TIE Dec. 2020 10325-10334*
- A Simplified Equivalent Circuit Method for Induction Machine Nonintrusive Field Efficiency Estimation. *Aminu, M.*, +, *TIE Sept. 2020 7301-7311*
- Airgap Flux Based Detection and Classification of Induction Motor Rotor and Load Defects During the Starting Transient. *Park, Y.*, +, *TIE Dec. 2020 10075-10084*
- Enhanced Braking Control for the Induction Machine Using Scalar Control. *Costa, C.A.*, +, *TIE Nov. 2020 9133-9142*
- Erratum to “An Advanced Equivalent Circuit Model for Linear Induction Motors” [Sep 18 7495-7503]. *Lv, G.*, +, *TIE Dec. 2020 10996*
- Fast Restarting of Free-Running Induction Motors Under Speed-Sensorless Vector Control. *Yin, S.*, +, *TIE July 2020 6124-6134*
- High-Accuracy Dynamic Load Emulation Method for Electrical Drives. *de Oliveira, C.M.R.*, +, *TIE Sept. 2020 7239-7249*
- Performance Analysis of Induction-Based Reaction Spheres. *Zhu, L.*, +, *TIE Sept. 2020 7746-7756*
- The Optimal Speed-Torque Control of Asynchronous Motors for Electric Cars in the Field-Weakening Region Based on the RFR. *Xie, F.*, +, *TIE Nov. 2020 9601-9612*
- The Relationship Between Root Locus and Transient Field Components of AC Machines. *Qi, X.*, +, *TIE March 2020 1836-1843*
- Wireless Power Transfer Using a Five-Phase Wound-Rotor Induction Machine for Speed-Controlled Rotary Platforms. *Rizzoli, G.*, +, *TIE Aug. 2020 6237-6247*

Inductive power transmission

- dq* Synchronous Reference Frame Model of A Series–Series Tuned Inductive Power Transfer System. *Lee, S.*, +, *TIE Dec. 2020 10325-10334*

A 13.56-MHz Full-Bridge Class-D ZVS Inverter With Dynamic Dead-Time Control for Wireless Power Transfer Systems. *Tebianian, H.*, +, *TIE Feb. 2020 1487-1497*

A Digital Phase Synchronization Method for Bidirectional Inductive Power Transfer. *Jia, S.*, +, *TIE Aug. 2020 6450-6460*

A Load-Independent LCC-Compensated Wireless Power Transfer System for Multiple Loads With a Compact Coupler Design. *Cheng, C.*, +, *TIE June 2020 4507-4515*

A Novel Boost Active Bridge-Based Inductive Power Transfer System. *Kalra, G.R.*, +, *TIE Feb. 2020 1103-1112*

A Proposed Fast Charging and High-Power System for Wireless Railway Trains Adopting the Input Voltage Sharing Topology and the Balancing Control Scheme. *Kim, J.*, +, *TIE Aug. 2020 6407-6417*

A Wireless Dimmable Lighting System Using Variable-Power Variable-Frequency Control. *Liu, W.*, +, *TIE Oct. 2020 8392-8404*

Active Class E Rectifier for DC Output Voltage Regulation in Megahertz Wireless Power Transfer Systems. *Liu, M.*, +, *TIE May 2020 3618-3628*

Analysis and Design of a High-Efficiency 6.78-MHz Wireless Power Transfer System With Scalable Number of Receivers. *Song, J.*, +, *TIE Oct. 2020 8281-8291*

Analysis, Design, and Experimental Verification of a Mixed High-Order Compensations-Based WPT System with Constant Current Outputs for Driving Multistring LEDs. *Li, Y.*, +, *TIE Jan. 2020 203-213*

Angular-Misalignment Insensitive Omnidirectional Wireless Power Transfer. *Zhang, Z.*, +, *TIE April 2020 2755-2764*

Concurrent Wireless Power Transfer to Multiple Receivers With Additional Resonant Frequencies and Reduced Power Switches. *Xiao, Y.*, +, *TIE Nov. 2020 9292-9301*

Considering Losses to Enhance Circuit Model Accuracy of Ultrasonic Wireless Power Transfer System. *Wu, M.*, +, *TIE Oct. 2020 8788-8798*

Cost-Effective Compensation Design for Output Customization and Efficiency Optimization in Series/Series-Parallel Inductive Power Transfer Converter. *Huang, Z.*, +, *TIE Dec. 2020 10356-10365*

Design and Analysis of Inductively Coupled Power Transfer System on Mooring Buoy With Double Ultracapacitor Chargers Using Indirect Control. *Xu, J.*, +, *TIE June 2020 4836-4845*

Energy-Concentrating Optimization Based on Energy Distribution Characteristics of MCR WPT Systems With SS/PS Compensation. *Li, W.*, +, *TIE Dec. 2020 10410-10420*

Extending the Operating Region of Inductive Power Transfer Systems Through Dual-Side Cooperative Control. *Chen, S.*, +, *TIE Nov. 2020 9302-9312*

Impact of Rebar and Concrete on Power Dissipation of Wireless Power Transfer Systems. *Lee, S.*, +, *TIE Jan. 2020 276-287*

Range-Adaptive Wireless Power Transfer Based on Differential Coupling Using Multiple Bidirectional Coils. *Zhuang, Y.*, +, *TIE Sept. 2020 7519-7528*

Inductors

A Coupled Inductor-Based Buck-Boost Type Grid Connected Transformerless PV Inverter Having the Ability to Control Two Subarrays Simultaneously. *Dutta, S.*, +, *TIE July 2020 5543-5553*

A GaN-Based DC-DC Module for Railway Applications: Design Consideration and High-Frequency Digital Control. *Fu, M.*, +, *TIE Feb. 2020 1638-1647*

A Novel High Step-Up High Efficiency Interleaved DC-DC Converter With Coupled Inductor and Built-In Transformer for Renewable Energy Systems. *Nouri, T.*, +, *TIE Aug. 2020 6505-6516*

Accurate Operation Analysis Based Variable On-time Control for 360–800 Hz CRM Boost PFC Converters. *Ren, X.*, +, *TIE Aug. 2020 6845-6853*

Coupled Inductor Based Regenerative Cascaded Multicell Converter for Drives With Multilevel Voltage Operation at Both Input and Output Sides. *Sau, S.*, +, *TIE Jan. 2020 147-158*

Dual-Input Isolated Converter With Dual-Charge-Pump Cell for High Step-Up Voltage Ratio Achievement. *Shen, C.*, +, *TIE Nov. 2020 9383-9392*

Ferdowsi Rectifiers—Single-Phase Buck-Boost Bridgeless PFC Rectifiers With Low Semiconductor Count. *Sharifi, S.*, +, *TIE Nov. 2020 9206-9214*

Imbalance Current Analysis and Its Suppression Methodology for Parallel SiC MOSFETs with Aid of a Differential Mode Choke. *Zeng, Z.*, +, *TIE Feb. 2020 1508-1519*

Magnetically Coupled High-Voltage-Boost Split Y -Source Inverter Without Leakage-Induced Voltage Spikes. *Chen, M.*, +, *TIE July 2020 5444-5455*

Min-Type Control Strategy of a DC-DC Synchronous Boost Converter. *Sferlazza, A.*, +, *TIE April 2020 3167-3179*

Nonisolated High-Step-Up DC-DC Converter Derived from Switched-Inductors and Switched-Capacitors. *Salvador, M.A.*, +, *TIE Oct. 2020 8506-8516*

Pulse Train Control Strategy for CCM Boost PFC Converter With Improved Dynamic Response and Unity Power Factor. *Luo, H.*, +, *TIE Dec. 2020 10377-10387*

Robust Current Control of Grid-Tied Inverters Affected by LCL Filter Soft-Saturation. *Osorio, C.R.D.*, +, *TIE Aug. 2020 6550-6561*

Single-Stage High-Efficiency 48/1 V Sigma Converter With Integrated Magnetics. *Ahmed, M.H.*, +, *TIE Jan. 2020 192-202*

Study and Analysis of Pulsating and Nonpulsating Input and Output Current of Ultrahigh-Voltage Gain Hybrid DC-DC Converters. *Andrade, A.M.S.S.*, +, *TIE May 2020 3776-3787*

Winding Scheme With Fractional Layer for Differential-Mode Toroidal Inductor. *Liu, B.*, +, *TIE Feb. 2020 1592-1604*

Industrial control

A Flattened-Priority Framework for Mixed-Criticality Systems. *Li, Z.*, +, *TIE Nov. 2020 9862-9872*

Industrial engineering

A Novel Hierarchical Detection and Isolation Framework for Quality-Related Multiple Faults in Large-Scale Processes. *Ma, L.*, +, *TIE Feb. 2020 1316-1327*

Industrial manipulators

Flexible 3-D Helix Fabrication by In-Situ SEM Micromanipulation System. *Wang, P.*, +, *TIE July 2020 5565-5574*

Predefined-Time Convergent Neural Solution to Cyclical Motion Planning of Redundant Robots Under Physical Constraints. *Li, W.*, *TIE Dec. 2020 10732-10743*

Industrial plants

Designing Dynamic Alarm Limits and Adjusting Manipulated Variables for Multivariate Systems. *Yu, Y.*, +, *TIE March 2020 2314-2325*

Hybrid-Model-Based Intelligent Optimization of Ironmaking Process. *Zhou, H.*, +, *TIE March 2020 2469-2479*

Neurofuzzy-Based Plant-Wide Hierarchical Coordinating Optimization and Control: An Application to Zinc Hydrometallurgy Plant. *Xie, S.*, +, *TIE March 2020 2207-2219*

Uncertainty-Based Pattern Mining for Maximizing Profit of Manufacturing Plants With List Structure. *Baek, Y.*, +, *TIE Nov. 2020 9914-9926*

Industrial robots

Fault Detection and Diagnosis of Industrial Robot Based on Power Consumption Modeling. *Sabry, A.H.*, +, *TIE Sept. 2020 7929-7940*

Omnidirectional Touch Probe With Adaptive Maneuvering for 3-D Object Machining and Measurement Verification Applications. *Luo, R.C.*, +, *TIE Feb. 2020 1136-1148*

Inertial navigation

A Solution to the Attitude Problem Using Two Rotation Units of Micromechanical Gyroscopes. *Liang, Q.*, +, *TIE Feb. 2020 1357-1365*

Fast Self-Alignment Technology for Hybrid Inertial Navigation Systems Based on a New Two-Position Analytic Method. *Liu, B.*, +, *TIE April 2020 3226-3235*

Foot-Mounted Pedestrian Navigation Algorithm Based on BOR/MINS Integrated Framework. *Deng, Z.*, +, *TIE May 2020 3980-3989*

Method and Implementation of a Bioinspired Polarization-Based Attitude and Heading Reference System by Integration of Polarization Compass and Inertial Sensors. *Yang, J.*, +, *TIE Nov. 2020 9802-9812*

Observability Analysis and Adaptive Information Fusion for Integrated Navigation of Unmanned Ground Vehicles. *Shen, K.*, +, *TIE Sept. 2020 7659-7668*

Inertial systems

A Novel Multifeature Based On-Site Calibration Method for LiDAR-IMU System. *Liu, W.*, +, *TIE Nov. 2020 9851-9861*

Fine Load-Side Acceleration Control Based on Torsion Torque Sensing of Two-Inertia System. *Yokokura, Y.*, +, *TIE Jan. 2020 768-777*

Sensor Glove Based on Novel Inertial Sensor Fusion Control Algorithm for 3-D Real-Time Hand Gestures Measurements. *Chang, H.*, +, *TIE Jan. 2020 658-666*

Infrared detectors

Novel Method for Direct Measurement of Air Gap Anomalies in Direct-Drive Electrical Motors. *Herman, J.*, +, *TIE March 2020 2422-2429*

Infrared imaging

Natural Crack Diagnosis System Based on Novel L-Shaped Electromagnetic Sensing Thermography. *Liu, Z.*, +, *TIE Nov. 2020 9703-9714*

Optical Gas Imaging With Uncooled Thermal Imaging Camera - Impact of Warm Filters and Elevated Background Temperature. *Olbrycht, R.*, +, *TIE Nov. 2020 9824-9832*

Injection molding

Data-Driven Batch-End Quality Modeling and Monitoring Based on Optimized Sparse Partial Least Squares. *Jiang, Q.*, +, *TIE May 2020 4098-4107*

Injuries

Reliable Winding-Based DC-Bus Capacitor Discharge Technique Over Full-Speed Range for IPMSM Drive in Electric Vehicles Without Position Sensor. *Gong, C.*, +, *TIE Oct. 2020 8131-8142*

Inspection

Airgap Flux Based Detection and Classification of Induction Motor Rotor and Load Defects During the Starting Transient. *Park, Y.*, +, *TIE Dec. 2020 10075-10084*

An Efficient Convolutional Neural Network Model Based on Object-Level Attention Mechanism for Casting Defect Detection on Radiography Images. *Hu, C.*, +, *TIE Dec. 2020 10922-10930*

Design of a New Vision-Based Method for the Bolts Looseness Detection in Flange Connections. *Wang, C.*, +, *TIE Feb. 2020 1366-1375*

Real-Time Imaging of Invisible Micron-Scale Monolayer Patterns on a Moving Web Using Condensation Figures. *Du, X.*, +, *TIE May 2020 4077-4087*

Insulated gate bipolar transistors

A High-Performance and Economical Multiport Hybrid Direct Current Circuit Breaker. *He, J.*, +, *TIE Oct. 2020 8921-8930*

A High-Voltage Series-Stacked IGBT Switch With Active Energy Recovery Feature for Pulsed Power Applications. *Mohsenzade, S.*, +, *TIE May 2020 3650-3661*

A Novel Mixture Solid-State Switch Based on IGCT With High Capacity and IGBT With High Turn-off Ability for Hybrid DC Breakers. *Zhang, X.*, +, *TIE June 2020 4485-4495*

A Proposed Fast Charging and High-Power System for Wireless Railway Trains Adopting the Input Voltage Sharing Topology and the Balancing Control Scheme. *Kim, J.*, +, *TIE Aug. 2020 6407-6417*

A Reliable Single-Phase Bipolar Buck-Boost Direct PWM AC-AC Converter With Continuous Input/Output Currents. *Ahmed, H.F.*, +, *TIE Dec. 2020 10253-10265*

Coupled Inductance Model of Full-Bridge Modules in Hybrid High Voltage Direct Current Circuit Breakers. *Dongye, Z.*, +, *TIE Dec. 2020 10315-10324*

DC Fault Current Blocking With the Coordination of Half-Bridge MMC and the Hybrid DC Breaker. *Iman-Eini, H.*, +, *TIE July 2020 5503-5514*

Embedded Hardware Artificial Neural Network Control for Global and Real-Time Imbalance Current Suppression of Parallel Connected IGBTs. *Zeng, X.*, +, *TIE March 2020 2186-2196*

Event Driven Control of Voltage and Current Gradients of Medium Voltage IGBTs. *Holtz, J.*, *TIE Aug. 2020 6323-6330*

Inverter Side *RL* Filter Precise Design for Motor Overvoltage Mitigation in SiC-Based Drives. *Ruffo, R.*, +, *TIE Feb. 2020 863-873*

Multilevel Single-Phase Converter With Two DC Links. *de Freitas, N.B.*, +, *TIE Dec. 2020 10346-10355*

Performance and Reliability Review of 650 V and 900 V Silicon and SiC Devices: MOSFETs, Cascode JFETs and IGBTs. *Gonzalez, J.O.*, +, *TIE Sept. 2020 7375-7385*

Real-Time Simulation of Power Electronic Systems Based on Predictive Behavior. *Liu, C.*, +, *TIE Sept. 2020 8044-8053*

Insulation

Correction of Winding Peak Temperature Detection in High-Frequency Automotive Electric Machines. *Dong, T.*, +, *TIE July 2020 5615-5625*

Noise Rejection and Detection of Partial Discharges Under Repetitive Impulse Supply Voltage. *Ghosh, R.*, +, *TIE May 2020 4144-4151*

Insulator contamination

Estimation of Contamination Level of Overhead Insulators Based on Surface Leakage Current Employing Detrended Fluctuation Analysis. *Deb, S.*, +, *TIE July 2020 5729-5736*

Integer programming

Power Scheduling in More Electric Aircraft Based on an Optimal Adaptive Control Strategy. *Zhang, Y.*, +, *TIE Dec. 2020 10911-10921*

Integrated circuit design

A Data-Driven Realization of the Control-Performance-Oriented Process Monitoring System. *Luo, H.*, +, *TIE Jan. 2020 521-530*

An Effective Optimization Algorithm for Application Mapping in Network-on-Chip Designs. *Wang, X.*, +, *TIE July 2020 5798-5809*

Integrated circuit manufacture

Dual-Mode RFID Tag IC Supporting Gen-2 and Visible RFID Modes Using a Process-Compensating Self-Calibrating Clock Generator. *Din, A.U.*, +, *TIE Jan. 2020 569-580*

Integrated circuit reliability

FPGA-Based Stochastic Activity Networks for Online Reliability Monitoring. *Garro, U.*, +, *TIE June 2020 5000-5011*

Integrated optoelectronics

InGaN RGB Light-Emitting Diodes With Monolithically Integrated Photodetectors for Stabilizing Color Chromaticity. *Li, K.H.*, +, *TIE June 2020 5154-5160*

Intelligent control

An Intelligent Control Strategy for Iron Ore Sintering Ignition Process Based on the Prediction of Ignition Temperature. *Du, S.*, +, *TIE Feb. 2020 1233-1241*

Intelligent sensors

Airgap Flux Based Detection and Classification of Induction Motor Rotor and Load Defects During the Starting Transient. *Park, Y.*, +, *TIE Dec. 2020 10075-10084*

An Energy-Efficient Multimode Multichannel Gas-Sensor System With Learning-Based Optimization and Self-Calibration Schemes. *Park, K.*, +, *TIE March 2020 2402-2410*

Intelligent transportation systems

DenseLightNet: A Light-Weight Vehicle Detection Network for Autonomous Driving. *Chen, L.*, +, *TIE Dec. 2020 10600-10609*

Observability Analysis and Adaptive Information Fusion for Integrated Navigation of Unmanned Ground Vehicles. *Shen, K.*, +, *TIE Sept. 2020 7659-7668*

Interactive devices

Second-Order Information Recovery in Oriented-Plane Curvature Reproduction. *Zeng, T.*, +, *TIE Jan. 2020 725-735*

Interference filters

Optical Gas Imaging With Uncooled Thermal Imaging Camera - Impact of Warm Filters and Elevated Background Temperature. *Olbrycht, R.*, +, *TIE Nov. 2020 9824-9832*

Interference suppression

Massive MIMO With Massive Connectivity for Industrial Internet of Things. *Lee, B.M.*, +, *TIE June 2020 5187-5196*

Intermodulation distortion

A 20-W Wide Bandwidth GaN HEMT Power Amplifier for VHF/UHF Applications. *Kim, J.*, +, *TIE Dec. 2020 10905-10910*

Internal combustion engines

Adaptive Internal Model-Based Harmonic Control for Active Torsional Vibration Reduction. *Vadamalu, R.S.*, +, *TIE April 2020 3024-3032*

Finite-Time Identification Algorithm for Volumetric Efficiency Map in SI Gasoline Engines. *Wang, C.*, +, *TIE Dec. 2020 10702-10712*

Real-Time Energy Management of the Electric Turbocharger Based on Explicit Model Predictive Control. *Zhao, D.*, +, *TIE April 2020 3126-3137*

Internet

Toward Accurate Quality Estimation of Screen Content Pictures With Very Sparse Reference Information. *Xia, Z.*, +, *TIE March 2020 2251-2261*

Internet of Things

- A Fully Integrated Maximum Power Tracking Combiner for Energy Harvesting IoT Applications. *Estrada-Lopez, J.J.*, +, *TIE April 2020 2744-2754*
- Charge-Based Supercapacitor Storage Estimation for Indoor Sub-mW Photovoltaic Energy Harvesting Powered Wireless Sensor Nodes. *Yue, X.*, +, *TIE March 2020 2411-2421*
- Multiple-Input Harvesting Power Management Unit With Enhanced Boosting Scheme for IoT Applications. *Abuellil, A.*, +, *TIE May 2020 3662-3672*
- Performance Model for Advanced Neighbor Discovery Process in Bluetooth Low Energy 5.0-Enabled Internet of Things Networks. *Shan, G.*, +, *TIE Dec. 2020 10965-10974*
- Physical Unclonable Function-Based Key Sharing via Machine Learning for IoT Security. *Zhang, J.*, +, *TIE Aug. 2020 7025-7033*
- Privacy-Preserving Database Assisted Spectrum Access for Industrial Internet of Things: A Distributed Learning Approach. *Zhang, M.*, +, *TIE Aug. 2020 7094-7103*

Interpolation

- A Second-Order Dual Mode Repetitive Control for Magnetically Suspended Rotor. *Cui, P.*, +, *TIE June 2020 4946-4956*
- Application of Analytic Signal and Smooth Interpolation in Pulsewidth Modulation for Conventional Matrix Converters. *Szczepankowski, P.*, +, *TIE Dec. 2020 10011-10023*
- Broadband Mode Decomposition and Its Application to the Quality Evaluation of Welding Inverter Power Source Signals. *Peng, Y.*, +, *TIE Nov. 2020 9734-9746*
- Finite-Time Identification Algorithm for Volumetric Efficiency Map in SI Gasoline Engines. *Wang, C.*, +, *TIE Dec. 2020 10702-10712*
- Omnidirectional Touch Probe With Adaptive Maneuvering for 3-D Object Machining and Measurement Verification Applications. *Luo, R.C.*, +, *TIE Feb. 2020 1136-1148*
- Repetitive Control Meets Continuous Zero Phase Error Tracking Controller for Precise Tracking of B-Spline Trajectories. *Biagiotti, L.*, +, *TIE Sept. 2020 7808-7818*
- Trajectory Generation of a Two-Wheeled Mobile Robot in an Uncertain Environment. *Kim, J.*, +, *TIE July 2020 5586-5594*

Invariance

- Adaptive Unbalance Compensation for a Three-Pole Active Magnetic Bearing System. *Chen, S.*, +, *TIE March 2020 2097-2106*

Inverse problems

- Efficient QR Updating Factorization for Sensorless Synchronous Motor Drive Based on High Frequency Voltage Injection. *Toso, F.*, +, *TIE Dec. 2020 10213-10222*
- Tomographic Approach for Universal Tactile Imaging With Electromechanically Coupled Conductors. *Yoshimoto, S.*, +, *TIE Jan. 2020 627-636*

Inverters

- Γ -Source Magnetic Integrated Filter for Single-Phase Grid Tied Voltage Source Converters. *Masoumi, A.H.*, +, *TIE July 2020 5410-5420*
- A 13.56-MHz Full-Bridge Class-D ZVS Inverter With Dynamic Dead-Time Control for Wireless Power Transfer Systems. *Tebianian, H.*, +, *TIE Feb. 2020 1487-1497*
- A 5-Level Inverter Scheme Using Single DC Link With Reduced Number of Floating Capacitors and Switches for Open-End IM Drives. *Majumder, M.G.*, +, *TIE Feb. 2020 960-968*
- A Coupled Inductor-Based Buck-Boost Type Grid Connected Transformerless PV Inverter Having the Ability to Control Two Subarrays Simultaneously. *Dutta, S.*, +, *TIE July 2020 5543-5553*
- A Current-Based Approach for Short-Circuit Fault Diagnosis in Closed-Loop Current Source Inverter. *Guo, X.*, +, *TIE Sept. 2020 7941-7950*
- A Decentralized Control for Cascaded Inverters in Grid-Connected Applications. *Li, L.*, +, *TIE Sept. 2020 8064-8071*
- A Feedback-Based Passive Islanding Detection Technique for One-Cycle-Controlled Single-Phase Inverter Used in Photovoltaic Systems. *Reddy, V.R.*, +, *TIE Aug. 2020 6541-6549*
- A Hybrid Boost-Flyback/Flyback Microinverter for Photovoltaic Applications. *Zhang, F.*, +, *TIE Jan. 2020 308-318*
- A New and Modular Active Snubber Cell for Inverters. *Bodur, H.*, +, *TIE Jan. 2020 288-296*

- A New Single-Phase Transformerless Grid-Connected Inverter With Boosting Ability and Common Ground Feature. *Vosoughi, N.*, +, *TIE Nov. 2020 9313-9325*
- A New Transformerless Inverter With Leakage Current Limiting and Voltage Boosting Capabilities for Grid-Connected PV Applications. *Jahan, H.K.*, *TIE Dec. 2020 10542-10551*
- A Novel Order Reduced Synchronous Power Control for Grid-Forming Inverters. *Quan, X.*, +, *TIE Dec. 2020 10989-10995*
- A Reconfigurable Solar Photovoltaic Grid-Tied Inverter Architecture for Enhanced Energy Access in Backup Power Applications. *Venkatramanan, D.*, +, *TIE Dec. 2020 10531-10541*
- ADRC-Based Current Control for Grid-Tied Inverters: Design, Analysis, and Verification. *Cao, Y.*, +, *TIE Oct. 2020 8428-8437*
- All Current Sensor Survivable IPMSM Drive With Reconfigurable Inverter. *Lu, J.*, +, *TIE Aug. 2020 6331-6341*
- An Active Islanding Detection Strategy With Zero Nondetection Zone for Operation in Single and Multiple Inverter Mode Using GPS Synchronized Pattern. *Sivadas, D.*, +, *TIE July 2020 5554-5564*
- An Advanced Voltage Support Scheme Considering the Impact of Zero-Sequence Voltage Under Microgrid Faults Using Model Predictive Control. *Mohapatra, S.R.*, +, *TIE Oct. 2020 8957-8968*
- An Effective Sliding Mode Control Design for a Grid-Connected PUC7 Multilevel Inverter. *Makhamreh, H.*, +, *TIE May 2020 3717-3725*
- An Enhanced Strategy to Inhibit Commutation Failure in Line-Commutated Converters. *Mirsaeidi, S.*, +, *TIE Jan. 2020 340-349*
- An Induction Machine With Tapped Stator Windings for LCI-Fed Medium Voltage Drive Applications. *Titus, J.*, +, *TIE Sept. 2020 7217-7227*
- An Optimized Third Harmonic Injection Method for Reducing DC-Link Voltage Fluctuation and Alleviating Power Imbalance of Three-Phase Cascaded H-Bridge Photovoltaic Inverter. *Hu, Y.*, +, *TIE April 2020 2488-2498*
- An SVM Approach for Five-Phase Current Source Converters Output Current Harmonics and Common-Mode Voltage Mitigation. *He, J.*, +, *TIE July 2020 5232-5245*
- Analysis and Design of a Novel Six-Switch Five-Level Active Boost Neutral Point Clamped Inverter. *Siwakoti, Y.P.*, +, *TIE Dec. 2020 10485-10496*
- Analysis, Design, and Experimental Verification of a Mixed High-Order Compensations-Based WPT System with Constant Current Outputs for Driving Multistring LEDs. *Li, Y.*, +, *TIE Jan. 2020 203-213*
- Assessment of an Improved Finite Control Set Model Predictive Current Controller for Automotive Propulsion Applications. *Andersson, A.*, +, *TIE Jan. 2020 91-100*
- Asymmetric Cascaded H-Bridge Multilevel Inverter With Single DC Source per Phase. *Vasu, R.*, +, *TIE July 2020 5398-5409*
- Broadband Mode Decomposition and Its Application to the Quality Evaluation of Welding Inverter Power Source Signals. *Peng, Y.*, +, *TIE Nov. 2020 9734-9746*
- Cascaded Transformer Multilevel Inverters With Asymmetrical Turns Ratios Based on NPC. *Bahia, F.A.d.C.*, +, *TIE Aug. 2020 6387-6397*
- Circulating Current Analysis and the Improved D- Σ Digital Control Strategy for Multiparalleled Three-Level T-Type Grid-Connected Inverters. *Ren, B.*, +, *TIE April 2020 2810-2821*
- Closed-Form Analytic Expression of Total Harmonic Distortion in Single-Phase Multilevel Inverters With Staircase Modulation. *Barbie, E.*, +, *TIE June 2020 5213-5216*
- Closed-Loop Control and Boundary for CCM and DCM of Nonisolated Inverting $N \times$ Multilevel Boost Converter for High-Voltage Step-Up Applications. *Iqbal, A.*, +, *TIE April 2020 2863-2874*
- Comments on "Fault-Tolerant Control Strategies for T-Type Three-Level Inverters Considering Neutral-Point Voltage Oscillations". *Wang, J.*, +, *TIE Aug. 2020 7114-7115*
- Concurrent Wireless Power Transfer to Multiple Receivers With Additional Resonant Frequencies and Reduced Power Switches. *Xiao, Y.*, +, *TIE Nov. 2020 9292-9301*
- Control Scheme to Achieve Multiple Objectives and Superior Reliability for Input-Series-Output-Parallel LCL-Type Grid-Connected Inverter System. *Fang, T.*, +, *TIE Jan. 2020 214-224*

- Coupled Inductor Based Regenerative Cascaded Multicell Converter for Drives With Multilevel Voltage Operation at Both Input and Output Sides. *Sau, S.*, +, *TIE Jan. 2020 147-158*
- DC-Link Voltage-Balancing Strategy Based on Optimal Switching Sequence Model Predictive Control for Single-Phase H-NPC Converters. *Vazquez, S.*, +, *TIE Sept. 2020 7410-7420*
- Decoupled $d-q$ Axes Current-Sharing Control of Multi-Three-Phase Induction Machines. *Sala, G.*, +, *TIE Sept. 2020 7124-7134*
- Determination of Stray Inductance of Low-Inductive Laminated Planar Multipole Busbars Using Vector Synthesis Method. *Lu, B.*, +, *TIE Feb. 2020 1337-1347*
- Digitally Controlled Gate Current Source-Based Active Gate Driver for Silicon Carbide MOSFETs. *Sukhatme, Y.*, +, *TIE Dec. 2020 10121-10133*
- Direct Single-Power-Conversion Bidirectional Grid-Connected Inverter Solving Commutation Problem. *Jeong, S.*, +, *TIE Dec. 2020 10335-10345*
- Discrete Space Vector Modulation-Based Model Predictive Torque Control With No Suboptimization. *Osman, I.*, +, *TIE Oct. 2020 8164-8174*
- Discrete-Time Modified UDE-Based Current Control for $L+C+L$ -Type Grid-Tied Inverters. *Wu, Y.*, +, *TIE March 2020 2143-2154*
- DLFCR Reduction Based on Power Predictive Scheme for Full-Bridge Photovoltaic Microinverter. *Kan, J.*, +, *TIE June 2020 4658-4669*
- Double Vector Model Predictive Control to Reduce Common-Mode Voltage Without Weighting Factors for Three-Level Inverters. *Liu, T.*, +, *TIE Oct. 2020 8980-8990*
- Dual-Input Quasi-Z-Source PV Inverter: Dynamic Modeling, Design, and Control. *Lashab, A.*, +, *TIE Aug. 2020 6483-6493*
- Dual-Loop-Based Harmonic Current Control Strategy and Admittance Modeling for a Multimodular Parallel SAPFs System. *Liu, K.*, +, *TIE July 2020 5456-5466*
- Enhanced Braking Control for the Induction Machine Using Scalar Control. *Costa, C.A.*, +, *TIE Nov. 2020 9133-9142*
- Enhanced Floating Capacitor Voltage Balancing Schemes for Single-Source Seven-Level Inverters With Capacitor Fed H-Bridge Units. *Davis, T.T.*, +, *TIE Aug. 2020 6227-6236*
- Evaluation of the off-State Base-Emitter Voltage Requirement of the SiC BJT With a Regenerative Proportional Base Driver Circuit and Their Application in an Inverter. *McNeill, N.*, +, *TIE Sept. 2020 7179-7189*
- Fast Restarting of Free-Running Induction Motors Under Speed-Sensorless Vector Control. *Yin, S.*, +, *TIE July 2020 6124-6134*
- Fault Detection and Identification Scheme for Dual-Inverter Fed OEWM Drive. *Yang, S.*, +, *TIE July 2020 6112-6123*
- Finite Control Set Model Predictive Control for LCL-Filtered Grid-Tied Inverter With Minimum Sensors. *Chen, X.*, +, *TIE Dec. 2020 9980-9990*
- FOC Transformation for Single Open-Phase Faults in the Five-Phase Open-End Winding Topology. *Priestley, M.*, +, *TIE Feb. 2020 842-851*
- Frequency Adaptive Grid Voltage Sensorless Control of LCL-Filtered Inverter Based on Extended Model Observer. *Tran, T.V.*, +, *TIE Sept. 2020 7560-7573*
- Generalized Space Vector Modulation for Current Source Converter in Continuous and Discontinuous Current Modes. *Guo, X.*, +, *TIE Nov. 2020 9348-9357*
- Generalized Symmetrical Step-Up Multilevel Inverter Using Crisscross Capacitor Units. *Lin, W.*, +, *TIE Sept. 2020 7439-7450*
- Harmonic Compensation Strategy for Single-Phase Cascaded H-Bridge PV Inverter Under Unbalanced Power Conditions. *Wang, M.*, +, *TIE Dec. 2020 10474-10484*
- ILC-Based Voltage Compensation Method for PMSM Sensorless Control Considering Inverter Nonlinearity and Sampling Current DC Bias. *Wang, Y.*, +, *TIE July 2020 5980-5989*
- Implementation of an Optimum Reduced Components Multicell Multilevel Inverter (MC-MLI) for Lower Standing Voltage. *Majumdar, S.*, +, *TIE April 2020 2765-2775*
- Improved Accuracy, Modeling, and Stability Analysis of Power-Hardware-in-Loop Simulation With Open-Loop Inverter as Power Amplifier. *Upamanyu, K.*, +, *TIE Jan. 2020 369-378*
- Integrated-Power-Control-Strategy-Based Electrolytic Capacitor-Less Back-to-Back Converter for Variable Frequency Speed Control System. *Bao, D.*, +, *TIE Dec. 2020 10065-10074*
- Inverter Side RL Filter Precise Design for Motor Overvoltage Mitigation in SiC-Based Drives. *Ruffo, R.*, +, *TIE Feb. 2020 863-873*
- Investigation of Harmonic Losses in a Two-Pole Slotless Permanent-Magnet Motor Due to Wide Bandgap Inverter Supply. *Millinger, J.*, +, *TIE Aug. 2020 6280-6289*
- LQR Control of Single-Phase Grid-Tied PUC5 Inverter With LCL Filter. *Arab, N.*, +, *TIE Jan. 2020 297-307*
- Magnetically Coupled High-Voltage-Boost Split Y -Source Inverter Without Leakage-Induced Voltage Spikes. *Chen, M.*, +, *TIE July 2020 5444-5455*
- Minimization of Switched Capacitor Voltage Ripple in a Multilevel Dodecagonal Voltage Space Vector Structure for Drives. *Imthias, M.*, +, *TIE Jan. 2020 126-135*
- Minimum-Loss Control Strategy for a Dual-VSI DFIG DC System. *Marques, G.D.*, +, *TIE Oct. 2020 8175-8185*
- Motor Parameter-Free Predictive Current Control of Synchronous Motors by Recursive Least-Square Self-Commissioning Model. *Tinazzi, F.*, +, *TIE Nov. 2020 9093-9100*
- Multi-Input Multi-Output-Based Sliding-Mode Controller for Single-Phase Quasi-Z-Source Inverters. *Bagheri, F.*, +, *TIE Aug. 2020 6439-6449*
- Noise Rejection and Detection of Partial Discharges Under Repetitive Impulse Supply Voltage. *Ghosh, R.*, +, *TIE May 2020 4144-4151*
- Novel Current Profile of Switched Reluctance Machines for Torque Density Enhancement in Low-Speed Applications. *Huang, L.*, +, *TIE Nov. 2020 9623-9634*
- Novel Transformerless Buck-Boost Inverters Without Leakage Current. *Khan, A.A.*, +, *TIE Dec. 2020 10442-10454*
- Online Feedback Dead Time Compensation Strategy for Three-Level T-Type Inverters. *Wang, D.*, +, *TIE Sept. 2020 7260-7268*
- Optimal DC Source Influence on Selective Harmonic Elimination in Multilevel Inverters Using Teaching-Learning-Based Optimization. *Haghdar, K.*, *TIE Feb. 2020 942-949*
- Optimal Tracking With Disturbance Rejection of Voltage Source Inverters. *Teng, J.*, +, *TIE June 2020 4957-4968*
- Optimal Voltage-Support Control for Distributed Generation Inverters in RL Grid-Faulty Networks. *Garnica, M.*, +, *TIE Oct. 2020 8405-8415*
- Optimization and Implementation of the Proportional-Resonant Controller for Grid-Connected Inverter With Significant Computation Delay. *Husev, O.*, +, *TIE Feb. 2020 1201-1211*
- Performance Improvement of the Unbalanced Voltage Compensation in Islanded Microgrid Based on Small-Signal Analysis. *Peng, Y.*, +, *TIE July 2020 5531-5542*
- Power Capability Improvement of Interior Permanent Magnet Synchronous Motor Drives Using Capacitive Network. *Lee, K.*, +, *TIE Dec. 2020 10109-10120*
- PSO-Based Optimization of DC-Link Current Harmonics in Traction VSI for an Electric Vehicle. *Steczek, M.*, +, *TIE Oct. 2020 8197-8208*
- Research on Power Equalization of Three-Phase Cascaded H-Bridge Photovoltaic Inverter Based on the Combination of Hybrid Modulation Strategy and Zero-Sequence Injection Methods. *Mao, W.*, +, *TIE Nov. 2020 9337-9347*
- Research on the Dynamic Characteristics and Regulation Method of the Energy Stored Quasi-Z-Source Inverter System. *Hu, S.*, +, *TIE June 2020 4590-4599*
- Resynchronization of Distributed Generation Based on the Universal Droop Controller for Seamless Transfer Between Operation Modes. *Amin, M.*, +, *TIE Sept. 2020 7574-7582*
- Robust Current Control of Grid-Tied Inverters Affected by LCL Filter Soft-Saturation. *Osorio, C.R.D.*, +, *TIE Aug. 2020 6550-6561*
- Seamless Transition of Synchronous Inverters Using Synchronizing Virtual Torque and Flux Linkage. *Ramezani, M.*, +, *TIE Jan. 2020 319-328*
- Simultaneous Common-Mode Voltage Reduction and Neutral-Point Voltage Balance Scheme for the Quasi-Z-Source Three-Level T-Type Inverter. *Qin, C.*, +, *TIE March 2020 1956-1967*

Single-Cycle-Lag Compensator-Based Active Damping for Digitally Controlled LCL/LLCL-Type Grid-Connected Inverters. *Miao, Z.*, +, *TIE March 2020 1980-1990*

Single-Phase Dual-Mode Interleaved Multilevel Inverter for PV Applications. *Pourfaraj, A.*, +, *TIE April 2020 2905-2915*

Switched-Capacitor Differential Boost Inverter: Design, Modeling, and Control. *Silva, G.V.*, +, *TIE July 2020 5421-5431*

Torque Distributed Control Strategy for the Dual Three-Phase PMSM in Hybrid Energy Storage System Application. *Hu, S.*, +, *TIE April 2020 2544-2552*

Torque Ripple Suppression for Open-End Winding Permanent-Magnet Synchronous Machine Drives With Predictive Current Control. *Yuan, X.*, +, *TIE March 2020 1771-1781*

Unified Graphical Model of High-Frequency Signal Injection Methods for PMSM Sensorless Control. *Li, H.*, +, *TIE June 2020 4411-4421*

Vector Shifted Model Predictive Power Control of Three-Level Neutral-Point-Clamped Rectifiers. *Zhou, D.*, +, *TIE Sept. 2020 7157-7166*

Voltage Grid Supporting by Using Variable Structure Adaptive Virtual Impedance for LCL-Voltage Source Converter DG Converters. *Fonseca, T.Q.*, +, *TIE Nov. 2020 9326-9336*

Weighted Efficiency Enhancement for Single-Power-Conversion Microinverters Using Hybrid-Mode Modulation Strategy. *Kim, K.*, +, *TIE Dec. 2020 10243-10252*

Ion accelerators

Analytic Modeling Optimal Control of Pulsed Power Supply for Accelerator Magnet. *Wang, X.*, +, *TIE July 2020 5657-5665*

Iron

Nonregenerative Braking of Permanent Magnet Synchronous Motor. *Marce-tic, D.P.*, +, *TIE Oct. 2020 8186-8196*

Iron alloys

Mitigation of DC-Link Current Ripple for Dual Three-Phase Flux-Adjustable Hybrid PMAC Drives Using Collaborative Switching Strategy. *Wang, Z.*, +, *TIE Sept. 2020 7202-7216*

Multifunction Transformer With Adjustable Magnetic Stage Based on Nanocomposite Semihard Magnets. *Chen, Z.*, +, *TIE May 2020 4226-4234*

Iron compounds

Bidirectional DC-DC Converter for Modular Residential Battery Energy Storage Systems. *Chub, A.*, +, *TIE March 2020 1944-1955*

ISO standards

An Analysis of the Impact of Transient Faults on the Performance of the CAN-FD Protocol. *Pohren, D.H.*, +, *TIE March 2020 2440-2449*

Data-Driven Soft Sensor for the Estimation of Sound Power Levels of Refrigeration Compressors Through Vibration Measurements. *Nascimento, A.S.B.d.S.*, +, *TIE Aug. 2020 7065-7072*

Iterative learning control

Current-Cycle Iterative Learning Control for High-Precision Position Tracking of Piezoelectric Actuator System via Active Disturbance Rejection Control for Hysteresis Compensation. *Huang, D.*, +, *TIE Oct. 2020 8680-8690*

Distributed Control of Multiple Flexible Manipulators With Unknown Disturbances and Dead-Zone Input. *Chen, T.*, +, *TIE Nov. 2020 9937-9947*

High-Order Model-Free Adaptive Iterative Learning Control of Pneumatic Artificial Muscle With Enhanced Convergence. *Ai, Q.*, +, *TIE Nov. 2020 9548-9559*

ILC-Based Voltage Compensation Method for PMSM Sensorless Control Considering Inverter Nonlinearity and Sampling Current DC Bias. *Wang, Y.*, +, *TIE July 2020 5980-5989*

Improved Iterative Learning Control Strategy for Surface-Mounted Permanent Magnet Synchronous Motor Drives. *Mohammed, S.A.Q.*, +, *TIE Dec. 2020 10134-10144*

Iterative Learning Control for Time-Varying Systems Subject to Variable Pass Lengths: Application to Robot Manipulators. *Shi, J.*, +, *TIE Oct. 2020 8629-8637*

Synthesis of ILC-MPC Controller With Data-Driven Approach for Constrained Batch Processes. *Li, D.*, +, *TIE April 2020 3116-3125*

Iterative methods

A Decentralized Periodic Energy Trading Framework for Pelagic Islanded Microgrids. *Hu, M.*, +, *TIE Sept. 2020 7595-7605*

Adaptive Visual Servoing for an Underwater Soft Robot Considering Refraction Effects. *Xu, F.*, +, *TIE Dec. 2020 10575-10586*

An Accurate Wide-Speed Range Control Method of IPMSM Considering Resistive Voltage Drop and Magnetic Saturation. *Wang, S.*, +, *TIE April 2020 2630-2641*

An Effective Subsuperpixel-Based Approach for Background Subtraction. *Chen, Y.*, +, *TIE Jan. 2020 601-609*

An Iterative Estimation Algorithm of Prepositioning Focusing on the Detent Force in the Permanent Magnet Linear Synchronous Motor System. *Huang, X.*, +, *TIE Oct. 2020 8252-8261*

Dynamic State Estimation for the Advanced Brake System of Electric Vehicles by Using Deep Recurrent Neural Networks. *Xing, Y.*, +, *TIE Nov. 2020 9536-9547*

High-Order Model-Free Adaptive Iterative Learning Control of Pneumatic Artificial Muscle With Enhanced Convergence. *Ai, Q.*, +, *TIE Nov. 2020 9548-9559*

High-Speed AFM Imaging of Nanopositioning Stages Using H_∞ and Iterative Learning Control. *Xie, H.*, +, *TIE March 2020 2430-2439*

Iterative Learning Control for Time-Varying Systems Subject to Variable Pass Lengths: Application to Robot Manipulators. *Shi, J.*, +, *TIE Oct. 2020 8629-8637*

Optimal Model-Free Output Synchronization of Heterogeneous Multiagent Systems Under Switching Topologies. *Mu, C.*, +, *TIE Dec. 2020 10951-10964*

Parameter Space Optimization Towards Constrained Controller Design With Application to Tray Indexing. *Ma, J.*, +, *TIE July 2020 5575-5585*

SOSO Boosting of the K-SVD Denoising Algorithm for Enhancing Fault-Induced Impulse Responses of Rolling Element Bearings. *Zeng, M.*, +, *TIE Feb. 2020 1282-1292*

Sparsity-Based Algorithm for Condition Assessment of Rotating Machinery Using Internal Encoder Data. *Ding, C.*, +, *TIE Sept. 2020 7982-7993*

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Jitter

An Analysis of the Impact of Transient Faults on the Performance of the CAN-FD Protocol. *Pohren, D.H.*, +, *TIE March 2020 2440-2449*

Junction gate field effect transistors

Characterization of Static and Dynamic Behavior of 1200 V Normally off GaN/SiC Cascode Devices. *Wang, Y.*, +, *TIE Dec. 2020 10284-10294*

Performance and Reliability Review of 650 V and 900 V Silicon and SiC Devices: MOSFETs, Cascode JFETs and IGBTs. *Gonzalez, J.O.*, +, *TIE Sept. 2020 7375-7385*

K

Kalman filters

A Double-Step Unscented Kalman Filter and HMM-Based Zero-Velocity Update for Pedestrian Dead Reckoning Using MEMS Sensors. *Tong, X.*, +, *TIE Jan. 2020 581-591*

A Model-Based Approach for the Estimation of Bearing Forces and Moments Using Outer Ring Deformation. *Kerst, S.*, +, *TIE Jan. 2020 461-470*

A Real-Time Entropy Estimation Algorithm for Lithium Batteries Based on a Combination of Kalman Filter and Nonlinear Observer. *Thenaisie, G.*, +, *TIE Sept. 2020 8034-8043*

Adaptive Algorithms of Tuning and Switching Kalman and \mathcal{H}_∞ Filters and Their Application to Estimation of Ship Oscillation With Time-Varying Frequencies. *Sato, M.*, +, *TIE Jan. 2020 501-511*

Design and Experimental Evaluation of Immersion and Invariance Observer for Low-Cost Attitude-Heading Reference System. *Keighobadi, J.*, +, *TIE Sept. 2020 7871-7878*

Detection of Grid Voltage Fundamental and Harmonic Components Using Kalman Filter Based on Dynamic Tracking Model. *Nie, X.*, *TIE Feb. 2020 1191-1200*

Extended State Filter Based Disturbance and Uncertainty Mitigation for Nonlinear Uncertain Systems With Application to Fuel Cell Temperature Control. *Xue, W.*, +, *TIE Dec. 2020 10682-10692*

- Fine Sensorless Force Control Realization Based on Dither Periodic Component Elimination Kalman Filter and Wide Band Disturbance Observer. *Phuong, T.T.*, +, *TIE Jan. 2020 757-767*
- Foot-Mounted Pedestrian Navigation Algorithm Based on BOR/MINS Integrated Framework. *Deng, Z.*, +, *TIE May 2020 3980-3989*
- Fusion Kalman and Weighted UFIR State Estimator With Improved Accuracy. *You, S.H.*, +, *TIE Dec. 2020 10713-10722*
- Hydrothermal Aging Factor Estimation for Two-Cell Diesel-Engine SCR Systems via a Dual Time-Scale Unscented Kalman Filter. *Jiang, K.*, +, *TIE Jan. 2020 442-450*
- Improved Extended Kalman Filter Estimation Using Threshold Signal Detection With an MEMS Electrostatic Microscanner. *Chen, Y.*, +, *TIE Feb. 2020 1328-1336*
- Improved Fusion of Permanent Magnet Temperature Estimation Techniques for Synchronous Motors Using a Kalman Filter. *Erazo, D.E.G.*, +, *TIE March 2020 1708-1717*
- Interference-Compensating Magnetometer Calibration With Estimated Measurement Noise Covariance for Application to Small-Sized UAVs. *Lee, H.*, +, *TIE Oct. 2020 8829-8840*
- Joint SoC and SoH Estimation for Zinc–Nickel Single-Flow Batteries. *Li, S.*, +, *TIE Oct. 2020 8484-8494*
- Modeling and State-of-Charge Estimation of Supercapacitor Considering Leakage Effect. *Saha, P.*, +, *TIE Jan. 2020 350-357*
- Observability Analysis and Adaptive Information Fusion for Integrated Navigation of Unmanned Ground Vehicles. *Shen, K.*, +, *TIE Sept. 2020 7659-7668*
- Online Battery State of Power Prediction Using PRBS and Extended Kalman Filter. *Nejad, S.*, +, *TIE May 2020 3747-3755*
- Online Parameter Estimation for Supercapacitor State-of-Energy and State-of-Health Determination in Vehicular Applications. *Naseri, F.*, +, *TIE Sept. 2020 7963-7972*
- Parameter Identification and SOC Estimation of a Battery Under the Hysteresis Effect. *Kwak, M.*, +, *TIE Nov. 2020 9758-9767*
- Resilient Control Design for Load Frequency Control System Under False Data Injection Attacks. *Abbaspour, A.*, +, *TIE Sept. 2020 7951-7962*
- Sensorless Control of Linear Flux-Switching Permanent Magnet Motor Based on Extended Kalman Filter. *Cao, R.*, +, *TIE July 2020 5971-5979*
- Sequential Fusion Estimation for Networked Multisensor Nonlinear Systems. *Zhang, W.*, +, *TIE June 2020 4991-4999*

L

Laboratory techniques

- A Reliable Single-Phase Bipolar Buck–Boost Direct PWM AC–AC Converter With Continuous Input/Output Currents. *Ahmed, H.F.*, +, *TIE Dec. 2020 10253-10265*

Laminates

- Determination of Stray Inductance of Low-Inductive Laminated Planar Multiport Busbars Using Vector Synthesis Method. *Lu, B.*, +, *TIE Feb. 2020 1337-1347*
- Multiresonant Chipless RFID Array System for Coating Defect Detection and Corrosion Prediction. *Deif, S.*, +, *TIE Oct. 2020 8868-8877*

Laminations

- A Novel Concept of Ribless Synchronous Reluctance Motor for Enhanced Torque Capability. *Bao, Y.*, +, *TIE April 2020 2553-2563*
- Magnetic Sensor Design for a Permanent Magnet Linear Motor Considering Edge-Effect. *Luu, P.T.*, +, *TIE July 2020 5768-5777*
- Performance Comparison Between PCB-Stator and Laminated-Core-Stator-Based Designs of Axial Flux Permanent Magnet Motors for High-Speed Low-Power Applications. *S., N.*, +, *TIE July 2020 5269-5277*
- Water Cold Plates for Efficient Cooling: Verified on a Permanent-Magnet Machine With Concentrated Winding. *Fan, X.*, +, *TIE July 2020 5325-5336*

Lamps

- Multidimensional Fractional-Order Newton-Based Extremum Seeking for Online Light-Energy Saving Technique of Lighting System. *Yin, C.*, +, *TIE Oct. 2020 8576-8586*

Laplace equations

- Analytical Calculation of the Magnetic Field Distribution in Slotless Brushless Machines With U-Shaped Interior Permanent Magnets. *Hajdinjak, M.*, +, *TIE Aug. 2020 6721-6731*

Large-scale systems

- Characteristic Analysis and Risk Assessment for Voltage–Frequency Coupled Transient Instability of Large-Scale Grid-Connected Renewable Energy Plants During LVRT. *Pei, J.*, +, *TIE July 2020 5515-5530*

Laser beam cutting

- Effect of Laser Cutting on Core Losses in Electrical Machines—Measurements and Modeling. *Sundaria, R.*, +, *TIE Sept. 2020 7354-7363*

Laser beam welding

- Real-Time CU-Net-Based Welding Quality Inspection Algorithm in Battery Production. *Zhang, H.*, +, *TIE Dec. 2020 10942-10950*

Laser beams

- A Distortion Model of Laser Sheet for a Laser Line Scanner With Large Fan Angle. *Yoon, S.*, +, *TIE Aug. 2020 6986-6995*

Lathes

- Design of a High-Force Electromechanical Actuator for Electrically Driven Lathe Machine. *Jang, D.*, +, *TIE Nov. 2020 9526-9535*

LC circuits

- 1-kV Input 1-MHz GaN Stacked Bridge LLC Converters. *Zhang, Z.*, +, *TIE Nov. 2020 9227-9237*
- A High-Frequency Link Matrix Rectifier With a Pure Capacitive Output Filter in a Discontinuous Conduction Mode. *Lan, D.*, +, *TIE Jan. 2020 4-15*
- A Reliable Single-Phase Bipolar Buck–Boost Direct PWM AC–AC Converter With Continuous Input/Output Currents. *Ahmed, H.F.*, +, *TIE Dec. 2020 10253-10265*
- Analysis and Experimental Validation of Bidirectional Z-Source DC Circuit Breakers. *Savaliya, S.G.*, +, *TIE June 2020 4613-4622*
- Bidirectional DC–DC Converter for Modular Residential Battery Energy Storage Systems. *Chub, A.*, +, *TIE March 2020 1944-1955*
- Stacked Class-E Amplifier. *Pena-Eguiluz, R.*, +, *TIE Oct. 2020 8292-8301*
- Unified Second-Stage LC Filter Applied in the Three-State Switching Cell Buck–Boost Converter: Static and Dynamic Analysis and Experimentation. *Larico, H.R.E.*, +, *TIE Jan. 2020 225-234*

Lead acid batteries

- Distributed Control of Active Cell Balancing and Low-Voltage Bus Regulation in Electric Vehicles Using Hierarchical Model-Predictive Control. *Gong, Z.*, +, *TIE Dec. 2020 10464-10473*

Lead compounds

- Piezoelectric Motor Utilizing an Alumina/PZT Transducer. *Wu, J.*, +, *TIE Aug. 2020 6762-6772*

Leakage currents

- A Coupled Inductor-Based Buck–Boost Type Grid Connected Transformerless PV Inverter Having the Ability to Control Two Subarrays Simultaneously. *Dutta, S.*, +, *TIE July 2020 5543-5553*
- A Four-Quadrant Single-Phase Grid-Connected Converter With Only Two High-Frequency Switches. *Siu, K.K.M.*, +, *TIE March 2020 1899-1909*
- A New Single-Phase Transformerless Grid-Connected Inverter With Boosting Ability and Common Ground Feature. *Vosoughi, N.*, +, *TIE Nov. 2020 9313-9325*
- A New Transformerless Inverter With Leakage Current Limiting and Voltage Boosting Capabilities for Grid-Connected PV Applications. *Jahan, H.K.*, *TIE Dec. 2020 10542-10551*
- A Novel Scalar PWM Method to Reduce Leakage Current in Three-Phase Two-Level Transformerless Grid-Connected VSIs. *Xu, J.*, +, *TIE May 2020 3788-3797*
- Characterization of Static and Dynamic Behavior of 1200 V Normally off GaN/SiC Cascode Devices. *Wang, Y.*, +, *TIE Dec. 2020 10284-10294*
- Charge-Based Supercapacitor Power Estimation for Indoor Sub-mW Photovoltaic Energy Harvesting Powered Wireless Sensor Nodes. *Yue, X.*, +, *TIE March 2020 2411-2421*
- Estimation of Contamination Level of Overhead Insulators Based on Surface Leakage Current Employing Detrended Fluctuation Analysis. *Deb, S.*, +, *TIE July 2020 5729-5736*

Learning (artificial intelligence)

- A Metric-Learning-Based Nonlinear Modeling Algorithm and Its Application in Key-Performance-Indicator Prediction. *Duan, Y.*, +, *TIE Aug. 2020* 7073-7082
- A New Penalty Domain Selection Machine Enabled Transfer Learning for Gearbox Fault Recognition. *Shen, F.*, +, *TIE Oct. 2020* 8743-8754
- A Novel Application of Deep Belief Networks in Learning Partial Discharge Patterns for Classifying Corona, Surface, and Internal Discharges. *Karimi, M.*, +, *TIE April 2020* 3277-3287
- A Polynomial Kernel Induced Distance Metric to Improve Deep Transfer Learning for Fault Diagnosis of Machines. *Yang, B.*, +, *TIE Nov. 2020* 9747-9757
- A Prognostic Model Based on DBN and Diffusion Process for Degrading Bearing. *Hu, C.*, +, *TIE Oct. 2020* 8767-8777
- A Self-Governed Online Energy Management and Trading for Smart Micro/Nano-Grids. *Latifi, M.*, +, *TIE Sept. 2020* 7484-7498
- Adaptive Prognostic of Fuel Cells by Implementing Ensemble Echo State Networks in Time-Varying Model Space. *Li, Z.*, +, *TIE Jan. 2020* 379-389
- An Efficient Convolutional Neural Network Model Based on Object-Level Attention Mechanism for Casting Defect Detection on Radiography Images. *Hu, C.*, +, *TIE Dec. 2020* 10922-10930
- An Energy-Efficient Multimode Multichannel Gas-Sensor System With Learning-Based Optimization and Self-Calibration Schemes. *Park, K.*, +, *TIE March 2020* 2402-2410
- An Intelligent Data-Driven Model to Secure Intravehicle Communications Based on Machine Learning. *Al-Saud, M.*, +, *TIE June 2020* 5112-5119
- Application of Economical Building Management System for Singapore Commercial Building. *Li, W.*, *TIE May 2020* 4235-4243
- Back-to-Back Competitive Learning Mechanism for Fuzzy Logic Based Supervisory Control System of Hybrid Electric Vehicles. *Li, J.*, +, *TIE Oct. 2020* 8900-8909
- Bayesian Deep-Learning-Based Health Prognostics Toward Prognostics Uncertainty. *Peng, W.*, +, *TIE March 2020* 2283-2293
- Broad Convolutional Neural Network Based Industrial Process Fault Diagnosis With Incremental Learning Capability. *Yu, W.*, +, *TIE June 2020* 5081-5091
- Computer Modeling of the Eddy Current Losses of Metal Fasteners in Rotor Slots of a Large Nuclear Steam Turbine Generator Based on Finite-Element Method and Deep Gaussian Process Regression. *Zhao, J.*, +, *TIE July 2020* 5349-5359
- Data-Driven Fault Diagnosis Method Based on Compressed Sensing and Improved Multiscale Network. *Hu, Z.*, +, *TIE April 2020* 3216-3225
- Data-Driven Modeling Based on Two-Stream λ Gated Recurrent Unit Network With Soft Sensor Application. *Xie, R.*, +, *TIE Aug. 2020* 7034-7043
- Data-Driven Soft Sensor for the Estimation of Sound Power Levels of Refrigeration Compressors Through Vibration Measurements. *Nascimento, A.S.B.d.S.*, +, *TIE Aug. 2020* 7065-7072
- Deep Learning Approaches on Pedestrian Detection in Hazy Weather. *Li, G.*, +, *TIE Oct. 2020* 8889-8899
- Deep Learning-Based Machinery Fault Diagnostics With Domain Adaptation Across Sensors at Different Places. *Li, X.*, +, *TIE Aug. 2020* 6785-6794
- Distributed Fast Fault Diagnosis for Multimachine Power Systems via Deterministic Learning. *Chen, T.*, +, *TIE May 2020* 4152-4162
- DMP-Based Motion Generation for a Walking Exoskeleton Robot Using Reinforcement Learning. *Yuan, Y.*, +, *TIE May 2020* 3830-3839
- Dynamic State Estimation for the Advanced Brake System of Electric Vehicles by Using Deep Recurrent Neural Networks. *Xing, Y.*, +, *TIE Nov. 2020* 9536-9547
- Fault Diagnosis in Microelectronics Attachment Via Deep Learning Analysis of 3-D Laser Scans. *Dimitriou, N.*, +, *TIE July 2020* 5748-5757
- Generalized Semisupervised Self-Optimizing Kernel Model for Quality-Related Industrial Process Monitoring. *Wei, C.*, +, *TIE Dec. 2020* 10876-10886
- Improved Classification Scheme Using Fused Wavelet Packet Transform Based Features for Intelligent Myoelectric Prostheses. *Pancholi, S.*, +, *TIE Oct. 2020* 8517-8525

- Intelligent Fault Identification Based on Multisource Domain Generalization Towards Actual Diagnosis Scenario. *Zheng, H.*, +, *TIE Feb. 2020* 1293-1304
- Learning Representations With Local and Global Geometries Preserved for Machine Fault Diagnosis. *Li, Y.*, +, *TIE March 2020* 2360-2370
- Light Sensor Based Occupancy Estimation via Bayes Filter With Neural Networks. *Chen, Z.*, +, *TIE July 2020* 5787-5797
- Meta Learning for Task-Driven Video Summarization. *Li, X.*, +, *TIE July 2020* 5778-5786
- Multitask Bayesian Spatiotemporal Gaussian Processes for Short-Term Load Forecasting. *Gilanifar, M.*, +, *TIE June 2020* 5132-5143
- Multitask Convolutional Neural Network With Information Fusion for Bearing Fault Diagnosis and Localization. *Guo, S.*, +, *TIE Sept. 2020* 8005-8015
- Neurofuzzy-Based Plant-Wide Hierarchical Coordinating Optimization and Control: An Application to Zinc Hydrometallurgy Plant. *Xie, S.*, +, *TIE March 2020* 2207-2219
- Optimal Model-Free Output Synchronization of Heterogeneous Multiagent Systems Under Switching Topologies. *Mu, C.*, +, *TIE Dec. 2020* 10951-10964
- Optimized Ensemble Extreme Learning Machine for Classification of Electrical Insulators Conditions. *Stefenon, S.F.*, +, *TIE June 2020* 5170-5178
- Optimized Formation Control Using Simplified Reinforcement Learning for a Class of Multiagent Systems With Unknown Dynamics. *Wen, G.*, +, *TIE Sept. 2020* 7879-7888
- Physical Unclonable Function-Based Key Sharing via Machine Learning for IoT Security. *Zhang, J.*, +, *TIE Aug. 2020* 7025-7033
- Power Scheduling in More Electric Aircraft Based on an Optimal Adaptive Control Strategy. *Zhang, Y.*, +, *TIE Dec. 2020* 10911-10921
- Privacy-Preserving Database Assisted Spectrum Access for Industrial Internet of Things: A Distributed Learning Approach. *Zhang, M.*, +, *TIE Aug. 2020* 7094-7103
- Real-Time CU-Net-Based Welding Quality Inspection Algorithm in Battery Production. *Zhang, H.*, +, *TIE Dec. 2020* 10942-10950
- Salient Object Detection by Spatiotemporal and Semantic Features in Real-Time Video Processing Systems. *Fang, Y.*, +, *TIE Nov. 2020* 9893-9903
- SAT: Single-Shot Adversarial Tracker. *Wu, Q.*, +, *TIE Nov. 2020* 9882-9892
- SDDNet: Real-Time Crack Segmentation. *Choi, W.*, +, *TIE Sept. 2020* 8016-8025
- SmartLoc: Smart Wireless Indoor Localization Empowered by Machine Learning. *Li, L.*, +, *TIE Aug. 2020* 6883-6893
- Sparse Machine Learning Discovery of Dynamic Differential Equation of an Esophageal Swallowing Robot. *Bhattacharya, D.*, +, *TIE June 2020* 4711-4720
- Spatial Correlation-Based Incremental Learning for Spatiotemporal Modeling of Battery Thermal Process. *Wang, B.*, +, *TIE April 2020* 2885-2893
- Transfer Learning With Long Short-Term Memory Network for State-of-Health Prediction of Lithium-Ion Batteries. *Tan, Y.*, +, *TIE Oct. 2020* 8723-8731
- Unsupervised Adversarial Adaptation Network for Intelligent Fault Diagnosis. *Jiao, J.*, +, *TIE Nov. 2020* 9904-9913
- Learning systems**
- Finite-Time Adaptive Quantized Control of Stochastic Nonlinear Systems With Input Quantization: A Broad Learning System Based Identification Method. *Sui, S.*, +, *TIE Oct. 2020* 8555-8565
- Force Sensorless Admittance Control With Neural Learning for Robots With Actuator Saturation. *Peng, G.*, +, *TIE April 2020* 3138-3148
- Motor Learning and Generalization Using Broad Learning Adaptive Neural Control. *Huang, H.*, +, *TIE Oct. 2020* 8608-8617
- Least mean squares methods**
- 1-kV Input 1-MHz GaN Stacked Bridge LLC Converters. *Zhang, Z.*, +, *TIE Nov. 2020* 9227-9237
- An Improved Deadbeat Predictive Current Control With Online Parameter Identification for Surface-Mounted PMSMs. *Yao, Y.*, +, *TIE Dec. 2020* 10145-10155
- An Optimized Modulation Strategy for the Three-Level DAB Converter With Five Control Degrees of Freedom. *Liu, P.*, +, *TIE Jan. 2020* 254-264

Improved Reweighted Zero-Attracting Quaternion-Valued LMS Algorithm for Islanded Distributed Generation System at IM Load. *Kawat, S., +, TIE May 2020 3705-3716*

Least squares approximations

A Metric-Learning-Based Nonlinear Modeling Algorithm and Its Application in Key-Performance-Indicator Prediction. *Duan, Y., +, TIE Aug. 2020 7073-7082*

A Voltage Adaptive Dynamic Harmonic Model of Nonlinear Home Appliances. *Sun, Y., +, TIE May 2020 3607-3617*

An Optimal Compensation Method of Shunt Active Power Filters for System-Wide Voltage Quality Improvement. *Zhai, H., +, TIE Feb. 2020 1270-1281*

Data-Driven Batch-End Quality Modeling and Monitoring Based on Optimized Sparse Partial Least Squares. *Jiang, Q., +, TIE May 2020 4098-4107*

DC Fault Analysis Models of Three Converter Topologies Considering Control Effects. *Li, Y., +, TIE Nov. 2020 9480-9491*

Efficient QR Updating Factorization for Sensorless Synchronous Motor Drive Based on High Frequency Voltage Injection. *Toso, F., +, TIE Dec. 2020 10213-10222*

Motor Parameter-Free Predictive Current Control of Synchronous Motors by Recursive Least-Square Self-Commissioning Model. *Tinazzi, F., +, TIE Nov. 2020 9093-9100*

Online Hysteresis Identification and Compensation for Piezoelectric Actuators. *Liu, Y., +, TIE July 2020 5595-5603*

Optimal Model-Free Output Synchronization of Heterogeneous Multiagent Systems Under Switching Topologies. *Mu, C., +, TIE Dec. 2020 10951-10964*

Parameter Identification and SOC Estimation of a Battery Under the Hysteresis Effect. *Kwak, M., +, TIE Nov. 2020 9758-9767*

Voluntary and FES-Induced Finger Movement Estimation Using Muscle Deformation Features. *Zhou, Y., +, TIE May 2020 4002-4012*

LED lamps

Energy-Efficient Supplemental LED Lighting Control for a Proof-of-Concept Greenhouse System. *Jiang, J., +, TIE April 2020 3033-3042*

Legged locomotion

Adaptive Time-Delay Balance Control of Biped Robots. *Pi, M., +, TIE April 2020 2936-2944*

DMP-Based Motion Generation for a Walking Exoskeleton Robot Using Reinforcement Learning. *Yuan, Y., +, TIE May 2020 3830-3839*

Human-Cooperative Control of a Wearable Walking Exoskeleton for Enhancing Climbing Stair Activities. *Li, Z., +, TIE April 2020 3086-3095*

Lenses

A Distortion Model of Laser Sheet for a Laser Line Scanner With Large Fan Angle. *Yoon, S., +, TIE Aug. 2020 6986-6995*

Novel Method for Direct Measurement of Air Gap Anomalies in Direct-Drive Electrical Motors. *Herman, J., +, TIE March 2020 2422-2429*

Life testing

Thermal Overload and Insulation Aging of Short Duty Cycle, Aerospace Motors. *Madonna, V., +, TIE April 2020 2618-2629*

Lifts

A Hybrid-Driven Elevator System With Energy Regeneration and Safety Enhancement. *Zhao, B., +, TIE Sept. 2020 7715-7726*

Light absorption

A High-Resolution Optical Displacement Detection Method for Piezoelectric Microvibratory Stage. *Zhan, H., +, TIE Dec. 2020 10897-10904*

Light emitting diodes

A Wireless Dimmable Lighting System Using Variable-Power Variable-Frequency Control. *Liu, W., +, TIE Oct. 2020 8392-8404*

Analysis, Design, and Experimental Verification of a Mixed High-Order Compensations-Based WPT System with Constant Current Outputs for Driving Multistring LEDs. *Li, Y., +, TIE Jan. 2020 203-213*

InGaN RGB Light-Emitting Diodes With Monolithically Integrated Photodetectors for Stabilizing Color Chromaticity. *Li, K.H., +, TIE June 2020 5154-5160*

Lateral GaN Schottky Barrier Diode for Wireless High-Power Transfer Application With High RF/DC Conversion Efficiency: From Circuit Construction and Device Technologies to System Demonstration. *Dang, K., +, TIE Aug. 2020 6597-6606*

Light polarization

Light-Field Camera for Fast Switching of Time-Sequential Two-Dimensional and Three-Dimensional Image Capturing at Video Rate. *Joo, K., +, TIE Aug. 2020 6975-6985*

Light reflection

Novel Method for Direct Measurement of Air Gap Anomalies in Direct-Drive Electrical Motors. *Herman, J., +, TIE March 2020 2422-2429*

Lighting

Multidimensional Fractional-Order Newton-Based Extremum Seeking for Online Light-Energy Saving Technique of Lighting System. *Yin, C., +, TIE Oct. 2020 8576-8586*

Lighting control

A Wireless Dimmable Lighting System Using Variable-Power Variable-Frequency Control. *Liu, W., +, TIE Oct. 2020 8392-8404*

Energy-Efficient Supplemental LED Lighting Control for a Proof-of-Concept Greenhouse System. *Jiang, J., +, TIE April 2020 3033-3042*

Linear discriminant analysis

Intelligent Fault Identification Based on Multisource Domain Generalization Towards Actual Diagnosis Scenario. *Zheng, H., +, TIE Feb. 2020 1293-1304*

Linear machines

Design and Optimization of a Novel Dual-Port Linear Generator for Oceanic Wave Energy Conversion. *Farrok, O., +, TIE May 2020 3409-3418*

Linear matrix inequalities

Adaptive Threshold Generation for Vehicle Fault Detection Using Switched T-S Interval Observers. *Ifqir, S., +, TIE June 2020 5030-5040*

Attractive Ellipsoid-Based Robust Control for Quadrotor Tracking. *Falcon, R., +, TIE Sept. 2020 7851-7860*

Full-Order Observer for a Class of Nonlinear Systems With Unmatched Uncertainties: Joint Attractive Ellipsoid and Sliding Mode Concepts. *Sanchez, B., +, TIE July 2020 5677-5686*

H-Infinity Load Frequency Control of Networked Power Systems via an Event-Triggered Scheme. *Zhang, H., +, TIE Aug. 2020 7104-7113*

Improve Disturbance-Rejection Performance for an Equivalent-Input-Disturbance-Based Control System by Incorporating a Proportional-Integral Observer. *Wu, M., +, TIE Feb. 2020 1254-1260*

Interference-Compensating Magnetometer Calibration With Estimated Measurement Noise Covariance for Application to Small-Sized UAVs. *Lee, H., +, TIE Oct. 2020 8829-8840*

Relative Impedance-Based Internal Force Control for Bimanual Robot Teleoperation With Varying Time Delay. *Lu, Z., +, TIE Jan. 2020 778-789*

Robust Current Control of Grid-Tied Inverters Affected by LCL Filter Soft-Saturation. *Osorio, C.R.D., +, TIE Aug. 2020 6550-6561*

Simultaneous Fault Estimation for Markovian Jump Systems With Generally Uncertain Transition Rates: A Reduced-Order Observer Approach. *Li, X., +, TIE Sept. 2020 7889-7897*

Sliding Mode Control for Nonlinear Stochastic Semi-Markov Switching Systems With Application to SRMM. *Qi, W., +, TIE May 2020 3955-3966*

Linear motors

A Novel Model-Based Robust Control for Position Tracking of Permanent Magnet Linear Motor. *Liu, X., +, TIE Sept. 2020 7767-7777*

Finite-Time Control of a Linear Motor Positioner Using Adaptive Recursive Terminal Sliding Mode. *Shao, K., +, TIE Aug. 2020 6659-6668*

Integrated Coordinated/Synchronized Contouring Control of a Dual-Linear-Motor-Driven Gantry. *Chen, Z., +, TIE May 2020 3944-3954*

Magnetic Sensor Design for a Permanent Magnet Linear Motor Considering Edge-Effect. *Luu, P.T., +, TIE July 2020 5768-5777*

Multiobjective Optimization of a Double-Side Linear Vernier PM Motor Using Response Surface Method and Differential Evolution. *Zhao, W., +, TIE Jan. 2020 80-90*

Sensorless Control of Linear Flux-Switching Permanent Magnet Motor Based on Extended Kalman Filter. *Cao, R., +, TIE July 2020 5971-5979*

Linear parameter varying systems

Adaptive Prognostic of Fuel Cells by Implementing Ensemble Echo State Networks in Time-Varying Model Space. *Li, Z., +, TIE Jan. 2020 379-389*

Linear programming

Parameter Space Optimization Towards Constrained Controller Design With Application to Tray Indexing. *Ma, J., +, TIE July 2020 5575-5585*

Linear quadratic control

- Design of a LQR-Based Boost Converter Controller for Energy Savings. *Neacsu, D.O.*, +, *TIE July 2020 5379-5388*
- Frequency Adaptive Grid Voltage Sensorless Control of LCL-Filtered Inverter Based on Extended Model Observer. *Tran, T.V.*, +, *TIE Sept. 2020 7560-7573*
- LQR Control of Single-Phase Grid-Tied PUC5 Inverter With LCL Filter. *Arab, N.*, +, *TIE Jan. 2020 297-307*
- Tuning of Digital PID Controllers Using Particle Swarm Optimization Algorithm for a CAN-Based DC Motor Subject to Stochastic Delays. *Qi, Z.*, +, *TIE July 2020 5637-5646*

Linear synchronous motors

- An Iterative Estimation Algorithm of Prepositioning Focusing on the Detent Force in the Permanent Magnet Linear Synchronous Motor System. *Huang, X.*, +, *TIE Oct. 2020 8252-8261*
- Analytical Prediction and Multiconstrained Nonlinear Optimization of Slotted Linear PM Motors Taking Into Account Two-Dimensional End Effects. *Min, S.G.*, +, *TIE April 2020 2965-2976*
- Detent-Force Minimization of Double-Sided Permanent Magnet Linear Synchronous Motor by Shifting One of the Primary Components. *Huang, X.Z.*, +, *TIE Jan. 2020 180-191*
- Magnetic Field Analysis and Flux Barrier Design for Modular Permanent Magnet Linear Synchronous Motor. *Tan, Q.*, +, *TIE May 2020 3891-3900*
- Multifidelity Surrogate Assisted Rapid Design of Transverse-Flux Permanent Magnet Linear Synchronous Motor. *Ahmed, S.*, +, *TIE Sept. 2020 7280-7289*
- Multiobjective Optimization of a Tubular Coreless LPMSM Based on Adaptive Multiobjective Black Hole Algorithm. *Wu, T.*, +, *TIE May 2020 3901-3910*
- Robust High Bandwidth Current Regulation for Permanent Magnet Synchronous Linear Motor Drivers by Using Two-Degree-of-Freedom Controller and Thrust Ripple Observer. *Zhao, J.*, +, *TIE March 2020 1804-1812*

Linear systems

- H_∞ Refined Antidisturbance Control of Switched LPV Systems With Application to Aero-Engine. *Yang, D.*, +, *TIE April 2020 3180-3190*
- A Novel Scheme of Nonfragile Controller Design for Periodic Piecewise LTV Systems. *Xie, X.*, +, *TIE Dec. 2020 10766-10775*
- Adaptive Internal Model-Based Harmonic Control for Active Torsional Vibration Reduction. *Vadamalu, R.S.*, +, *TIE April 2020 3024-3032*
- Adaptive Threshold Generation for Vehicle Fault Detection Using Switched T-S Interval Observers. *Ifqir, S.*, +, *TIE June 2020 5030-5040*
- Flux-Controlled Hybrid Reluctance Actuator for High-Precision Scanning Motion. *Ito, S.*, +, *TIE Nov. 2020 9593-9600*
- Force Sensorless Admittance Control With Neural Learning for Robots With Actuator Saturation. *Peng, G.*, +, *TIE April 2020 3138-3148*
- Improve Disturbance-Rejection Performance for an Equivalent-Input-Disturbance-Based Control System by Incorporating a Proportional-Integral Observer. *Wu, M.*, +, *TIE Feb. 2020 1254-1260*
- Output-Based Event-Triggered Predictive Control for Networked Control Systems. *Yang, R.*, +, *TIE Dec. 2020 10631-10640*
- Parametric Stability Analysis of Active Magnetic Bearing Supported Rotor System With a Novel Control Law Subject to Periodic Base Motion. *Soni, T.*, +, *TIE Feb. 2020 1160-1170*
- Performance Improvement of Open-Winding PMSMs With a Discrete-Time Designed Zero-Sequence Current Controller Based on Virtual Three-Phase Expansion. *Song, Z.*, +, *TIE Dec. 2020 10046-10054*
- Rate Bumpless Transfer Control for Switched Linear Systems With Stability and Its Application to Aero-Engine Control Design. *Zhao, Y.*, +, *TIE June 2020 4900-4910*
- Repetitive Control Meets Continuous Zero Phase Error Tracking Controller for Precise Tracking of B-Spline Trajectories. *Biagiotti, L.*, +, *TIE Sept. 2020 7808-7818*
- Sensorless Control Strategy for IPMSM to Reduce Audible Noise by Variable Frequency Current Injection. *Du, B.*, +, *TIE Feb. 2020 1149-1159*
- Stochastic Consensus Control Integrated With Performance Improvement: A Consensus Region-Based Approach. *Wang, J.*, +, *TIE April 2020 3000-3012*

- Synchronization of Network Systems via Aperiodic Sampled-Data Control With Constant Delay and Application to Unmanned Ground Vehicles. *Ren, H.*, +, *TIE June 2020 4980-4990*

Linearization techniques

- DC Fault Analysis Models of Three Converter Topologies Considering Control Effects. *Li, Y.*, +, *TIE Nov. 2020 9480-9491*
- Discrete-Time Extended State Observer-Based Model-Free Adaptive Control Via Local Dynamic Linearization. *Chi, R.*, +, *TIE Oct. 2020 8691-8701*
- High-Order Model-Free Adaptive Iterative Learning Control of Pneumatic Artificial Muscle With Enhanced Convergence. *Ai, Q.*, +, *TIE Nov. 2020 9548-9559*
- Precise Phase Demodulation Algorithm for Sinusoidal Encoders and Resolvers. *Ye, G.*, +, *TIE Oct. 2020 8778-8787*
- Sensorless Optimal Commutation Steady Speed Control Method for a Non-ideal Back-EMF BLDC Motor Drive System Including Buck Converter. *Chen, X.*, +, *TIE July 2020 6147-6157*
- Switched-Capacitor Differential Boost Inverter: Design, Modeling, and Control. *Silva, G.V.*, +, *TIE July 2020 5421-5431*

Liquid crystal displays

- A Pre-Bootstrapping Method for Use in Gate Driver Circuits to Improve the Scan Pulse Delay of High-Resolution TFT-LCD Systems. *Lin, C.*, +, *TIE Aug. 2020 7015-7024*
- Light-Field Camera for Fast Switching of Time-Sequential Two-Dimensional and Three-Dimensional Image Capturing at Video Rate. *Joo, K.*, +, *TIE Aug. 2020 6975-6985*

Liquid films

- Measurement of Liquid Film Thickness Using Distributed Conductance Sensor in Multiphase Slug Flow. *Wang, D.*, +, *TIE Oct. 2020 8841-8850*

Lithium compounds

- A Real-Time Entropy Estimation Algorithm for Lithium Batteries Based on a Combination of Kalman Filter and Nonlinear Observer. *Thenaisie, G.*, +, *TIE Sept. 2020 8034-8043*
- A Temperature and Current Rate Adaptive Model for High-Power Lithium-Titanate Batteries Used in Electric Vehicles. *Chen, A.*, +, *TIE Nov. 2020 9492-9502*
- Bidirectional DC-DC Converter for Modular Residential Battery Energy Storage Systems. *Chub, A.*, +, *TIE March 2020 1944-1955*
- Digital Battery Management Design for Point-of-Load Applications With Cell Balancing. *Yang, Y.*, +, *TIE Aug. 2020 6365-6375*
- Distributed Control of Active Cell Balancing and Low-Voltage Bus Regulation in Electric Vehicles Using Hierarchical Model-Predictive Control. *Gong, Z.*, +, *TIE Dec. 2020 10464-10473*
- Lyapunov-Based Thermal Fault Diagnosis of Cylindrical Lithium-Ion Batteries. *Wei, J.*, +, *TIE June 2020 4670-4679*
- Multibattery-Fed Neutral-Point-Clamped DC-AC Converter With SoC Balancing Control to Maximize Capacity Utilization. *Busquets-Monge, S.*, +, *TIE Jan. 2020 16-27*
- Online Fault Diagnosis of External Short Circuit for Lithium-Ion Battery Pack. *Xiong, R.*, +, *TIE Feb. 2020 1081-1091*
- Robust Estimation for State-of-Charge and State-of-Health of Lithium-Ion Batteries Using Integral-Type Terminal Sliding-Mode Observers. *Feng, Y.*, +, *TIE May 2020 4013-4023*
- S-Hybrid Step-Down DC-DC Converter—Analysis of Operation and Design Considerations. *Seo, G.*, +, *TIE Jan. 2020 265-275*
- Spatial Correlation-Based Incremental Learning for Spatiotemporal Modeling of Battery Thermal Process. *Wang, B.*, +, *TIE April 2020 2885-2893*
- Transfer Learning With Long Short-Term Memory Network for State-of-Health Prediction of Lithium-Ion Batteries. *Tan, Y.*, +, *TIE Oct. 2020 8723-8731*

Load (electric)

- A Voltage Adaptive Dynamic Harmonic Model of Nonlinear Home Appliances. *Sun, Y.*, +, *TIE May 2020 3607-3617*
- Analysis and Design of a High-Efficiency 6.78-MHz Wireless Power Transfer System With Scalable Number of Receivers. *Song, J.*, +, *TIE Oct. 2020 8281-8291*
- Hybrid Buck Converter With Constant Mode Changing Point and Smooth Mode Transition for High-Frequency Applications. *Yuan, B.*, +, *TIE Feb. 2020 1466-1474*

Load distribution

Novel Boost-SEPIC Type Interleaved DC–DC Converter for Mitigation of Voltage Imbalance in a Low-Voltage Bipolar DC Microgrid. *Prabhakaran, P.*, +, *TIE Aug. 2020 6494-6504*

Load flow

A Digital Phase Synchronization Method for Bidirectional Inductive Power Transfer. *Jia, S.*, +, *TIE Aug. 2020 6450-6460*

A ZVT Bidirectional Converter With Coupled-Filter-Inductor and Elimination of Input Current Notches. *Mohammadi, M.R.*, +, *TIE Sept. 2020 7461-7469*

Graph-Theory-Based Modeling and Control for System-Level Optimization of Smart Transformers. *Liserre, M.*, +, *TIE Oct. 2020 8910-8920*

Model Predictive Control With Lifetime Constraints Based Energy Management Strategy for Proton Exchange Membrane Fuel Cell Hybrid Power Systems. *He, H.*, +, *TIE Oct. 2020 9012-9023*

Multibattery-Fed Neutral-Point-Clamped DC–AC Converter With SoC Balancing Control to Maximize Capacity Utilization. *Busquets-Monge, S.*, +, *TIE Jan. 2020 16-27*

Novel Transformerless Buck–Boost Inverters Without Leakage Current. *Khan, A.A.*, +, *TIE Dec. 2020 10442-10454*

Regenerative Test for Multiple Three-Phase Machines With Even Number of Neutral Points. *Abduallah, A.A.*, +, *TIE March 2020 1684-1694*

Triple-Compound-Full-Bridge-Based Multi-Input Converter With Wide Zero-Voltage Switching Range and Wide Conversion Gain. *Zeng, J.*, +, *TIE Nov. 2020 9260-9272*

Voltage-Adjustable Capacitor Isolated Solid-State Transformer. *Sun, B.*, +, *TIE Sept. 2020 7550-7559*

Load flow control

Impedance Modeling and DC Bus Voltage Stability Assessment of a Solid-State-Transformer-Enabled Hybrid AC–DC Grid Considering Bidirectional Power Flow. *Ye, Q.*, +, *TIE Aug. 2020 6531-6540*

Multiport Interline Current Flow Controller for Meshed HVDC Grids. *Sau-Bassols, J.*, +, *TIE July 2020 5467-5478*

Online Kron Reduction for Economical Frequency Control of Microgrids. *Abdolmaleki, B.*, +, *TIE Oct. 2020 8461-8471*

Performance Analysis of Model Predictive Technique Based Combined Control for PMSG-Based Distributed Generation Unit. *Mishra, R.*, +, *TIE Oct. 2020 8991-9000*

Pole Balancing and Thermal Management in Multiterminal HVdc Grids Using Single H-Bridge-Based Current Flow Controllers. *Balasubramaniam, S.*, +, *TIE June 2020 4623-4634*

Reducing Distribution Power Loss of Islanded AC Microgrids Using Distributed Electric Springs With Predictive Control. *Yang, Y.*, +, *TIE Oct. 2020 9001-9011*

Voltage Grid Supporting by Using Variable Structure Adaptive Virtual Impedance for LCL-Voltage Source Converter DG Converters. *Fonseca, T.Q.*, +, *TIE Nov. 2020 9326-9336*

Load forecasting

Electric Load Forecasting Model Using a Multicolumn Deep Neural Networks. *Hoori, A.O.*, +, *TIE Aug. 2020 6473-6482*

Multitask Bayesian Spatiotemporal Gaussian Processes for Short-Term Load Forecasting. *Gilanifar, M.*, +, *TIE June 2020 5132-5143*

Load regulation

A Load-Independent LCC-Compensated Wireless Power Transfer System for Multiple Loads With a Compact Coupler Design. *Cheng, C.*, +, *TIE June 2020 4507-4515*

Extending the Operating Region of Inductive Power Transfer Systems Through Dual-Side Cooperative Control. *Chen, S.*, +, *TIE Nov. 2020 9302-9312*

H-Infinity Load Frequency Control of Networked Power Systems via an Event-Triggered Scheme. *Zhang, H.*, +, *TIE Aug. 2020 7104-7113*

Noncooperative Event-Triggered Control Strategy Design With Round-Robin Protocol: Applications to Load Frequency Control of Circuit Systems. *Yuan, Y.*, +, *TIE March 2020 2155-2166*

Predictive Control Based DC Microgrid Stabilization With the Dual Active Bridge Converter. *Chen, L.*, +, *TIE Oct. 2020 8944-8956*

Proposing a Multimode Switching Control Method for a Half-Bridge Converter to Improve Its Efficiency Over the Entire Load Variations. *Ghanbari, A.R.*, +, *TIE March 2020 1910-1920*

Resilient Control Design for Load Frequency Control System Under False Data Injection Attacks. *Abbaspour, A.*, +, *TIE Sept. 2020 7951-7962*

Load shedding

Two-Stage Robust Optimization for Resilient Operation of Microgrids Considering Hierarchical Frequency Control Structure. *Mohiti, M.*, +, *TIE Nov. 2020 9439-9449*

Local area networks

A Flattened-Priority Framework for Mixed-Criticality Systems. *Li, Z.*, +, *TIE Nov. 2020 9862-9872*

Locomotives

A Polynomial Kernel Induced Distance Metric to Improve Deep Transfer Learning for Fault Diagnosis of Machines. *Yang, B.*, +, *TIE Nov. 2020 9747-9757*

Log periodic antennas

Multiresonant Chipless RFID Array System for Coating Defect Detection and Corrosion Prediction. *Deif, S.*, +, *TIE Oct. 2020 8868-8877*

Losses

A Complete Switching Analytical Model of Low-Voltage eGaN HEMTs and Its Application in Loss Analysis. *Chen, J.*, +, *TIE Feb. 2020 1615-1625*

Analysis and Implementation of a High Voltage Gain 1 MHz Bidirectional DC–DC Converter. *Dung, N.A.*, +, *TIE Feb. 2020 1415-1424*

Back-Iron Extension Thermal Benefits for Electrical Machines With Concentrated Windings. *Zhang, F.*, +, *TIE March 2020 1728-1738*

Double-Ended Active-Clamp Forward Converter With Low DC Offset Current of Transformer. *Kim, M.*, +, *TIE Feb. 2020 1036-1047*

Elimination of Photovoltaic Mismatching With Improved Submodule Differential Power Processing. *Chu, G.*, +, *TIE April 2020 2822-2833*

Fast Iron Loss and Thermal Prediction Method for Power Density and Efficiency Improvement in Switched Reluctance Machines. *Ge, L.*, +, *TIE June 2020 4463-4473*

High Efficiency High Density 1 MHz 380–12 V DCX With Low FoM Devices. *Wu, X.*, +, *TIE Feb. 2020 1648-1656*

Minimum-Loss Control Strategy for a Dual-VSI DFIG DC System. *Marques, G.D.*, +, *TIE Oct. 2020 8175-8185*

Optimization of High-Density and High-Efficiency Switched-Tank Converter for Data Center Applications. *Lyu, X.*, +, *TIE Feb. 2020 1626-1637*

Reducing Distribution Power Loss of Islanded AC Microgrids Using Distributed Electric Springs With Predictive Control. *Yang, Y.*, +, *TIE Oct. 2020 9001-9011*

Voltage-Source Converter Energy Efficiency Classification in Accordance With IEC 61800-9-2. *Aarniovuori, L.*, +, *TIE Oct. 2020 8242-8251*

Zero Voltage Switching Control Method for MHz Boundary Conduction Mode Converters. *Hernandez, J.C.*, +, *TIE Feb. 2020 1544-1554*

Low-pass filters

Adaptive Self-Configurable Rectifier for Extended Operating Range of Piezoelectric Energy Harvesting. *Chew, Z.J.*, +, *TIE April 2020 3267-3276*

An Adaptive Power Sharing Control for Management of DC Microgrids Powered by Fuel Cell and Storage System. *de Aguiar, C.R.*, +, *TIE May 2020 3726-3735*

An Improved Delay-Suppressed Sliding-Mode Observer for Sensorless Vector-Controlled PMSM. *Gong, C.*, +, *TIE July 2020 5913-5923*

Improving Dynamic Performance of Boost PFC Converter Using Current-Harmonic Feedforward Compensation in Synchronous Reference Frame. *Li, S.*, +, *TIE June 2020 4857-4866*

Lowpass-Bandpass Triplexer Integrated Switch Design Using Common Lumped-Element Triple-Resonance Resonator Technique. *Xu, J.*, +, *TIE Jan. 2020 471-479*

Optimal Input and Output Power Quality Control of Single-Phase AC–DC–DC Converter With Significant DC-Link Voltage Ripple. *Meng, L.*, +, *TIE Dec. 2020 10366-10376*

Path-Following Control of A Quadrotor UAV With A Cable-Suspended Payload Under Wind Disturbances. *Qian, L.*, +, *TIE March 2020 2021-2029*

Quasi-Proportional-Resonant Controller Based Adaptive Position Observer for Sensorless Control of PMSM Drives Under Low Carrier Ratio. *An, Q.*, +, *TIE April 2020 2564-2573*

Robust Estimation for State-of-Charge and State-of-Health of Lithium-Ion Batteries Using Integral-Type Terminal Sliding-Mode Observers. *Feng, Y.*, +, *TIE May 2020 4013-4023*

Suppression of Harmonic Vibration in Magnetically Suspended Centrifugal Compressor Using Zero-Phase Odd-Harmonic Repetitive Controller. *Cai, K.*, +, *TIE Sept. 2020 7789-7797*

Low-power electronics

An Output Capacitorless Low-Dropout Regulator With a Low- V_{DD} Inverting Buffer for the Mobile Application. *Park, J.*, +, *TIE Oct. 2020 8931-8935*

Analysis and Implementation of a High Voltage Gain 1 MHz Bidirectional DC-DC Converter. *Dung, N.A.*, +, *TIE Feb. 2020 1415-1424*

Lyapunov methods

H_{∞} Refined Antidisturbance Control of Switched LPV Systems With Application to Aero-Engine. *Yang, D.*, +, *TIE April 2020 3180-3190*

A Global Convergence Estimator of Grid Voltage Parameters for More Electric Aircraft. *Dai, Z.*, +, *TIE Sept. 2020 7540-7549*

A New Self-Organizing Fuzzy Cerebellar Model Articulation Controller for Uncertain Nonlinear Systems Using Overlapped Gaussian Membership Functions. *Huynh, T.*, +, *TIE Nov. 2020 9671-9682*

A Novel Geometric Hierarchical Approach for Dynamic Visual Servoing of Quadrotors. *Zhang, X.*, +, *TIE May 2020 3840-3849*

Actuator Failure Compensation-Based Adaptive Control of Active Suspension Systems With Prescribed Performance. *Liu, Y.*, +, *TIE Aug. 2020 7044-7053*

Adaptive Algorithms of Tuning and Switching Kalman and \mathcal{H}_{∞} Filters and Their Application to Estimation of Ship Oscillation With Time-Varying Frequencies. *Sato, M.*, +, *TIE Jan. 2020 501-511*

Adaptive Backstepping Sliding Mode Control for Equilibrium Position Tracking of an Electrohydraulic Elastic Manipulator. *Tran, D.T.*, +, *TIE May 2020 3860-3869*

Adaptive Fuzzy Tracking Control of Flexible-Joint Robots Based on Command Filtering. *Ling, S.*, +, *TIE May 2020 4046-4055*

Adaptive Neural Network Control of Underactuated Surface Vessels With Guaranteed Transient Performance: Theory and Experimental Results. *Chen, L.*, +, *TIE May 2020 4024-4035*

Adaptive NN Backstepping Control Design for a 3-DOF Helicopter: Theory and Experiments. *Yang, X.*, +, *TIE May 2020 3967-3979*

Adaptive Threshold Generation for Vehicle Fault Detection Using Switched T-S Interval Observers. *Ifqir, S.*, +, *TIE June 2020 5030-5040*

Adaptive Time-Delay Balance Control of Biped Robots. *Pi, M.*, +, *TIE April 2020 2936-2944*

Adaptive Visual Servoing for an Underwater Soft Robot Considering Refraction Effects. *Xu, F.*, +, *TIE Dec. 2020 10575-10586*

An Online Trajectory Planning Approach for a Quadrotor UAV With a Slung Payload. *Xian, B.*, +, *TIE Aug. 2020 6669-6678*

Application of Sliding Switching Functions in Backstepping Based Speed Observer of Induction Machine. *Morawiec, M.*, +, *TIE July 2020 5843-5853*

Attractive Ellipsoid-Based Robust Control for Quadrotor Tracking. *Falcon, R.*, +, *TIE Sept. 2020 7851-7860*

Boundary Antidisturbance Control of a Spatially Nonlinear Flexible String System. *Zhao, Z.*, +, *TIE June 2020 4846-4856*

Cascaded-Extended-State-Observer-Based Sliding-Mode Control for Underactuated Flexible Joint Robot. *Rsetam, K.*, +, *TIE Dec. 2020 10822-10832*

Distributed Voltage Restoration and Current Sharing Control in Islanded DC Microgrid Systems Without Continuous Communication. *Guo, F.*, +, *TIE April 2020 3043-3053*

Energy-Based Nonlinear Adaptive Control Design for the Quadrotor UAV System With a Suspended Payload. *Yang, S.*, +, *TIE March 2020 2054-2064*

Event-Triggered Decentralized Tracking Control of Modular Reconfigurable Robots Through Adaptive Dynamic Programming. *Zhao, B.*, +, *TIE April 2020 3054-3064*

Finite-Time Trajectory Tracking Control of Space Manipulator Under Actuator Saturation. *Jia, S.*, +, *TIE March 2020 2086-2096*

Force Sensorless Admittance Control With Neural Learning for Robots With Actuator Saturation. *Peng, G.*, +, *TIE April 2020 3138-3148*

Frequency Adaptive Grid Voltage Sensorless Control of LCL-Filtered Inverter Based on Extended Model Observer. *Tran, T.V.*, +, *TIE Sept. 2020 7560-7573*

From Battery Cell to Electrodes: Real-Time Estimation of Charge and Health of Individual Battery Electrodes. *Dey, S.*, +, *TIE March 2020 2167-2175*

Full-Order Observer for a Class of Nonlinear Systems With Unmatched Uncertainties: Joint Attractive Ellipsoid and Sliding Mode Concepts. *Sanchez, B.*, +, *TIE July 2020 5677-5686*

Globally Fixed-Time High-Order Sliding Mode Control for New Sliding Mode Systems Subject to Mismatched Terms and Its Application. *Shi, S.*, +, *TIE Dec. 2020 10776-10786*

H-Infinity Load Frequency Control of Networked Power Systems via an Event-Triggered Scheme. *Zhang, H.*, +, *TIE Aug. 2020 7104-7113*

Hyperbolic-Tangent LOS Guidance-Based Finite-Time Path Following of Underactuated Marine Vehicles. *Wang, N.*, +, *TIE Oct. 2020 8566-8575*

Input-to-State Stable Bilateral Teleoperation by Dynamic Interconnection and Damping Injection: Theory and Experiments. *Yang, Y.*, +, *TIE Jan. 2020 790-799*

Leaderless Consensus of Ring-Networked Mobile Robots via Distributed Saturated Control. *Lu, P.*, +, *TIE Dec. 2020 10723-10731*

Lyapunov-Based Thermal Fault Diagnosis of Cylindrical Lithium-Ion Batteries. *Wei, J.*, +, *TIE June 2020 4670-4679*

Neurofuzzy-Based Plant-Wide Hierarchical Coordinating Optimization and Control: An Application to Zinc Hydrometallurgy Plant. *Xie, S.*, +, *TIE March 2020 2207-2219*

On Autonomous Large-Signal Stabilization for Islanded Multibus DC Microgrids: A Uniform Nonsmooth Control Scheme. *Lin, P.*, +, *TIE June 2020 4600-4612*

Online Kron Reduction for Economical Frequency Control of Microgrids. *Abdolmaleki, B.*, +, *TIE Oct. 2020 8461-8471*

Output-Constrained Robust Sliding Mode Based Nonlinear Active Suspension Control. *Rath, J.J.*, +, *TIE Dec. 2020 10652-10662*

Parametric Stability Analysis of Active Magnetic Bearing Supported Rotor System With a Novel Control Law Subject to Periodic Base Motion. *Soni, T.*, +, *TIE Feb. 2020 1160-1170*

Relative Impedance-Based Internal Force Control for Bimanual Robot Teleoperation With Varying Time Delay. *Lu, Z.*, +, *TIE Jan. 2020 778-789*

Simulation and Experimental Results of a New Control Strategy For Point Stabilization of Nonholonomic Mobile Robots. *Fabregas, E.*, +, *TIE Aug. 2020 6679-6687*

Sliding Mode Control for Nonlinear Stochastic Semi-Markov Switching Systems With Application to SRMM. *Qi, W.*, +, *TIE May 2020 3955-3966*

Synchronization of Network Systems via Aperiodic Sampled-Data Control With Constant Delay and Application to Unmanned Ground Vehicles. *Ren, H.*, +, *TIE June 2020 4980-4990*

Three-Dimensional Guidance for Various Target Motions With Terminal Angle Constraints Using Twisting Control. *Hu, Q.*, +, *TIE Feb. 2020 1242-1253*

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Machine bearings

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A Novel Statistical Time-Frequency Analysis for Rotating Machine Condition Monitoring. *Wang, T.*, +, *TIE Jan. 2020 531-541*

A Polynomial Kernel Induced Distance Metric to Improve Deep Transfer Learning for Fault Diagnosis of Machines. *Yang, B.*, +, *TIE Nov. 2020 9747-9757*

A Prognostic Model Based on DBN and Diffusion Process for Degrading Bearing. *Hu, C.*, +, *TIE Oct. 2020 8767-8777*

A TDF Model in Induction Machines for Loose Bearing Diagnosis by Neutral Voltage. *Jafarian, M.J.*, +, *TIE Oct. 2020 8155-8163*

Bearing Corrosion Failure Diagnosis of Doubly Fed Induction Generator in Wind Turbines Based on Stator Current Analysis. *Chen, X.*, +, *TIE May 2020 3419-3430*

Design and Optimization of Halbach-Array PM Rotor for High-Speed Axial-Flux Permanent Magnet Machine With Ironless Stator. *Zhang, Z.*, +, *TIE Sept. 2020 7269-7279*

Fault Diagnosis Using Adaptive Multifractal Detrended Fluctuation Analysis. *Du, W.*, +, *TIE March 2020 2272-2282*

Macroscopic–Microscopic Attention in LSTM Networks Based on Fusion Features for Gear Remaining Life Prediction. *Qin, Y.*, +, *TIE Dec. 2020 10865-10875*

Motor Speed Signature Analysis for Local Bearing Fault Detection With Noise Cancellation Based on Improved Drive Algorithm. *Yang, M.*, +, *TIE May 2020 4172-4182*

Naturally Damaged Wind Turbine Blade Bearing Fault Detection Using Novel Iterative Nonlinear Filter and Morphological Analysis. *Liu, Z.*, +, *TIE Oct. 2020 8713-8722*

Machine control

A New Relieving-DC-Saturation Hybrid Excitation Vernier Machine for HEV Starter Generator Application. *Zhao, X.*, +, *TIE Aug. 2020 6342-6353*

A New Slot-PM Vernier Reluctance Machine With Enhanced Zero-Sequence Current Excitation for Electric Vehicle Propulsion. *Zhao, X.*, +, *TIE May 2020 3528-3539*

A New SVPWM Technique to Reduce the Inductor Current Ripple of Three-Phase Z-Source Inverter. *Singh, S.*, +, *TIE May 2020 3540-3550*

A Novel Concept of Ribless Synchronous Reluctance Motor for Enhanced Torque Capability. *Bao, Y.*, +, *TIE April 2020 2553-2563*

A Novel Fault-Tolerant Technique for Active-Neutral-Point-Clamped Inverter Using Carrier-Based PWM. *Azer, P.*, +, *TIE March 2020 1792-1803*

A Novel Hybrid-Magnetic-Circuit Variable Flux Memory Machine. *Yang, H.*, +, *TIE July 2020 5258-5268*

A Novel Model-Based Robust Control for Position Tracking of Permanent Magnet Linear Motor. *Liu, X.*, +, *TIE Sept. 2020 7767-7777*

A Robust Field-Weakening Approach for Direct Torque and Flux Controlled Reluctance Synchronous Motors With Extended Constant Power Speed Region. *Zhang, X.*, +, *TIE March 2020 1813-1823*

A Simple Feedforward Approach to Stabilize VSI-Fed Induction Motor With Filter in RFOC. *Mishra, P.*, +, *TIE Dec. 2020 10191-10201*

A Two-Stage Synchronous Vibration Control for Magnetically Suspended Rotor System in the Full Speed Range. *Peng, C.*, +, *TIE Jan. 2020 480-489*

Active Disturbance-Rejection-Based Speed Control in Model Predictive Control for Induction Machines. *Yan, L.*, +, *TIE April 2020 2574-2584*

Adaptive Internal Model-Based Harmonic Control for Active Torsional Vibration Reduction. *Vadamalu, R.S.*, +, *TIE April 2020 3024-3032*

Airgap Flux Based Detection and Classification of Induction Motor Rotor and Load Defects During the Starting Transient. *Park, Y.*, +, *TIE Dec. 2020 10075-10084*

An Accurate Wide-Speed Range Control Method of IPMSM Considering Resistive Voltage Drop and Magnetic Saturation. *Wang, S.*, +, *TIE April 2020 2630-2641*

An Antiovervoltage Control Scheme for Electrolytic Capacitorless IPMSM Drives Based on Stator Current Vector Orientation. *Ding, D.*, +, *TIE May 2020 3517-3527*

An Assistant-Mover-Based Position Estimation Method for Planar Switched Reluctance Motors. *Cao, G.*, +, *TIE July 2020 6066-6077*

An Improved Deadbeat Predictive Current Control With Online Parameter Identification for Surface-Mounted PMSMs. *Yao, Y.*, +, *TIE Dec. 2020 10145-10155*

An Improved Modulation Technique With Minimum Switching Actions Within One PWM Cycle for Open-End Winding PMSM System With Isolated DC Bus. *Hu, W.*, +, *TIE May 2020 4259-4264*

An Integrated Electrified Powertrain Topology With SRG and SRM for Plug-In Hybrid Electrical Vehicle. *Cheng, H.*, +, *TIE Oct. 2020 8231-8241*

An Iterative Estimation Algorithm of Prepositioning Focusing on the Detent Force in the Permanent Magnet Linear Synchronous Motor System. *Huang, X.*, +, *TIE Oct. 2020 8252-8261*

An Optimized Zero-Sequence Voltage Injection Method for Eliminating Circulating Current and Reducing Common Mode Voltage of Parallel-Connected Three-Level Converters. *Xing, X.*, +, *TIE Aug. 2020 6583-6596*

Assessing Variable Sampling Time Controllers for Five-Phase Induction Motor Drives. *Arahal, M.R.*, +, *TIE April 2020 2523-2531*

Circulating Current Analysis and the Improved D–Σ Digital Control Strategy for Multiparalleled Three-Level T-Type Grid-Connected Inverters. *Ren, B.*, +, *TIE April 2020 2810-2821*

Composite Hierarchical Pitch Angle Control for a Tidal Turbine Based on the Uncertainty and Disturbance Estimator. *Yin, X.*, +, *TIE Jan. 2020 329-339*

Control Strategy for Five-Phase Dual-Stator Winding Induction Starter/Generator System. *Liu, H.*, +, *TIE April 2020 2607-2617*

Crowbarless Symmetrical Low-Voltage Ride Through Based on Flux Linkage Tracking For Brushless Doubly Fed Induction Generators. *Zhang, A.*, +, *TIE Sept. 2020 7606-7616*

Decoupled d – q Axes Current-Sharing Control of Multi-Three-Phase Induction Machines. *Sala, G.*, +, *TIE Sept. 2020 7124-7134*

Design and Implementation of Parameter Estimation and Start Control of Brushless Synchronous Starter/Generators Under Sudden Excitation Change. *Mao, S.*, +, *TIE May 2020 3551-3561*

Design Consideration and Characteristic Investigation of Modular Permanent Magnet Bearingless Switched Reluctance Motor. *Wang, H.*, +, *TIE June 2020 4326-4337*

Digital Current Control of an Asymmetrical Dual Three-Phase Flux-Switching Permanent Magnet Machine. *Hu, M.*, +, *TIE June 2020 4281-4291*

Direct Torque Control Techniques of Three-Level H-Bridge Inverter Fed Induction Motor for Torque Ripple Reduction at Low Speed Operations. *Naganathan, P.*, +, *TIE Oct. 2020 8262-8270*

Discrete Space Vector Modulation-Based Model Predictive Torque Control With No Suboptimization. *Osman, I.*, +, *TIE Oct. 2020 8164-8174*

Dual-Pulse Mode Control of a High-Speed Doubly Salient Electromagnetic Machine for Loss Reduction and Speed Range Extension. *Yu, L.*, +, *TIE June 2020 4391-4401*

Dynamic Performance Improvement of Doubly Salient Brushless DC Generator System With Controlled Rectifier. *Xu, Y.*, +, *TIE Oct. 2020 8209-8218*

Enhanced Braking Control for the Induction Machine Using Scalar Control. *Costa, C.A.*, +, *TIE Nov. 2020 9133-9142*

Enhanced Model Predictive Torque Control of Fault-Tolerant Five-Phase Permanent Magnet Synchronous Motor With Harmonic Restraint and Voltage Preselection. *Huang, W.*, +, *TIE Aug. 2020 6259-6269*

Enhanced Parallel Hybrid Converter With DC Ripple Minimization Control. *Patro, S.K.*, +, *TIE Nov. 2020 9969-9975*

Enhanced Performance of Constant Frequency Torque Controller-Based Direct Torque Control of Induction Machines with Increased Torque-Loop Bandwidth. *Alsifyani, I.M.*, +, *TIE Dec. 2020 10168-10179*

Extension of Space-Vector-Signal-Injection-Based MTPA Control Into SVPWM Fault-Tolerant Operation for Five-Phase IPMSM. *Chen, Q.*, +, *TIE Sept. 2020 7321-7333*

Fast Iron Loss and Thermal Prediction Method for Power Density and Efficiency Improvement in Switched Reluctance Machines. *Ge, L.*, +, *TIE June 2020 4463-4473*

Finite-Control-Set MPC for Open-Phase Fault-Tolerant Control of PM Synchronous Motor Drives. *Kiselev, A.*, +, *TIE June 2020 4444-4452*

Finite-Time Control of a Linear Motor Positioner Using Adaptive Recursive Terminal Sliding Mode. *Shao, K.*, +, *TIE Aug. 2020 6659-6668*

Full Converter Control for Variable-Speed Wind Turbines Without Integral Controller or PLL. *Koiwa, K.*, +, *TIE Nov. 2020 9418-9428*

Haptic Performance Using Voltage-Mode Motor Control. *Gil, J.J.*, +, *TIE Jan. 2020 698-705*

High-Accuracy Dynamic Load Emulation Method for Electrical Drives. *de Oliveira, C.M.R.*, +, *TIE Sept. 2020 7239-7249*

Homopolar Bearingless Slice Motor With Flux-Biasing Halbach Arrays. *Noh, M.*, +, *TIE Sept. 2020 7757-7766*

Hybrid PWM Scheme for Pole-Phase Modulation Induction Motor Drive Using Carrier-Based Hexagonal and Octadecagonal SVPWM. *Janaki Ramaiah, V.*, +, *TIE Sept. 2020 7312-7320*

Impedance-Based Harmonic Current Suppression Method for VSG Connected to Distorted Grid. *Zhou, L.*, +, *TIE July 2020 5490-5502*

- Improved Accuracy, Modeling, and Stability Analysis of Power-Hardware-in-Loop Simulation With Open-Loop Inverter as Power Amplifier. *Upamanyu, K.*, +, *TIE Jan. 2020 369-378*
- Improved Fusion of Permanent Magnet Temperature Estimation Techniques for Synchronous Motors Using a Kalman Filter. *Erazo, D.E.G.*, +, *TIE March 2020 1708-1717*
- Improved Iterative Learning Control Strategy for Surface-Mounted Permanent Magnet Synchronous Motor Drives. *Mohammed, S.A.Q.*, +, *TIE Dec. 2020 10134-10144*
- Improved Model Predictive Current Control for SPMSM Drives With Parameter Mismatch. *Yuan, X.*, +, *TIE Feb. 2020 852-862*
- Improved Online Maximum-Torque-Per-Ampere Algorithm for Speed Controlled Interior Permanent Magnet Synchronous Machine. *Han, Z.*, +, *TIE May 2020 3398-3408*
- Integrated Coordinated/Synchronized Contouring Control of a Dual-Linear-Motor-Driven Gantry. *Chen, Z.*, +, *TIE May 2020 3944-3954*
- Magnetic Sensor Design for a Permanent Magnet Linear Motor Considering Edge-Effect. *Luu, P.T.*, +, *TIE July 2020 5768-5777*
- Mitigation of DC-Link Current Ripple for Dual Three-Phase Flux-Adjustable Hybrid PMAC Drives Using Collaborative Switching Strategy. *Wang, Z.*, +, *TIE Sept. 2020 7202-7216*
- Model Predictive Control for a Six-Phase PMSM Motor With a Reduced-Dimension Cost Function. *Luo, Y.*, +, *TIE Feb. 2020 969-979*
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- Modeling, Analysis, and Attenuation of Uncontrolled Generation for IPMSM-Based Electric Vehicles in Emergency. *Gong, C.*, +, *TIE June 2020 4453-4462*
- Motor Parameter-Free Predictive Current Control of Synchronous Motors by Recursive Least-Square Self-Commissioning Model. *Tinazzi, F.*, +, *TIE Nov. 2020 9093-9100*
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- Prediction Horizons Optimized Nonlinear Predictive Control for Permanent Magnet Synchronous Motor Position System. *Wei, Y.*, +, *TIE Nov. 2020 9153-9163*
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- Subspace-Aided Closed-Loop System Identification With Application to DC Motor System. *Li, K.*, +, *TIE March 2020 2304-2313*
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- A New Slot-PM Vernier Reluctance Machine With Enhanced Zero-Sequence Current Excitation for Electric Vehicle Propulsion. *Zhao, X.*, +, *TIE May 2020 3528-3539*
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- Effect Comparison of Zigzag Skew PM Pole and Straight Skew Slot for Vibration Mitigation of PM Brush DC Motors. *Wang, S.*, +, *TIE June 2020 4752-4761*
- Fast Iron Loss and Thermal Prediction Method for Power Density and Efficiency Improvement in Switched Reluctance Machines. *Ge, L.*, +, *TIE June 2020 4463-4473*
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- Machine vector control**
- A Constant Switching Frequency Multiple-Vector-Based Model Predictive Current Control of Five-Phase PMSM With Nonsinusoidal Back EMF. *Xiong, C.*, +, *TIE March 2020 1695-1707*
- A Fault-Tolerant FOC Strategy for Five-Phase SPMSM With Minimum Torque Ripples in the Full Torque Operation Range Under Double-Phase Open-Circuit Fault. *Xiong, C.*, +, *TIE Nov. 2020 9059-9072*
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- Sensorless Low/Zero Speed Estimation for Permanent Magnet Synchronous Machine Using a Search-Based Real-Time Commissioning Method. *Sci-cluna, K.*, +, *TIE July 2020 6010-6018*
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- An Improved Modulation Technique With Minimum Switching Actions Within One PWM Cycle for Open-End Winding PMSM System With Isolated DC Bus. *Hu, W.*, +, *TIE May 2020 4259-4264*
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- Back-Iron Extension Thermal Benefits for Electrical Machines With Concentrated Windings. *Zhang, F.*, +, *TIE March 2020 1728-1738*
- Design and Optimization of a Flux-Modulated Permanent Magnet Motor Based on an Airgap-Harmonic-Orientated Design Methodology. *Zhu, X.*, +, *TIE July 2020 5337-5348*
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- Minimization of Switched Capacitor Voltage Ripple in a Multilevel Dodecagonal Voltage Space Vector Structure for Drives. *Imthias, M.*, +, *TIE Jan. 2020 126-135*

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Power Converter Topologies and Control Strategies for DC-Biased Vernier Reluctance Machines. *Yu, Z.*, +, *TIE June 2020 4350-4359*

Reliable Winding-Based DC-Bus Capacitor Discharge Technique Over Full-Speed Range for IPMSM Drive in Electric Vehicles Without Position Sensor. *Gong, C.*, +, *TIE Oct. 2020 8131-8142*

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A New Slot-PM Vernier Reluctance Machine With Enhanced Zero-Sequence Current Excitation for Electric Vehicle Propulsion. *Zhao, X.*, +, *TIE May 2020 3528-3539*

A Novel Hybrid-Magnetic-Circuit Variable Flux Memory Machine. *Yang, H.*, +, *TIE July 2020 5258-5268*

An Assistant-Mover-Based Position Estimation Method for Planar Switched Reluctance Motors. *Cao, G.*, +, *TIE July 2020 6066-6077*

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Analytical Calculation of the Magnetic Field Distribution in Slotless Brushless Machines With U-Shaped Interior Permanent Magnets. *Hajdinjak, M.*, +, *TIE Aug. 2020 6721-6731*

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- Analytical Modeling of Misalignment in Axial Flux Permanent Magnet Machine. Guo, B., +, *TIE June 2020 4433-4443*
- Angular-Misalignment Insensitive Omnidirectional Wireless Power Transfer. Zhang, Z., +, *TIE April 2020 2755-2764*
- Characteristics Analysis of the Motions of the Two-Degree-of-Freedom Direct Drive Induction Motor. Xie, L., +, *TIE Feb. 2020 931-941*
- Design and Characteristics Analysis of Coaxial Magnetic Gear for Contra-Rotating Propeller in Yacht. Shin, H., +, *TIE Sept. 2020 7250-7259*
- Design and Performance of a High-Speed Permanent Magnet Generator with Amorphous Alloy Magnetic Core for Aerospace Applications. Ismagilov, F.R., +, *TIE March 2020 1750-1758*
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- Detection of Winding Asymmetries in Wound-Rotor Induction Motors via Transient Analysis of the External Magnetic Field. Zamudio-Ramirez, I., +, *TIE June 2020 5050-5059*
- Electromagnetic Vibration Analysis of High-Speed Permanent Magnet Synchronous Machines With Amorphous Metal Stator Cores Considering Current Harmonics. Wu, S., +, *TIE Dec. 2020 10156-10167*
- Harmonic Analysis of Air Gap Magnetic Field in Flux-Modulation Double-Stator Electrical-Excitation Synchronous Machine. Wang, Y., +, *TIE July 2020 5302-5312*
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- Magnetic Field Analysis of an Iron-Cored Tiered Type Permanent Magnet Spherical Motor Using Modified Dynamic Reluctance Mesh Method. Chai, F., +, *TIE Aug. 2020 6742-6751*
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- Tilting Torque Calculation of a Novel Tiered Type Permanent Magnet Spherical Motor. Gan, L., +, *TIE Jan. 2020 421-431*
- Torque Calculation of Permanent Magnet Spherical Motor Based on Virtual Work Method. Li, H., +, *TIE Sept. 2020 7736-7745*
- Magnetic flux**
- A New Hybrid Model for Electromechanical Characteristic Analysis Under SISC in Synchronous Generators. He, Y., +, *TIE March 2020 2348-2359*
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- A New Slot-PM Vernier Reluctance Machine With Enhanced Zero-Sequence Current Excitation for Electric Vehicle Propulsion. Zhao, X., +, *TIE May 2020 3528-3539*
- A Novel Doubly-Fed Flux-Switching Permanent Magnet Machine With Armature Windings Wound on Both Stator Poles and Rotor Teeth. Wu, L., +, *TIE Dec. 2020 10223-10232*
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- A Turn Fault Mitigation Strategy Based on Current Injection Technique for a Triple Three-Phase PMA SynRM. Wang, B., +, *TIE April 2020 2511-2522*
- An Assistant-Mover-Based Position Estimation Method for Planar Switched Reluctance Motors. Cao, G., +, *TIE July 2020 6066-6077*
- Analysis and Reduction of On-Load DC Winding Induced Voltage in Wound Field Switched Flux Machines. Wu, Z., +, *TIE April 2020 2655-2666*
- Analysis of Consequent-Pole Flux Reversal Permanent Magnet Machine With Biased Flux Modulation Theory. Yang, H., +, *TIE March 2020 2107-2121*
- Analysis of PM Eddy Current Loss in Four-Phase Fault-Tolerant Flux-Switching Permanent-Magnet Machines by Air-Gap Magnetic Field Modulation Theory. Zhao, W., +, *TIE July 2020 5369-5378*
- Analysis of PM Eddy Current Loss in Rotor-PM and Stator-PM Flux-switching Machines by Air-gap Field Modulation Theory. Su, P., +, *TIE March 2020 1824-1835*
- Analysis of Reactive Power Compensation Effect of a New Hybrid Excitation Brushless DC Generator. Sun, L., +, *TIE May 2020 3562-3572*
- Analysis of Stator Slots and Rotor Pole Pairs Combinations of Rotor-Permanent Magnet Flux-Switching Machines. Su, P., +, *TIE Feb. 2020 906-918*
- Analytical Calculation of the Magnetic Field Distribution in Slotless Brushless Machines With U-Shaped Interior Permanent Magnets. Hajdinjak, M., +, *TIE Aug. 2020 6721-6731*
- Analytical Modeling of Misalignment in Axial Flux Permanent Magnet Machine. Guo, B., +, *TIE June 2020 4433-4443*
- Analytical Thermal Model of Natural-Convection Cooling in Axial Flux Machines. Nasab, P.S., +, *TIE April 2020 2711-2721*
- Back EMF Harmonic Analysis of Permanent Magnet Magnetic Gearing Machine. Ren, X., +, *TIE Aug. 2020 6248-6258*
- Back-Iron Extension Thermal Benefits for Electrical Machines With Concentrated Windings. Zhang, F., +, *TIE March 2020 1728-1738*
- Comparative Analysis of Flux Reversal Permanent Magnet Machines With Toroidal and Concentrated Windings. Li, H., +, *TIE July 2020 5278-5290*
- Core-Loss Analysis of High-Speed Doubly Salient Electromagnetic Machine for Aeronautic Starter/Generator Application. Jia, W., +, *TIE Jan. 2020 59-68*
- Crowbarless Symmetrical Low-Voltage Ride Through Based on Flux Linkage Tracking For Brushless Doubly Fed Induction Generators. Zhang, A., +, *TIE Sept. 2020 7606-7616*
- Design and Analysis of a New Parallel-Hybrid-Excited Machine With Harmonic-Shift Structure. Cao, L., +, *TIE March 2020 1759-1770*
- Design and Analysis of Novel Asymmetric-Stator-Pole Flux Reversal PM Machine. Yang, H., +, *TIE Jan. 2020 101-114*
- Design and Optimization of a Flux-Modulated Permanent Magnet Motor Based on an Airgap-Harmonic-Orientated Design Methodology. Zhu, X., +, *TIE July 2020 5337-5348*
- Design and Optimization of Halbach-Array PM Rotor for High-Speed Axial-Flux Permanent Magnet Machine With Ironless Stator. Zhang, Z., +, *TIE Sept. 2020 7269-7279*
- Development of a Three-Dimensional Magnetic Equivalent Circuit Model for Axial Flux Machines. Alipour-Sarabi, R., +, *TIE July 2020 5758-5767*
- Digital Current Control of an Asymmetrical Dual Three-Phase Flux-Switching Permanent Magnet Machine. Hu, M., +, *TIE June 2020 4281-4291*
- Dual-Pulse Mode Control of a High-Speed Doubly Salient Electromagnetic Machine for Loss Reduction and Speed Range Extension. Yu, L., +, *TIE June 2020 4391-4401*
- Electromagnetic Shielding Analysis of a Canned Permanent Magnet Motor. Yu, Q., +, *TIE Oct. 2020 8123-8130*
- Erratum to "An Advanced Equivalent Circuit Model for Linear Induction Motors" [Sep 18 7495-7503]. Lv, G., +, *TIE Dec. 2020 10996*
- Experimental Investigations on Flux-Linkage Characteristics and Stator-Side Modeling of a Solid-Rotor Switched Reluctance Machine. Ahmad, S.S., +, *TIE Dec. 2020 10180-10190*
- Fast Iron Loss and Thermal Prediction Method for Power Density and Efficiency Improvement in Switched Reluctance Machines. Ge, L., +, *TIE June 2020 4463-4473*
- Filling Force Valley With Interpoles for Pole-Frequency Vibration Reduction in Surface-Mounted PM Synchronous Machines. Wang, S., +, *TIE Aug. 2020 6709-6720*
- Flux-Controlled Hybrid Reluctance Actuator for High-Precision Scanning Motion. Ito, S., +, *TIE Nov. 2020 9593-9600*
- Flux-Focusing Permanent Magnet Machines With Modular Consequent-Pole Rotor. Li, J., +, *TIE May 2020 3374-3385*
- Harmonic Analysis of Air Gap Magnetic Field in Flux-Modulation Double-Stator Electrical-Excitation Synchronous Machine. Wang, Y., +, *TIE July 2020 5302-5312*
- Improved Online Maximum-Torque-Per-Ampere Algorithm for Speed Controlled Interior Permanent Magnet Synchronous Machine. Han, Z., +, *TIE May 2020 3398-3408*

Induction Machine Parameters Determination and the Impact of Stator/Rotor Leakage Split Ratio on Its Performance. *Masadeh, M.A.*, +, *TIE July 2020 5291-5301*

Magnetic Design Aspects of the Trans-Rotary Magnetic Gear Using Quasi-Halbach Arrays. *Jenney, K.*, +, *TIE Nov. 2020 9582-9592*

Magnetic Field Analysis and Flux Barrier Design for Modular Permanent Magnet Linear Synchronous Motor. *Tan, Q.*, +, *TIE May 2020 3891-3900*

Mitigation of DC-Link Current Ripple for Dual Three-Phase Flux-Adjustable Hybrid PMAC Drives Using Collaborative Switching Strategy. *Wang, Z.*, +, *TIE Sept. 2020 7202-7216*

Modeling Based on Exact Segmentation of Magnetic Field for a Centripetal Force Type-Magnetic Bearing. *Zhang, W.*, +, *TIE Sept. 2020 7691-7701*

Multifidelity Surrogate Assisted Rapid Design of Transverse-Flux Permanent Magnet Linear Synchronous Motor. *Ahmed, S.*, +, *TIE Sept. 2020 7280-7289*

Multifunction Transformer With Adjustable Magnetic Stage Based on Nanocomposite Semihard Magnets. *Chen, Z.*, +, *TIE May 2020 4226-4234*

Novel Adaptive Controller for Effective Magnetic Measurement Under Arbitrary Magnetization. *Vo, A.*, +, *TIE Nov. 2020 9841-9850*

Novel Method for Direct Measurement of Air Gap Anomalies in Direct-Drive Electrical Motors. *Herman, J.*, +, *TIE March 2020 2422-2429*

Numerical Analysis of Turn-to-Turn Short Circuit Current Mitigation for Concentrated Winding Permanent Magnet Machines With Series and Parallel Connected Windings. *Xu, Y.*, +, *TIE Nov. 2020 9101-9111*

On-Load Field Prediction in SPM Machines by a Subdomain and Magnetic Circuit Hybrid Model. *Wu, L.*, +, *TIE Sept. 2020 7190-7201*

Optimization and Performance Improvement of a Hybrid Excitation Synchronous Machine With Modular Magnetic-Shunting Rotor. *Liu, Y.*, +, *TIE June 2020 4381-4390*

Performance Analysis of Induction-Based Reaction Spheres. *Zhu, L.*, +, *TIE Sept. 2020 7746-7756*

Performance Comparison Between PCB-Stator and Laminated-Core-Stator-Based Designs of Axial Flux Permanent Magnet Motors for High-Speed Low-Power Applications. *S., N.*, +, *TIE July 2020 5269-5277*

Permanent-Magnet Machine Flux and Torque Response Under the Influence of Turn Fault. *Hsu, C.*, +, *TIE Jan. 2020 169-179*

PLL Position and Speed Observer With Integrated Current Observer for Sensorless PMSM Drives. *Lasca, C.*, +, *TIE July 2020 5990-5999*

Relationship Between Homopolar Inductor Machine and Wound-Field Synchronous Machine. *Ye, C.*, +, *TIE Feb. 2020 919-930*

Sensorless Control of Linear Flux-Switching Permanent Magnet Motor Based on Extended Kalman Filter. *Cao, R.*, +, *TIE July 2020 5971-5979*

Sensorless SynRG Based Variable Speed Wind Generator and Single-Stage Solar PV Array Integrated Grid System With Maximum Power Extraction Capability. *Vijay, M. D.*, +, *TIE Sept. 2020 7529-7539*

Single-Variable-Input Active Sidelobe Suppression Method for Synthesized Magnetic Field Focusing Technology and Its Optimization. *Kim, J.H.*, +, *TIE Nov. 2020 9813-9823*

Magnetic forces

Flux-Focusing Permanent Magnet Machines With Modular Consequent-Pole Rotor. *Li, J.*, +, *TIE May 2020 3374-3385*

Magnetic gears

Back EMF Harmonic Analysis of Permanent Magnet Magnetic Geared Machine. *Ren, X.*, +, *TIE Aug. 2020 6248-6258*

Magnetic heads

Quadruple-Stage Actuator System for Magnetic-Head Positioning System in Hard Disk Drives. *Atsumi, T.*, +, *TIE Nov. 2020 9184-9194*

Magnetic hysteresis

Modeling, Design, and Validation of Magnetic Hysteresis Motors. *Galluzzi, R.*, +, *TIE Feb. 2020 1171-1179*

Novel Adaptive Controller for Effective Magnetic Measurement Under Arbitrary Magnetization. *Vo, A.*, +, *TIE Nov. 2020 9841-9850*

Magnetic leakage

A High Step Up SEPIC-Based Converter Based on Partly Interleaved Transformer. *Gao, S.*, +, *TIE Feb. 2020 1455-1465*

A Hybrid Boost-Flyback/Flyback Microinverter for Photovoltaic Applications. *Zhang, F.*, +, *TIE Jan. 2020 308-318*

An Ultra-High Step-Up DC-DC Converter With Extendable Voltage Gain and Soft-Switching Capability. *Alavi, P.*, +, *TIE Nov. 2020 9238-9250*

Induction Machine Parameters Determination and the Impact of Stator/Rotor Leakage Split Ratio on Its Performance. *Masadeh, M.A.*, +, *TIE July 2020 5291-5301*

Integrated Buck and Modified Push-Pull DC-DC Converter With High Step-Down Ratio. *Tseng, K.*, +, *TIE Jan. 2020 235-243*

Modeling Based on Exact Segmentation of Magnetic Field for a Centripetal Force Type-Magnetic Bearing. *Zhang, W.*, +, *TIE Sept. 2020 7691-7701*

Magnetic levitation

A Tunable Electrostatic MEMS Pressure Switch. *Pallay, M.*, +, *TIE Nov. 2020 9833-9840*

A Two-Stage Synchronous Vibration Control for Magnetically Suspended Rotor System in the Full Speed Range. *Peng, C.*, +, *TIE Jan. 2020 480-489*

Adaptive Unbalance Compensation for a Three-Pole Active Magnetic Bearing System. *Chen, S.*, +, *TIE March 2020 2097-2106*

Analysis and Design of a Novel Magnetic Levitation Gravity Compensator With Low Passive Force Variation in a Large Vertical Displacement. *Zhang, H.*, +, *TIE June 2020 4797-4805*

Motion Control of a Magnetic Levitation Actuator Based on a Wrench Model Considering Yaw Angle. *Xu, F.*, +, *TIE Oct. 2020 8545-8554*

Multifidelity Surrogate Assisted Rapid Design of Transverse-Flux Permanent Magnet Linear Synchronous Motor. *Ahmed, S.*, +, *TIE Sept. 2020 7280-7289*

Novel Topologies of Power Electronics Converter as Active Magnetic Bearing Drive. *Jiang, D.*, +, *TIE Feb. 2020 950-959*

Magnetic materials

Effect of Laser Cutting on Core Losses in Electrical Machines—Measurements and Modeling. *Sundaria, R.*, +, *TIE Sept. 2020 7354-7363*

Magnetic permeability

Considering Operating Point Variation in 3-D Analytical Charge Model Used for Design of Low-Stiffness Permanent Magnet Vibration Isolator. *Li, J.*, +, *TIE Aug. 2020 6732-6741*

Effect of Laser Cutting on Core Losses in Electrical Machines—Measurements and Modeling. *Sundaria, R.*, +, *TIE Sept. 2020 7354-7363*

Improving Current Transformer-Based Energy Extraction From AC Power Lines by Manipulating Magnetic Field. *Zhuang, Y.*, +, *TIE Nov. 2020 9471-9479*

Magnetic resonance

Range-Adaptive Wireless Power Transfer Based on Differential Coupling Using Multiple Bidirectional Coils. *Zhuang, Y.*, +, *TIE Sept. 2020 7519-7528*

Magnetic sensors

A Double-Step Unscented Kalman Filter and HMM-Based Zero-Velocity Update for Pedestrian Dead Reckoning Using MEMS Sensors. *Tong, X.*, +, *TIE Jan. 2020 581-591*

A New Calibration Method for Triaxial Fluxgate Magnetometer Based on Magnetic Shielding Room. *Pan, D.*, +, *TIE May 2020 4183-4192*

A Novel Adaptive Kalman Filtering Approach to Human Motion Tracking With Magnetic-Inertial Sensors. *Zhang, J.*, +, *TIE Oct. 2020 8659-8669*

A Novel Joint Angle Estimation Method for Serial Manipulator Using Micro-Electromechanical Systems Sensors. *Xu, X.*, +, *TIE Dec. 2020 10610-10620*

Gradient-Enhanced Electromagnetic Actuation System With a New Core Shape Design for Microrobot Manipulation. *Li, D.*, +, *TIE June 2020 4700-4710*

Magnetic Sensor Design for a Permanent Magnet Linear Motor Considering Edge-Effect. *Luu, P.T.*, +, *TIE July 2020 5768-5777*

Sensor Glove Based on Novel Inertial Sensor Fusion Control Algorithm for 3-D Real-Time Hand Gestures Measurements. *Chang, H.*, +, *TIE Jan. 2020 658-666*

Magnetic shielding

A New Calibration Method for Triaxial Fluxgate Magnetometer Based on Magnetic Shielding Room. *Pan, D.*, +, *TIE May 2020 4183-4192*

Research on the Design Method of Uniform Magnetic Field Coil Based on the MSR. *Pan, D.*, +, *TIE Feb. 2020 1348-1356*

Magnetic thin films

Drive-Current-Free Switch With Internal Transduction in a Magneto Piezo-Electronic Transistor. *Xue, F.*, +, *TIE April 2020 3257-3266*

Magnetic variables control

Adaptive Unbalance Compensation for a Three-Pole Active Magnetic Bearing System. *Chen, S.*, +, *TIE March 2020 2097-2106*

Magnetic variables measurement

Novel Adaptive Controller for Effective Magnetic Measurement Under Arbitrary Magnetization. *Vo, A.*, +, *TIE Nov. 2020 9841-9850*

Novel Method for Direct Measurement of Air Gap Anomalies in Direct-Drive Electrical Motors. *Herman, J.*, +, *TIE March 2020 2422-2429*

Magnetization

A Novel Hybrid-Magnetic-Circuit Variable Flux Memory Machine. *Yang, H.*, +, *TIE July 2020 5258-5268*

High Torque Density Torque Motor With Hybrid Magnetization Pole Arrays for Jet Pipe Servo Valve. *Zhang, Q.*, +, *TIE March 2020 2133-2142*

Magnetoelastic effects

Investigation of Harmonic Losses in a Two-Pole Slotless Permanent-Magnet Motor Due to Wide Bandgap Inverter Supply. *Millinger, J.*, +, *TIE Aug. 2020 6280-6289*

Magnetometers

A Novel Adaptive Kalman Filtering Approach to Human Motion Tracking With Magnetic-Inertial Sensors. *Zhang, J.*, +, *TIE Oct. 2020 8659-8669*

A Novel Orientation Recursive Algorithm Aiming at Catastrophe Signals in MWD. *Yang, J.*, +, *TIE Nov. 2020 9683-9692*

Interference-Compensating Magnetometer Calibration With Estimated Measurement Noise Covariance for Application to Small-Sized UAVs. *Lee, H.*, +, *TIE Oct. 2020 8829-8840*

Magnetorheology

An Electromagnetic Variable Stiffness Device for Semiactive Seat Suspension Vibration Control. *Ning, D.*, +, *TIE Aug. 2020 6773-6784*

Mainframes

Thermal Model Identification of Computing Nodes in High-Performance Computing Systems. *Diversi, R.*, +, *TIE Sept. 2020 7778-7788*

Maintenance engineering

In-Service Wind Turbine DFIG Diagnosis Using Current Signature Analysis. *Artigao, E.*, +, *TIE March 2020 2262-2271*

Information Theory Based Probabilistic Approach to Blade Damage Detection of Turbomachine Using Sensor Data. *Yang, S.*, +, *TIE Dec. 2020 10887-10896*

Joint SoC and SoH Estimation for Zinc-Nickel Single-Flow Batteries. *Li, S.*, +, *TIE Oct. 2020 8484-8494*

Sucker Rod Pump Working State Diagnosis Using Motor Data and Hidden Conditional Random Fields. *Zheng, B.*, +, *TIE Sept. 2020 7919-7928*

Valve Failure Prognostics in Reciprocating Compressors Utilizing Temperature Measurements, PCA-Based Data Fusion, and Probabilistic Algorithms. *Loutas, T.*, +, *TIE June 2020 5022-5029*

Manganese compounds

Distributed Control of Active Cell Balancing and Low-Voltage Bus Regulation in Electric Vehicles Using Hierarchical Model-Predictive Control. *Gong, Z.*, +, *TIE Dec. 2020 10464-10473*

Manipulator dynamics

A Practical Visual Servo Control for Aerial Manipulation Using a Spherical Projection Model. *Zhong, H.*, +, *TIE Dec. 2020 10564-10574*

A Symplectic Instantaneous Optimal Control for Robot Trajectory Tracking With Differential-Algebraic Equation Models. *Peng, H.*, +, *TIE May 2020 3819-3829*

Adaptive Fuzzy Tracking Control of Flexible-Joint Robots Based on Command Filtering. *Ling, S.*, +, *TIE May 2020 4046-4055*

Analysis and Design of the Stewart Platform-Based Parallel Support Bumper for Inertially Stabilized Platforms. *He, Q.*, +, *TIE May 2020 4203-4215*

Decoupling Finger Joint Motion in an Exoskeletal Hand: A Design for Robot-Assisted Rehabilitation. *Pu, S.*, +, *TIE Jan. 2020 686-697*

Position and Posture Control of Planar Four-Link Underactuated Manipulator Based on Neural Network Model. *Wu, J.*, +, *TIE June 2020 4721-4728*

Relative Impedance-Based Internal Force Control for Bimanual Robot Teleoperation With Varying Time Delay. *Lu, Z.*, +, *TIE Jan. 2020 778-789*

Unknown System Dynamics Estimator for Motion Control of Nonlinear Robotic Systems. *Na, J.*, +, *TIE May 2020 3850-3859*

Manipulator kinematics

A 2-DOF Monolithic Compliant Rotation Platform Driven by Piezoelectric Actuators. *Liang, C.*, +, *TIE Aug. 2020 6963-6974*

A Practical Visual Servo Control for Aerial Manipulation Using a Spherical Projection Model. *Zhong, H.*, +, *TIE Dec. 2020 10564-10574*

An Accelerated Recurrent Neural Network for Visual Servo Control of a Robotic Flexible Endoscope With Joint Limit Constraint. *Li, W.*, +, *TIE Dec. 2020 10787-10797*

Analysis and Design of the Stewart Platform-Based Parallel Support Bumper for Inertially Stabilized Platforms. *He, Q.*, +, *TIE May 2020 4203-4215*

Manipulators

A Modular Wearable Finger Interface for Cutaneous and Kinesthetic Interaction: Control and Evaluation. *Chinello, F.*, +, *TIE Jan. 2020 706-716*

A Novel Joint Angle Estimation Method for Serial Manipulator Using Micro-Electromechanical Systems Sensors. *Xu, X.*, +, *TIE Dec. 2020 10610-10620*

Adaptive Backstepping Sliding Mode Control for Equilibrium Position Tracking of an Electrohydraulic Elastic Manipulator. *Tran, D.T.*, +, *TIE May 2020 3860-3869*

Adaptive Fuzzy Backstepping Control for Stable Nonlinear Bilateral Teleoperation Manipulators With Enhanced Transparency Performance. *Chen, Z.*, +, *TIE Jan. 2020 746-756*

An Adaptive Gain Dynamics for Time Delay Control Improves Accuracy and Robustness to Significant Payload Changes for Robots. *Lee, J.*, +, *TIE April 2020 3076-3085*

Comments on "A New Adaptive Sliding-Mode Control Scheme for Application to Robot Manipulators". *Su, Y.*, *TIE Aug. 2020 7116-7120*

Cooperative Manipulation of Wearable Dual-Arm Exoskeletons Using Force Communication Between Partners. *Wu, X.*, +, *TIE Aug. 2020 6629-6638*

Design, Analysis, and Control of an XY Parallel Nanomanipulator With Multiple Actuation Modes. *Yang, X.*, +, *TIE Sept. 2020 7639-7648*

Fault Detection and Diagnosis of Industrial Robot Based on Power Consumption Modeling. *Sabry, A.H.*, +, *TIE Sept. 2020 7929-7940*

Finite-Time Trajectory Tracking Control of Space Manipulator Under Actuator Saturation. *Jia, S.*, +, *TIE March 2020 2086-2096*

Gradient-Enhanced Electromagnetic Actuation System With a New Core Shape Design for Microrobot Manipulation. *Li, D.*, +, *TIE June 2020 4700-4710*

Iterative Learning Control for Time-Varying Systems Subject to Variable Pass Lengths: Application to Robot Manipulators. *Shi, J.*, +, *TIE Oct. 2020 8629-8637*

Motion Control for Piezoelectric-Actuator-Based Surgical Device Using Neural Network and Extended State Observer. *Lau, J.Y.*, +, *TIE Jan. 2020 402-412*

Robust Control of an Aerial Manipulator Based on a Variable Inertia Parameters Model. *Zhang, G.*, +, *TIE Nov. 2020 9515-9525*

Self-Triggered DMPC Design for Cooperative Multiagent Systems. *Mi, X.*, +, *TIE Jan. 2020 512-520*

Underwater Bioinspired Propulsion: From Inspection to Manipulation. *Wang, Y.*, +, *TIE Sept. 2020 7629-7638*

Manufacturing processes

Fault Diagnosis in Microelectronics Attachment Via Deep Learning Analysis of 3-D Laser Scans. *Dimitriou, N.*, +, *TIE July 2020 5748-5757*

Lambert Compensation, Nonlinear Estimation, and Control Architecture of a Novel Optical Calibration Instrument. *Liu, G.*, +, *TIE May 2020 4193-4202*

Manufacturing systems

Flexible 3-D Helix Fabrication by In-Situ SEM Micromanipulation System. *Wang, P.*, +, *TIE July 2020 5565-5574*

Marine control

Adaptive Algorithms of Tuning and Switching Kalman and \mathcal{H}_∞ Filters and Their Application to Estimation of Ship Oscillation With Time-Varying Frequencies. *Sato, M.*, +, *TIE Jan. 2020 501-511*

Marine power systems

Extending Protection Selectivity in DC Shipboard Power Systems by Means of Additional Bus Capacitance. *Kim, S.*, +, *TIE May 2020 3673-3683*

Marine propulsion

Underwater Bioinspired Propulsion: From Inspection to Manipulation. Wang, Y., +, *TIE Sept. 2020* 7629-7638

Marine robots

Adaptive Visual Servoing for an Underwater Soft Robot Considering Refraction Effects. Xu, F., +, *TIE Dec. 2020* 10575-10586

Precise Discrete-Time Steering Control for Robotic Fish Based on Data-Assisted Technique and Super-Twisting-Like Algorithm. Wang, H., +, *TIE Dec. 2020* 10587-10599

Marine vehicles

Adaptive Neural Network Control of Underactuated Surface Vessels With Guaranteed Transient Performance: Theory and Experimental Results. Chen, L., +, *TIE May 2020* 4024-4035

Markov processes

A Double-Step Unscented Kalman Filter and HMM-Based Zero-Velocity Update for Pedestrian Dead Reckoning Using MEMS Sensors. Tong, X., +, *TIE Jan. 2020* 581-591

A Novel Adaptive Kalman Filtering Approach to Human Motion Tracking With Magnetic-Inertial Sensors. Zhang, J., +, *TIE Oct. 2020* 8659-8669

A Stochastic Predictive Energy Management Strategy for Plug-in Hybrid Electric Vehicles Based on Fast Rolling Optimization. Yang, C., +, *TIE Nov. 2020* 9659-9670

Sliding Mode Control for Nonlinear Stochastic Semi-Markov Switching Systems With Application to SRMM. Qi, W., +, *TIE May 2020* 3955-3966

Stochastic Consensus Control Integrated With Performance Improvement: A Consensus Region-Based Approach. Wang, J., +, *TIE April 2020* 3000-3012

Mass production

Lambert Compensation, Nonlinear Estimation, and Control Architecture of a Novel Optical Calibration Instrument. Liu, G., +, *TIE May 2020* 4193-4202

Mathematical analysis

A High Efficiency Nonisolated Buck–Boost Converter Based on ZETA Converter. Banaei, M.R., +, *TIE March 2020* 1991-1998

A Hybrid Boost–Flyback/Flyback Microinverter for Photovoltaic Applications. Zhang, F., +, *TIE Jan. 2020* 308-318

A Novel Boost Active Bridge-Based Inductive Power Transfer System. Kalra, G.R., +, *TIE Feb. 2020* 1103-1112

A Novel Scalar PWM Method to Reduce Leakage Current in Three-Phase Two-Level Transformerless Grid-Connected VSIs. Xu, J., +, *TIE May 2020* 3788-3797

A Robust Frequency Estimation Method for Aircraft Grids Under Distorted Conditions. Dai, Z., +, *TIE May 2020* 4254-4258

Analysis and Optimal Design of High-Frequency and High-Efficiency Asymmetrical Half-Bridge Flyback Converters. Li, M., +, *TIE Oct. 2020* 8312-8321

Analytic Modeling Optimal Control of Pulsed Power Supply for Accelerator Magnet. Wang, X., +, *TIE July 2020* 5657-5665

DC-Side-Fault-Tolerant Control of a Battery-Supercapacitor Hybrid Energy Storage System Based on Cascaded Multilevel Converter and Auxiliary Power Loop. Jiang, W., +, *TIE Sept. 2020* 7451-7460

Disturbance Observer Design for Nonlinear Systems Represented by Input–Output Models. Ding, S., +, *TIE Feb. 2020* 1222-1232

DLFCR Reduction Based on Power Predictive Scheme for Full-Bridge Photovoltaic Microinverter. Kan, J., +, *TIE June 2020* 4658-4669

Dual-Input Isolated Converter With Dual-Charge-Pump Cell for High Step-Up Voltage Ratio Achievement. Shen, C., +, *TIE Nov. 2020* 9383-9392

Generalized Harmonic Control for CHB Converters With Unbalanced Cells Operation. Marquez, A., +, *TIE Nov. 2020* 9039-9047

Imbalance Current Analysis and Its Suppression Methodology for Parallel SiC MOSFETs with Aid of a Differential Mode Choke. Zeng, Z., +, *TIE Feb. 2020* 1508-1519

Influence of Electric Shield Materials on Temperature Distribution in the End Region of a Large Water–Hydrogen–Hydrogen-Cooled Turbogenerator. Han, J., +, *TIE May 2020* 3431-3441

On Autonomous Large-Signal Stabilization for Islanded Multibus DC Microgrids: A Uniform Nonsmooth Control Scheme. Lin, P., +, *TIE June 2020* 4600-4612

Relationship Between Homopolar Inductor Machine and Wound-Field Synchronous Machine. Ye, C., +, *TIE Feb. 2020* 919-930

Research on the Dynamic Characteristics and Regulation Method of the Energy Stored Quasi-Z-Source Inverter System. Hu, S., +, *TIE June 2020* 4590-4599

Matlab

A Cooperative Adaptive Droop Based Energy Management and Optimal Voltage Regulation Scheme for DC Microgrids. Sahoo, S., +, *TIE April 2020* 2894-2904

A Novel Fault-Tolerant Technique for Active-Neutral-Point-Clamped Inverter Using Carrier-Based PWM. Azer, P., +, *TIE March 2020* 1792-1803

DC-Side-Fault-Tolerant Control of a Battery-Supercapacitor Hybrid Energy Storage System Based on Cascaded Multilevel Converter and Auxiliary Power Loop. Jiang, W., +, *TIE Sept. 2020* 7451-7460

Optimal DC Source Influence on Selective Harmonic Elimination in Multilevel Inverters Using Teaching–Learning-Based Optimization. Haghdar, K., *TIE Feb. 2020* 942-949

Matrix algebra

A Gossip-Based Distributed Algorithm for Economic Dispatch in Smart Grids With Random Communication Link Failures. Wang, R., +, *TIE June 2020* 4635-4645

A Voltage Adaptive Dynamic Harmonic Model of Nonlinear Home Appliances. Sun, Y., +, *TIE May 2020* 3607-3617

Analysis and Design of the Stewart Platform-Based Parallel Support Bumper for Inertially Stabilized Platforms. He, Q., +, *TIE May 2020* 4203-4215

Electrothermal Transient Behavioral Modeling of Thyristor-Based Ultrafast Mechatronic Circuit Breaker for Real-Time DC Grid Emulation. Lin, N., +, *TIE March 2020* 1660-1670

Improved Equivalent-Input-Disturbance Approach Based on H_∞ Control. Yu, P., +, *TIE Oct. 2020* 8670-8679

Parameter Space Optimization Towards Constrained Controller Design With Application to Tray Indexing. Ma, J., +, *TIE July 2020* 5575-5585

Parametric Stability Analysis of Active Magnetic Bearing Supported Rotor System With a Novel Control Law Subject to Periodic Base Motion. Soni, T., +, *TIE Feb. 2020* 1160-1170

Unknown System Dynamics Estimator for Motion Control of Nonlinear Robotic Systems. Na, J., +, *TIE May 2020* 3850-3859

Matrix converters

A High-Frequency Link Matrix Rectifier With a Pure Capacitive Output Filter in a Discontinuous Conduction Mode. Lan, D., +, *TIE Jan. 2020* 4-15

A Reliable Single-Phase Bipolar Buck–Boost Direct PWM AC–AC Converter With Continuous Input/Output Currents. Ahmed, H.F., +, *TIE Dec. 2020* 10253-10265

A Single-Phase Five-Branch Direct AC–AC Modular Multilevel Converter for Railway Power Conditioning. Lei, M., +, *TIE June 2020* 4292-4304

An Enhanced Control Strategy for AC–DC Matrix Converters Under Unbalanced Grid Voltage. Nguyen, T., +, *TIE March 2020* 1718-1727

Application of Analytic Signal and Smooth Interpolation in Pulsewidth Modulation for Conventional Matrix Converters. Szczepankowski, P., +, *TIE Dec. 2020* 10011-10023

Matrix decomposition

Model-Based Fault Tolerant Control for the Thermal Management of PEMFC Systems. Yan, C., +, *TIE April 2020* 2875-2884

Maximum likelihood estimation

A Novel Multifeature Based On-Site Calibration Method for LiDAR-IMU System. Liu, W., +, *TIE Nov. 2020* 9851-9861

Novel Maximum Likelihood Estimation of Clock Skew in One-Way Broadcast Time Synchronization. Shi, F., +, *TIE Nov. 2020* 9948-9957

Maximum power point trackers

A Cooperative Adaptive Droop Based Energy Management and Optimal Voltage Regulation Scheme for DC Microgrids. Sahoo, S., +, *TIE April 2020* 2894-2904

A Fully Integrated Maximum Power Tracking Combiner for Energy Harvesting IoT Applications. Estrada-Lopez, J.J., +, *TIE April 2020* 2744-2754

Dual-Input Quasi-Z-Source PV Inverter: Dynamic Modeling, Design, and Control. *Lashab, A.*, +, *TIE Aug. 2020 6483-6493*

Elimination of Photovoltaic Mismatching With Improved Submodule Differential Power Processing. *Chu, G.*, +, *TIE April 2020 2822-2833*

Harmonic Compensation Strategy for Single-Phase Cascaded H-Bridge PV Inverter Under Unbalanced Power Conditions. *Wang, M.*, +, *TIE Dec. 2020 10474-10484*

Improved Reweighted Zero-Attracting Quaternion-Valued LMS Algorithm for Islanded Distributed Generation System at IM Load. *Kewat, S.*, +, *TIE May 2020 3705-3716*

Multiple-Input Harvesting Power Management Unit With Enhanced Boosting Scheme for IoT Applications. *Abuellil, A.*, +, *TIE May 2020 3662-3672*

Solar PV Energy Generation System Interfaced to Three Phase Grid With Improved Power Quality. *Singh, A.K.*, +, *TIE May 2020 3798-3808*

Maxwell equations

Analytical Modeling of Misalignment in Axial Flux Permanent Magnet Machine. *Guo, B.*, +, *TIE June 2020 4433-4443*

Mean square error methods

A Gossip-Based Distributed Algorithm for Economic Dispatch in Smart Grids With Random Communication Link Failures. *Wang, R.*, +, *TIE June 2020 4635-4645*

A Proportional Pattern Recognition Control Scheme for Wearable A-mode Ultrasound Sensing. *Yang, X.*, +, *TIE Jan. 2020 800-808*

Analysis and Design of the LLC Resonant Converter With Variable Inductor Control Based on Time-Domain Analysis. *Wei, Y.*, +, *TIE July 2020 5432-5443*

Online Hysteresis Identification and Compensation for Piezoelectric Actuators. *Liu, Y.*, +, *TIE July 2020 5595-5603*

Measurement errors

A Double-Step Unscented Kalman Filter and HMM-Based Zero-Velocity Update for Pedestrian Dead Reckoning Using MEMS Sensors. *Tong, X.*, +, *TIE Jan. 2020 581-591*

A New Calibration Method for Triaxial Fluxgate Magnetometer Based on Magnetic Shielding Room. *Pan, D.*, +, *TIE May 2020 4183-4192*

A Novel Controlled Frequency Band Impedance Measurement Approach for Single-Phase Railway Traction Power System. *Hu, H.*, +, *TIE Jan. 2020 244-253*

A Solution to the Attitude Problem Using Two Rotation Units of Micromechanical Gyroscopes. *Liang, Q.*, +, *TIE Feb. 2020 1357-1365*

High-Accuracy Quartz Crystal Resonance DP Instrument. *Nie, J.*, +, *TIE Sept. 2020 8026-8033*

Reduced-Order Thermal Observer for Power Modules Temperature Estimation. *Dong, X.*, +, *TIE Dec. 2020 10085-10094*

Sensor Glove Based on Novel Inertial Sensor Fusion Control Algorithm for 3-D Real-Time Hand Gestures Measurements. *Chang, H.*, +, *TIE Jan. 2020 658-666*

Measurement standards

Sensor Glove Based on Novel Inertial Sensor Fusion Control Algorithm for 3-D Real-Time Hand Gestures Measurements. *Chang, H.*, +, *TIE Jan. 2020 658-666*

Measurement uncertainty

Reduced-Order Thermal Observer for Power Modules Temperature Estimation. *Dong, X.*, +, *TIE Dec. 2020 10085-10094*

Voltage-Source Converter Energy Efficiency Classification in Accordance With IEC 61800-9-2. *Aarniovuori, L.*, +, *TIE Oct. 2020 8242-8251*

Mechanical contact

A Robot Gripper With Variable Stiffness Actuation for Enhancing Collision Safety. *Memar, A.H.*, +, *TIE Aug. 2020 6607-6616*

Mechanical engineering computing

A Model-Based Approach for the Estimation of Bearing Forces and Moments Using Outer Ring Deformation. *Kerst, S.*, +, *TIE Jan. 2020 461-470*

A Polynomial Kernel Induced Distance Metric to Improve Deep Transfer Learning for Fault Diagnosis of Machines. *Yang, B.*, +, *TIE Nov. 2020 9747-9757*

A Prognostic Model Based on DBN and Diffusion Process for Degrading Bearing. *Hu, C.*, +, *TIE Oct. 2020 8767-8777*

An Incorrect Data Detection Method for Big Data Cleaning of Machinery Condition Monitoring. *Xu, X.*, +, *TIE March 2020 2326-2336*

Broadband Mode Decomposition and Its Application to the Quality Evaluation of Welding Inverter Power Source Signals. *Peng, Y.*, +, *TIE Nov. 2020 9734-9746*

Data-Driven Fault Diagnosis Method Based on Compressed Sensing and Improved Multiscale Network. *Hu, Z.*, +, *TIE April 2020 3216-3225*

Data-Driven Soft Sensor for the Estimation of Sound Power Levels of Refrigeration Compressors Through Vibration Measurements. *Nascimento, A.S.B.d.S.*, +, *TIE Aug. 2020 7065-7072*

Deep Learning-Based Machinery Fault Diagnostics With Domain Adaptation Across Sensors at Different Places. *Li, X.*, +, *TIE Aug. 2020 6785-6794*

Design of a New Vision-Based Method for the Bolts Looseness Detection in Flange Connections. *Wang, C.*, +, *TIE Feb. 2020 1366-1375*

Information Theory Based Probabilistic Approach to Blade Damage Detection of Turbomachine Using Sensor Data. *Yang, S.*, +, *TIE Dec. 2020 10887-10896*

Learning Representations With Local and Global Geometries Preserved for Machine Fault Diagnosis. *Li, Y.*, +, *TIE March 2020 2360-2370*

SOSO Boosting of the K-SVD Denoising Algorithm for Enhancing Fault-Induced Impulse Responses of Rolling Element Bearings. *Zeng, M.*, +, *TIE Feb. 2020 1282-1292*

Sparsity-Based Algorithm for Condition Assessment of Rotating Machinery Using Internal Encoder Data. *Ding, C.*, +, *TIE Sept. 2020 7982-7993*

Unsupervised Adversarial Adaptation Network for Intelligent Fault Diagnosis. *Jiao, J.*, +, *TIE Nov. 2020 9904-9913*

Valve Failure Prognostics in Reciprocating Compressors Utilizing Temperature Measurements, PCA-Based Data Fusion, and Probabilistic Algorithms. *Loutas, T.*, +, *TIE June 2020 5022-5029*

Mechanical stability

A Model-Free Control Strategy for Vehicle Lateral Stability With Adaptive Dynamic Programming. *Sun, W.*, +, *TIE Dec. 2020 10693-10701*

On the Suppression of the Backward Motion of a Piezo-Driven Precision Positioning Platform Designed by the Parasitic Motion Principle. *Yang, Z.*, +, *TIE May 2020 3870-3878*

Mechanical strength

Design and Optimization of Halbach-Array PM Rotor for High-Speed Axial-Flux Permanent Magnet Machine With Ironless Stator. *Zhang, Z.*, +, *TIE Sept. 2020 7269-7279*

Mechanical testing

A Simple Equivalent Temperature Rise Test Method Suitable for Safely Evaluating Thermal Limits of Motors and Power Devices Without Model Dependence. *Wang, B.*, +, *TIE Oct. 2020 8755-8766*

Mechanical variables control

Active Suspension System Control With Decentralized Event-Triggered Scheme. *Zhang, H.*, +, *TIE Dec. 2020 10798-10808*

Mechatronics

Decoupling Finger Joint Motion in an Exoskeletal Hand: A Design for Robot-Assisted Rehabilitation. *Pu, S.*, +, *TIE Jan. 2020 686-697*

Multiphysical Design Approach for Automotive Electronic Throttle Body. *Mcharek, M.*, +, *TIE Aug. 2020 6752-6761*

Medical control systems

High-Order Model-Free Adaptive Iterative Learning Control of Pneumatic Artificial Muscle With Enhanced Convergence. *Ai, Q.*, +, *TIE Nov. 2020 9548-9559*

Medical image processing

CCD Optical Tomography System to Detect Solid Contamination in Crystal-Clear Water. *Jamaludin, J.*, +, *TIE April 2020 3248-3256*

Towards Robotic-Assisted Subretinal Injection: A Hybrid Parallel-Serial Robot System Design and Preliminary Evaluation. *Zhou, M.*, +, *TIE Aug. 2020 6617-6628*

Medical robotics

An Accelerated Recurrent Neural Network for Visual Servo Control of a Robotic Flexible Endoscope With Joint Limit Constraint. *Li, W.*, +, *TIE Dec. 2020 10787-10797*

Decoupling Finger Joint Motion in an Exoskeletal Hand: A Design for Robot-Assisted Rehabilitation. *Pu, S.*, +, *TIE Jan. 2020 686-697*

DMP-Based Motion Generation for a Walking Exoskeleton Robot Using Reinforcement Learning. *Yuan, Y.*, +, *TIE May 2020 3830-3839*

Gradient-Enhanced Electromagnetic Actuation System With a New Core Shape Design for Microrobot Manipulation. *Li, D.*, +, *TIE June 2020 4700-4710*

Human-Cooperative Control of a Wearable Walking Exoskeleton for Enhancing Climbing Stair Activities. *Li, Z.*, +, *TIE April 2020 3086-3095*

Motion Control for Piezoelectric-Actuator-Based Surgical Device Using Neural Network and Extended State Observer. *Lau, J.Y.*, +, *TIE Jan. 2020 402-412*

Sparse Machine Learning Discovery of Dynamic Differential Equation of an Esophageal Swallowing Robot. *Bhattacharya, D.*, +, *TIE June 2020 4711-4720*

Towards Robotic-Assisted Subretinal Injection: A Hybrid Parallel–Serial Robot System Design and Preliminary Evaluation. *Zhou, M.*, +, *TIE Aug. 2020 6617-6628*

Medical signal processing

Improved Classification Scheme Using Fused Wavelet Packet Transform Based Features for Intelligent Myoelectric Prostheses. *Pancholi, S.*, +, *TIE Oct. 2020 8517-8525*

Memristors

Flux–Charge Analysis of Two-Memristor-Based Chua's Circuit: Dimensionality Decreasing Model for Detecting Extreme Multistability. *Chen, M.*, +, *TIE March 2020 2197-2206*

Metal products

Real-Time Servo Press Force Estimation Based on Dual Particle Filter. *Olaizola, J.*, +, *TIE May 2020 4088-4097*

Metallurgical industries

Hybrid-Model-Based Intelligent Optimization of Ironmaking Process. *Zhou, H.*, +, *TIE March 2020 2469-2479*

Neurofuzzy-Based Plant-Wide Hierarchical Coordinating Optimization and Control: An Application to Zinc Hydrometallurgy Plant. *Xie, S.*, +, *TIE March 2020 2207-2219*

Meteorology

Deep Learning Approaches on Pedestrian Detection in Hazy Weather. *Li, G.*, +, *TIE Oct. 2020 8889-8899*

Microactuators

A 2-DOF Monolithic Compliant Rotation Platform Driven by Piezoelectric Actuators. *Liang, C.*, +, *TIE Aug. 2020 6963-6974*

A High-Resolution Optical Displacement Detection Method for Piezoelectric Microvibratory Stage. *Zhan, H.*, +, *TIE Dec. 2020 10897-10904*

A Soft and Transparent Visuo-Haptic Interface Pursuing Wearable Devices. *Yun, S.*, +, *TIE Jan. 2020 717-724*

Quadruple-Stage Actuator System for Magnetic-Head Positioning System in Hard Disk Drives. *Atsumi, T.*, +, *TIE Nov. 2020 9184-9194*

Microcontrollers

A GaN-Based DC–DC Module for Railway Applications: Design Consideration and High-Frequency Digital Control. *Fu, M.*, +, *TIE Feb. 2020 1638-1647*

A Real-Time Entropy Estimation Algorithm for Lithium Batteries Based on a Combination of Kalman Filter and Nonlinear Observer. *Thenaisie, G.*, +, *TIE Sept. 2020 8034-8043*

Burst-Mode and Phase-Shift Hybrid Control Method of LLC Converters for Wide Output Range Applications. *Shi, L.*, +, *TIE Feb. 2020 1013-1023*

Design of a LQR-Based Boost Converter Controller for Energy Savings. *Neacsu, D.O.*, +, *TIE July 2020 5379-5388*

High-Accuracy Quartz Crystal Resonance DP Instrument. *Nie, J.*, +, *TIE Sept. 2020 8026-8033*

Nonregenerative Braking of Permanent Magnet Synchronous Motor. *Marce-tic, D.P.*, +, *TIE Oct. 2020 8186-8196*

Phase Voltage Measurement for Permanent Magnet Machine Sensorless Drive Using Controller Capture Modulator. *Chen, G.*, +, *TIE Jan. 2020 49-58*

Microfabrication

A High-Resolution Optical Displacement Detection Method for Piezoelectric Microvibratory Stage. *Zhan, H.*, +, *TIE Dec. 2020 10897-10904*

Microfluidics

A Tunable Electrostatic MEMS Pressure Switch. *Pallay, M.*, +, *TIE Nov. 2020 9833-9840*

Microgrids

Guest Editorial: Applications of Predictive Control in Microgrids. *Hu, J.*, +, *TIE Oct. 2020 8941-8943*

Microlenses

Light-Field Camera for Fast Switching of Time-Sequential Two-Dimensional and Three-Dimensional Image Capturing at Video Rate. *Joo, K.*, +, *TIE Aug. 2020 6975-6985*

Micromanipulators

A 2-DOF Monolithic Compliant Rotation Platform Driven by Piezoelectric Actuators. *Liang, C.*, +, *TIE Aug. 2020 6963-6974*

Development of a Magnetically Driven Microgripper for PicoNewton Force-Controlled Microscale Manipulation and Characterization. *Xie, H.*, +, *TIE March 2020 2065-2075*

Flexible 3-D Helix Fabrication by In-Situ SEM Micromanipulation System. *Wang, P.*, +, *TIE July 2020 5565-5574*

On the Suppression of the Backward Motion of a Piezo-Driven Precision Positioning Platform Designed by the Parasitic Motion Principle. *Yang, Z.*, +, *TIE May 2020 3870-3878*

Micromechanical devices

Correction to “Wafer-Level Vacuum-Packaged High-Performance AlN-on-SOI Piezoelectric Resonator for Sub-100-MHz Oscillator Applications” [Apr 18 3576-3584]. *Wu, G.*, +, *TIE Nov. 2020 9976*

Improved Extended Kalman Filter Estimation Using Threshold Signal Detection With an MEMS Electrostatic Microscanner. *Chen, Y.*, +, *TIE Feb. 2020 1328-1336*

Micromechanical resonators

An Outlook on Potentialities and Limits in Using Epitaxial Polysilicon for MEMS Real-Time Clocks. *Mussi, G.*, +, *TIE Aug. 2020 6996-7004*

Microorganisms

Adaptive Visual Servoing for an Underwater Soft Robot Considering Refraction Effects. *Xu, F.*, +, *TIE Dec. 2020 10575-10586*

Microphone arrays

Acoustic Source Localization From Multicopter UAVs. *Salvati, D.*, +, *TIE Oct. 2020 8618-8628*

Microrobots

Gradient-Enhanced Electromagnetic Actuation System With a New Core Shape Design for Microrobot Manipulation. *Li, D.*, +, *TIE June 2020 4700-4710*

Underwater Bioinspired Propulsion: From Inspection to Manipulation. *Wang, Y.*, +, *TIE Sept. 2020 7629-7638*

Microsensors

A Double-Step Unscented Kalman Filter and HMM-Based Zero-Velocity Update for Pedestrian Dead Reckoning Using MEMS Sensors. *Tong, X.*, +, *TIE Jan. 2020 581-591*

A High-Resolution Optical Displacement Detection Method for Piezoelectric Microvibratory Stage. *Zhan, H.*, +, *TIE Dec. 2020 10897-10904*

A Novel Joint Angle Estimation Method for Serial Manipulator Using Micro-Electromechanical Systems Sensors. *Xu, X.*, +, *TIE Dec. 2020 10610-10620*

A Self-Powered Vibration Sensor With Wide Bandwidth. *Li, Y.*, +, *TIE Jan. 2020 560-568*

A Solution to the Attitude Problem Using Two Rotation Units of Micromechanical Gyroscopes. *Liang, Q.*, +, *TIE Feb. 2020 1357-1365*

A Tunable Electrostatic MEMS Pressure Switch. *Pallay, M.*, +, *TIE Nov. 2020 9833-9840*

An Energy-Efficient Multimode Multichannel Gas-Sensor System With Learning-Based Optimization and Self-Calibration Schemes. *Park, K.*, +, *TIE March 2020 2402-2410*

An Outlook on Potentialities and Limits in Using Epitaxial Polysilicon for MEMS Real-Time Clocks. *Mussi, G.*, +, *TIE Aug. 2020 6996-7004*

Design and Experimental Evaluation of Immersion and Invariance Observer for Low-Cost Attitude-Heading Reference System. *Keighobadi, J.*, +, *TIE Sept. 2020 7871-7878*

Foot-Mounted Pedestrian Navigation Algorithm Based on BOR/MINS Integrated Framework. *Deng, Z.*, +, *TIE May 2020 3980-3989*

Piezoelectric–Piezoresistive Coupling MEMS Sensors for Measurement of Electric Fields of Broad Bandwidth and Large Dynamic Range. *Xue, F.*, +, *TIE Jan. 2020 551-559*

Microstrip antenna arrays

Multiresonant Chipless RFID Array System for Coating Defect Detection and Corrosion Prediction. *Deif, S.*, +, *TIE Oct. 2020 8868-8877*

Microswitches

A Tunable Electrostatic MEMS Pressure Switch. *Pallay, M.*, +, *TIE Nov. 2020 9833-9840*

Microwave filters

Lowpass-Bandpass Triplexer Integrated Switch Design Using Common Lumped-Element Triple-Resonance Resonator Technique. *Xu, J.*, +, *TIE Jan. 2020 471-479*

Microwave power transmission

Directional Radiation Technique for Maximum Receiving Power in Microwave Power Transmission System. *Hui, Q.*, +, *TIE Aug. 2020 6376-6386*

Lateral GaN Schottky Barrier Diode for Wireless High-Power Transfer Application With High RF/DC Conversion Efficiency: From Circuit Construction and Device Technologies to System Demonstration. *Dang, K.*, +, *TIE Aug. 2020 6597-6606*

Microwave resonators

Multiresonant Chipless RFID Array System for Coating Defect Detection and Corrosion Prediction. *Deif, S.*, +, *TIE Oct. 2020 8868-8877*

Microwave switches

Lowpass-Bandpass Triplexer Integrated Switch Design Using Common Lumped-Element Triple-Resonance Resonator Technique. *Xu, J.*, +, *TIE Jan. 2020 471-479*

Milling

A Reinforced k -Nearest Neighbors Method With Application to Chatter Identification in High-Speed Milling. *Shi, F.*, +, *TIE Dec. 2020 10844-10855*

Milling machines

A Reinforced k -Nearest Neighbors Method With Application to Chatter Identification in High-Speed Milling. *Shi, F.*, +, *TIE Dec. 2020 10844-10855*

MIMO communication

Massive MIMO With Massive Connectivity for Industrial Internet of Things. *Lee, B.M.*, +, *TIE June 2020 5187-5196*

MIMO systems

A Novel Scheme of Nonfragile Controller Design for Periodic Piecewise LTV Systems. *Xie, X.*, +, *TIE Dec. 2020 10766-10775*

Decoupling and Optimal Control of Multilevel Buck DC-DC Converters With Inverse System Theory. *Wu, J.*, +, *TIE Sept. 2020 7861-7870*

Multi-Input Multi-Output-Based Sliding-Mode Controller for Single-Phase Quasi-Z-Source Inverters. *Bagheri, F.*, +, *TIE Aug. 2020 6439-6449*

Minimization

An Optimized Modulation Strategy for the Three-Level DAB Converter With Five Control Degrees of Freedom. *Liu, P.*, +, *TIE Jan. 2020 254-264*

Online Kron Reduction for Economical Frequency Control of Microgrids. *Abdolmaleki, B.*, +, *TIE Oct. 2020 8461-8471*

Parameter Space Optimization Towards Constrained Controller Design With Application to Tray Indexing. *Ma, J.*, +, *TIE July 2020 5575-5585*

Missile guidance

Three-Dimensional Guidance for Various Target Motions With Terminal Angle Constraints Using Twisting Control. *Hu, Q.*, +, *TIE Feb. 2020 1242-1253*

Missiles

H_2/H_∞ -Neural-Based FOPID Controller Applied for Radar-Guided Missile. *Yaghi, M.*, +, *TIE June 2020 4806-4814*

Mixture models

A Robust Point Set Registration Approach With Multiple Effective Constraints. *Sun, J.*, +, *TIE Dec. 2020 10931-10941*

Mobile computing

All-Day Mobile Healthcare Monitoring System Based on Heterogeneous Stretchable Sensors for Medical Emergency. *Lee, S.*, +, *TIE Oct. 2020 8808-8816*

Mobile radio

WAVE-Based Short-Range Vehicular Localization Through Vector Match. *Zhang, J.*, +, *TIE Jan. 2020 592-600*

Mobile robots

A Modular Wearable Finger Interface for Cutaneous and Kinesthetic Interaction: Control and Evaluation. *Chinello, F.*, +, *TIE Jan. 2020 706-716*

A Motion Planning and Tracking Framework for Autonomous Vehicles Based on Artificial Potential Field Elaborated Resistance Network Approach. *Huang, Y.*, +, *TIE Feb. 2020 1376-1386*

A Novel Geometric Hierarchical Approach for Dynamic Visual Servoing of Quadrotors. *Zhang, X.*, +, *TIE May 2020 3840-3849*

A Practical Visual Servo Control for Aerial Manipulation Using a Spherical Projection Model. *Zhong, H.*, +, *TIE Dec. 2020 10564-10574*

A Symplectic Instantaneous Optimal Control for Robot Trajectory Tracking With Differential-Algebraic Equation Models. *Peng, H.*, +, *TIE May 2020 3819-3829*

Adaptive Fuzzy Tracking Control of Flexible-Joint Robots Based on Command Filtering. *Ling, S.*, +, *TIE May 2020 4046-4055*

Control of a Soft Inchworm Robot With Environment Adaptation. *Cao, J.*, +, *TIE May 2020 3809-3818*

Cornering Trajectory Planning Avoiding Slip for Differential-Wheeled Mobile Robots. *Kim, J.*, +, *TIE Aug. 2020 6698-6708*

Design, Implementation, and Evaluation of a Neural-Network-Based Quadcopter UAV System. *Jiang, F.*, +, *TIE March 2020 2076-2085*

Dynamics-Level Finite-Time Fuzzy Monocular Visual Servo of an Unmanned Surface Vehicle. *Wang, N.*, +, *TIE Nov. 2020 9648-9658*

Event- and Deadline-Driven Control of a Self-Localizing Robot With Vision-Induced Delays. *van Horsen, E.P.*, +, *TIE Feb. 2020 1212-1221*

Fault-Tolerant Fixed-Time Trajectory Tracking Control of Autonomous Surface Vessels With Specified Accuracy. *Zhang, J.*, +, *TIE June 2020 4889-4899*

Fringe-Projection-Based Normal Direction Measurement and Adjustment for Robotic Drilling. *Rao, G.*, +, *TIE Nov. 2020 9560-9570*

Gliding Motion Regulation of a Robotic Dolphin Based on a Controllable Fluke. *Wu, Z.*, +, *TIE April 2020 2945-2953*

High-Order Disturbance-Observer-Based Sliding Mode Control for Mobile Wheeled Inverted Pendulum Systems. *Huang, J.*, +, *TIE March 2020 2030-2041*

Human-Cooperative Control of a Wearable Walking Exoskeleton for Enhancing Climbing Stair Activities. *Li, Z.*, +, *TIE April 2020 3086-3095*

Impulsive Super-Twisting Sliding Mode Control for Space Debris Capturing via Tethered Space Net Robot. *Zhao, Y.*, +, *TIE Aug. 2020 6874-6882*

Leaderless Consensus of Ring-Networked Mobile Robots via Distributed Saturated Control. *Lu, P.*, +, *TIE Dec. 2020 10723-10731*

Model Predictive Adaptive Constraint Tracking Control for Underwater Vehicles. *Gan, W.*, +, *TIE Sept. 2020 7829-7840*

Multiobjective Optimal Parking Maneuver Planning of Autonomous Wheeled Vehicles. *Chai, R.*, +, *TIE Dec. 2020 10809-10821*

Optimal Path Planning Using Generalized Voronoi Graph and Multiple Potential Functions. *Wang, J.*, +, *TIE Dec. 2020 10621-10630*

Optimized Formation Control Using Simplified Reinforcement Learning for a Class of Multiagent Systems With Unknown Dynamics. *Wen, G.*, +, *TIE Sept. 2020 7879-7888*

Precise Discrete-Time Steering Control for Robotic Fish Based on Data-Assisted Technique and Super-Twisting-Like Algorithm. *Wang, H.*, +, *TIE Dec. 2020 10587-10599*

Robust Control of an Aerial Manipulator Based on a Variable Inertia Parameters Model. *Zhang, G.*, +, *TIE Nov. 2020 9515-9525*

Robust Vision-Based Tube Model Predictive Control of Multiple Mobile Robots for Leader-Follower Formation. *Li, Z.*, +, *TIE April 2020 3096-3106*

Sensor-Based Control Using an Image Point and Distance Features for Rivet-in-Hole Insertion. *Zhu, W.*, +, *TIE June 2020 4692-4699*

Simulation and Experimental Results of a New Control Strategy For Point Stabilization of Nonholonomic Mobile Robots. *Fabregas, E.*, +, *TIE Aug. 2020 6679-6687*

Three-Dimensional Cooperative Mapping for Connected and Automated Vehicles. *Zhang, Y.*, +, *TIE Aug. 2020 6649-6658*

Trajectory Generation of a Two-Wheeled Mobile Robot in an Uncertain Environment. *Kim, J.*, *TIE July 2020 5586-5594*

Underwater Bioinspired Propulsion: From Inspection to Manipulation. *Wang, Y.*, +, *TIE Sept. 2020 7629-7638*

Model reference adaptive control systems

- A Constant-Current Transmission Converter for Semi-airborne Transient Electromagnetic Surveying. *Geng, Z.*, +, *TIE Jan. 2020 542-550*
- Electromagnetic Torque-Based Model Reference Adaptive System Speed Estimator for Sensorless Surface Mount Permanent Magnet Synchronous Motor Drive. *Prabhakaran, K.K.*, +, *TIE July 2020 5936-5947*
- Seamless Dynamics for Wild-Frequency Active Rectifiers in More Electric Aircraft. *Benzaquen, J.*, +, *TIE Sept. 2020 7135-7145*
- Simple Stability Enhancement Method for Stator Current Error-Based MRAS-Type Speed Estimator for Induction Motor. *Korzonek, M.*, +, *TIE July 2020 5854-5866*

Modulation

- A Novel Virtual Space Vector Modulation With Reduced Common-Mode Voltage and Eliminated Neutral Point Voltage Oscillation for Neutral Point Clamped Three-Level Inverter. *Jiang, W.*, +, *TIE Feb. 2020 884-894*
- Generalized Space Vector Modulation for Current Source Converter in Continuous and Discontinuous Current Modes. *Guo, X.*, +, *TIE Nov. 2020 9348-9357*

Moisture

- Condition Monitoring of Transformer Breather Using a Capacitive Moisture Sensor. *Kumar, S.*, +, *TIE Nov. 2020 9779-9789*

Moisture measurement

- Condition Monitoring of Transformer Breather Using a Capacitive Moisture Sensor. *Kumar, S.*, +, *TIE Nov. 2020 9779-9789*

Monolayers

- Real-Time Imaging of Invisible Micron-Scale Monolayer Patterns on a Moving Web Using Condensation Figures. *Du, X.*, +, *TIE May 2020 4077-4087*

Monte Carlo methods

- FPGA-Based Stochastic Activity Networks for Online Reliability Monitoring. *Garro, U.*, +, *TIE June 2020 5000-5011*
- Multiobjective Deterministic and Robust Optimization Design of a New Spoke-Type Permanent Magnet Machine for the Improvement of Torque Performance. *Liu, G.*, +, *TIE Dec. 2020 10202-10212*

MOSFET

- In situ* Degradation Monitoring of SiC MOSFET Based on Switching Transient Measurement. *Pu, S.*, +, *TIE June 2020 5092-5100*
- A Multiresonant Gate Driver for High-Frequency Resonant Converters. *Gu, L.*, +, *TIE Feb. 2020 1405-1414*
- An H5-Bridge-Based Asymmetric LLC Resonant Converter With an Ultrawide Output Voltage Range. *Li, C.*, +, *TIE Nov. 2020 9503-9514*
- An Interleaved Secondary-Side Modulated LLC Resonant Converter for Wide Output Range Applications. *Li, Z.*, +, *TIE Feb. 2020 1124-1135*
- Ferdowski Rectifiers—Single-Phase Buck-Boost Bridgeless PFC Rectifiers With Low Semiconductor Count. *Sharifi, S.*, +, *TIE Nov. 2020 9206-9214*
- Imbalance Current Analysis and Its Suppression Methodology for Parallel SiC MOSFETs with Aid of a Differential Mode Choke. *Zeng, Z.*, +, *TIE Feb. 2020 1508-1519*

Motion control

- A Motion Planning and Tracking Framework for Autonomous Vehicles Based on Artificial Potential Field Elaborated Resistance Network Approach. *Huang, Y.*, +, *TIE Feb. 2020 1376-1386*
- An Accelerated Recurrent Neural Network for Visual Servo Control of a Robotic Flexible Endoscope With Joint Limit Constraint. *Li, W.*, +, *TIE Dec. 2020 10787-10797*
- An Online Trajectory Planning Approach for a Quadrotor UAV With a Slung Payload. *Xian, B.*, +, *TIE Aug. 2020 6669-6678*
- Analysis and Design of the Stewart Platform-Based Parallel Support Bumper for Inertially Stabilized Platforms. *He, Q.*, +, *TIE May 2020 4203-4215*
- Control of a Soft Inchworm Robot With Environment Adaptation. *Cao, J.*, +, *TIE May 2020 3809-3818*
- Decoupled Torque Control of Series Elastic Actuator With Adaptive Robust Compensation of Time-Varying Load-Side Dynamics. *Lin, Y.*, +, *TIE July 2020 5604-5614*
- Decoupling Finger Joint Motion in an Exoskeletal Hand: A Design for Robot-Assisted Rehabilitation. *Pu, S.*, +, *TIE Jan. 2020 686-697*
- Design, Analysis, and Control of an XY Parallel Nanomanipulator With Multiple Actuation Modes. *Yang, X.*, +, *TIE Sept. 2020 7639-7648*

- DMP-Based Motion Generation for a Walking Exoskeleton Robot Using Reinforcement Learning. *Yuan, Y.*, +, *TIE May 2020 3830-3839*
- Event- and Deadline-Driven Control of a Self-Localizing Robot With Vision-Induced Delays. *van Horssen, E.P.*, +, *TIE Feb. 2020 1212-1221*
- Finite-Time Control of a Linear Motor Positioner Using Adaptive Recursive Terminal Sliding Mode. *Shao, K.*, +, *TIE Aug. 2020 6659-6668*
- Flux-Controlled Hybrid Reluctance Actuator for High-Precision Scanning Motion. *Ito, S.*, +, *TIE Nov. 2020 9593-9600*
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Postfault Operation of Cascaded H-Bridge Converter for Equal Power Handling by the Healthy Cells. *Sharma, R.*, +, *TIE Nov. 2020 9174-9183*

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Thermal Overload and Insulation Aging of Short Duty Cycle, Aerospace Motors. *Madonna, V.*, +, *TIE April 2020 2618-2629*

Voltage-Source Converter Energy Efficiency Classification in Accordance With IEC 61800-9-2. *Aarniovuori, L.*, +, *TIE Oct. 2020 8242-8251*

Multi-agent systems

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Multi-robot systems

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Cooperative Manipulation of Wearable Dual-Arm Exoskeletons Using Force Communication Between Partners. *Wu, X.*, +, *TIE Aug. 2020 6629-6638*

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Leaderless Consensus of Ring-Networked Mobile Robots via Distributed Saturated Control. *Lu, P.*, +, *TIE Dec. 2020 10723-10731*

Optimized Formation Control Using Simplified Reinforcement Learning for a Class of Multiagent Systems With Unknown Dynamics. *Wen, G.*, +, *TIE Sept. 2020 7879-7888*

Robust Vision-Based Tube Model Predictive Control of Multiple Mobile Robots for Leader-Follower Formation. *Li, Z.*, +, *TIE April 2020 3096-3106*

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Flexible 1–3 Composite Ultrasound Transducers With Silver-Nanowire-Based Stretchable Electrodes. *Kim, T.*, +, *TIE Aug. 2020 6955-6962*

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Mitigation of DC-Link Current Ripple for Dual Three-Phase Flux-Adjustable Hybrid PMAC Drives Using Collaborative Switching Strategy. *Wang, Z.*, +, *TIE Sept. 2020 7202-7216*

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- Embedded Hardware Artificial Neural Network Control for Global and Real-Time Imbalance Current Suppression of Parallel Connected IGBTs. *Zeng, X.*, +, *TIE March 2020 2186-2196*
- Event-Triggered Decentralized Tracking Control of Modular Reconfigurable Robots Through Adaptive Dynamic Programming. *Zhao, B.*, +, *TIE April 2020 3054-3064*
- Finite-Time Trajectory Tracking Control of Space Manipulator Under Actuator Saturation. *Jia, S.*, +, *TIE March 2020 2086-2096*
- Force Sensorless Admittance Control With Neural Learning for Robots With Actuator Saturation. *Peng, G.*, +, *TIE April 2020 3138-3148*

Motion Control for Piezoelectric-Actuator-Based Surgical Device Using Neural Network and Extended State Observer. *Lau, J.Y.*, +, *TIE Jan. 2020 402-412*

Motor Learning and Generalization Using Broad Learning Adaptive Neural Control. *Huang, H.*, +, *TIE Oct. 2020 8608-8617*

Neurofuzzy-Based Plant-Wide Hierarchical Coordinating Optimization and Control: An Application to Zinc Hydrometallurgy Plant. *Xie, S.*, +, *TIE March 2020 2207-2219*

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Position and Posture Control of Planar Four-Link Underactuated Manipulator Based on Neural Network Model. *Wu, J.*, +, *TIE June 2020 4721-4728*

Predefined-Time Convergent Neural Solution to Cyclical Motion Planning of Redundant Robots Under Physical Constraints. *Li, W.*, *TIE Dec. 2020 10732-10743*

Real-Time Reentry Trajectory Planning of Hypersonic Vehicles: A Two-Step Strategy Incorporating Fuzzy Multiobjective Transcription and Deep Neural Network. *Chai, R.*, +, *TIE Aug. 2020 6904-6915*

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Newton method

Multidimensional Fractional-Order Newton-Based Extremum Seeking for Online Light-Energy Saving Technique of Lighting System. *Yin, C.*, +, *TIE Oct. 2020 8576-8586*

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An Accurate Wide-Speed Range Control Method of IPMSM Considering Resistive Voltage Drop and Magnetic Saturation. *Wang, S.*, +, *TIE April 2020 2630-2641*

Electrothermal Transient Behavioral Modeling of Thyristor-Based Ultrafast Mechatronic Circuit Breaker for Real-Time DC Grid Emulation. *Lin, N.*, +, *TIE March 2020 1660-1670*

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Nickel

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Distributed Control of Active Cell Balancing and Low-Voltage Bus Regulation in Electric Vehicles Using Hierarchical Model-Predictive Control. *Gong, Z.*, +, *TIE Dec. 2020 10464-10473*

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A GaN-Based DC-DC Module for Railway Applications: Design Consideration and High-Frequency Digital Control. *Fu, M.*, +, *TIE Feb. 2020 1638-1647*

Hydrothermal Aging Factor Estimation for Two-Cell Diesel-Engine SCR Systems via a Dual Time-Scale Unscented Kalman Filter. *Jiang, K.*, +, *TIE Jan. 2020 442-450*

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A New Self-Organizing Fuzzy Cerebellar Model Articulation Controller for Uncertain Nonlinear Systems Using Overlapped Gaussian Membership Functions. *Huynh, T.*, +, *TIE Nov. 2020 9671-9682*

A Novel Degradation Modeling and Prognostic Framework for Closed-Loop Systems With Degrading Actuator. *Si, X.*, +, *TIE Nov. 2020 9635-9647*

A Novel Geometric Hierarchical Approach for Dynamic Visual Servoing of Quadrotors. *Zhang, X.*, +, *TIE May 2020 3840-3849*

A Novel Initiative Braking System With Nondegraded Fallback Level for ADAS and Autonomous Driving. *Yuan, Y.*, +, *TIE June 2020 4360-4370*

A Novel Model-Based Robust Control for Position Tracking of Permanent Magnet Linear Motor. *Liu, X.*, +, *TIE Sept. 2020 7767-7777*

A Symplectic Instantaneous Optimal Control for Robot Trajectory Tracking With Differential-Algebraic Equation Models. *Peng, H.*, +, *TIE May 2020 3819-3829*

Active Disturbance-Rejection-Based Speed Control in Model Predictive Control for Induction Machines. *Yan, L.*, +, *TIE April 2020 2574-2584*

Actuator Failure Compensation-Based Adaptive Control of Active Suspension Systems With Prescribed Performance. *Liu, Y.*, +, *TIE Aug. 2020 7044-7053*

Adaptive Backstepping Sliding Mode Control for Equilibrium Position Tracking of an Electrohydraulic Elastic Manipulator. *Tran, D.T.*, +, *TIE May 2020 3860-3869*

Adaptive Fault-Tolerant Constrained Control of Cooperative Spacecraft Rendezvous and Docking. *Sun, L.*, *TIE April 2020 3107-3115*

Adaptive Fuzzy Backstepping Control for Stable Nonlinear Bilateral Teleoperation Manipulators With Enhanced Transparency Performance. *Chen, Z.*, +, *TIE Jan. 2020 746-756*

Adaptive Fuzzy Tracking Control of Flexible-Joint Robots Based on Command Filtering. *Ling, S.*, +, *TIE May 2020 4046-4055*

Adaptive Neural Network Control of Underactuated Surface Vessels With Guaranteed Transient Performance: Theory and Experimental Results. *Chen, L.*, +, *TIE May 2020 4024-4035*

Adaptive NN Backstepping Control Design for a 3-DOF Helicopter: Theory and Experiments. *Yang, X.*, +, *TIE May 2020 3967-3979*

Adaptive Threshold Generation for Vehicle Fault Detection Using Switched T-S Interval Observers. *Ifqir, S.*, +, *TIE June 2020 5030-5040*

An Explicit Nonlinear Model Predictive ABS Controller for Electro-Hydraulic Braking Systems. *Tavernini, D.*, +, *TIE May 2020 3990-4001*

An Online Trajectory Planning Approach for a Quadrotor UAV With a Slung Payload. *Xian, B.*, +, *TIE Aug. 2020 6669-6678*

Anti-Disturbance Control for Nonlinear Systems Based on Interval Observer. *Yong, K.*, +, *TIE Feb. 2020 1261-1269*

Application of Sliding Switching Functions in Backstepping Based Speed Observer of Induction Machine. *Morawiec, M.*, +, *TIE July 2020 5843-5853*

Boundary Antidisturbance Control of a Spatially Nonlinear Flexible String System. *Zhao, Z.*, +, *TIE June 2020 4846-4856*

Composite Disturbance Rejection Attitude Control for Quadrotor With Unknown Disturbance. *Zhao, K.*, +, *TIE Aug. 2020 6894-6903*

Control of Antilock Braking Systems Using Disturbance Observer With a Novel Nonlinear Sliding Surface. *Phadke, S.B.*, +, *TIE Aug. 2020 6815-6823*

Current-Cycle Iterative Learning Control for High-Precision Position Tracking of Piezoelectric Actuator System via Active Disturbance Rejection Control for Hysteresis Compensation. *Huang, D.*, +, *TIE Oct. 2020 8680-8690*

Decoupling and Optimal Control of Multilevel Buck DC-DC Converters With Inverse System Theory. *Wu, J.*, +, *TIE Sept. 2020 7861-7870*

Design, Implementation, and Evaluation of a Neural-Network-Based Quadcopter UAV System. *Jiang, F.*, +, *TIE March 2020 2076-2085*

Discrete-Time Extended State Observer-Based Model-Free Adaptive Control Via Local Dynamic Linearization. *Chi, R.*, +, *TIE Oct. 2020 8691-8701*

Distributed Control of Multiple Flexible Manipulators With Unknown Disturbances and Dead-Zone Input. *Chen, T.*, +, *TIE Nov. 2020 9937-9947*

Distributed Tracking of a Class of Underactuated Lagrangian Systems With Uncertain Parameters and Actuator Faults. *Chen, T.*, +, *TIE May 2020 4244-4253*

Disturbance Observer Design for Nonlinear Systems Represented by Input-Output Models. *Ding, S.*, +, *TIE Feb. 2020 1222-1232*

Disturbance Rejection and Control System Design Using Improved Equivalent Input Disturbance Approach. *Du, Y.*, +, *TIE April 2020 3013-3023*

Energy-Based Nonlinear Adaptive Control Design for the Quadrotor UAV System With a Suspended Payload. *Yang, S.*, +, *TIE March 2020 2054-2064*

Extended State Filter Based Disturbance and Uncertainty Mitigation for Nonlinear Uncertain Systems With Application to Fuel Cell Temperature Control. *Xue, W.*, +, *TIE Dec. 2020 10682-10692*

Fault-Estimation-Based Output-Feedback Adaptive FTC for Uncertain Nonlinear Systems With Actuator Faults. *Zhang, L.*, +, *TIE April 2020 3065-3075*

Fault-Tolerant Fixed-Time Trajectory Tracking Control of Autonomous Surface Vessels With Specified Accuracy. *Zhang, J.*, +, *TIE June 2020 4889-4899*

Feedback Control of Multiphase Induction Machines With Backstepping Technique. *Morawiec, M.*, +, *TIE June 2020 4305-4314*

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Full-Order Observer for a Class of Nonlinear Systems With Unmatched Uncertainties: Joint Attractive Ellipsoid and Sliding Mode Concepts. *Sanchez, B.*, +, *TIE July 2020 5677-5686*

High-Accuracy Dynamic Load Emulation Method for Electrical Drives. *de Oliveira, C.M.R.*, +, *TIE Sept. 2020 7239-7249*

High-Order Model-Free Adaptive Iterative Learning Control of Pneumatic Artificial Muscle With Enhanced Convergence. *Ai, Q.*, +, *TIE Nov. 2020 9548-9559*

Input-to-State Stable Bilateral Teleoperation by Dynamic Interconnection and Damping Injection: Theory and Experiments. *Yang, Y.*, +, *TIE Jan. 2020 790-799*

Integral Sliding Mode Control Using a Disturbance Observer for Vehicle Platoons. *Wang, J.*, +, *TIE Aug. 2020 6639-6648*

Lambert Compensation, Nonlinear Estimation, and Control Architecture of a Novel Optical Calibration Instrument. *Liu, G.*, +, *TIE May 2020 4193-4202*

Large-Signal Stability of Interleave Boost Converter System With Constant Power Load Using Sliding-Mode Control. *Jiang, W.*, +, *TIE Nov. 2020 9450-9459*

Min-Type Control Strategy of a DC-DC Synchronous Boost Converter. *Sferlazza, A.*, +, *TIE April 2020 3167-3179*

Motion Control for Piezoelectric-Actuator-Based Surgical Device Using Neural Network and Extended State Observer. *Lau, J.Y.*, +, *TIE Jan. 2020 402-412*

Noncooperative Event-Triggered Control Strategy Design With Round-Robin Protocol: Applications to Load Frequency Control of Circuit Systems. *Yuan, Y.*, +, *TIE March 2020 2155-2166*

Nonlinear Control of Underactuated Systems Subject to Both Actuated and Unactuated State Constraints With Experimental Verification. *Chen, H.*, +, *TIE Sept. 2020 7702-7714*

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Optimal Tracking With Disturbance Rejection of Voltage Source Inverters. *Teng, J.*, +, *TIE June 2020 4957-4968*

Optimized Formation Control Using Simplified Reinforcement Learning for a Class of Multiagent Systems With Unknown Dynamics. *Wen, G.*, +, *TIE Sept. 2020 7879-7888*

Output Feedback Adaptive Motion Control and Its Experimental Verification for Time-Delay Nonlinear Systems With Asymmetric Hysteresis. *Zhang, X.*, +, *TIE Aug. 2020 6824-6834*

Output-Constrained Robust Sliding Mode Based Nonlinear Active Suspension Control. *Rath, J.J.*, +, *TIE Dec. 2020 10652-10662*

Performance Enhancement of RCS and Application to Tracking Control of Chuck-Workpiece Systems. *Zhou, L.*, +, *TIE May 2020 4056-4065*

Position and Posture Control of Planar Four-Link Underactuated Manipulator Based on Neural Network Model. *Wu, J.*, +, *TIE June 2020 4721-4728*

Position Control of Parallel Active Link Suspension With Backlash. *Yu, M.*, +, *TIE June 2020 4741-4751*

Position Sensorless Control of Switched Reluctance Motors Using Reference and Virtual Flux Linkage With One-Phase Current Sensor in Medium and High Speed. *Ding, W.*, +, *TIE April 2020 2595-2606*

Precise Active Brake-Pressure Control for a Novel Electro-Booster Brake System. *Zhao, J.*, +, *TIE June 2020 4774-4784*

Precision Motion Control of a Servomotor-Pump Direct-Drive Electrohydraulic System With a Nonlinear Pump Flow Mapping. *Helian, B.*, +, *TIE Oct. 2020 8638-8648*

Prediction Horizons Optimized Nonlinear Predictive Control for Permanent Magnet Synchronous Motor Position System. *Wei, Y.*, +, *TIE Nov. 2020 9153-9163*

Probabilistic Monitoring of Correlated Sensors for Nonlinear Processes in State Space. *Zhao, S.*, +, *TIE March 2020 2294-2303*

Rate Bumpless Transfer Control for Switched Linear Systems With Stability and Its Application to Aero-Engine Control Design. *Zhao, Y.*, +, *TIE June 2020 4900-4910*

Relative Impedance-Based Internal Force Control for Bimanual Robot Teleoperation With Varying Time Delay. *Lu, Z.*, +, *TIE Jan. 2020 778-789*

Sensorless Rotor Position Estimation of Doubly Fed Induction Generator Based on Backstepping Technique. *Morawiec, M.*, +, *TIE July 2020 5889-5899*

Signal Compensation Based Adaptive Cascade Control for Regrinding Processes. *Wang, L.*, +, *TIE Oct. 2020 8732-8742*

Sliding Mode Control for Nonlinear Stochastic Semi-Markov Switching Systems With Application to SRMM. *Qi, W.*, +, *TIE May 2020 3955-3966*

Synchronization of Network Systems via Aperiodic Sampled-Data Control With Constant Delay and Application to Unmanned Ground Vehicles. *Ren, H.*, +, *TIE June 2020 4980-4990*

Three-Dimensional Guidance for Various Target Motions With Terminal Angle Constraints Using Twisting Control. *Hu, Q.*, +, *TIE Feb. 2020 1242-1253*

UDE-Based Robust Output Feedback Control With Applications to a Piezoelectric Stage. *Ren, B.*, +, *TIE Sept. 2020 7819-7828*

Uncertainty and Disturbance Estimator-Based Control of a Flapping-Wing Aerial Vehicle With Unknown Backlash-Like Hysteresis. *Yin, Z.*, +, *TIE June 2020 4826-4835*

Unknown System Dynamics Estimator for Motion Control of Nonlinear Robotic Systems. *Na, J.*, +, *TIE May 2020 3850-3859*

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H_2/H_∞ -Neural-Based FOPID Controller Applied for Radar-Guided Missile. *Yaghi, M.*, +, *TIE June 2020 4806-4814*

A Symplectic Instantaneous Optimal Control for Robot Trajectory Tracking With Differential-Algebraic Equation Models. *Peng, H.*, +, *TIE May 2020 3819-3829*

Precision Motion Control of a Servomotor-Pump Direct-Drive Electrohydraulic System With a Nonlinear Pump Flow Mapping. *Helian, B.*, +, *TIE Oct. 2020 8638-8648*

Synchronization of Network Systems via Aperiodic Sampled-Data Control With Constant Delay and Application to Unmanned Ground Vehicles. *Ren, H.*, +, *TIE June 2020 4980-4990*

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Optimal DC Source Influence on Selective Harmonic Elimination in Multilevel Inverters Using Teaching-Learning-Based Optimization. *Haghdar, K.*, *TIE Feb. 2020 942-949*

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A Double-Step Unscented Kalman Filter and HMM-Based Zero-Velocity Update for Pedestrian Dead Reckoning Using MEMS Sensors. *Tong, X.*, +, *TIE Jan. 2020 581-591*

A Model-Based Approach for the Estimation of Bearing Forces and Moments Using Outer Ring Deformation. *Kerst, S.*, +, *TIE Jan. 2020 461-470*

Design and Experimental Evaluation of Immersion and Invariance Observer for Low-Cost Attitude-Heading Reference System. *Keighobadi, J.*, +, *TIE Sept. 2020 7871-7878*

Hydrothermal Aging Factor Estimation for Two-Cell Diesel-Engine SCR Systems via a Dual Time-Scale Unscented Kalman Filter. *Jiang, K.*, +, *TIE Jan. 2020 442-450*

Improved Extended Kalman Filter Estimation Using Threshold Signal Detection With an MEMS Electrostatic Microscanner. *Chen, Y.*, +, *TIE Feb. 2020 1328-1336*

Interference-Compensating Magnetometer Calibration With Estimated Measurement Noise Covariance for Application to Small-Sized UAVs. *Lee, H.*, +, *TIE Oct. 2020 8829-8840*

Naturally Damaged Wind Turbine Blade Bearing Fault Detection Using Novel Iterative Nonlinear Filter and Morphological Analysis. *Liu, Z.*, +, *TIE Oct. 2020 8713-8722*

Online Battery State of Power Prediction Using PRBS and Extended Kalman Filter. *Nejad, S.*, +, *TIE May 2020 3747-3755*

Online Parameter Estimation for Supercapacitor State-of-Energy and State-of-Health Determination in Vehicular Applications. *Naseri, F.*, +, *TIE Sept. 2020 7963-7972*

Parameter Identification and SOC Estimation of a Battery Under the Hysteresis Effect. *Kwak, M.*, +, *TIE Nov. 2020 9758-9767*

Resilient Control Design for Load Frequency Control System Under False Data Injection Attacks. *Abbaspour, A.*, +, *TIE Sept. 2020 7951-7962*

Sensorless Control of Linear Flux-Switching Permanent Magnet Motor Based on Extended Kalman Filter. *Cao, R.*, +, *TIE July 2020 5971-5979*

Sequential Fusion Estimation for Networked Multisensor Nonlinear Systems. *Zhang, W.*, +, *TIE June 2020 4991-4999*

Nonlinear programming

Analytical Prediction and Multiconstrained Nonlinear Optimization of Slotted Linear PM Motors Taking Into Account Two-Dimensional End Effects. *Min, S.G.*, +, *TIE April 2020 2965-2976*

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Control of a Bowden-Cable Actuation System With Embedded BoASensor for Soft Wearable Robots. *Jeong, U.*, +, *TIE Sept. 2020 7669-7680*

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Optimal Input and Output Power Quality Control of Single-Phase AC-DC-DC Converter With Significant DC-Link Voltage Ripple. *Meng, L.*, +, *TIE Dec. 2020 10366-10376*

Suppression of Second-Order Harmonic Current for Droop-Controlled Distributed Energy Resource Converters in DC Microgrids. *Liu, G.*, +, *TIE Jan. 2020 358-368*

Suppression of Synchronous Current Using Double Input Improved Adaptive Notch Filter Algorithm. *Liu, G.*, +, *TIE Oct. 2020 8599-8607*

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Experimental Investigation on Oil Spray Cooling With Hairpin Windings. *Liu, C.*, +, *TIE Sept. 2020 7343-7353*

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Classification of Faults in Multicore Cable via Time-Frequency Domain Reflectometry. *Bang, S.S.*, +, *TIE May 2020 4163-4171*

Computer Modeling of the Eddy Current Losses of Metal Fasteners in Rotor Slots of a Large Nuclear Steam Turbine Generator Based on Finite-El-

ement Method and Deep Gaussian Process Regression. *Zhao, J.*, +, *TIE July 2020 5349-5359*

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A TDF Model in Induction Machines for Loose Bearing Diagnosis by Neutral Voltage. *Jafarian, M.J.*, +, *TIE Oct. 2020 8155-8163*

Analysis and Calculation of Radial Electromagnetic Force of Circular Winding Brushless DC Motor. *Zhang, Q.*, +, *TIE June 2020 4338-4349*

Analysis and Design of the Stewart Platform-Based Parallel Support Bumper for Inertially Stabilized Platforms. *He, Q.*, +, *TIE May 2020 4203-4215*

Cooperation of Multiple Connected Vehicles at Unsignalized Intersections: Distributed Observation, Optimization, and Control. *Bian, Y.*, +, *TIE Dec. 2020 10744-10754*

DC Fault Detection in Meshed MTdc Systems Based on Transient Average Value of Current. *Li, Y.*, +, *TIE March 2020 1932-1943*

Designing Dynamic Alarm Limits and Adjusting Manipulated Variables for Multivariate Systems. *Yu, Y.*, +, *TIE March 2020 2314-2325*

Flux-Charge Analysis of Two-Memristor-Based Chua's Circuit: Dimensionality Decreasing Model for Detecting Extreme Multistability. *Chen, M.*, +, *TIE March 2020 2197-2206*

Investigation of Harmonic Losses in a Two-Pole Slotless Permanent-Magnet Motor Due to Wide Bandgap Inverter Supply. *Millinger, J.*, +, *TIE Aug. 2020 6280-6289*

Minimum-Loss Control Strategy for a Dual-VSI DFIG DC System. *Marques, G.D.*, +, *TIE Oct. 2020 8175-8185*

Numerical and Experimental Calculation of CHTC in an Oil-Based Shaft Cooling System for a High-Speed High-Power PMSM. *Gai, Y.*, +, *TIE June 2020 4371-4380*

Real-Time Simulation of Power Electronic Systems Based on Predictive Behavior. *Liu, C.*, +, *TIE Sept. 2020 8044-8053*

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DenseLightNet: A Light-Weight Vehicle Detection Network for Autonomous Driving. *Chen, L.*, +, *TIE Dec. 2020 10600-10609*

Design of a New Vision-Based Method for the Bolts Looseness Detection in Flange Connections. *Wang, C.*, +, *TIE Feb. 2020 1366-1375*

Salient Object Detection by Spatiotemporal and Semantic Features in Real-Time Video Processing Systems. *Fang, Y.*, +, *TIE Nov. 2020 9893-9903*

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Tomographic Approach for Universal Tactile Imaging With Electromechanically Coupled Conductors. *Yoshimoto, S.*, +, *TIE Jan. 2020 627-636*

Visual Tracking via Auto-Encoder Pair Correlation Filter. *Cheng, X.*, +, *TIE April 2020 3288-3297*

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SAT: Single-Shot Adversarial Tracker. *Wu, Q.*, +, *TIE Nov. 2020 9882-9892*

Visual Tracking via Auto-Encoder Pair Correlation Filter. *Cheng, X.*, +, *TIE April 2020 3288-3297*

Observers

H_∞ Refined Antidisturbance Control of Switched LPV Systems With Application to Aero-Engine. *Yang, D.*, +, *TIE April 2020 3180-3190*

A Constant Switching Frequency Multiple-Vector-Based Model Predictive Current Control of Five-Phase PMSM With Nonsinusoidal Back EMF. *Xiong, C.*, +, *TIE March 2020 1695-1707*

A Disturbance Rejection-Based Control Strategy for Five-Level T-Type Hybrid Power Converters With Ripple Voltage Estimation Capability. *Khan, S.A.*, +, *TIE Sept. 2020 7364-7374*

A Novel Sliding Mode Observer With Optimized Constant Rate Reaching Law for Sensorless Control of Induction Motor. *Zhang, Y.*, +, *TIE July 2020 5867-5878*

A Real-Time Entropy Estimation Algorithm for Lithium Batteries Based on a Combination of Kalman Filter and Nonlinear Observer. *Thenaisie, G.*, +, *TIE Sept. 2020 8034-8043*

A Robust Observer and Nonorthogonal PLL-Based Sensorless Control for Fault-Tolerant Permanent Magnet Motor With Guaranteed Postfault Performance. *Xu, J.*, +, *TIE July 2020 5959-5970*

A Third-Order Super-Twisting Extended State Observer for Dynamic Performance Enhancement of Sensorless IPMSM Drives. *Zhang, T.*, +, *TIE July 2020 5948-5958*

Active Disturbance-Rejection-Based Speed Control in Model Predictive Control for Induction Machines. *Yan, L.*, +, *TIE April 2020 2574-2584*

Active Suspension System Control With Decentralized Event-Triggered Scheme. *Zhang, H.*, +, *TIE Dec. 2020 10798-10808*

Adaptive Neural Network Control of Underactuated Surface Vessels With Guaranteed Transient Performance: Theory and Experimental Results. *Chen, L.*, +, *TIE May 2020 4024-4035*

Adaptive Threshold Generation for Vehicle Fault Detection Using Switched T-S Interval Observers. *Ifqir, S.*, +, *TIE June 2020 5030-5040*

Alternative Solution Regarding Problems of Adaptive Observer Compensating Parameters Uncertainties for Sensorless Induction Motor Drives. *Chen, J.*, +, *TIE July 2020 5879-5888*

An Improved Deadbeat Predictive Current Control With Online Parameter Identification for Surface-Mounted PMSMs. *Yao, Y.*, +, *TIE Dec. 2020 10145-10155*

An Improved Delay-Suppressed Sliding-Mode Observer for Sensorless Vector-Controlled PMSM. *Gong, C.*, +, *TIE July 2020 5913-5923*

Anti-Disturbance Control for Nonlinear Systems Based on Interval Observer. *Yong, K.*, +, *TIE Feb. 2020 1261-1269*

Application of Sliding Switching Functions in Backstepping Based Speed Observer of Induction Machine. *Morawiec, M.*, +, *TIE July 2020 5843-5853*

Attractive Ellipsoid-Based Robust Control for Quadrotor Tracking. *Falcon, R.*, +, *TIE Sept. 2020 7851-7860*

Boundary Antidisturbance Control of a Spatially Nonlinear Flexible String System. *Zhao, Z.*, +, *TIE June 2020 4846-4856*

Cascaded-Extended-State-Observer-Based Sliding-Mode Control for Underactuated Flexible Joint Robot. *Rsetam, K.*, +, *TIE Dec. 2020 10822-10832*

Complex-Coefficient Adaptive Disturbance Observer for Position Estimation of IPMSMs With Robustness to DC Errors. *Xiao, D.*, +, *TIE July 2020 5924-5935*

Composite Disturbance Rejection Attitude Control for Quadrotor With Unknown Disturbance. *Zhao, K.*, +, *TIE Aug. 2020 6894-6903*

Control of a Soft Inchworm Robot With Environment Adaptation. *Cao, J.*, +, *TIE May 2020 3809-3818*

Control of Antilock Braking Systems Using Disturbance Observer With a Novel Nonlinear Sliding Surface. *Phadke, S.B.*, +, *TIE Aug. 2020 6815-6823*

Design and Evaluation of a Short-Circuit Rotor-Ring for Enhanced Self-Sensing Capability in a Slotless PM Motor. *Millinger, J.*, +, *TIE May 2020 3462-3471*

Design and Experimental Evaluation of Immersion and Invariance Observer for Low-Cost Attitude-Heading Reference System. *Keighobadi, J.*, +, *TIE Sept. 2020 7871-7878*

Discrete-Time Extended State Observer-Based Model-Free Adaptive Control Via Local Dynamic Linearization. *Chi, R.*, +, *TIE Oct. 2020 8691-8701*

Distributed Control of Multiple Flexible Manipulators With Unknown Disturbances and Dead-Zone Input. *Chen, T.*, +, *TIE Nov. 2020 9937-9947*

Distributed Tracking of a Class of Underactuated Lagrangian Systems With Uncertain Parameters and Actuator Faults. *Chen, T.*, +, *TIE May 2020 4244-4253*

Disturbance Observer Design for Nonlinear Systems Represented by Input-Output Models. *Ding, S.*, +, *TIE Feb. 2020 1222-1232*

Disturbance Observer-Based Robust Control and Its Applications: 35th Anniversary Overview. *Sariyildiz, E.*, +, *TIE March 2020 2042-2053*

Disturbance Rejection and Control System Design Using Improved Equivalent Input Disturbance Approach. *Du, Y.*, +, *TIE April 2020 3013-3023*

- Dynamics-Level Finite-Time Fuzzy Monocular Visual Servo of an Unmanned Surface Vehicle. Wang, N., +, *TIE Nov. 2020 9648-9658*
- Fast Restarting of Free-Running Induction Motors Under Speed-Sensorless Vector Control. Yin, S., +, *TIE July 2020 6124-6134*
- Fault-Estimation-Based Output-Feedback Adaptive FTC for Uncertain Nonlinear Systems With Actuator Faults. Zhang, L., +, *TIE April 2020 3065-3075*
- Fault-Tolerant Fixed-Time Trajectory Tracking Control of Autonomous Surface Vessels With Specified Accuracy. Zhang, J., +, *TIE June 2020 4889-4899*
- Fine Load-Side Acceleration Control Based on Torsion Torque Sensing of Two-Inertia System. Yokokura, Y., +, *TIE Jan. 2020 768-777*
- Fine Sensorless Force Control Realization Based on Dither Periodic Component Elimination Kalman Filter and Wide Band Disturbance Observer. Phuong, T.T., +, *TIE Jan. 2020 757-767*
- Finite Control Set Model Predictive Control for LCL-Filtered Grid-Tied Inverter With Minimum Sensors. Chen, X., +, *TIE Dec. 2020 9980-9990*
- Finite-Time Adaptive Quantized Control of Stochastic Nonlinear Systems With Input Quantization: A Broad Learning System Based Identification Method. Sui, S., +, *TIE Oct. 2020 8555-8565*
- Finite-Time Identification Algorithm for Volumetric Efficiency Map in SI Gasoline Engines. Wang, C., +, *TIE Dec. 2020 10702-10712*
- Fixed-Time Attitude Tracking Control for Rigid Spacecraft Without Angular Velocity Measurements. Zou, A., +, *TIE Aug. 2020 6795-6805*
- Force Sensorless Admittance Control With Neural Learning for Robots With Actuator Saturation. Peng, G., +, *TIE April 2020 3138-3148*
- Frequency Adaptive Grid Voltage Sensorless Control of LCL-Filtered Inverter Based on Extended Model Observer. Tran, T.V., +, *TIE Sept. 2020 7560-7573*
- From Battery Cell to Electrodes: Real-Time Estimation of Charge and Health of Individual Battery Electrodes. Dey, S., +, *TIE March 2020 2167-2175*
- Full-Order Observer for a Class of Nonlinear Systems With Unmatched Uncertainties: Joint Attractive Ellipsoid and Sliding Mode Concepts. Sanchez, B., +, *TIE July 2020 5677-5686*
- High-Order Disturbance-Observer-Based Sliding Mode Control for Mobile Wheeled Inverted Pendulum Systems. Huang, J., +, *TIE March 2020 2030-2041*
- Hyperbolic-Tangent LOS Guidance-Based Finite-Time Path Following of Underactuated Marine Vehicles. Wang, N., +, *TIE Oct. 2020 8566-8575*
- Improve Disturbance-Rejection Performance for an Equivalent-Input-Disturbance-Based Control System by Incorporating a Proportional-Integral Observer. Wu, M., +, *TIE Feb. 2020 1254-1260*
- Improved Fusion of Permanent Magnet Temperature Estimation Techniques for Synchronous Motors Using a Kalman Filter. Erazo, D.E.G., +, *TIE March 2020 1708-1717*
- Large-Signal Stability of Interleave Boost Converter System With Constant Power Load Using Sliding-Mode Control. Jiang, W., +, *TIE Nov. 2020 9450-9459*
- Lyapunov-Based Thermal Fault Diagnosis of Cylindrical Lithium-Ion Batteries. Wei, J., +, *TIE June 2020 4670-4679*
- Motion Control for Piezoelectric-Actuator-Based Surgical Device Using Neural Network and Extended State Observer. Lau, J.Y., +, *TIE Jan. 2020 402-412*
- Operating-Point Tracking Method for Sensorless Induction Motor Stability Enhancement in Low-Speed Regenerating Mode. Luo, C., +, *TIE May 2020 3386-3397*
- Optimal Model-Free Output Synchronization of Heterogeneous Multiagent Systems Under Switching Topologies. Mu, C., +, *TIE Dec. 2020 10951-10964*
- Output-Based Event-Triggered Predictive Control for Networked Control Systems. Yang, R., +, *TIE Dec. 2020 10631-10640*
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- Periodic/Aperiodic Motion Control Using Periodic/Aperiodic Separation Filter. Muramatsu, H., +, *TIE Sept. 2020 7649-7658*
- PLL Position and Speed Observer With Integrated Current Observer for Sensorless PMSM Drives. Lascu, C., +, *TIE July 2020 5990-5999*
- Quasi-Proportional-Resonant Controller Based Adaptive Position Observer for Sensorless Control of PMSM Drives Under Low Carrier Ratio. An, Q., +, *TIE April 2020 2564-2573*
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- Reliable Winding-Based DC-Bus Capacitor Discharge Technique Over Full-Speed Range for IPMSM Drive in Electric Vehicles Without Position Sensor. Gong, C., +, *TIE Oct. 2020 8131-8142*
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- Robust Estimation for State-of-Charge and State-of-Health of Lithium-Ion Batteries Using Integral-Type Terminal Sliding-Mode Observers. Feng, Y., +, *TIE May 2020 4013-4023*
- Robust High Bandwidth Current Regulation for Permanent Magnet Synchronous Linear Motor Drivers by Using Two-Degree-of-Freedom Controller and Thrust Ripple Observer. Zhao, J., +, *TIE March 2020 1804-1812*
- Robust Stability Improvement for Speed Sensorless Induction Motor Drive at Low Speed Range by Virtual Voltage Injection. Sun, W., +, *TIE April 2020 2642-2654*
- Sensorless Control Strategy for IPMSM to Reduce Audible Noise by Variable Frequency Current Injection. Du, B., +, *TIE Feb. 2020 1149-1159*
- Sensorless Low/Zero Speed Estimation for Permanent Magnet Synchronous Machine Using a Search-Based Real-Time Commissioning Method. Scicluna, K., +, *TIE July 2020 6010-6018*
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- Small-Signal Modeling of the Incremental Optical Encoder for Motor Control. Vazquez-Gutierrez, Y., +, *TIE May 2020 3452-3461*
- Torque Ripple Reduction of PMSMs Using a Novel Angle-Based Repetitive Observer. Tang, M., +, *TIE April 2020 2689-2699*
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Full Converter Control for Variable-Speed Wind Turbines Without Integral Controller or PLL. *Koiwa, K.*, +, *TIE Nov. 2020 9418-9428*

Model Predictive Control of the Open-winding PMSG System Based on Three-Dimensional Reference Voltage-Vector. *Zhang, X.*, +, *TIE Aug. 2020 6312-6322*

Numerical Analysis of Turn-to-Turn Short Circuit Current Mitigation for Concentrated Winding Permanent Magnet Machines With Series and Parallel Connected Windings. *Xu, Y.*, +, *TIE Nov. 2020 9101-9111*

Parallel Nine-Phase Generator Control in a Medium-Voltage DC Wind System. *Beik, O.*, +, *TIE Oct. 2020 8112-8122*

Performance Analysis of Model Predictive Technique Based Combined Control for PMSG-Based Distributed Generation Unit. *Mishra, R.*, +, *TIE Oct. 2020 8991-9000*

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A Constant Switching Frequency Multiple-Vector-Based Model Predictive Current Control of Five-Phase PMSM With Nonsinusoidal Back EMF. *Xiong, C.*, +, *TIE March 2020 1695-1707*

A Fault-Tolerant FOC Strategy for Five-Phase SPMSM With Minimum Torque Ripples in the Full Torque Operation Range Under Double-Phase Open-Circuit Fault. *Xiong, C.*, +, *TIE Nov. 2020 9059-9072*

A New Relieving-DC-Saturation Hybrid Excitation Vernier Machine for HEV Starter Generator Application. *Zhao, X.*, +, *TIE Aug. 2020 6342-6353*

A New Slot-PM Vernier Reluctance Machine With Enhanced Zero-Sequence Current Excitation for Electric Vehicle Propulsion. *Zhao, X.*, +, *TIE May 2020 3528-3539*

A Novel Doubly-Fed Flux-Switching Permanent Magnet Machine With Armature Windings Wound on Both Stator Poles and Rotor Teeth. *Wu, L.*, +, *TIE Dec. 2020 10223-10232*

A Novel Hybrid-Magnetic-Circuit Variable Flux Memory Machine. *Yang, H.*, +, *TIE July 2020 5258-5268*

An Improved Deadbeat Predictive Current Control With Online Parameter Identification for Surface-Mounted PMSMs. *Yao, Y.*, +, *TIE Dec. 2020 10145-10155*

An Improved Modulation Technique With Minimum Switching Actions Within One PWM Cycle for Open-End Winding PMSM System With Isolated DC Bus. *Hu, W.*, +, *TIE May 2020 4259-4264*

Analysis of Consequent-Pole Flux Reversal Permanent Magnet Machine With Biased Flux Modulation Theory. *Yang, H.*, +, *TIE March 2020 2107-2121*

Analysis of PM Eddy Current Loss in Four-Phase Fault-Tolerant Flux-Switching Permanent-Magnet Machines by Air-Gap Magnetic Field Modulation Theory. *Zhao, W.*, +, *TIE July 2020 5369-5378*

Analysis of PM Eddy Current Loss in Rotor-PM and Stator-PM Flux-switching Machines by Air-gap Field Modulation Theory. *Su, P.*, +, *TIE March 2020 1824-1835*

Analysis of Reactive Power Compensation Effect of a New Hybrid Excitation Brushless DC Generator. *Sun, L.*, +, *TIE May 2020 3562-3572*

Analysis of Stator Slots and Rotor Pole Pairs Combinations of Rotor-Permanent Magnet Flux-Switching Machines. *Su, P.*, +, *TIE Feb. 2020 906-918*

Analytical Calculation of the Magnetic Field Distribution in Slotless Brushless Machines With U-Shaped Interior Permanent Magnets. *Hajdinjak, M.*, +, *TIE Aug. 2020 6721-6731*

Analytical Modeling of Misalignment in Axial Flux Permanent Magnet Machine. *Guo, B.*, +, *TIE June 2020 4433-4443*

Analytical Thermal Model of Natural-Convection Cooling in Axial Flux Machines. *Nasab, P.S.*, +, *TIE April 2020 2711-2721*

Comparative Analysis of Flux Reversal Permanent Magnet Machines With Toroidal and Concentrated Windings. *Li, H.*, +, *TIE July 2020 5278-5290*

Design and Analysis of a New Parallel-Hybrid-Excited Machine With Harmonic-Shift Structure. *Cao, L.*, +, *TIE March 2020 1759-1770*

Design and Analysis of Novel Asymmetric-Stator-Pole Flux Reversal PM Machine. *Yang, H.*, +, *TIE Jan. 2020 101-114*

Design and Characteristics Analysis of Coaxial Magnetic Gear for Contra-Rotating Propeller in Yacht. *Shin, H.*, +, *TIE Sept. 2020 7250-7259*

Design and Optimization of Halbach-Array PM Rotor for High-Speed Axial-Flux Permanent Magnet Machine With Ironless Stator. *Zhang, Z.*, +, *TIE Sept. 2020 7269-7279*

Design Considerations of Fault-Tolerant Permanent Magnet Vernier Machine. *Zhao, W.*, +, *TIE Sept. 2020 7290-7300*

Design of a New Fault-Tolerant Permanent Magnet Machine With Optimized Salient Ratio and Reluctance Torque Ratio. *Chen, Q.*, +, *TIE July 2020 6043-6054*

Design of New Dual-Stator Field Modulation Machines. *Wang, H.*, +, *TIE July 2020 5626-5636*

Development of a Three-Dimensional Magnetic Equivalent Circuit Model for Axial Flux Machines. *Alipour-Sarabi, R.*, +, *TIE July 2020 5758-5767*

Digital Current Control of an Asymmetrical Dual Three-Phase Flux-Switching Permanent Magnet Machine. *Hu, M.*, +, *TIE June 2020 4281-4291*

Effects of Design Parameters on the Multiphysics Performance of High-Speed Permanent Magnet Machines. *Du, G.*, +, *TIE May 2020 3472-3483*

Effects of Magnet Shape on Torque Capability of Surface-Mounted Permanent Magnet Machine for Servo Applications. *Zeng, Y.*, +, *TIE April 2020 2977-2990*

Electromagnetic Force and Vibration Study on Axial Flux Permanent Magnet Synchronous Machines With Dual Three-Phase Windings. *Lu, Y.*, +, *TIE Jan. 2020 115-125*

Electromagnetic Vibration Analysis of High-Speed Permanent Magnet Synchronous Machines With Amorphous Metal Stator Cores Considering Current Harmonics. *Wu, S.*, +, *TIE Dec. 2020 10156-10167*

Extension of Space-Vector-Signal-Injection-Based MTPA Control Into SVPWM Fault-Tolerant Operation for Five-Phase IPMSM. *Chen, Q.*, +, *TIE Sept. 2020 7321-7333*

Flux-Focusing Permanent Magnet Machines With Modular Consequent-Pole Rotor. *Li, J.*, +, *TIE May 2020 3374-3385*

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Improved Online Maximum-Torque-Per-Ampere Algorithm for Speed Controlled Interior Permanent Magnet Synchronous Machine. *Han, Z.*, +, *TIE May 2020 3398-3408*

Multiobjective Deterministic and Robust Optimization Design of a New Spoke-Type Permanent Magnet Machine for the Improvement of Torque Performance. *Liu, G.*, +, *TIE Dec. 2020 10202-10212*

Novel Compensation Strategy for Calculation Delay of Finite Control Set Model Predictive Current Control in PMSM. *Gao, J.*, +, *TIE July 2020 5816-5819*

On-Load Field Prediction in SPM Machines by a Subdomain and Magnetic Circuit Hybrid Model. *Wu, L.*, +, *TIE Sept. 2020 7190-7201*

Optimal Design of a Novel Single-Phase 8-Slot 8-Pole Tubular Electromagnetic Shock Absorber to Harvest Energy. *Duong, M.*, +, *TIE Feb. 2020 1180-1190*

Optimization and Performance Improvement of a Hybrid Excitation Synchronous Machine With Modular Magnetic-Shunting Rotor. *Liu, Y.*, +, *TIE June 2020 4381-4390*

Performance Improvement of Open-Winding PMSMs With a Discrete-Time Designed Zero-Sequence Current Controller Based on Virtual Three-Phase Expansion. *Song, Z.*, +, *TIE Dec. 2020 10046-10054*

Permanent-Magnet Machine Flux and Torque Response Under the Influence of Turn Fault. *Hsu, C.*, +, *TIE Jan. 2020 169-179*

Phase Voltage Measurement for Permanent Magnet Machine Sensorless Drive Using Controller Capture Modulator. *Chen, G.*, +, *TIE Jan. 2020* 49-58

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Spatial Inductance Estimation for Current Loop Auto-Tuning in IPMSM Self-Commissioning. *Erturk, F.*, +, *TIE May 2020* 3911-3920

Torque Distributed Control Strategy for the Dual Three-Phase PMSM in Hybrid Energy Storage System Application. *Hu, S.*, +, *TIE April 2020* 2544-2552

Torque Ripple Reduction of PMSMs Using a Novel Angle-Based Repetitive Observer. *Tang, M.*, +, *TIE April 2020* 2689-2699

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A Novel Model-Based Robust Control for Position Tracking of Permanent Magnet Linear Motor. *Liu, X.*, +, *TIE Sept. 2020* 7767-7777

A Novel Spoke-Type PM Motor With Auxiliary Salient Poles for Low Torque Pulsation. *Chen, Q.*, +, *TIE June 2020* 4762-4773

A Robust Observer and Nonorthogonal PLL-Based Sensorless Control for Fault-Tolerant Permanent Magnet Motor With Guaranteed Postfault Performance. *Xu, J.*, +, *TIE July 2020* 5959-5970

A Third-Order Super-Twisting Extended State Observer for Dynamic Performance Enhancement of Sensorless IPMSM Drives. *Zhang, T.*, +, *TIE July 2020* 5948-5958

All Current Sensor Survivable IPMSM Drive With Reconfigurable Inverter. *Lu, J.*, +, *TIE Aug. 2020* 6331-6341

An Accurate Wide-Speed Range Control Method of IPMSM Considering Resistive Voltage Drop and Magnetic Saturation. *Wang, S.*, +, *TIE April 2020* 2630-2641

An Antiovervoltage Control Scheme for Electrolytic Capacitorless IPMSM Drives Based on Stator Current Vector Orientation. *Ding, D.*, +, *TIE May 2020* 3517-3527

An Improved Delay-Suppressed Sliding-Mode Observer for Sensorless Vector-Controlled PMSM. *Gong, C.*, +, *TIE July 2020* 5913-5923

An Improved Rotating Restart Method for a Sensorless Permanent Magnet Synchronous Motor Drive System Using Repetitive Zero Voltage Vectors. *Seo, D.*, +, *TIE May 2020* 3496-3504

An Indirect Testing Method for the Torque Ripple of Multiunit Permanent Magnet Synchronous Machines. *Zeng, D.*, +, *TIE April 2020* 2734-2743

An Iterative Estimation Algorithm of Prepositioning Focusing on the Detent Force in the Permanent Magnet Linear Synchronous Motor System. *Huang, X.*, +, *TIE Oct. 2020* 8252-8261

Analysis and Calculation of Radial Electromagnetic Force of Circular Winding Brushless DC Motor. *Zhang, Q.*, +, *TIE June 2020* 4338-4349

Analysis of Zeroth-Mode Slot Frequency Vibration of Integer Slot Permanent-Magnet Synchronous Motors. *Wang, S.*, +, *TIE April 2020* 2954-2964

Analytical Prediction and Multiconstrained Nonlinear Optimization of Slotted Linear PM Motors Taking Into Account Two-Dimensional End Effects. *Min, S.G.*, +, *TIE April 2020* 2965-2976

Back EMF Harmonic Analysis of Permanent Magnet Magnetic Geared Machine. *Ren, X.*, +, *TIE Aug. 2020* 6248-6258

Complex-Coefficient Adaptive Disturbance Observer for Position Estimation of IPMSMs With Robustness to DC Errors. *Xiao, D.*, +, *TIE July 2020* 5924-5935

Computationally Efficient Coordinate Transformation for Field-Oriented Control Using Phase Shift of Linear Hall-Effect Sensor Signals. *Yu, Z.*, +, *TIE May 2020* 3442-3451

Correction of Rotor Position Estimation Error for High-Speed Permanent Magnet Synchronous Motor Sensorless Drive System Based on Minimum-Current-Tracking Method. *Gu, C.*, +, *TIE Oct. 2020* 8271-8280

Current Harmonics Suppression Strategy for PMSM With Nonsinusoidal Back-EMF Based on Adaptive Linear Neuron Method. *Wang, L.*, +, *TIE Nov. 2020* 9164-9173

Design and Analysis of New Five-Phase Flux-Intensifying Fault-Tolerant Interior-Permanent-Magnet Motor for Sensorless Operation. *Zhang, L.*, +, *TIE July 2020* 6055-6065

Design and Evaluation of a Short-Circuit Rotor-Ring for Enhanced Self-Sensing Capability in a Slotless PM Motor. *Millinger, J.*, +, *TIE May 2020* 3462-3471

Design and Optimization of a Flux-Modulated Permanent Magnet Motor Based on an Airgap-Harmonic-Orientated Design Methodology. *Zhu, X.*, +, *TIE July 2020* 5337-5348

Design Consideration and Characteristic Investigation of Modular Permanent Magnet Bearingless Switched Reluctance Motor. *Wang, H.*, +, *TIE June 2020* 4326-4337

Detent-Force Minimization of Double-Sided Permanent Magnet Linear Synchronous Motor by Shifting One of the Primary Components. *Huang, X.Z.*, +, *TIE Jan. 2020* 180-191

Detrimental Effect Elimination of Current Sensor Accuracy Uncertainty for High-Precision Position Sensorless Control of Interior Permanent Magnet Synchronous Motor Drives. *Lu, J.*, +, *TIE July 2020* 6101-6111

Effect Comparison of Zigzag Skew PM Pole and Straight Skew Slot for Vibration Mitigation of PM Brush DC Motors. *Wang, S.*, +, *TIE June 2020* 4752-4761

Efficient QR Updating Factorization for Sensorless Synchronous Motor Drive Based on High Frequency Voltage Injection. *Toso, F.*, +, *TIE Dec. 2020* 10213-10222

Electromagnetic Shielding Analysis of a Canned Permanent Magnet Motor. *Yu, Q.*, +, *TIE Oct. 2020* 8123-8130

Electromagnetic Torque-Based Model Reference Adaptive System Speed Estimator for Sensorless Surface Mount Permanent Magnet Synchronous Motor Drive. *Prabhakaran, K.K.*, +, *TIE July 2020* 5936-5947

Enhanced Model Predictive Torque Control of Fault-Tolerant Five-Phase Permanent Magnet Synchronous Motor With Harmonic Restraint and Voltage Preselection. *Huang, W.*, +, *TIE Aug. 2020* 6259-6269

Experimental Study of the Amorphous Magnetic Material for High-Speed Sleeve-Free PM Rotor Application. *Ou, J.*, +, *TIE June 2020* 4422-4432

Filling Force Valley With Interpoles for Pole-Frequency Vibration Reduction in Surface-Mounted PM Synchronous Machines. *Wang, S.*, +, *TIE Aug. 2020* 6709-6720

Finite-Control-Set MPC for Open-Phase Fault-Tolerant Control of PM Synchronous Motor Drives. *Kiselev, A.*, +, *TIE June 2020* 4444-4452

FOC Transformation for Single Open-Phase Faults in the Five-Phase Open-End Winding Topology. *Priestley, M.*, +, *TIE Feb. 2020* 842-851

High-Speed Permanent Magnet Synchronous Motor Iron Loss Calculation Method Considering Multiphysics Factors. *Liu, G.*, +, *TIE July 2020* 5360-5368

ILC-Based Voltage Compensation Method for PMSM Sensorless Control Considering Inverter Nonlinearity and Sampling Current DC Bias. *Wang, Y.*, +, *TIE July 2020* 5980-5989

Improved Fusion of Permanent Magnet Temperature Estimation Techniques for Synchronous Motors Using a Kalman Filter. *Erazo, D.E.G.*, +, *TIE March 2020* 1708-1717

Improved Iterative Learning Control Strategy for Surface-Mounted Permanent Magnet Synchronous Motor Drives. *Mohammed, S.A.Q.*, +, *TIE Dec. 2020* 10134-10144

Improved Model Predictive Current Control for SPMSM Drives With Parameter Mismatch. *Yuan, X.*, +, *TIE Feb. 2020* 852-862

Interturn Fault Tolerant Drive Method by Limiting Copper Loss of Interior Permanent Magnet Synchronous Motor. *Im, S.*, +, *TIE Sept. 2020* 7973-7981

Investigation of Harmonic Losses in a Two-Pole Slotless Permanent-Magnet Motor Due to Wide Bandgap Inverter Supply. *Millinger, J.*, +, *TIE Aug. 2020* 6280-6289

IPMSM Sensorless Control Using High-Frequency Voltage Injection Method With Random Switching Frequency for Audible Noise Improvement. *Zhang, Y.*, +, *TIE July 2020* 6019-6030

IPMSMs Sensorless MTPA Control Based on Virtual q -Axis Inductance by Using Virtual High-Frequency Signal Injection. *Tang, Q.*, +, *TIE Jan. 2020* 136-146

Magnetic Field Analysis and Flux Barrier Design for Modular Permanent Magnet Linear Synchronous Motor. *Tan, Q.*, +, *TIE May 2020* 3891-3900

- Magnetic Field Analysis of an Iron-Cored Tiered Type Permanent Magnet Spherical Motor Using Modified Dynamic Reluctance Mesh Method. *Chai, F.*, +, *TIE Aug. 2020 6742-6751*
- Magnetic Sensor Design for a Permanent Magnet Linear Motor Considering Edge-Effect. *Luu, P.T.*, +, *TIE July 2020 5768-5777*
- Mitigation of DC-Link Current Ripple for Dual Three-Phase Flux-Adjustable Hybrid PMAC Drives Using Collaborative Switching Strategy. *Wang, Z.*, +, *TIE Sept. 2020 7202-7216*
- Model Predictive Control for a Six-Phase PMSM Motor With a Reduced-Dimension Cost Function. *Luo, Y.*, +, *TIE Feb. 2020 969-979*
- Model Predictive Control of the Open-winding PMSG System Based on Three-Dimensional Reference Voltage-Vector. *Zhang, X.*, +, *TIE Aug. 2020 6312-6322*
- Modeling, Analysis, and Attenuation of Uncontrolled Generation for IPMSM-Based Electric Vehicles in Emergency. *Gong, C.*, +, *TIE June 2020 4453-4462*
- Multifidelity Surrogate Assisted Rapid Design of Transverse-Flux Permanent Magnet Linear Synchronous Motor. *Ahmed, S.*, +, *TIE Sept. 2020 7280-7289*
- Multiobjective Optimization of a Double-Side Linear Vernier PM Motor Using Response Surface Method and Differential Evolution. *Zhao, W.*, +, *TIE Jan. 2020 80-90*
- Multiobjective Optimization of a Tubular Coreless LPMSM Based on Adaptive Multiobjective Black Hole Algorithm. *Wu, T.*, +, *TIE May 2020 3901-3910*
- Multivector-Based Model Predictive Control With Geometric Solution of a Five-Phase Flux-Switching Permanent Magnet Motor. *Hua, W.*, +, *TIE Dec. 2020 10035-10045*
- Mutual Calibration of Multiple Current Sensors With Accuracy Uncertainties in IPMSM Drives for Electric Vehicles. *Lu, J.*, +, *TIE Jan. 2020 69-79*
- Nonregenerative Braking of Permanent Magnet Synchronous Motor. *Marce-tic, D.P.*, +, *TIE Oct. 2020 8186-8196*
- Optimization of Torque Tracking Performance for Direct-Torque-Controlled PMSM Drives With Composite Torque Regulator. *Wang, X.*, +, *TIE Dec. 2020 10095-10108*
- Performance Comparison Between PCB-Stator and Laminated-Core-Stator-Based Designs of Axial Flux Permanent Magnet Motors for High-Speed Low-Power Applications. *S., N.*, +, *TIE July 2020 5269-5277*
- PLL Position and Speed Observer With Integrated Current Observer for Sensorless PMSM Drives. *Lasca, C.*, +, *TIE July 2020 5990-5999*
- Position Sensorless Permanent Magnet Synchronous Machine Drives—A Review. *Wang, G.*, +, *TIE July 2020 5830-5842*
- Power Capability Improvement of Interior Permanent Magnet Synchronous Motor Drives Using Capacitive Network. *Lee, K.*, +, *TIE Dec. 2020 10109-10120*
- Power Loss and Thermal Analysis for High-Power High-Speed Permanent Magnet Machines. *Du, G.*, +, *TIE April 2020 2722-2733*
- Prediction Horizons Optimized Nonlinear Predictive Control for Permanent Magnet Synchronous Motor Position System. *Wei, Y.*, +, *TIE Nov. 2020 9153-9163*
- Quasi-Proportional-Resonant Controller Based Adaptive Position Observer for Sensorless Control of PMSM Drives Under Low Carrier Ratio. *An, Q.*, +, *TIE April 2020 2564-2573*
- Reduction of Torque Ripple Caused by Slot Harmonics in FSCW Spoke-Type FPM Motors by Assisted Poles. *Chen, Q.*, +, *TIE Nov. 2020 9613-9622*
- Reliable Winding-Based DC-Bus Capacitor Discharge Technique Over Full-Speed Range for IPMSM Drive in Electric Vehicles Without Position Sensor. *Gong, C.*, +, *TIE Oct. 2020 8131-8142*
- Robust High Bandwidth Current Regulation for Permanent Magnet Synchronous Linear Motor Drivers by Using Two-Degree-of-Freedom Controller and Thrust Ripple Observer. *Zhao, J.*, +, *TIE March 2020 1804-1812*
- Robust PMDC Motor Control for Accurate Wire Feeding in GMAW Using Back EMF. *Paul, A.K.*, *TIE Jan. 2020 413-420*
- Sensorless Control of Linear Flux-Switching Permanent Magnet Motor Based on Extended Kalman Filter. *Cao, R.*, +, *TIE July 2020 5971-5979*
- Sensorless Control Strategy for IPMSM to Reduce Audible Noise by Variable Frequency Current Injection. *Du, B.*, +, *TIE Feb. 2020 1149-1159*
- Sensorless Low/Zero Speed Estimation for Permanent Magnet Synchronous Machine Using a Search-Based Real-Time Commissioning Method. *Sci-cluna, K.*, +, *TIE July 2020 6010-6018*
- Speed Sensorless Control for Permanent Magnet Synchronous Motors Based on Finite Position Set. *Sun, X.*, +, *TIE July 2020 6089-6100*
- Stator-PM-Based Variable Reluctance Resolver With Advantage of Motional Back-EMF. *Sun, L.*, +, *TIE Nov. 2020 9790-9801*
- Symmetrical Three-Vector-Based Model Predictive Control With Deadbeat Solution for IPMSM in Rotating Reference Frame. *Kang, S.*, +, *TIE Jan. 2020 159-168*
- Tilting Torque Calculation of a Novel Tiered Type Permanent Magnet Spherical Motor. *Gan, L.*, +, *TIE Jan. 2020 421-431*
- Torque Calculation of Permanent Magnet Spherical Motor Based on Virtual Work Method. *Li, H.*, +, *TIE Sept. 2020 7736-7745*
- Torque Ripple Reduction in Sectorfed Multi Three-Phase Machines Based on PWM Carrier Phase Shift. *Wang, X.*, +, *TIE June 2020 4315-4325*
- Torque Ripple Suppression for Open-End Winding Permanent-Magnet Synchronous Machine Drives With Predictive Current Control. *Yuan, X.*, +, *TIE March 2020 1771-1781*
- Unified Graphical Model of High-Frequency Signal Injection Methods for PMSM Sensorless Control. *Li, H.*, +, *TIE June 2020 4411-4421*
- Water Cold Plates for Efficient Cooling: Verified on a Permanent-Magnet Machine With Concentrated Winding. *Fan, X.*, +, *TIE July 2020 5325-5336*

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- A Brushless Doubly Fed Generator Based on Permanent Magnet Field Modulation. *Zhang, J.*, +, *TIE May 2020 3505-3516*
- A New Slot-PM Vernier Reluctance Machine With Enhanced Zero-Sequence Current Excitation for Electric Vehicle Propulsion. *Zhao, X.*, +, *TIE May 2020 3528-3539*
- Analysis and Design of a Novel Magnetic Levitation Gravity Compensator With Low Passive Force Variation in a Large Vertical Displacement. *Zhang, H.*, +, *TIE June 2020 4797-4805*
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- Analysis of PM Eddy Current Loss in Four-Phase Fault-Tolerant Flux-Switching Permanent-Magnet Machines by Air-Gap Magnetic Field Modulation Theory. *Zhao, W.*, +, *TIE July 2020 5369-5378*
- Analysis of PM Eddy Current Loss in Rotor-PM and Stator-PM Flux-switching Machines by Air-gap Field Modulation Theory. *Su, P.*, +, *TIE March 2020 1824-1835*
- Considering Operating Point Variation in 3-D Analytical Charge Model Used for Design of Low-Stiffness Permanent Magnet Vibration Isolator. *Li, J.*, +, *TIE Aug. 2020 6732-6741*
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- Design and Characteristics Analysis of Coaxial Magnetic Gear for Contra-Rotating Propeller in Yacht. *Shin, H.*, +, *TIE Sept. 2020 7250-7259*
- Design Consideration and Characteristic Investigation of Modular Permanent Magnet Bearingless Switched Reluctance Motor. *Wang, H.*, +, *TIE June 2020 4326-4337*
- Design of a New Relieving-DC-Saturation Hybrid Reluctance Machine for Fault-Tolerant In-Wheel Direct Drive. *Zhao, X.*, +, *TIE Nov. 2020 9571-9581*
- Effects of Design Parameters on the Multiphysics Performance of High-Speed Permanent Magnet Machines. *Du, G.*, +, *TIE May 2020 3472-3483*
- High Torque Density Torque Motor With Hybrid Magnetization Pole Arrays for Jet Pipe Servo Valve. *Zhang, Q.*, +, *TIE March 2020 2133-2142*
- Homopolar Bearingless Slice Motor With Flux-Biasing Halbach Arrays. *Noh, M.*, +, *TIE Sept. 2020 7757-7766*
- Mitigation of DC-Link Current Ripple for Dual Three-Phase Flux-Adjustable Hybrid PMAC Drives Using Collaborative Switching Strategy. *Wang, Z.*, +, *TIE Sept. 2020 7202-7216*

- Multifunction Transformer With Adjustable Magnetic Stage Based on Nano-composite Semihard Magnets. *Chen, Z.*, +, *TIE May 2020 4226-4234*
- Reduction of Torque Ripple Caused by Slot Harmonics in FSCW Spoke-Type FPM Motors by Assisted Poles. *Chen, Q.*, +, *TIE Nov. 2020 9613-9622*
- Sizing Methodology Based on Scaling Laws for a Permanent Magnet Electrical Variable Transmission. *Verbelen, F.*, +, *TIE March 2020 1739-1749*
- Thermal Quantitative Analysis and Design Method of Bistable Permanent Magnet Actuators Based on Multiphysics Methodology. *Tan, C.*, +, *TIE Sept. 2020 7727-7735*
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- The Relationship Between Root Locus and Transient Field Components of AC Machines. *Qi, X.*, +, *TIE March 2020 1836-1843*
- Petri nets**
- VCA Protocol-Based Multilevel Flexible Architecture on Embedded PLCs for Visual Servo Control. *Wu, H.*, +, *TIE March 2020 2450-2459*
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- Parallel Nine-Phase Generator Control in a Medium-Voltage DC Wind System. *Beik, O.*, +, *TIE Oct. 2020 8112-8122*
- Realization of High Fidelity Power-Hardware-in-the-Loop Capability Using a MW-Scale Motor-Generator Set. *Hong, Q.*, +, *TIE Aug. 2020 6835-6844*
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- Phase converters**
- A Dual Half-Bridge Converter With Current Doubler Rectifier. *Zhao, L.*, +, *TIE Aug. 2020 6398-6406*
- Phase estimation**
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- Phase locked loops**
- A Global Convergence Estimator of Grid Voltage Parameters for More Electric Aircraft. *Dai, Z.*, +, *TIE Sept. 2020 7540-7549*
- A Robust Observer and Nonorthogonal PLL-Based Sensorless Control for Fault-Tolerant Permanent Magnet Motor With Guaranteed Postfault Performance. *Xu, J.*, +, *TIE July 2020 5959-5970*
- Dual Phase-Locked Loop-Based Speed Estimation Scheme for Sensorless Vector Control of Linear Induction Motor Drives. *Wang, H.*, +, *TIE July 2020 5900-5912*
- Fast Phase Angle Jump Estimation to Improve the Convergence Time of the GDSC-PLL. *Andrade, D.S.d.S.*, +, *TIE April 2020 2852-2862*
- Frequency Adaptive Grid Voltage Sensorless Control of LCL-Filtered Inverter Based on Extended Model Observer. *Tran, T.V.*, +, *TIE Sept. 2020 7560-7573*
- High-Performance Selective and Output Filter Techniques for Sensorless Direct Position and Speed Estimation. *Preindl, M.*, *TIE July 2020 6000-6009*
- Is Using A Complex Control Gain in Three-Phase FLLs Reasonable?. *Golestani, S.*, +, *TIE March 2020 2480-2484*
- PLL Position and Speed Observer With Integrated Current Observer for Sensorless PMSM Drives. *Lascu, C.*, +, *TIE July 2020 5990-5999*
- Speed Sensorless Control for Permanent Magnet Synchronous Motors Based on Finite Position Set. *Sun, X.*, +, *TIE July 2020 6089-6100*
- Phase modulation**
- Multilayer Fractional Slot Pole-Phase Modulated Induction Motor Drives for Traction Applications. *Reddy, B.P.*, +, *TIE Nov. 2020 9112-9119*
- Precise Phase Demodulation Algorithm for Sinusoidal Encoders and Resolvers. *Ye, G.*, +, *TIE Oct. 2020 8778-8787*
- Unified Graphical Model of High-Frequency Signal Injection Methods for PMSM Sensorless Control. *Li, H.*, +, *TIE June 2020 4411-4421*
- Phase shifters**
- Modulation Scheme of Dual Active Bridge Converter for Seamless Transitions in Multiworking Modes Compromising ZVS and Conduction Loss. *Guo, Z.*, *TIE Sept. 2020 7399-7409*
- Photoconductivity**
- InGaN RGB Light-Emitting Diodes With Monolithically Integrated Photodetectors for Stabilizing Color Chromaticity. *Li, K.H.*, +, *TIE June 2020 5154-5160*
- Photodetectors**
- A High-Resolution Optical Displacement Detection Method for Piezoelectric Microvibratory Stage. *Zhan, H.*, +, *TIE Dec. 2020 10897-10904*
- InGaN RGB Light-Emitting Diodes With Monolithically Integrated Photodetectors for Stabilizing Color Chromaticity. *Li, K.H.*, +, *TIE June 2020 5154-5160*
- Method and Implementation of a Bioinspired Polarization-Based Attitude and Heading Reference System by Integration of Polarization Compass and Inertial Sensors. *Yang, J.*, +, *TIE Nov. 2020 9802-9812*
- Photodiodes**
- A High-Resolution Optical Displacement Detection Method for Piezoelectric Microvibratory Stage. *Zhan, H.*, +, *TIE Dec. 2020 10897-10904*
- Dual-Mode RFID Tag IC Supporting Gen-2 and Visible RFID Modes Using a Process-Compensating Self-Calibrating Clock Generator. *Din, A.U.*, +, *TIE Jan. 2020 569-580*
- Photolithography**
- A Soft and Transparent Visuo-Haptic Interface Pursuing Wearable Devices. *Yun, S.*, +, *TIE Jan. 2020 717-724*
- Photovoltaic power systems**
- A Cooperative Adaptive Droop Based Energy Management and Optimal Voltage Regulation Scheme for DC Microgrids. *Sahoo, S.*, +, *TIE April 2020 2894-2904*
- A Coupled Inductor-Based Buck-Boost Type Grid Connected Transformerless PV Inverter Having the Ability to Control Two Subarrays Simultaneously. *Dutta, S.*, +, *TIE July 2020 5543-5553*
- A Feedback-Based Passive Islanding Detection Technique for One-Cycle-Controlled Single-Phase Inverter Used in Photovoltaic Systems. *Reddy, V.R.*, +, *TIE Aug. 2020 6541-6549*
- A Hybrid Boost-Flyback/Flyback Microinverter for Photovoltaic Applications. *Zhang, F.*, +, *TIE Jan. 2020 308-318*
- A New Method for Detecting Series Arc Fault in Photovoltaic Systems Based on the Blind-Source Separation. *Ahmadi, M.*, +, *TIE June 2020 5041-5049*
- A New Transformerless Inverter With Leakage Current Limiting and Voltage Boosting Capabilities for Grid-Connected PV Applications. *Jahan, H.K.*, *TIE Dec. 2020 10542-10551*
- A Reconfigurable Solar Photovoltaic Grid-Tied Inverter Architecture for Enhanced Energy Access in Backup Power Applications. *Venkatramanan, D.*, +, *TIE Dec. 2020 10531-10541*
- An Optimized Third Harmonic Injection Method for Reducing DC-Link Voltage Fluctuation and Alleviating Power Imbalance of Three-Phase Cascaded H-Bridge Photovoltaic Inverter. *Hu, Y.*, +, *TIE April 2020 2488-2498*
- Charge-Based Supercapacitor Storage Estimation for Indoor Sub-mW Photovoltaic Energy Harvesting Powered Wireless Sensor Nodes. *Yue, X.*, +, *TIE March 2020 2411-2421*
- DLFCR Reduction Based on Power Predictive Scheme for Full-Bridge Photovoltaic Microinverter. *Kan, J.*, +, *TIE June 2020 4658-4669*
- Dual-Input Quasi-Z-Source PV Inverter: Dynamic Modeling, Design, and Control. *Lashab, A.*, +, *TIE Aug. 2020 6483-6493*
- Efficiency Optimization of DC Solid-State Transformer for Photovoltaic Power Systems. *Shi, H.*, +, *TIE May 2020 3583-3595*
- Elimination of Photovoltaic Mismatching With Improved Submodule Differential Power Processing. *Chu, G.*, +, *TIE April 2020 2822-2833*
- Harmonic Compensation Strategy for Single-Phase Cascaded H-Bridge PV Inverter Under Unbalanced Power Conditions. *Wang, M.*, +, *TIE Dec. 2020 10474-10484*
- Improved Reweighted Zero-Attracting Quaternion-Valued LMS Algorithm for Islanded Distributed Generation System at IM Load. *Kewat, S.*, +, *TIE May 2020 3705-3716*

- Multisampling Method for Single-Phase Grid-Connected Cascaded H-Bridge Inverters. *Ma, J.*, +, *TIE Oct. 2020 8322-8334*
- Passive Integration Using FMLF Technique for Integrated Boost Resonant Converters. *Deng, C.*, +, *TIE May 2020 3756-3766*
- Research on Power Equalization of Three-Phase Cascaded H-Bridge Photovoltaic Inverter Based on the Combination of Hybrid Modulation Strategy and Zero-Sequence Injection Methods. *Mao, W.*, +, *TIE Nov. 2020 9337-9347*
- Sensorless SynRG Based Variable Speed Wind Generator and Single-Stage Solar PV Array Integrated Grid System With Maximum Power Extraction Capability. *Vijay, M. D.*, +, *TIE Sept. 2020 7529-7539*
- Single-Phase Dual-Mode Interleaved Multilevel Inverter for PV Applications. *Pourfaraj, A.*, +, *TIE April 2020 2905-2915*
- Solar PV Energy Generation System Interfaced to Three Phase Grid With Improved Power Quality. *Singh, A.K.*, +, *TIE May 2020 3798-3808*
- Switched Capacitor–Inductor Network Based Ultra-Gain DC–DC Converter Using Single Switch. *Kumar, G.G.*, +, *TIE Dec. 2020 10274-10283*

Physical instrumentation control

- A Multimode Transverse Dynamic Force Microscope—Design, Identification, and Control. *Zhang, K.*, +, *TIE June 2020 4729-4740*

Physiological models

- Sparse Machine Learning Discovery of Dynamic Differential Equation of an Esophageal Swallowing Robot. *Bhattacharya, D.*, +, *TIE June 2020 4711-4720*

PI control

- dq* Synchronous Reference Frame Model of A Series–Series Tuned Inductive Power Transfer System. *Lee, S.*, +, *TIE Dec. 2020 10325-10334*
- A Constant-Current Transmission Converter for Semi-airborne Transient Electromagnetic Surveying. *Geng, Z.*, +, *TIE Jan. 2020 542-550*
- A Fault-Tolerant FOC Strategy for Five-Phase SPMSM With Minimum Torque Ripples in the Full Torque Operation Range Under Double-Phase Open-Circuit Fault. *Xiong, C.*, +, *TIE Nov. 2020 9059-9072*
- A Model Predictive Contouring Error Precompensation Method. *Yang, X.*, +, *TIE May 2020 4036-4045*
- A New Self-Organizing Fuzzy Cerebellar Model Articulation Controller for Uncertain Nonlinear Systems Using Overlapped Gaussian Membership Functions. *Huynh, T.*, +, *TIE Nov. 2020 9671-9682*
- Active Disturbance-Rejection-Based Speed Control in Model Predictive Control for Induction Machines. *Yan, L.*, +, *TIE April 2020 2574-2584*
- Adaptive Backstepping Sliding Mode Control for Equilibrium Position Tracking of an Electrohydraulic Elastic Manipulator. *Tran, D.T.*, +, *TIE May 2020 3860-3869*
- Cost-Effective Islanded Electrical System With Decentralized Interleaving PWM for Converter Harmonic Reduction. *He, J.*, +, *TIE Oct. 2020 8472-8483*
- Current-Cycle Iterative Learning Control for High-Precision Position Tracking of Piezoelectric Actuator System via Active Disturbance Rejection Control for Hysteresis Compensation. *Huang, D.*, +, *TIE Oct. 2020 8680-8690*
- DC Fault Analysis Models of Three Converter Topologies Considering Control Effects. *Li, Y.*, +, *TIE Nov. 2020 9480-9491*
- Decoupling and Optimal Control of Multilevel Buck DC–DC Converters With Inverse System Theory. *Wu, J.*, +, *TIE Sept. 2020 7861-7870*
- Design and Implementation of Parameter Estimation and Start Control of Brushless Synchronous Starter/Generators Under Sudden Excitation Change. *Mao, S.*, +, *TIE May 2020 3551-3561*
- Finite-Control-Set MPC for Open-Phase Fault-Tolerant Control of PM Synchronous Motor Drives. *Kiselev, A.*, +, *TIE June 2020 4444-4452*
- Flux-Controlled Hybrid Reluctance Actuator for High-Precision Scanning Motion. *Ito, S.*, +, *TIE Nov. 2020 9593-9600*
- FOC Transformation for Single Open-Phase Faults in the Five-Phase Open-End Winding Topology. *Priestley, M.*, +, *TIE Feb. 2020 842-851*
- Full Converter Control for Variable-Speed Wind Turbines Without Integral Controller or PLL. *Koiwa, K.*, +, *TIE Nov. 2020 9418-9428*
- High-Accuracy Dynamic Load Emulation Method for Electrical Drives. *de Oliveira, C.M.R.*, +, *TIE Sept. 2020 7239-7249*

- Minimum-Loss Control Strategy for a Dual-VSI DFIG DC System. *Marques, G.D.*, +, *TIE Oct. 2020 8175-8185*
- Motor Speed Signature Analysis for Local Bearing Fault Detection With Noise Cancellation Based on Improved Drive Algorithm. *Yang, M.*, +, *TIE May 2020 4172-4182*
- On Autonomous Large-Signal Stabilization for Islanded Multibus DC Microgrids: A Uniform Nonsmooth Control Scheme. *Lin, P.*, +, *TIE June 2020 4600-4612*
- Position Control of Parallel Active Link Suspension With Backlash. *Yu, M.*, +, *TIE June 2020 4741-4751*
- Predictive Control Based DC Microgrid Stabilization With the Dual Active Bridge Converter. *Chen, L.*, +, *TIE Oct. 2020 8944-8956*
- Robust High Bandwidth Current Regulation for Permanent Magnet Synchronous Linear Motor Drivers by Using Two-Degree-of-Freedom Controller and Thrust Ripple Observer. *Zhao, J.*, +, *TIE March 2020 1804-1812*
- Seamless Dynamics for Wild-Frequency Active Rectifiers in More Electric Aircraft. *Benzaquen, J.*, +, *TIE Sept. 2020 7135-7145*
- Signal Compensation Based Adaptive Cascade Control for Regrinding Processes. *Wang, L.*, +, *TIE Oct. 2020 8732-8742*

Piecewise linear techniques

- A Real-Time Entropy Estimation Algorithm for Lithium Batteries Based on a Combination of Kalman Filter and Nonlinear Observer. *Thenaisie, G.*, +, *TIE Sept. 2020 8034-8043*
- Voltage Grid Supporting by Using Variable Structure Adaptive Virtual Impedance for LCL-Voltage Source Converter DG Converters. *Fonseca, T.Q.*, +, *TIE Nov. 2020 9326-9336*

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- Flexible 1–3 Composite Ultrasound Transducers With Silver-Nanowire-Based Stretchable Electrodes. *Kim, T.*, +, *TIE Aug. 2020 6955-6962*

Piezoelectric actuators

- A 2-DOF Monolithic Compliant Rotation Platform Driven by Piezoelectric Actuators. *Liang, C.*, +, *TIE Aug. 2020 6963-6974*
- Current-Cycle Iterative Learning Control for High-Precision Position Tracking of Piezoelectric Actuator System via Active Disturbance Rejection Control for Hysteresis Compensation. *Huang, D.*, +, *TIE Oct. 2020 8680-8690*
- Design and Control of a Piezoelectrically Actuated Fast Tool Servo for Diamond Turning of Microstructured Surfaces. *Zhu, Z.*, +, *TIE Aug. 2020 6688-6697*
- Design and Trajectory Tracking of a Nanometric Ultra-Fast Tool Servo. *Zhu, Z.*, +, *TIE Jan. 2020 432-441*
- Dynamic Mass Isolation for Improving the Moving Efficiency of an Impact Drive Mechanism. *Liao, X.*, +, *TIE Oct. 2020 8526-8534*
- High-Speed AFM Imaging of Nanopositioning Stages Using H_{∞} and Iterative Learning Control. *Xie, H.*, +, *TIE March 2020 2430-2439*
- Motion Control for Piezoelectric-Actuator-Based Surgical Device Using Neural Network and Extended State Observer. *Lau, J.Y.*, +, *TIE Jan. 2020 402-412*
- MPC Inspired Dynamical Output Feedback and Adaptive Feedforward Control Applied to Piezo-Actuated Positioning Systems. *Nguyen, M.L.*, +, *TIE May 2020 3921-3931*
- On the Suppression of the Backward Motion of a Piezo-Driven Precision Positioning Platform Designed by the Parasitic Motion Principle. *Yang, Z.*, +, *TIE May 2020 3870-3878*
- Online Hysteresis Identification and Compensation for Piezoelectric Actuators. *Liu, Y.*, +, *TIE July 2020 5595-5603*
- Quadruple-Stage Actuator System for Magnetic-Head Positioning System in Hard Disk Drives. *Atsumi, T.*, +, *TIE Nov. 2020 9184-9194*

Piezoelectric devices

- Artificial Tactile Sensor With Pin-type Module for Depth Profile and Surface Topography Detection. *Shin, K.*, +, *TIE Jan. 2020 637-646*
- Tunable High-Power Multilayer Piezoelectric Transformer. *Li, X.*, +, *TIE Oct. 2020 8335-8343*

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- Piezoelectric Motor Utilizing an Alumina/PZT Transducer. *Wu, J.*, +, *TIE Aug. 2020 6762-6772*

Piezoelectric transducers

- A High-Resolution Optical Displacement Detection Method for Piezoelectric Microvibratory Stage. *Zhan, H.*, +, *TIE Dec. 2020 10897-10904*
- A Novel Fast Resonance Frequency Tracking Method Based on the Admittance Circle for Ultrasonic Transducers. *Wang, J.*, +, *TIE Aug. 2020 6864-6873*
- Adaptive Self-Configurable Rectifier for Extended Operating Range of Piezoelectric Energy Harvesting. *Chew, Z.J.*, +, *TIE April 2020 3267-3276*
- Considering Losses to Enhance Circuit Model Accuracy of Ultrasonic Wireless Power Transfer System. *Wu, M.*, +, *TIE Oct. 2020 8788-8798*
- Drive-Current-Free Switch With Internal Transduction in a Magneto Piezo-Electronic Transistor. *Xue, F.*, +, *TIE April 2020 3257-3266*
- Flexible 1–3 Composite Ultrasound Transducers With Silver-Nanowire-Based Stretchable Electrodes. *Kim, T.*, +, *TIE Aug. 2020 6955-6962*
- In-Dressing Acoustic Map by Low-Cost Piezoelectric Transducer. *Lofrano Dotto, F.R.*, +, *TIE Aug. 2020 6927-6936*
- Piezoelectric–Piezoresistive Coupling MEMS Sensors for Measurement of Electric Fields of Broad Bandwidth and Large Dynamic Range. *Xue, F.*, +, *TIE Jan. 2020 551-559*
- Self-Powered Piezoelectric and Thermoelectric Energy Simultaneous Extraction Interface Circuit Based on Double Stack Resonance. *Wang, X.*, +, *TIE June 2020 4567-4577*

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- Piezoelectric–Piezoresistive Coupling MEMS Sensors for Measurement of Electric Fields of Broad Bandwidth and Large Dynamic Range. *Xue, F.*, +, *TIE Jan. 2020 551-559*

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- Multiresonant Chipless RFID Array System for Coating Defect Detection and Corrosion Prediction. *Deif, S.*, +, *TIE Oct. 2020 8868-8877*
- Remaining Useful Life Estimation of Structure Systems Under the Influence of Multiple Causes: Subsea Pipelines as a Case Study. *Cai, B.*, +, *TIE July 2020 5737-5747*

Pipes

- High Torque Density Torque Motor With Hybrid Magnetization Pole Arrays for Jet Pipe Servo Valve. *Zhang, Q.*, +, *TIE March 2020 2133-2142*

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- High-Order Model-Free Adaptive Iterative Learning Control of Pneumatic Artificial Muscle With Enhanced Convergence. *Ai, Q.*, +, *TIE Nov. 2020 9548-9559*

Poisson equation

- Analytical Calculation of the Magnetic Field Distribution in Slotless Brushless Machines With U-Shaped Interior Permanent Magnets. *Hajdinjak, M.*, +, *TIE Aug. 2020 6721-6731*

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- Adaptive Unbalance Compensation for a Three-Pole Active Magnetic Bearing System. *Chen, S.*, +, *TIE March 2020 2097-2106*
- Digital Current Control of an Asymmetrical Dual Three-Phase Flux-Switching Permanent Magnet Machine. *Hu, M.*, +, *TIE June 2020 4281-4291*
- Euler's Formula-Based Stability Analysis for Wideband Harmonic Resonances. *Chen, Z.*, +, *TIE Nov. 2020 9405-9417*

Polonium

- Bidirectional DC–DC Converter for Modular Residential Battery Energy Storage Systems. *Chub, A.*, +, *TIE March 2020 1944-1955*

Polymers

- A Real-Time Entropy Estimation Algorithm for Lithium Batteries Based on a Combination of Kalman Filter and Nonlinear Observer. *Thenaisie, G.*, +, *TIE Sept. 2020 8034-8043*
- Soft Haptic Actuator Based on Knitted PVC Gel Fabric. *Park, W.*, +, *TIE Jan. 2020 677-685*

Polynomials

- A Novel Scheme of Nonfragile Controller Design for Periodic Piecewise LTV Systems. *Xie, X.*, +, *TIE Dec. 2020 10766-10775*
- A Temperature and Current Rate Adaptive Model for High-Power Lithium-Titanate Batteries Used in Electric Vehicles. *Chen, A.*, +, *TIE Nov. 2020 9492-9502*
- Fault Diagnosis Using Adaptive Multifractal Detrended Fluctuation Analysis. *Du, W.*, +, *TIE March 2020 2272-2282*

Porous materials

- Effective Thermal Conductivity Calculation and Measurement of Litz Wire Based on the Porous Metal Materials Structure. *Liu, X.*, +, *TIE April 2020 2667-2677*

Pose estimation

- Dynamics-Level Finite-Time Fuzzy Monocular Visual Servo of an Unmanned Surface Vehicle. *Wang, N.*, +, *TIE Nov. 2020 9648-9658*
- Sensor-Based Control Using an Image Point and Distance Features for Rivet-in-Hole Insertion. *Zhu, W.*, +, *TIE June 2020 4692-4699*
- Sparse Template-Based 6-D Pose Estimation of Metal Parts Using a Monocular Camera. *He, Z.*, +, *TIE Jan. 2020 390-401*

Position control

- A Model Predictive Contouring Error Precompensation Method. *Yang, X.*, +, *TIE May 2020 4036-4045*
- A Novel Geometric Hierarchical Approach for Dynamic Visual Servoing of Quadrotors. *Zhang, X.*, +, *TIE May 2020 3840-3849*
- A Novel Initiative Braking System With Nondegraded Fallback Level for ADAS and Autonomous Driving. *Yuan, Y.*, +, *TIE June 2020 4360-4370*
- A Novel Model-Based Robust Control for Position Tracking of Permanent Magnet Linear Motor. *Liu, X.*, +, *TIE Sept. 2020 7767-7777*
- A Practical Visual Servo Control for Aerial Manipulation Using a Spherical Projection Model. *Zhong, H.*, +, *TIE Dec. 2020 10564-10574*
- A Robot Gripper With Variable Stiffness Actuation for Enhancing Collision Safety. *Memar, A.H.*, +, *TIE Aug. 2020 6607-6616*
- A Robust Observer and Nonorthogonal PLL-Based Sensorless Control for Fault-Tolerant Permanent Magnet Motor With Guaranteed Postfault Performance. *Xu, J.*, +, *TIE July 2020 5959-5970*
- A Third-Order Super-Twisting Extended State Observer for Dynamic Performance Enhancement of Sensorless IPMSM Drives. *Zhang, T.*, +, *TIE July 2020 5948-5958*
- Adaptive Backstepping Sliding Mode Control for Equilibrium Position Tracking of an Electrohydraulic Elastic Manipulator. *Tran, D.T.*, +, *TIE May 2020 3860-3869*
- Adaptive Fault-Tolerant Constrained Control of Cooperative Spacecraft Rendezvous and Docking. *Sun, L.*, *TIE April 2020 3107-3115*
- Adaptive Neural Network Control of Underactuated Surface Vessels With Guaranteed Transient Performance: Theory and Experimental Results. *Chen, L.*, +, *TIE May 2020 4024-4035*
- Adaptive Visual Servoing for an Underwater Soft Robot Considering Refraction Effects. *Xu, F.*, +, *TIE Dec. 2020 10575-10586*
- An Assistant-Mover-Based Position Estimation Method for Planar Switched Reluctance Motors. *Cao, G.*, +, *TIE July 2020 6066-6077*
- An Improved Delay-Suppressed Sliding-Mode Observer for Sensorless Vector-Controlled PMSM. *Gong, C.*, +, *TIE July 2020 5913-5923*
- An Improved Rotating Restart Method for a Sensorless Permanent Magnet Synchronous Motor Drive System Using Repetitive Zero Voltage Vectors. *Seo, D.*, +, *TIE May 2020 3496-3504*
- An Iterative Estimation Algorithm of Prepositioning Focusing on the Detent Force in the Permanent Magnet Linear Synchronous Motor System. *Huang, X.*, +, *TIE Oct. 2020 8252-8261*
- An Online Trajectory Planning Approach for a Quadrotor UAV With a Slung Payload. *Xian, B.*, +, *TIE Aug. 2020 6669-6678*
- An Unsaturated Inductance Reconstruction Based Universal Sensorless Starting Control Scheme for SRM Drives. *Cai, J.*, +, *TIE Nov. 2020 9083-9092*
- Analysis and Design of the Stewart Platform-Based Parallel Support Bumper for Inertially Stabilized Platforms. *He, Q.*, +, *TIE May 2020 4203-4215*
- Attractive Ellipsoid-Based Robust Control for Quadrotor Tracking. *Falcon, R.*, +, *TIE Sept. 2020 7851-7860*
- Complex-Coefficient Adaptive Disturbance Observer for Position Estimation of IPMSMs With Robustness to DC Errors. *Xiao, D.*, +, *TIE July 2020 5924-5935*
- Computationally Efficient Coordinate Transformation for Field-Oriented Control Using Phase Shift of Linear Hall-Effect Sensor Signals. *Yu, Z.*, +, *TIE May 2020 3442-3451*
- Control of a Bowden-Cable Actuation System With Embedded BoASensor for Soft Wearable Robots. *Jeong, U.*, +, *TIE Sept. 2020 7669-7680*

- Correction of Rotor Position Estimation Error for High-Speed Permanent Magnet Synchronous Motor Sensorless Drive System Based on Minimum-Current-Tracking Method. *Gu, C.*, +, *TIE Oct. 2020 8271-8280*
- Current-Cycle Iterative Learning Control for High-Precision Position Tracking of Piezoelectric Actuator System via Active Disturbance Rejection Control for Hysteresis Compensation. *Huang, D.*, +, *TIE Oct. 2020 8680-8690*
- Decoupling Finger Joint Motion in an Exoskeletal Hand: A Design for Robot-Assisted Rehabilitation. *Pu, S.*, +, *TIE Jan. 2020 686-697*
- Detrimental Effect Elimination of Current Sensor Accuracy Uncertainty for High-Precision Position Sensorless Control of Interior Permanent Magnet Synchronous Motor Drives. *Lu, J.*, +, *TIE July 2020 6101-6111*
- Dynamic Performance Improvement of Doubly Salient Brushless DC Generator System With Controlled Rectifier. *Xu, Y.*, +, *TIE Oct. 2020 8209-8218*
- Efficient QR Updating Factorization for Sensorless Synchronous Motor Drive Based on High Frequency Voltage Injection. *Toso, F.*, +, *TIE Dec. 2020 10213-10222*
- Electromagnetic Torque-Based Model Reference Adaptive System Speed Estimator for Sensorless Surface Mount Permanent Magnet Synchronous Motor Drive. *Prabhakaran, K.K.*, +, *TIE July 2020 5936-5947*
- Energy-Based Nonlinear Adaptive Control Design for the Quadrotor UAV System With a Suspended Payload. *Yang, S.*, +, *TIE March 2020 2054-2064*
- Error-Bounded Reference Tracking MPC for Machines With Structural Flexibility. *Yuan, M.*, +, *TIE Oct. 2020 8143-8154*
- Extended Signal-Correction Observer and Application to Aircraft Navigation. *Wang, X.*, +, *TIE April 2020 3149-3156*
- Fault-Tolerant Fixed-Time Trajectory Tracking Control of Autonomous Surface Vessels With Specified Accuracy. *Zhang, J.*, +, *TIE June 2020 4889-4899*
- Finite-Time Control of a Linear Motor Positioner Using Adaptive Recursive Terminal Sliding Mode. *Shao, K.*, +, *TIE Aug. 2020 6659-6668*
- Fringe-Projection-Based Normal Direction Measurement and Adjustment for Robotic Drilling. *Rao, G.*, +, *TIE Nov. 2020 9560-9570*
- Guest Editorial: Position Sensorless AC Motor Drives. *Valla, M.I.*, +, *TIE July 2020 5825-5829*
- Hyperbolic-Tangent LOS Guidance-Based Finite-Time Path Following of Underactuated Marine Vehicles. *Wang, N.*, +, *TIE Oct. 2020 8566-8575*
- ILC-Based Voltage Compensation Method for PMSM Sensorless Control Considering Inverter Nonlinearity and Sampling Current DC Bias. *Wang, Y.*, +, *TIE July 2020 5980-5989*
- Input-to-State Stable Bilateral Teleoperation by Dynamic Interconnection and Damping Injection: Theory and Experiments. *Yang, Y.*, +, *TIE Jan. 2020 790-799*
- Integrated Coordinated/Synchronized Contouring Control of a Dual-Linear-Motor-Driven Gantry. *Chen, Z.*, +, *TIE May 2020 3944-3954*
- IPMSM Sensorless Control Using High-Frequency Voltage Injection Method With Random Switching Frequency for Audible Noise Improvement. *Zhang, Y.*, +, *TIE July 2020 6019-6030*
- IPMSMs Sensorless MTPA Control Based on Virtual q -Axis Inductance by Using Virtual High-Frequency Signal Injection. *Tang, Q.*, +, *TIE Jan. 2020 136-146*
- Magnetic Sensor Design for a Permanent Magnet Linear Motor Considering Edge-Effect. *Luu, P.T.*, +, *TIE July 2020 5768-5777*
- Model Predictive Adaptive Constraint Tracking Control for Underwater Vehicles. *Gan, W.*, +, *TIE Sept. 2020 7829-7840*
- Motion Control of a Magnetic Levitation Actuator Based on a Wrench Model Considering Yaw Angle. *Xu, F.*, +, *TIE Oct. 2020 8545-8554*
- MPC Inspired Dynamical Output Feedback and Adaptive Feedforward Control Applied to Piezo-Actuated Positioning Systems. *Nguyen, M.L.*, +, *TIE May 2020 3921-3931*
- Multiobjective System Level Optimization Method for Switched Reluctance Motor Drive Systems Using Finite-Element Model. *Diao, K.*, +, *TIE Dec. 2020 10055-10064*
- Omnidirectional Touch Probe With Adaptive Maneuvering for 3-D Object Machining and Measurement Verification Applications. *Luo, R.C.*, +, *TIE Feb. 2020 1136-1148*
- On the Suppression of the Backward Motion of a Piezo-Driven Precision Positioning Platform Designed by the Parasitic Motion Principle. *Yang, Z.*, +, *TIE May 2020 3870-3878*
- Online Hysteresis Identification and Compensation for Piezoelectric Actuators. *Liu, Y.*, +, *TIE July 2020 5595-5603*
- Optimized Formation Control Using Simplified Reinforcement Learning for a Class of Multiagent Systems With Unknown Dynamics. *Wen, G.*, +, *TIE Sept. 2020 7879-7888*
- Output Feedback Adaptive Motion Control and Its Experimental Verification for Time-Delay Nonlinear Systems With Asymmetric Hysteresis. *Zhang, X.*, +, *TIE Aug. 2020 6824-6834*
- Path-Following Control of A Quadrotor UAV With A Cable-Suspended Payload Under Wind Disturbances. *Qian, L.*, +, *TIE March 2020 2021-2029*
- PLL Position and Speed Observer With Integrated Current Observer for Sensorless PMSM Drives. *Lasca, C.*, +, *TIE July 2020 5990-5999*
- Position and Posture Control of Planar Four-Link Underactuated Manipulator Based on Neural Network Model. *Wu, J.*, +, *TIE June 2020 4721-4728*
- Position Control of Parallel Active Link Suspension With Backlash. *Yu, M.*, +, *TIE June 2020 4741-4751*
- Position Sensorless Control for Doubly Salient Electromagnetic Machine With Improved Startup Performance. *Zhou, X.*, +, *TIE March 2020 1782-1791*
- Position Sensorless Control of Switched Reluctance Motors Using Reference and Virtual Flux Linkage With One-Phase Current Sensor in Medium and High Speed. *Ding, W.*, +, *TIE April 2020 2595-2606*
- Position Sensorless Permanent Magnet Synchronous Machine Drives—A Review. *Wang, G.*, +, *TIE July 2020 5830-5842*
- Precise Active Brake-Pressure Control for a Novel Electro-Booster Brake System. *Zhao, J.*, +, *TIE June 2020 4774-4784*
- Precision Motion Control of a Servomotor-Pump Direct-Drive Electrohydraulic System With a Nonlinear Pump Flow Mapping. *Helian, B.*, +, *TIE Oct. 2020 8638-8648*
- Prediction Horizons Optimized Nonlinear Predictive Control for Permanent Magnet Synchronous Motor Position System. *Wei, Y.*, +, *TIE Nov. 2020 9153-9163*
- Quadruple-Stage Actuator System for Magnetic-Head Positioning System in Hard Disk Drives. *Atsumi, T.*, +, *TIE Nov. 2020 9184-9194*
- Quasi-Proportional-Resonant Controller Based Adaptive Position Observer for Sensorless Control of PMSM Drives Under Low Carrier Ratio. *An, Q.*, +, *TIE April 2020 2564-2573*
- Relative Impedance-Based Internal Force Control for Bimanual Robot Teleoperation With Varying Time Delay. *Lu, Z.*, +, *TIE Jan. 2020 778-789*
- Robust High Bandwidth Current Regulation for Permanent Magnet Synchronous Linear Motor Drivers by Using Two-Degree-of-Freedom Controller and Thrust Ripple Observer. *Zhao, J.*, +, *TIE March 2020 1804-1812*
- Rotor Position Estimation Method for Brushless Synchronous Machine Based on Second-Order Generated Integrator in the Starting Mode. *Wei, J.*, +, *TIE July 2020 6135-6146*
- Sensorless Control of Planar Switched Reluctance Motors Based on Voltage Injection Combined With Core-Loss Calculation. *Chen, N.*, +, *TIE July 2020 6031-6042*
- Sensorless Control Strategy for IPMSM to Reduce Audible Noise by Variable Frequency Current Injection. *Du, B.*, +, *TIE Feb. 2020 1149-1159*
- Sensorless Low/Zero Speed Estimation for Permanent Magnet Synchronous Machine Using a Search-Based Real-Time Commissioning Method. *Sci-cluna, K.*, +, *TIE July 2020 6010-6018*
- Sensorless Optimal Commutation Steady Speed Control Method for a Non-ideal Back-EMF BLDC Motor Drive System Including Buck Converter. *Chen, X.*, +, *TIE July 2020 6147-6157*
- Simulation and Experimental Results of a New Control Strategy For Point Stabilization of Nonholonomic Mobile Robots. *Fabregas, E.*, +, *TIE Aug. 2020 6679-6687*
- Spatial Inductance Estimation for Current Loop Auto-Tuning in IPMSM Self-Commissioning. *Erturk, F.*, +, *TIE May 2020 3911-3920*

Speed Sensorless Control for Permanent Magnet Synchronous Motors Based on Finite Position Set. *Sun, X.*, +, *TIE July 2020 6089-6100*

Uncertainty and Disturbance Estimator-Based Control of a Flapping-Wing Aerial Vehicle With Unknown Backlash-Like Hysteresis. *Yin, Z.*, +, *TIE June 2020 4826-4835*

Unknown System Dynamics Estimator for Motion Control of Nonlinear Robotic Systems. *Na, J.*, +, *TIE May 2020 3850-3859*

Position measurement

Stator-PM-Based Variable Reluctance Resolver With Advantage of Motional Back-EMF. *Sun, L.*, +, *TIE Nov. 2020 9790-9801*

Power amplifiers

A Class D Power Amplifier for Multifrequency Eddy Current Testing Based on Multisimultaneous-Frequency Selective Harmonic Elimination Pulse-width Modulation. *Tao, Y.*, +, *TIE Oct. 2020 8799-8807*

A Multiresonant Gate Driver for High-Frequency Resonant Converters. *Gu, L.*, +, *TIE Feb. 2020 1405-1414*

Electromagnetic Induced Failure in GaN-HEMT High-Frequency Power Amplifier. *Sangwan, V.*, +, *TIE July 2020 5708-5716*

Improved Accuracy, Modeling, and Stability Analysis of Power-Hardware-in-Loop Simulation With Open-Loop Inverter as Power Amplifier. *Upamanyu, K.*, +, *TIE Jan. 2020 369-378*

Modulation Induced Current Imbalance and Its Sensorless Control of a GaN-Based Four-Phase DC-DC Power Amplifier. *Wang, C.*, +, *TIE Feb. 2020 1520-1531*

Realization of High Fidelity Power-Hardware-in-the-Loop Capability Using a MW-Scale Motor-Generator Set. *Hong, Q.*, +, *TIE Aug. 2020 6835-6844*

Reproducing Multicarrier Modulation Schemes for Visible Light Communication With the Ripple Modulation Technique. *Rodriguez Mendez, J.*, +, *TIE Feb. 2020 1532-1543*

Stacked Class-E Amplifier. *Pena-Eguiluz, R.*, +, *TIE Oct. 2020 8292-8301*

Thermal Stress Balancing Oriented Model Predictive Control of Modular Multilevel Switching Power Amplifier. *Han, R.*, +, *TIE Nov. 2020 9028-9038*

Power aware computing

Energy Optimization by Software Prefetching for Task Granularity in GPU-Based Embedded Systems. *Wang, Z.*, +, *TIE June 2020 5120-5131*

Profile-Guided Three-Phase Virtual Resource Management for Energy Efficiency of Data Centers. *Ding, Z.*, +, *TIE March 2020 2460-2468*

Thermal Model Identification of Computing Nodes in High-Performance Computing Systems. *Diversi, R.*, +, *TIE Sept. 2020 7778-7788*

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The Impact of Temperature and Switching Rate on Dynamic Transients of High-Voltage Silicon and 4H-SiC NPN BJTs: A Technology Evaluation. *Jahdi, S.*, +, *TIE June 2020 4556-4566*

Power cables

An Analytical AC Resistance Calculation Method for Multiple-Conductor Feeder Cables in Aircraft Electric Power Systems. *Zhang, Y.*, +, *TIE May 2020 3340-3349*

Classification of Faults in Multicore Cable via Time-Frequency Domain Reflectometry. *Bang, S.S.*, +, *TIE May 2020 4163-4171*

Improving Current Transformer-Based Energy Extraction From AC Power Lines by Manipulating Magnetic Field. *Zhuang, Y.*, +, *TIE Nov. 2020 9471-9479*

Inverter Side *RL* Filter Precise Design for Motor Overvoltage Mitigation in SiC-Based Drives. *Ruffo, R.*, +, *TIE Feb. 2020 863-873*

S-Hybrid Step-Down DC-DC Converter—Analysis of Operation and Design Considerations. *Seo, G.*, +, *TIE Jan. 2020 265-275*

Power capacitors

A 20 MHz Low-Profile DC-DC Converter With Magnetic-Free Characteristics. *Guan, Y.*, +, *TIE Feb. 2020 1555-1567*

A 5-Level Inverter Scheme Using Single DC Link With Reduced Number of Floating Capacitors and Switches for Open-End IM Drives. *Majumder, M.G.*, +, *TIE Feb. 2020 960-968*

A Currentless Submodule Individual Voltage Balancing Control for Modular Multilevel Converters. *Deng, F.*, +, *TIE Nov. 2020 9370-9382*

A Disturbance Rejection-Based Control Strategy for Five-Level T-Type Hybrid Power Converters With Ripple Voltage Estimation Capability. *Khan, S.A.*, +, *TIE Sept. 2020 7364-7374*

A Hybrid Interleaved DC-DC Converter With a Wide Step-Up Regulation Range and Ultralow Voltage Stress. *Hu, X.*, +, *TIE July 2020 5479-5489*

A Load-Independent LCC-Compensated Wireless Power Transfer System for Multiple Loads With a Compact Coupler Design. *Cheng, C.*, +, *TIE June 2020 4507-4515*

A Neutral-Point Diode-Clamped Converter With Inherent Voltage-Boosting for a Four-Phase SRM Drive. *Abdel-Aziz, A.A.*, +, *TIE July 2020 5313-5324*

A New Soft Switching DC-DC Converter With High Voltage Gain Capability. *Mohseni, P.*, +, *TIE Sept. 2020 7386-7398*

A Reliable Single-Phase Bipolar Buck-Boost Direct PWM AC-AC Converter With Continuous Input/Output Currents. *Ahmed, H.F.*, +, *TIE Dec. 2020 10253-10265*

A Single-Phase Five-Branch Direct AC-AC Modular Multilevel Converter for Railway Power Conditioning. *Lei, M.*, +, *TIE June 2020 4292-4304*

An Active-Clamping ZVS Interleaved Buck/Boost Bidirectional Converter With One Auxiliary Switch. *Mohammadi, M.R.*, *TIE Sept. 2020 7430-7438*

An Advanced Voltage Support Scheme Considering the Impact of Zero-Sequence Voltage Under Microgrid Faults Using Model Predictive Control. *Mohapatra, S.R.*, +, *TIE Oct. 2020 8957-8968*

An Interleaved Three-Phase PWM Single-Stage Resonant Rectifier With High-Frequency Isolation. *Li, G.*, +, *TIE Aug. 2020 6572-6582*

An Optimized Carrier-Based PWM Method and Voltage Balancing Control for Five-Level ANPC Converters. *Wang, K.*, +, *TIE Nov. 2020 9120-9132*

An SVM Approach for Five-Phase Current Source Converters Output Current Harmonics and Common-Mode Voltage Mitigation. *He, J.*, +, *TIE July 2020 5232-5245*

An Ultra-High Step-Up DC-DC Converter With Extendable Voltage Gain and Soft-Switching Capability. *Alavi, P.*, +, *TIE Nov. 2020 9238-9250*

Analysis and Design of a High-Efficiency 6.78-MHz Wireless Power Transfer System With Scalable Number of Receivers. *Song, J.*, +, *TIE Oct. 2020 8281-8291*

Analysis and Design of a Novel Six-Switch Five-Level Active Boost Neutral Point Clamped Inverter. *Siwakoti, Y.P.*, +, *TIE Dec. 2020 10485-10496*

Analysis, Design, and Implementation of a ZVT High Step-Up DC-DC Converter With Continuous Input Current. *Fani, R.*, +, *TIE Dec. 2020 10455-10463*

Bidirectional Isolated Current-Source DAB Converter With Extended ZVS/ZCS Range and Reduced Energy Circulation for Storage Applications. *Blinov, A.*, +, *TIE Dec. 2020 10552-10563*

Bridgeless Triple-Mode Resonant AC-DC Converter: Dynamic Modeling and Controls. *Kim, S.*, +, *TIE June 2020 4921-4933*

Cascaded Transformer Multilevel Inverters With Asymmetrical Turns Ratios Based on NPC. *Bahia, F.A.d.C.*, +, *TIE Aug. 2020 6387-6397*

Cost-Effective Compensation Design for Output Customization and Efficiency Optimization in Series/Series-Parallel Inductive Power Transfer Converter. *Huang, Z.*, +, *TIE Dec. 2020 10356-10365*

Cost-Effective Islanded Electrical System With Decentralized Interleaving PWM for Converter Harmonic Reduction. *He, J.*, +, *TIE Oct. 2020 8472-8483*

DC Fault Analysis Models of Three Converter Topologies Considering Control Effects. *Li, Y.*, +, *TIE Nov. 2020 9480-9491*

DC Fault Current Blocking With the Coordination of Half-Bridge MMC and the Hybrid DC Breaker. *Iman-Eini, H.*, +, *TIE July 2020 5503-5514*

DC Fault Detection in Meshed MTdc Systems Based on Transient Average Value of Current. *Li, Y.*, +, *TIE March 2020 1932-1943*

DC-Link Voltage-Balancing Strategy Based on Optimal Switching Sequence Model Predictive Control for Single-Phase H-NPC Converters. *Vazquez, S.*, +, *TIE Sept. 2020 7410-7420*

Decoupling and Optimal Control of Multilevel Buck DC-DC Converters With Inverse System Theory. *Wu, J.*, +, *TIE Sept. 2020 7861-7870*

Design of Monolithic All-NMOS Three-Level Three-phase Switched-Capacitor Power Converter for Industrial Environmental Sensor Conditioning. *Chen, L.*, +, *TIE Nov. 2020 9873-9881*

Design, Analysis, and Impacts of Sinusoidal *LC* Filter on Pulsewidth Modulated Inverter Fed-Induction Motor Drive. *Mishra, P.*, +, *TIE April 2020 2678-2688*

- Determination of Stray Inductance of Low-Inductive Laminated Planar Multiport Busbars Using Vector Synthesis Method. *Lu, B., +, TIE Feb. 2020 1337-1347*
- Double-Ended Active-Clamp Forward Converter With Low DC Offset Current of Transformer. *Kim, M., +, TIE Feb. 2020 1036-1047*
- Double-Thyristor-Based Protection for Valve-Side Single-Phase-to-Ground Faults in HB-MMC-Based Bipolar HVDC Systems. *Li, G., +, TIE July 2020 5810-5815*
- Dual-Input Quasi-Z-Source PV Inverter: Dynamic Modeling, Design, and Control. *Lashab, A., +, TIE Aug. 2020 6483-6493*
- Effective Hold-Up Time Extension Method Using Fan Control in Server Power Systems. *Baek, J., +, TIE July 2020 5820-5824*
- Enhanced Floating Capacitor Voltage Balancing Schemes for Single-Source Seven-Level Inverters With Capacitor Fed H-Bridge Units. *Davis, T.T., +, TIE Aug. 2020 6227-6236*
- Extending the Linear Modulation Range to Full Base Speed Independent of Load Power Factor for a Multilevel Inverter Fed IM Drive. *Majumder, M.G., +, TIE Nov. 2020 9143-9152*
- Fault Diagnosis and Monitoring of Modular Multilevel Converter With Fast Response of Voltage Sensors. *Zhang, J., +, TIE June 2020 5071-5080*
- HVdc Reactor Reduction Method Based on Virtual Reactor Fault Current Limiting Control of MMC. *Li, X., +, TIE Dec. 2020 9991-10000*
- Imbalance Current Analysis and Its Suppression Methodology for Parallel SiC MOSFETs with Aid of a Differential Mode Choke. *Zeng, Z., +, TIE Feb. 2020 1508-1519*
- Minimization of Abnormal Output Voltage Rising for LLC Resonant Converter at Very Light Load. *Kim, C., TIE Dec. 2020 10295-10303*
- Mitigation of DC-Link Current Ripple for Dual Three-Phase Flux-Adjustable Hybrid PMAC Drives Using Collaborative Switching Strategy. *Wang, Z., +, TIE Sept. 2020 7202-7216*
- Model Predictive Control of a Nine-Level Internal Parallel Multilevel Converter With Phase-Shifted Pulsewidth Modulation. *Zhou, D., +, TIE Nov. 2020 9073-9082*
- Modulation and Capacitor Voltage Balancing Control of Multilevel NPC Dual Active Bridge DC-DC Converters. *Filba-Martinez, A., +, TIE April 2020 2499-2510*
- Modulation and Voltage Balancing of a Five-Level Series-Connected Multilevel Inverter With Reduced Isolated Direct Current Sources. *Dekka, A., +, TIE Oct. 2020 8219-8230*
- Nonisolated High-Step-Up DC-DC Converter Derived from Switched-Inductors and Switched-Capacitors. *Salvador, M.A., +, TIE Oct. 2020 8506-8516*
- Normalized Analysis and Optimal Design of DCM-LCC Resonant Converter for High-Voltage Power Supply. *Zhang, H., +, TIE June 2020 4496-4506*
- Novel Transformerless Buck-Boost Inverters Without Leakage Current. *Khan, A.A., +, TIE Dec. 2020 10442-10454*
- Optimal Input and Output Power Quality Control of Single-Phase AC-DC Converter With Significant DC-Link Voltage Ripple. *Meng, L., +, TIE Dec. 2020 10366-10376*
- Optimization of High-Density and High-Efficiency Switched-Tank Converter for Data Center Applications. *Lyu, X., +, TIE Feb. 2020 1626-1637*
- Power Capability Improvement of Interior Permanent Magnet Synchronous Motor Drives Using Capacitive Network. *Lee, K., +, TIE Dec. 2020 10109-10120*
- Reliable Winding-Based DC-Bus Capacitor Discharge Technique Over Full-Speed Range for IPMSM Drive in Electric Vehicles Without Position Sensor. *Gong, C., +, TIE Oct. 2020 8131-8142*
- Stacked Class-E Amplifier. *Pena-Eguiluz, R., +, TIE Oct. 2020 8292-8301*
- Switched Capacitor-Inductor Network Based Ultra-Gain DC-DC Converter Using Single Switch. *Kumar, G.G., +, TIE Dec. 2020 10274-10283*
- Switched-Capacitor Differential Boost Inverter: Design, Modeling, and Control. *Silva, G.V., +, TIE July 2020 5421-5431*
- Voltage-Adjustable Capacitor Isolated Solid-State Transformer. *Sun, B., +, TIE Sept. 2020 7550-7559*
- Weak Grid Intertie WEGS With Hybrid Generalized Integrator for Power Quality Improvement. *Chishiti, F., +, TIE Feb. 2020 1113-1123*
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- Power consumption**
- A Self-Governed Online Energy Management and Trading for Smart Micro/Nano-Grids. *Latifi, M., +, TIE Sept. 2020 7484-7498*
- Energy Optimization by Software Prefetching for Task Granularity in GPU-Based Embedded Systems. *Wang, Z., +, TIE June 2020 5120-5131*
- Fault Detection and Diagnosis of Industrial Robot Based on Power Consumption Modeling. *Sabry, A.H., +, TIE Sept. 2020 7929-7940*
- Multiple-Input Harvesting Power Management Unit With Enhanced Boosting Scheme for IoT Applications. *Abuellil, A., +, TIE May 2020 3662-3672*
- Suppression of Harmonic Vibration in Magnetically Suspended Centrifugal Compressor Using Zero-Phase Odd-Harmonic Repetitive Controller. *Cai, K., +, TIE Sept. 2020 7789-7797*
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- A Load-Independent LCC-Compensated Wireless Power Transfer System for Multiple Loads With a Compact Coupler Design. *Cheng, C., +, TIE June 2020 4507-4515*
- A Novel Order Reduced Synchronous Power Control for Grid-Forming Inverters. *Quan, X., +, TIE Dec. 2020 10989-10995*
- A Wireless Dimmable Lighting System Using Variable-Power Variable-Frequency Control. *Liu, W., +, TIE Oct. 2020 8392-8404*
- DC-Link Voltage-Balancing Strategy Based on Optimal Switching Sequence Model Predictive Control for Single-Phase H-NPC Converters. *Vazquez, S., +, TIE Sept. 2020 7410-7420*
- Directional Radiation Technique for Maximum Receiving Power in Microwave Power Transmission System. *Hui, Q., +, TIE Aug. 2020 6376-6386*
- Fault Diagnosis and Monitoring of Modular Multilevel Converter With Fast Response of Voltage Sensors. *Zhang, J., +, TIE June 2020 5071-5080*
- Frequency-Adaptive Virtual Flux Estimator-Based Predictive Power Control With Suppression of Dc Voltage Ripples Under Unbalanced Network. *Yang, H., +, TIE Oct. 2020 8969-8979*
- Full Degree of Freedom Based Control Scheme of the Single-Phase Direct AC-AC Modular Multilevel Converter for Railway Power Conditioning Under Asymmetric Branch Conditions. *Lei, M., +, TIE March 2020 1671-1683*
- Integrated-Power-Control-Strategy-Based Electrolytic Capacitor-Less Back-to-Back Converter for Variable Frequency Speed Control System. *Bao, D., +, TIE Dec. 2020 10065-10074*
- Power Scheduling in More Electric Aircraft Based on an Optimal Adaptive Control Strategy. *Zhang, Y., +, TIE Dec. 2020 10911-10921*
- Rotor Current Oriented Control Method of DFIG-DC System Without Stator Side Sensors. *Wu, C., +, TIE Nov. 2020 9958-9962*
- Sensorless SynRG Based Variable Speed Wind Generator and Single-Stage Solar PV Array Integrated Grid System With Maximum Power Extraction Capability. *Vijay, M. D., +, TIE Sept. 2020 7529-7539*
- Vector Shifted Model Predictive Power Control of Three-Level Neutral-Point-Clamped Rectifiers. *Zhou, D., +, TIE Sept. 2020 7157-7166*
- Voltage Grid Supporting by Using Variable Structure Adaptive Virtual Impedance for LCL-Voltage Source Converter DG Converters. *Fonseca, T.Q., +, TIE Nov. 2020 9326-9336*
- Power conversion**
- An Approach Towards Extreme Fast Charging Station Power Delivery for Electric Vehicles with Partial Power Processing. *Iyer, V.M., +, TIE Oct. 2020 8076-8087*
- Enhanced Dual-Active-Bridge DC-DC Converter for Balancing Bipolar Voltage Level of DC Distribution System. *Lee, J., +, TIE Dec. 2020 10399-10409*
- Novel Transformerless Buck-Boost Inverters Without Leakage Current. *Khan, A.A., +, TIE Dec. 2020 10442-10454*
- Power conversion harmonics**
- A Low-EMI Continuous-Time Delta-Sigma-Modulator Buck Converter With Transient Response Eruption Techniques. *Hwang, Y., +, TIE Aug. 2020 6854-6863*

- An Enhanced Control Strategy for AC–DC Matrix Converters Under Unbalanced Grid Voltage. *Nguyen, T.*, +, *TIE March 2020 1718-1727*
- Cost-Effective Islanded Electrical System With Decentralized Interleaving PWM for Converter Harmonic Reduction. *He, J.*, +, *TIE Oct. 2020 8472-8483*
- Discrete-Time Modified UDE-Based Current Control for L+C+L-Type Grid-Tied Inverters. *Wu, Y.*, +, *TIE March 2020 2143-2154*
- Power converters**
- Γ -Source Magnetic Integrated Filter for Single-Phase Grid Tied Voltage Source Converters. *Masoumi, A.H.*, +, *TIE July 2020 5410-5420*
- on-Time Mismatch Based System Identification Technique for Buck Converters. *Gietler, H.*, +, *TIE Sept. 2020 7898-7908*
- A 2–10 MHz GaN HEMTs Half-Bridge Driver With Bandgap Reference Comparator Clamping and Dual Level Shifters for Automotive Applications. *Yan, R.*, +, *TIE Feb. 2020 1446-1454*
- A Constant-Current Transmission Converter for Semi-airborne Transient Electromagnetic Surveying. *Geng, Z.*, +, *TIE Jan. 2020 542-550*
- A Coupled Inductor-Based Buck–Boost Type Grid Connected Transformerless PV Inverter Having the Ability to Control Two Subarrays Simultaneously. *Dutta, S.*, +, *TIE July 2020 5543-5553*
- A Currentless Submodule Individual Voltage Balancing Control for Modular Multilevel Converters. *Deng, F.*, +, *TIE Nov. 2020 9370-9382*
- A Digital Phase Synchronization Method for Bidirectional Inductive Power Transfer. *Jia, S.*, +, *TIE Aug. 2020 6450-6460*
- A Disturbance Rejection-Based Control Strategy for Five-Level T-Type Hybrid Power Converters With Ripple Voltage Estimation Capability. *Khan, S.A.*, +, *TIE Sept. 2020 7364-7374*
- A Lossless Turn-on Snubber for Reducing Diode Reverse Recovery Losses in Bidirectional Buck/Boost Converter. *Mohammadi, M.R.*, *TIE Feb. 2020 1396-1399*
- A Neutral-Point Diode-Clamped Converter With Inherent Voltage-Boosting for a Four-Phase SRM Drive. *Abdel-Aziz, A.A.*, +, *TIE July 2020 5313-5324*
- A New CCM/DCM Hybrid-Mode Synchronous Rectification Flyback Converter. *Dong, H.*, +, *TIE May 2020 3629-3639*
- A Novel Boost Active Bridge-Based Inductive Power Transfer System. *Kabra, G.R.*, +, *TIE Feb. 2020 1103-1112*
- A Novel Converter Station Structure for Improving Multiterminal HVDC System Resiliency Against AC and DC Faults. *Wang, S.*, +, *TIE June 2020 4270-4280*
- A Novel High-Voltage DC Transformer Based on Diode-Clamped Modular Multilevel Converters With Voltage Self-Balancing Capability. *Zheng, T.*, +, *TIE Dec. 2020 10304-10314*
- Accurate Operation Analysis Based Variable On-time Control for 360–800 Hz CRM Boost PFC Converters. *Ren, X.*, +, *TIE Aug. 2020 6845-6853*
- An Asynchronous Boost Converter With Time-Based Dual-Mode Control for Wide Load Range and High Efficiency in SSD Applications. *Lee, K.*, +, *TIE Dec. 2020 10520-10530*
- An SVM Approach for Five-Phase Current Source Converters Output Current Harmonics and Common-Mode Voltage Mitigation. *He, J.*, +, *TIE July 2020 5232-5245*
- Analysis and Design of a Novel Six-Switch Five-Level Active Boost Neutral Point Clamped Inverter. *Siwakoti, Y.P.*, +, *TIE Dec. 2020 10485-10496*
- Analysis and Experimental Validation of Bidirectional Z-Source DC Circuit Breakers. *Savaliya, S.G.*, +, *TIE June 2020 4613-4622*
- Collaborative Control and Allocation Method of RSC and GSC for DFIG System to Suppress High-Frequency Resonance and Harmonics. *Pang, B.*, +, *TIE Dec. 2020 10509-10519*
- Cost-Effective Compensation Design for Output Customization and Efficiency Optimization in Series/Series-Parallel Inductive Power Transfer Converter. *Huang, Z.*, +, *TIE Dec. 2020 10356-10365*
- Coupled Inductance Model of Full-Bridge Modules in Hybrid High Voltage Direct Current Circuit Breakers. *Dongye, Z.*, +, *TIE Dec. 2020 10315-10324*
- DC Voltage Control Strategy of Three-Terminal Medium-Voltage Power Electronic Transformer-Based Soft Normally Open Points. *Ouyang, S.*, +, *TIE May 2020 3684-3695*
- DC-Link Voltage-Balancing Strategy Based on Optimal Switching Sequence Model Predictive Control for Single-Phase H-NPC Converters. *Vazquez, S.*, +, *TIE Sept. 2020 7410-7420*
- Decoupled d - q Axes Current-Sharing Control of Multi-Three-Phase Induction Machines. *Sala, G.*, +, *TIE Sept. 2020 7124-7134*
- Design of Monolithic All-NMOS Three-Level Three-phase Switched-Capacitor Power Converter for Industrial Environmental Sensor Conditioning. *Chen, L.*, +, *TIE Nov. 2020 9873-9881*
- Development of an Improved Input-Parallel Output-Series Buck-Boost Converter and Its Closed-Loop Control. *Rana, N.*, +, *TIE Aug. 2020 6428-6438*
- Direct Seamless Transfer Strategy by Limiting Voltage Drop of Interface Filter in Energy Storage Equipment of Microgrid. *Zhao, G.*, +, *TIE Dec. 2020 10421-10432*
- Distributed Control of Active Cell Balancing and Low-Voltage Bus Regulation in Electric Vehicles Using Hierarchical Model-Predictive Control. *Gong, Z.*, +, *TIE Dec. 2020 10464-10473*
- Dual-Input Isolated Converter With Dual-Charge-Pump Cell for High Step-Up Voltage Ratio Achievement. *Shen, C.*, +, *TIE Nov. 2020 9383-9392*
- Efficiency Optimization of DC Solid-State Transformer for Photovoltaic Power Systems. *Shi, H.*, +, *TIE May 2020 3583-3595*
- Electrothermal-Based Junction Temperature Estimation Model for Converter of Switched Reluctance Motor Drive System. *Chen, H.*, +, *TIE Feb. 2020 874-883*
- Embedded Hardware Artificial Neural Network Control for Global and Real-Time Imbalance Current Suppression of Parallel Connected IGBTs. *Zeng, X.*, +, *TIE March 2020 2186-2196*
- Enhanced Parallel Hybrid Converter With DC Ripple Minimization Control. *Patro, S.K.*, +, *TIE Nov. 2020 9969-9975*
- Extending the Operating Region of Inductive Power Transfer Systems Through Dual-Side Cooperative Control. *Chen, S.*, +, *TIE Nov. 2020 9302-9312*
- Finite Control Set Model Predictive Control for LCL-Filtered Grid-Tied Inverter With Minimum Sensors. *Chen, X.*, +, *TIE Dec. 2020 9980-9990*
- Full Degree of Freedom Based Control Scheme of the Single-Phase Direct AC–AC Modular Multilevel Converter for Railway Power Conditioning Under Asymmetric Branch Conditions. *Lei, M.*, +, *TIE March 2020 1671-1683*
- High and Very High Frequency Power Supplies for Industrial Applications. *Wang, Y.*, +, *TIE Feb. 2020 1400-1404*
- Improved Direct Torque Control for a DFIG under Symmetrical Voltage Dip With Transient Flux Damping. *Agha Kashkooli, M.R.*, +, *TIE Jan. 2020 28-37*
- Improving Dynamic Performance of Boost PFC Converter Using Current-Harmonic Feedforward Compensation in Synchronous Reference Frame. *Li, S.*, +, *TIE June 2020 4857-4866*
- Integrated-Power-Control-Strategy-Based Electrolytic Capacitor-Less Back-to-Back Converter for Variable Frequency Speed Control System. *Bao, D.*, +, *TIE Dec. 2020 10065-10074*
- Is Using A Complex Control Gain in Three-Phase FLLs Reasonable?. *Golestani, S.*, +, *TIE March 2020 2480-2484*
- Magnetically Coupled High-Voltage-Boost Split Y -Source Inverter Without Leakage-Induced Voltage Spikes. *Chen, M.*, +, *TIE July 2020 5444-5455*
- Minimum DC-Link Capacitance for Single-Phase Applications With Power Factor Correction. *Marcos-Pastor, A.*, +, *TIE June 2020 5204-5208*
- Novel Topologies of Power Electronics Converter as Active Magnetic Bearing Drive. *Jiang, D.*, +, *TIE Feb. 2020 950-959*
- Performance Analysis of Model Predictive Technique Based Combined Control for PMSG-Based Distributed Generation Unit. *Mishra, R.*, +, *TIE Oct. 2020 8991-9000*
- Power Converter Topologies and Control Strategies for DC-Biased Vernier Reluctance Machines. *Yu, Z.*, +, *TIE June 2020 4350-4359*
- Power Electronic Converter Based Flexible Transmission Line Emulation. *Dutta, S.*, +, *TIE Aug. 2020 6195-6205*
- Pulse Train Control Strategy for CCM Boost PFC Converter With Improved Dynamic Response and Unity Power Factor. *Luo, H.*, +, *TIE Dec. 2020 10377-10387*

- Research on the Dynamic Characteristics and Regulation Method of the Energy Stored Quasi-Z-Source Inverter System. *Hu, S.*, +, *TIE June 2020 4590-4599*
- Seamless Dynamics for Wild-Frequency Active Rectifiers in More Electric Aircraft. *Benzaquen, J.*, +, *TIE Sept. 2020 7135-7145*
- Simultaneous Identification of Multiple Control Loops in DC Microgrid Power Converters. *Khodamoradi, A.*, +, *TIE Dec. 2020 10641-10651*
- Stacked Class-E Amplifier. *Pena-Eguiluz, R.*, +, *TIE Oct. 2020 8292-8301*
- The Output Voltage Control Strategy for DSEG With Controlled Rectification Based on Conduction Angle Estimation. *Wang, K.*, +, *TIE May 2020 3350-3360*
- Voltage Grid Supporting by Using Variable Structure Adaptive Virtual Impedance for LCL-Voltage Source Converter DG Converters. *Fonseca, T.Q.*, +, *TIE Nov. 2020 9326-9336*
- Winding Scheme With Fractional Layer for Differential-Mode Toroidal Inductor. *Liu, B.*, +, *TIE Feb. 2020 1592-1604*
- Power distribution control**
- A Cooperative Adaptive Droop Based Energy Management and Optimal Voltage Regulation Scheme for DC Microgrids. *Sahoo, S.*, +, *TIE April 2020 2894-2904*
- Coordinated Control of Passive Transition from Grid-Connected to Islanded Operation for Three/Single-Phase Hybrid Multimicrogrids Considering Speed and Smoothness. *Wang, C.*, +, *TIE March 2020 1921-1931*
- Cost-Effective Islanded Electrical System With Decentralized Interleaving PWM for Converter Harmonic Reduction. *He, J.*, +, *TIE Oct. 2020 8472-8483*
- DC Voltage Control Strategy of Three-Terminal Medium-Voltage Power Electronic Transformer-Based Soft Normally Open Points. *Ouyang, S.*, +, *TIE May 2020 3684-3695*
- Dual-Loop-Based Harmonic Current Control Strategy and Admittance Modeling for a Multimodular Parallel SAPFs System. *Liu, K.*, +, *TIE July 2020 5456-5466*
- Impedance Modeling and DC Bus Voltage Stability Assessment of a Solid-State-Transformer-Enabled Hybrid AC–DC Grid Considering Bidirectional Power Flow. *Ye, Q.*, +, *TIE Aug. 2020 6531-6540*
- Improved Reweighted Zero-Attracting Quaternion-Valued LMS Algorithm for Islanded Distributed Generation System at IM Load. *Kewat, S.*, +, *TIE May 2020 3705-3716*
- Power Quality Enhancement Using Euclidean Direction Search Based Control Technique. *Badoni, M.*, +, *TIE March 2020 2231-2240*
- Reducing Distribution Power Loss of Islanded AC Microgrids Using Distributed Electric Springs With Predictive Control. *Yang, Y.*, +, *TIE Oct. 2020 9001-9011*
- Resilient Information Architecture Platform for the Smart Grid: A Novel Open-Source Platform for Microgrid Control. *Tu, H.*, +, *TIE Nov. 2020 9393-9404*
- Resynchronization of Distributed Generation Based on the Universal Droop Controller for Seamless Transfer Between Operation Modes. *Amin, M.*, +, *TIE Sept. 2020 7574-7582*
- Simultaneous Identification and Control for Hybrid Energy Storage System Using Model Predictive Control and Active Signal Injection. *Song, Z.*, +, *TIE Nov. 2020 9768-9778*
- Single-Stage Voltage Balancer With High-Frequency Isolation for Bipolar LVDC Distribution System. *Lee, J.*, +, *TIE May 2020 3596-3606*
- Power distribution economics**
- A Decentralized Periodic Energy Trading Framework for Pelagic Islanded Microgrids. *Hu, M.*, +, *TIE Sept. 2020 7595-7605*
- Reducing Distribution Power Loss of Islanded AC Microgrids Using Distributed Electric Springs With Predictive Control. *Yang, Y.*, +, *TIE Oct. 2020 9001-9011*
- Power distribution faults**
- A Decentralized Periodic Energy Trading Framework for Pelagic Islanded Microgrids. *Hu, M.*, +, *TIE Sept. 2020 7595-7605*
- An Active Islanding Detection Strategy With Zero Nondetection Zone for Operation in Single and Multiple Inverter Mode Using GPS Synchronized Pattern. *Sivadas, D.*, +, *TIE July 2020 5554-5564*
- Coordinated Control of Passive Transition from Grid-Connected to Islanded Operation for Three/Single-Phase Hybrid Multimicrogrids Considering Speed and Smoothness. *Wang, C.*, +, *TIE March 2020 1921-1931*
- Cost-Effective Islanded Electrical System With Decentralized Interleaving PWM for Converter Harmonic Reduction. *He, J.*, +, *TIE Oct. 2020 8472-8483*
- Direct Seamless Transfer Strategy by Limiting Voltage Drop of Interface Filter in Energy Storage Equipment of Microgrid. *Zhao, G.*, +, *TIE Dec. 2020 10421-10432*
- Distributed Cooperative Control of Multiple Hybrid Energy Storage Systems in a DC Microgrid Using Consensus Protocol. *Chen, X.*, +, *TIE March 2020 1968-1979*
- Disturbance Injection Based Decentralized Identification of Accidental Islanding. *Murugesan, S.*, +, *TIE May 2020 3767-3775*
- Improved Reweighted Zero-Attracting Quaternion-Valued LMS Algorithm for Islanded Distributed Generation System at IM Load. *Kewat, S.*, +, *TIE May 2020 3705-3716*
- On Autonomous Large-Signal Stabilization for Islanded Multibus DC Microgrids: A Uniform Nonsmooth Control Scheme. *Lin, P.*, +, *TIE June 2020 4600-4612*
- Performance Improvement of the Unbalanced Voltage Compensation in Islanded Microgrid Based on Small-Signal Analysis. *Peng, Y.*, +, *TIE July 2020 5531-5542*
- Reducing Distribution Power Loss of Islanded AC Microgrids Using Distributed Electric Springs With Predictive Control. *Yang, Y.*, +, *TIE Oct. 2020 9001-9011*
- Resynchronization of Distributed Generation Based on the Universal Droop Controller for Seamless Transfer Between Operation Modes. *Amin, M.*, +, *TIE Sept. 2020 7574-7582*
- Seamless Transition of Synchronous Inverters Using Synchronizing Virtual Torque and Flux Linkage. *Ramezani, M.*, +, *TIE Jan. 2020 319-328*
- Transient Current Correlation Based Protection for DC Distribution System. *Jia, K.*, +, *TIE Nov. 2020 9927-9936*
- Power distribution protection**
- Transient Current Correlation Based Protection for DC Distribution System. *Jia, K.*, +, *TIE Nov. 2020 9927-9936*
- Power distribution reliability**
- Distribution System Restoration With Renewable Resources for Reliability Improvement Under System Uncertainties. *Zou, K.*, +, *TIE Oct. 2020 8438-8449*
- Dual-Loop-Based Harmonic Current Control Strategy and Admittance Modeling for a Multimodular Parallel SAPFs System. *Liu, K.*, +, *TIE July 2020 5456-5466*
- Impedance Modeling and DC Bus Voltage Stability Assessment of a Solid-State-Transformer-Enabled Hybrid AC–DC Grid Considering Bidirectional Power Flow. *Ye, Q.*, +, *TIE Aug. 2020 6531-6540*
- On Autonomous Large-Signal Stabilization for Islanded Multibus DC Microgrids: A Uniform Nonsmooth Control Scheme. *Lin, P.*, +, *TIE June 2020 4600-4612*
- Transient Current Correlation Based Protection for DC Distribution System. *Jia, K.*, +, *TIE Nov. 2020 9927-9936*
- Power electronics**
- A Voltage Adaptive Dynamic Harmonic Model of Nonlinear Home Appliances. *Sun, Y.*, +, *TIE May 2020 3607-3617*
- Analysis and Experimental Validation of Bidirectional Z-Source DC Circuit Breakers. *Savaliya, S.G.*, +, *TIE June 2020 4613-4622*
- DC Microgrid Grounding Impact on Power Electronic Interfaces in Fault Condition. *Naghizadeh, M.*, +, *TIE May 2020 4120-4132*
- DC Voltage Control Strategy of Three-Terminal Medium-Voltage Power Electronic Transformer-Based Soft Normally Open Points. *Ouyang, S.*, +, *TIE May 2020 3684-3695*
- Even-Handed Sequential Predictive Torque and Flux Control. *Davari, S.A.*, +, *TIE Sept. 2020 7334-7342*
- Implementation of an Optimum Reduced Components Multicell Multilevel Inverter (MC-MLI) for Lower Standing Voltage. *Majumdar, S.*, +, *TIE April 2020 2765-2775*

- Large-Signal Stability of Interleave Boost Converter System With Constant Power Load Using Sliding-Mode Control. *Jiang, W.*, +, *TIE Nov. 2020* 9450-9459
- Modulation Induced Current Imbalance and Its Sensorless Control of a GaN-Based Four-Phase DC–DC Power Amplifier. *Wang, C.*, +, *TIE Feb. 2020* 1520-1531
- Novel Topologies of Power Electronics Converter as Active Magnetic Bearing Drive. *Jiang, D.*, +, *TIE Feb. 2020* 950-959
- Pole Balancing and Thermal Management in Multiterminal HVdc Grids Using Single H-Bridge-Based Current Flow Controllers. *Balasubramaniam, S.*, +, *TIE June 2020* 4623-4634
- Realization of High Fidelity Power-Hardware-in-the-Loop Capability Using a MW-Scale Motor-Generator Set. *Hong, Q.*, +, *TIE Aug. 2020* 6835-6844
- Reduced-Order Thermal Observer for Power Modules Temperature Estimation. *Dong, X.*, +, *TIE Dec. 2020* 10085-10094
- Simultaneous Identification of Multiple Control Loops in DC Microgrid Power Converters. *Khodamoradi, A.*, +, *TIE Dec. 2020* 10641-10651
- Tunable High-Power Multilayer Piezoelectric Transformer. *Li, X.*, +, *TIE Oct. 2020* 8335-8343
- Uniform Distribution Pulsewidth Modulation Strategy for Three-Phase Converters to Reduce Conducted EMI and Switching Loss. *Chen, J.*, +, *TIE Aug. 2020* 6215-6226
- Power engineering computing**
- A GaN-Based DC–DC Module for Railway Applications: Design Consideration and High-Frequency Digital Control. *Fu, M.*, +, *TIE Feb. 2020* 1638-1647
- A Gossip-Based Distributed Algorithm for Economic Dispatch in Smart Grids With Random Communication Link Failures. *Wang, R.*, +, *TIE June 2020* 4635-4645
- A Self-Governed Online Energy Management and Trading for Smart Micro/Nano-Grids. *Latifi, M.*, +, *TIE Sept. 2020* 7484-7498
- Adaptive Prognostic of Fuel Cells by Implementing Ensemble Echo State Networks in Time-Varying Model Space. *Li, Z.*, +, *TIE Jan. 2020* 379-389
- Application of Economical Building Management System for Singapore Commercial Building. *Li, W.*, *TIE May 2020* 4235-4243
- Back-to-Back Competitive Learning Mechanism for Fuzzy Logic Based Supervisory Control System of Hybrid Electric Vehicles. *Li, J.*, +, *TIE Oct. 2020* 8900-8909
- Classification of Complex Power Quality Disturbances Using Optimized S-Transform and Kernel SVM. *Tang, Q.*, +, *TIE Nov. 2020* 9715-9723
- Computer Modeling of the Eddy Current Losses of Metal Fasteners in Rotor Slots of a Large Nuclear Steam Turbine Generator Based on Finite-Element Method and Deep Gaussian Process Regression. *Zhao, J.*, +, *TIE July 2020* 5349-5359
- Current Harmonics Suppression Strategy for PMSM With Nonsinusoidal Back-EMF Based on Adaptive Linear Neuron Method. *Wang, L.*, +, *TIE Nov. 2020* 9164-9173
- Distributed Fast Fault Diagnosis for Multimachine Power Systems via Deterministic Learning. *Chen, T.*, +, *TIE May 2020* 4152-4162
- Dual-Input Quasi-Z-Source PV Inverter: Dynamic Modeling, Design, and Control. *Lashab, A.*, +, *TIE Aug. 2020* 6483-6493
- Electric Load Forecasting Model Using a Multicolumn Deep Neural Networks. *Hoori, A.O.*, +, *TIE Aug. 2020* 6473-6482
- Graph-Theory-Based Modeling and Control for System-Level Optimization of Smart Transformers. *Lisserre, M.*, +, *TIE Oct. 2020* 8910-8920
- Improving Dynamic Performance of Boost PFC Converter Using Current-Harmonic Feedforward Compensation in Synchronous Reference Frame. *Li, S.*, +, *TIE June 2020* 4857-4866
- Light Sensor Based Occupancy Estimation via Bayes Filter With Neural Networks. *Chen, Z.*, +, *TIE July 2020* 5787-5797
- Multitask Bayesian Spatiotemporal Gaussian Processes for Short-Term Load Forecasting. *Gilanifar, M.*, +, *TIE June 2020* 5132-5143
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- Optimized Ensemble Extreme Learning Machine for Classification of Electrical Insulators Conditions. *Stefenon, S.F.*, +, *TIE June 2020* 5170-5178
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- Resilient Information Architecture Platform for the Smart Grid: A Novel Open-Source Platform for Microgrid Control. *Tu, H.*, +, *TIE Nov. 2020* 9393-9404
- Sensorless Vibration Harmonic Estimation of Servo System Based on the Disturbance Torque Observer. *Huang, C.*, +, *TIE March 2020* 2122-2132
- Spatial Correlation-Based Incremental Learning for Spatiotemporal Modeling of Battery Thermal Process. *Wang, B.*, +, *TIE April 2020* 2885-2893
- Transfer Learning With Long Short-Term Memory Network for State-of-Health Prediction of Lithium-Ion Batteries. *Tan, Y.*, +, *TIE Oct. 2020* 8723-8731
- Power factor**
- A 300-kHz 6.6-kW SiC Bidirectional LLC Onboard Charger. *Li, H.*, +, *TIE Feb. 2020* 1435-1445
- A Novel Scalar PWM Method to Reduce Leakage Current in Three-Phase Two-Level Transformerless Grid-Connected VSIs. *Xu, J.*, +, *TIE May 2020* 3788-3797
- A Single-Phase Five-Branch Direct AC–AC Modular Multilevel Converter for Railway Power Conditioning. *Lei, M.*, +, *TIE June 2020* 4292-4304
- An Enhanced Control Strategy for AC–DC Matrix Converters Under Unbalanced Grid Voltage. *Nguyen, T.*, +, *TIE March 2020* 1718-1727
- An Induction Machine With Tapped Stator Windings for LCI-Fed Medium Voltage Drive Applications. *Titus, J.*, +, *TIE Sept. 2020* 7217-7227
- Comparative Analysis of Flux Reversal Permanent Magnet Machines With Toroidal and Concentrated Windings. *Li, H.*, +, *TIE July 2020* 5278-5290
- Design Considerations of Fault-Tolerant Permanent Magnet Vernier Machine. *Zhao, W.*, +, *TIE Sept. 2020* 7290-7300
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- Enhanced Floating Capacitor Voltage Balancing Schemes for Single-Source Seven-Level Inverters With Capacitor Fed H-Bridge Units. *Davis, T.T.*, +, *TIE Aug. 2020* 6227-6236
- Extending the Linear Modulation Range to Full Base Speed Independent of Load Power Factor for a Multilevel Inverter Fed IM Drive. *Majumder, M.G.*, +, *TIE Nov. 2020* 9143-9152
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- Multiojective Optimization of a Double-Side Linear Vernier PM Motor Using Response Surface Method and Differential Evolution. *Zhao, W.*, +, *TIE Jan. 2020* 80-90
- Optimal Input and Output Power Quality Control of Single-Phase AC–DC–DC Converter With Significant DC-Link Voltage Ripple. *Meng, L.*, +, *TIE Dec. 2020* 10366-10376
- Pulse Train Control Strategy for CCM Boost PFC Converter With Improved Dynamic Response and Unity Power Factor. *Luo, H.*, +, *TIE Dec. 2020* 10377-10387
- Two-Layer Pulsewidth Modulation Strategy for Common-Mode Voltage and Current Harmonic Distortion Reduction in Vienna Rectifier. *Xing, X.*, +, *TIE Sept. 2020* 7470-7483
- Weighted Efficiency Enhancement for Single-Power-Conversion Microinverters Using Hybrid-Mode Modulation Strategy. *Kim, K.*, +, *TIE Dec. 2020* 10243-10252
- Power factor correction**
- A 300-kHz 6.6-kW SiC Bidirectional LLC Onboard Charger. *Li, H.*, +, *TIE Feb. 2020* 1435-1445
- A New CCM/DCM Hybrid-Mode Synchronous Rectification Flyback Converter. *Dong, H.*, +, *TIE May 2020* 3629-3639
- A New Three-Phase Multipoint Clamped 5L-HPFC With Reduced PSD Count and Switch Stress. *Yalla, N.*, +, *TIE April 2020* 2532-2543
- Accurate Operation Analysis Based Variable On-time Control for 360–800 Hz CRM Boost PFC Converters. *Ren, X.*, +, *TIE Aug. 2020* 6845-6853
- An Integrated Electrified Powertrain Topology With SRG and SRM for Plug-In Hybrid Electrical Vehicle. *Cheng, H.*, +, *TIE Oct. 2020* 8231-8241
- An Interleaved Three-Phase PWM Single-Stage Resonant Rectifier With High-Frequency Isolation. *Li, G.*, +, *TIE Aug. 2020* 6572-6582

- Design and Implementation of Four-Switch Current Sensorless Control for Three-Phase PFC Converter. *Li, C.*, +, *TIE April 2020 3307-3312*
- Design Considerations for Voltage Sensorless Control of a PFC Single-Phase Rectifier Without Electrolytic Capacitors. *Qi, W.*, +, *TIE March 2020 1878-1889*
- Ferdowsi Rectifiers—Single-Phase Buck-Boost Bridgeless PFC Rectifiers With Low Semiconductor Count. *Sharifi, S.*, +, *TIE Nov. 2020 9206-9214*
- High-Efficiency Zero-Voltage-Switching Totem-Pole Bridgeless Rectifier With Integrated Inrush Current Limiter Circuit. *Jeong, Y.*, +, *TIE Sept. 2020 7421-7429*
- Improving Dynamic Performance of Boost PFC Converter Using Current-Harmonic Feedforward Compensation in Synchronous Reference Frame. *Li, S.*, +, *TIE June 2020 4857-4866*
- Minimum DC-Link Capacitance for Single-Phase Applications With Power Factor Correction. *Marcos-Pastor, A.*, +, *TIE June 2020 5204-5208*
- Pulse Train Control Strategy for CCM Boost PFC Converter With Improved Dynamic Response and Unity Power Factor. *Luo, H.*, +, *TIE Dec. 2020 10377-10387*
- Weighted Efficiency Enhancement for Single-Power-Conversion Microinverters Using Hybrid-Mode Modulation Strategy. *Kim, K.*, +, *TIE Dec. 2020 10243-10252*
- Power filters**
- A Dual Half-Bridge Converter With Current Doubler Rectifier. *Zhao, L.*, +, *TIE Aug. 2020 6398-6406*
- A High-Frequency Link Matrix Rectifier With a Pure Capacitive Output Filter in a Discontinuous Conduction Mode. *Lan, D.*, +, *TIE Jan. 2020 4-15*
- A Reliable Single-Phase Bipolar Buck–Boost Direct PWM AC–AC Converter With Continuous Input/Output Currents. *Ahmed, H.F.*, +, *TIE Dec. 2020 10253-10265*
- A ZVT Bidirectional Converter With Coupled-Filter-Inductor and Elimination of Input Current Notches. *Mohammadi, M.R.*, +, *TIE Sept. 2020 7461-7469*
- Analysis and Experimental Validation of Bidirectional Z-Source DC Circuit Breakers. *Savaliya, S.G.*, +, *TIE June 2020 4613-4622*
- Control Scheme to Achieve Multiple Objectives and Superior Reliability for Input-Series-Output-Parallel LCL-Type Grid-Connected Inverter System. *Fang, T.*, +, *TIE Jan. 2020 214-224*
- Design, Analysis, and Impacts of Sinusoidal LC Filter on Pulsewidth Modulated Inverter Fed-Induction Motor Drive. *Mishra, P.*, +, *TIE April 2020 2678-2688*
- Direct Seamless Transfer Strategy by Limiting Voltage Drop of Interface Filter in Energy Storage Equipment of Microgrid. *Zhao, G.*, +, *TIE Dec. 2020 10421-10432*
- Frequency Adaptive Grid Voltage Sensorless Control of LCL-Filtered Inverter Based on Extended Model Observer. *Tran, T.V.*, +, *TIE Sept. 2020 7560-7573*
- Frequency-Adaptive Virtual Flux Estimator-Based Predictive Power Control With Suppression of Dc Voltage Ripples Under Unbalanced Network. *Yang, H.*, +, *TIE Oct. 2020 8969-8979*
- Highly Efficient Single-Phase Buck–Boost Variable-Frequency AC–AC Converter With Inherent Commutation Capability. *Sharifi, S.*, +, *TIE May 2020 3640-3649*
- Inverter Side RL Filter Precise Design for Motor Overvoltage Mitigation in SiC-Based Drives. *Ruffo, R.*, +, *TIE Feb. 2020 863-873*
- LQR Control of Single-Phase Grid-Tied PUC5 Inverter With LCL Filter. *Arab, N.*, +, *TIE Jan. 2020 297-307*
- Robust Current Control of Grid-Tied Inverters Affected by LCL Filter Soft-Saturation. *Osorio, C.R.D.*, +, *TIE Aug. 2020 6550-6561*
- Single-Cycle-Lag Compensator-Based Active Damping for Digitally Controlled LCL/LLCL-Type Grid-Connected Inverters. *Miao, Z.*, +, *TIE March 2020 1980-1990*
- Unified Second-Stage LC Filter Applied in the Three-State Switching Cell Buck–Boost Converter: Static and Dynamic Analysis and Experimentation. *Larico, H.R.E.*, +, *TIE Jan. 2020 225-234*
- Power generation control**
- Γ -Source Magnetic Integrated Filter for Single-Phase Grid Tied Voltage Source Converters. *Masoumi, A.H.*, +, *TIE July 2020 5410-5420*
- A Cooperative Adaptive Droop Based Energy Management and Optimal Voltage Regulation Scheme for DC Microgrids. *Sahoo, S.*, +, *TIE April 2020 2894-2904*
- A Disturbance Rejection-Based Control Strategy for Five-Level T-Type Hybrid Power Converters With Ripple Voltage Estimation Capability. *Khan, S.A.*, +, *TIE Sept. 2020 7364-7374*
- A Novel Order Reduced Synchronous Power Control for Grid-Forming Inverters. *Quan, X.*, +, *TIE Dec. 2020 10989-10995*
- A Reconfigurable Solar Photovoltaic Grid-Tied Inverter Architecture for Enhanced Energy Access in Backup Power Applications. *Venkatramanan, D.*, +, *TIE Dec. 2020 10531-10541*
- Active Power Sharing and Frequency Regulation in Droop-Free Control for Islanded Microgrids Under Electrical and Communication Failures. *Rosero, C.X.*, +, *TIE Aug. 2020 6461-6472*
- ADRC-Based Current Control for Grid-Tied Inverters: Design, Analysis, and Verification. *Cao, Y.*, +, *TIE Oct. 2020 8428-8437*
- An Adaptive Power Sharing Control for Management of DC Microgrids Powered by Fuel Cell and Storage System. *de Aguiar, C.R.*, +, *TIE May 2020 3726-3735*
- An Advanced Voltage Support Scheme Considering the Impact of Zero-Sequence Voltage Under Microgrid Faults Using Model Predictive Control. *Mohapatra, S.R.*, +, *TIE Oct. 2020 8957-8968*
- Bidirectional DC–DC Converter for Modular Residential Battery Energy Storage Systems. *Chub, A.*, +, *TIE March 2020 1944-1955*
- Coordinated Control of Passive Transition from Grid-Connected to Islanded Operation for Three/Single-Phase Hybrid Multimicrogrids Considering Speed and Smoothness. *Wang, C.*, +, *TIE March 2020 1921-1931*
- Cost-Effective Islanded Electrical System With Decentralized Interleaving PWM for Converter Harmonic Reduction. *He, J.*, +, *TIE Oct. 2020 8472-8483*
- Crowbarless Symmetrical Low-Voltage Ride Through Based on Flux Linkage Tracking For Brushless Doubly Fed Induction Generators. *Zhang, A.*, +, *TIE Sept. 2020 7606-7616*
- Distributed Cooperative Control of Multiple Hybrid Energy Storage Systems in a DC Microgrid Using Consensus Protocol. *Chen, X.*, +, *TIE March 2020 1968-1979*
- Disturbance Injection Based Decentralized Identification of Accidental Islanding. *Murugesan, S.*, +, *TIE May 2020 3767-3775*
- DLFCR Reduction Based on Power Predictive Scheme for Full-Bridge Photovoltaic Microinverter. *Kan, J.*, +, *TIE June 2020 4658-4669*
- Dual-Input Quasi-Z-Source PV Inverter: Dynamic Modeling, Design, and Control. *Lashab, A.*, +, *TIE Aug. 2020 6483-6493*
- Elimination of Photovoltaic Mismatching With Improved Submodule Differential Power Processing. *Chu, G.*, +, *TIE April 2020 2822-2833*
- Full Converter Control for Variable-Speed Wind Turbines Without Integral Controller or PLL. *Koiwa, K.*, +, *TIE Nov. 2020 9418-9428*
- Impedance Modeling and DC Bus Voltage Stability Assessment of a Solid-State-Transformer-Enabled Hybrid AC–DC Grid Considering Bidirectional Power Flow. *Ye, Q.*, +, *TIE Aug. 2020 6531-6540*
- Improved Direct Torque Control for a DFIG under Symmetrical Voltage Dip With Transient Flux Damping. *Agha Kashkooli, M.R.*, +, *TIE Jan. 2020 28-37*
- Improved Reweighted Zero-Attracting Quaternion-Valued LMS Algorithm for Islanded Distributed Generation System at IM Load. *Kewat, S.*, +, *TIE May 2020 3705-3716*
- Lyapunov-Based Thermal Fault Diagnosis of Cylindrical Lithium-Ion Batteries. *Wei, J.*, +, *TIE June 2020 4670-4679*
- Mileage-Responsive Wind Power Smoothing. *Lyu, X.*, +, *TIE June 2020 5209-5212*
- Minimum-Loss Control Strategy for a Dual-VSI DFIG DC System. *Marques, G.D.*, +, *TIE Oct. 2020 8175-8185*
- Model Predictive Control for Dual Active Bridge in Naval DC Microgrids Supplying Pulsed Power Loads Featuring Fast Transition and Online Transformer Current Minimization. *Xiao, Q.*, +, *TIE June 2020 5197-5203*
- On Detection of False Data in Cooperative DC Microgrids—A Discordant Element Approach. *Sahoo, S.*, +, *TIE Aug. 2020 6562-6571*

- Online Kron Reduction for Economical Frequency Control of Microgrids. *Abdolmaleki, B.*, +, *TIE Oct. 2020 8461-8471*
- Optimal Voltage-Support Control for Distributed Generation Inverters in *RL* Grid-Faulty Networks. *Garnica, M.*, +, *TIE Oct. 2020 8405-8415*
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- Predictive Control Based DC Microgrid Stabilization With the Dual Active Bridge Converter. *Chen, L.*, +, *TIE Oct. 2020 8944-8956*
- Reducing Distribution Power Loss of Islanded AC Microgrids Using Distributed Electric Springs With Predictive Control. *Yang, Y.*, +, *TIE Oct. 2020 9001-9011*
- Resilient Information Architecture Platform for the Smart Grid: A Novel Open-Source Platform for Microgrid Control. *Tu, H.*, +, *TIE Nov. 2020 9393-9404*
- Resynchronization of Distributed Generation Based on the Universal Droop Controller for Seamless Transfer Between Operation Modes. *Amin, M.*, +, *TIE Sept. 2020 7574-7582*
- Rotor Current Oriented Control Method of DFIG-DC System Without Stator Side Sensors. *Wu, C.*, +, *TIE Nov. 2020 9958-9962*
- Seamless Transition of Synchronous Inverters Using Synchronizing Virtual Torque and Flux Linkage. *Ramezani, M.*, +, *TIE Jan. 2020 319-328*
- Sensorless Rotor Position Estimation of Doubly Fed Induction Generator Based on Backstepping Technique. *Morawiec, M.*, +, *TIE July 2020 5889-5899*
- Sensorless SynRG Based Variable Speed Wind Generator and Single-Stage Solar PV Array Integrated Grid System With Maximum Power Extraction Capability. *Vijay, M. D.*, +, *TIE Sept. 2020 7529-7539*
- Series-Connected-Based Offshore Wind Farms With Full-Bridge Modular Multilevel Converter as Grid- and Generator-side Converters. *Guo, G.*, +, *TIE April 2020 2798-2809*
- Simultaneous Identification and Control for Hybrid Energy Storage System Using Model Predictive Control and Active Signal Injection. *Song, Z.*, +, *TIE Nov. 2020 9768-9778*
- Solar PV Energy Generation System Interfaced to Three Phase Grid With Improved Power Quality. *Singh, A.K.*, +, *TIE May 2020 3798-3808*
- Suppression of Second-Order Harmonic Current for Droop-Controlled Distributed Energy Resource Converters in DC Microgrids. *Liu, G.*, +, *TIE Jan. 2020 358-368*
- Three-Step Switching Frequency Selection Criteria for the Generalized *CLLC*-Type DC Transformer in Hybrid AC–DC Microgrid. *Huang, J.*, +, *TIE Feb. 2020 980-991*
- Two-Stage Robust Optimization for Resilient Operation of Microgrids Considering Hierarchical Frequency Control Structure. *Mohiti, M.*, +, *TIE Nov. 2020 9439-9449*
- Voltage Grid Supporting by Using Variable Structure Adaptive Virtual Impedance for LCL-Voltage Source Converter DG Converters. *Fonseca, T.Q.*, +, *TIE Nov. 2020 9326-9336*
- Weak Grid Intertie WEGS With Hybrid Generalized Integrator for Power Quality Improvement. *Chishty, F.*, +, *TIE Feb. 2020 1113-1123*
- Power generation dispatch**
- A Gossip-Based Distributed Algorithm for Economic Dispatch in Smart Grids With Random Communication Link Failures. *Wang, R.*, +, *TIE June 2020 4635-4645*
- Online Kron Reduction for Economical Frequency Control of Microgrids. *Abdolmaleki, B.*, +, *TIE Oct. 2020 8461-8471*
- Power generation economics**
- A Decentralized Periodic Energy Trading Framework for Pelagic Islanded Microgrids. *Hu, M.*, +, *TIE Sept. 2020 7595-7605*
- A Self-Governed Online Energy Management and Trading for Smart Micro/Nano-Grids. *Latifi, M.*, +, *TIE Sept. 2020 7484-7498*
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- Cost-Effective Islanded Electrical System With Decentralized Interleaving PWM for Converter Harmonic Reduction. *He, J.*, +, *TIE Oct. 2020 8472-8483*
- Online Kron Reduction for Economical Frequency Control of Microgrids. *Abdolmaleki, B.*, +, *TIE Oct. 2020 8461-8471*
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- Power generation faults**
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- DC Microgrid Grounding Impact on Power Electronic Interfaces in Fault Condition. *Naghizadeh, M.*, +, *TIE May 2020 4120-4132*
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- On Autonomous Large-Signal Stabilization for Islanded Multibus DC Microgrids: A Uniform Nonsmooth Control Scheme. *Lin, P.*, +, *TIE June 2020 4600-4612*
- Optimal Voltage-Support Control for Distributed Generation Inverters in *RL* Grid-Faulty Networks. *Garnica, M.*, +, *TIE Oct. 2020 8405-8415*
- Two-Stage Robust Optimization for Resilient Operation of Microgrids Considering Hierarchical Frequency Control Structure. *Mohiti, M.*, +, *TIE Nov. 2020 9439-9449*
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- Electric Load Forecasting Model Using a Multicolumn Deep Neural Networks. *Hoori, A.O.*, +, *TIE Aug. 2020 6473-6482*
- Power generation reliability**
- A Soft-PWM Approach to Power/Signal Synchronous Transmission for SRG-Based DC Microgrids. *Yu, D.*, +, *TIE Oct. 2020 8450-8460*
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- Crowbarless Symmetrical Low-Voltage Ride Through Based on Flux Linkage Tracking For Brushless Doubly Fed Induction Generators. *Zhang, A.*, +, *TIE Sept. 2020 7606-7616*
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- Lyapunov-Based Thermal Fault Diagnosis of Cylindrical Lithium-Ion Batteries. *Wei, J.*, +, *TIE June 2020 4670-4679*
- On Autonomous Large-Signal Stabilization for Islanded Multibus DC Microgrids: A Uniform Nonsmooth Control Scheme. *Lin, P.*, +, *TIE June 2020 4600-4612*
- On Detection of False Data in Cooperative DC Microgrids—A Discordant Element Approach. *Sahoo, S.*, +, *TIE Aug. 2020 6562-6571*
- Optimal Voltage-Support Control for Distributed Generation Inverters in *RL* Grid-Faulty Networks. *Garnica, M.*, +, *TIE Oct. 2020 8405-8415*
- Robust Self-Scheduling of Operational Processes for Industrial Demand Response Aggregators. *Golmohamadi, H.*, +, *TIE Feb. 2020 1387-1395*
- Voltage Grid Supporting by Using Variable Structure Adaptive Virtual Impedance for LCL-Voltage Source Converter DG Converters. *Fonseca, T.Q.*, +, *TIE Nov. 2020 9326-9336*
- Power generation scheduling**
- Robust Self-Scheduling of Operational Processes for Industrial Demand Response Aggregators. *Golmohamadi, H.*, +, *TIE Feb. 2020 1387-1395*

Two-Stage Robust Optimization for Resilient Operation of Microgrids Considering Hierarchical Frequency Control Structure. *Mohiti, M.*, +, *TIE Nov. 2020 9439-9449*

Power grids

Γ -Source Magnetic Integrated Filter for Single-Phase Grid Tied Voltage Source Converters. *Masoumi, A.H.*, +, *TIE July 2020 5410-5420*

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A CM Filter Configuration for Grid-Tied Voltage Source Converters. *Gulur, S.*, +, *TIE Oct. 2020 8100-8111*

A Coupled Inductor-Based Buck–Boost Type Grid Connected Transformerless PV Inverter Having the Ability to Control Two Subarrays Simultaneously. *Dutta, S.*, +, *TIE July 2020 5543-5553*

A Decentralized Control for Cascaded Inverters in Grid-Connected Applications. *Li, L.*, +, *TIE Sept. 2020 8064-8071*

A Digital Phase Synchronization Method for Bidirectional Inductive Power Transfer. *Jia, S.*, +, *TIE Aug. 2020 6450-6460*

A Disturbance Rejection-Based Control Strategy for Five-Level T-Type Hybrid Power Converters With Ripple Voltage Estimation Capability. *Khan, S.A.*, +, *TIE Sept. 2020 7364-7374*

A Feedback-Based Passive Islanding Detection Technique for One-Cycle-Controlled Single-Phase Inverter Used in Photovoltaic Systems. *Reddy, V.R.*, +, *TIE Aug. 2020 6541-6549*

A Four-Quadrant Single-Phase Grid-Connected Converter With Only Two High-Frequency Switches. *Siu, K.K.M.*, +, *TIE March 2020 1899-1909*

A Global Convergence Estimator of Grid Voltage Parameters for More Electric Aircraft. *Dai, Z.*, +, *TIE Sept. 2020 7540-7549*

A High-Performance and Economical Multiport Hybrid Direct Current Circuit Breaker. *He, J.*, +, *TIE Oct. 2020 8921-8930*

A Hybrid Boost–Flyback/Flyback Microinverter for Photovoltaic Applications. *Zhang, F.*, +, *TIE Jan. 2020 308-318*

A Hybrid Phase Shift-Pulsewidth Modulation and Asymmetric Selective Harmonic Current Mitigation-Pulsewidth Modulation Technique to Reduce Harmonics and Inductance of Single-Phase Grid-Tied Cascaded Multilevel Converters. *Moeini, A.*, +, *TIE Dec. 2020 10388-10398*

A New and Modular Active Snubber Cell for Inverters. *Bodur, H.*, +, *TIE Jan. 2020 288-296*

A New Single-Phase Transformerless Grid-Connected Inverter With Boosting Ability and Common Ground Feature. *Vosoughi, N.*, +, *TIE Nov. 2020 9313-9325*

A New Transformerless Inverter With Leakage Current Limiting and Voltage Boosting Capabilities for Grid-Connected PV Applications. *Jahan, H.K.*, *TIE Dec. 2020 10542-10551*

A Novel Converter Station Structure for Improving Multiterminal HVDC System Resiliency Against AC and DC Faults. *Wang, S.*, +, *TIE June 2020 4270-4280*

A Novel Current Modulation Method to Eliminate Low-Frequency Harmonics in Single-Stage Dual Active Bridge AC–DC Converter. *Zengin, S.*, +, *TIE Feb. 2020 1048-1058*

A Novel High-Voltage DC Transformer Based on Diode-Clamped Modular Multilevel Converters With Voltage Self-Balancing Capability. *Zheng, T.*, +, *TIE Dec. 2020 10304-10314*

A Novel Order Reduced Synchronous Power Control for Grid-Forming Inverters. *Quan, X.*, +, *TIE Dec. 2020 10989-10995*

A Novel Scalar PWM Method to Reduce Leakage Current in Three-Phase Two-Level Transformerless Grid-Connected VSIs. *Xu, J.*, +, *TIE May 2020 3788-3797*

A PWM ZVS High-Frequency-Link Three-Phase Inverter With T-Type NPC Unfolder. *Pal, A.*, +, *TIE Sept. 2020 7146-7156*

A Reconfigurable Solar Photovoltaic Grid-Tied Inverter Architecture for Enhanced Energy Access in Backup Power Applications. *Venkatramanan, D.*, +, *TIE Dec. 2020 10531-10541*

A Robust Frequency Estimation Method for Aircraft Grids Under Distorted Conditions. *Dai, Z.*, +, *TIE May 2020 4254-4258*

A Waveform-Subtraction Based Single-Stage Ripple-Suppression Converter Family for Multiple Waveform Generation. *Zhang, G.*, +, *TIE March 2020 1890-1898*

ADRC-Based Current Control for Grid-Tied Inverters: Design, Analysis, and Verification. *Cao, Y.*, +, *TIE Oct. 2020 8428-8437*

An Active Islanding Detection Strategy With Zero Nondetection Zone for Operation in Single and Multiple Inverter Mode Using GPS Synchronized Pattern. *Sivadas, D.*, +, *TIE July 2020 5554-5564*

An Advanced Voltage Support Scheme Considering the Impact of Zero-Sequence Voltage Under Microgrid Faults Using Model Predictive Control. *Mohapatra, S.R.*, +, *TIE Oct. 2020 8957-8968*

An Approach Towards Extreme Fast Charging Station Power Delivery for Electric Vehicles with Partial Power Processing. *Iyer, V.M.*, +, *TIE Oct. 2020 8076-8087*

An Enhanced Control Strategy for AC–DC Matrix Converters Under Unbalanced Grid Voltage. *Nguyen, T.*, +, *TIE March 2020 1718-1727*

An Open-Loop Synchronization Technique With Simple Structure for Phase Error Compensation and Frequency Estimation. *Liu, P.*, +, *TIE Oct. 2020 8936-8940*

An Optimized Third Harmonic Injection Method for Reducing DC-Link Voltage Fluctuation and Alleviating Power Imbalance of Three-Phase Cascaded H-Bridge Photovoltaic Inverter. *Hu, Y.*, +, *TIE April 2020 2488-2498*

Analysis and Design of a Novel Six-Switch Five-Level Active Boost Neutral Point Clamped Inverter. *Siwakoti, Y.P.*, +, *TIE Dec. 2020 10485-10496*

Characteristic Analysis and Risk Assessment for Voltage–Frequency Coupled Transient Instability of Large-Scale Grid-Connected Renewable Energy Plants During LVRT. *Pei, J.*, +, *TIE July 2020 5515-5530*

Circulating Current Analysis and the Improved D– Σ Digital Control Strategy for Multiparalleled Three-Level T-Type Grid-Connected Inverters. *Ren, B.*, +, *TIE April 2020 2810-2821*

Classification of Complex Power Quality Disturbances Using Optimized S-Transform and Kernel SVM. *Tang, Q.*, +, *TIE Nov. 2020 9715-9723*

Collaborative Control and Allocation Method of RSC and GSC for DFIG System to Suppress High-Frequency Resonance and Harmonics. *Pang, B.*, +, *TIE Dec. 2020 10509-10519*

Control Scheme to Achieve Multiple Objectives and Superior Reliability for Input-Series-Output-Parallel LCL-Type Grid-Connected Inverter System. *Fang, T.*, +, *TIE Jan. 2020 214-224*

Coordinated Control of Passive Transition from Grid-Connected to Islanded Operation for Three/Single-Phase Hybrid Multimicrogrids Considering Speed and Smoothness. *Wang, C.*, +, *TIE March 2020 1921-1931*

Cosimulation of Shifted-Frequency/Dynamic Phasor and Electromagnetic Transient Models of Hybrid LCC-MMC DC Grids on Integrated CPU–GPUs. *Shu, D.*, +, *TIE Aug. 2020 6517-6530*

Crowbarless Symmetrical Low-Voltage Ride Through Based on Flux Linkage Tracking For Brushless Doubly Fed Induction Generators. *Zhang, A.*, +, *TIE Sept. 2020 7606-7616*

Damping HVDC Circuit Breaker With Current Commutation and Limiting Integrated. *Wu, Y.*, +, *TIE Dec. 2020 10433-10441*

DC Fault Analysis Models of Three Converter Topologies Considering Control Effects. *Li, Y.*, +, *TIE Nov. 2020 9480-9491*

DC Fault Detection in Meshed MTdc Systems Based on Transient Average Value of Current. *Li, Y.*, +, *TIE March 2020 1932-1943*

DC Voltage Control Strategy of Three-Terminal Medium-Voltage Power Electronic Transformer-Based Soft Normally Open Points. *Ouyang, S.*, +, *TIE May 2020 3684-3695*

DC-Link Voltage-Balancing Strategy Based on Optimal Switching Sequence Model Predictive Control for Single-Phase H-NPC Converters. *Vazquez, S.*, +, *TIE Sept. 2020 7410-7420*

Detection of Grid Voltage Fundamental and Harmonic Components Using Kalman Filter Based on Dynamic Tracking Model. *Nie, X.*, *TIE Feb. 2020 1191-1200*

Direct Seamless Transfer Strategy by Limiting Voltage Drop of Interface Filter in Energy Storage Equipment of Microgrid. *Zhao, G.*, +, *TIE Dec. 2020 10421-10432*

Direct Single-Power-Conversion Bidirectional Grid-Connected Inverter Solving Commutation Problem. *Jeong, S.*, +, *TIE Dec. 2020 10335-10345*

Discrete-Time Modified UDE-Based Current Control for L+C+L-Type Grid-Tied Inverters. *Wu, Y.*, +, *TIE March 2020 2143-2154*

- Double-Thyristor-Based Protection for Valve-Side Single-Phase-to-Ground Faults in HB-MMC-Based Bipolar HVDC Systems. *Li, G.*, +, *TIE July 2020 5810-5815*
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- Electrothermal Transient Behavioral Modeling of Thyristor-Based Ultrafast Mechatronic Circuit Breaker for Real-Time DC Grid Emulation. *Lin, N.*, +, *TIE March 2020 1660-1670*
- Finite Control Set Model Predictive Control for LCL-Filtered Grid-Tied Inverter With Minimum Sensors. *Chen, X.*, +, *TIE Dec. 2020 9980-9990*
- Frequency Adaptive Grid Voltage Sensorless Control of LCL-Filtered Inverter Based on Extended Model Observer. *Tran, T.V.*, +, *TIE Sept. 2020 7560-7573*
- Frequency-Adaptive Virtual Flux Estimator-Based Predictive Power Control With Suppression of Dc Voltage Ripples Under Unbalanced Network. *Yang, H.*, +, *TIE Oct. 2020 8969-8979*
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- Impedance-Based Harmonic Current Suppression Method for VSG Connected to Distorted Grid. *Zhou, L.*, +, *TIE July 2020 5490-5502*
- Improved Direct Torque Control for a DFIG under Symmetrical Voltage Dip With Transient Flux Damping. *Agha Kashkooli, M.R.*, +, *TIE Jan. 2020 28-37*
- Integrated-Power-Control-Strategy-Based Electrolytic Capacitor-Less Back-to-Back Converter for Variable Frequency Speed Control System. *Bao, D.*, +, *TIE Dec. 2020 10065-10074*
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- New Concept for Fault Current Limiter With Voltage Restoration Capability. *Nourmohamadi, H.*, +, *TIE Dec. 2020 10001-10010*
- Optimal Voltage-Support Control for Distributed Generation Inverters in RL Grid-Faulty Networks. *Garnica, M.*, +, *TIE Oct. 2020 8405-8415*
- Optimization and Implementation of the Proportional-Resonant Controller for Grid-Connected Inverter With Significant Computation Delay. *Husev, O.*, +, *TIE Feb. 2020 1201-1211*
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- Optimum Selection of Circuit Breaker Parameters Based on Analytical Calculation of Overcurrent and Overvoltage in Multiterminal HVDC Grids. *Song, Y.*, +, *TIE May 2020 4133-4143*
- Parallel Nine-Phase Generator Control in a Medium-Voltage DC Wind System. *Beik, O.*, +, *TIE Oct. 2020 8112-8122*
- Piezoelectric–Piezoresistive Coupling MEMS Sensors for Measurement of Electric Fields of Broad Bandwidth and Large Dynamic Range. *Xue, F.*, +, *TIE Jan. 2020 551-559*
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- Seamless Transition of Synchronous Inverters Using Synchronizing Virtual Torque and Flux Linkage. *Ramezani, M.*, +, *TIE Jan. 2020 319-328*
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- Series-Connected-Based Offshore Wind Farms With Full-Bridge Modular Multilevel Converter as Grid- and Generator-side Converters. *Guo, G.*, +, *TIE April 2020 2798-2809*
- Single-Cycle-Lag Compensator-Based Active Damping for Digitally Controlled LCL/LLCL-Type Grid-Connected Inverters. *Miao, Z.*, +, *TIE March 2020 1980-1990*
- Single-Phase Dual-Mode Interleaved Multilevel Inverter for PV Applications. *Pourfaraj, A.*, +, *TIE April 2020 2905-2915*
- Solar PV Energy Generation System Interfaced to Three Phase Grid With Improved Power Quality. *Singh, A.K.*, +, *TIE May 2020 3798-3808*
- Unified Reduced Model for a Dual-Control Scheme of the High-Speed Response Brushless Excitation System of Synchronous Generators. *Noland, J.K.*, +, *TIE June 2020 4474-4484*
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- Power harmonic filters**
- A CM Filter Configuration for Grid-Tied Voltage Source Converters. *Gulur, S.*, +, *TIE Oct. 2020 8100-8111*
- A Hybrid Phase Shift-Pulsewidth Modulation and Asymmetric Selective Harmonic Current Mitigation-Pulsewidth Modulation Technique to Reduce Harmonics and Inductance of Single-Phase Grid-Tied Cascaded Multilevel Converters. *Moieni, A.*, +, *TIE Dec. 2020 10388-10398*
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- Cost-Effective Islanded Electrical System With Decentralized Interleaving PWM for Converter Harmonic Reduction. *He, J.*, +, *TIE Oct. 2020 8472-8483*
- Discrete-Time Modified UDE-Based Current Control for L+C+L-Type Grid-Tied Inverters. *Wu, Y.*, +, *TIE March 2020 2143-2154*
- Dual-Loop-Based Harmonic Current Control Strategy and Admittance Modeling for a Multimodular Parallel SAPFs System. *Liu, K.*, +, *TIE July 2020 5456-5466*
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Power inductors

A 20 MHz Low-Profile DC–DC Converter With Magnetic-Free Characteristics. Guan, Y., +, *TIE Feb. 2020* 1555-1567

A Closed-Loop Modulation Scheme for Duty Cycle Compensation of PWM Voltage Distortion at High Switching Frequency Inverter. Ren, R., +, *TIE Feb. 2020* 1475-1486

A Dual Half-Bridge Converter With Current Doubler Rectifier. Zhao, L., +, *TIE Aug. 2020* 6398-6406

A High Step-Down Buck Converter With Self-Driven Synchronous Rectifier. Soleymani, B., +, *TIE Dec. 2020* 10266-10273

A Hybrid Interleaved DC–DC Converter With a Wide Step-Up Regulation Range and Ultralow Voltage Stress. Hu, X., +, *TIE July 2020* 5479-5489

A Load-Independent LCC-Compensated Wireless Power Transfer System for Multiple Loads With a Compact Coupler Design. Cheng, C., +, *TIE June 2020* 4507-4515

A New Coupled Inductor Nonisolated High Step-Up Quasi Z-Source DC–DC Converter. Samadian, A., +, *TIE July 2020* 5389-5397

A New Soft Switching DC–DC Converter With High Voltage Gain Capability. Mohseni, P., +, *TIE Sept. 2020* 7386-7398

A ZVT Bidirectional Converter With Coupled-Filter-Inductor and Elimination of Input Current Notches. Mohammadi, M.R., +, *TIE Sept. 2020* 7461-7469

An Active-Clamping ZVS Interleaved Buck/Boost Bidirectional Converter With One Auxiliary Switch. Mohammadi, M.R., *TIE Sept. 2020* 7430-7438

An Optimized Modulation Strategy for the Three-Level DAB Converter With Five Control Degrees of Freedom. Liu, P., +, *TIE Jan. 2020* 254-264

An Ultra-High Step-Up DC–DC Converter With Extendable Voltage Gain and Soft-Switching Capability. Alavi, P., +, *TIE Nov. 2020* 9238-9250

Analysis and Design of the LLC Resonant Converter With Variable Inductor Control Based on Time-Domain Analysis. Wei, Y., +, *TIE July 2020* 5432-5443

Analysis and Experimental Validation of Bidirectional Z-Source DC Circuit Breakers. Savaliya, S.G., +, *TIE June 2020* 4613-4622

Analysis, Design, and Implementation of a ZVT High Step-Up DC–DC Converter With Continuous Input Current. Fani, R., +, *TIE Dec. 2020* 10455-10463

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Dual-Input Quasi-Z-Source PV Inverter: Dynamic Modeling, Design, and Control. Lashab, A., +, *TIE Aug. 2020* 6483-6493

High-Frequency Resonant ZVS Boost Converter With Grounded Switches and Continuous Input Current. Jabbari, M., +, *TIE Feb. 2020* 1059-1067

Highly Efficient Single-Phase Buck–Boost Variable-Frequency AC–AC Converter With Inherent Commutation Capability. Sharifi, S., +, *TIE May 2020* 3640-3649

Impedance-Based Harmonic Current Suppression Method for VSG Connected to Distorted Grid. Zhou, L., +, *TIE July 2020* 5490-5502

Inverter Side RL Filter Precise Design for Motor Overvoltage Mitigation in SiC-Based Drives. Ruffo, R., +, *TIE Feb. 2020* 863-873

Magnetic Coupling Branch Based Dual-Input/Output DC–DC Converters With Improved Cross-Regulation and Soft-Switching Operation. Liu, Y., +, *TIE Sept. 2020* 7167-7178

Modulation Induced Current Imbalance and Its Sensorless Control of a GaN-Based Four-Phase DC–DC Power Amplifier. Wang, C., +, *TIE Feb. 2020* 1520-1531

Novel Motor-Shaped Rotational Inductor for Motor Drive Applications. Khawja, M.R., +, *TIE March 2020* 1844-1854

Optimization of High-Density and High-Efficiency Switched-Tank Converter for Data Center Applications. Lyu, X., +, *TIE Feb. 2020* 1626-1637

Relationship Between Homopolar Inductor Machine and Wound-Field Synchronous Machine. Ye, C., +, *TIE Feb. 2020* 919-930

S-Hybrid Step-Down DC–DC Converter—Analysis of Operation and Design Considerations. Seo, G., +, *TIE Jan. 2020* 265-275

Switched Capacitor–Inductor Network Based Ultra-Gain DC–DC Converter Using Single Switch. Kumar, G.G., +, *TIE Dec. 2020* 10274-10283

Zero Voltage Switching Control Method for MHz Boundary Conduction Mode Converters. Hernandez, J.C., +, *TIE Feb. 2020* 1544-1554

Power integrated circuits

A Low-EMI Continuous-Time Delta-Sigma-Modulator Buck Converter With Transient Response Eruption Techniques. Hwang, Y., +, *TIE Aug. 2020* 6854-6863

Power markets

A Decentralized Bilateral Energy Trading System for Peer-to-Peer Electricity Markets. Khorasany, M., +, *TIE June 2020* 4646-4657

A Decentralized Periodic Energy Trading Framework for Pelagic Islanded Microgrids. Hu, M., +, *TIE Sept. 2020* 7595-7605

A Self-Governed Online Energy Management and Trading for Smart Micro/Nano-Grids. Latifi, M., +, *TIE Sept. 2020* 7484-7498

Power measurement

Fault Detection and Diagnosis of Industrial Robot Based on Power Consumption Modeling. Sabry, A.H., +, *TIE Sept. 2020* 7929-7940

Reducing Distribution Power Loss of Islanded AC Microgrids Using Distributed Electric Springs With Predictive Control. Yang, Y., +, *TIE Oct. 2020* 9001-9011

Voltage-Source Converter Energy Efficiency Classification in Accordance With IEC 61800-9-2. Aarniovuori, L., +, *TIE Oct. 2020* 8242-8251

Power MOSFET

1-kV Input 1-MHz GaN Stacked Bridge LLC Converters. Zhang, Z., +, *TIE Nov. 2020* 9227-9237

on-Time Mismatch Based System Identification Technique for Buck Converters. Gietler, H., +, *TIE Sept. 2020* 7898-7908

A 300-kHz 6.6-kW SiC Bidirectional LLC Onboard Charger. Li, H., +, *TIE Feb. 2020* 1435-1445

A High Step-Down Buck Converter With Self-Driven Synchronous Rectifier. Soleymani, B., +, *TIE Dec. 2020* 10266-10273

A Novel High Step-Up High Efficiency Interleaved DC–DC Converter With Coupled Inductor and Built-In Transformer for Renewable Energy Systems. Nouri, T., +, *TIE Aug. 2020* 6505-6516

Design of Monolithic All-NMOS Three-Level Three-phase Switched-Capacitor Power Converter for Industrial Environmental Sensor Conditioning. Chen, L., +, *TIE Nov. 2020* 9873-9881

Digitally Controlled Gate Current Source-Based Active Gate Driver for Silicon Carbide MOSFETs. Sukhatme, Y., +, *TIE Dec. 2020* 10121-10133

Full-Scale Physical Simulator of All SiC Traction Motor Drive With Onboard Supercapacitor ESS for Light-Rail Public Transportation. Yildirim, D., +, *TIE Aug. 2020* 6290-6301

High Efficiency High Density 1 MHz 380–12 V DCX With Low FoM Devices. Wu, X., +, *TIE Feb. 2020* 1648-1656

Inverter Side RL Filter Precise Design for Motor Overvoltage Mitigation in SiC-Based Drives. Ruffo, R., +, *TIE Feb. 2020* 863-873

Multitransformer Primary-Side Regulated Flyback Converter for Supplying Isolated IGBT and MOSFET Drivers. Kolincio, M., +, *TIE Feb. 2020* 1005-1012

Performance and Reliability Review of 650 V and 900 V Silicon and SiC Devices: MOSFETs, Cascode JFETs and IGBTs. Gonzalez, J.O., +, *TIE Sept. 2020* 7375-7385

Stacked Class-E Amplifier. Pena-Eguiluz, R., +, *TIE Oct. 2020* 8292-8301

Power plants

Euler's Formula-Based Stability Analysis for Wideband Harmonic Resonances. Chen, Z., +, *TIE Nov. 2020* 9405-9417

Power semiconductor devices

A New Three-Phase Multipoint Clamped 5L-HPFC With Reduced PSD Count and Switch Stress. Yalla, N., +, *TIE April 2020* 2532-2543

Dual-Loop-Based Harmonic Current Control Strategy and Admittance Modeling for a Multimodular Parallel SAPFs System. Liu, K., +, *TIE July 2020* 5456-5466

Highly Efficient Single-Phase Buck–Boost Variable-Frequency AC–AC Converter With Inherent Commutation Capability. Sharifi, S., +, *TIE May 2020* 3640-3649

Imbalance Current Analysis and Its Suppression Methodology for Parallel SiC MOSFETs with Aid of a Differential Mode Choke. *Zeng, Z.*, +, *TIE Feb. 2020 1508-1519*

Multibattery-Fed Neutral-Point-Clamped DC–AC Converter With SoC Balancing Control to Maximize Capacity Utilization. *Busquets-Monge, S.*, +, *TIE Jan. 2020 16-27*

Power semiconductor diodes

An Ultra-High Step-Up DC–DC Converter With Extendable Voltage Gain and Soft-Switching Capability. *Alavi, P.*, +, *TIE Nov. 2020 9238-9250*

Collaboratively Harvesting Ambient Radiofrequency and Thermal Energy. *Guo, L.*, +, *TIE May 2020 3736-3746*

Soft-Switched High Step-Up Quasi-Z-Source DC–DC Converter. *Poorali, B.*, +, *TIE June 2020 4547-4555*

Power semiconductor switches

A 5-Level Inverter Scheme Using Single DC Link With Reduced Number of Floating Capacitors and Switches for Open-End IM Drives. *Majumder, M.G.*, +, *TIE Feb. 2020 960-968*

A High-Voltage Series-Stacked IGBT Switch With Active Energy Recovery Feature for Pulsed Power Applications. *Mohsenzade, S.*, +, *TIE May 2020 3650-3661*

A Novel Mixture Solid-State Switch Based on IGCT With High Capacity and IGBT With High Turn-off Ability for Hybrid DC Breakers. *Zhang, X.*, +, *TIE June 2020 4485-4495*

IGCT Low-Current Switching—TCAD and Experimental Characterization. *Stamenkovic, D.*, +, *TIE Aug. 2020 6302-6311*

Power supplies to apparatus

Multitransformer Primary-Side Regulated Flyback Converter for Supplying Isolated IGBT and MOSFET Drivers. *Kolincio, M.*, +, *TIE Feb. 2020 1005-1012*

Power supply circuits

Sequential Offline-Online-Offline Measurement Approach for High-Frequency LCLC Resonant Converters in the TWTA Applications. *Zhao, B.*, +, *TIE Feb. 2020 1568-1579*

Power supply quality

A 2–10 MHz GaN HEMTs Half-Bridge Driver With Bandgap Reference Comparator Clamping and Dual Level Shifters for Automotive Applications. *Yan, R.*, +, *TIE Feb. 2020 1446-1454*

A Decentralized Control for Cascaded Inverters in Grid-Connected Applications. *Li, L.*, +, *TIE Sept. 2020 8064-8071*

A High Step-Down Buck Converter With Self-Driven Synchronous Rectifier. *Soleymani, B.*, +, *TIE Dec. 2020 10266-10273*

A Hybrid Boost–Flyback/Flyback Microinverter for Photovoltaic Applications. *Zhang, F.*, +, *TIE Jan. 2020 308-318*

A Reliable Single-Phase Bipolar Buck–Boost Direct PWM AC–AC Converter With Continuous Input/Output Currents. *Ahmed, H.F.*, +, *TIE Dec. 2020 10253-10265*

A Transformer Integrated Filtering System for Power Quality Improvement of Industrial DC Supply System. *Liu, Q.*, +, *TIE May 2020 3329-3339*

An Optimal Compensation Method of Shunt Active Power Filters for System-Wide Voltage Quality Improvement. *Zhai, H.*, +, *TIE Feb. 2020 1270-1281*

Classification of Complex Power Quality Disturbances Using Optimized S-Transform and Kernel SVM. *Tang, Q.*, +, *TIE Nov. 2020 9715-9723*

Collaborative Control and Allocation Method of RSC and GSC for DFIG System to Suppress High-Frequency Resonance and Harmonics. *Pang, B.*, +, *TIE Dec. 2020 10509-10519*

Highly Efficient Single-Phase Buck–Boost Variable-Frequency AC–AC Converter With Inherent Commutation Capability. *Sharifi, S.*, +, *TIE May 2020 3640-3649*

Improved Reweighted Zero-Attracting Quaternion-Valued LMS Algorithm for Islanded Distributed Generation System at IM Load. *Kewat, S.*, +, *TIE May 2020 3705-3716*

Integrated Buck and Modified Push–Pull DC–DC Converter With High Step-Down Ratio. *Tseng, K.*, +, *TIE Jan. 2020 235-243*

Magnetic-Integrated Multipulse Rectifier Transformer With a Tight Impedance Equalizing Strategy for Power Quality Improvement of DC Traction Power Supply System. *An, B.*, +, *TIE Aug. 2020 6270-6279*

Multifunction Transformer With Adjustable Magnetic Stage Based on Nanocomposite Semihard Magnets. *Chen, Z.*, +, *TIE May 2020 4226-4234*

On Autonomous Large-Signal Stabilization for Islanded Multibus DC Microgrids: A Uniform Nonsmooth Control Scheme. *Lin, P.*, +, *TIE June 2020 4600-4612*

Optimal Dynamic Harmonic Extraction and Suppression in Power Conditioning Applications. *Ornelas-Tellez, F.*, +, *TIE Sept. 2020 7909-7918*

Optimal Input and Output Power Quality Control of Single-Phase AC–DC–DC Converter With Significant DC-Link Voltage Ripple. *Meng, L.*, +, *TIE Dec. 2020 10366-10376*

Optimal Voltage-Support Control for Distributed Generation Inverters in RL Grid-Faulty Networks. *Garnica, M.*, +, *TIE Oct. 2020 8405-8415*

Power Quality Enhancement Using Euclidean Direction Search Based Control Technique. *Badoni, M.*, +, *TIE March 2020 2231-2240*

Reducing Distribution Power Loss of Islanded AC Microgrids Using Distributed Electric Springs With Predictive Control. *Yang, Y.*, +, *TIE Oct. 2020 9001-9011*

Sensorless SynRG Based Variable Speed Wind Generator and Single-Stage Solar PV Array Integrated Grid System With Maximum Power Extraction Capability. *Vijay, M. D.*, +, *TIE Sept. 2020 7529-7539*

Solar PV Energy Generation System Interfaced to Three Phase Grid With Improved Power Quality. *Singh, A.K.*, +, *TIE May 2020 3798-3808*

Weak Grid Inertia WEGS With Hybrid Generalized Integrator for Power Quality Improvement. *Chishti, F.*, +, *TIE Feb. 2020 1113-1123*

Power system CAD

A Currentless Submodule Individual Voltage Balancing Control for Modular Multilevel Converters. *Deng, F.*, +, *TIE Nov. 2020 9370-9382*

A High-Performance and Economical Multiport Hybrid Direct Current Circuit Breaker. *He, J.*, +, *TIE Oct. 2020 8921-8930*

DC Fault Current Blocking With the Coordination of Half-Bridge MMC and the Hybrid DC Breaker. *Iman-Eini, H.*, +, *TIE July 2020 5503-5514*

DC Fault Detection in Meshed MTdc Systems Based on Transient Average Value of Current. *Li, Y.*, +, *TIE March 2020 1932-1943*

Double-Thyristor-Based Protection for Valve-Side Single-Phase-to-Ground Faults in HB-MMC-Based Bipolar HVDC Systems. *Li, G.*, +, *TIE July 2020 5810-5815*

Electrothermal Transient Behavioral Modeling of Thyristor-Based Ultrafast Mechatronic Circuit Breaker for Real-Time DC Grid Emulation. *Lin, N.*, +, *TIE March 2020 1660-1670*

IGCT Low-Current Switching—TCAD and Experimental Characterization. *Stamenkovic, D.*, +, *TIE Aug. 2020 6302-6311*

Optimum Selection of Circuit Breaker Parameters Based on Analytical Calculation of Overcurrent and Overvoltage in Multiterminal HVDC Grids. *Song, Y.*, +, *TIE May 2020 4133-4143*

Protection of Single-Phase Fault at the Transformer Valve Side of FB-MMC-Based Bipolar HVdc Systems. *Liu, W.*, +, *TIE Oct. 2020 8416-8427*

Power system control

dq Synchronous Reference Frame Model of A Series–Series Tuned Inductive Power Transfer System. *Lee, S.*, +, *TIE Dec. 2020 10325-10334*

A Novel Controlled Frequency Band Impedance Measurement Approach for Single-Phase Railway Traction Power System. *Hu, H.*, +, *TIE Jan. 2020 244-253*

A Novel High-Voltage DC Transformer Based on Diode-Clamped Modular Multilevel Converters With Voltage Self-Balancing Capability. *Zheng, T.*, +, *TIE Dec. 2020 10304-10314*

Accurate Operation Analysis Based Variable On-time Control for 360–800 Hz CRM Boost PFC Converters. *Ren, X.*, +, *TIE Aug. 2020 6845-6853*

An Open-Loop Synchronization Technique With Simple Structure for Phase Error Compensation and Frequency Estimation. *Liu, P.*, +, *TIE Oct. 2020 8936-8940*

An Optimal Compensation Method of Shunt Active Power Filters for System-Wide Voltage Quality Improvement. *Zhai, H.*, +, *TIE Feb. 2020 1270-1281*

Analysis and Design of a Novel Six-Switch Five-Level Active Boost Neutral Point Clamped Inverter. *Siwakoti, Y.P.*, +, *TIE Dec. 2020 10485-10496*

Comments on “Fault-Tolerant Control Strategies for T-Type Three-Level Inverters Considering Neutral-Point Voltage Oscillations”. Wang, J., +, *TIE Aug. 2020 7114-7115*

Composite Hierarchical Pitch Angle Control for a Tidal Turbine Based on the Uncertainty and Disturbance Estimator. Yin, X., +, *TIE Jan. 2020 329-339*

Control Scheme to Achieve Multiple Objectives and Superior Reliability for Input-Series-Output-Parallel LCL-Type Grid-Connected Inverter System. Fang, T., +, *TIE Jan. 2020 214-224*

Coupled Inductor Based Regenerative Cascaded Multicell Converter for Drives With Multilevel Voltage Operation at Both Input and Output Sides. Sau, S., +, *TIE Jan. 2020 147-158*

DC-Link Voltage-Balancing Strategy Based on Optimal Switching Sequence Model Predictive Control for Single-Phase H-NPC Converters. Vazquez, S., +, *TIE Sept. 2020 7410-7420*

Design and Analysis of Inductively Coupled Power Transfer System on Mooring Buoy With Double Ultracapacitor Chargers Using Indirect Control. Xu, J., +, *TIE June 2020 4836-4845*

Design of Robust Discretized Sliding Mode Controller: Analysis and Application to Buck Converters. Cheng, Y., +, *TIE Dec. 2020 10672-10681*

Direct Single-Power-Conversion Bidirectional Grid-Connected Inverter Solving Commutation Problem. Jeong, S., +, *TIE Dec. 2020 10335-10345*

Economic Feedback Model Predictive Control of Wave Energy Converters. Zhan, S., +, *TIE May 2020 3932-3943*

Electrothermal-Based Junction Temperature Estimation Model for Converter of Switched Reluctance Motor Drive System. Chen, H., +, *TIE Feb. 2020 874-883*

Improving Dynamic Performance of Boost PFC Converter Using Current-Harmonic Feedforward Compensation in Synchronous Reference Frame. Li, S., +, *TIE June 2020 4857-4866*

LQR Control of Single-Phase Grid-Tied PUC5 Inverter With LCL Filter. Arab, N., +, *TIE Jan. 2020 297-307*

Multivector-Based Model Predictive Control With Geometric Solution of a Five-Phase Flux-Switching Permanent Magnet Motor. Hua, W., +, *TIE Dec. 2020 10035-10045*

Novel Adaptive Controller for Effective Magnetic Measurement Under Arbitrary Magnetization. Vo, A., +, *TIE Nov. 2020 9841-9850*

On the Decentralized Energy Management Strategy for the All-Electric APU of Future More Electric Aircraft Composed of Multiple Fuel Cells and Supercapacitors. Chen, J., +, *TIE Aug. 2020 6183-6194*

Optimal Dynamic Harmonic Extraction and Suppression in Power Conditioning Applications. Ornelas-Tellez, F., +, *TIE Sept. 2020 7909-7918*

Proposing a Multimode Switching Control Method for a Half-Bridge Converter to Improve Its Efficiency Over the Entire Load Variations. Ghanbari, A.R., +, *TIE March 2020 1910-1920*

Pulse Train Control Strategy for CCM Boost PFC Converter With Improved Dynamic Response and Unity Power Factor. Luo, H., +, *TIE Dec. 2020 10377-10387*

Realization of High Fidelity Power-Hardware-in-the-Loop Capability Using a MW-Scale Motor-Generator Set. Hong, Q., +, *TIE Aug. 2020 6835-6844*

Resilient Control Design for Load Frequency Control System Under False Data Injection Attacks. Abbaspour, A., +, *TIE Sept. 2020 7951-7962*

Switched-Capacitor Differential Boost Inverter: Design, Modeling, and Control. Silva, G.V., +, *TIE July 2020 5421-5431*

Weighted Efficiency Enhancement for Single-Power-Conversion Microinverters Using Hybrid-Mode Modulation Strategy. Kim, K., +, *TIE Dec. 2020 10243-10252*

Zero Voltage Switching Control Method for MHz Boundary Conduction Mode Converters. Hernandez, J.C., +, *TIE Feb. 2020 1544-1554*

Power system economics

Imbalance Current Analysis and Its Suppression Methodology for Parallel SiC MOSFETs with Aid of a Differential Mode Choke. Zeng, Z., +, *TIE Feb. 2020 1508-1519*

Nonregenerative Braking of Permanent Magnet Synchronous Motor. Marcevic, D.P., +, *TIE Oct. 2020 8186-8196*

Reliability-Oriented Design of Modular Multilevel Converters for Medium-Voltage STATCOM. Farias, J.V.M., +, *TIE Aug. 2020 6206-6214*

Power system faults

A Novel Controlled Frequency Band Impedance Measurement Approach for Single-Phase Railway Traction Power System. Hu, H., +, *TIE Jan. 2020 244-253*

An Enhanced Strategy to Inhibit Commutation Failure in Line-Commutated Converters. Mirsaeidi, S., +, *TIE Jan. 2020 340-349*

Classification of Complex Power Quality Disturbances Using Optimized S-Transform and Kernel SVM. Tang, Q., +, *TIE Nov. 2020 9715-9723*

Distributed Fast Fault Diagnosis for Multimachine Power Systems via Deterministic Learning. Chen, T., +, *TIE May 2020 4152-4162*

Extending Protection Selectivity in DC Shipboard Power Systems by Means of Additional Bus Capacitance. Kim, S., +, *TIE May 2020 3673-3683*

Numerical Analysis of Turn-to-Turn Short Circuit Current Mitigation for Concentrated Winding Permanent Magnet Machines With Series and Parallel Connected Windings. Xu, Y., +, *TIE Nov. 2020 9101-9111*

Power system harmonics

A Hybrid Phase Shift-Pulsewidth Modulation and Asymmetric Selective Harmonic Current Mitigation-Pulsewidth Modulation Technique to Reduce Harmonics and Inductance of Single-Phase Grid-Tied Cascaded Multilevel Converters. Moeni, A., +, *TIE Dec. 2020 10388-10398*

A New Transformerless Inverter With Leakage Current Limiting and Voltage Boosting Capabilities for Grid-Connected PV Applications. Jahan, H.K., *TIE Dec. 2020 10542-10551*

A Novel Controlled Frequency Band Impedance Measurement Approach for Single-Phase Railway Traction Power System. Hu, H., +, *TIE Jan. 2020 244-253*

A ZVT Bidirectional Converter With Coupled-Filter-Inductor and Elimination of Input Current Notches. Mohammadi, M.R., +, *TIE Sept. 2020 7461-7469*

An Optimal Compensation Method of Shunt Active Power Filters for System-Wide Voltage Quality Improvement. Zhai, H., +, *TIE Feb. 2020 1270-1281*

Analysis and Calculation of Radial Electromagnetic Force of Circular Winding Brushless DC Motor. Zhang, Q., +, *TIE June 2020 4338-4349*

Analysis of PM Eddy Current Loss in Rotor-PM and Stator-PM Flux-switching Machines by Air-gap Field Modulation Theory. Su, P., +, *TIE March 2020 1824-1835*

Analysis of Stator Slots and Rotor Pole Pairs Combinations of Rotor-Permanent Magnet Flux-Switching Machines. Su, P., +, *TIE Feb. 2020 906-918*

Back EMF Harmonic Analysis of Permanent Magnet Magnetic Gearing Machine. Ren, X., +, *TIE Aug. 2020 6248-6258*

Closed-Form Analytic Expression of Total Harmonic Distortion in Single-Phase Multilevel Inverters With Staircase Modulation. Barbie, E., +, *TIE June 2020 5213-5216*

Design and Optimization of a Flux-Modulated Permanent Magnet Motor Based on an Airgap-Harmonic-Orientated Design Methodology. Zhu, X., +, *TIE July 2020 5337-5348*

Detection of Grid Voltage Fundamental and Harmonic Components Using Kalman Filter Based on Dynamic Tracking Model. Nie, X., *TIE Feb. 2020 1191-1200*

Direct Torque Control Techniques of Three-Level H-Bridge Inverter Fed Induction Motor for Torque Ripple Reduction at Low Speed Operations. Naganathan, P., +, *TIE Oct. 2020 8262-8270*

Dual-Loop-Based Harmonic Current Control Strategy and Admittance Modeling for a Multimodular Parallel SAPFs System. Liu, K., +, *TIE July 2020 5456-5466*

Enhanced Parallel Hybrid Converter With DC Ripple Minimization Control. Patro, S.K., +, *TIE Nov. 2020 9969-9975*

Euler's Formula-Based Stability Analysis for Wideband Harmonic Resonances. Chen, Z., +, *TIE Nov. 2020 9405-9417*

Generalized Harmonic Control for CHB Converters With Unbalanced Cells Operation. Marquez, A., +, *TIE Nov. 2020 9039-9047*

Harmonic Compensation Strategy for Single-Phase Cascaded H-Bridge PV Inverter Under Unbalanced Power Conditions. Wang, M., +, *TIE Dec. 2020 10474-10484*

Impedance-Based Harmonic Current Suppression Method for VSG Connected to Distorted Grid. Zhou, L., +, *TIE July 2020 5490-5502*

Improving Dynamic Performance of Boost PFC Converter Using Current-Harmonic Feedforward Compensation in Synchronous Reference Frame. *Li, S.*, +, *TIE June 2020 4857-4866*

Investigation of Harmonic Losses in a Two-Pole Slotless Permanent-Magnet Motor Due to Wide Bandgap Inverter Supply. *Millinger, J.*, +, *TIE Aug. 2020 6280-6289*

Novel Current Profile of Switched Reluctance Machines for Torque Density Enhancement in Low-Speed Applications. *Huang, L.*, +, *TIE Nov. 2020 9623-9634*

Novel Transformerless Buck–Boost Inverters Without Leakage Current. *Khan, A.A.*, +, *TIE Dec. 2020 10442-10454*

Resonance Reduction by Optimal Switch Angle Selection in Switched Reluctance Motor. *Guo, X.*, +, *TIE March 2020 1867-1877*

Sensorless Vibration Harmonic Estimation of Servo System Based on the Disturbance Torque Observer. *Huang, C.*, +, *TIE March 2020 2122-2132*

Suppression of Harmonic Vibration in Magnetically Suspended Centrifugal Compressor Using Zero-Phase Odd-Harmonic Repetitive Controller. *Cai, K.*, +, *TIE Sept. 2020 7789-7797*

Suppression of Second-Order Harmonic Current for Droop-Controlled Distributed Energy Resource Converters in DC Microgrids. *Liu, G.*, +, *TIE Jan. 2020 358-368*

Two-Layer Pulsewidth Modulation Strategy for Common-Mode Voltage and Current Harmonic Distortion Reduction in Vienna Rectifier. *Xing, X.*, +, *TIE Sept. 2020 7470-7483*

Weak Grid Intertie WEGS With Hybrid Generalized Integrator for Power Quality Improvement. *Chishti, F.*, +, *TIE Feb. 2020 1113-1123*

Power system interconnection

Robust Current Control of Grid-Tied Inverters Affected by LCL Filter Soft-Saturation. *Osorio, C.R.D.*, +, *TIE Aug. 2020 6550-6561*

Solar PV Energy Generation System Interfaced to Three Phase Grid With Improved Power Quality. *Singh, A.K.*, +, *TIE May 2020 3798-3808*

Power system management

Power Scheduling in More Electric Aircraft Based on an Optimal Adaptive Control Strategy. *Zhang, Y.*, +, *TIE Dec. 2020 10911-10921*

Power system measurement

Distributed Fast Fault Diagnosis for Multimachine Power Systems via Deterministic Learning. *Chen, T.*, +, *TIE May 2020 4152-4162*

Piezoelectric–Piezoresistive Coupling MEMS Sensors for Measurement of Electric Fields of Broad Bandwidth and Large Dynamic Range. *Xue, F.*, +, *TIE Jan. 2020 551-559*

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Extending Protection Selectivity in DC Shipboard Power Systems by Means of Additional Bus Capacitance. *Kim, S.*, +, *TIE May 2020 3673-3683*

Model Predictive Control With Lifetime Constraints Based Energy Management Strategy for Proton Exchange Membrane Fuel Cell Hybrid Power Systems. *He, H.*, +, *TIE Oct. 2020 9012-9023*

Power system reliability

Control Scheme to Achieve Multiple Objectives and Superior Reliability for Input-Series-Output-Parallel LCL-Type Grid-Connected Inverter System. *Fang, T.*, +, *TIE Jan. 2020 214-224*

Reliability-Oriented Design of Modular Multilevel Converters for Medium-Voltage STATCOM. *Farias, J.V.M.*, +, *TIE Aug. 2020 6206-6214*

Power system restoration

Distribution System Restoration With Renewable Resources for Reliability Improvement Under System Uncertainties. *Zou, K.*, +, *TIE Oct. 2020 8438-8449*

Power system security

On Detection of False Data in Cooperative DC Microgrids—A Discordant Element Approach. *Sahoo, S.*, +, *TIE Aug. 2020 6562-6571*

Resilient Control Design for Load Frequency Control System Under False Data Injection Attacks. *Abbaspour, A.*, +, *TIE Sept. 2020 7951-7962*

Power system simulation

A Cooperative Adaptive Droop Based Energy Management and Optimal Voltage Regulation Scheme for DC Microgrids. *Sahoo, S.*, +, *TIE April 2020 2894-2904*

Adaptive Time-Stepping Universal Line and Machine Models for Real Time and Faster-Than-Real-Time Hardware Emulation. *Duan, T.*, +, *TIE Aug. 2020 6173-6182*

Optimal DC Source Influence on Selective Harmonic Elimination in Multi-level Inverters Using Teaching–Learning-Based Optimization. *Haghdar, K.*, *TIE Feb. 2020 942-949*

Power system stability

A Cooperative Adaptive Droop Based Energy Management and Optimal Voltage Regulation Scheme for DC Microgrids. *Sahoo, S.*, +, *TIE April 2020 2894-2904*

A Novel Controlled Frequency Band Impedance Measurement Approach for Single-Phase Railway Traction Power System. *Hu, H.*, +, *TIE Jan. 2020 244-253*

A Proposed Fast Charging and High-Power System for Wireless Railway Trains Adopting the Input Voltage Sharing Topology and the Balancing Control Scheme. *Kim, J.*, +, *TIE Aug. 2020 6407-6417*

Active Power Sharing and Frequency Regulation in Droop-Free Control for Islanded Microgrids Under Electrical and Communication Failures. *Rosero, C.X.*, +, *TIE Aug. 2020 6461-6472*

Discrete-Time Modified UDE-Based Current Control for L+C+L-Type Grid-Tied Inverters. *Wu, Y.*, +, *TIE March 2020 2143-2154*

Distributed Cooperative Control of Multiple Hybrid Energy Storage Systems in a DC Microgrid Using Consensus Protocol. *Chen, X.*, +, *TIE March 2020 1968-1979*

Distributed Voltage Restoration and Current Sharing Control in Islanded DC Microgrid Systems Without Continuous Communication. *Guo, F.*, +, *TIE April 2020 3043-3053*

Dual-Loop-Based Harmonic Current Control Strategy and Admittance Modeling for a Multimodular Parallel SAPFs System. *Liu, K.*, +, *TIE July 2020 5456-5466*

Euler's Formula-Based Stability Analysis for Wideband Harmonic Resonances. *Chen, Z.*, +, *TIE Nov. 2020 9405-9417*

HVdc Reactor Reduction Method Based on Virtual Reactor Fault Current Limiting Control of MMC. *Li, X.*, +, *TIE Dec. 2020 9991-10000*

Imbalance Current Analysis and Its Suppression Methodology for Parallel SiC MOSFETs with Aid of a Differential Mode Choke. *Zeng, Z.*, +, *TIE Feb. 2020 1508-1519*

Impedance Modeling and DC Bus Voltage Stability Assessment of a Solid-State-Transformer-Enabled Hybrid AC–DC Grid Considering Bidirectional Power Flow. *Ye, Q.*, +, *TIE Aug. 2020 6531-6540*

Improved Accuracy, Modeling, and Stability Analysis of Power-Hardware-in-Loop Simulation With Open-Loop Inverter as Power Amplifier. *Upamanyu, K.*, +, *TIE Jan. 2020 369-378*

Improved Direct Torque Control for a DFIG under Symmetrical Voltage Dip With Transient Flux Damping. *Agha Kashkooli, M.R.*, +, *TIE Jan. 2020 28-37*

Large-Signal Stability of Interleave Boost Converter System With Constant Power Load Using Sliding-Mode Control. *Jiang, W.*, +, *TIE Nov. 2020 9450-9459*

Lyapunov-Based Thermal Fault Diagnosis of Cylindrical Lithium-Ion Batteries. *Wei, J.*, +, *TIE June 2020 4670-4679*

On Autonomous Large-Signal Stabilization for Islanded Multibus DC Microgrids: A Uniform Nonsmooth Control Scheme. *Lin, P.*, +, *TIE June 2020 4600-4612*

On Detection of False Data in Cooperative DC Microgrids—A Discordant Element Approach. *Sahoo, S.*, +, *TIE Aug. 2020 6562-6571*

Online Kron Reduction for Economical Frequency Control of Microgrids. *Abdolmaleki, B.*, +, *TIE Oct. 2020 8461-8471*

Operating-Point Tracking Method for Sensorless Induction Motor Stability Enhancement in Low-Speed Regenerating Mode. *Luo, C.*, +, *TIE May 2020 3386-3397*

Optimal Voltage-Support Control for Distributed Generation Inverters in RL Grid-Faulty Networks. *Garnica, M.*, +, *TIE Oct. 2020 8405-8415*

Predictive Control Based DC Microgrid Stabilization With the Dual Active Bridge Converter. *Chen, L.*, +, *TIE Oct. 2020 8944-8956*

Reducing Distribution Power Loss of Islanded AC Microgrids Using Distributed Electric Springs With Predictive Control. *Yang, Y.*, +, *TIE Oct. 2020 9001-9011*

Sensorless Control of Linear Flux-Switching Permanent Magnet Motor Based on Extended Kalman Filter. *Cao, R.*, +, *TIE July 2020 5971-5979*

Suppression of Harmonic Vibration in Magnetically Suspended Centrifugal Compressor Using Zero-Phase Odd-Harmonic Repetitive Controller. *Cai, K.*, +, *TIE Sept. 2020 7789-7797*

Suppression of Second-Order Harmonic Current for Droop-Controlled Distributed Energy Resource Converters in DC Microgrids. *Liu, G.*, +, *TIE Jan. 2020 358-368*

Voltage Grid Supporting by Using Variable Structure Adaptive Virtual Impedance for LCL-Voltage Source Converter DG Converters. *Fonseca, T.Q.*, +, *TIE Nov. 2020 9326-9336*

Power system transient stability

Characteristic Analysis and Risk Assessment for Voltage-Frequency Coupled Transient Instability of Large-Scale Grid-Connected Renewable Energy Plants During LVRT. *Pei, J.*, +, *TIE July 2020 5515-5530*

Power system transients

IGCT Low-Current Switching—TCAD and Experimental Characterization. *Stamenkovic, D.*, +, *TIE Aug. 2020 6302-6311*

Improved Direct Torque Control for a DFIG under Symmetrical Voltage Dip With Transient Flux Damping. *Agha Kashkooli, M.R.*, +, *TIE Jan. 2020 28-37*

Power transformer insulation

A New Testing Method for the Dielectric Response of Oil-Immersed Transformer. *Wang, D.*, +, *TIE Dec. 2020 10833-10843*

Power transformers

A Bidirectional CDT-LC Resonant DC-DC Converter With a Wide Voltage Range. *Chen, B.*, +, *TIE March 2020 2009-2020*

A Current-Sharing Method for Interleaved High-Frequency LLC Converter With Partial Energy Processing. *Chen, H.*, +, *TIE Feb. 2020 1498-1507*

A High Step Up SEPIC-Based Converter Based on Partly Interleaved Transformer. *Gao, S.*, +, *TIE Feb. 2020 1455-1465*

A High-Frequency Link Matrix Rectifier With a Pure Capacitive Output Filter in a Discontinuous Conduction Mode. *Lan, D.*, +, *TIE Jan. 2020 4-15*

A Hybrid Boost-Flyback/Flyback Microinverter for Photovoltaic Applications. *Zhang, F.*, +, *TIE Jan. 2020 308-318*

A Multiphysics Design and Optimization Method for Air-Core Planar Transformers in High-Frequency LLC Resonant Converters. *Ho, G.K.Y.*, +, *TIE Feb. 2020 1605-1614*

A Novel High-Voltage DC Transformer Based on Diode-Clamped Modular Multilevel Converters With Voltage Self-Balancing Capability. *Zheng, T.*, +, *TIE Dec. 2020 10304-10314*

A Single-Phase Five-Branch Direct AC-AC Modular Multilevel Converter for Railway Power Conditioning. *Lei, M.*, +, *TIE June 2020 4292-4304*

A Transformer Integrated Filtering System for Power Quality Improvement of Industrial DC Supply System. *Liu, Q.*, +, *TIE May 2020 3329-3339*

An Approach Towards Extreme Fast Charging Station Power Delivery for Electric Vehicles with Partial Power Processing. *Iyer, V.M.*, +, *TIE Oct. 2020 8076-8087*

An Efficiency-Oriented Two-Stage Optimal Design Methodology of High-Frequency LCLC Resonant Converters for Space Travelling-Wave Tube Amplifier Applications. *Zhao, B.*, +, *TIE Feb. 2020 1068-1080*

Analysis and Optimal Design of High-Frequency and High-Efficiency Asymmetrical Half-Bridge Flyback Converters. *Li, M.*, +, *TIE Oct. 2020 8312-8321*

Cascaded Transformer Multilevel Inverters With Asymmetrical Turns Ratios Based on NPC. *Bahia, F.A.d.C.*, +, *TIE Aug. 2020 6387-6397*

Cost-Effective Compensation Design for Output Customization and Efficiency Optimization in Series/Series-Parallel Inductive Power Transfer Converter. *Huang, Z.*, +, *TIE Dec. 2020 10356-10365*

DC Voltage Control Strategy of Three-Terminal Medium-Voltage Power Electronic Transformer-Based Soft Normally Open Points. *Ouyang, S.*, +, *TIE May 2020 3684-3695*

Double-Ended Active-Clamp Forward Converter With Low DC Offset Current of Transformer. *Kim, M.*, +, *TIE Feb. 2020 1036-1047*

Efficiency Optimization of DC Solid-State Transformer for Photovoltaic Power Systems. *Shi, H.*, +, *TIE May 2020 3583-3595*

Experimental Evaluation of Transformer Internal Fault Detection Based on $V-I$ Characteristics. *Zhao, X.*, +, *TIE May 2020 4108-4119*

Generalized Harmonic Control for CHB Converters With Unbalanced Cells Operation. *Marquez, A.*, +, *TIE Nov. 2020 9039-9047*

High Efficiency High Density 1 MHz 380–12 V DCX With Low FoM Devices. *Wu, X.*, +, *TIE Feb. 2020 1648-1656*

Impedance Modeling and DC Bus Voltage Stability Assessment of a Solid-State-Transformer-Enabled Hybrid AC-DC Grid Considering Bidirectional Power Flow. *Ye, Q.*, +, *TIE Aug. 2020 6531-6540*

Integrated Buck and Modified Push-Pull DC-DC Converter With High Step-Down Ratio. *Tseng, K.*, +, *TIE Jan. 2020 235-243*

Magnetic-Integrated Multipulse Rectifier Transformer With a Tight Impedance Equalizing Strategy for Power Quality Improvement of DC Traction Power Supply System. *An, B.*, +, *TIE Aug. 2020 6270-6279*

Model Predictive Control for Dual Active Bridge in Naval DC Microgrids Supplying Pulsed Power Loads Featuring Fast Transition and Online Transformer Current Minimization. *Xiao, Q.*, +, *TIE June 2020 5197-5203*

Multifunction Transformer With Adjustable Magnetic Stage Based on Nanocomposite Semihard Magnets. *Chen, Z.*, +, *TIE May 2020 4226-4234*

Multilevel Single-Phase Converter With Two DC Links. *de Freitas, N.B.*, +, *TIE Dec. 2020 10346-10355*

Power Quality Enhancement Using Euclidean Direction Search Based Control Technique. *Badoni, M.*, +, *TIE March 2020 2231-2240*

Protection of Single-Phase Fault at the Transformer Valve Side of FB-MMC-Based Bipolar HVdc Systems. *Liu, W.*, +, *TIE Oct. 2020 8416-8427*

Quarter-Turn Transformer Design and Optimization for High Power Density 1-MHz LLC Resonant Converter. *Liu, Y.*, +, *TIE Feb. 2020 1580-1591*

Single-Stage Voltage Balancer With High-Frequency Isolation for Bipolar LVDC Distribution System. *Lee, J.*, +, *TIE May 2020 3596-3606*

The Novel Quasi-Resonant Flyback Converter With Autoregulated Structure for Parallel/Serial Input. *Wang, J.*, +, *TIE Feb. 2020 992-1004*

Three-Step Switching Frequency Selection Criteria for the Generalized CLLC-Type DC Transformer in Hybrid AC-DC Microgrid. *Huang, J.*, +, *TIE Feb. 2020 980-991*

Transient DC Bias Elimination of Dual-Active-Bridge DC-DC Converter With Improved Triple-Phase-Shift Control. *Bu, Q.*, +, *TIE Oct. 2020 8587-8598*

Tunable High-Power Multilayer Piezoelectric Transformer. *Li, X.*, +, *TIE Oct. 2020 8335-8343*

Power transistors

High-Frequency Single-Switch ZVS Gate Driver Based on a Class Φ_2 Resonant Inverter. *Jedi, H.*, +, *TIE June 2020 4527-4535*

Investigation of Harmonic Losses in a Two-Pole Slotless Permanent-Magnet Motor Due to Wide Bandgap Inverter Supply. *Millinger, J.*, +, *TIE Aug. 2020 6280-6289*

Power transmission (mechanical)

A New Penalty Domain Selection Machine Enabled Transfer Learning for Gearbox Fault Recognition. *Shen, F.*, +, *TIE Oct. 2020 8743-8754*

A Stochastic Predictive Energy Management Strategy for Plug-in Hybrid Electric Vehicles Based on Fast Rolling Optimization. *Yang, C.*, +, *TIE Nov. 2020 9659-9670*

An Integrated Electrified Powertrain Topology With SRG and SRM for Plug-In Hybrid Electrical Vehicle. *Cheng, H.*, +, *TIE Oct. 2020 8231-8241*

Back EMF Harmonic Analysis of Permanent Magnet Magnetic Gearing Machine. *Ren, X.*, +, *TIE Aug. 2020 6248-6258*

Macroscopic-Microscopic Attention in LSTM Networks Based on Fusion Features for Gear Remaining Life Prediction. *Qin, Y.*, +, *TIE Dec. 2020 10865-10875*

Power transmission control

A 13.56-MHz Full-Bridge Class-D ZVS Inverter With Dynamic Dead-Time Control for Wireless Power Transfer Systems. *Tebianian, H.*, +, *TIE Feb. 2020 1487-1497*

A Load-Independent LCC-Compensated Wireless Power Transfer System for Multiple Loads With a Compact Coupler Design. *Cheng, C.*, +, *TIE June 2020 4507-4515*

A Novel Converter Station Structure for Improving Multiterminal HVDC System Resiliency Against AC and DC Faults. *Wang, S.*, +, *TIE June 2020 4270-4280*

A Single-Phase Five-Branch Direct AC-AC Modular Multilevel Converter for Railway Power Conditioning. *Lei, M.*, +, *TIE June 2020 4292-4304*

Analysis, Design, and Experimental Verification of a Mixed High-Order Compensations-Based WPT System with Constant Current Outputs for Driving Multistring LEDs. *Li, Y., +, TIE Jan. 2020 203-213*

Extending the Operating Region of Inductive Power Transfer Systems Through Dual-Side Cooperative Control. *Chen, S., +, TIE Nov. 2020 9302-9312*

Generalized Harmonic Control for CHB Converters With Unbalanced Cells Operation. *Marquez, A., +, TIE Nov. 2020 9039-9047*

Multiport Interline Current Flow Controller for Meshed HVDC Grids. *Sau-Bassols, J., +, TIE July 2020 5467-5478*

Parallel Nine-Phase Generator Control in a Medium-Voltage DC Wind System. *Beik, O., +, TIE Oct. 2020 8112-8122*

Pole Balancing and Thermal Management in Multiterminal HVdc Grids Using Single H-Bridge-Based Current Flow Controllers. *Balasubramaniam, S., +, TIE June 2020 4623-4634*

Three-Step Switching Frequency Selection Criteria for the Generalized CLLC-Type DC Transformer in Hybrid AC-DC Microgrid. *Huang, J., +, TIE Feb. 2020 980-991*

Power transmission economics

A High-Performance and Economical Multiport Hybrid Direct Current Circuit Breaker. *He, J., +, TIE Oct. 2020 8921-8930*

A Soft-PWM Approach to Power/Signal Synchronous Transmission for SRG-Based DC Microgrids. *Yu, D., +, TIE Oct. 2020 8450-8460*

Analysis, Design, and Experimental Verification of a Mixed High-Order Compensations-Based WPT System with Constant Current Outputs for Driving Multistring LEDs. *Li, Y., +, TIE Jan. 2020 203-213*

Power transmission faults

A High-Performance and Economical Multiport Hybrid Direct Current Circuit Breaker. *He, J., +, TIE Oct. 2020 8921-8930*

A Novel Converter Station Structure for Improving Multiterminal HVDC System Resiliency Against AC and DC Faults. *Wang, S., +, TIE June 2020 4270-4280*

Damping HVDC Circuit Breaker With Current Commutation and Limiting Integrated. *Wu, Y., +, TIE Dec. 2020 10433-10441*

DC Fault Analysis Models of Three Converter Topologies Considering Control Effects. *Li, Y., +, TIE Nov. 2020 9480-9491*

DC Fault Current Blocking With the Coordination of Half-Bridge MMC and the Hybrid DC Breaker. *Iman-Eini, H., +, TIE July 2020 5503-5514*

DC Fault Detection in Meshed MTdc Systems Based on Transient Average Value of Current. *Li, Y., +, TIE March 2020 1932-1943*

Double-Thyristor-Based Protection for Valve-Side Single-Phase-to-Ground Faults in HB-MMC-Based Bipolar HVDC Systems. *Li, G., +, TIE July 2020 5810-5815*

Pole Balancing and Thermal Management in Multiterminal HVdc Grids Using Single H-Bridge-Based Current Flow Controllers. *Balasubramaniam, S., +, TIE June 2020 4623-4634*

Protection of Single-Phase Fault at the Transformer Valve Side of FB-MMC-Based Bipolar HVdc Systems. *Liu, W., +, TIE Oct. 2020 8416-8427*

Power transmission lines

Adaptive Time-Stepping Universal Line and Machine Models for Real Time and Faster-Than-Real-Time Hardware Emulation. *Duan, T., +, TIE Aug. 2020 6173-6182*

Cosimulation of Shifted-Frequency/Dynamic Phasor and Electromagnetic Transient Models of Hybrid LCC-MMC DC Grids on Integrated CPU-GPUs. *Shu, D., +, TIE Aug. 2020 6517-6530*

DC Fault Detection in Meshed MTdc Systems Based on Transient Average Value of Current. *Li, Y., +, TIE March 2020 1932-1943*

Power Electronic Converter Based Flexible Transmission Line Emulation. *Dutta, S., +, TIE Aug. 2020 6195-6205*

Power transmission protection

DC Fault Detection in Meshed MTdc Systems Based on Transient Average Value of Current. *Li, Y., +, TIE March 2020 1932-1943*

Double-Thyristor-Based Protection for Valve-Side Single-Phase-to-Ground Faults in HB-MMC-Based Bipolar HVDC Systems. *Li, G., +, TIE July 2020 5810-5815*

Protection of Single-Phase Fault at the Transformer Valve Side of FB-MMC-Based Bipolar HVdc Systems. *Liu, W., +, TIE Oct. 2020 8416-8427*

Power transmission reliability

A Soft-PWM Approach to Power/Signal Synchronous Transmission for SRG-Based DC Microgrids. *Yu, D., +, TIE Oct. 2020 8450-8460*

Damping HVDC Circuit Breaker With Current Commutation and Limiting Integrated. *Wu, Y., +, TIE Dec. 2020 10433-10441*

Predictive control

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A Disturbance Rejection-Based Control Strategy for Five-Level T-Type Hybrid Power Converters With Ripple Voltage Estimation Capability. *Khan, S.A., +, TIE Sept. 2020 7364-7374*

A Model Predictive Contouring Error Precompensation Method. *Yang, X., +, TIE May 2020 4036-4045*

A Motion Planning and Tracking Framework for Autonomous Vehicles Based on Artificial Potential Field Elaborated Resistance Network Approach. *Huang, Y., +, TIE Feb. 2020 1376-1386*

A Stochastic Predictive Energy Management Strategy for Plug-in Hybrid Electric Vehicles Based on Fast Rolling Optimization. *Yang, C., +, TIE Nov. 2020 9659-9670*

Active Disturbance-Rejection-Based Speed Control in Model Predictive Control for Induction Machines. *Yan, L., +, TIE April 2020 2574-2584*

An Advanced Voltage Support Scheme Considering the Impact of Zero-Sequence Voltage Under Microgrid Faults Using Model Predictive Control. *Mohapatra, S.R., +, TIE Oct. 2020 8957-8968*

An Explicit Nonlinear Model Predictive ABS Controller for Electro-Hydraulic Braking Systems. *Tavernini, D., +, TIE May 2020 3990-4001*

An Improved Deadbeat Predictive Current Control With Online Parameter Identification for Surface-Mounted PMSMs. *Yao, Y., +, TIE Dec. 2020 10145-10155*

Assessment of an Improved Finite Control Set Model Predictive Current Controller for Automotive Propulsion Applications. *Andersson, A., +, TIE Jan. 2020 91-100*

Cooperative and Dynamically Weighted Model Predictive Control of a 3-Level Uninterruptible Power Supply With Improved Performance and Dynamic Response. *Caseiro, L.M.A., +, TIE June 2020 4934-4945*

DC-Link Voltage-Balancing Strategy Based on Optimal Switching Sequence Model Predictive Control for Single-Phase H-NPC Converters. *Vazquez, S., +, TIE Sept. 2020 7410-7420*

Design and Implementation of Parameter Estimation and Start Control of Brushless Synchronous Starter/Generators Under Sudden Excitation Change. *Mao, S., +, TIE May 2020 3551-3561*

Discrete Space Vector Modulation-Based Model Predictive Torque Control With No Suboptimization. *Osman, I., +, TIE Oct. 2020 8164-8174*

Distributed Control of Active Cell Balancing and Low-Voltage Bus Regulation in Electric Vehicles Using Hierarchical Model-Predictive Control. *Gong, Z., +, TIE Dec. 2020 10464-10473*

DLFCR Reduction Based on Power Predictive Scheme for Full-Bridge Photovoltaic Microinverter. *Kan, J., +, TIE June 2020 4658-4669*

Double Vector Model Predictive Control to Reduce Common-Mode Voltage Without Weighting Factors for Three-Level Inverters. *Liu, T., +, TIE Oct. 2020 8980-8990*

Economic Feedback Model Predictive Control of Wave Energy Converters. *Zhan, S., +, TIE May 2020 3932-3943*

Enhanced Model Predictive Torque Control of Fault-Tolerant Five-Phase Permanent Magnet Synchronous Motor With Harmonic Restraint and Voltage Preselection. *Huang, W., +, TIE Aug. 2020 6259-6269*

Error-Bounded Reference Tracking MPC for Machines With Structural Flexibility. *Yuan, M., +, TIE Oct. 2020 8143-8154*

Even-Handed Sequential Predictive Torque and Flux Control. *Davari, S.A., +, TIE Sept. 2020 7334-7342*

Finite Control Set Model Predictive Control for LCL-Filtered Grid-Tied Inverter With Minimum Sensors. *Chen, X., +, TIE Dec. 2020 9980-9990*

Finite-Control-Set MPC for Open-Phase Fault-Tolerant Control of PM Synchronous Motor Drives. *Kiselev, A., +, TIE June 2020 4444-4452*

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- Model Predictive Adaptive Constraint Tracking Control for Underwater Vehicles. *Gan, W.*, +, *TIE Sept. 2020 7829-7840*
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- Model Predictive Control for Dual Active Bridge in Naval DC Microgrids Supplying Pulsed Power Loads Featuring Fast Transition and Online Transformer Current Minimization. *Xiao, Q.*, +, *TIE June 2020 5197-5203*
- Model Predictive Control of a Nine-Level Internal Parallel Multilevel Converter With Phase-Shifted Pulsewidth Modulation. *Zhou, D.*, +, *TIE Nov. 2020 9073-9082*
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- Model Predictive Control With Lifetime Constraints Based Energy Management Strategy for Proton Exchange Membrane Fuel Cell Hybrid Power Systems. *He, H.*, +, *TIE Oct. 2020 9012-9023*
- Motor Parameter-Free Predictive Current Control of Synchronous Motors by Recursive Least-Square Self-Commissioning Model. *Tinazzi, F.*, +, *TIE Nov. 2020 9093-9100*
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- Output-Based Event-Triggered Predictive Control for Networked Control Systems. *Yang, R.*, +, *TIE Dec. 2020 10631-10640*
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- Robust High Bandwidth Current Regulation for Permanent Magnet Synchronous Linear Motor Drivers by Using Two-Degree-of-Freedom Controller and Thrust Ripple Observer. *Zhao, J.*, +, *TIE March 2020 1804-1812*
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- Printed circuits**
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Optimization of High-Density and High-Efficiency Switched-Tank Converter for Data Center Applications. *Lyu, X.*, +, *TIE Feb. 2020 1626-1637*

Performance Comparison Between PCB-Stator and Laminated-Core-Stator-Based Designs of Axial Flux Permanent Magnet Motors for High-Speed Low-Power Applications. *S., N.*, +, *TIE July 2020 5269-5277*

Quarter-Turn Transformer Design and Optimization for High Power Density 1-MHz LLC Resonant Converter. *Liu, Y.*, +, *TIE Feb. 2020 1580-1591*

Single-Stage High-Efficiency 48/1 V Sigma Converter With Integrated Magnetics. *Ahmed, M.H.*, +, *TIE Jan. 2020 192-202*

Printing

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Private key cryptography

Physical Unclonable Function-Based Key Sharing via Machine Learning for IoT Security. *Zhang, J.*, +, *TIE Aug. 2020 7025-7033*

Probability

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A Prognostic Model Based on DBN and Diffusion Process for Degrading Bearing. *Hu, C.*, +, *TIE Oct. 2020 8767-8777*

A Stochastic Predictive Energy Management Strategy for Plug-in Hybrid Electric Vehicles Based on Fast Rolling Optimization. *Yang, C.*, +, *TIE Nov. 2020 9659-9670*

A Time-Saving Approach for the Thermal Lifetime Evaluation of Low-Voltage Electrical Machines. *Madonna, V.*, +, *TIE Nov. 2020 9195-9205*

Finite-Time Adaptive Quantized Control of Stochastic Nonlinear Systems With Input Quantization: A Broad Learning System Based Identification Method. *Sui, S.*, +, *TIE Oct. 2020 8555-8565*

Optimal DC Source Influence on Selective Harmonic Elimination in Multi-level Inverters Using Teaching-Learning-Based Optimization. *Haghdar, K.*, *TIE Feb. 2020 942-949*

Performance Model for Advanced Neighbor Discovery Process in Bluetooth Low Energy 5.0-Enabled Internet of Things Networks. *Shan, G.*, +, *TIE Dec. 2020 10965-10974*

Probabilistic Monitoring of Correlated Sensors for Nonlinear Processes in State Space. *Zhao, S.*, +, *TIE March 2020 2294-2303*

Protection of Single-Phase Fault at the Transformer Valve Side of FB-MMC-Based Bipolar HVdc Systems. *Liu, W.*, +, *TIE Oct. 2020 8416-8427*

SAT: Single-Shot Adversarial Tracker. *Wu, Q.*, +, *TIE Nov. 2020 9882-9892*

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Uncertainty-Based Pattern Mining for Maximizing Profit of Manufacturing Plants With List Structure. *Baek, Y.*, +, *TIE Nov. 2020 9914-9926*

Valve Failure Prognostics in Reciprocating Compressors Utilizing Temperature Measurements, PCA-Based Data Fusion, and Probabilistic Algorithms. *Loutas, T.*, +, *TIE June 2020 5022-5029*

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A Data-Driven Realization of the Control-Performance-Oriented Process Monitoring System. *Luo, H.*, +, *TIE Jan. 2020 521-530*

A Novel Dynamic Weight Principal Component Analysis Method and Hierarchical Monitoring Strategy for Process Fault Detection and Diagnosis. *Tao, Y.*, +, *TIE Sept. 2020 7994-8004*

Data-Driven Batch-End Quality Modeling and Monitoring Based on Optimized Sparse Partial Least Squares. *Jiang, Q.*, +, *TIE May 2020 4098-4107*

Generalized Semisupervised Self-Optimizing Kernel Model for Quality-Related Industrial Process Monitoring. *Wei, C.*, +, *TIE Dec. 2020 10876-10886*

Real-Time Mode Diagnosis for Processes With Multiple Operating Conditions Using Switching Conditional Random Fields. *Fang, M.*, +, *TIE June 2020 5060-5070*

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Product quality

A Correlation-Based Distributed Fault Detection Method and Its Application to a Hot Tandem Rolling Mill Process. *Zhang, K.*, +, *TIE March 2020 2380-2390*

Data-Driven Batch-End Quality Modeling and Monitoring Based on Optimized Sparse Partial Least Squares. *Jiang, Q.*, +, *TIE May 2020 4098-4107*

Production engineering computing

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A Correlation-Based Distributed Fault Detection Method and Its Application to a Hot Tandem Rolling Mill Process. *Zhang, K.*, +, *TIE March 2020 2380-2390*

A Game-Theoretic Approach to Cross-Layer Security Decision-Making in Industrial Cyber-Physical Systems. *Huang, K.*, +, *TIE March 2020 2371-2379*

A Reinforced k -Nearest Neighbors Method With Application to Chatter Identification in High-Speed Milling. *Shi, F.*, +, *TIE Dec. 2020 10844-10855*

An Efficient Convolutional Neural Network Model Based on Object-Level Attention Mechanism for Casting Defect Detection on Radiography Images. *Hu, C.*, +, *TIE Dec. 2020 10922-10930*

Bayesian Deep-Learning-Based Health Prognostics Toward Prognostics Uncertainty. *Peng, W.*, +, *TIE March 2020 2283-2293*

Broad Convolutional Neural Network Based Industrial Process Fault Diagnosis With Incremental Learning Capability. *Yu, W.*, +, *TIE June 2020 5081-5091*

Design of a High-Force Electromechanical Actuator for Electrically Driven Lathe Machine. *Jang, D.*, +, *TIE Nov. 2020 9526-9535*

Fault Diagnosis in Microelectronics Attachment Via Deep Learning Analysis of 3-D Laser Scans. *Dimitriou, N.*, +, *TIE July 2020 5748-5757*

Generalized Semisupervised Self-Optimizing Kernel Model for Quality-Related Industrial Process Monitoring. *Wei, C.*, +, *TIE Dec. 2020 10876-10886*

Hybrid-Model-Based Intelligent Optimization of Ironmaking Process. *Zhou, H.*, +, *TIE March 2020 2469-2479*

In-Dressing Acoustic Map by Low-Cost Piezoelectric Transducer. *Lofrano Dotto, F.R.*, +, *TIE Aug. 2020 6927-6936*

Natural Crack Diagnosis System Based on Novel L-Shaped Electromagnetic Sensing Thermography. *Liu, Z.*, +, *TIE Nov. 2020 9703-9714*

Nonlinear Ultrasonic Transmissive Tomography for Low-Contrast Biphasic Medium Imaging Using Continuous-Wave Excitation. *Liu, H.*, +, *TIE Oct. 2020 8878-8888*

Real-Time CU-Net-Based Welding Quality Inspection Algorithm in Battery Production. *Zhang, H.*, +, *TIE Dec. 2020 10942-10950*

Real-Time Imaging of Invisible Micron-Scale Monolayer Patterns on a Moving Web Using Condensation Figures. *Du, X.*, +, *TIE May 2020 4077-4087*

Uncertainty-Based Pattern Mining for Maximizing Profit of Manufacturing Plants With List Structure. *Baek, Y.*, +, *TIE Nov. 2020 9914-9926*

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Uncertainty-Based Pattern Mining for Maximizing Profit of Manufacturing Plants With List Structure. *Baek, Y.*, +, *TIE Nov. 2020 9914-9926*

Programmable controllers

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Propellers

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Proportional control

Performance Improvement of Open-Winding PMSMs With a Discrete-Time Designed Zero-Sequence Current Controller Based on Virtual Three-Phase Expansion. *Song, Z.*, +, *TIE Dec. 2020 10046-10054*

Prosthetics

Improved Classification Scheme Using Fused Wavelet Packet Transform Based Features for Intelligent Myoelectric Prostheses. *Pancholi, S.*, +, *TIE Oct. 2020 8517-8525*

Voluntary and FES-Induced Finger Movement Estimation Using Muscle Deformation Features. *Zhou, Y.*, +, *TIE May 2020 4002-4012*

Protocols

An Analysis of the Impact of Transient Faults on the Performance of the CAN-FD Protocol. *Pohren, D.H.*, +, *TIE March 2020 2440-2449*

Distributed Cooperative Control of Multiple Hybrid Energy Storage Systems in a DC Microgrid Using Consensus Protocol. *Chen, X.*, +, *TIE March 2020 1968-1979*

Novel Anonymous Key Establishment Protocol for Isolated Smart Meters. *Abbasinezhad-Mood, D.*, +, *TIE April 2020 2844-2851*

Novel Maximum Likelihood Estimation of Clock Skew in One-Way Broadcast Time Synchronization. *Shi, F.*, +, *TIE Nov. 2020 9948-9957*

Proton exchange membrane fuel cells

Adaptive Prognostic of Fuel Cells by Implementing Ensemble Echo State Networks in Time-Varying Model Space. *Li, Z.*, +, *TIE Jan. 2020 379-389*

Extended State Filter Based Disturbance and Uncertainty Mitigation for Nonlinear Uncertain Systems With Application to Fuel Cell Temperature Control. *Xue, W.*, +, *TIE Dec. 2020 10682-10692*

Model Predictive Control With Lifetime Constraints Based Energy Management Strategy for Proton Exchange Membrane Fuel Cell Hybrid Power Systems. *He, H.*, +, *TIE Oct. 2020 9012-9023*

Model-Based Fault Tolerant Control for the Thermal Management of PEMFC Systems. *Yan, C.*, +, *TIE April 2020 2875-2884*

Prototypes

Design and Performance of a High-Speed Permanent Magnet Generator with Amorphous Alloy Magnetic Core for Aerospace Applications. *Ismagilov, F.R.*, +, *TIE March 2020 1750-1758*

Power Loss and Thermal Analysis for High-Power High-Speed Permanent Magnet Machines. *Du, G.*, +, *TIE April 2020 2722-2733*

Solar PV Energy Generation System Interfaced to Three Phase Grid With Improved Power Quality. *Singh, A.K.*, +, *TIE May 2020 3798-3808*

Public domain software

Resilient Information Architecture Platform for the Smart Grid: A Novel Open-Source Platform for Microgrid Control. *Tu, H.*, +, *TIE Nov. 2020 9393-9404*

Pulse circuits

A Pedagogical Study of Aerodynamic Feedback Control by Dielectric Barrier Discharge Plasma. *Kwan, P.W.*, +, *TIE Jan. 2020 451-460*

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An Asynchronous Boost Converter With Time-Based Dual-Mode Control for Wide Load Range and High Efficiency in SSD Applications. *Lee, K.*, +, *TIE Dec. 2020 10520-10530*

Analysis and Design of Phase-Shift Pulse-Frequency-Modulated Full-Bridge LCC Resonant Converter. *Chen, Y.*, +, *TIE Feb. 2020 1092-1102*

Pulse width modulation

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A Soft-PWM Approach to Power/Signal Synchronous Transmission for SRG-Based DC Microgrids. *Yu, D.*, +, *TIE Oct. 2020 8450-8460*

Electromagnetic Vibration Analysis of High-Speed Permanent Magnet Synchronous Machines With Amorphous Metal Stator Cores Considering Current Harmonics. *Wu, S.*, +, *TIE Dec. 2020 10156-10167*

Performance Analysis of Model Predictive Technique Based Combined Control for PMSG-Based Distributed Generation Unit. *Mishra, R.*, +, *TIE Oct. 2020 8991-9000*

Predictive Control of IM Drive Acoustic Noise. *Kroneisl, M.*, +, *TIE July 2020 5666-5676*

Robust PMDC Motor Control for Accurate Wire Feeding in GMAW Using Back EMF. *Paul, A.K.*, *TIE Jan. 2020 413-420*

Pulsed power supplies

Analytic Modeling Optimal Control of Pulsed Power Supply for Accelerator Magnet. *Wang, X.*, +, *TIE July 2020 5657-5665*

Pulsed power switches

A High-Voltage Series-Stacked IGBT Switch With Active Energy Recovery Feature for Pulsed Power Applications. *Mohsenzade, S.*, +, *TIE May 2020 3650-3661*

Pumps

Precision Motion Control of a Servomotor-Pump Direct-Drive Electrohydraulic System With a Nonlinear Pump Flow Mapping. *Helian, B.*, +, *TIE Oct. 2020 8638-8648*

Sucker Rod Pump Working State Diagnosis Using Motor Data and Hidden Conditional Random Fields. *Zheng, B.*, +, *TIE Sept. 2020 7919-7928*

PWM inverters

A Closed-Loop Modulation Scheme for Duty Cycle Compensation of PWM Voltage Distortion at High Switching Frequency Inverter. *Ren, R.*, +, *TIE Feb. 2020 1475-1486*

A Hybrid Phase Shift-Pulsewidth Modulation and Asymmetric Selective Harmonic Current Mitigation-Pulsewidth Modulation Technique to Reduce Harmonics and Inductance of Single-Phase Grid-Tied Cascaded Multilevel Converters. *Moeini, A.*, +, *TIE Dec. 2020 10388-10398*

A New SVPWM Technique to Reduce the Inductor Current Ripple of Three-Phase Z-Source Inverter. *Singh, S.*, +, *TIE May 2020 3540-3550*

A Novel Scalar PWM Method to Reduce Leakage Current in Three-Phase Two-Level Transformerless Grid-Connected VSIs. *Xu, J.*, +, *TIE May 2020 3788-3797*

A Novel Virtual Space Vector Modulation With Reduced Common-Mode Voltage and Eliminated Neutral Point Voltage Oscillation for Neutral Point Clamped Three-Level Inverter. *Jiang, W.*, +, *TIE Feb. 2020 884-894*

A PWM ZVS High-Frequency-Link Three-Phase Inverter With T-Type NPC Unfolder. *Pal, A.*, +, *TIE Sept. 2020 7146-7156*

A Simple Feedforward Approach to Stabilize VSI-Fed Induction Motor With Filter in RFOC. *Mishra, P.*, +, *TIE Dec. 2020 10191-10201*

An Improved Modulation Technique With Minimum Switching Actions Within One PWM Cycle for Open-End Winding PMSM System With Isolated DC Bus. *Hu, W.*, +, *TIE May 2020 4259-4264*

An Optimized Zero-Sequence Voltage Injection Method for Eliminating Circulating Current and Reducing Common Mode Voltage of Parallel-Connected Three-Level Converters. *Xing, X.*, +, *TIE Aug. 2020 6583-6596*

An SVM Approach for Five-Phase Current Source Converters Output Current Harmonics and Common-Mode Voltage Mitigation. *He, J.*, +, *TIE July 2020 5232-5245*

Analysis and Calculation of Radial Electromagnetic Force of Circular Winding Brushless DC Motor. *Zhang, Q.*, +, *TIE June 2020 4338-4349*

Analysis and Design of a Novel Six-Switch Five-Level Active Boost Neutral Point Clamped Inverter. *Siwakoti, Y.P.*, +, *TIE Dec. 2020 10485-10496*

Carrier-Based PWM Equivalent to Multilevel Multiphase Space Vector PWM Techniques. *Lopez, O.*, +, *TIE July 2020 5220-5231*

Cost-Effective Islanded Electrical System With Decentralized Interleaving PWM for Converter Harmonic Reduction. *He, J.*, +, *TIE Oct. 2020 8472-8483*

Design and Implementation of New Multilevel Inverter Topology for Tri-nary Sequence Using Unipolar Pulsewidth Modulation. *Prabaharan, N.*, +, *TIE May 2020 3573-3582*

Design, Analysis, and Impacts of Sinusoidal LC Filter on Pulsewidth Modulated Inverter Fed-Induction Motor Drive. *Mishra, P.*, +, *TIE April 2020 2678-2688*

Direct Torque Control Techniques of Three-Level H-Bridge Inverter Fed Induction Motor for Torque Ripple Reduction at Low Speed Operations. *Naganathan, P.*, +, *TIE Oct. 2020 8262-8270*

Enhanced Parallel Hybrid Converter With DC Ripple Minimization Control. *Patro, S.K.*, +, *TIE Nov. 2020 9969-9975*

Extending the Linear Modulation Range to Full Base Speed Independent of Load Power Factor for a Multilevel Inverter Fed IM Drive. *Majumder, M.G.*, +, *TIE Nov. 2020 9143-9152*

Full-Scale Physical Simulator of All SiC Traction Motor Drive With Onboard Supercapacitor ESS for Light-Rail Public Transportation. *Yildirim, D.*, +, *TIE Aug. 2020 6290-6301*

- Hybrid Voltage Vector Preselection-Based Model Predictive Control for Two-Level Voltage Source Inverters to Reduce the Common-Mode Voltage. *Guo, L.*, +, *TIE June 2020 4680-4691*
- Minimization of Current Ripple and Switching Losses in Double-Inverter Fed Wound Rotor Induction Machine Drive Using PWM Techniques. *Bajjuri, N.K.*, +, *TIE May 2020 3484-3495*
- Mitigation of DC-Link Current Ripple for Dual Three-Phase Flux-Adjustable Hybrid PMAC Drives Using Collaborative Switching Strategy. *Wang, Z.*, +, *TIE Sept. 2020 7202-7216*
- Model Predictive Control of a Nine-Level Internal Parallel Multilevel Converter With Phase-Shifted Pulsewidth Modulation. *Zhou, D.*, +, *TIE Nov. 2020 9073-9082*
- Modeling and Control of Low Switching Frequency High-Performance Induction Motor Drives. *Qi, X.*, +, *TIE June 2020 4402-4410*
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- Multisampling Method for Single-Phase Grid-Connected Cascaded H-Bridge Inverters. *Ma, J.*, +, *TIE Oct. 2020 8322-8334*
- Permanent-Magnet Machine Flux and Torque Response Under the Influence of Turn Fault. *Hsu, C.*, +, *TIE Jan. 2020 169-179*
- Phase Voltage Measurement for Permanent Magnet Machine Sensorless Drive Using Controller Capture Modulator. *Chen, G.*, +, *TIE Jan. 2020 49-58*
- Sensorless Control of Planar Switched Reluctance Motors Based on Voltage Injection Combined With Core-Loss Calculation. *Chen, N.*, +, *TIE July 2020 6031-6042*
- Simple Fundamental Current Estimation and Smooth Transition Between Synchronous Optimal PWM and Asynchronous SVM. *Birda, A.*, +, *TIE Aug. 2020 6354-6364*
- Simultaneous DC Current Balance and CMV Reduction for Parallel CSC System With Interleaved Carrier-Based SPWM. *Ding, L.*, +, *TIE Oct. 2020 8495-8505*
- Torque Ripple Reduction in Sectorized Multi Three-Phase Machines Based on PWM Carrier Phase Shift. *Wang, X.*, +, *TIE June 2020 4315-4325*
- PWM power converters**
- A Current-Sharing Method for Interleaved High-Frequency LLC Converter With Partial Energy Processing. *Chen, H.*, +, *TIE Feb. 2020 1498-1507*
- A Hybrid Phase Shift-Pulsewidth Modulation and Asymmetric Selective Harmonic Current Mitigation-Pulsewidth Modulation Technique to Reduce Harmonics and Inductance of Single-Phase Grid-Tied Cascaded Multilevel Converters. *Moeini, A.*, +, *TIE Dec. 2020 10388-10398*
- A New Three-Phase Multipoint Clamped 5L-HPFC With Reduced PSD Count and Switch Stress. *Yalla, N.*, +, *TIE April 2020 2532-2543*
- A Novel Fault-Tolerant Technique for Active-Neutral-Point-Clamped Inverter Using Carrier-Based PWM. *Azer, P.*, +, *TIE March 2020 1792-1803*
- A Novel Scalar PWM Method to Reduce Leakage Current in Three-Phase Two-Level Transformerless Grid-Connected VSIs. *Xu, J.*, +, *TIE May 2020 3788-3797*
- A Novel Virtual Space Vector Modulation With Reduced Common-Mode Voltage and Eliminated Neutral Point Voltage Oscillation for Neutral Point Clamped Three-Level Inverter. *Jiang, W.*, +, *TIE Feb. 2020 884-894*
- A PWM ZVS High-Frequency-Link Three-Phase Inverter With T-Type NPC Unfolder. *Pal, A.*, +, *TIE Sept. 2020 7146-7156*
- A Reliable Single-Phase Bipolar Buck-Boost Direct PWM AC-AC Converter With Continuous Input/Output Currents. *Ahmed, H.F.*, +, *TIE Dec. 2020 10253-10265*
- An Active-Clamping ZVS Interleaved Buck/Boost Bidirectional Converter With One Auxiliary Switch. *Mohammadi, M.R.*, *TIE Sept. 2020 7430-7438*
- An Enhanced Control Strategy for AC-DC Matrix Converters Under Unbalanced Grid Voltage. *Nguyen, T.*, +, *TIE March 2020 1718-1727*
- An Improved Modulation Technique With Minimum Switching Actions Within One PWM Cycle for Open-End Winding PMSM System With Isolated DC Bus. *Hu, W.*, +, *TIE May 2020 4259-4264*
- An Interleaved Three-Phase PWM Single-Stage Resonant Rectifier With High-Frequency Isolation. *Li, G.*, +, *TIE Aug. 2020 6572-6582*
- An Optimized Carrier-Based PWM Method and Voltage Balancing Control for Five-Level ANPC Converters. *Wang, K.*, +, *TIE Nov. 2020 9120-9132*
- An Optimized Zero-Sequence Voltage Injection Method for Eliminating Circulating Current and Reducing Common Mode Voltage of Parallel-Connected Three-Level Converters. *Xing, X.*, +, *TIE Aug. 2020 6583-6596*
- Analysis and Design of Phase-Shift Pulse-Frequency-Modulated Full-Bridge LCC Resonant Converter. *Chen, Y.*, +, *TIE Feb. 2020 1092-1102*
- Application of Analytic Signal and Smooth Interpolation in Pulsewidth Modulation for Conventional Matrix Converters. *Szczepankowski, P.*, +, *TIE Dec. 2020 10011-10023*
- Assessing Variable Sampling Time Controllers for Five-Phase Induction Motor Drives. *Arahal, M.R.*, +, *TIE April 2020 2523-2531*
- Common-Mode and Phase-to-Ground Voltage Reduction in Back-to-Back Power Converters With Discontinuous PWM. *Samanes, J.*, +, *TIE Sept. 2020 7499-7508*
- Cost-Effective Islanded Electrical System With Decentralized Interleaving PWM for Converter Harmonic Reduction. *He, J.*, +, *TIE Oct. 2020 8472-8483*
- Coupled Inductor Based Regenerative Cascaded Multicell Converter for Drives With Multilevel Voltage Operation at Both Input and Output Sides. *Sau, S.*, +, *TIE Jan. 2020 147-158*
- DC-Side-Fault-Tolerant Control of a Battery-Supercapacitor Hybrid Energy Storage System Based on Cascaded Multilevel Converter and Auxiliary Power Loop. *Jiang, W.*, +, *TIE Sept. 2020 7451-7460*
- Finite-Control-Set MPC for Open-Phase Fault-Tolerant Control of PM Synchronous Motor Drives. *Kiselev, A.*, +, *TIE June 2020 4444-4452*
- Full-Scale Physical Simulator of All SiC Traction Motor Drive With Onboard Supercapacitor ESS for Light-Rail Public Transportation. *Yildirim, D.*, +, *TIE Aug. 2020 6290-6301*
- Generalized Harmonic Control for CHB Converters With Unbalanced Cells Operation. *Marquez, A.*, +, *TIE Nov. 2020 9039-9047*
- Generalized Phase-Shift PWM for Active-Neutral-Point-Clamped Multilevel Converter. *Li, Y.*, +, *TIE Nov. 2020 9048-9058*
- Generalized Space Vector Modulation for Current Source Converter in Continuous and Discontinuous Current Modes. *Guo, X.*, +, *TIE Nov. 2020 9348-9357*
- Hybrid Buck Converter With Constant Mode Changing Point and Smooth Mode Transition for High-Frequency Applications. *Yuan, B.*, +, *TIE Feb. 2020 1466-1474*
- Hybrid PWM Scheme for Pole-Phase Modulation Induction Motor Drive Using Carrier-Based Hexagonal and Octadecagonal SVPWM. *Janaki Ramaiah, V.*, +, *TIE Sept. 2020 7312-7320*
- Model Predictive Control for Dual Active Bridge in Naval DC Microgrids Supplying Pulsed Power Loads Featuring Fast Transition and Online Transformer Current Minimization. *Xiao, Q.*, +, *TIE June 2020 5197-5203*
- Model Predictive Control of a Nine-Level Internal Parallel Multilevel Converter With Phase-Shifted Pulsewidth Modulation. *Zhou, D.*, +, *TIE Nov. 2020 9073-9082*
- Modulation and Voltage Balancing of a Five-Level Series-Connected Multilevel Inverter With Reduced Isolated Direct Current Sources. *Dekka, A.*, +, *TIE Oct. 2020 8219-8230*
- Multibattery-Fed Neutral-Point-Clamped DC-AC Converter With SoC Balancing Control to Maximize Capacity Utilization. *Busquets-Monge, S.*, +, *TIE Jan. 2020 16-27*
- Near-Optimal MPC Algorithm for Actively Damped Grid-Connected PWM-VSCs With LCL Filters. *Lim, C.S.*, +, *TIE June 2020 4578-4589*
- Phase Voltage Measurement for Permanent Magnet Machine Sensorless Drive Using Controller Capture Modulator. *Chen, G.*, +, *TIE Jan. 2020 49-58*
- Postfault Operation of Cascaded H-Bridge Converter for Equal Power Handling by the Healthy Cells. *Sharma, R.*, +, *TIE Nov. 2020 9174-9183*

- Sampling-Time Harmonic Control for Cascaded H-Bridge Converters With Thermal Control. *Marquez, A.*, +, *TIE April 2020 2776-2785*
- Simultaneous DC Current Balance and CMV Reduction for Parallel CSC System With Interleaved Carrier-Based SPWM. *Ding, L.*, +, *TIE Oct. 2020 8495-8505*
- Single-Stage Voltage Balancer With High-Frequency Isolation for Bipolar LVDC Distribution System. *Lee, J.*, +, *TIE May 2020 3596-3606*
- Soft Switching Bidirectional Converter for Reflex Charger With Minimum Switches. *Ahmadi, F.*, +, *TIE Oct. 2020 8355-8362*
- The Novel Quasi-Resonant Flyback Converter With Autoregulated Structure for Parallel/Serial Input. *Wang, J.*, +, *TIE Feb. 2020 992-1004*
- Torque Ripple Reduction in Sectorized Multi Three-Phase Machines Based on PWM Carrier Phase Shift. *Wang, X.*, +, *TIE June 2020 4315-4325*
- Two-Layer Pulsewidth Modulation Strategy for Common-Mode Voltage and Current Harmonic Distortion Reduction in Vienna Rectifier. *Xing, X.*, +, *TIE Sept. 2020 7470-7483*
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- Vector Shifted Model Predictive Power Control of Three-Level Neutral-Point-Clamped Rectifiers. *Zhou, D.*, +, *TIE Sept. 2020 7157-7166*

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- A Hybrid Space-Vector Modulation Method for Harmonics and Current Ripple Reduction of Interleaved Vienna Rectifier. *Wang, T.*, +, *TIE Oct. 2020 8088-8099*
- An Interleaved Secondary-Side Modulated LLC Resonant Converter for Wide Output Range Applications. *Li, Z.*, +, *TIE Feb. 2020 1124-1135*
- Coupled Inductor Based Regenerative Cascaded Multicell Converter for Drives With Multilevel Voltage Operation at Both Input and Output Sides. *Sau, S.*, +, *TIE Jan. 2020 147-158*
- Frequency-Adaptive Virtual Flux Estimator-Based Predictive Power Control With Suppression of Dc Voltage Ripples Under Unbalanced Network. *Yang, H.*, +, *TIE Oct. 2020 8969-8979*
- Full-Scale Physical Simulator of All SiC Traction Motor Drive With Onboard Supercapacitor ESS for Light-Rail Public Transportation. *Yildirim, D.*, +, *TIE Aug. 2020 6290-6301*
- Two-Layer Pulsewidth Modulation Strategy for Common-Mode Voltage and Current Harmonic Distortion Reduction in Vienna Rectifier. *Xing, X.*, +, *TIE Sept. 2020 7470-7483*
- Vector Shifted Model Predictive Power Control of Three-Level Neutral-Point-Clamped Rectifiers. *Zhou, D.*, +, *TIE Sept. 2020 7157-7166*

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- A Novel Hierarchical Detection and Isolation Framework for Quality-Related Multiple Faults in Large-Scale Processes. *Ma, L.*, +, *TIE Feb. 2020 1316-1327*
- Data-Driven Batch-End Quality Modeling and Monitoring Based on Optimized Sparse Partial Least Squares. *Jiang, Q.*, +, *TIE May 2020 4098-4107*

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- Motion Control for Piezoelectric-Actuator-Based Surgical Device Using Neural Network and Extended State Observer. *Lau, J.Y.*, +, *TIE Jan. 2020 402-412*
- Spatial Correlation-Based Incremental Learning for Spatiotemporal Modeling of Battery Thermal Process. *Wang, B.*, +, *TIE April 2020 2885-2893*

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- Dual-Mode RFID Tag IC Supporting Gen-2 and Visible RFID Modes Using a Process-Compensating Self-Calibrating Clock Generator. *Din, A.U.*, +, *TIE Jan. 2020 569-580*
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- Massive MIMO With Massive Connectivity for Industrial Internet of Things. *Lee, B.M.*, +, *TIE June 2020 5187-5196*

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- Analysis and Design of a High-Efficiency 6.78-MHz Wireless Power Transfer System With Scalable Number of Receivers. *Song, J.*, +, *TIE Oct. 2020 8281-8291*

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- A Triple-Band High-Gain Multibeam Ambient RF Energy Harvesting System Utilizing Hybrid Combining. *Shen, S.*, +, *TIE Nov. 2020 9215-9226*
- Active Class E Rectifier for DC Output Voltage Regulation in Megahertz Wireless Power Transfer Systems. *Liu, M.*, +, *TIE May 2020 3618-3628*
- Analysis and Design of a High-Efficiency 6.78-MHz Wireless Power Transfer System With Scalable Number of Receivers. *Song, J.*, +, *TIE Oct. 2020 8281-8291*
- Continuously Adjustable Capacitor for Multiple-Pickup Wireless Power Transfer Under Single-Power-Induced Energy Field. *Zhang, Z.*, +, *TIE Aug. 2020 6418-6427*

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- An Efficient Convolutional Neural Network Model Based on Object-Level Attention Mechanism for Casting Defect Detection on Radiography Images. *Hu, C.*, +, *TIE Dec. 2020 10922-10930*

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- Impact of Rebar and Concrete on Power Dissipation of Wireless Power Transfer Systems. *Lee, S.*, +, *TIE Jan. 2020 276-287*

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- A GaN-Based DC–DC Module for Railway Applications: Design Consideration and High-Frequency Digital Control. *Fu, M.*, +, *TIE Feb. 2020 1638-1647*
- A Novel Controlled Frequency Band Impedance Measurement Approach for Single-Phase Railway Traction Power System. *Hu, H.*, +, *TIE Jan. 2020 244-253*
- A Single-Phase Five-Branch Direct AC–AC Modular Multilevel Converter for Railway Power Conditioning. *Lei, M.*, +, *TIE June 2020 4292-4304*
- Magnetic-Integrated Multipulse Rectifier Transformer With a Tight Impedance Equalizing Strategy for Power Quality Improvement of DC Traction Power Supply System. *An, B.*, +, *TIE Aug. 2020 6270-6279*
- PSO-Based Optimization of DC-Link Current Harmonics in Traction VSI for an Electric Vehicle. *Steczek, M.*, +, *TIE Oct. 2020 8197-8208*
- Sensorless Control of Linear Flux-Switching Permanent Magnet Motor Based on Extended Kalman Filter. *Cao, R.*, +, *TIE July 2020 5971-5979*

Railways

- A Proposed Fast Charging and High-Power System for Wireless Railway Trains Adopting the Input Voltage Sharing Topology and the Balancing Control Scheme. *Kim, J.*, +, *TIE Aug. 2020 6407-6417*
- Full Degree of Freedom Based Control Scheme of the Single-Phase Direct AC–AC Modular Multilevel Converter for Railway Power Conditioning Under Asymmetric Branch Conditions. *Lei, M.*, +, *TIE March 2020 1671-1683*
- Impact of Rebar and Concrete on Power Dissipation of Wireless Power Transfer Systems. *Lee, S.*, +, *TIE Jan. 2020 276-287*

Random processes

- A Gossip-Based Distributed Algorithm for Economic Dispatch in Smart Grids With Random Communication Link Failures. *Wang, R.*, +, *TIE June 2020 4635-4645*
- Distribution System Restoration With Renewable Resources for Reliability Improvement Under System Uncertainties. *Zou, K.*, +, *TIE Oct. 2020 8438-8449*
- Sucker Rod Pump Working State Diagnosis Using Motor Data and Hidden Conditional Random Fields. *Zheng, B.*, +, *TIE Sept. 2020 7919-7928*

Random-access storage

- FPGA-Based Stochastic Activity Networks for Online Reliability Monitoring. *Garro, U.*, +, *TIE June 2020 5000-5011*

Rapid prototyping (industrial)

- A Collaborative Sensing and Model-Based Real-Time Recovery of Fast Data Flows From Sparse Measurements. *Xiao, H.*, +, *TIE Aug. 2020 6806-6814*

Ray tracing

- Reconfigurable Cellular Base Station Antenna Consisting of Parasitic Radiators. *Kayani, H.A.*, +, *TIE Aug. 2020 7083-7093*

Rayleigh channels

- Stochastic Consensus Control Integrated With Performance Improvement: A Consensus Region-Based Approach. *Wang, J.*, +, *TIE April 2020 3000-3012*

RC circuits

- DC Fault Analysis Models of Three Converter Topologies Considering Control Effects. *Li, Y.*, +, *TIE Nov. 2020 9480-9491*

Reactive power

- An Induction Machine With Tapped Stator Windings for LCI-Fed Medium Voltage Drive Applications. *Titus, J.*, +, *TIE Sept. 2020 7217-7227*
- Analysis of Reactive Power Compensation Effect of a New Hybrid Excitation Brushless DC Generator. *Sun, L.*, +, *TIE May 2020 3562-3572*
- Design, Analysis, and Impacts of Sinusoidal LC Filter on Pulsewidth Modulated Inverter Fed-Induction Motor Drive. *Mishra, P.*, +, *TIE April 2020 2678-2688*
- Novel Transformerless Buck–Boost Inverters Without Leakage Current. *Khan, A.A.*, +, *TIE Dec. 2020 10442-10454*
- Power Quality Enhancement Using Euclidean Direction Search Based Control Technique. *Badoni, M.*, +, *TIE March 2020 2231-2240*

Reactive power control

- A New Single-Phase Transformerless Grid-Connected Inverter With Boosting Ability and Common Ground Feature. *Vosoughi, N.*, +, *TIE Nov. 2020 9313-9325*

- An Enhanced Control Strategy for AC–DC Matrix Converters Under Unbalanced Grid Voltage. *Nguyen, T.*, +, *TIE March 2020 1718-1727*
- An Enhanced Strategy to Inhibit Commutation Failure in Line-Commutated Converters. *Mirsaeidi, S.*, +, *TIE Jan. 2020 340-349*
- Control Strategy for Five-Phase Dual-Stator Winding Induction Starter/Generator System. *Liu, H.*, +, *TIE April 2020 2607-2617*
- Improved Reweighted Zero-Attracting Quaternion-Valued LMS Algorithm for Islanded Distributed Generation System at IM Load. *Kewat, S.*, +, *TIE May 2020 3705-3716*
- Postfault Operation of Cascaded H-Bridge Converter for Equal Power Handling by the Healthy Cells. *Sharma, R.*, +, *TIE Nov. 2020 9174-9183*
- Seamless Dynamics for Wild-Frequency Active Rectifiers in More Electric Aircraft. *Benzaquen, J.*, +, *TIE Sept. 2020 7135-7145*
- Sensorless Rotor Position Estimation of Doubly Fed Induction Generator Based on Backstepping Technique. *Morawiec, M.*, +, *TIE July 2020 5889-5899*
- Vector Shifted Model Predictive Power Control of Three-Level Neutral-Point-Clamped Rectifiers. *Zhou, D.*, +, *TIE Sept. 2020 7157-7166*

Readout electronics

- An Energy-Efficient Multimode Multichannel Gas-Sensor System With Learning-Based Optimization and Self-Calibration Schemes. *Park, K.*, +, *TIE March 2020 2402-2410*

Real-time systems

- Distributed Fast Fault Diagnosis for Multimachine Power Systems via Deterministic Learning. *Chen, T.*, +, *TIE May 2020 4152-4162*
- Real-Time Reentry Trajectory Planning of Hypersonic Vehicles: A Two-Step Strategy Incorporating Fuzzy Multiobjective Transcription and Deep Neural Network. *Chai, R.*, +, *TIE Aug. 2020 6904-6915*

Rebar

- Impact of Rebar and Concrete on Power Dissipation of Wireless Power Transfer Systems. *Lee, S.*, +, *TIE Jan. 2020 276-287*

Receivers

- Concurrent Wireless Power Transfer to Multiple Receivers With Additional Resonant Frequencies and Reduced Power Switches. *Xiao, Y.*, +, *TIE Nov. 2020 9292-9301*

Receiving antennas

- Directional Radiation Technique for Maximum Receiving Power in Microwave Power Transmission System. *Hui, Q.*, +, *TIE Aug. 2020 6376-6386*

Rectification

- A 300-kHz 6.6-kW SiC Bidirectional LLC Onboard Charger. *Li, H.*, +, *TIE Feb. 2020 1435-1445*
- A New CCM/DCM Hybrid-Mode Synchronous Rectification Flyback Converter. *Dong, H.*, +, *TIE May 2020 3629-3639*
- Active Class E Rectifier for DC Output Voltage Regulation in Megahertz Wireless Power Transfer Systems. *Liu, M.*, +, *TIE May 2020 3618-3628*
- Lateral GaN Schottky Barrier Diode for Wireless High-Power Transfer Application With High RF/DC Conversion Efficiency: From Circuit Construction and Device Technologies to System Demonstration. *Dang, K.*, +, *TIE Aug. 2020 6597-6606*
- Novel Boost-SEPIC Type Interleaved DC–DC Converter for Mitigation of Voltage Imbalance in a Low-Voltage Bipolar DC Microgrid. *Prabhakaran, P.*, +, *TIE Aug. 2020 6494-6504*
- Power Loss Estimation in LLC Synchronous Rectification Using Rectifier Current Equations. *Glitz, E.S.*, +, *TIE May 2020 3696-3704*
- The Output Voltage Control Strategy for DSEG With Controlled Rectification Based on Conduction Angle Estimation. *Wang, K.*, +, *TIE May 2020 3350-3360*
- Thermoelectric Energy Harvesting From Gradients in the Earth Surface. *Sigrist, L.*, +, *TIE Nov. 2020 9460-9470*

Rectifiers

- A 30-Pulse Rectifier Using Passive Voltage Harmonic Injection Method at DC Link. *Li, Q.*, +, *TIE Nov. 2020 9273-9291*
- A Dual Half-Bridge Converter With Current Doubler Rectifier. *Zhao, L.*, +, *TIE Aug. 2020 6398-6406*
- A High Step-Down Buck Converter With Self-Driven Synchronous Rectifier. *Soleymani, B.*, +, *TIE Dec. 2020 10266-10273*
- A PWM ZVS High-Frequency-Link Three-Phase Inverter With T-Type NPC Unfolder. *Pal, A.*, +, *TIE Sept. 2020 7146-7156*

- A Reliable Single-Phase Bipolar Buck–Boost Direct PWM AC–AC Converter With Continuous Input/Output Currents. *Ahmed, H.F.*, +, *TIE Dec. 2020 10253-10265*
- A Simple Technique for Fundamental Harmonic Approximation Analysis in Parallel and Series–Parallel Resonant Converters. *Rathore, A.K.*, +, *TIE Nov. 2020 9963-9968*
- Active Class E Rectifier for DC Output Voltage Regulation in Megahertz Wireless Power Transfer Systems. *Liu, M.*, +, *TIE May 2020 3618-3628*
- Adaptive Self-Configurable Rectifier for Extended Operating Range of Piezoelectric Energy Harvesting. *Chew, Z.J.*, +, *TIE April 2020 3267-3276*
- An Efficiency-Oriented Two-Stage Optimal Design Methodology of High-Frequency *LCLC* Resonant Converters for Space Travelling-Wave Tube Amplifier Applications. *Zhao, B.*, +, *TIE Feb. 2020 1068-1080*
- An Integrated Electrified Powertrain Topology With SRG and SRM for Plug-In Hybrid Electrical Vehicle. *Cheng, H.*, +, *TIE Oct. 2020 8231-8241*
- An Interleaved Three-Phase PWM Single-Stage Resonant Rectifier With High-Frequency Isolation. *Li, G.*, +, *TIE Aug. 2020 6572-6582*
- Analysis and Design of a High-Efficiency 6.78-MHz Wireless Power Transfer System With Scalable Number of Receivers. *Song, J.*, +, *TIE Oct. 2020 8281-8291*
- Analysis, Design, and Experimental Verification of a Mixed High-Order Compensations-Based WPT System with Constant Current Outputs for Driving Multistring LEDs. *Li, Y.*, +, *TIE Jan. 2020 203-213*
- Bidirectional DC–DC Converter for Modular Residential Battery Energy Storage Systems. *Chub, A.*, +, *TIE March 2020 1944-1955*
- Design Considerations for Voltage Sensorless Control of a PFC Single-Phase Rectifier Without Electrolytic Capacitors. *Qi, W.*, +, *TIE March 2020 1878-1889*
- Dynamic Performance Improvement of Doubly Salient Brushless DC Generator System With Controlled Rectifier. *Xu, Y.*, +, *TIE Oct. 2020 8209-8218*
- Extending Protection Selectivity in DC Shipboard Power Systems by Means of Additional Bus Capacitance. *Kim, S.*, +, *TIE May 2020 3673-3683*
- Ferdowsi Rectifiers—Single-Phase Buck-Boost Bridgeless PFC Rectifiers With Low Semiconductor Count. *Sharifi, S.*, +, *TIE Nov. 2020 9206-9214*
- Magnetic-Integrated Multipulse Rectifier Transformer With a Tight Impedance Equalizing Strategy for Power Quality Improvement of DC Traction Power Supply System. *An, B.*, +, *TIE Aug. 2020 6270-6279*
- Minimization of Abnormal Output Voltage Rising for *LLC* Resonant Converter at Very Light Load. *Kim, C.*, +, *TIE Dec. 2020 10295-10303*
- Modeling, Analysis, and Attenuation of Uncontrolled Generation for IPMSM-Based Electric Vehicles in Emergency. *Gong, C.*, +, *TIE June 2020 4453-4462*
- Nonregenerative Braking of Permanent Magnet Synchronous Motor. *Marcevic, D.P.*, +, *TIE Oct. 2020 8186-8196*
- Power Loss Estimation in *LLC* Synchronous Rectification Using Rectifier Current Equations. *Glitz, E.S.*, +, *TIE May 2020 3696-3704*
- Seamless Dynamics for Wild-Frequency Active Rectifiers in More Electric Aircraft. *Benzaquen, J.*, +, *TIE Sept. 2020 7135-7145*
- Vector Shifted Model Predictive Power Control of Three-Level Neutral-Point-Clamped Rectifiers. *Zhou, D.*, +, *TIE Sept. 2020 7157-7166*
- Zero Voltage Switching Control Method for MHz Boundary Conduction Mode Converters. *Hernandez, J.C.*, +, *TIE Feb. 2020 1544-1554*
- Rectifying circuits**
- A 30-Pulse Rectifier Using Passive Voltage Harmonic Injection Method at DC Link. *Li, Q.*, +, *TIE Nov. 2020 9273-9291*
- A High Step-Down Buck Converter With Self-Driven Synchronous Rectifier. *Soleymani, B.*, +, *TIE Dec. 2020 10266-10273*
- A Hybrid Space-Vector Modulation Method for Harmonics and Current Ripple Reduction of Interleaved Vienna Rectifier. *Wang, T.*, +, *TIE Oct. 2020 8088-8099*
- A PWM ZVS High-Frequency-Link Three-Phase Inverter With T-Type NPC Unfolder. *Pal, A.*, +, *TIE Sept. 2020 7146-7156*
- Adaptive Self-Configurable Rectifier for Extended Operating Range of Piezoelectric Energy Harvesting. *Chew, Z.J.*, +, *TIE April 2020 3267-3276*
- An Interleaved Three-Phase PWM Single-Stage Resonant Rectifier With High-Frequency Isolation. *Li, G.*, +, *TIE Aug. 2020 6572-6582*
- DC Fault Analysis Models of Three Converter Topologies Considering Control Effects. *Li, Y.*, +, *TIE Nov. 2020 9480-9491*
- Design Considerations for Voltage Sensorless Control of a PFC Single-Phase Rectifier Without Electrolytic Capacitors. *Qi, W.*, +, *TIE March 2020 1878-1889*
- Ferdowsi Rectifiers—Single-Phase Buck-Boost Bridgeless PFC Rectifiers With Low Semiconductor Count. *Sharifi, S.*, +, *TIE Nov. 2020 9206-9214*
- High-Efficiency Zero-Voltage-Switching Totem-Pole Bridgeless Rectifier With Integrated Inrush Current Limiter Circuit. *Jeong, Y.*, +, *TIE Sept. 2020 7421-7429*
- Lateral GaN Schottky Barrier Diode for Wireless High-Power Transfer Application With High RF/DC Conversion Efficiency: From Circuit Construction and Device Technologies to System Demonstration. *Dang, K.*, +, *TIE Aug. 2020 6597-6606*
- Magnetic-Integrated Multipulse Rectifier Transformer With a Tight Impedance Equalizing Strategy for Power Quality Improvement of DC Traction Power Supply System. *An, B.*, +, *TIE Aug. 2020 6270-6279*
- Self-Powered Piezoelectric and Thermoelectric Energy Simultaneous Extraction Interface Circuit Based on Double Stack Resonance. *Wang, X.*, +, *TIE June 2020 4567-4577*
- Single-Stage Voltage Balancer With High-Frequency Isolation for Bipolar LVDC Distribution System. *Lee, J.*, +, *TIE May 2020 3596-3606*
- Vector Shifted Model Predictive Power Control of Three-Level Neutral-Point-Clamped Rectifiers. *Zhou, D.*, +, *TIE Sept. 2020 7157-7166*
- Recurrent neural networks**
- An Accelerated Recurrent Neural Network for Visual Servo Control of a Robotic Flexible Endoscope With Joint Limit Constraint. *Li, W.*, +, *TIE Dec. 2020 10787-10797*
- Data-Driven Modeling Based on Two-Stream λ Gated Recurrent Unit Network With Soft Sensor Application. *Xie, R.*, +, *TIE Aug. 2020 7034-7043*
- Dynamic State Estimation for the Advanced Brake System of Electric Vehicles by Using Deep Recurrent Neural Networks. *Xing, Y.*, +, *TIE Nov. 2020 9536-9547*
- Hybrid-Model-Based Intelligent Optimization of Ironmaking Process. *Zhou, H.*, +, *TIE March 2020 2469-2479*
- Macroscopic–Microscopic Attention in LSTM Networks Based on Fusion Features for Gear Remaining Life Prediction. *Qin, Y.*, +, *TIE Dec. 2020 10865-10875*
- Predefined-Time Convergent Neural Solution to Cyclical Motion Planning of Redundant Robots Under Physical Constraints. *Li, W.*, +, *TIE Dec. 2020 10732-10743*
- Transfer Learning With Long Short-Term Memory Network for State-of-Health Prediction of Lithium-Ion Batteries. *Tan, Y.*, +, *TIE Oct. 2020 8723-8731*
- Recursive estimation**
- Motor Parameter-Free Predictive Current Control of Synchronous Motors by Recursive Least-Square Self-Commissioning Model. *Tinazzi, F.*, +, *TIE Nov. 2020 9093-9100*
- SOSO Boosting of the K-SVD Denoising Algorithm for Enhancing Fault-Induced Impulse Responses of Rolling Element Bearings. *Zeng, M.*, +, *TIE Feb. 2020 1282-1292*
- Recursive filters**
- Is Using A Complex Control Gain in Three-Phase FLLs Reasonable?. *Golestani, S.*, +, *TIE March 2020 2480-2484*
- Reduced order systems**
- A Novel Order Reduced Synchronous Power Control for Grid-Forming Inverters. *Quan, X.*, +, *TIE Dec. 2020 10989-10995*
- Is Using A Complex Control Gain in Three-Phase FLLs Reasonable?. *Golestani, S.*, +, *TIE March 2020 2480-2484*
- Simultaneous Fault Estimation for Markovian Jump Systems With Generally Uncertain Transition Rates: A Reduced-Order Observer Approach. *Li, X.*, +, *TIE Sept. 2020 7889-7897*
- Reduction (chemical)**
- Hydrothermal Aging Factor Estimation for Two-Cell Diesel-Engine SCR Systems via a Dual Time-Scale Unscented Kalman Filter. *Jiang, K.*, +, *TIE Jan. 2020 442-450*

Redundant manipulators

Predefined-Time Convergent Neural Solution to Cyclical Motion Planning of Redundant Robots Under Physical Constraints. *Li, W.*, *TIE Dec. 2020 10732-10743*

Regenerative braking

A Neutral-Point Diode-Clamped Converter With Inherent Voltage-Boosting for a Four-Phase SRM Drive. *Abdel-Aziz, A.A.*, +, *TIE July 2020 5313-5324*

A Novel Initiative Braking System With Nondegraded Fallback Level for ADAS and Autonomous Driving. *Yuan, Y.*, +, *TIE June 2020 4360-4370*

An Antiovervoltage Control Scheme for Electrolytic Capacitorless IPMSM Drives Based on Stator Current Vector Orientation. *Ding, D.*, +, *TIE May 2020 3517-3527*

Regression analysis

A Proportional Pattern Recognition Control Scheme for Wearable A-mode Ultrasound Sensing. *Yang, X.*, +, *TIE Jan. 2020 800-808*

Data-Driven Modeling Based on Two-Stream λ Gated Recurrent Unit Network With Soft Sensor Application. *Xie, R.*, +, *TIE Aug. 2020 7034-7043*

Finite-Time Identification Algorithm for Volumetric Efficiency Map in SI Gasoline Engines. *Wang, C.*, +, *TIE Dec. 2020 10702-10712*

Multitask Bayesian Spatiotemporal Gaussian Processes for Short-Term Load Forecasting. *Gilanifar, M.*, +, *TIE June 2020 5132-5143*

The Optimal Speed-Torque Control of Asynchronous Motors for Electric Cars in the Field-Weakening Region Based on the RFR. *Xie, F.*, +, *TIE Nov. 2020 9601-9612*

Voluntary and FES-Induced Finger Movement Estimation Using Muscle Deformation Features. *Zhou, Y.*, +, *TIE May 2020 4002-4012*

Reinforced concrete

Impact of Rebar and Concrete on Power Dissipation of Wireless Power Transfer Systems. *Lee, S.*, +, *TIE Jan. 2020 276-287*

Reliability

A Currentless Submodule Individual Voltage Balancing Control for Modular Multilevel Converters. *Deng, F.*, +, *TIE Nov. 2020 9370-9382*

A High-Power-Density Converter With a Continuous Input Current Waveform for Satellite Power Applications. *Lee, N.*, +, *TIE Feb. 2020 1024-1035*

A Prognostic Model Based on DBN and Diffusion Process for Degrading Bearing. *Hu, C.*, +, *TIE Oct. 2020 8767-8777*

A Simple Equivalent Temperature Rise Test Method Suitable for Safely Evaluating Thermal Limits of Motors and Power Devices Without Model Dependence. *Wang, B.*, +, *TIE Oct. 2020 8755-8766*

A Time-Saving Approach for the Thermal Lifetime Evaluation of Low-Voltage Electrical Machines. *Madonna, V.*, +, *TIE Nov. 2020 9195-9205*

Adaptive Prognostic of Fuel Cells by Implementing Ensemble Echo State Networks in Time-Varying Model Space. *Li, Z.*, +, *TIE Jan. 2020 379-389*

Airgap Flux Based Detection and Classification of Induction Motor Rotor and Load Defects During the Starting Transient. *Park, Y.*, +, *TIE Dec. 2020 10075-10084*

Condition Monitoring of Transformer Breather Using a Capacitive Moisture Sensor. *Kumar, S.*, +, *TIE Nov. 2020 9779-9789*

Detection of Winding Asymmetries in Wound-Rotor Induction Motors via Transient Analysis of the External Magnetic Field. *Zamudio-Ramirez, I.*, +, *TIE June 2020 5050-5059*

Modeling, Design, and Validation of Magnetic Hysteresis Motors. *Galluzzi, R.*, +, *TIE Feb. 2020 1171-1179*

Multifunction Transformer With Adjustable Magnetic Stage Based on Nanocomposite Semihard Magnets. *Chen, Z.*, +, *TIE May 2020 4226-4234*

Real-Time CU-Net-Based Welding Quality Inspection Algorithm in Battery Production. *Zhang, H.*, +, *TIE Dec. 2020 10942-10950*

Thermal Overload and Insulation Aging of Short Duty Cycle, Aerospace Motors. *Madonna, V.*, +, *TIE April 2020 2618-2629*

Reluctance generators

A Soft-PWM Approach to Power/Signal Synchronous Transmission for SRG-Based DC Microgrids. *Yu, D.*, +, *TIE Oct. 2020 8450-8460*

An Integrated Electrified Powertrain Topology With SRG and SRM for Plug-In Hybrid Electrical Vehicle. *Cheng, H.*, +, *TIE Oct. 2020 8231-8241*

Sensorless SynRG Based Variable Speed Wind Generator and Single-Stage Solar PV Array Integrated Grid System With Maximum Power Extraction Capability. *Vijay, M. D.*, +, *TIE Sept. 2020 7529-7539*

Reluctance machines

A Turn Fault Mitigation Strategy Based on Current Injection Technique for a Triple Three-Phase PMA SynRM. *Wang, B.*, +, *TIE April 2020 2511-2522*

Design of a New Relieving-DC-Saturation Hybrid Reluctance Machine for Fault-Tolerant In-Wheel Direct Drive. *Zhao, X.*, +, *TIE Nov. 2020 9571-9581*

Dual-Pulse Mode Control of a High-Speed Doubly Salient Electromagnetic Machine for Loss Reduction and Speed Range Extension. *Yu, L.*, +, *TIE June 2020 4391-4401*

Experimental Investigations on Flux-Linkage Characteristics and Stator-Side Modeling of a Solid-Rotor Switched Reluctance Machine. *Ahmad, S.S.*, +, *TIE Dec. 2020 10180-10190*

Fast Iron Loss and Thermal Prediction Method for Power Density and Efficiency Improvement in Switched Reluctance Machines. *Ge, L.*, +, *TIE June 2020 4463-4473*

Novel Current Profile of Switched Reluctance Machines for Torque Density Enhancement in Low-Speed Applications. *Huang, L.*, +, *TIE Nov. 2020 9623-9634*

Power Converter Topologies and Control Strategies for DC-Biased Vernier Reluctance Machines. *Yu, Z.*, +, *TIE June 2020 4350-4359*

Pre- and Postfault Current Control of Dual Three-Phase Reluctance Synchronous Drives. *Eldeeb, H.M.*, +, *TIE May 2020 3361-3373*

Relationship Between Homopolar Inductor Machine and Wound-Field Synchronous Machine. *Ye, C.*, +, *TIE Feb. 2020 919-930*

Reluctance motor drives

A Neutral-Point Diode-Clamped Converter With Inherent Voltage-Boosting for a Four-Phase SRM Drive. *Abdel-Aziz, A.A.*, +, *TIE July 2020 5313-5324*

A New Slot-PM Vernier Reluctance Machine With Enhanced Zero-Sequence Current Excitation for Electric Vehicle Propulsion. *Zhao, X.*, +, *TIE May 2020 3528-3539*

An Assistant-Mover-Based Position Estimation Method for Planar Switched Reluctance Motors. *Cao, G.*, +, *TIE July 2020 6066-6077*

An Unsaturated Inductance Reconstruction Based Universal Sensorless Starting Control Scheme for SRM Drives. *Cai, J.*, +, *TIE Nov. 2020 9083-9092*

Electrothermal-Based Junction Temperature Estimation Model for Converter of Switched Reluctance Motor Drive System. *Chen, H.*, +, *TIE Feb. 2020 874-883*

Multiojective System Level Optimization Method for Switched Reluctance Motor Drive Systems Using Finite-Element Model. *Diao, K.*, +, *TIE Dec. 2020 10055-10064*

Position Sensorless Control of Switched Reluctance Motors Using Reference and Virtual Flux Linkage With One-Phase Current Sensor in Medium and High Speed. *Ding, W.*, +, *TIE April 2020 2595-2606*

Reluctance motors

A Hybrid Control Strategy of Hybrid-Excitation Switched Reluctance Motor for Torque Ripple Reduction and Constant Power Extension. *Ding, W.*, +, *TIE Jan. 2020 38-48*

A Novel Concept of Ribless Synchronous Reluctance Motor for Enhanced Torque Capability. *Bao, Y.*, +, *TIE April 2020 2553-2563*

An Integrated Electrified Powertrain Topology With SRG and SRM for Plug-In Hybrid Electrical Vehicle. *Cheng, H.*, +, *TIE Oct. 2020 8231-8241*

Design Consideration and Characteristic Investigation of Modular Permanent Magnet Bearingless Switched Reluctance Motor. *Wang, H.*, +, *TIE June 2020 4326-4337*

Homopolar Bearingless Slice Motor With Flux-Biasing Halbach Arrays. *Noh, M.*, +, *TIE Sept. 2020 7757-7766*

Resonance Reduction by Optimal Switch Angle Selection in Switched Reluctance Motor. *Guo, X.*, +, *TIE March 2020 1867-1877*

Sensorless Control of Planar Switched Reluctance Motors Based on Voltage Injection Combined With Core-Loss Calculation. *Chen, N.*, +, *TIE July 2020 6031-6042*

Stator-PM-Based Variable Reluctance Resolver With Advantage of Motional Back-EMF. *Sun, L.*, +, *TIE Nov. 2020 9790-9801*

Remaining life assessment

A Novel Degradation Modeling and Prognostic Framework for Closed-Loop Systems With Degrading Actuator. *Si, X.*, +, *TIE Nov. 2020 9635-9647*

A Prognostic Model Based on DBN and Diffusion Process for Degrading Bearing. *Hu, C.*, +, *TIE Oct. 2020 8767-8777*

A Time-Saving Approach for the Thermal Lifetime Evaluation of Low-Voltage Electrical Machines. *Madonna, V.*, +, *TIE Nov. 2020 9195-9205*

Adaptive Prognosis of Hybrid Dynamical System for Dynamic Degradation Patterns. *Prakash, O.*, +, *TIE July 2020 5717-5728*

Bayesian Deep-Learning-Based Health Prognostics Toward Prognostics Uncertainty. *Peng, W.*, +, *TIE March 2020 2283-2293*

Macroscopic–Microscopic Attention in LSTM Networks Based on Fusion Features for Gear Remaining Life Prediction. *Qin, Y.*, +, *TIE Dec. 2020 10865-10875*

Prognostics for Linear Stochastic Degrading Systems With Survival Measurements. *Si, X.*, +, *TIE April 2020 3202-3215*

Remaining Useful Life Estimation of Structure Systems Under the Influence of Multiple Causes: Subsea Pipelines as a Case Study. *Cai, B.*, +, *TIE July 2020 5737-5747*

Valve Failure Prognostics in Reciprocating Compressors Utilizing Temperature Measurements, PCA-Based Data Fusion, and Probabilistic Algorithms. *Loutas, T.*, +, *TIE June 2020 5022-5029*

Remotely operated vehicles

Adaptive Neural Network Control of Underactuated Surface Vessels With Guaranteed Transient Performance: Theory and Experimental Results. *Chen, L.*, +, *TIE May 2020 4024-4035*

Observability Analysis and Adaptive Information Fusion for Integrated Navigation of Unmanned Ground Vehicles. *Shen, K.*, +, *TIE Sept. 2020 7659-7668*

Synchronization of Network Systems via Aperiodic Sampled-Data Control With Constant Delay and Application to Unmanned Ground Vehicles. *Ren, H.*, +, *TIE June 2020 4980-4990*

Rendering (computer graphics)

Enhancing the Rate-Hardness of Haptic Interaction: Successive Force Augmentation Approach. *Singh, H.*, +, *TIE Jan. 2020 809-819*

Multirate Haptic Rendering Using Local Stiffness Matrix for Stable and Transparent Simulation Involving Interaction With Deformable Objects. *Kim, M.*, +, *TIE Jan. 2020 820-828*

Perceptually Correct Haptic Rendering in Mid-Air Using Ultrasound Phased Array. *Raza, A.*, +, *TIE Jan. 2020 736-745*

Second-Order Information Recovery in Oriented-Plane Curvature Reproduction. *Zeng, T.*, +, *TIE Jan. 2020 725-735*

Renewable energy sources

A New Single-Phase Transformerless Grid-Connected Inverter With Boosting Ability and Common Ground Feature. *Vosoughi, N.*, +, *TIE Nov. 2020 9313-9325*

A New Soft Switching DC–DC Converter With High Voltage Gain Capability. *Mohseni, P.*, +, *TIE Sept. 2020 7386-7398*

A Soft-PWM Approach to Power/Signal Synchronous Transmission for SRG-Based DC Microgrids. *Yu, D.*, +, *TIE Oct. 2020 8450-8460*

A Waveform-Subtraction Based Single-Stage Ripple-Suppression Converter Family for Multiple Waveform Generation. *Zhang, G.*, +, *TIE March 2020 1890-1898*

Characteristic Analysis and Risk Assessment for Voltage–Frequency Coupled Transient Instability of Large-Scale Grid-Connected Renewable Energy Plants During LVRT. *Pei, J.*, +, *TIE July 2020 5515-5530*

DC Voltage Control Strategy of Three-Terminal Medium-Voltage Power Electronic Transformer-Based Soft Normally Open Points. *Ouyang, S.*, +, *TIE May 2020 3684-3695*

Distributed Cooperative Control of Multiple Hybrid Energy Storage Systems in a DC Microgrid Using Consensus Protocol. *Chen, X.*, +, *TIE March 2020 1968-1979*

Distribution System Restoration With Renewable Resources for Reliability Improvement Under System Uncertainties. *Zou, K.*, +, *TIE Oct. 2020 8438-8449*

Electric Load Forecasting Model Using a Multicolumn Deep Neural Networks. *Hoori, A.O.*, +, *TIE Aug. 2020 6473-6482*

Two-Stage Robust Optimization for Resilient Operation of Microgrids Considering Hierarchical Frequency Control Structure. *Mohiti, M.*, +, *TIE Nov. 2020 9439-9449*

Resins

A Novel Concept of Ribless Synchronous Reluctance Motor for Enhanced Torque Capability. *Bao, Y.*, +, *TIE April 2020 2553-2563*

Resistors

Enhanced Braking Control for the Induction Machine Using Scalar Control. *Costa, C.A.*, +, *TIE Nov. 2020 9133-9142*

Inverter Side *RL* Filter Precise Design for Motor Overvoltage Mitigation in SiC-Based Drives. *Ruffo, R.*, +, *TIE Feb. 2020 863-873*

Minimum DC-Link Capacitance for Single-Phase Applications With Power Factor Correction. *Marcos-Pastor, A.*, +, *TIE June 2020 5204-5208*

Resonant inverters

High-Frequency Single-Switch ZVS Gate Driver Based on a Class Φ_2 Resonant Inverter. *Jedi, H.*, +, *TIE June 2020 4527-4535*

Resonant power converters

1-kV Input 1-MHz GaN Stacked Bridge *LLC* Converters. *Zhang, Z.*, +, *TIE Nov. 2020 9227-9237*

A 20 MHz Low-Profile DC–DC Converter With Magnetic-Free Characteristics. *Guan, Y.*, +, *TIE Feb. 2020 1555-1567*

A Bidirectional CDT-LC Resonant DC–DC Converter With a Wide Voltage Range. *Chen, B.*, +, *TIE March 2020 2009-2020*

A Current-Sharing Method for Interleaved High-Frequency *LLC* Converter With Partial Energy Processing. *Chen, H.*, +, *TIE Feb. 2020 1498-1507*

A Multiphysics Design and Optimization Method for Air-Core Planar Transformers in High-Frequency *LLC* Resonant Converters. *Ho, G.K.Y.*, +, *TIE Feb. 2020 1605-1614*

A Multiresonant Gate Driver for High-Frequency Resonant Converters. *Gu, L.*, +, *TIE Feb. 2020 1405-1414*

A Simple Technique for Fundamental Harmonic Approximation Analysis in Parallel and Series–Parallel Resonant Converters. *Rathore, A.K.*, +, *TIE Nov. 2020 9963-9968*

An Efficiency-Oriented Two-Stage Optimal Design Methodology of High-Frequency *LCLC* Resonant Converters for Space Travelling-Wave Tube Amplifier Applications. *Zhao, B.*, +, *TIE Feb. 2020 1068-1080*

An H5-Bridge-Based Asymmetric *LLC* Resonant Converter With an Ultrawide Output Voltage Range. *Li, C.*, +, *TIE Nov. 2020 9503-9514*

An Interleaved Secondary-Side Modulated *LLC* Resonant Converter for Wide Output Range Applications. *Li, Z.*, +, *TIE Feb. 2020 1124-1135*

An Interleaved Three-Phase PWM Single-Stage Resonant Rectifier With High-Frequency Isolation. *Li, G.*, +, *TIE Aug. 2020 6572-6582*

Analysis and Design of a 1-MHz Bidirectional Multi-*CLLC* Resonant DC–DC Converter With GaN Devices. *Wang, Y.*, +, *TIE Feb. 2020 1425-1434*

Analysis and Design of Phase-Shift Pulse-Frequency-Modulated Full-Bridge *LCC* Resonant Converter. *Chen, Y.*, +, *TIE Feb. 2020 1092-1102*

Analysis and Design of the *LLC* Resonant Converter With Variable Inductor Control Based on Time-Domain Analysis. *Wei, Y.*, +, *TIE July 2020 5432-5443*

Burst-Mode and Phase-Shift Hybrid Control Method of *LLC* Converters for Wide Output Range Applications. *Shi, L.*, +, *TIE Feb. 2020 1013-1023*

High Efficiency High Density 1 MHz 380–12 V DCX With Low FoM Devices. *Wu, X.*, +, *TIE Feb. 2020 1648-1656*

High-Frequency Resonant ZVS Boost Converter With Grounded Switches and Continuous Input Current. *Jabbari, M.*, +, *TIE Feb. 2020 1059-1067*

IGCT Low-Current Switching—TCAD and Experimental Characterization. *Stamenkovic, D.*, +, *TIE Aug. 2020 6302-6311*

Minimization of Abnormal Output Voltage Rising for *LLC* Resonant Converter at Very Light Load. *Kim, C.*, *TIE Dec. 2020 10295-10303*

Multitransformer Primary-Side Regulated Flyback Converter for Supplying Isolated IGBT and MOSFET Drivers. *Kolincio, M.*, +, *TIE Feb. 2020 1005-1012*

Normalized Analysis and Optimal Design of DCM-*LCC* Resonant Converter for High-Voltage Power Supply. *Zhang, H.*, +, *TIE June 2020 4496-4506*

Optimization of High-Density and High-Efficiency Switched-Tank Converter for Data Center Applications. *Lyu, X.*, +, *TIE Feb. 2020 1626-1637*

Passive Integration Using FMLF Technique for Integrated Boost Resonant Converters. *Deng, C.*, +, *TIE May 2020 3756-3766*

Quarter-Turn Transformer Design and Optimization for High Power Density 1-MHz LLC Resonant Converter. *Liu, Y.*, +, *TIE Feb. 2020 1580-1591*

Sequential Offline-Online-Offline Measurement Approach for High-Frequency LCLC Resonant Converters in the TWTA Applications. *Zhao, B.*, +, *TIE Feb. 2020 1568-1579*

Step-by-Step Threshold Design Methodology of Switching Frequency Regulation for a Generalized Resonant DC-DC Converter. *Huang, J.*, +, *TIE Dec. 2020 10975-10980*

The Novel Quasi-Resonant Flyback Converter With Autoregulated Structure for Parallel/Serial Input. *Wang, J.*, +, *TIE Feb. 2020 992-1004*

Resonator filters

Lowpass-Bandpass Triplexer Integrated Switch Design Using Common Lumped-Element Triple-Resonance Resonator Technique. *Xu, J.*, +, *TIE Jan. 2020 471-479*

Resonators

Nonlinearity Reduction in Disk Resonator Gyroscopes Based on the Vibration Amplification Effect. *Li, Q.*, +, *TIE Aug. 2020 6946-6954*

Reducing Motion-Induced Noise With Mechanically Resonant Coil Sensor in a Rigid Helicopter Transient Electromagnetic System. *Liu, F.*, +, *TIE March 2020 2391-2401*

Resource allocation

A Flattened-Priority Framework for Mixed-Criticality Systems. *Li, Z.*, +, *TIE Nov. 2020 9862-9872*

Parallel Implementation of Model Predictive Control for Multilevel Cascaded H-Bridge STATCOM With Linear Complexity. *Zhang, Y.*, +, *TIE Feb. 2020 832-841*

Power Scheduling in More Electric Aircraft Based on an Optimal Adaptive Control Strategy. *Zhang, Y.*, +, *TIE Dec. 2020 10911-10921*

Profile-Guided Three-Phase Virtual Resource Management for Energy Efficiency of Data Centers. *Ding, Z.*, +, *TIE March 2020 2460-2468*

Response surface methodology

Design and Characteristics Analysis of Coaxial Magnetic Gear for Contra-Rotating Propeller in Yacht. *Shin, H.*, +, *TIE Sept. 2020 7250-7259*

Magnetic Sensor Design for a Permanent Magnet Linear Motor Considering Edge-Effect. *Luu, P.T.*, +, *TIE July 2020 5768-5777*

Multiobjective Deterministic and Robust Optimization Design of a New Spoke-Type Permanent Magnet Machine for the Improvement of Torque Performance. *Liu, G.*, +, *TIE Dec. 2020 10202-10212*

Multiobjective Optimization of a Double-Side Linear Vernier PM Motor Using Response Surface Method and Differential Evolution. *Zhao, W.*, +, *TIE Jan. 2020 80-90*

Reverberation

Data-Driven Soft Sensor for the Estimation of Sound Power Levels of Refrigeration Compressors Through Vibration Measurements. *Nascimento, A.S.B.d.S.*, +, *TIE Aug. 2020 7065-7072*

Reverse engineering

Omnidirectional Touch Probe With Adaptive Maneuvering for 3-D Object Machining and Measurement Verification Applications. *Luo, R.C.*, +, *TIE Feb. 2020 1136-1148*

Riccati equations

A Game Approach to Distributed Robust Optimal Filtering With Consensus Through Multiple Sensors: Theory and Application. *Feng, Y.*, +, *TIE Nov. 2020 9693-9702*

Design of a LQR-Based Boost Converter Controller for Energy Savings. *Neacsu, D.O.*, +, *TIE July 2020 5379-5388*

Optimal Model-Free Output Synchronization of Heterogeneous Multiagent Systems Under Switching Topologies. *Mu, C.*, +, *TIE Dec. 2020 10951-10964*

Rigidity

Analysis and Design of a Novel Magnetic Levitation Gravity Compensator With Low Passive Force Variation in a Large Vertical Displacement. *Zhang, H.*, +, *TIE June 2020 4797-4805*

Rings (structures)

A Model-Based Approach for the Estimation of Bearing Forces and Moments Using Outer Ring Deformation. *Kerst, S.*, +, *TIE Jan. 2020 461-470*

Risk management

Characteristic Analysis and Risk Assessment for Voltage-Frequency Coupled Transient Instability of Large-Scale Grid-Connected Renewable Energy Plants During LVRT. *Pei, J.*, +, *TIE July 2020 5515-5530*

Intrinsic Determinants and Harmonic Measure of Flight Safety. *Yin, T.*, +, *TIE Aug. 2020 7054-7064*

On Detection of False Data in Cooperative DC Microgrids—A Discordant Element Approach. *Sahoo, S.*, +, *TIE Aug. 2020 6562-6571*

RLC circuits

DC Fault Analysis Models of Three Converter Topologies Considering Control Effects. *Li, Y.*, +, *TIE Nov. 2020 9480-9491*

DC Fault Current Blocking With the Coordination of Half-Bridge MMC and the Hybrid DC Breaker. *Iman-Eini, H.*, +, *TIE July 2020 5503-5514*

DC Fault Detection in Meshed MTdc Systems Based on Transient Average Value of Current. *Li, Y.*, +, *TIE March 2020 1932-1943*

Road safety

An Analysis of the Impact of Transient Faults on the Performance of the CAN-FD Protocol. *Pohren, D.H.*, +, *TIE March 2020 2440-2449*

Deep Learning Approaches on Pedestrian Detection in Hazy Weather. *Li, G.*, +, *TIE Oct. 2020 8889-8899*

Road traffic

DenseLightNet: A Light-Weight Vehicle Detection Network for Autonomous Driving. *Chen, L.*, +, *TIE Dec. 2020 10600-10609*

Road traffic control

Asymptotic Parking of General Two-Trailer Systems Leveraging Singularity. *Huang, X.*, +, *TIE Sept. 2020 7798-7807*

Cooperation of Multiple Connected Vehicles at Unsignalized Intersections: Distributed Observation, Optimization, and Control. *Bian, Y.*, +, *TIE Dec. 2020 10744-10754*

Road vehicles

A Model-Free Control Strategy for Vehicle Lateral Stability With Adaptive Dynamic Programming. *Sun, W.*, +, *TIE Dec. 2020 10693-10701*

A Motion Planning and Tracking Framework for Autonomous Vehicles Based on Artificial Potential Field Elaborated Resistance Network Approach. *Huang, Y.*, +, *TIE Feb. 2020 1376-1386*

A Novel Initiative Braking System With Nondegraded Fallback Level for ADAS and Autonomous Driving. *Yuan, Y.*, +, *TIE June 2020 4360-4370*

Active Suspension System Control With Decentralized Event-Triggered Scheme. *Zhang, H.*, +, *TIE Dec. 2020 10798-10808*

Actuator Failure Compensation-Based Adaptive Control of Active Suspension Systems With Prescribed Performance. *Liu, Y.*, +, *TIE Aug. 2020 7044-7053*

An Explicit Nonlinear Model Predictive ABS Controller for Electro-Hydraulic Braking Systems. *Tavernini, D.*, +, *TIE May 2020 3990-4001*

Asymptotic Parking of General Two-Trailer Systems Leveraging Singularity. *Huang, X.*, +, *TIE Sept. 2020 7798-7807*

Control of Antilock Braking Systems Using Disturbance Observer With a Novel Nonlinear Sliding Surface. *Phadke, S.B.*, +, *TIE Aug. 2020 6815-6823*

Cooperation of Multiple Connected Vehicles at Unsignalized Intersections: Distributed Observation, Optimization, and Control. *Bian, Y.*, +, *TIE Dec. 2020 10744-10754*

DenseLightNet: A Light-Weight Vehicle Detection Network for Autonomous Driving. *Chen, L.*, +, *TIE Dec. 2020 10600-10609*

Hierarchical Management Control Based on Equivalent Fitting Circle and Equivalent Energy Consumption Method for Multiple Fuel Cells Hybrid Power System. *Yan, Y.*, +, *TIE April 2020 2786-2797*

Integral Sliding Mode Control Using a Disturbance Observer for Vehicle Platoons. *Wang, J.*, +, *TIE Aug. 2020 6639-6648*

Observability Analysis and Adaptive Information Fusion for Integrated Navigation of Unmanned Ground Vehicles. *Shen, K.*, +, *TIE Sept. 2020 7659-7668*

Output-Constrained Robust Sliding Mode Based Nonlinear Active Suspension Control. *Rath, J.J.*, +, *TIE Dec. 2020 10652-10662*

Wheel Slip Control for the Electric Vehicle With In-Wheel Motors: Variable Structure and Sliding Mode Methods. *Savitski, D.*, +, *TIE Oct. 2020 8535-8544*

Robot dynamics

- Adaptive Visual Servoing for an Underwater Soft Robot Considering Refraction Effects. *Xu, F.*, +, *TIE Dec. 2020 10575-10586*
- Cornering Trajectory Planning Avoiding Slip for Differential-Wheeled Mobile Robots. *Kim, J.*, +, *TIE Aug. 2020 6698-6708*
- DMP-Based Motion Generation for a Walking Exoskeleton Robot Using Reinforcement Learning. *Yuan, Y.*, +, *TIE May 2020 3830-3839*
- Gliding Motion Regulation of a Robotic Dolphin Based on a Controllable Fluke. *Wu, Z.*, +, *TIE April 2020 2945-2953*
- Precise Discrete-Time Steering Control for Robotic Fish Based on Data-Assisted Technique and Super-Twisting-Like Algorithm. *Wang, H.*, +, *TIE Dec. 2020 10587-10599*

Robot kinematics

- Gliding Motion Regulation of a Robotic Dolphin Based on a Controllable Fluke. *Wu, Z.*, +, *TIE April 2020 2945-2953*
- Human-Cooperative Control of a Wearable Walking Exoskeleton for Enhancing Climbing Stair Activities. *Li, Z.*, +, *TIE April 2020 3086-3095*
- Model Predictive Adaptive Constraint Tracking Control for Underwater Vehicles. *Gan, W.*, +, *TIE Sept. 2020 7829-7840*

Robot programming

- DMP-Based Motion Generation for a Walking Exoskeleton Robot Using Reinforcement Learning. *Yuan, Y.*, +, *TIE May 2020 3830-3839*

Robot vision

- A Novel Geometric Hierarchical Approach for Dynamic Visual Servoing of Quadrotors. *Zhang, X.*, +, *TIE May 2020 3840-3849*
- A Practical Visual Servo Control for Aerial Manipulation Using a Spherical Projection Model. *Zhong, H.*, +, *TIE Dec. 2020 10564-10574*
- Adaptive Visual Servoing for an Underwater Soft Robot Considering Refraction Effects. *Xu, F.*, +, *TIE Dec. 2020 10575-10586*
- An Accelerated Recurrent Neural Network for Visual Servo Control of a Robotic Flexible Endoscope With Joint Limit Constraint. *Li, W.*, +, *TIE Dec. 2020 10787-10797*
- Dynamics-Level Finite-Time Fuzzy Monocular Visual Servo of an Unmanned Surface Vehicle. *Wang, N.*, +, *TIE Nov. 2020 9648-9658*
- Event- and Deadline-Driven Control of a Self-Localizing Robot With Vision-Induced Delays. *van Horssen, E.P.*, +, *TIE Feb. 2020 1212-1221*
- Robust Vision-Based Tube Model Predictive Control of Multiple Mobile Robots for Leader-Follower Formation. *Li, Z.*, +, *TIE April 2020 3096-3106*
- Sensor-Based Control Using an Image Point and Distance Features for Rivet-in-Hole Insertion. *Zhu, W.*, +, *TIE June 2020 4692-4699*
- Sparse Machine Learning Discovery of Dynamic Differential Equation of an Esophageal Swallowing Robot. *Bhattacharya, D.*, +, *TIE June 2020 4711-4720*
- Three-Dimensional Cooperative Mapping for Connected and Automated Vehicles. *Zhang, Y.*, +, *TIE Aug. 2020 6649-6658*
- VCA Protocol-Based Multilevel Flexible Architecture on Embedded PLCs for Visual Servo Control. *Wu, H.*, +, *TIE March 2020 2450-2459*

Robots

- Control of a Bowden-Cable Actuation System With Embedded BoASensor for Soft Wearable Robots. *Jeong, U.*, +, *TIE Sept. 2020 7669-7680*
- Event-Triggered Decentralized Tracking Control of Modular Reconfigurable Robots Through Adaptive Dynamic Programming. *Zhao, B.*, +, *TIE April 2020 3054-3064*

Robust control

- A Data-Driven Realization of the Control-Performance-Oriented Process Monitoring System. *Luo, H.*, +, *TIE Jan. 2020 521-530*
- A Game Approach to Distributed Robust Optimal Filtering With Consensus Through Multiple Sensors: Theory and Application. *Feng, Y.*, +, *TIE Nov. 2020 9693-9702*
- A Multimode Transverse Dynamic Force Microscope—Design, Identification, and Control. *Zhang, K.*, +, *TIE June 2020 4729-4740*
- A Novel Geometric Hierarchical Approach for Dynamic Visual Servoing of Quadrotors. *Zhang, X.*, +, *TIE May 2020 3840-3849*
- A Novel Initiative Braking System With Nondegraded Fallback Level for ADAS and Autonomous Driving. *Yuan, Y.*, +, *TIE June 2020 4360-4370*
- A Novel Model-Based Robust Control for Position Tracking of Permanent Magnet Linear Motor. *Liu, X.*, +, *TIE Sept. 2020 7767-7777*

- A Symplectic Instantaneous Optimal Control for Robot Trajectory Tracking With Differential-Algebraic Equation Models. *Peng, H.*, +, *TIE May 2020 3819-3829*
- Active Disturbance-Rejection-Based Speed Control in Model Predictive Control for Induction Machines. *Yan, L.*, +, *TIE April 2020 2574-2584*
- Adaptive Backstepping Sliding Mode Control for Equilibrium Position Tracking of an Electrohydraulic Elastic Manipulator. *Tran, D.T.*, +, *TIE May 2020 3860-3869*
- Adaptive Fault-Tolerant Constrained Control of Cooperative Spacecraft Rendezvous and Docking. *Sun, L.*, *TIE April 2020 3107-3115*
- Adaptive Fuzzy Tracking Control of Flexible-Joint Robots Based on Command Filtering. *Ling, S.*, +, *TIE May 2020 4046-4055*
- Adaptive Neural Network Control of Underactuated Surface Vessels With Guaranteed Transient Performance: Theory and Experimental Results. *Chen, L.*, +, *TIE May 2020 4024-4035*
- Adaptive NN Backstepping Control Design for a 3-DOF Helicopter: Theory and Experiments. *Yang, X.*, +, *TIE May 2020 3967-3979*
- Adaptive Threshold Generation for Vehicle Fault Detection Using Switched T-S Interval Observers. *Ifqir, S.*, +, *TIE June 2020 5030-5040*
- An Adaptive Gain Dynamics for Time Delay Control Improves Accuracy and Robustness to Significant Payload Changes for Robots. *Lee, J.*, +, *TIE April 2020 3076-3085*
- Attractive Ellipsoid-Based Robust Control for Quadrotor Tracking. *Falcon, R.*, +, *TIE Sept. 2020 7851-7860*
- Cascaded-Extended-State-Observer-Based Sliding-Mode Control for Underactuated Flexible Joint Robot. *Rsetam, K.*, +, *TIE Dec. 2020 10822-10832*
- Complex-Coefficient Adaptive Disturbance Observer for Position Estimation of IPMSMs With Robustness to DC Errors. *Xiao, D.*, +, *TIE July 2020 5924-5935*
- Composite Disturbance Rejection Attitude Control for Quadrotor With Unknown Disturbance. *Zhao, K.*, +, *TIE Aug. 2020 6894-6903*
- Composite Hierarchical Pitch Angle Control for a Tidal Turbine Based on the Uncertainty and Disturbance Estimator. *Yin, X.*, +, *TIE Jan. 2020 329-339*
- Control of a Soft Inchworm Robot With Environment Adaptation. *Cao, J.*, +, *TIE May 2020 3809-3818*
- DC Voltage Control Strategy of Three-Terminal Medium-Voltage Power Electronic Transformer-Based Soft Normally Open Points. *Ouyang, S.*, +, *TIE May 2020 3684-3695*
- Decoupled Torque Control of Series Elastic Actuator With Adaptive Robust Compensation of Time-Varying Load-Side Dynamics. *Lin, Y.*, +, *TIE July 2020 5604-5614*
- Decoupling and Optimal Control of Multilevel Buck DC-DC Converters With Inverse System Theory. *Wu, J.*, +, *TIE Sept. 2020 7861-7870*
- Design of Robust Discretized Sliding Mode Controller: Analysis and Application to Buck Converters. *Cheng, Y.*, +, *TIE Dec. 2020 10672-10681*
- Design, Implementation, and Evaluation of a Neural-Network-Based Quadcopter UAV System. *Jiang, F.*, +, *TIE March 2020 2076-2085*
- Discrete-Time Extended State Observer-Based Model-Free Adaptive Control Via Local Dynamic Linearization. *Chi, R.*, +, *TIE Oct. 2020 8691-8701*
- Discrete-Time Modified UDE-Based Current Control for L+C+L-Type Grid-Tied Inverters. *Wu, Y.*, +, *TIE March 2020 2143-2154*
- Disturbance Observer-Based Robust Control and Its Applications: 35th Anniversary Overview. *Sariyildiz, E.*, +, *TIE March 2020 2042-2053*
- Electromagnetic Torque-Based Model Reference Adaptive System Speed Estimator for Sensorless Surface Mount Permanent Magnet Synchronous Motor Drive. *Prabhakaran, K.K.*, +, *TIE July 2020 5936-5947*
- Error-Bounded Reference Tracking MPC for Machines With Structural Flexibility. *Yuan, M.*, +, *TIE Oct. 2020 8143-8154*
- Fine Load-Side Acceleration Control Based on Torsion Torque Sensing of Two-Inertia System. *Yokokura, Y.*, +, *TIE Jan. 2020 768-777*
- Finite-Time Continuous Terminal Sliding Mode Control of Servo Motor Systems. *Hou, H.*, +, *TIE July 2020 5647-5656*
- Finite-Time Control of a Linear Motor Positioner Using Adaptive Recursive Terminal Sliding Mode. *Shao, K.*, +, *TIE Aug. 2020 6659-6668*

- Full-Order Observer for a Class of Nonlinear Systems With Unmatched Uncertainties: Joint Attractive Ellipsoid and Sliding Mode Concepts. *Sanchez, B.*, +, *TIE July 2020 5677-5686*
- High-Accuracy Dynamic Load Emulation Method for Electrical Drives. *de Oliveira, C.M.R.*, +, *TIE Sept. 2020 7239-7249*
- Improve Disturbance-Rejection Performance for an Equivalent-Input-Disturbance-Based Control System by Incorporating a Proportional-Integral Observer. *Wu, M.*, +, *TIE Feb. 2020 1254-1260*
- Improved Equivalent-Input-Disturbance Approach Based on H_∞ Control. *Yu, P.*, +, *TIE Oct. 2020 8670-8679*
- Improved Fusion of Permanent Magnet Temperature Estimation Techniques for Synchronous Motors Using a Kalman Filter. *Erazo, D.E.G.*, +, *TIE March 2020 1708-1717*
- Improved Robust Performance Design for Passive Uncertain Systems—Active Use of the Uncertainty Phase and Gain. *Liu, K.*, +, *TIE Dec. 2020 10755-10765*
- Input-to-State Stable Bilateral Teleoperation by Dynamic Interconnection and Damping Injection: Theory and Experiments. *Yang, Y.*, +, *TIE Jan. 2020 790-799*
- Motion Control for Piezoelectric-Actuator-Based Surgical Device Using Neural Network and Extended State Observer. *Lau, J.Y.*, +, *TIE Jan. 2020 402-412*
- Optimal Tracking With Disturbance Rejection of Voltage Source Inverters. *Teng, J.*, +, *TIE June 2020 4957-4968*
- Output Feedback Control of Uncertain Hydraulic Servo Systems. *Na, J.*, +, *TIE Jan. 2020 490-500*
- Output-Constrained Robust Sliding Mode Based Nonlinear Active Suspension Control. *Rath, J.J.*, +, *TIE Dec. 2020 10652-10662*
- Parameter Space Optimization Towards Constrained Controller Design With Application to Tray Indexing. *Ma, J.*, +, *TIE July 2020 5575-5585*
- Precise Discrete-Time Steering Control for Robotic Fish Based on Data-Assisted Technique and Super-Twisting-Like Algorithm. *Wang, H.*, +, *TIE Dec. 2020 10587-10599*
- Precision Motion Control of a Servomotor-Pump Direct-Drive Electrohydraulic System With a Nonlinear Pump Flow Mapping. *Helian, B.*, +, *TIE Oct. 2020 8638-8648*
- Repetitive Control Meets Continuous Zero Phase Error Tracking Controller for Precise Tracking of B-Spline Trajectories. *Biagiotti, L.*, +, *TIE Sept. 2020 7808-7818*
- Robust Control of an Aerial Manipulator Based on a Variable Inertia Parameters Model. *Zhang, G.*, +, *TIE Nov. 2020 9515-9525*
- Robust Current Control of Grid-Tied Inverters Affected by LCL Filter Soft-Saturation. *Osorio, C.R.D.*, +, *TIE Aug. 2020 6550-6561*
- Robust Fine Tuning of Optimal PID Controller With Guaranteed Robustness. *Verma, B.*, +, *TIE June 2020 4911-4920*
- Robust PMDC Motor Control for Accurate Wire Feeding in GMAW Using Back EMF. *Paul, A.K.*, *TIE Jan. 2020 413-420*
- Robust Stability Improvement for Speed Sensorless Induction Motor Drive at Low Speed Range by Virtual Voltage Injection. *Sun, W.*, +, *TIE April 2020 2642-2654*
- Robust Vision-Based Tube Model Predictive Control of Multiple Mobile Robots for Leader-Follower Formation. *Li, Z.*, +, *TIE April 2020 3096-3106*
- Single-Index Open-Phase Fault Detection Method for Six-Phase Electric Drives. *Garcia-Entrambasaguas, P.*, +, *TIE Dec. 2020 10233-10242*
- Stochastic Consensus Control Integrated With Performance Improvement: A Consensus Region-Based Approach. *Wang, J.*, +, *TIE April 2020 3000-3012*
- Three-Dimensional Guidance for Various Target Motions With Terminal Angle Constraints Using Twisting Control. *Hu, Q.*, +, *TIE Feb. 2020 1242-1253*
- Torque Ripple Reduction of PMSMs Using a Novel Angle-Based Repetitive Observer. *Tang, M.*, +, *TIE April 2020 2689-2699*
- UDE-Based Robust Output Feedback Control With Applications to a Piezoelectric Stage. *Ren, B.*, +, *TIE Sept. 2020 7819-7828*
- Uncertainty and Disturbance Estimator-Based Control of a Flapping-Wing Aerial Vehicle With Unknown Backlash-Like Hysteresis. *Yin, Z.*, +, *TIE June 2020 4826-4835*
- Unknown System Dynamics Estimator for Motion Control of Nonlinear Robotic Systems. *Na, J.*, +, *TIE May 2020 3850-3859*
- Rods (structures)**
- Sucker Rod Pump Working State Diagnosis Using Motor Data and Hidden Conditional Random Fields. *Zheng, B.*, +, *TIE Sept. 2020 7919-7928*
- Rolling bearings**
- A Model-Based Approach for the Estimation of Bearing Forces and Moments Using Outer Ring Deformation. *Kerst, S.*, +, *TIE Jan. 2020 461-470*
- An Incorrect Data Detection Method for Big Data Cleaning of Machinery Condition Monitoring. *Xu, X.*, +, *TIE March 2020 2326-2336*
- Multitask Convolutional Neural Network With Information Fusion for Bearing Fault Diagnosis and Localization. *Guo, S.*, +, *TIE Sept. 2020 8005-8015*
- SOSO Boosting of the K-SVD Denoising Algorithm for Enhancing Fault-Induced Impulse Responses of Rolling Element Bearings. *Zeng, M.*, +, *TIE Feb. 2020 1282-1292*
- Unsupervised Adversarial Adaptation Network for Intelligent Fault Diagnosis. *Jiao, J.*, +, *TIE Nov. 2020 9904-9913*
- Rolling mills**
- A Correlation-Based Distributed Fault Detection Method and Its Application to a Hot Tandem Rolling Mill Process. *Zhang, K.*, +, *TIE March 2020 2380-2390*
- Rotation measurement**
- A High-Resolution Optical Displacement Detection Method for Piezoelectric Microvibratory Stage. *Zhan, H.*, +, *TIE Dec. 2020 10897-10904*
- Rotational flow**
- Numerical and Experimental Calculation of CHTC in an Oil-Based Shaft Cooling System for a High-Speed High-Power PMSM. *Gai, Y.*, +, *TIE June 2020 4371-4380*
- Rotors**
- A Brushless Doubly Fed Generator Based on Permanent Magnet Field Modulation. *Zhang, J.*, +, *TIE May 2020 3505-3516*
- A New Slot-PM Vernier Reluctance Machine With Enhanced Zero-Sequence Current Excitation for Electric Vehicle Propulsion. *Zhao, X.*, +, *TIE May 2020 3528-3539*
- A Novel Concept of Ribless Synchronous Reluctance Motor for Enhanced Torque Capability. *Bao, Y.*, +, *TIE April 2020 2553-2563*
- A Novel Doubly-Fed Flux-Switching Permanent Magnet Machine With Armature Windings Wound on Both Stator Poles and Rotor Teeth. *Wu, L.*, +, *TIE Dec. 2020 10223-10232*
- A Novel Electrodynamic Reaction Sphere Prototype for Spacecraft Attitude Control. *Huai, Z.*, +, *TIE May 2020 3879-3890*
- A Robust Observer and Nonorthogonal PLL-Based Sensorless Control for Fault-Tolerant Permanent Magnet Motor With Guaranteed Postfault Performance. *Xu, J.*, +, *TIE July 2020 5959-5970*
- A Second-Order Dual Mode Repetitive Control for Magnetically Suspended Rotor. *Cui, P.*, +, *TIE June 2020 4946-4956*
- A Simple Feedforward Approach to Stabilize VSI-Fed Induction Motor With Filter in RFOC. *Mishra, P.*, +, *TIE Dec. 2020 10191-10201*
- A Two-Stage Synchronous Vibration Control for Magnetically Suspended Rotor System in the Full Speed Range. *Peng, C.*, +, *TIE Jan. 2020 480-489*
- Airgap Flux Based Detection and Classification of Induction Motor Rotor and Load Defects During the Starting Transient. *Park, Y.*, +, *TIE Dec. 2020 10075-10084*
- An Improved Delay-Suppressed Sliding-Mode Observer for Sensorless Vector-Controlled PMSM. *Gong, C.*, +, *TIE July 2020 5913-5923*
- An Improved Rotating Restart Method for a Sensorless Permanent Magnet Synchronous Motor Drive System Using Repetitive Zero Voltage Vectors. *Seo, D.*, +, *TIE May 2020 3496-3504*
- An Initial States Recognition (ISR) Method for Start-Up of 1 Φ BLDC Motor in Hall-Sensor-Less Fan Applications. *Tang, Z.*, +, *TIE Oct. 2020 8302-8311*
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An Initial States Recognition (ISR) Method for Start-Up of 1 Φ BLDC Motor in Hall-Sensor-Less Fan Applications. *Tang, Z.*, +, *TIE Oct. 2020 8302-8311*

An Unsaturated Inductance Reconstruction Based Universal Sensorless Starting Control Scheme for SRM Drives. *Cai, J.*, +, *TIE Nov. 2020 9083-9092*

Application of Sliding Switching Functions in Backstepping Based Speed Observer of Induction Machine. *Morawiec, M.*, +, *TIE July 2020 5843-5853*

Complex-Coefficient Adaptive Disturbance Observer for Position Estimation of IPMSMs With Robustness to DC Errors. *Xiao, D.*, +, *TIE July 2020 5924-5935*

Correction of Rotor Position Estimation Error for High-Speed Permanent Magnet Synchronous Motor Sensorless Drive System Based on Minimum-Current-Tracking Method. *Gu, C.*, +, *TIE Oct. 2020 8271-8280*

Detrimental Effect Elimination of Current Sensor Accuracy Uncertainty for High-Precision Position Sensorless Control of Interior Permanent Magnet Synchronous Motor Drives. *Lu, J.*, +, *TIE July 2020 6101-6111*

Dual Phase-Locked Loop-Based Speed Estimation Scheme for Sensorless Vector Control of Linear Induction Motor Drives. *Wang, H.*, +, *TIE July 2020 5900-5912*

Efficient QR Updating Factorization for Sensorless Synchronous Motor Drive Based on High Frequency Voltage Injection. *Toso, F.*, +, *TIE Dec. 2020 10213-10222*

Electromagnetic Torque-Based Model Reference Adaptive System Speed Estimator for Sensorless Surface Mount Permanent Magnet Synchronous Motor Drive. *Prabhakaran, K.K.*, +, *TIE July 2020 5936-5947*

Fast Restarting of Free-Running Induction Motors Under Speed-Sensorless Vector Control. *Yin, S.*, +, *TIE July 2020 6124-6134*

Fault Detection and Identification Scheme for Dual-Inverter Fed OEWM Drive. *Yang, S.*, +, *TIE July 2020 6112-6123*

ILC-Based Voltage Compensation Method for PMSM Sensorless Control Considering Inverter Nonlinearity and Sampling Current DC Bias. *Wang, Y.*, +, *TIE July 2020 5980-5989*

Integrated-Power-Control-Strategy-Based Electrolytic Capacitor-Less Back-to-Back Converter for Variable Frequency Speed Control System. *Bao, D.*, +, *TIE Dec. 2020 10065-10074*

IPMSM Sensorless Control Using High-Frequency Voltage Injection Method With Random Switching Frequency for Audible Noise Improvement. *Zhang, Y.*, +, *TIE July 2020 6019-6030*

IPMSMs Sensorless MTPA Control Based on Virtual q -Axis Inductance by Using Virtual High-Frequency Signal Injection. *Tang, Q.*, +, *TIE Jan. 2020 136-146*

Modulation Induced Current Imbalance and Its Sensorless Control of a GaN-Based Four-Phase DC-DC Power Amplifier. *Wang, C.*, +, *TIE Feb. 2020 1520-1531*

Operating-Point Tracking Method for Sensorless Induction Motor Stability Enhancement in Low-Speed Regenerating Mode. *Luo, C.*, +, *TIE May 2020 3386-3397*

Phase Voltage Measurement for Permanent Magnet Machine Sensorless Drive Using Controller Capture Modulator. *Chen, G.*, +, *TIE Jan. 2020 49-58*

PLL Position and Speed Observer With Integrated Current Observer for Sensorless PMSM Drives. *Lasca, C.*, +, *TIE July 2020 5990-5999*

Position Sensorless Control for Doubly Salient Electromagnetic Machine With Improved Startup Performance. *Zhou, X.*, +, *TIE March 2020 1782-1791*

Position Sensorless Control of Switched Reluctance Motors Using Reference and Virtual Flux Linkage With One-Phase Current Sensor in Medium and High Speed. *Ding, W.*, +, *TIE April 2020 2595-2606*

Position Sensorless Permanent Magnet Synchronous Machine Drives—A Review. *Wang, G.*, +, *TIE July 2020 5830-5842*

Quasi-Proportional-Resonant Controller Based Adaptive Position Observer for Sensorless Control of PMSM Drives Under Low Carrier Ratio. *An, Q.*, +, *TIE April 2020 2564-2573*

Reliable Winding-Based DC-Bus Capacitor Discharge Technique Over Full-Speed Range for IPMSM Drive in Electric Vehicles Without Position Sensor. *Gong, C.*, +, *TIE Oct. 2020 8131-8142*

Robust Stability Improvement for Speed Sensorless Induction Motor Drive at Low Speed Range by Virtual Voltage Injection. *Sun, W.*, +, *TIE April 2020 2642-2654*

Rotor Position Estimation Method for Brushless Synchronous Machine Based on Second-Order Generated Integrator in the Starting Mode. *Wei, J., +, TIE July 2020 6135-6146*

Sensorless Closed-Loop Voltage and Frequency Control of Stand-Alone DFIGs Introducing Direct Flux-Vector Control. *Rostami, M., +, TIE July 2020 6078-6088*

Sensorless Commutation Deviation Correction of Brushless DC Motor With Three-Phase Asymmetric Back-EMF. *Liu, G., +, TIE July 2020 6158-6167*

Sensorless Control of Linear Flux-Switching Permanent Magnet Motor Based on Extended Kalman Filter. *Cao, R., +, TIE July 2020 5971-5979*

Sensorless Control of Planar Switched Reluctance Motors Based on Voltage Injection Combined With Core-Loss Calculation. *Chen, N., +, TIE July 2020 6031-6042*

Sensorless Control Strategy for IPMSM to Reduce Audible Noise by Variable Frequency Current Injection. *Du, B., +, TIE Feb. 2020 1149-1159*

Sensorless Low/Zero Speed Estimation for Permanent Magnet Synchronous Machine Using a Search-Based Real-Time Commissioning Method. *Sci-cluna, K., +, TIE July 2020 6010-6018*

Sensorless Optimal Commutation Steady Speed Control Method for a Non-ideal Back-EMF BLDC Motor Drive System Including Buck Converter. *Chen, X., +, TIE July 2020 6147-6157*

Sensorless Rotor Position Estimation of Doubly Fed Induction Generator Based on Backstepping Technique. *Morawiec, M., +, TIE July 2020 5889-5899*

Simple Stability Enhancement Method for Stator Current Error-Based MRAS-Type Speed Estimator for Induction Motor. *Korzonek, M., +, TIE July 2020 5854-5866*

Spatial Inductance Estimation for Current Loop Auto-Tuning in IPMSM Self-Commissioning. *Erturk, F., +, TIE May 2020 3911-3920*

Speed Sensorless Control for Permanent Magnet Synchronous Motors Based on Finite Position Set. *Sun, X., +, TIE July 2020 6089-6100*

Unified Graphical Model of High-Frequency Signal Injection Methods for PMSM Sensorless Control. *Li, H., +, TIE June 2020 4411-4421*

Sensors

A Reinforced k -Nearest Neighbors Method With Application to Chatter Identification in High-Speed Milling. *Shi, F., +, TIE Dec. 2020 10844-10855*

Data-Driven Soft Sensor for the Estimation of Sound Power Levels of Refrigeration Compressors Through Vibration Measurements. *Nascimento, A.S.B.d.S., +, TIE Aug. 2020 7065-7072*

Fault Diagnosis and Monitoring of Modular Multilevel Converter With Fast Response of Voltage Sensors. *Zhang, J., +, TIE June 2020 5071-5080*

Fine Load-Side Acceleration Control Based on Torsion Torque Sensing of Two-Inertia System. *Yokokura, Y., +, TIE Jan. 2020 768-777*

Fringe-Projection-Based Normal Direction Measurement and Adjustment for Robotic Drilling. *Rao, G., +, TIE Nov. 2020 9560-9570*

In-Dressing Acoustic Map by Low-Cost Piezoelectric Transducer. *Lofrano Dotto, F.R., +, TIE Aug. 2020 6927-6936*

Model-Based Fault Tolerant Control for the Thermal Management of PEMFC Systems. *Yan, C., +, TIE April 2020 2875-2884*

Reducing Motion-Induced Noise With Mechanically Resonant Coil Sensor in a Rigid Helicopter Transient Electromagnetic System. *Liu, F., +, TIE March 2020 2391-2401*

Rotor Current Oriented Control Method of DFIG-DC System Without Stator Side Sensors. *Wu, C., +, TIE Nov. 2020 9958-9962*

Stator-PM-Based Variable Reluctance Resolver With Advantage of Motional Back-EMF. *Sun, L., +, TIE Nov. 2020 9790-9801*

Sequences

Carrier-Based PWM Equivalent to Multilevel Multiphase Space Vector PWM Techniques. *Lopez, O., +, TIE July 2020 5220-5231*

Sequential switching

Design Considerations of Sequential Switching Shunt Regulator for High-Power Applications. *Zhu, H., +, TIE Nov. 2020 9358-9369*

Servomechanisms

A Novel Geometric Hierarchical Approach for Dynamic Visual Servoing of Quadrotors. *Zhang, X., +, TIE May 2020 3840-3849*

A Practical Visual Servo Control for Aerial Manipulation Using a Spherical Projection Model. *Zhong, H., +, TIE Dec. 2020 10564-10574*

Adaptive Backstepping Sliding Mode Control for Equilibrium Position Tracking of an Electrohydraulic Elastic Manipulator. *Tran, D.T., +, TIE May 2020 3860-3869*

Design and Control of a Piezoelectrically Actuated Fast Tool Servo for Diamond Turning of Microstructured Surfaces. *Zhu, Z., +, TIE Aug. 2020 6688-6697*

Design and Trajectory Tracking of a Nanometric Ultra-Fast Tool Servo. *Zhu, Z., +, TIE Jan. 2020 432-441*

Effective Disturbance Compensation Method Under Control Saturation in Discrete-Time Sliding Mode Control. *Han, J., +, TIE July 2020 5696-5707*

Output Feedback Control of Uncertain Hydraulic Servo Systems. *Na, J., +, TIE Jan. 2020 490-500*

Real-Time Servo Press Force Estimation Based on Dual Particle Filter. *Olaizola, J., +, TIE May 2020 4088-4097*

Sensorless Vibration Harmonic Estimation of Servo System Based on the Disturbance Torque Observer. *Huang, C., +, TIE March 2020 2122-2132*

Servomotors

Effects of Magnet Shape on Torque Capability of Surface-Mounted Permanent Magnet Machine for Servo Applications. *Zeng, Y., +, TIE April 2020 2977-2990*

Finite-Time Continuous Terminal Sliding Mode Control of Servo Motor Systems. *Hou, H., +, TIE July 2020 5647-5656*

High Torque Density Torque Motor With Hybrid Magnetization Pole Arrays for Jet Pipe Servo Valve. *Zhang, Q., +, TIE March 2020 2133-2142*

Precision Motion Control of a Servomotor-Pump Direct-Drive Electrohydraulic System With a Nonlinear Pump Flow Mapping. *Helian, B., +, TIE Oct. 2020 8638-8648*

Shafts

Experimental Investigations on Flux-Linkage Characteristics and Stator-Side Modeling of a Solid-Rotor Switched Reluctance Machine. *Ahmad, S.S., +, TIE Dec. 2020 10180-10190*

Full-Scale Physical Simulator of All SiC Traction Motor Drive With Onboard Supercapacitor ESS for Light-Rail Public Transportation. *Yildirim, D., +, TIE Aug. 2020 6290-6301*

High-Accuracy Dynamic Load Emulation Method for Electrical Drives. *de Oliveira, C.M.R., +, TIE Sept. 2020 7239-7249*

Investigation of Harmonic Losses in a Two-Pole Slotless Permanent-Magnet Motor Due to Wide Bandgap Inverter Supply. *Millinger, J., +, TIE Aug. 2020 6280-6289*

Numerical and Experimental Calculation of CHTC in an Oil-Based Shaft Cooling System for a High-Speed High-Power PMSM. *Gai, Y., +, TIE June 2020 4371-4380*

Parametric Stability Analysis of Active Magnetic Bearing Supported Rotor System With a Novel Control Law Subject to Periodic Base Motion. *Soni, T., +, TIE Feb. 2020 1160-1170*

Ships

Adaptive Algorithms of Tuning and Switching Kalman and \mathcal{H}_∞ Filters and Their Application to Estimation of Ship Oscillation With Time-Varying Frequencies. *Sato, M., +, TIE Jan. 2020 501-511*

Design and Characteristics Analysis of Coaxial Magnetic Gear for Contra-Rotating Propeller in Yacht. *Shin, H., +, TIE Sept. 2020 7250-7259*

Fault-Tolerant Fixed-Time Trajectory Tracking Control of Autonomous Surface Vessels With Specified Accuracy. *Zhang, J., +, TIE June 2020 4889-4899*

Hyperbolic-Tangent LOS Guidance-Based Finite-Time Path Following of Underactuated Marine Vehicles. *Wang, N., +, TIE Oct. 2020 8566-8575*

Shock absorbers

An Electromagnetic Variable Stiffness Device for Semiactive Seat Suspension Vibration Control. *Ning, D., +, TIE Aug. 2020 6773-6784*

Optimal Design of a Novel Single-Phase 8-Slot 8-Pole Tubular Electromagnetic Shock Absorber to Harvest Energy. *Duong, M., +, TIE Feb. 2020 1180-1190*

Short-circuit currents

A New Hybrid Model for Electromechanical Characteristic Analysis Under SISC in Synchronous Generators. *He, Y., +, TIE March 2020 2348-2359*

A New Relieving-DC-Saturation Hybrid Excitation Vernier Machine for HEV Starter Generator Application. *Zhao, X., +, TIE Aug. 2020 6342-6353*

Analysis of Reactive Power Compensation Effect of a New Hybrid Excitation Brushless DC Generator. *Sun, L.*, +, *TIE May 2020 3562-3572*

Design of a New Relieving-DC-Saturation Hybrid Reluctance Machine for Fault-Tolerant In-Wheel Direct Drive. *Zhao, X.*, +, *TIE Nov. 2020 9571-9581*

Double-Thyristor-Based Protection for Valve-Side Single-Phase-to-Ground Faults in HB-MMC-Based Bipolar HVDC Systems. *Li, G.*, +, *TIE July 2020 5810-5815*

Numerical Analysis of Turn-to-Turn Short Circuit Current Mitigation for Concentrated Winding Permanent Magnet Machines With Series and Parallel Connected Windings. *Xu, Y.*, +, *TIE Nov. 2020 9101-9111*

Signal classification

Improved Classification Scheme Using Fused Wavelet Packet Transform Based Features for Intelligent Myoelectric Prostheses. *Pancholi, S.*, +, *TIE Oct. 2020 8517-8525*

Signal denoising

Broadband Mode Decomposition and Its Application to the Quality Evaluation of Welding Inverter Power Source Signals. *Peng, Y.*, +, *TIE Nov. 2020 9734-9746*

Information Theory Based Probabilistic Approach to Blade Damage Detection of Turbomachine Using Sensor Data. *Yang, S.*, +, *TIE Dec. 2020 10887-10896*

SOSO Boosting of the K-SVD Denoising Algorithm for Enhancing Fault-Induced Impulse Responses of Rolling Element Bearings. *Zeng, M.*, +, *TIE Feb. 2020 1282-1292*

Sparsity-Based Algorithm for Condition Assessment of Rotating Machinery Using Internal Encoder Data. *Ding, C.*, +, *TIE Sept. 2020 7982-7993*

Signal detection

Classification of Complex Power Quality Disturbances Using Optimized S-Transform and Kernel SVM. *Tang, Q.*, +, *TIE Nov. 2020 9715-9723*

Improved Extended Kalman Filter Estimation Using Threshold Signal Detection With an MEMS Electrostatic Microscanner. *Chen, Y.*, +, *TIE Feb. 2020 1328-1336*

Natural Crack Diagnosis System Based on Novel L-Shaped Electromagnetic Sensing Thermography. *Liu, Z.*, +, *TIE Nov. 2020 9703-9714*

Signal processing

Broadband Mode Decomposition and Its Application to the Quality Evaluation of Welding Inverter Power Source Signals. *Peng, Y.*, +, *TIE Nov. 2020 9734-9746*

Detection of Winding Asymmetries in Wound-Rotor Induction Motors via Transient Analysis of the External Magnetic Field. *Zamudio-Ramirez, I.*, +, *TIE June 2020 5050-5059*

Efficient QR Updating Factorization for Sensorless Synchronous Motor Drive Based on High Frequency Voltage Injection. *Toso, F.*, +, *TIE Dec. 2020 10213-10222*

Extended Signal-Correction Observer and Application to Aircraft Navigation. *Wang, X.*, +, *TIE April 2020 3149-3156*

In-Service Wind Turbine DFIG Diagnosis Using Current Signature Analysis. *Artigao, E.*, +, *TIE March 2020 2262-2271*

IPMSMs Sensorless MTPA Control Based on Virtual q -Axis Inductance by Using Virtual High-Frequency Signal Injection. *Tang, Q.*, +, *TIE Jan. 2020 136-146*

Motion Characteristic Recognition of Transmission Lines Based on Inertial Measurement. *Yang, J.*, +, *TIE Oct. 2020 8860-8867*

Motor Speed Signature Analysis for Local Bearing Fault Detection With Noise Cancellation Based on Improved Drive Algorithm. *Yang, M.*, +, *TIE May 2020 4172-4182*

Super-Twisting Algorithm-Based Time-Varying Delay Estimation With External Signal. *Deng, Y.*, +, *TIE Dec. 2020 10663-10671*

Signal restoration

SOSO Boosting of the K-SVD Denoising Algorithm for Enhancing Fault-Induced Impulse Responses of Rolling Element Bearings. *Zeng, M.*, +, *TIE Feb. 2020 1282-1292*

Signal sampling

Oversampling Synchronous Envelope Detection for Resolver-to-Digital Conversion. *Wang, K.*, +, *TIE June 2020 4867-4876*

Silicon

A 2–10 MHz GaN HEMTs Half-Bridge Driver With Bandgap Reference Comparator Clamping and Dual Level Shifters for Automotive Applications. *Yan, R.*, +, *TIE Feb. 2020 1446-1454*

A Pre-Bootstrapping Method for Use in Gate Driver Circuits to Improve the Scan Pulse Delay of High-Resolution TFT-LCD Systems. *Lin, C.*, +, *TIE Aug. 2020 7015-7024*

An Outlook on Potentialities and Limits in Using Epitaxial Polysilicon for MEMS Real-Time Clocks. *Mussi, G.*, +, *TIE Aug. 2020 6996-7004*

Design of Monolithic All-NMOS Three-Level Three-phase Switched-Capacitor Power Converter for Industrial Environmental Sensor Conditioning. *Chen, L.*, +, *TIE Nov. 2020 9873-9881*

Fully Soft-Switched High Step-Up Nonisolated Three-Port DC–DC Converter Using GaN HEMTs. *Faraji, R.*, +, *TIE Oct. 2020 8371-8380*

High Efficiency High Density 1 MHz 380–12 V DCX With Low FoM Devices. *Wu, X.*, +, *TIE Feb. 2020 1648-1656*

Performance and Reliability Review of 650 V and 900 V Silicon and SiC Devices: MOSFETs, Cascode JFETs and IGBTs. *Gonzalez, J.O.*, +, *TIE Sept. 2020 7375-7385*

The Impact of Temperature and Switching Rate on Dynamic Transients of High-Voltage Silicon and 4H-SiC NPN BJTs: A Technology Evaluation. *Jahdi, S.*, +, *TIE June 2020 4556-4566*

Silicon compounds

1-kV Input 1-MHz GaN Stacked Bridge LLC Converters. *Zhang, Z.*, +, *TIE Nov. 2020 9227-9237*

In situ Degradation Monitoring of SiC MOSFET Based on Switching Transient Measurement. *Pu, S.*, +, *TIE June 2020 5092-5100*

A 300-kHz 6.6-kW SiC Bidirectional LLC Onboard Charger. *Li, H.*, +, *TIE Feb. 2020 1435-1445*

A Multiresonant Gate Driver for High-Frequency Resonant Converters. *Gu, L.*, +, *TIE Feb. 2020 1405-1414*

Characterization of Static and Dynamic Behavior of 1200 V Normally off GaN/SiC Cascode Devices. *Wang, Y.*, +, *TIE Dec. 2020 10284-10294*

Design, Analysis, and Impacts of Sinusoidal LC Filter on Pulsewidth Modulated Inverter Fed-Induction Motor Drive. *Mishra, P.*, +, *TIE April 2020 2678-2688*

Digitally Controlled Gate Current Source-Based Active Gate Driver for Silicon Carbide MOSFETs. *Sukhatme, Y.*, +, *TIE Dec. 2020 10121-10133*

Evaluation of the off-State Base-Emitter Voltage Requirement of the SiC BJT With a Regenerative Proportional Base Driver Circuit and Their Application in an Inverter. *McNeill, N.*, +, *TIE Sept. 2020 7179-7189*

Full-Scale Physical Simulator of All SiC Traction Motor Drive With Onboard Supercapacitor ESS for Light-Rail Public Transportation. *Yildirim, D.*, +, *TIE Aug. 2020 6290-6301*

High and Very High Frequency Power Supplies for Industrial Applications. *Wang, Y.*, +, *TIE Feb. 2020 1400-1404*

Imbalance Current Analysis and Its Suppression Methodology for Parallel SiC MOSFETs with Aid of a Differential Mode Choke. *Zeng, Z.*, +, *TIE Feb. 2020 1508-1519*

Inverter Side RL Filter Precise Design for Motor Overvoltage Mitigation in SiC-Based Drives. *Ruffo, R.*, +, *TIE Feb. 2020 863-873*

Investigation of Harmonic Losses in a Two-Pole Slotless Permanent-Magnet Motor Due to Wide Bandgap Inverter Supply. *Millinger, J.*, +, *TIE Aug. 2020 6280-6289*

Performance and Reliability Review of 650 V and 900 V Silicon and SiC Devices: MOSFETs, Cascode JFETs and IGBTs. *Gonzalez, J.O.*, +, *TIE Sept. 2020 7375-7385*

The Impact of Temperature and Switching Rate on Dynamic Transients of High-Voltage Silicon and 4H-SiC NPN BJTs: A Technology Evaluation. *Jahdi, S.*, +, *TIE June 2020 4556-4566*

Silver

A Soft and Transparent Visuo-Haptic Interface Pursuing Wearable Devices. *Yun, S.*, +, *TIE Jan. 2020 717-724*

Flexible 1–3 Composite Ultrasound Transducers With Silver-Nanowire-Based Stretchable Electrodes. *Kim, T.*, +, *TIE Aug. 2020 6955-6962*

Single-input single-output systems (control)

- Decoupling and Optimal Control of Multilevel Buck DC–DC Converters With Inverse System Theory. *Wu, J.*, +, *TIE Sept. 2020 7861-7870*
- Finite-Time Adaptive Quantized Control of Stochastic Nonlinear Systems With Input Quantization: A Broad Learning System Based Identification Method. *Sui, S.*, +, *TIE Oct. 2020 8555-8565*
- Performance-Improved Implementation of the SISO Adaptive Predictive Control Algorithm for Embedded Systems. *Cruz-Malagon, I.D.L.*, +, *TIE Sept. 2020 8054-8063*
- UDE-Based Robust Output Feedback Control With Applications to a Piezoelectric Stage. *Ren, B.*, +, *TIE Sept. 2020 7819-7828*

Singular value decomposition

- Motion Characteristic Recognition of Transmission Lines Based on Inertial Measurement. *Yang, J.*, +, *TIE Oct. 2020 8860-8867*
- SOSO Boosting of the K-SVD Denoising Algorithm for Enhancing Fault-Induced Impulse Responses of Rolling Element Bearings. *Zeng, M.*, +, *TIE Feb. 2020 1282-1292*

Sintering

- An Intelligent Control Strategy for Iron Ore Sintering Ignition Process Based on the Prediction of Ignition Temperature. *Du, S.*, +, *TIE Feb. 2020 1233-1241*

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- A Soft and Transparent Visuo-Haptic Interface Pursuing Wearable Devices. *Yun, S.*, +, *TIE Jan. 2020 717-724*
- All-Day Mobile Healthcare Monitoring System Based on Heterogeneous Stretchable Sensors for Medical Emergency. *Lee, S.*, +, *TIE Oct. 2020 8808-8816*
- Stretchable e-Skin Patch for Gesture Recognition on the Back of the Hand. *Jiang, S.*, +, *TIE Jan. 2020 647-657*

Skin effect

- Core-Loss Analysis of High-Speed Doubly Salient Electromagnetic Machine for Aeronautic Starter/Generator Application. *Jia, W.*, +, *TIE Jan. 2020 59-68*

SLAM (robots)

- Three-Dimensional Cooperative Mapping for Connected and Automated Vehicles. *Zhang, Y.*, +, *TIE Aug. 2020 6649-6658*

Smart meters

- Novel Anonymous Key Establishment Protocol for Isolated Smart Meters. *Abbasinezhad-Mood, D.*, +, *TIE April 2020 2844-2851*

Smart phones

- All-Day Mobile Healthcare Monitoring System Based on Heterogeneous Stretchable Sensors for Medical Emergency. *Lee, S.*, +, *TIE Oct. 2020 8808-8816*

Smart power grids

- A Gossip-Based Distributed Algorithm for Economic Dispatch in Smart Grids With Random Communication Link Failures. *Wang, R.*, +, *TIE June 2020 4635-4645*
- A Self-Governed Online Energy Management and Trading for Smart Micro/Nano-Grids. *Latifi, M.*, +, *TIE Sept. 2020 7484-7498*
- Application of Economical Building Management System for Singapore Commercial Building. *Li, W.*, *TIE May 2020 4235-4243*
- Impedance Modeling and DC Bus Voltage Stability Assessment of a Solid-State-Transformer-Enabled Hybrid AC–DC Grid Considering Bidirectional Power Flow. *Ye, Q.*, +, *TIE Aug. 2020 6531-6540*
- Resilient Control Design for Load Frequency Control System Under False Data Injection Attacks. *Abbaspour, A.*, +, *TIE Sept. 2020 7951-7962*
- Resilient Information Architecture Platform for the Smart Grid: A Novel Open-Source Platform for Microgrid Control. *Tu, H.*, +, *TIE Nov. 2020 9393-9404*

Snubbers

- A High Step-Down Buck Converter With Self-Driven Synchronous Rectifier. *Soleymani, B.*, +, *TIE Dec. 2020 10266-10273*
- A High-Frequency Link Matrix Rectifier With a Pure Capacitive Output Filter in a Discontinuous Conduction Mode. *Lan, D.*, +, *TIE Jan. 2020 4-15*
- A Hybrid Boost–Flyback/Flyback Microinverter for Photovoltaic Applications. *Zhang, F.*, +, *TIE Jan. 2020 308-318*

- A Lossless Turn-on Snubber for Reducing Diode Reverse Recovery Losses in Bidirectional Buck/Boost Converter. *Mohammadi, M.R.*, *TIE Feb. 2020 1396-1399*

- A New and Modular Active Snubber Cell for Inverters. *Bodur, H.*, +, *TIE Jan. 2020 288-296*

- Bidirectional Isolated Current-Source DAB Converter With Extended ZVS/ZCS Range and Reduced Energy Circulation for Storage Applications. *Blinov, A.*, +, *TIE Dec. 2020 10552-10563*

- Magnetically Coupled High-Voltage-Boost Split *Y*-Source Inverter Without Leakage-Induced Voltage Spikes. *Chen, M.*, +, *TIE July 2020 5444-5455*

- Soft-Switching Bidirectional Buck/Boost Converter With a Lossless Passive Snubber. *Mohammadi, M.R.*, +, *TIE Oct. 2020 8363-8370*

Soft magnetic materials

- Novel Adaptive Controller for Effective Magnetic Measurement Under Arbitrary Magnetization. *Vo, A.*, +, *TIE Nov. 2020 9841-9850*

Software tools

- An Analysis of the Impact of Transient Faults on the Performance of the CAN-FD Protocol. *Pohren, D.H.*, +, *TIE March 2020 2440-2449*

Solar cell arrays

- A Cooperative Adaptive Droop Based Energy Management and Optimal Voltage Regulation Scheme for DC Microgrids. *Sahoo, S.*, +, *TIE April 2020 2894-2904*

- Design Considerations of Sequential Switching Shunt Regulator for High-Power Applications. *Zhu, H.*, +, *TIE Nov. 2020 9358-9369*

- Dual-Input Quasi-Z-Source PV Inverter: Dynamic Modeling, Design, and Control. *Lashab, A.*, +, *TIE Aug. 2020 6483-6493*

- Harmonic Compensation Strategy for Single-Phase Cascaded H-Bridge PV Inverter Under Unbalanced Power Conditions. *Wang, M.*, +, *TIE Dec. 2020 10474-10484*

- Improved Reweighted Zero-Attracting Quaternion-Valued LMS Algorithm for Islanded Distributed Generation System at IM Load. *Kewat, S.*, +, *TIE May 2020 3705-3716*

- Sensorless SynRG Based Variable Speed Wind Generator and Single-Stage Solar PV Array Integrated Grid System With Maximum Power Extraction Capability. *Vijay, M, D.*, +, *TIE Sept. 2020 7529-7539*

- Solar PV Energy Generation System Interfaced to Three Phase Grid With Improved Power Quality. *Singh, A.K.*, +, *TIE May 2020 3798-3808*

Solar cells

- A PWM ZVS High-Frequency-Link Three-Phase Inverter With T-Type NPC Unfolder. *Pal, A.*, +, *TIE Sept. 2020 7146-7156*

Solar power

- A Reconfigurable Solar Photovoltaic Grid-Tied Inverter Architecture for Enhanced Energy Access in Backup Power Applications. *Venkatramanan, D.*, +, *TIE Dec. 2020 10531-10541*

Solar power stations

- Solar PV Energy Generation System Interfaced to Three Phase Grid With Improved Power Quality. *Singh, A.K.*, +, *TIE May 2020 3798-3808*

- Switched Capacitor–Inductor Network Based Ultra-Gain DC–DC Converter Using Single Switch. *Kumar, G.G.*, +, *TIE Dec. 2020 10274-10283*

Solenoids

- Analysis and Computational Methods for a Reader Solenoid Coil Used in Industrial Environments. *Geng, S.*, +, *TIE April 2020 3298-3306*

Solid state drives

- An Asynchronous Boost Converter With Time-Based Dual-Mode Control for Wide Load Range and High Efficiency in SSD Applications. *Lee, K.*, +, *TIE Dec. 2020 10520-10530*

Source separation

- A New Penalty Domain Selection Machine Enabled Transfer Learning for Gearbox Fault Recognition. *Shen, F.*, +, *TIE Oct. 2020 8743-8754*

Space debris

- Impulsive Super-Twisting Sliding Mode Control for Space Debris Capturing via Tethered Space Net Robot. *Zhao, Y.*, +, *TIE Aug. 2020 6874-6882*

Space vehicle electronics

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- Multilayer Fractional Slot Pole-Phase Modulated Induction Motor Drives for Traction Applications. *Reddy, B.P.*, +, *TIE Nov. 2020 9112-9119*
- Novel Method for Direct Measurement of Air Gap Anomalies in Direct-Drive Electrical Motors. *Herman, J.*, +, *TIE March 2020 2422-2429*
- Novel Motor-Shaped Rotational Inductor for Motor Drive Applications. *Khawja, M.R.*, +, *TIE March 2020 1844-1854*
- Performance Comparison Between PCB-Stator and Laminated-Core-Stator-Based Designs of Axial Flux Permanent Magnet Motors for High-Speed Low-Power Applications. *S., N.*, +, *TIE July 2020 5269-5277*
- Permanent-Magnet Machine Flux and Torque Response Under the Influence of Turn Fault. *Hsu, C.*, +, *TIE Jan. 2020 169-179*
- PLL Position and Speed Observer With Integrated Current Observer for Sensorless PMSM Drives. *Lasco, C.*, +, *TIE July 2020 5990-5999*
- Pre- and Postfault Current Control of Dual Three-Phase Reluctance Synchronous Drives. *Eldeeb, H.M.*, +, *TIE May 2020 3361-3373*
- Predictive Control of IM Drive Acoustic Noise. *Kroneisl, M.*, +, *TIE July 2020 5666-5676*
- Reduction of Torque Ripple Caused by Slot Harmonics in FSCW Spoke-Type FPM Motors by Assisted Poles. *Chen, Q.*, +, *TIE Nov. 2020 9613-9622*
- Regenerative Test for Multiple Three-Phase Machines With Even Number of Neutral Points. *Abduallah, A.A.*, +, *TIE March 2020 1684-1694*
- Rotor Current Oriented Control Method of DFIG-DC System Without Stator Side Sensors. *Wu, C.*, +, *TIE Nov. 2020 9958-9962*
- Rotor Position Estimation Method for Brushless Synchronous Machine Based on Second-Order Generated Integrator in the Starting Mode. *Wei, J.*, +, *TIE July 2020 6135-6146*
- Sensorless Closed-Loop Voltage and Frequency Control of Stand-Alone DFIGs Introducing Direct Flux-Vector Control. *Rostami, M.*, +, *TIE July 2020 6078-6088*
- Sensorless Control of Linear Flux-Switching Permanent Magnet Motor Based on Extended Kalman Filter. *Cao, R.*, +, *TIE July 2020 5971-5979*
- Sensorless Rotor Position Estimation of Doubly Fed Induction Generator Based on Backstepping Technique. *Morawiec, M.*, +, *TIE July 2020 5889-5899*
- Sensorless SynRG Based Variable Speed Wind Generator and Single-Stage Solar PV Array Integrated Grid System With Maximum Power Extraction Capability. *Vijay, M, D.*, +, *TIE Sept. 2020 7529-7539*
- Simple Stability Enhancement Method for Stator Current Error-Based MRAS-Type Speed Estimator for Induction Motor. *Korzonek, M.*, +, *TIE July 2020 5854-5866*
- Sizing Methodology Based on Scaling Laws for a Permanent Magnet Electrical Variable Transmission. *Verbelen, F.*, +, *TIE March 2020 1739-1749*
- Stator-PM-Based Variable Reluctance Resolver With Advantage of Motional Back-EMF. *Sun, L.*, +, *TIE Nov. 2020 9790-9801*
- The Optimal Speed-Torque Control of Asynchronous Motors for Electric Cars in the Field-Weakening Region Based on the RFR. *Xie, F.*, +, *TIE Nov. 2020 9601-9612*
- Thermal Deformation Analysis of Water Cooling Doubly Salient Brushless DC Generator With Stator Field Winding. *Zhang, J.*, +, *TIE April 2020 2700-2710*
- Tilting Torque Calculation of a Novel Tiered Type Permanent Magnet Spherical Motor. *Gan, L.*, +, *TIE Jan. 2020 421-431*
- Torque Calculation of Permanent Magnet Spherical Motor Based on Virtual Work Method. *Li, H.*, +, *TIE Sept. 2020 7736-7745*
- Steam power stations**
- A Tuning Method of Active Disturbance Rejection Control for a Class of High-Order Processes. *He, T.*, +, *TIE April 2020 3191-3201*
- Steam turbines**
- Computer Modeling of the Eddy Current Losses of Metal Fasteners in Rotor Slots of a Large Nuclear Steam Turbine Generator Based on Finite-Element Method and Deep Gaussian Process Regression. *Zhao, J.*, +, *TIE July 2020 5349-5359*
- Information Theory Based Probabilistic Approach to Blade Damage Detection of Turbomachine Using Sensor Data. *Yang, S.*, +, *TIE Dec. 2020 10887-10896*
- Steel**
- A Correlation-Based Distributed Fault Detection Method and Its Application to a Hot Tandem Rolling Mill Process. *Zhang, K.*, +, *TIE March 2020 2380-2390*
- Effect of Laser Cutting on Core Losses in Electrical Machines—Measurements and Modeling. *Sundaria, R.*, +, *TIE Sept. 2020 7354-7363*
- Impact of Rebar and Concrete on Power Dissipation of Wireless Power Transfer Systems. *Lee, S.*, +, *TIE Jan. 2020 276-287*
- Magnetic Sensor Design for a Permanent Magnet Linear Motor Considering Edge-Effect. *Luu, P.T.*, +, *TIE July 2020 5768-5777*
- Steel industry**
- An Intelligent Control Strategy for Iron Ore Sintering Ignition Process Based on the Prediction of Ignition Temperature. *Du, S.*, +, *TIE Feb. 2020 1233-1241*
- Steering systems**
- A Model-Free Control Strategy for Vehicle Lateral Stability With Adaptive Dynamic Programming. *Sun, W.*, +, *TIE Dec. 2020 10693-10701*

Spacecraft Vibration Control Based on Extended Modal Decoupling of Vernier-Gimballing Magnetically Suspension Flywheels. *Chen, X.*, +, *TIE May 2020 4066-4076*

Stereo image processing

A Distortion Model of Laser Sheet for a Laser Line Scanner With Large Fan Angle. *Yoon, S.*, +, *TIE Aug. 2020 6986-6995*

Salient Object Detection by Spatiotemporal and Semantic Features in Real-Time Video Processing Systems. *Fang, Y.*, +, *TIE Nov. 2020 9893-9903*

Sensor-Based Control Using an Image Point and Distance Features for Rivet-in-Hole Insertion. *Zhu, W.*, +, *TIE June 2020 4692-4699*

Stochastic games

A Game-Theoretic Approach to Cross-Layer Security Decision-Making in Industrial Cyber-Physical Systems. *Huang, K.*, +, *TIE March 2020 2371-2379*

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A New Nonlinear Model-Based Fault Detection Method Using Mann–Whitney Test. *Yang, C.*, +, *TIE Dec. 2020 10856-10864*

A Reinforced k -Nearest Neighbors Method With Application to Chatter Identification in High-Speed Milling. *Shi, F.*, +, *TIE Dec. 2020 10844-10855*

Bayesian Deep-Learning-Based Health Prognostics Toward Prognostics Uncertainty. *Peng, W.*, +, *TIE March 2020 2283-2293*

Distribution System Restoration With Renewable Resources for Reliability Improvement Under System Uncertainties. *Zou, K.*, +, *TIE Oct. 2020 8438-8449*

Extended Signal-Correction Observer and Application to Aircraft Navigation. *Wang, X.*, +, *TIE April 2020 3149-3156*

Extended State Filter Based Disturbance and Uncertainty Mitigation for Nonlinear Uncertain Systems With Application to Fuel Cell Temperature Control. *Xue, W.*, +, *TIE Dec. 2020 10682-10692*

FPGA-Based Stochastic Activity Networks for Online Reliability Monitoring. *Garro, U.*, +, *TIE June 2020 5000-5011*

Prognostics for Linear Stochastic Degrading Systems With Survival Measurements. *Si, X.*, +, *TIE April 2020 3202-3215*

Stochastic systems

A Gossip-Based Distributed Algorithm for Economic Dispatch in Smart Grids With Random Communication Link Failures. *Wang, R.*, +, *TIE June 2020 4635-4645*

A New Nonlinear Model-Based Fault Detection Method Using Mann–Whitney Test. *Yang, C.*, +, *TIE Dec. 2020 10856-10864*

A Novel Degradation Modeling and Prognostic Framework for Closed-Loop Systems With Degrading Actuator. *Si, X.*, +, *TIE Nov. 2020 9635-9647*

Event- and Deadline-Driven Control of a Self-Localizing Robot With Vision-Induced Delays. *van Horsen, E.P.*, +, *TIE Feb. 2020 1212-1221*

Finite-Time Adaptive Quantized Control of Stochastic Nonlinear Systems With Input Quantization: A Broad Learning System Based Identification Method. *Sui, S.*, +, *TIE Oct. 2020 8555-8565*

Iterative Learning Control for Time-Varying Systems Subject to Variable Pass Lengths: Application to Robot Manipulators. *Shi, J.*, +, *TIE Oct. 2020 8629-8637*

Simultaneous Fault Estimation for Markovian Jump Systems With Generally Uncertain Transition Rates: A Reduced-Order Observer Approach. *Li, X.*, +, *TIE Sept. 2020 7889-7897*

Sliding Mode Control for Nonlinear Stochastic Semi-Markov Switching Systems With Application to SRMM. *Qi, W.*, +, *TIE May 2020 3955-3966*

Storage management

Energy Optimization by Software Prefetching for Task Granularity in GPU-Based Embedded Systems. *Wang, Z.*, +, *TIE June 2020 5120-5131*

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A Model-Based Approach for the Estimation of Bearing Forces and Moments Using Outer Ring Deformation. *Kerst, S.*, +, *TIE Jan. 2020 461-470*

Stress analysis

Design and Optimization of Halbach-Array PM Rotor for High-Speed Axial-Flux Permanent Magnet Machine With Ironless Stator. *Zhang, Z.*, +, *TIE Sept. 2020 7269-7279*

Structural engineering

Impact of Rebar and Concrete on Power Dissipation of Wireless Power Transfer Systems. *Lee, S.*, +, *TIE Jan. 2020 276-287*

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SDDNet: Real-Time Crack Segmentation. *Choi, W.*, +, *TIE Sept. 2020 8016-8025*

Substation automation

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Experimental Evaluation of Transformer Internal Fault Detection Based on $V-I$ Characteristics. *Zhao, X.*, +, *TIE May 2020 4108-4119*

Parallel Nine-Phase Generator Control in a Medium-Voltage DC Wind System. *Beik, O.*, +, *TIE Oct. 2020 8112-8122*

Sunlight

Energy-Efficient Supplemental LED Lighting Control for a Proof-of-Concept Greenhouse System. *Jiang, J.*, +, *TIE April 2020 3033-3042*

Supercapacitors

Charge-Based Supercapacitor Storage Estimation for Indoor Sub-mW Photovoltaic Energy Harvesting Powered Wireless Sensor Nodes. *Yue, X.*, +, *TIE March 2020 2411-2421*

Cooperative CC–CV Charging of Supercapacitors Using Multicharger Systems. *Li, H.*, +, *TIE Dec. 2020 10497-10508*

DC-Side-Fault-Tolerant Control of a Battery-Supercapacitor Hybrid Energy Storage System Based on Cascaded Multilevel Converter and Auxiliary Power Loop. *Jiang, W.*, +, *TIE Sept. 2020 7451-7460*

Design and Analysis of Inductively Coupled Power Transfer System on Mooring Buoy With Double Ultracapacitor Chargers Using Indirect Control. *Xu, J.*, +, *TIE June 2020 4836-4845*

Distributed Cooperative Control of Multiple Hybrid Energy Storage Systems in a DC Microgrid Using Consensus Protocol. *Chen, X.*, +, *TIE March 2020 1968-1979*

Efficiency Optimization of DC Solid-State Transformer for Photovoltaic Power Systems. *Shi, H.*, +, *TIE May 2020 3583-3595*

Equivalent Series Resistance-based Real-time Control of Battery-Ultracapacitor Hybrid Energy Storage Systems. *Zhao, C.*, +, *TIE March 2020 1999-2008*

Full-Scale Physical Simulator of All SiC Traction Motor Drive With Onboard Supercapacitor ESS for Light-Rail Traction Transportation. *Yildirim, D.*, +, *TIE Aug. 2020 6290-6301*

Hierarchical Management Control Based on Equivalent Fitting Circle and Equivalent Energy Consumption Method for Multiple Fuel Cells Hybrid Power System. *Yan, Y.*, +, *TIE April 2020 2786-2797*

Modeling and State-of-Charge Estimation of Supercapacitor Considering Leakage Effect. *Saha, P.*, +, *TIE Jan. 2020 350-357*

On the Decentralized Energy Management Strategy for the All-Electric APU of Future More Electric Aircraft Composed of Multiple Fuel Cells and Supercapacitors. *Chen, J.*, +, *TIE Aug. 2020 6183-6194*

Online Parameter Estimation for Supercapacitor State-of-Energy and State-of-Health Determination in Vehicular Applications. *Naseri, F.*, +, *TIE Sept. 2020 7963-7972*

Simultaneous Identification and Control for Hybrid Energy Storage System Using Model Predictive Control and Active Signal Injection. *Song, Z.*, +, *TIE Nov. 2020 9768-9778*

Support vector machines

A Metric-Learning-Based Nonlinear Modeling Algorithm and Its Application in Key-Performance-Indicator Prediction. *Duan, Y.*, +, *TIE Aug. 2020 7073-7082*

An Intelligent Data-Driven Model to Secure Intravehicle Communications Based on Machine Learning. *Al-Saud, M.*, +, *TIE June 2020 5112-5119*

Classification of Complex Power Quality Disturbances Using Optimized S-Transform and Kernel SVM. *Tang, Q.*, +, *TIE Nov. 2020 9715-9723*

Voluntary and FES-Induced Finger Movement Estimation Using Muscle Deformation Features. *Zhou, Y.*, +, *TIE May 2020 4002-4012*

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Surface topography

Artificial Tactile Sensor With Pin-type Module for Depth Profile and Surface Topography Detection. *Shin, K.*, +, *TIE Jan. 2020 637-646*

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Artificial Tactile Sensor With Pin-type Module for Depth Profile and Surface Topography Detection. *Shin, K.*, +, *TIE Jan. 2020 637-646*

Fringe-Projection-Based Normal Direction Measurement and Adjustment for Robotic Drilling. *Rao, G.*, +, *TIE Nov. 2020 9560-9570*

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An Accelerated Recurrent Neural Network for Visual Servo Control of a Robotic Flexible Endoscope With Joint Limit Constraint. *Li, W.*, +, *TIE Dec. 2020 10787-10797*

Disposable FBG-Based Tridirectional Force/Torque Sensor for Aspiration Instruments in Neurosurgery. *Li, T.*, +, *TIE April 2020 3236-3247*

Motion Control for Piezoelectric-Actuator-Based Surgical Device Using Neural Network and Extended State Observer. *Lau, J.Y.*, +, *TIE Jan. 2020 402-412*

Towards Robotic-Assisted Subretinal Injection: A Hybrid Parallel–Serial Robot System Design and Preliminary Evaluation. *Zhou, M.*, +, *TIE Aug. 2020 6617-6628*

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A Novel Orientation Recursive Algorithm Aiming at Catastrophe Signals in MWD. *Yang, J.*, +, *TIE Nov. 2020 9683-9692*

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Suspension Force Error Source Analysis and Multidimensional Dynamic Model for a Centripetal Force Type-Magnetic Bearing. *Zhang, W.*, +, *TIE Sept. 2020 7617-7628*

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Active Suspension System Control With Decentralized Event-Triggered Scheme. *Zhang, H.*, +, *TIE Dec. 2020 10798-10808*

Actuator Failure Compensation-Based Adaptive Control of Active Suspension Systems With Prescribed Performance. *Liu, Y.*, +, *TIE Aug. 2020 7044-7053*

An Electromagnetic Variable Stiffness Device for Semiactive Seat Suspension Vibration Control. *Ning, D.*, +, *TIE Aug. 2020 6773-6784*

Output-Constrained Robust Sliding Mode Based Nonlinear Active Suspension Control. *Rath, J.J.*, +, *TIE Dec. 2020 10652-10662*

Position Control of Parallel Active Link Suspension With Backlash. *Yu, M.*, +, *TIE June 2020 4741-4751*

Regionless Explicit Model Predictive Control of Active Suspension Systems With Preview. *Theunissen, J.*, +, *TIE June 2020 4877-4888*

Spacecraft Vibration Control Based on Extended Modal Decoupling of Vernier-Gimballing Magnetically Suspension Flywheels. *Chen, X.*, +, *TIE May 2020 4066-4076*

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Composite Hierarchical Pitch Angle Control for a Tidal Turbine Based on the Uncertainty and Disturbance Estimator. *Yin, X.*, +, *TIE Jan. 2020 329-339*

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Switched-Capacitor Differential Boost Inverter: Design, Modeling, and Control. *Silva, G.V.*, +, *TIE July 2020 5421-5431*

Switched mode power supplies

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Modulation Induced Current Imbalance and Its Sensorless Control of a GaN-Based Four-Phase DC–DC Power Amplifier. *Wang, C.*, +, *TIE Feb. 2020 1520-1531*

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DC Microgrid Grounding Impact on Power Electronic Interfaces in Fault Condition. *Naghizadeh, M.*, +, *TIE May 2020 4120-4132*

Design of Monolithic All-NMOS Three-Level Three-phase Switched-Capacitor Power Converter for Industrial Environmental Sensor Conditioning. *Chen, L.*, +, *TIE Nov. 2020 9873-9881*

Dual-Input Isolated Converter With Dual-Charge-Pump Cell for High Step-Up Voltage Ratio Achievement. *Shen, C.*, +, *TIE Nov. 2020 9383-9392*

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Noise Rejection and Detection of Partial Discharges Under Repetitive Impulse Supply Voltage. *Ghosh, R.*, +, *TIE May 2020 4144-4151*

Novel Transformerless Buck–Boost Inverters Without Leakage Current. *Khan, A.A.*, +, *TIE Dec. 2020 10442-10454*

Switched Capacitor–Inductor Network Based Ultra-Gain DC–DC Converter Using Single Switch. *Kumar, G.G.*, +, *TIE Dec. 2020 10274-10283*

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A 20 MHz Low-Profile DC–DC Converter With Magnetic-Free Characteristics. *Guan, Y.*, +, *TIE Feb. 2020 1555-1567*

A 30-Pulse Rectifier Using Passive Voltage Harmonic Injection Method at DC Link. *Li, Q.*, +, *TIE Nov. 2020 9273-9291*

A 300-kHz 6.6-kW SiC Bidirectional LLC Onboard Charger. *Li, H.*, +, *TIE Feb. 2020 1435-1445*

A Bidirectional CDT-LC Resonant DC–DC Converter With a Wide Voltage Range. *Chen, B.*, +, *TIE March 2020 2009-2020*

A Current-Sharing Method for Interleaved High-Frequency LLC Converter With Partial Energy Processing. *Chen, H.*, +, *TIE Feb. 2020 1498-1507*

A Dual Half-Bridge Converter With Current Doubler Rectifier. *Zhao, L.*, +, *TIE Aug. 2020 6398-6406*

A Four-Quadrant Single-Phase Grid-Connected Converter With Only Two High-Frequency Switches. *Siu, K.K.M.*, +, *TIE March 2020 1899-1909*

A High Efficiency Nonisolated Buck–Boost Converter Based on ZETA Converter. *Banaei, M.R.*, +, *TIE March 2020 1991-1998*

A High Step Up SEPIC-Based Converter Based on Partly Interleaved Transformer. *Gao, S.*, +, *TIE Feb. 2020 1455-1465*

A High-Frequency Link Matrix Rectifier With a Pure Capacitive Output Filter in a Discontinuous Conduction Mode. *Lan, D.*, +, *TIE Jan. 2020 4-15*

A High-Power-Density Converter With a Continuous Input Current Waveform for Satellite Power Applications. *Lee, N.*, +, *TIE Feb. 2020 1024-1035*

A Hybrid Interleaved DC–DC Converter With a Wide Step-Up Regulation Range and Ultralow Voltage Stress. *Hu, X.*, +, *TIE July 2020 5479-5489*

A Hybrid Phase Shift-Pulsewidth Modulation and Asymmetric Selective Harmonic Current Mitigation-Pulsewidth Modulation Technique to Reduce Harmonics and Inductance of Single-Phase Grid-Tied Cascaded Multilevel Converters. *Moieni, A.*, +, *TIE Dec. 2020 10388-10398*

A Hybrid Space-Vector Modulation Method for Harmonics and Current Ripple Reduction of Interleaved Vienna Rectifier. *Wang, T.*, +, *TIE Oct. 2020 8088-8099*

- A Low-EMI Continuous-Time Delta-Sigma-Modulator Buck Converter With Transient Response Eruption Techniques. *Hwang, Y.*, +, *TIE Aug. 2020 6854-6863*
- A Multiresonant Gate Driver for High-Frequency Resonant Converters. *Gu, L.*, +, *TIE Feb. 2020 1405-1414*
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- A Novel Scalar PWM Method to Reduce Leakage Current in Three-Phase Two-Level Transformerless Grid-Connected VSIs. *Xu, J.*, +, *TIE May 2020 3788-3797*
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- DC Fault Analysis Models of Three Converter Topologies Considering Control Effects. *Li, Y.*, +, *TIE Nov. 2020 9480-9491*
- DC Microgrid Grounding Impact on Power Electronic Interfaces in Fault Condition. *Naghizadeh, M.*, +, *TIE May 2020 4120-4132*
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- Design Considerations for Voltage Sensorless Control of a PFC Single-Phase Rectifier Without Electrolytic Capacitors. *Qi, W.*, +, *TIE March 2020 1878-1889*
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- Enhanced Dual-Active-Bridge DC–DC Converter for Balancing Bipolar Voltage Level of DC Distribution System. *Lee, J.*, +, *TIE Dec. 2020 10399-10409*
- Enhanced Floating Capacitor Voltage Balancing Schemes for Single-Source Seven-Level Inverters With Capacitor Fed H-Bridge Units. *Davis, T.T.*, +, *TIE Aug. 2020 6227-6236*
- Fault Diagnosis and Monitoring of Modular Multilevel Converter With Fast Response of Voltage Sensors. *Zhang, J.*, +, *TIE June 2020 5071-5080*
- Ferdowsi Rectifiers—Single-Phase Buck-Boost Bridgeless PFC Rectifiers With Low Semiconductor Count. *Sharifi, S.*, +, *TIE Nov. 2020 9206-9214*
- Fully Soft-Switched High Step-Up Nonisolated Three-Port DC–DC Converter Using GaN HEMTs. *Faraji, R.*, +, *TIE Oct. 2020 8371-8380*
- Generalized Phase-Shift PWM for Active-Neutral-Point-Clamped Multilevel Converter. *Li, Y.*, +, *TIE Nov. 2020 9048-9058*
- Generalized Symmetrical Step-Up Multilevel Inverter Using Crisscross Capacitor Units. *Lin, W.*, +, *TIE Sept. 2020 7439-7450*
- High Efficiency High Density 1 MHz 380–12 V DCX With Low FoM Devices. *Wu, X.*, +, *TIE Feb. 2020 1648-1656*
- High-Efficiency Zero-Voltage-Switching Totem-Pole Bridgeless Rectifier With Integrated Inrush Current Limiter Circuit. *Jeong, Y.*, +, *TIE Sept. 2020 7421-7429*
- High-Frequency Resonant ZVS Boost Converter With Grounded Switches and Continuous Input Current. *Jabbari, M.*, +, *TIE Feb. 2020 1059-1067*
- Highly Efficient Single-Phase Buck–Boost Variable-Frequency AC–AC Converter With Inherent Commutation Capability. *Sharifi, S.*, +, *TIE May 2020 3640-3649*
- Hybrid Buck Converter With Constant Mode Changing Point and Smooth Mode Transition for High-Frequency Applications. *Yuan, B.*, +, *TIE Feb. 2020 1466-1474*
- IGCT Low-Current Switching—TCAD and Experimental Characterization. *Stamenkovic, D.*, +, *TIE Aug. 2020 6302-6311*
- Imbalance Current Analysis and Its Suppression Methodology for Parallel SiC MOSFETs with Aid of a Differential Mode Choke. *Zeng, Z.*, +, *TIE Feb. 2020 1508-1519*
- Integrated Buck and Modified Push–Pull DC–DC Converter With High Step-Down Ratio. *Tseng, K.*, +, *TIE Jan. 2020 235-243*
- Magnetic Coupling Branch Based Dual-Input/Output DC–DC Converters With Improved Cross-Regulation and Soft-Switching Operation. *Liu, Y.*, +, *TIE Sept. 2020 7167-7178*

- Magnetically Coupled High-Voltage-Boost Split Y -Source Inverter Without Leakage-Induced Voltage Spikes. *Chen, M.*, +, *TIE July 2020 5444-5455*
- Min-Type Control Strategy of a DC–DC Synchronous Boost Converter. *Sferlazza, A.*, +, *TIE April 2020 3167-3179*
- Minimization of Abnormal Output Voltage Rising for LLC Resonant Converter at Very Light Load. *Kim, C.*, *TIE Dec. 2020 10295-10303*
- Minimization of Current Ripple and Switching Losses in Double-Inverter Fed Wound Rotor Induction Machine Drive Using PWM Techniques. *Bajjuri, N.K.*, +, *TIE May 2020 3484-3495*
- Model Predictive Control for Dual Active Bridge in Naval DC Microgrids Supplying Pulsed Power Loads Featuring Fast Transition and Online Transformer Current Minimization. *Xiao, Q.*, +, *TIE June 2020 5197-5203*
- Model Predictive Control of a Nine-Level Internal Parallel Multilevel Converter With Phase-Shifted Pulsewidth Modulation. *Zhou, D.*, +, *TIE Nov. 2020 9073-9082*
- Modeling and Control of Low Switching Frequency High-Performance Induction Motor Drives. *Qi, X.*, +, *TIE June 2020 4402-4410*
- Modulation and Capacitor Voltage Balancing Control of Multilevel NPC Dual Active Bridge DC–DC Converters. *Filba-Martinez, A.*, +, *TIE April 2020 2499-2510*
- Modulation and Voltage Balancing of a Five-Level Series-Connected Multilevel Inverter With Reduced Isolated Direct Current Sources. *Dekka, A.*, +, *TIE Oct. 2020 8219-8230*
- Modulation Scheme of Dual Active Bridge Converter for Seamless Transitions in Multiworking Modes Compromising ZVS and Conduction Loss. *Guo, Z.*, *TIE Sept. 2020 7399-7409*
- Multilevel Single-Phase Converter With Two DC Links. *de Freitas, N.B.*, +, *TIE Dec. 2020 10346-10355*
- Multitransformer Primary-Side Regulated Flyback Converter for Supplying Isolated IGBT and MOSFET Drivers. *Kolincio, M.*, +, *TIE Feb. 2020 1005-1012*
- Nonisolated High-Step-Up DC–DC Converter Derived from Switched-Inductors and Switched-Capacitors. *Salvador, M.A.*, +, *TIE Oct. 2020 8506-8516*
- Novel Transformerless Buck–Boost Inverters Without Leakage Current. *Khan, A.A.*, +, *TIE Dec. 2020 10442-10454*
- Optimization of High-Density and High-Efficiency Switched-Tank Converter for Data Center Applications. *Lyu, X.*, +, *TIE Feb. 2020 1626-1637*
- Peak Current Control and Feed-Forward Compensation of a DAB Converter. *Vazquez, N.*, +, *TIE Oct. 2020 8381-8391*
- Postfault Operation of Cascaded H-Bridge Converter for Equal Power Handling by the Healthy Cells. *Sharma, R.*, +, *TIE Nov. 2020 9174-9183*
- Power Quality Enhancement Using Euclidean Direction Search Based Control Technique. *Badoni, M.*, +, *TIE March 2020 2231-2240*
- Proposing a Multimode Switching Control Method for a Half-Bridge Converter to Improve Its Efficiency Over the Entire Load Variations. *Ghanbari, A.R.*, +, *TIE March 2020 1910-1920*
- Pulse Train Control Strategy for CCM Boost PFC Converter With Improved Dynamic Response and Unity Power Factor. *Luo, H.*, +, *TIE Dec. 2020 10377-10387*
- Sequential Offline-Online-Offline Measurement Approach for High-Frequency LCLC Resonant Converters in the TWTA Applications. *Zhao, B.*, +, *TIE Feb. 2020 1568-1579*
- Simple Fundamental Current Estimation and Smooth Transition Between Synchronous Optimal PWM and Asynchronous SVM. *Birda, A.*, +, *TIE Aug. 2020 6354-6364*
- Simultaneous Common-Mode Voltage Reduction and Neutral-Point Voltage Balance Scheme for the Quasi-Z-Source Three-Level T-Type Inverter. *Qin, C.*, +, *TIE March 2020 1956-1967*
- Simultaneous DC Current Balance and CMV Reduction for Parallel CSC System With Interleaved Carrier-Based SPWM. *Ding, L.*, +, *TIE Oct. 2020 8495-8505*
- Single-Phase Z_{AC} -Source AC–AC Converter With High Buck and Boost Voltage Conversion Capability. *Rahman, K.*, +, *TIE Nov. 2020 9251-9259*
- Single-Stage Voltage Balancer With High-Frequency Isolation for Bipolar LVDC Distribution System. *Lee, J.*, +, *TIE May 2020 3596-3606*
- Soft Switching Bidirectional Converter for Reflex Charger With Minimum Switches. *Ahmadi, F.*, +, *TIE Oct. 2020 8355-8362*
- Soft-Switched High Step-Up Quasi-Z-Source DC–DC Converter. *Poorali, B.*, +, *TIE June 2020 4547-4555*
- Soft-Switching Bidirectional Buck/Boost Converter With a Lossless Passive Snubber. *Mohammadi, M.R.*, +, *TIE Oct. 2020 8363-8370*
- Switched Capacitor–Inductor Network Based Ultra-Gain DC–DC Converter Using Single Switch. *Kumar, G.G.*, +, *TIE Dec. 2020 10274-10283*
- Switched-Capacitor Differential Boost Inverter: Design, Modeling, and Control. *Silva, G.V.*, +, *TIE July 2020 5421-5431*
- Synthesis of Integrated Multiport DC–DC Converters With Reduced Switches. *Chen, G.*, +, *TIE June 2020 4536-4546*
- The Novel Quasi-Resonant Flyback Converter With Autoregulated Structure for Parallel/Serial Input. *Wang, J.*, +, *TIE Feb. 2020 992-1004*
- Three-Step Switching Frequency Selection Criteria for the Generalized CLLC-Type DC Transformer in Hybrid AC–DC Microgrid. *Huang, J.*, +, *TIE Feb. 2020 980-991*
- Triple-Compound-Full-Bridge-Based Multi-Input Converter With Wide Zero-Voltage Switching Range and Wide Conversion Gain. *Zeng, J.*, +, *TIE Nov. 2020 9260-9272*
- Unified Second-Stage LC Filter Applied in the Three-State Switching Cell Buck–Boost Converter: Static and Dynamic Analysis and Experimentation. *Larico, H.R.E.*, +, *TIE Jan. 2020 225-234*
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- Switching systems (control)**
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- Coupled Inductor Based Regenerative Cascaded Multicell Converter for Drives With Multilevel Voltage Operation at Both Input and Output Sides. *Sau, S.*, +, *TIE Jan. 2020 147-158*
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- Switching transients**
- In situ* Degradation Monitoring of SiC MOSFET Based on Switching Transient Measurement. *Pu, S.*, +, *TIE June 2020 5092-5100*
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- A Digital Phase Synchronization Method for Bidirectional Inductive Power Transfer. *Jia, S.*, +, *TIE Aug. 2020 6450-6460*

A Global Convergence Estimator of Grid Voltage Parameters for More Electric Aircraft. *Dai, Z.*, +, *TIE Sept. 2020 7540-7549*

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An Open-Loop Synchronization Technique With Simple Structure for Phase Error Compensation and Frequency Estimation. *Liu, P.*, +, *TIE Oct. 2020 8936-8940*

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A New Hybrid Model for Electromechanical Characteristic Analysis Under SISC in Synchronous Generators. *He, Y.*, +, *TIE March 2020 2348-2359*

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Full Converter Control for Variable-Speed Wind Turbines Without Integral Controller or PLL. *Koiwa, K.*, +, *TIE Nov. 2020 9418-9428*

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Improved Accuracy, Modeling, and Stability Analysis of Power-Hardware-in-Loop Simulation With Open-Loop Inverter as Power Amplifier. *Upamanyu, K.*, +, *TIE Jan. 2020 369-378*

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Numerical Analysis of Turn-to-Turn Short Circuit Current Mitigation for Concentrated Winding Permanent Magnet Machines With Series and Parallel Connected Windings. *Xu, Y.*, +, *TIE Nov. 2020 9101-9111*

Performance Analysis of Model Predictive Technique Based Combined Control for PMSG-Based Distributed Generation Unit. *Mishra, R.*, +, *TIE Oct. 2020 8991-9000*

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Unified Reduced Model for a Dual-Control Scheme of the High-Speed Response Brushless Excitation System of Synchronous Generators. *Noland, J.K.*, +, *TIE June 2020 4474-4484*

Weak Grid Intertie WEGS With Hybrid Generalized Integrator for Power Quality Improvement. *Chishtii, F.*, +, *TIE Feb. 2020 1113-1123*

Synchronous machines

A Constant Switching Frequency Multiple-Vector-Based Model Predictive Current Control of Five-Phase PMSM With Nonsinusoidal Back EMF. *Xiong, C.*, +, *TIE March 2020 1695-1707*

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An Improved Modulation Technique With Minimum Switching Actions Within One PWM Cycle for Open-End Winding PMSM System With Isolated DC Bus. *Hu, W.*, +, *TIE May 2020 4259-4264*

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Extension of Space-Vector-Signal-Injection-Based MTPA Control Into SVPWM Fault-Tolerant Operation for Five-Phase IPMSM. *Chen, Q.*, +, *TIE Sept. 2020 7321-7333*

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Harmonic Analysis of Air Gap Magnetic Field in Flux-Modulation Double-Stator Electrical-Excitation Synchronous Machine. *Wang, Y.*, +, *TIE July 2020 5302-5312*

Improved Online Maximum-Torque-Per-Ampere Algorithm for Speed Controlled Interior Permanent Magnet Synchronous Machine. *Han, Z.*, +, *TIE May 2020 3398-3408*

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Permanent-Magnet Machine Flux and Torque Response Under the Influence of Turn Fault. *Hsu, C.*, +, *TIE Jan. 2020 169-179*

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Spatial Inductance Estimation for Current Loop Auto-Tuning in IPMSM Self-Commissioning. *Erturk, F.*, +, *TIE May 2020 3911-3920*

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Water Cold Plates for Efficient Cooling: Verified on a Permanent-Magnet Machine With Concentrated Winding. *Fan, X.*, +, *TIE July 2020 5325-5336*

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A Robust Field-Weakening Approach for Direct Torque and Flux Controlled Reluctance Synchronous Motors With Extended Constant Power Speed Region. *Zhang, X.*, +, *TIE March 2020 1813-1823*

A Robust Observer and Nonorthogonal PLL-Based Sensorless Control for Fault-Tolerant Permanent Magnet Motor With Guaranteed Postfault Performance. *Xu, J.*, +, *TIE July 2020 5959-5970*

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All Current Sensor Survivable IPMSM Drive With Reconfigurable Inverter. *Lu, J.*, +, *TIE Aug. 2020 6331-6341*

- An Antiovervoltage Control Scheme for Electrolytic Capacitorless IPMSM Drives Based on Stator Current Vector Orientation. *Ding, D.*, +, *TIE May 2020 3517-3527*
- An Improved Delay-Suppressed Sliding-Mode Observer for Sensorless Vector-Controlled PMSM. *Gong, C.*, +, *TIE July 2020 5913-5923*
- An Improved Rotating Restart Method for a Sensorless Permanent Magnet Synchronous Motor Drive System Using Repetitive Zero Voltage Vectors. *Seo, D.*, +, *TIE May 2020 3496-3504*
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- Complex-Coefficient Adaptive Disturbance Observer for Position Estimation of IPMSMs With Robustness to DC Errors. *Xiao, D.*, +, *TIE July 2020 5924-5935*
- Correction of Rotor Position Estimation Error for High-Speed Permanent Magnet Synchronous Motor Sensorless Drive System Based on Minimum-Current-Tracking Method. *Gu, C.*, +, *TIE Oct. 2020 8271-8280*
- Detrimental Effect Elimination of Current Sensor Accuracy Uncertainty for High-Precision Position Sensorless Control of Interior Permanent Magnet Synchronous Motor Drives. *Lu, J.*, +, *TIE July 2020 6101-6111*
- Efficient QR Updating Factorization for Sensorless Synchronous Motor Drive Based on High Frequency Voltage Injection. *Toso, F.*, +, *TIE Dec. 2020 10213-10222*
- Electromagnetic Torque-Based Model Reference Adaptive System Speed Estimator for Sensorless Surface Mount Permanent Magnet Synchronous Motor Drive. *Prabhakaran, K.K.*, +, *TIE July 2020 5936-5947*
- Enhanced Model Predictive Torque Control of Fault-Tolerant Five-Phase Permanent Magnet Synchronous Motor With Harmonic Restraint and Voltage Preselection. *Huang, W.*, +, *TIE Aug. 2020 6259-6269*
- Finite-Control-Set MPC for Open-Phase Fault-Tolerant Control of PM Synchronous Motor Drives. *Kiselev, A.*, +, *TIE June 2020 4444-4452*
- FOC Transformation for Single Open-Phase Faults in the Five-Phase Open-End Winding Topology. *Priestley, M.*, +, *TIE Feb. 2020 842-851*
- Improved Iterative Learning Control Strategy for Surface-Mounted Permanent Magnet Synchronous Motor Drives. *Mohammed, S.A.Q.*, +, *TIE Dec. 2020 10134-10144*
- IPMSM Sensorless Control Using High-Frequency Voltage Injection Method With Random Switching Frequency for Audible Noise Improvement. *Zhang, Y.*, +, *TIE July 2020 6019-6030*
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- Motor Parameter-Free Predictive Current Control of Synchronous Motors by Recursive Least-Square Self-Commissioning Model. *Tinazzi, F.*, +, *TIE Nov. 2020 9093-9100*
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- Nonregenerative Braking of Permanent Magnet Synchronous Motor. *Marce-tic, D.P.*, +, *TIE Oct. 2020 8186-8196*
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- PLL Position and Speed Observer With Integrated Current Observer for Sensorless PMSM Drives. *Lascu, C.*, +, *TIE July 2020 5990-5999*
- Position Sensorless Permanent Magnet Synchronous Machine Drives—A Review. *Wang, G.*, +, *TIE July 2020 5830-5842*
- Power Capability Improvement of Interior Permanent Magnet Synchronous Motor Drives Using Capacitive Network. *Lee, K.*, +, *TIE Dec. 2020 10109-10120*
- Quasi-Proportional-Resonant Controller Based Adaptive Position Observer for Sensorless Control of PMSM Drives Under Low Carrier Ratio. *An, Q.*, +, *TIE April 2020 2564-2573*
- Reliable Winding-Based DC-Bus Capacitor Discharge Technique Over Full-Speed Range for IPMSM Drive in Electric Vehicles Without Position Sensor. *Gong, C.*, +, *TIE Oct. 2020 8131-8142*
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- Sensorless Low/Zero Speed Estimation for Permanent Magnet Synchronous Machine Using a Search-Based Real-Time Commissioning Method. *Sci-cluna, K.*, +, *TIE July 2020 6010-6018*
- Torque Ripple Reduction in Sectorized Multi Three-Phase Machines Based on PWM Carrier Phase Shift. *Wang, X.*, +, *TIE June 2020 4315-4325*
- Torque Ripple Suppression for Open-End Winding Permanent-Magnet Synchronous Machine Drives With Predictive Current Control. *Yuan, X.*, +, *TIE March 2020 1771-1781*
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- An Accurate Wide-Speed Range Control Method of IPMSM Considering Resistive Voltage Drop and Magnetic Saturation. *Wang, S.*, +, *TIE April 2020 2630-2641*
- An Indirect Testing Method for the Torque Ripple of Multiunit Permanent Magnet Synchronous Machines. *Zeng, D.*, +, *TIE April 2020 2734-2743*
- Current Harmonics Suppression Strategy for PMSM With Nonsinusoidal Back-EMF Based on Adaptive Linear Neuron Method. *Wang, L.*, +, *TIE Nov. 2020 9164-9173*
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- ILC-Based Voltage Compensation Method for PMSM Sensorless Control Considering Inverter Nonlinearity and Sampling Current DC Bias. *Wang, Y.*, +, *TIE July 2020 5980-5989*
- Improved Fusion of Permanent Magnet Temperature Estimation Techniques for Synchronous Motors Using a Kalman Filter. *Erazo, D.E.G.*, +, *TIE March 2020 1708-1717*
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- Motor Parameter-Free Predictive Current Control of Synchronous Motors by Recursive Least-Square Self-Commissioning Model. *Tinazzi, F.*, +, *TIE Nov. 2020 9093-9100*

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Cooperative Manipulation of Wearable Dual-Arm Exoskeletons Using Force Communication Between Partners. *Wu, X.*, +, *TIE Aug. 2020* 6629-6638

Sequential Fusion Estimation for Networked Multisensor Nonlinear Systems. *Zhang, W.*, +, *TIE June 2020* 4991-4999

Three-Dimensional Guidance for Various Target Motions With Terminal Angle Constraints Using Twisting Control. *Hu, Q.*, +, *TIE Feb. 2020* 1242-1253

Telecommunication computing

Anomaly Detection and Identification for Multiagent Systems Subjected to Physical Faults and Cyberattacks. *Li, Y.*, +, *TIE Nov. 2020* 9724-9733

SmartLoc: Smart Wireless Indoor Localization Empowered by Machine Learning. *Li, L.*, +, *TIE Aug. 2020* 6883-6893

Telecommunication links

A Gossip-Based Distributed Algorithm for Economic Dispatch in Smart Grids With Random Communication Link Failures. *Wang, R.*, +, *TIE June 2020* 4635-4645

Telecommunication network reliability

Anomaly Detection and Identification for Multiagent Systems Subjected to Physical Faults and Cyberattacks. *Li, Y.*, +, *TIE Nov. 2020* 9724-9733

Telecommunication networks

Anomaly Detection and Identification for Multiagent Systems Subjected to Physical Faults and Cyberattacks. *Li, Y.*, +, *TIE Nov. 2020* 9724-9733

Telecommunication security

Anomaly Detection and Identification for Multiagent Systems Subjected to Physical Faults and Cyberattacks. *Li, Y.*, +, *TIE Nov. 2020* 9724-9733

Privacy-Preserving Database Assisted Spectrum Access for Industrial Internet of Things: A Distributed Learning Approach. *Zhang, M.*, +, *TIE Aug. 2020* 7094-7103

Telemedicine

All-Day Mobile Healthcare Monitoring System Based on Heterogeneous Stretchable Sensors for Medical Emergency. *Lee, S.*, +, *TIE Oct. 2020* 8808-8816

Telerobotics

A Modular Wearable Finger Interface for Cutaneous and Kinesthetic Interaction: Control and Evaluation. *Chinello, F.*, +, *TIE Jan. 2020* 706-716

Adaptive Fuzzy Backstepping Control for Stable Nonlinear Bilateral Teleoperation Manipulators With Enhanced Transparency Performance. *Chen, Z.*, +, *TIE Jan. 2020* 746-756

Decoupling Finger Joint Motion in an Exoskeletal Hand: A Design for Robot-Assisted Rehabilitation. *Pu, S.*, +, *TIE Jan. 2020* 686-697

Input-to-State Stable Bilateral Teleoperation by Dynamic Interconnection and Damping Injection: Theory and Experiments. *Yang, Y.*, +, *TIE Jan. 2020* 790-799

Novel Emerging Sensing, Actuation, and Control Techniques for Haptic Interaction and Teleoperation. *Wang, D.*, +, *TIE Jan. 2020* 624-626

Omnidirectional Touch Probe With Adaptive Maneuvering for 3-D Object Machining and Measurement Verification Applications. *Luo, R.C.*, +, *TIE Feb. 2020* 1136-1148

Relative Impedance-Based Internal Force Control for Bimanual Robot Teleoperation With Varying Time Delay. *Lu, Z.*, +, *TIE Jan. 2020* 778-789

Temperature control

A Tuning Method of Active Disturbance Rejection Control for a Class of High-Order Processes. *He, T.*, +, *TIE April 2020* 3191-3201

Extended State Filter Based Disturbance and Uncertainty Mitigation for Nonlinear Uncertain Systems With Application to Fuel Cell Temperature Control. *Xue, W.*, +, *TIE Dec. 2020* 10682-10692

Thermal Stress Balancing Oriented Model Predictive Control of Modular Multilevel Switching Power Amplifier. *Han, R.*, +, *TIE Nov. 2020* 9028-9038

Temperature distribution

Effects of Design Parameters on the Multiphysics Performance of High-Speed Permanent Magnet Machines. *Du, G.*, +, *TIE May 2020* 3472-3483

Electrothermal-Based Junction Temperature Estimation Model for Converter of Switched Reluctance Motor Drive System. *Chen, H.*, +, *TIE Feb. 2020* 874-883

Influence of Electric Shield Materials on Temperature Distribution in the End Region of a Large Water-Hydrogen-Hydrogen-Cooled Turbogenerator. *Han, J.*, +, *TIE May 2020* 3431-3441

Power Loss and Thermal Analysis for High-Power High-Speed Permanent Magnet Machines. *Du, G.*, +, *TIE April 2020* 2722-2733

Thermal Deformation Analysis of Water Cooling Doubly Salient Brushless DC Generator With Stator Field Winding. *Zhang, J.*, +, *TIE April 2020* 2700-2710

Thermal Modeling of Hollow Conductors for Direct Cooling of Electrical Machines. *Chen, X.*, +, *TIE Feb. 2020* 895-905

Temperature measurement

Correction of Winding Peak Temperature Detection in High-Frequency Automotive Electric Machines. *Dong, T.*, +, *TIE July 2020* 5615-5625

Lyapunov-Based Thermal Fault Diagnosis of Cylindrical Lithium-Ion Batteries. *Wei, J.*, +, *TIE June 2020* 4670-4679

Optical Gas Imaging With Uncooled Thermal Imaging Camera - Impact of Warm Filters and Elevated Background Temperature. *Olbrycht, R.*, +, *TIE Nov. 2020* 9824-9832

Reduced-Order Thermal Observer for Power Modules Temperature Estimation. *Dong, X.*, +, *TIE Dec. 2020* 10085-10094

Thermal Model Identification of Computing Nodes in High-Performance Computing Systems. *Diversi, R.*, +, *TIE Sept. 2020* 7778-7788

Valve Failure Prognostics in Reciprocating Compressors Utilizing Temperature Measurements, PCA-Based Data Fusion, and Probabilistic Algorithms. *Loutas, T.*, +, *TIE June 2020* 5022-5029

Temperature sensors

All-Day Mobile Healthcare Monitoring System Based on Heterogeneous Stretchable Sensors for Medical Emergency. *Lee, S.*, +, *TIE Oct. 2020* 8808-8816

Thermal analysis

Power Loss and Thermal Analysis for High-Power High-Speed Permanent Magnet Machines. *Du, G.*, +, *TIE April 2020* 2722-2733

Thermal Modeling of Hollow Conductors for Direct Cooling of Electrical Machines. *Chen, X.*, +, *TIE Feb. 2020* 895-905

Thermal conductivity

Effective Thermal Conductivity Calculation and Measurement of Litz Wire Based on the Porous Metal Materials Structure. *Liu, X.*, +, *TIE April 2020* 2667-2677

Power Loss and Thermal Analysis for High-Power High-Speed Permanent Magnet Machines. *Du, G.*, +, *TIE April 2020* 2722-2733

Thermal engineering

A Simple Equivalent Temperature Rise Test Method Suitable for Safely Evaluating Thermal Limits of Motors and Power Devices Without Model Dependence. *Wang, B.*, +, *TIE Oct. 2020* 8755-8766

Thermal expansion

Quadruple-Stage Actuator System for Magnetic-Head Positioning System in Hard Disk Drives. *Atsumi, T.*, +, *TIE Nov. 2020* 9184-9194

Thermal management (packaging)

Model-Based Fault Tolerant Control for the Thermal Management of PEMFC Systems. *Yan, C.*, +, *TIE April 2020* 2875-2884

S-Hybrid Step-Down DC-DC Converter—Analysis of Operation and Design Considerations. *Seo, G.*, +, *TIE Jan. 2020* 265-275

Water Cold Plates for Efficient Cooling: Verified on a Permanent-Magnet Machine With Concentrated Winding. *Fan, X.*, +, *TIE July 2020* 5325-5336

Thermal resistance

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Thermal stresses

- A Time-Saving Approach for the Thermal Lifetime Evaluation of Low-Voltage Electrical Machines. *Madonna, V.*, +, *TIE Nov. 2020 9195-9205*
- Thermal Stress Balancing Oriented Model Predictive Control of Modular Multilevel Switching Power Amplifier. *Han, R.*, +, *TIE Nov. 2020 9028-9038*

Thermocouples

- Correction of Winding Peak Temperature Detection in High-Frequency Automotive Electric Machines. *Dong, T.*, +, *TIE July 2020 5615-5625*
- Extended State Filter Based Disturbance and Uncertainty Mitigation for Nonlinear Uncertain Systems With Application to Fuel Cell Temperature Control. *Xue, W.*, +, *TIE Dec. 2020 10682-10692*

Thermoelectric conversion

- Self-Powered Piezoelectric and Thermoelectric Energy Simultaneous Extraction Interface Circuit Based on Double Stack Resonance. *Wang, X.*, +, *TIE June 2020 4567-4577*
- Thermoelectric Energy Harvesting From Gradients in the Earth Surface. *Sigrist, L.*, +, *TIE Nov. 2020 9460-9470*

Thin film sensors

- Flexible 1–3 Composite Ultrasound Transducers With Silver-Nanowire-Based Stretchable Electrodes. *Kim, T.*, +, *TIE Aug. 2020 6955-6962*

Thin film transistors

- A Pre-Bootstrapping Method for Use in Gate Driver Circuits to Improve the Scan Pulse Delay of High-Resolution TFT-LCD Systems. *Lin, C.*, +, *TIE Aug. 2020 7015-7024*

Three-dimensional displays

- Light-Field Camera for Fast Switching of Time-Sequential Two-Dimensional and Three-Dimensional Image Capturing at Video Rate. *Joo, K.*, +, *TIE Aug. 2020 6975-6985*

Three-term control

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- A Novel Initiative Braking System With Nondegraded Fallback Level for ADAS and Autonomous Driving. *Yuan, Y.*, +, *TIE June 2020 4360-4370*
- A Novel Model-Based Robust Control for Position Tracking of Permanent Magnet Linear Motor. *Liu, X.*, +, *TIE Sept. 2020 7767-7777*
- A Tuning Method of Active Disturbance Rejection Control for a Class of High-Order Processes. *He, T.*, +, *TIE April 2020 3191-3201*
- An Explicit Nonlinear Model Predictive ABS Controller for Electro-Hydraulic Braking Systems. *Tavernini, D.*, +, *TIE May 2020 3990-4001*
- Analytic Modeling Optimal Control of Pulsed Power Supply for Accelerator Magnet. *Wang, X.*, +, *TIE July 2020 5657-5665*
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- Embedded Hardware Artificial Neural Network Control for Global and Real-Time Imbalance Current Suppression of Parallel Connected IGBTs. *Zeng, X.*, +, *TIE March 2020 2186-2196*
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- Motion Control of a Magnetic Levitation Actuator Based on a Wrench Model Considering Yaw Angle. *Xu, F.*, +, *TIE Oct. 2020 8545-8554*
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- Robust Fine Tuning of Optimal PID Controller With Guaranteed Robustness. *Verma, B.*, +, *TIE June 2020 4911-4920*
- Tuning of Digital PID Controllers Using Particle Swarm Optimization Algorithm for a CAN-Based DC Motor Subject to Stochastic Delays. *Qi, Z.*, +, *TIE July 2020 5637-5646*
- Double-Thyristor-Based Protection for Valve-Side Single-Phase-to-Ground Faults in HB-MMC-Based Bipolar HVDC Systems. *Li, G.*, +, *TIE July 2020 5810-5815*

Thyristors

- A Novel Mixture Solid-State Switch Based on IGCT With High Capacity and IGBT With High Turn-off Ability for Hybrid DC Breakers. *Zhang, X.*, +, *TIE June 2020 4485-4495*
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- Double-Thyristor-Based Protection for Valve-Side Single-Phase-to-Ground Faults in HB-MMC-Based Bipolar HVDC Systems. *Li, G.*, +, *TIE July 2020 5810-5815*
- Electrothermal Transient Behavioral Modeling of Thyristor-Based Ultrafast Mechatronic Circuit Breaker for Real-Time DC Grid Emulation. *Lin, N.*, +, *TIE March 2020 1660-1670*
- IGCT Low-Current Switching—TCAD and Experimental Characterization. *Stamenkovic, D.*, +, *TIE Aug. 2020 6302-6311*
- Performance and Reliability Review of 650 V and 900 V Silicon and SiC Devices: MOSFETs, Cascode JFETs and IGBTs. *Gonzalez, J.O.*, +, *TIE Sept. 2020 7375-7385*

Time series

- A Collaborative Sensing and Model-Based Real-Time Recovery of Fast Data Flows From Sparse Measurements. *Xiao, H.*, +, *TIE Aug. 2020 6806-6814*
- Dynamic State Estimation for the Advanced Brake System of Electric Vehicles by Using Deep Recurrent Neural Networks. *Xing, Y.*, +, *TIE Nov. 2020 9536-9547*

Time-domain analysis

- A Simple Technique for Fundamental Harmonic Approximation Analysis in Parallel and Series-Parallel Resonant Converters. *Rathore, A.K.*, +, *TIE Nov. 2020 9963-9968*
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- An Open-Loop Synchronization Technique With Simple Structure for Phase Error Compensation and Frequency Estimation. *Liu, P.*, +, *TIE Oct. 2020 8936-8940*
- Analysis and Design of the LLC Resonant Converter With Variable Inductor Control Based on Time-Domain Analysis. *Wei, Y.*, +, *TIE July 2020 5432-5443*
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- Euler's Formula-Based Stability Analysis for Wideband Harmonic Resonances. *Chen, Z.*, +, *TIE Nov. 2020 9405-9417*
- Noise Rejection and Detection of Partial Discharges Under Repetitive Impulse Supply Voltage. *Ghosh, R.*, +, *TIE May 2020 4144-4151*
- Optimum Selection of Circuit Breaker Parameters Based on Analytical Calculation of Overcurrent and Overvoltage in Multiterminal HVDC Grids. *Song, Y.*, +, *TIE May 2020 4133-4143*
- Power Loss Estimation in LLC Synchronous Rectification Using Rectifier Current Equations. *Glitz, E.S.*, +, *TIE May 2020 3696-3704*

Time-domain reflectometry

- Classification of Faults in Multicore Cable via Time-Frequency Domain Reflectometry. *Bang, S.S.*, +, *TIE May 2020 4163-4171*

Time-frequency analysis

- A New Testing Method for the Dielectric Response of Oil-Immersed Transformer. *Wang, D.*, +, *TIE Dec. 2020 10833-10843*
- A Novel Statistical Time-Frequency Analysis for Rotating Machine Condition Monitoring. *Wang, T.*, +, *TIE Jan. 2020 531-541*
- Classification of Complex Power Quality Disturbances Using Optimized S-Transform and Kernel SVM. *Tang, Q.*, +, *TIE Nov. 2020 9715-9723*
- Classification of Faults in Multicore Cable via Time-Frequency Domain Reflectometry. *Bang, S.S.*, +, *TIE May 2020 4163-4171*

Time-varying systems

- H_∞ Refined Antidisturbance Control of Switched LPV Systems With Application to Aero-Engine. *Yang, D.*, +, *TIE April 2020 3180-3190*
- A Novel Dead Zone Reaching Law of Discrete-Time Sliding Mode Control With Disturbance Compensation. *Ma, H.*, +, *TIE June 2020 4815-4825*
- A Novel Degradation Modeling and Prognostic Framework for Closed-Loop Systems With Degrading Actuator. *Si, X.*, +, *TIE Nov. 2020 9635-9647*

A Novel Scheme of Nonfragile Controller Design for Periodic Piecewise LTV Systems. *Xie, X.*, +, *TIE Dec. 2020 10766-10775*

Adaptive Algorithms of Tuning and Switching Kalman and \mathcal{H}_∞ Filters and Their Application to Estimation of Ship Oscillation With Time-Varying Frequencies. *Sato, M.*, +, *TIE Jan. 2020 501-511*

Adaptive Prognostic of Fuel Cells by Implementing Ensemble Echo State Networks in Time-Varying Model Space. *Li, Z.*, +, *TIE Jan. 2020 379-389*

Adaptive Threshold Generation for Vehicle Fault Detection Using Switched T-S Interval Observers. *Ifqir, S.*, +, *TIE June 2020 5030-5040*

Anti-Disturbance Control for Nonlinear Systems Based on Interval Observer. *Yong, K.*, +, *TIE Feb. 2020 1261-1269*

Comments on "A New Adaptive Sliding-Mode Control Scheme for Application to Robot Manipulators". *Su, Y.*, *TIE Aug. 2020 7116-7120*

Cooperative Manipulation of Wearable Dual-Arm Exoskeletons Using Force Communication Between Partners. *Wu, X.*, +, *TIE Aug. 2020 6629-6638*

Cornering Trajectory Planning Avoiding Slip for Differential-Wheeled Mobile Robots. *Kim, J.*, +, *TIE Aug. 2020 6698-6708*

Discrete-Time Extended State Observer-Based Model-Free Adaptive Control Via Local Dynamic Linearization. *Chi, R.*, +, *TIE Oct. 2020 8691-8701*

Distribution System Restoration With Renewable Resources for Reliability Improvement Under System Uncertainties. *Zou, K.*, +, *TIE Oct. 2020 8438-8449*

Event-Triggered Adaptive Attitude Tracking Control for Spacecraft With Unknown Actuator Faults. *Wang, C.*, +, *TIE March 2020 2241-2250*

Fixed-Time Attitude Tracking Control for Rigid Spacecraft Without Angular Velocity Measurements. *Zou, A.*, +, *TIE Aug. 2020 6795-6805*

Fusion Kalman and Weighted UFIR State Estimator With Improved Accuracy. *You, S.H.*, +, *TIE Dec. 2020 10713-10722*

Globally Fixed-Time High-Order Sliding Mode Control for New Sliding Mode Systems Subject to Mismatched Terms and Its Application. *Shi, S.*, +, *TIE Dec. 2020 10776-10786*

Improved Equivalent-Input-Disturbance Approach Based on H_∞ Control. *Yu, P.*, +, *TIE Oct. 2020 8670-8679*

Input-to-State Stable Bilateral Teleoperation by Dynamic Interconnection and Damping Injection: Theory and Experiments. *Yang, Y.*, +, *TIE Jan. 2020 790-799*

Noncooperative Event-Triggered Control Strategy Design With Round-Robin Protocol: Applications to Load Frequency Control of Circuit Systems. *Yuan, Y.*, +, *TIE March 2020 2155-2166*

Optimal Dynamic Harmonic Extraction and Suppression in Power Conditioning Applications. *Ornelas-Tellez, F.*, +, *TIE Sept. 2020 7909-7918*

Relative Impedance-Based Internal Force Control for Bimanual Robot Teleoperation With Varying Time Delay. *Lu, Z.*, +, *TIE Jan. 2020 778-789*

Robust Current Control of Grid-Tied Inverters Affected by LCL Filter Soft-Saturation. *Osorio, C.R.D.*, +, *TIE Aug. 2020 6550-6561*

Signal Compensation Based Adaptive Cascade Control for Regrinding Processes. *Wang, L.*, +, *TIE Oct. 2020 8732-8742*

Sliding Mode Control for Nonlinear Stochastic Semi-Markov Switching Systems With Application to SRMM. *Qi, W.*, +, *TIE May 2020 3955-3966*

Super-Twisting Algorithm-Based Time-Varying Delay Estimation With External Signal. *Deng, Y.*, +, *TIE Dec. 2020 10663-10671*

Synchronization of Network Systems via Aperiodic Sampled-Data Control With Constant Delay and Application to Unmanned Ground Vehicles. *Ren, H.*, +, *TIE June 2020 4980-4990*

Tuning of Digital PID Controllers Using Particle Swarm Optimization Algorithm for a CAN-Based DC Motor Subject to Stochastic Delays. *Qi, Z.*, +, *TIE July 2020 5637-5646*

Tires

A Model-Free Control Strategy for Vehicle Lateral Stability With Adaptive Dynamic Programming. *Sun, W.*, +, *TIE Dec. 2020 10693-10701*

An Explicit Nonlinear Model Predictive ABS Controller for Electro-Hydraulic Braking Systems. *Tavernini, D.*, +, *TIE May 2020 3990-4001*

Control of Antilock Braking Systems Using Disturbance Observer With a Novel Nonlinear Sliding Surface. *Phadke, S.B.*, +, *TIE Aug. 2020 6815-6823*

Tomography

Tomographic Approach for Universal Tactile Imaging With Electromechanically Coupled Conductors. *Yoshimoto, S.*, +, *TIE Jan. 2020 627-636*

Topology

A Novel Virtual Space Vector Modulation With Reduced Common-Mode Voltage and Eliminated Neutral Point Voltage Oscillation for Neutral Point Clamped Three-Level Inverter. *Jiang, W.*, +, *TIE Feb. 2020 884-894*

Torque

A New Relieving-DC-Saturation Hybrid Excitation Vernier Machine for HEV Starter Generator Application. *Zhao, X.*, +, *TIE Aug. 2020 6342-6353*

A New Slot-PM Vernier Reluctance Machine With Enhanced Zero-Sequence Current Excitation for Electric Vehicle Propulsion. *Zhao, X.*, +, *TIE May 2020 3528-3539*

A Novel Concept of Ribless Synchronous Reluctance Motor for Enhanced Torque Capability. *Bao, Y.*, +, *TIE April 2020 2553-2563*

A Novel Doubly-Fed Flux-Switching Permanent Magnet Machine With Armature Windings Wound on Both Stator Poles and Rotor Teeth. *Wu, L.*, +, *TIE Dec. 2020 10223-10232*

A Novel Spoke-Type PM Motor With Auxiliary Salient Poles for Low Torque Pulsation. *Chen, Q.*, +, *TIE June 2020 4762-4773*

A Simplified Equivalent Circuit Method for Induction Machine Nonintrusive Field Efficiency Estimation. *Aminu, M.*, +, *TIE Sept. 2020 7301-7311*

A Stochastic Predictive Energy Management Strategy for Plug-in Hybrid Electric Vehicles Based on Fast Rolling Optimization. *Yang, C.*, +, *TIE Nov. 2020 9659-9670*

A TDF Model in Induction Machines for Loose Bearing Diagnosis by Neutral Voltage. *Jafarian, M.J.*, +, *TIE Oct. 2020 8155-8163*

A Turn Fault Mitigation Strategy Based on Current Injection Technique for a Triple Three-Phase PMA SynRM. *Wang, B.*, +, *TIE April 2020 2511-2522*

An Improved Torque Density Pseudo Six-Phase Induction Machine Using a Quadruple Three-Phase Stator Winding. *Abdel-Khalik, A.S.*, +, *TIE March 2020 1855-1866*

An Indirect Testing Method for the Torque Ripple of Multiunit Permanent Magnet Synchronous Machines. *Zeng, D.*, +, *TIE April 2020 2734-2743*

An Initial States Recognition (ISR) Method for Start-Up of 1 Φ BLDC Motor in Hall-Sensor-Less Fan Applications. *Tang, Z.*, +, *TIE Oct. 2020 8302-8311*

Analysis and Calculation of Radial Electromagnetic Force of Circular Winding Brushless DC Motor. *Zhang, Q.*, +, *TIE June 2020 4338-4349*

Analysis and Reduction of On-Load DC Winding Induced Voltage in Wound Field Switched Flux Machines. *Wu, Z.*, +, *TIE April 2020 2655-2666*

Analysis of Consequent-Pole Flux Reversal Permanent Magnet Machine With Biased Flux Modulation Theory. *Yang, H.*, +, *TIE March 2020 2107-2121*

Analysis of PM Eddy Current Loss in Rotor-PM and Stator-PM Flux-switching Machines by Air-gap Field Modulation Theory. *Su, P.*, +, *TIE March 2020 1824-1835*

Analysis of Stator Slots and Rotor Pole Pairs Combinations of Rotor-Permanent Magnet Flux-Switching Machines. *Su, P.*, +, *TIE Feb. 2020 906-918*

Analytical Modeling of 3-D Magnetic Field and Performance in Magnetic Lead Screws Accounting for Magnetization Pattern. *Gao, F.*, +, *TIE June 2020 4785-4796*

Analytical Modeling of Misalignment in Axial Flux Permanent Magnet Machine. *Guo, B.*, +, *TIE June 2020 4433-4443*

Back EMF Harmonic Analysis of Permanent Magnet Magnetic Gearing Machine. *Ren, X.*, +, *TIE Aug. 2020 6248-6258*

Back-Iron Extension Thermal Benefits for Electrical Machines With Concentrated Windings. *Zhang, F.*, +, *TIE March 2020 1728-1738*

Characteristics Analysis of the Motions of the Two-Degree-of-Freedom Direct Drive Induction Motor. *Xie, L.*, +, *TIE Feb. 2020 931-941*

Comparative Analysis of Flux Reversal Permanent Magnet Machines With Toroidal and Concentrated Windings. *Li, H.*, +, *TIE July 2020 5278-5290*

Control Strategy for Five-Phase Dual-Stator Winding Induction Starter/Generator System. *Liu, H.*, +, *TIE April 2020 2607-2617*

Crowbarless Symmetrical Low-Voltage Ride Through Based on Flux Linkage Tracking For Brushless Doubly Fed Induction Generators. *Zhang, A.*, +, *TIE Sept. 2020 7606-7616*

- Decoupled d - q Axes Current-Sharing Control of Multi-Three-Phase Induction Machines. *Sala, G.*, +, *TIE Sept. 2020 7124-7134*
- Design and Analysis of a New Parallel-Hybrid-Excited Machine With Harmonic-Shift Structure. *Cao, L.*, +, *TIE March 2020 1759-1770*
- Design and Analysis of Novel Asymmetric-Stator-Pole Flux Reversal PM Machine. *Yang, H.*, +, *TIE Jan. 2020 101-114*
- Design and Evaluation of a Short-Circuit Rotor-Ring for Enhanced Self-Sensing Capability in a Slotless PM Motor. *Millinger, J.*, +, *TIE May 2020 3462-3471*
- Design and Optimization of a Flux-Modulated Permanent Magnet Motor Based on an Airgap-Harmonic-Orientated Design Methodology. *Zhu, X.*, +, *TIE July 2020 5337-5348*
- Design Consideration and Characteristic Investigation of Modular Permanent Magnet Bearingless Switched Reluctance Motor. *Wang, H.*, +, *TIE June 2020 4326-4337*
- Design Considerations of Fault-Tolerant Permanent Magnet Vernier Machine. *Zhao, W.*, +, *TIE Sept. 2020 7290-7300*
- Design of a New Fault-Tolerant Permanent Magnet Machine With Optimized Salient Ratio and Reluctance Torque Ratio. *Chen, Q.*, +, *TIE July 2020 6043-6054*
- Design of a New Relieving-DC-Saturation Hybrid Reluctance Machine for Fault-Tolerant In-Wheel Direct Drive. *Zhao, X.*, +, *TIE Nov. 2020 9571-9581*
- Design of New Dual-Stator Field Modulation Machines. *Wang, H.*, +, *TIE July 2020 5626-5636*
- Direct Torque Control Techniques of Three-Level H-Bridge Inverter Fed Induction Motor for Torque Ripple Reduction at Low Speed Operations. *Naganathan, P.*, +, *TIE Oct. 2020 8262-8270*
- Effect Comparison of Zigzag Skew PM Pole and Straight Skew Slot for Vibration Mitigation of PM Brush DC Motors. *Wang, S.*, +, *TIE June 2020 4752-4761*
- Effects of Magnet Shape on Torque Capability of Surface-Mounted Permanent Magnet Machine for Servo Applications. *Zeng, Y.*, +, *TIE April 2020 2977-2990*
- Electromagnetic Torque-Based Model Reference Adaptive System Speed Estimator for Sensorless Surface Mount Permanent Magnet Synchronous Motor Drive. *Prabhakaran, K.K.*, +, *TIE July 2020 5936-5947*
- Experimental Analysis and Optimization of a Contactless Eddy-Current-Based Speed Sensor for Smooth Conductive Surfaces. *Gong, C.*, +, *TIE Oct. 2020 8817-8828*
- Feedback Control of Multiphase Induction Machines With Backstepping Technique. *Morawiec, M.*, +, *TIE June 2020 4305-4314*
- Flux-Focusing Permanent Magnet Machines With Modular Consequent-Pole Rotor. *Li, J.*, +, *TIE May 2020 3374-3385*
- Harmonic Analysis of Air Gap Magnetic Field in Flux-Modulation Double-Stator Electrical-Excitation Synchronous Machine. *Wang, Y.*, +, *TIE July 2020 5302-5312*
- Homopolar Bearingless Slice Motor With Flux-Biasing Halbach Arrays. *Noh, M.*, +, *TIE Sept. 2020 7757-7766*
- Interturn Fault Tolerant Drive Method by Limiting Copper Loss of Interior Permanent Magnet Synchronous Motor. *Im, S.*, +, *TIE Sept. 2020 7973-7981*
- Magnetic Design Aspects of the Trans-Rotary Magnetic Gear Using Quasi-Halbach Arrays. *Jenney, K.*, +, *TIE Nov. 2020 9582-9592*
- Mitigation of DC-Link Current Ripple for Dual Three-Phase Flux-Adjustable Hybrid PMAC Drives Using Collaborative Switching Strategy. *Wang, Z.*, +, *TIE Sept. 2020 7202-7216*
- Modeling, Design, and Validation of Magnetic Hysteresis Motors. *Galluzzi, R.*, +, *TIE Feb. 2020 1171-1179*
- Multilayer Fractional Slot Pole-Phase Modulated Induction Motor Drives for Traction Applications. *Reddy, B.P.*, +, *TIE Nov. 2020 9112-9119*
- Multiobjective Deterministic and Robust Optimization Design of a New Spoke-Type Permanent Magnet Machine for the Improvement of Torque Performance. *Liu, G.*, +, *TIE Dec. 2020 10202-10212*
- Multiobjective System Level Optimization Method for Switched Reluctance Motor Drive Systems Using Finite-Element Model. *Diao, K.*, +, *TIE Dec. 2020 10055-10064*
- Novel Current Profile of Switched Reluctance Machines for Torque Density Enhancement in Low-Speed Applications. *Huang, L.*, +, *TIE Nov. 2020 9623-9634*
- Performance Analysis of Induction-Based Reaction Spheres. *Zhu, L.*, +, *TIE Sept. 2020 7746-7756*
- Performance Comparison Between PCB-Stator and Laminated-Core-Stator-Based Designs of Axial Flux Permanent Magnet Motors for High-Speed Low-Power Applications. *S., N.*, +, *TIE July 2020 5269-5277*
- Permanent-Magnet Machine Flux and Torque Response Under the Influence of Turn Fault. *Hsu, C.*, +, *TIE Jan. 2020 169-179*
- Piezoelectric Motor Utilizing an Alumina/PZT Transducer. *Wu, J.*, +, *TIE Aug. 2020 6762-6772*
- Power Capability Improvement of Interior Permanent Magnet Synchronous Motor Drives Using Capacitive Network. *Lee, K.*, +, *TIE Dec. 2020 10109-10120*
- Pre- and Postfault Current Control of Dual Three-Phase Reluctance Synchronous Drives. *Eldeeb, H.M.*, +, *TIE May 2020 3361-3373*
- PSO-Based Optimization of DC-Link Current Harmonics in Traction VSI for an Electric Vehicle. *Steczek, M.*, +, *TIE Oct. 2020 8197-8208*
- Reduction of Torque Ripple Caused by Slot Harmonics in FSCW Spoke-Type FPM Motors by Assisted Poles. *Chen, Q.*, +, *TIE Nov. 2020 9613-9622*
- Sizing Methodology Based on Scaling Laws for a Permanent Magnet Electrical Variable Transmission. *Verbelen, F.*, +, *TIE March 2020 1739-1749*
- Thermal Overload and Insulation Aging of Short Duty Cycle, Aerospace Motors. *Madonna, V.*, +, *TIE April 2020 2618-2629*
- Tilting Torque Calculation of a Novel Tiered Type Permanent Magnet Spherical Motor. *Gan, L.*, +, *TIE Jan. 2020 421-431*
- Torque Calculation of Permanent Magnet Spherical Motor Based on Virtual Work Method. *Li, H.*, +, *TIE Sept. 2020 7736-7745*
- Torque Distributed Control Strategy for the Dual Three-Phase PMSM in Hybrid Energy Storage System Application. *Hu, S.*, +, *TIE April 2020 2544-2552*
- Water Cold Plates for Efficient Cooling: Verified on a Permanent-Magnet Machine With Concentrated Winding. *Fan, X.*, +, *TIE July 2020 5325-5336*
- Torque control**
- A Fault-Tolerant FOC Strategy for Five-Phase SPMSM With Minimum Torque Ripples in the Full Torque Operation Range Under Double-Phase Open-Circuit Fault. *Xiong, C.*, +, *TIE Nov. 2020 9059-9072*
- A Hybrid Control Strategy of Hybrid-Excitation Switched Reluctance Motor for Torque Ripple Reduction and Constant Power Extension. *Ding, W.*, +, *TIE Jan. 2020 38-48*
- A Novel Hybrid-Magnetic-Circuit Variable Flux Memory Machine. *Yang, H.*, +, *TIE July 2020 5258-5268*
- A Robust Field-Weakening Approach for Direct Torque and Flux Controlled Reluctance Synchronous Motors With Extended Constant Power Speed Region. *Zhang, X.*, +, *TIE March 2020 1813-1823*
- Active Disturbance-Rejection-Based Speed Control in Model Predictive Control for Induction Machines. *Yan, L.*, +, *TIE April 2020 2574-2584*
- Adaptive Internal Model-Based Harmonic Control for Active Torsional Vibration Reduction. *Vadamalu, R.S.*, +, *TIE April 2020 3024-3032*
- An Antiovervoltage Control Scheme for Electrolytic Capacitorless IPMSM Drives Based on Stator Current Vector Orientation. *Ding, D.*, +, *TIE May 2020 3517-3527*
- Assessment of an Improved Finite Control Set Model Predictive Current Controller for Automotive Propulsion Applications. *Andersson, A.*, +, *TIE Jan. 2020 91-100*
- Decoupled Torque Control of Series Elastic Actuator With Adaptive Robust Compensation of Time-Varying Load-Side Dynamics. *Lin, Y.*, +, *TIE July 2020 5604-5614*
- Design Consideration and Characteristic Investigation of Modular Permanent Magnet Bearingless Switched Reluctance Motor. *Wang, H.*, +, *TIE June 2020 4326-4337*
- Direct Torque Control Techniques of Three-Level H-Bridge Inverter Fed Induction Motor for Torque Ripple Reduction at Low Speed Operations. *Naganathan, P.*, +, *TIE Oct. 2020 8262-8270*

- Discrete Space Vector Modulation-Based Model Predictive Torque Control With No Suboptimization. *Osman, I.*, +, *TIE Oct. 2020 8164-8174*
- Dual-Pulse Mode Control of a High-Speed Doubly Salient Electromagnetic Machine for Loss Reduction and Speed Range Extension. *Yu, L.*, +, *TIE June 2020 4391-4401*
- Electromagnetic Vibration Analysis of High-Speed Permanent Magnet Synchronous Machines With Amorphous Metal Stator Cores Considering Current Harmonics. *Wu, S.*, +, *TIE Dec. 2020 10156-10167*
- Enhanced Model Predictive Torque Control of Fault-Tolerant Five-Phase Permanent Magnet Synchronous Motor With Harmonic Restraint and Voltage Preselection. *Huang, W.*, +, *TIE Aug. 2020 6259-6269*
- Enhanced Performance of Constant Frequency Torque Controller-Based Direct Torque Control of Induction Machines with Increased Torque-Loop Bandwidth. *Alsafyani, I.M.*, +, *TIE Dec. 2020 10168-10179*
- Even-Handed Sequential Predictive Torque and Flux Control. *Davari, S.A.*, +, *TIE Sept. 2020 7334-7342*
- Fast Iron Loss and Thermal Prediction Method for Power Density and Efficiency Improvement in Switched Reluctance Machines. *Ge, L.*, +, *TIE June 2020 4463-4473*
- Fast Restarting of Free-Running Induction Motors Under Speed-Sensorless Vector Control. *Yin, S.*, +, *TIE July 2020 6124-6134*
- Feedback Control of Multiphase Induction Machines With Backstepping Technique. *Morawiec, M.*, +, *TIE June 2020 4305-4314*
- Fine Load-Side Acceleration Control Based on Torsion Torque Sensing of Two-Inertia System. *Yokokura, Y.*, +, *TIE Jan. 2020 768-777*
- Fine Sensorless Force Control Realization Based on Dither Periodic Component Elimination Kalman Filter and Wide Band Disturbance Observer. *Phuong, T.T.*, +, *TIE Jan. 2020 757-767*
- Finite-Control-Set MPC for Open-Phase Fault-Tolerant Control of PM Synchronous Motor Drives. *Kiselev, A.*, +, *TIE June 2020 4444-4452*
- FOC Transformation for Single Open-Phase Faults in the Five-Phase Open-End Winding Topology. *Priestley, M.*, +, *TIE Feb. 2020 842-851*
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- Improved Online Maximum-Torque-Per-Ampere Algorithm for Speed Controlled Interior Permanent Magnet Synchronous Machine. *Han, Z.*, +, *TIE May 2020 3398-3408*
- IPMSMs Sensorless MTPA Control Based on Virtual q -Axis Inductance by Using Virtual High-Frequency Signal Injection. *Tang, Q.*, +, *TIE Jan. 2020 136-146*
- Model Predictive Control for a Six-Phase PMSM Motor With a Reduced-Dimension Cost Function. *Luo, Y.*, +, *TIE Feb. 2020 969-979*
- Operating-Point Tracking Method for Sensorless Induction Motor Stability Enhancement in Low-Speed Regenerating Mode. *Luo, C.*, +, *TIE May 2020 3386-3397*
- Optimization of Torque Tracking Performance for Direct-Torque-Controlled PMSM Drives With Composite Torque Regulator. *Wang, X.*, +, *TIE Dec. 2020 10095-10108*
- Position Control of Parallel Active Link Suspension With Backlash. *Yu, M.*, +, *TIE June 2020 4741-4751*
- Sensorless Low/Zero Speed Estimation for Permanent Magnet Synchronous Machine Using a Search-Based Real-Time Commissioning Method. *Sci-cluna, K.*, +, *TIE July 2020 6010-6018*
- Spacecraft Vibration Control Based on Extended Modal Decoupling of Vernier-Gimballing Magnetically Suspension Flywheels. *Chen, X.*, +, *TIE May 2020 4066-4076*
- Symmetrical Three-Vector-Based Model Predictive Control With Deadbeat Solution for IPMSM in Rotating Reference Frame. *Kang, S.*, +, *TIE Jan. 2020 159-168*
- The Optimal Speed-Torque Control of Asynchronous Motors for Electric Cars in the Field-Weakening Region Based on the RFR. *Xie, F.*, +, *TIE Nov. 2020 9601-9612*
- Torque Calculation of Permanent Magnet Spherical Motor Based on Virtual Work Method. *Li, H.*, +, *TIE Sept. 2020 7736-7745*
- Torque Distributed Control Strategy for the Dual Three-Phase PMSM in Hybrid Energy Storage System Application. *Hu, S.*, +, *TIE April 2020 2544-2552*
- Torque Ripple Reduction in Sectorized Multi Three-Phase Machines Based on PWM Carrier Phase Shift. *Wang, X.*, +, *TIE June 2020 4315-4325*
- Torque Ripple Reduction of PMSMs Using a Novel Angle-Based Repetitive Observer. *Tang, M.*, +, *TIE April 2020 2689-2699*
- Torque Ripple Suppression for Open-End Winding Permanent-Magnet Synchronous Machine Drives With Predictive Current Control. *Yuan, X.*, +, *TIE March 2020 1771-1781*
- Torque measurement**
- Tilting Torque Calculation of a Novel Tiered Type Permanent Magnet Spherical Motor. *Gan, L.*, +, *TIE Jan. 2020 421-431*
- Torque motors**
- High Torque Density Torque Motor With Hybrid Magnetization Pole Arrays for Jet Pipe Servo Valve. *Zhang, Q.*, +, *TIE March 2020 2133-2142*
- Torsion**
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- Fine Load-Side Acceleration Control Based on Torsion Torque Sensing of Two-Inertia System. *Yokokura, Y.*, +, *TIE Jan. 2020 768-777*
- Touch (physiological)**
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- Touch sensitive screens**
- A Soft and Transparent Visuo-Haptic Interface Pursuing Wearable Devices. *Yun, S.*, +, *TIE Jan. 2020 717-724*
- Tracking**
- Adaptive Neural Network Control of Underactuated Surface Vessels With Guaranteed Transient Performance: Theory and Experimental Results. *Chen, L.*, +, *TIE May 2020 4024-4035*
- Event-Triggered Adaptive Attitude Tracking Control for Spacecraft With Unknown Actuator Faults. *Wang, C.*, +, *TIE March 2020 2241-2250*
- Event-Triggered Decentralized Tracking Control of Modular Reconfigurable Robots Through Adaptive Dynamic Programming. *Zhao, B.*, +, *TIE April 2020 3054-3064*
- Model Predictive Adaptive Constraint Tracking Control for Underwater Vehicles. *Gan, W.*, +, *TIE Sept. 2020 7829-7840*
- MPC Inspired Dynamical Output Feedback and Adaptive Feedforward Control Applied to Piezo-Actuated Positioning Systems. *Nguyen, M.L.*, +, *TIE May 2020 3921-3931*
- SAT: Single-Shot Adversarial Tracker. *Wu, Q.*, +, *TIE Nov. 2020 9882-9892*
- Tracking filters**
- Sequential Fusion Estimation for Networked Multisensor Nonlinear Systems. *Zhang, W.*, +, *TIE June 2020 4991-4999*
- Traction motor drives**
- Full-Scale Physical Simulator of All SiC Traction Motor Drive With Onboard Supercapacitor ESS for Light-Rail Public Transportation. *Yildirim, D.*, +, *TIE Aug. 2020 6290-6301*
- Multilayer Fractional Slot Pole-Phase Modulated Induction Motor Drives for Traction Applications. *Reddy, B.P.*, +, *TIE Nov. 2020 9112-9119*
- PSO-Based Optimization of DC-Link Current Harmonics in Traction VSI for an Electric Vehicle. *Steczek, M.*, +, *TIE Oct. 2020 8197-8208*
- Traction motors**
- Back-Iron Extension Thermal Benefits for Electrical Machines With Concentrated Windings. *Zhang, F.*, +, *TIE March 2020 1728-1738*
- Traction power supplies**
- A Novel Controlled Frequency Band Impedance Measurement Approach for Single-Phase Railway Traction Power System. *Hu, H.*, +, *TIE Jan. 2020 244-253*
- A Single-Phase Five-Branch Direct AC-AC Modular Multilevel Converter for Railway Power Conditioning. *Lei, M.*, +, *TIE June 2020 4292-4304*
- Magnetic-Integrated Multipulse Rectifier Transformer With a Tight Impedance Equalizing Strategy for Power Quality Improvement of DC Traction Power Supply System. *An, B.*, +, *TIE Aug. 2020 6270-6279*
- PSO-Based Optimization of DC-Link Current Harmonics in Traction VSI for an Electric Vehicle. *Steczek, M.*, +, *TIE Oct. 2020 8197-8208*

Traffic engineering computing

A Model-Free Control Strategy for Vehicle Lateral Stability With Adaptive Dynamic Programming. *Sun, W.*, +, *TIE Dec. 2020 10693-10701*

DenseLightNet: A Light-Weight Vehicle Detection Network for Autonomous Driving. *Chen, L.*, +, *TIE Dec. 2020 10600-10609*

Trajectory control

A Symplectic Instantaneous Optimal Control for Robot Trajectory Tracking With Differential-Algebraic Equation Models. *Peng, H.*, +, *TIE May 2020 3819-3829*

Adaptive Fuzzy Backstepping Control for Stable Nonlinear Bilateral Teleoperation Manipulators With Enhanced Transparency Performance. *Chen, Z.*, +, *TIE Jan. 2020 746-756*

An Online Trajectory Planning Approach for a Quadrotor UAV With a Slung Payload. *Xian, B.*, +, *TIE Aug. 2020 6669-6678*

Cooperation of Multiple Connected Vehicles at Unsignalized Intersections: Distributed Observation, Optimization, and Control. *Bian, Y.*, +, *TIE Dec. 2020 10744-10754*

Design, Implementation, and Evaluation of a Neural-Network-Based Quadcopter UAV System. *Jiang, F.*, +, *TIE March 2020 2076-2085*

Fault-Tolerant Fixed-Time Trajectory Tracking Control of Autonomous Surface Vessels With Specified Accuracy. *Zhang, J.*, +, *TIE June 2020 4889-4899*

Finite-Time Trajectory Tracking Control of Space Manipulator Under Actuator Saturation. *Jia, S.*, +, *TIE March 2020 2086-2096*

Motion Control for Piezoelectric-Actuator-Based Surgical Device Using Neural Network and Extended State Observer. *Lau, J.Y.*, +, *TIE Jan. 2020 402-412*

Multiobjective Optimal Parking Maneuver Planning of Autonomous Wheeled Vehicles. *Chai, R.*, +, *TIE Dec. 2020 10809-10821*

Optimal Dynamic Harmonic Extraction and Suppression in Power Conditioning Applications. *Ornelas-Tellez, F.*, +, *TIE Sept. 2020 7909-7918*

State-Trajectory Control With Single-Cycle Response for Point-of-Load Converters. *Li, V.*, +, *TIE April 2020 3157-3166*

UDE-Based Robust Output Feedback Control With Applications to a Piezoelectric Stage. *Ren, B.*, +, *TIE Sept. 2020 7819-7828*

Underwater Bioinspired Propulsion: From Inspection to Manipulation. *Wang, Y.*, +, *TIE Sept. 2020 7629-7638*

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A Data-Driven Realization of the Control-Performance-Oriented Process Monitoring System. *Luo, H.*, +, *TIE Jan. 2020 521-530*

A Pedagogical Study of Aerodynamic Feedback Control by Dielectric Barrier Discharge Plasma. *Kwan, P.W.*, +, *TIE Jan. 2020 451-460*

A Second-Order Dual Mode Repetitive Control for Magnetically Suspended Rotor. *Cui, P.*, +, *TIE June 2020 4946-4956*

An Accelerated Recurrent Neural Network for Visual Servo Control of a Robotic Flexible Endoscope With Joint Limit Constraint. *Li, W.*, +, *TIE Dec. 2020 10787-10797*

An Adaptive Power Sharing Control for Management of DC Microgrids Powered by Fuel Cell and Storage System. *de Aguiar, C.R.*, +, *TIE May 2020 3726-3735*

Modeling and Control of Low Switching Frequency High-Performance Induction Motor Drives. *Qi, X.*, +, *TIE June 2020 4402-4410*

MPC Inspired Dynamical Output Feedback and Adaptive Feedforward Control Applied to Piezo-Actuated Positioning Systems. *Nguyen, M.L.*, +, *TIE May 2020 3921-3931*

Predefined-Time Convergent Neural Solution to Cyclical Motion Planning of Redundant Robots Under Physical Constraints. *Li, W.*, *TIE Dec. 2020 10732-10743*

Predictive Control of IM Drive Acoustic Noise. *Kroneisl, M.*, +, *TIE July 2020 5666-5676*

Robust Stability Improvement for Speed Sensorless Induction Motor Drive at Low Speed Range by Virtual Voltage Injection. *Sun, W.*, +, *TIE April 2020 2642-2654*

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Double-Ended Active-Clamp Forward Converter With Low DC Offset Current of Transformer. *Kim, M.*, +, *TIE Feb. 2020 1036-1047*

Improving Current Transformer-Based Energy Extraction From AC Power Lines by Manipulating Magnetic Field. *Zhuang, Y.*, +, *TIE Nov. 2020 9471-9479*

Multifunction Transformer With Adjustable Magnetic Stage Based on Nanocomposite Semihard Magnets. *Chen, Z.*, +, *TIE May 2020 4226-4234*

Quarter-Turn Transformer Design and Optimization for High Power Density 1-MHz LLC Resonant Converter. *Liu, Y.*, +, *TIE Feb. 2020 1580-1591*

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A New Testing Method for the Dielectric Response of Oil-Immersed Transformer. *Wang, D.*, +, *TIE Dec. 2020 10833-10843*

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1-kV Input 1-MHz GaN Stacked Bridge LLC Converters. *Zhang, Z.*, +, *TIE Nov. 2020 9227-9237*

A New CCM/DCM Hybrid-Mode Synchronous Rectification Flyback Converter. *Dong, H.*, +, *TIE May 2020 3629-3639*

A Transformer Integrated Filtering System for Power Quality Improvement of Industrial DC Supply System. *Liu, Q.*, +, *TIE May 2020 3329-3339*

Analysis and Optimal Design of High-Frequency and High-Efficiency Asymmetrical Half-Bridge Flyback Converters. *Li, M.*, +, *TIE Oct. 2020 8312-8321*

Experimental Evaluation of Transformer Internal Fault Detection Based on $V-I$ Characteristics. *Zhao, X.*, +, *TIE May 2020 4108-4119*

Magnetic-Integrated Multipulse Rectifier Transformer With a Tight Impedance Equalizing Strategy for Power Quality Improvement of DC Traction Power Supply System. *An, B.*, +, *TIE Aug. 2020 6270-6279*

Multitransformer Primary-Side Regulated Flyback Converter for Supplying Isolated IGBT and MOSFET Drivers. *Kolincio, M.*, +, *TIE Feb. 2020 1005-1012*

Optimization of High-Density and High-Efficiency Switched-Tank Converter for Data Center Applications. *Lyu, X.*, +, *TIE Feb. 2020 1626-1637*

Quarter-Turn Transformer Design and Optimization for High Power Density 1-MHz LLC Resonant Converter. *Liu, Y.*, +, *TIE Feb. 2020 1580-1591*

Single-Stage High-Efficiency 48/1 V Sigma Converter With Integrated Magnetics. *Ahmed, M.H.*, +, *TIE Jan. 2020 192-202*

Triple-Compound-Full-Bridge-Based Multi-Input Converter With Wide Zero-Voltage Switching Range and Wide Conversion Gain. *Zeng, J.*, +, *TIE Nov. 2020 9260-9272*

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Condition Monitoring of Transformer Breather Using a Capacitive Moisture Sensor. *Kumar, S.*, +, *TIE Nov. 2020 9779-9789*

Sequential Offline-Online-Offline Measurement Approach for High-Frequency LCLC Resonant Converters in the TWTA Applications. *Zhao, B.*, +, *TIE Feb. 2020 1568-1579*

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Modeling, Analysis, and Attenuation of Uncontrolled Generation for IPMSM-Based Electric Vehicles in Emergency. *Gong, C.*, +, *TIE June 2020 4453-4462*

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A Digital Phase Synchronization Method for Bidirectional Inductive Power Transfer. *Jia, S.*, +, *TIE Aug. 2020 6450-6460*

A Low-EMI Continuous-Time Delta-Sigma-Modulator Buck Converter With Transient Response Eruption Techniques. *Hwang, Y.*, +, *TIE Aug. 2020 6854-6863*

A Second-Order Dual Mode Repetitive Control for Magnetically Suspended Rotor. *Cui, P.*, +, *TIE June 2020 4946-4956*

Data-Driven Modeling and UFIR-Based Outlet NO_x Estimation for Diesel-Engine SCR Systems. *Jiang, K.*, +, *TIE June 2020 5012-5021*

Design of Monolithic All-NMOS Three-Level Three-phase Switched-Capacitor Power Converter for Industrial Environmental Sensor Conditioning. *Chen, L.*, +, *TIE Nov. 2020 9873-9881*

High-Performance Selective and Output Filter Techniques for Sensorless Direct Position and Speed Estimation. *Preindl, M.*, *TIE July 2020 6000-6009*

Hybrid Buck Converter With Constant Mode Changing Point and Smooth Mode Transition for High-Frequency Applications. *Yuan, B.*, +, *TIE Feb. 2020 1466-1474*

Improved Iterative Learning Control Strategy for Surface-Mounted Permanent Magnet Synchronous Motor Drives. *Mohammed, S.A.Q.*, +, *TIE Dec. 2020 10134-10144*

Peak Current Control and Feed-Forward Compensation of a DAB Converter. *Vazquez, N.*, +, *TIE Oct. 2020 8381-8391*

Robust Current Control of Grid-Tied Inverters Affected by LCL Filter Soft-Saturation. *Osorio, C.R.D.*, +, *TIE Aug. 2020 6550-6561*

State-Trajectory Control With Single-Cycle Response for Point-of-Load Converters. *Li, V.*, +, *TIE April 2020 3157-3166*

Unified Reduced Model for a Dual-Control Scheme of the High-Speed Response Brushless Excitation System of Synchronous Generators. *Noland, J.K.*, +, *TIE June 2020 4474-4484*

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A Multiresonant Gate Driver for High-Frequency Resonant Converters. *Gu, L.*, +, *TIE Feb. 2020 1405-1414*

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Full-Scale Physical Simulator of All SiC Traction Motor Drive With Onboard Supercapacitor ESS for Light-Rail Public Transportation. *Yildirim, D.*, +, *TIE Aug. 2020 6290-6301*

Intrinsic Determinants and Harmonic Measure of Flight Safety. *Yin, T.*, +, *TIE Aug. 2020 7054-7064*

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Sequential Offline-Online-Offline Measurement Approach for High-Frequency LCLC Resonant Converters in the TWTA Applications. *Zhao, B.*, +, *TIE Feb. 2020 1568-1579*

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Online Kron Reduction for Economical Frequency Control of Microgrids. *Abdolmaleki, B.*, +, *TIE Oct. 2020 8461-8471*

Optimal Path Planning Using Generalized Voronoi Graph and Multiple Potential Functions. *Wang, J.*, +, *TIE Dec. 2020 10621-10630*

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Turning (machining)

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Two-dimensional electron gas

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Two-phase flow

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Multiresonant Chipless RFID Array System for Coating Defect Detection and Corrosion Prediction. *Deif, S.*, +, *TIE Oct. 2020 8868-8877*

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UHF integrated circuits

Dual-Mode RFID Tag IC Supporting Gen-2 and Visible RFID Modes Using a Process-Compensating Self-Calibrating Clock Generator. *Din, A.U.*, +, *TIE Jan. 2020 569-580*

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A 20-W Wide Bandwidth GaN HEMT Power Amplifier for VHF/UHF Applications. *Kim, J.*, +, *TIE Dec. 2020 10905-10910*

Digital Dual-Input Doherty Configuration for Ultrawideband Application. *Shi, W.*, +, *TIE Sept. 2020 7509-7518*

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Digital Dual-Input Doherty Configuration for Ultrawideband Application. *Shi, W.*, +, *TIE Sept. 2020 7509-7518*

Ultrasonic imaging

Nonlinear Ultrasonic Transmissive Tomography for Low-Contrast Biphasic Medium Imaging Using Continuous-Wave Excitation. *Liu, H.*, +, *TIE Oct. 2020 8878-8888*

Ultrasonic transducer arrays

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A Proportional Pattern Recognition Control Scheme for Wearable A-mode Ultrasound Sensing. *Yang, X.*, +, *TIE Jan. 2020 800-808*

Considering Losses to Enhance Circuit Model Accuracy of Ultrasonic Wireless Power Transfer System. *Wu, M.*, +, *TIE Oct. 2020 8788-8798*

Flexible 1-3 Composite Ultrasound Transducers With Silver-Nanowire-Based Stretchable Electrodes. *Kim, T.*, +, *TIE Aug. 2020 6955-6962*

Uncertain systems

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A Novel Dead Zone Reaching Law of Discrete-Time Sliding Mode Control With Disturbance Compensation. *Ma, H.*, +, *TIE June 2020 4815-4825*

A Novel Model-Based Robust Control for Position Tracking of Permanent Magnet Linear Motor. *Liu, X.*, +, *TIE Sept. 2020 7767-7777*

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- Adaptive Fault-Tolerant Constrained Control of Cooperative Spacecraft Rendezvous and Docking. *Sun, L.*, *TIE April 2020 3107-3115*
- Adaptive Fuzzy Backstepping Control for Stable Nonlinear Bilateral Teleoperation Manipulators With Enhanced Transparency Performance. *Chen, Z.*, *TIE Jan. 2020 746-756*
- Adaptive Neural Network Control of Underactuated Surface Vessels With Guaranteed Transient Performance: Theory and Experimental Results. *Chen, L.*, *TIE May 2020 4024-4035*
- Adaptive Threshold Generation for Vehicle Fault Detection Using Switched T-S Interval Observers. *Ifqir, S.*, *TIE June 2020 5030-5040*
- Adaptive Time-Delay Balance Control of Biped Robots. *Pi, M.*, *TIE April 2020 2936-2944*
- Composite Disturbance Rejection Attitude Control for Quadrotor With Unknown Disturbance. *Zhao, K.*, *TIE Aug. 2020 6894-6903*
- Composite Hierarchical Pitch Angle Control for a Tidal Turbine Based on the Uncertainty and Disturbance Estimator. *Yin, X.*, *TIE Jan. 2020 329-339*
- Control of Antilock Braking Systems Using Disturbance Observer With a Novel Nonlinear Sliding Surface. *Phadke, S.B.*, *TIE Aug. 2020 6815-6823*
- Cooperative Manipulation of Wearable Dual-Arm Exoskeletons Using Force Communication Between Partners. *Wu, X.*, *TIE Aug. 2020 6629-6638*
- Design of Robust Discretized Sliding Mode Controller: Analysis and Application to Buck Converters. *Cheng, Y.*, *TIE Dec. 2020 10672-10681*
- Discrete-Time Extended State Observer-Based Model-Free Adaptive Control Via Local Dynamic Linearization. *Chi, R.*, *TIE Oct. 2020 8691-8701*
- Discrete-Time Modified UDE-Based Current Control for L+C+L-Type Grid-Tied Inverters. *Wu, Y.*, *TIE March 2020 2143-2154*
- Distributed Control of Multiple Flexible Manipulators With Unknown Disturbances and Dead-Zone Input. *Chen, T.*, *TIE Nov. 2020 9937-9947*
- Distributed Tracking of a Class of Underactuated Lagrangian Systems With Uncertain Parameters and Actuator Faults. *Chen, T.*, *TIE May 2020 4244-4253*
- Event-Triggered Adaptive Attitude Tracking Control for Spacecraft With Unknown Actuator Faults. *Wang, C.*, *TIE March 2020 2241-2250*
- Extended State Filter Based Disturbance and Uncertainty Mitigation for Nonlinear Uncertain Systems With Application to Fuel Cell Temperature Control. *Xue, W.*, *TIE Dec. 2020 10682-10692*
- Fault-Estimation-Based Output-Feedback Adaptive FTC for Uncertain Nonlinear Systems With Actuator Faults. *Zhang, L.*, *TIE April 2020 3065-3075*
- Finite-Time Adaptive Quantized Control of Stochastic Nonlinear Systems With Input Quantization: A Broad Learning System Based Identification Method. *Sui, S.*, *TIE Oct. 2020 8555-8565*
- Finite-Time Trajectory Tracking Control of Space Manipulator Under Actuator Saturation. *Jia, S.*, *TIE March 2020 2086-2096*
- Force Sensorless Admittance Control With Neural Learning for Robots With Actuator Saturation. *Peng, G.*, *TIE April 2020 3138-3148*
- Full-Order Observer for a Class of Nonlinear Systems With Unmatched Uncertainties: Joint Attractive Ellipsoid and Sliding Mode Concepts. *Sanchez, B.*, *TIE July 2020 5677-5686*
- Globally Fixed-Time High-Order Sliding Mode Control for New Sliding Mode Systems Subject to Mismatched Terms and Its Application. *Shi, S.*, *TIE Dec. 2020 10776-10786*
- Improved Equivalent-Input-Disturbance Approach Based on H_∞ Control. *Yu, P.*, *TIE Oct. 2020 8670-8679*
- Improved Robust Performance Design for Passive Uncertain Systems—Active Use of the Uncertainty Phase and Gain. *Liu, K.*, *TIE Dec. 2020 10755-10765*
- Motion Control for Piezoelectric-Actuator-Based Surgical Device Using Neural Network and Extended State Observer. *Lau, J.Y.*, *TIE Jan. 2020 402-412*
- Optimal Tracking With Disturbance Rejection of Voltage Source Inverters. *Teng, J.*, *TIE June 2020 4957-4968*
- Output Feedback Control of Uncertain Hydraulic Servo Systems. *Na, J.*, *TIE Jan. 2020 490-500*
- Output-Constrained Robust Sliding Mode Based Nonlinear Active Suspension Control. *Rath, J.J.*, *TIE Dec. 2020 10652-10662*
- Parameter Space Optimization Towards Constrained Controller Design With Application to Tray Indexing. *Ma, J.*, *TIE July 2020 5575-5585*
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- Relative Impedance-Based Internal Force Control for Bimanual Robot Teleoperation With Varying Time Delay. *Lu, Z.*, *TIE Jan. 2020 778-789*
- Robust Current Control of Grid-Tied Inverters Affected by LCL Filter Soft-Saturation. *Osorio, C.R.D.*, *TIE Aug. 2020 6550-6561*
- Simultaneous Fault Estimation for Markovian Jump Systems With Generally Uncertain Transition Rates: A Reduced-Order Observer Approach. *Li, X.*, *TIE Sept. 2020 7889-7897*
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- Synchronization of Network Systems via Aperiodic Sampled-Data Control With Constant Delay and Application to Unmanned Ground Vehicles. *Ren, H.*, *TIE June 2020 4980-4990*
- UDE-Based Robust Output Feedback Control With Applications to a Piezoelectric Stage. *Ren, B.*, *TIE Sept. 2020 7819-7828*
- Uncertainty and Disturbance Estimator-Based Control of a Flapping-Wing Aerial Vehicle With Unknown Backlash-Like Hysteresis. *Yin, Z.*, *TIE June 2020 4826-4835*
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- Uninterruptible power supplies**
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- A New Self-Organizing Fuzzy Cerebellar Model Articulation Controller for Uncertain Nonlinear Systems Using Overlapped Gaussian Membership Functions. *Huynh, T.*, +, *TIE Nov. 2020 9671-9682*
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- A Novel Sliding Mode Observer With Optimized Constant Rate Reaching Law for Sensorless Control of Induction Motor. *Zhang, Y.*, +, *TIE July 2020 5867-5878*
- A Second-Order Dual Mode Repetitive Control for Magnetically Suspended Rotor. *Cui, P.*, +, *TIE June 2020 4946-4956*
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- Adaptive Unbalance Compensation for a Three-Pole Active Magnetic Bearing System. *Chen, S.*, +, *TIE March 2020 2097-2106*
- An Effective Sliding Mode Control Design for a Grid-Connected PUC7 Multilevel Inverter. *Makhamreh, H.*, +, *TIE May 2020 3717-3725*
- An Improved Delay-Suppressed Sliding-Mode Observer for Sensorless Vector-Controlled PMSM. *Gong, C.*, +, *TIE July 2020 5913-5923*
- Anti-Disturbance Control for Nonlinear Systems Based on Interval Observer. *Yong, K.*, +, *TIE Feb. 2020 1261-1269*
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- Comments on "A New Adaptive Sliding-Mode Control Scheme for Application to Robot Manipulators". *Su, Y.*, *TIE Aug. 2020 7116-7120*
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- Design of Robust Discretized Sliding Mode Controller: Analysis and Application to Buck Converters. *Cheng, Y.*, +, *TIE Dec. 2020 10672-10681*
- Distributed Control of Multiple Flexible Manipulators With Unknown Disturbances and Dead-Zone Input. *Chen, T.*, +, *TIE Nov. 2020 9937-9947*
- Distributed Tracking of a Class of Underactuated Lagrangian Systems With Uncertain Parameters and Actuator Faults. *Chen, T.*, +, *TIE May 2020 4244-4253*
- Effective Disturbance Compensation Method Under Control Saturation in Discrete-Time Sliding Mode Control. *Han, J.*, +, *TIE July 2020 5696-5707*
- Finite-Time Continuous Terminal Sliding Mode Control of Servo Motor Systems. *Hou, H.*, +, *TIE July 2020 5647-5656*
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- Full-Order Observer for a Class of Nonlinear Systems With Unmatched Uncertainties: Joint Attractive Ellipsoid and Sliding Mode Concepts. *Sanchez, B.*, +, *TIE July 2020 5677-5686*
- Globally Fixed-Time High-Order Sliding Mode Control for New Sliding Mode Systems Subject to Mismatched Terms and Its Application. *Shi, S.*, +, *TIE Dec. 2020 10776-10786*
- High-Order Disturbance-Observer-Based Sliding Mode Control for Mobile Wheeled Inverted Pendulum Systems. *Huang, J.*, +, *TIE March 2020 2030-2041*
- Hyperbolic-Tangent LOS Guidance-Based Finite-Time Path Following of Underactuated Marine Vehicles. *Wang, N.*, +, *TIE Oct. 2020 8566-8575*
- Impulsive Super-Twisting Sliding Mode Control for Space Debris Capturing via Tethered Space Net Robot. *Zhao, Y.*, +, *TIE Aug. 2020 6874-6882*
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- Sliding Mode Control for Nonlinear Stochastic Semi-Markov Switching Systems With Application to SRMM. *Qi, W.*, +, *TIE May 2020 3955-3966*
- Super-Twisting Algorithm-Based Time-Varying Delay Estimation With External Signal. *Deng, Y.*, +, *TIE Dec. 2020 10663-10671*
- Torque Ripple Suppression for Open-End Winding Permanent-Magnet Synchronous Machine Drives With Predictive Current Control. *Yuan, X.*, +, *TIE March 2020 1771-1781*
- Wheel Slip Control for the Electric Vehicle With In-Wheel Motors: Variable Structure and Sliding Mode Methods. *Savitski, D.*, +, *TIE Oct. 2020 8535-8544*

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- Discrete Space Vector Modulation-Based Model Predictive Torque Control With No Suboptimization. *Osman, I.*, +, *TIE Oct. 2020 8164-8174*
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- Fault Detection and Diagnosis of Industrial Robot Based on Power Consumption Modeling. *Sabry, A.H.*, +, *TIE Sept. 2020 7929-7940*
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- Multivector-Based Model Predictive Control With Geometric Solution of a Five-Phase Flux-Switching Permanent Magnet Motor. *Hua, W.*, +, *TIE Dec. 2020 10035-10045*
- Simultaneous Common-Mode Voltage Reduction and Neutral-Point Voltage Balance Scheme for the Quasi-Z-Source Three-Level T-Type Inverter. *Qin, C.*, +, *TIE March 2020 1956-1967*

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- A Model-Free Control Strategy for Vehicle Lateral Stability With Adaptive Dynamic Programming. *Sun, W.*, +, *TIE Dec. 2020 10693-10701*
- A Motion Planning and Tracking Framework for Autonomous Vehicles Based on Artificial Potential Field Elaborated Resistance Network Approach. *Huang, Y.*, +, *TIE Feb. 2020 1376-1386*
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- A Practical Visual Servo Control for Aerial Manipulation Using a Spherical Projection Model. *Zhong, H.*, +, *TIE Dec. 2020 10564-10574*
- Active Suspension System Control With Decentralized Event-Triggered Scheme. *Zhang, H.*, +, *TIE Dec. 2020 10798-10808*
- Actuator Failure Compensation-Based Adaptive Control of Active Suspension Systems With Prescribed Performance. *Liu, Y.*, +, *TIE Aug. 2020 7044-7053*

Adaptive Visual Servoing for an Underwater Soft Robot Considering Refraction Effects. *Xu, F.*, +, *TIE Dec. 2020 10575-10586*

An Explicit Nonlinear Model Predictive ABS Controller for Electro-Hydraulic Braking Systems. *Tavernini, D.*, +, *TIE May 2020 3990-4001*

Control of Antilock Braking Systems Using Disturbance Observer With a Novel Nonlinear Sliding Surface. *Phadke, S.B.*, +, *TIE Aug. 2020 6815-6823*

Hyperbolic-Tangent LOS Guidance-Based Finite-Time Path Following of Underactuated Marine Vehicles. *Wang, N.*, +, *TIE Oct. 2020 8566-8575*

Position Control of Parallel Active Link Suspension With Backlash. *Yu, M.*, +, *TIE June 2020 4741-4751*

Precise Active Brake-Pressure Control for a Novel Electro-Booster Brake System. *Zhao, J.*, +, *TIE June 2020 4774-4784*

Regionless Explicit Model Predictive Control of Active Suspension Systems With Preview. *Theunissen, J.*, +, *TIE June 2020 4877-4888*

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A Robust Observer and Nonorthogonal PLL-Based Sensorless Control for Fault-Tolerant Permanent Magnet Motor With Guaranteed Postfault Performance. *Xu, J.*, +, *TIE July 2020 5959-5970*

Active Disturbance-Rejection-Based Speed Control in Model Predictive Control for Induction Machines. *Yan, L.*, +, *TIE April 2020 2574-2584*

An Improved Rotating Restart Method for a Sensorless Permanent Magnet Synchronous Motor Drive System Using Repetitive Zero Voltage Vectors. *Seo, D.*, +, *TIE May 2020 3496-3504*

Dual-Pulse Mode Control of a High-Speed Doubly Salient Electromagnetic Machine for Loss Reduction and Speed Range Extension. *Yu, L.*, +, *TIE June 2020 4391-4401*

High-Order Disturbance-Observer-Based Sliding Mode Control for Mobile Wheeled Inverted Pendulum Systems. *Huang, J.*, +, *TIE March 2020 2030-2041*

Integrated-Power-Control-Strategy-Based Electrolytic Capacitor-Less Back-to-Back Converter for Variable Frequency Speed Control System. *Bao, D.*, +, *TIE Dec. 2020 10065-10074*

Motion Control for Piezoelectric-Actuator-Based Surgical Device Using Neural Network and Extended State Observer. *Lau, J.Y.*, +, *TIE Jan. 2020 402-412*

Periodic/Aperiodic Motion Control Using Periodic/Aperiodic Separation Filter. *Muramatsu, H.*, +, *TIE Sept. 2020 7649-7658*

PLL Position and Speed Observer With Integrated Current Observer for Sensorless PMSM Drives. *Lascu, C.*, +, *TIE July 2020 5990-5999*

Reliable Winding-Based DC-Bus Capacitor Discharge Technique Over Full-Speed Range for IPMSM Drive in Electric Vehicles Without Position Sensor. *Gong, C.*, +, *TIE Oct. 2020 8131-8142*

Robust PMDC Motor Control for Accurate Wire Feeding in GMAW Using Back EMF. *Paul, A.K.*, *TIE Jan. 2020 413-420*

Sensorless Low/Zero Speed Estimation for Permanent Magnet Synchronous Machine Using a Search-Based Real-Time Commissioning Method. *Scicluna, K.*, +, *TIE July 2020 6010-6018*

Sensorless Optimal Commutation Steady Speed Control Method for a Nonideal Back-EMF BLDC Motor Drive System Including Buck Converter. *Chen, X.*, +, *TIE July 2020 6147-6157*

Spacecraft Vibration Control Based on Extended Modal Decoupling of Vernier-Gimbaling Magnetically Suspension Flywheels. *Chen, X.*, +, *TIE May 2020 4066-4076*

Weak Grid Intertie WEGS With Hybrid Generalized Integrator for Power Quality Improvement. *Chishty, F.*, +, *TIE Feb. 2020 1113-1123*

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An Electromagnetic Variable Stiffness Device for Semiactive Seat Suspension Vibration Control. *Ning, D.*, +, *TIE Aug. 2020 6773-6784*

Boundary Antidisturbance Control of a Spatially Nonlinear Flexible String System. *Zhao, Z.*, +, *TIE June 2020 4846-4856*

Electromagnetic Vibration Analysis of High-Speed Permanent Magnet Synchronous Machines With Amorphous Metal Stator Cores Considering Current Harmonics. *Wu, S.*, +, *TIE Dec. 2020 10156-10167*

Fine Load-Side Acceleration Control Based on Torsion Torque Sensing of Two-Inertia System. *Yokokura, Y.*, +, *TIE Jan. 2020 768-777*

Regionless Explicit Model Predictive Control of Active Suspension Systems With Preview. *Theunissen, J.*, +, *TIE June 2020 4877-4888*

Suppression of Synchronous Current Using Double Input Improved Adaptive Notch Filter Algorithm. *Liu, G.*, +, *TIE Oct. 2020 8599-8607*

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A Self-Powered Vibration Sensor With Wide Bandwidth. *Li, Y.*, +, *TIE Jan. 2020 560-568*

Data-Driven Soft Sensor for the Estimation of Sound Power Levels of Refrigeration Compressors Through Vibration Measurements. *Nascimento, A.S.B.d.S.*, +, *TIE Aug. 2020 7065-7072*

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Multitask Convolutional Neural Network With Information Fusion for Bearing Fault Diagnosis and Localization. *Guo, S.*, +, *TIE Sept. 2020 8005-8015*

Sensorless Vibration Harmonic Estimation of Servo System Based on the Disturbance Torque Observer. *Huang, C.*, +, *TIE March 2020 2122-2132*

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A Second-Order Dual Mode Repetitive Control for Magnetically Suspended Rotor. *Cui, P.*, +, *TIE June 2020 4946-4956*

A Self-Powered Vibration Sensor With Wide Bandwidth. *Li, Y.*, +, *TIE Jan. 2020 560-568*

Adaptive Unbalance Compensation for a Three-Pole Active Magnetic Bearing System. *Chen, S.*, +, *TIE March 2020 2097-2106*

An Electromagnetic Variable Stiffness Device for Semiactive Seat Suspension Vibration Control. *Ning, D.*, +, *TIE Aug. 2020 6773-6784*

An Incorrect Data Detection Method for Big Data Cleaning of Machinery Condition Monitoring. *Xu, X.*, +, *TIE March 2020 2326-2336*

Data-Driven Soft Sensor for the Estimation of Sound Power Levels of Refrigeration Compressors Through Vibration Measurements. *Nascimento, A.S.B.d.S.*, +, *TIE Aug. 2020 7065-7072*

- Effect Comparison of Zigzag Skew PM Pole and Straight Skew Slot for Vibration Mitigation of PM Brush DC Motors. *Wang, S.*, +, *TIE June 2020 4752-4761*
- Electromagnetic Force and Vibration Study on Axial Flux Permanent Magnet Synchronous Machines With Dual Three-Phase Windings. *Lu, Y.*, +, *TIE Jan. 2020 115-125*
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- Authoring New Haptic Textures Based on Interpolation of Real Textures in Affective Space. *Hassan, W.*, +, *TIE Jan. 2020 667-676*
- Enhancing the Rate-Hardness of Haptic Interaction: Successive Force Augmentation Approach. *Singh, H.*, +, *TIE Jan. 2020 809-819*
- Multimodal Haptic Display for Virtual Reality: A Survey. *Wang, D.*, +, *TIE Jan. 2020 610-623*
- Multirate Haptic Rendering Using Local Stiffness Matrix for Stable and Transparent Simulation Involving Interaction With Deformable Objects. *Kim, M.*, +, *TIE Jan. 2020 820-828*
- Viscoelasticity**
- Parametric Stability Analysis of Active Magnetic Bearing Supported Rotor System With a Novel Control Law Subject to Periodic Base Motion. *Soni, T.*, +, *TIE Feb. 2020 1160-1170*
- Viscosity**
- Haptic Performance Using Voltage-Mode Motor Control. *Gil, J.J.*, +, *TIE Jan. 2020 698-705*
- Numerical and Experimental Calculation of CHTC in an Oil-Based Shaft Cooling System for a High-Speed High-Power PMSM. *Gai, Y.*, +, *TIE June 2020 4371-4380*
- Sparse Machine Learning Discovery of Dynamic Differential Equation of an Esophageal Swallowing Robot. *Bhattacharya, D.*, +, *TIE June 2020 4711-4720*
- Visual servoing**
- A Novel Geometric Hierarchical Approach for Dynamic Visual Servoing of Quadrotors. *Zhang, X.*, +, *TIE May 2020 3840-3849*
- A Practical Visual Servo Control for Aerial Manipulation Using a Spherical Projection Model. *Zhong, H.*, +, *TIE Dec. 2020 10564-10574*
- Adaptive Visual Servoing for an Underwater Soft Robot Considering Refraction Effects. *Xu, F.*, +, *TIE Dec. 2020 10575-10586*
- An Accelerated Recurrent Neural Network for Visual Servo Control of a Robotic Flexible Endoscope With Joint Limit Constraint. *Li, W.*, +, *TIE Dec. 2020 10787-10797*
- Dynamics-Level Finite-Time Fuzzy Monocular Visual Servo of an Unmanned Surface Vehicle. *Wang, N.*, +, *TIE Nov. 2020 9648-9658*
- VCA Protocol-Based Multilevel Flexible Architecture on Embedded PLCs for Visual Servo Control. *Wu, H.*, +, *TIE March 2020 2450-2459*
- Voltage control**
- A 13.56-MHz Full-Bridge Class-D ZVS Inverter With Dynamic Dead-Time Control for Wireless Power Transfer Systems. *Tebianian, H.*, +, *TIE Feb. 2020 1487-1497*
- A 300-kHz 6.6-kW SiC Bidirectional LLC Onboard Charger. *Li, H.*, +, *TIE Feb. 2020 1435-1445*
- A Closed-Loop Modulation Scheme for Duty Cycle Compensation of PWM Voltage Distortion at High Switching Frequency Inverter. *Ren, R.*, +, *TIE Feb. 2020 1475-1486*
- A Cooperative Adaptive Droop Based Energy Management and Optimal Voltage Regulation Scheme for DC Microgrids. *Sahoo, S.*, +, *TIE April 2020 2894-2904*
- A Currentless Submodule Individual Voltage Balancing Control for Modular Multilevel Converters. *Deng, F.*, +, *TIE Nov. 2020 9370-9382*
- A Disturbance Rejection-Based Control Strategy for Five-Level T-Type Hybrid Power Converters With Ripple Voltage Estimation Capability. *Khan, S.A.*, +, *TIE Sept. 2020 7364-7374*
- A Four-Quadrant Single-Phase Grid-Connected Converter With Only Two High-Frequency Switches. *Siu, K.K.M.*, +, *TIE March 2020 1899-1909*
- A GaN-Based DC-DC Module for Railway Applications: Design Consideration and High-Frequency Digital Control. *Fu, M.*, +, *TIE Feb. 2020 1638-1647*
- A New SVPWM Technique to Reduce the Inductor Current Ripple of Three-Phase Z-Source Inverter. *Singh, S.*, +, *TIE May 2020 3540-3550*
- A Novel Fault-Tolerant Technique for Active-Neutral-Point-Clamped Inverter Using Carrier-Based PWM. *Azer, P.*, +, *TIE March 2020 1792-1803*
- A Novel High-Voltage DC Transformer Based on Diode-Clamped Modular Multilevel Converters With Voltage Self-Balancing Capability. *Zheng, T.*, +, *TIE Dec. 2020 10304-10314*
- A Novel Order Reduced Synchronous Power Control for Grid-Forming Inverters. *Quan, X.*, +, *TIE Dec. 2020 10989-10995*
- A Novel Virtual Space Vector Modulation With Reduced Common-Mode Voltage and Eliminated Neutral Point Voltage Oscillation for Neutral Point Clamped Three-Level Inverter. *Jiang, W.*, +, *TIE Feb. 2020 884-894*
- A Proposed Fast Charging and High-Power System for Wireless Railway Trains Adopting the Input Voltage Sharing Topology and the Balancing Control Scheme. *Kim, J.*, +, *TIE Aug. 2020 6407-6417*
- Active Class E Rectifier for DC Output Voltage Regulation in Megahertz Wireless Power Transfer Systems. *Liu, M.*, +, *TIE May 2020 3618-3628*
- Adaptive Self-Configurable Rectifier for Extended Operating Range of Piezoelectric Energy Harvesting. *Chew, Z.J.*, +, *TIE April 2020 3267-3276*
- An Advanced Voltage Support Scheme Considering the Impact of Zero-Sequence Voltage Under Microgrid Faults Using Model Predictive Control. *Mohapatra, S.R.*, +, *TIE Oct. 2020 8957-8968*
- An Antiovervoltage Control Scheme for Electrolytic Capacitorless IPMSM Drives Based on Stator Current Vector Orientation. *Ding, D.*, +, *TIE May 2020 3517-3527*
- An Efficiency-Oriented Two-Stage Optimal Design Methodology of High-Frequency LCLC Resonant Converters for Space Travelling-Wave Tube Amplifier Applications. *Zhao, B.*, +, *TIE Feb. 2020 1068-1080*
- An Enhanced Control Strategy for AC-DC Matrix Converters Under Unbalanced Grid Voltage. *Nguyen, T.*, +, *TIE March 2020 1718-1727*

- An Interleaved Secondary-Side Modulated LLC Resonant Converter for Wide Output Range Applications. *Li, Z., +, TIE Feb. 2020 1124-1135*
- An Optimized Carrier-Based PWM Method and Voltage Balancing Control for Five-Level ANPC Converters. *Wang, K., +, TIE Nov. 2020 9120-9132*
- An Optimized Zero-Sequence Voltage Injection Method for Eliminating Circulating Current and Reducing Common Mode Voltage of Parallel-Connected Three-Level Converters. *Xing, X., +, TIE Aug. 2020 6583-6596*
- An SVM Approach for Five-Phase Current Source Converters Output Current Harmonics and Common-Mode Voltage Mitigation. *He, J., +, TIE July 2020 5232-5245*
- An Ultra-High Step-Up DC–DC Converter With Extendable Voltage Gain and Soft-Switching Capability. *Alavi, P., +, TIE Nov. 2020 9238-9250*
- Analysis and Design of a Novel Six-Switch Five-Level Active Boost Neutral Point Clamped Inverter. *Siwakoti, Y.P., +, TIE Dec. 2020 10485-10496*
- Analysis and Design of the LLC Resonant Converter With Variable Inductor Control Based on Time-Domain Analysis. *Wei, Y., +, TIE July 2020 5432-5443*
- Application of Analytic Signal and Smooth Interpolation in Pulsewidth Modulation for Conventional Matrix Converters. *Szczepankowski, P., +, TIE Dec. 2020 10011-10023*
- Bidirectional Isolated Current-Source DAB Converter With Extended ZVS/ZCS Range and Reduced Energy Circulation for Storage Applications. *Blinov, A., +, TIE Dec. 2020 10552-10563*
- Circulating Current Analysis and the Improved D–Σ Digital Control Strategy for Multiparalleled Three-Level T-Type Grid-Connected Inverters. *Ren, B., +, TIE April 2020 2810-2821*
- Comments on “Fault-Tolerant Control Strategies for T-Type Three-Level Inverters Considering Neutral-Point Voltage Oscillations”. *Wang, J., +, TIE Aug. 2020 7114-7115*
- Cooperative CC–CV Charging of Supercapacitors Using Multicharger Systems. *Li, H., +, TIE Dec. 2020 10497-10508*
- Cost-Effective Islanded Electrical System With Decentralized Interleaving PWM for Converter Harmonic Reduction. *He, J., +, TIE Oct. 2020 8472-8483*
- Coupled Inductor Based Regenerative Cascaded Multicell Converter for Drives With Multilevel Voltage Operation at Both Input and Output Sides. *Sau, S., +, TIE Jan. 2020 147-158*
- DC Fault Analysis Models of Three Converter Topologies Considering Control Effects. *Li, Y., +, TIE Nov. 2020 9480-9491*
- DC Voltage Control Strategy of Three-Terminal Medium-Voltage Power Electronic Transformer-Based Soft Normally Open Points. *Ouyang, S., +, TIE May 2020 3684-3695*
- DC-Link Voltage-Balancing Strategy Based on Optimal Switching Sequence Model Predictive Control for Single-Phase H-NPC Converters. *Vazquez, S., +, TIE Sept. 2020 7410-7420*
- Decoupling and Optimal Control of Multilevel Buck DC–DC Converters With Inverse System Theory. *Wu, J., +, TIE Sept. 2020 7861-7870*
- Design Considerations for Voltage Sensorless Control of a PFC Single-Phase Rectifier Without Electrolytic Capacitors. *Qi, W., +, TIE March 2020 1878-1889*
- Digital Battery Management Design for Point-of-Load Applications With Cell Balancing. *Yang, Y., +, TIE Aug. 2020 6365-6375*
- Distributed Control of Active Cell Balancing and Low-Voltage Bus Regulation in Electric Vehicles Using Hierarchical Model-Predictive Control. *Gong, Z., +, TIE Dec. 2020 10464-10473*
- Distributed Cooperative Control of Multiple Hybrid Energy Storage Systems in a DC Microgrid Using Consensus Protocol. *Chen, X., +, TIE March 2020 1968-1979*
- Distributed Voltage Restoration and Current Sharing Control in Islanded DC Microgrid Systems Without Continuous Communication. *Guo, F., +, TIE April 2020 3043-3053*
- Dynamic Performance Improvement of Doubly Salient Brushless DC Generator System With Controlled Rectifier. *Xu, Y., +, TIE Oct. 2020 8209-8218*
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- Frequency Adaptive Grid Voltage Sensorless Control of LCL-Filtered Inverter Based on Extended Model Observer. *Tran, T.V., +, TIE Sept. 2020 7560-7573*
- Frequency-Adaptive Virtual Flux Estimator-Based Predictive Power Control With Suppression of Dc Voltage Ripples Under Unbalanced Network. *Yang, H., +, TIE Oct. 2020 8969-8979*
- Full Converter Control for Variable-Speed Wind Turbines Without Integral Controller or PLL. *Koiwa, K., +, TIE Nov. 2020 9418-9428*
- Haptic Performance Using Voltage-Mode Motor Control. *Gil, J.J., +, TIE Jan. 2020 698-705*
- Impedance Modeling and DC Bus Voltage Stability Assessment of a Solid-State-Transformer-Enabled Hybrid AC–DC Grid Considering Bidirectional Power Flow. *Ye, Q., +, TIE Aug. 2020 6531-6540*
- Improved Direct Torque Control for a DFIG under Symmetrical Voltage Dip With Transient Flux Damping. *Agha Kashkooli, M.R., +, TIE Jan. 2020 28-37*
- Improved Reweighted Zero-Attracting Quaternion-Valued LMS Algorithm for Islanded Distributed Generation System at IM Load. *Kewat, S., +, TIE May 2020 3705-3716*
- Improving Dynamic Performance of Boost PFC Converter Using Current-Harmonic Feedforward Compensation in Synchronous Reference Frame. *Li, S., +, TIE June 2020 4857-4866*
- Integrated-Power-Control-Strategy-Based Electrolytic Capacitor-Less Back-to-Back Converter for Variable Frequency Speed Control System. *Bao, D., +, TIE Dec. 2020 10065-10074*
- LQR Control of Single-Phase Grid-Tied PUC5 Inverter With LCL Filter. *Arab, N., +, TIE Jan. 2020 297-307*
- Magnetically Coupled High-Voltage-Boost Split Y-Source Inverter Without Leakage-Induced Voltage Spikes. *Chen, M., +, TIE July 2020 5444-5455*
- Min-Type Control Strategy of a DC–DC Synchronous Boost Converter. *Sferlazza, A., +, TIE April 2020 3167-3179*
- Minimization of Switched Capacitor Voltage Ripple in a Multilevel Dodecagonal Voltage Space Vector Structure for Drives. *Imthias, M., +, TIE Jan. 2020 126-135*
- Model Predictive Control for a Six-Phase PMSM Motor With a Reduced-Dimension Cost Function. *Luo, Y., +, TIE Feb. 2020 969-979*
- Model Predictive Control for Dual Active Bridge in Naval DC Microgrids Supplying Pulsed Power Loads Featuring Fast Transition and Online Transformer Current Minimization. *Xiao, Q., +, TIE June 2020 5197-5203*
- Model Predictive Control of a Nine-Level Internal Parallel Multilevel Converter With Phase-Shifted Pulsewidth Modulation. *Zhou, D., +, TIE Nov. 2020 9073-9082*
- Model Predictive Control of the Open-winding PMSG System Based on Three-Dimensional Reference Voltage-Vector. *Zhang, X., +, TIE Aug. 2020 6312-6322*
- Modular Hybrid-Full-Bridge DC Transformer With Full-Process Matching Switching Strategy for MVdc Power Distribution Application. *Zhao, B., +, TIE May 2020 3317-3328*
- Modulation and Capacitor Voltage Balancing Control of Multilevel NPC Dual Active Bridge DC–DC Converters. *Filba-Martinez, A., +, TIE April 2020 2499-2510*
- Modulation and Voltage Balancing of a Five-Level Series-Connected Multilevel Inverter With Reduced Isolated Direct Current Sources. *Dekka, A., +, TIE Oct. 2020 8219-8230*
- Multisampling Method for Single-Phase Grid-Connected Cascaded H-Bridge Inverters. *Ma, J., +, TIE Oct. 2020 8322-8334*

- Multitransformer Primary-Side Regulated Flyback Converter for Supplying Isolated IGBT and MOSFET Drivers. *Kolincio, M.*, +, *TIE Feb. 2020 1005-1012*
- New Concept for Fault Current Limiter With Voltage Restoration Capability. *Nourmohamadi, H.*, +, *TIE Dec. 2020 10001-10010*
- Online Feedback Dead Time Compensation Strategy for Three-Level T-Type Inverters. *Wang, D.*, +, *TIE Sept. 2020 7260-7268*
- Optimal Input and Output Power Quality Control of Single-Phase AC–DC–DC Converter With Significant DC-Link Voltage Ripple. *Meng, L.*, +, *TIE Dec. 2020 10366-10376*
- Optimal Tracking With Disturbance Rejection of Voltage Source Inverters. *Teng, J.*, +, *TIE June 2020 4957-4968*
- Optimal Voltage-Support Control for Distributed Generation Inverters in RL Grid-Faulty Networks. *Garnica, M.*, +, *TIE Oct. 2020 8405-8415*
- Optimization of Cell Voltage and Circulating Current With Zero-Mean Current Command Injection in Modular Multilevel Converters. *Wu, T.*, +, *TIE Nov. 2020 9429-9438*
- Parallel Implementation of Model Predictive Control for Multilevel Cascaded H-Bridge STATCOM With Linear Complexity. *Zhang, Y.*, +, *TIE Feb. 2020 832-841*
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- Performance Analysis of Model Predictive Technique Based Combined Control for PMSG-Based Distributed Generation Unit. *Mishra, R.*, +, *TIE Oct. 2020 8991-9000*
- Postfault Operation of Cascaded H-Bridge Converter for Equal Power Handling by the Healthy Cells. *Sharma, R.*, +, *TIE Nov. 2020 9174-9183*
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- Predictive Control Based DC Microgrid Stabilization With the Dual Active Bridge Converter. *Chen, L.*, +, *TIE Oct. 2020 8944-8956*
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- Reducing Distribution Power Loss of Islanded AC Microgrids Using Distributed Electric Springs With Predictive Control. *Yang, Y.*, +, *TIE Oct. 2020 9001-9011*
- Reliable Winding-Based DC-Bus Capacitor Discharge Technique Over Full-Speed Range for IPMSM Drive in Electric Vehicles Without Position Sensor. *Gong, C.*, +, *TIE Oct. 2020 8131-8142*
- Resilient Information Architecture Platform for the Smart Grid: A Novel Open-Source Platform for Microgrid Control. *Tu, H.*, +, *TIE Nov. 2020 9393-9404*
- Seamless Dynamics for Wild-Frequency Active Rectifiers in More Electric Aircraft. *Benzaquen, J.*, +, *TIE Sept. 2020 7135-7145*
- Sensorless SynRG Based Variable Speed Wind Generator and Single-Stage Solar PV Array Integrated Grid System With Maximum Power Extraction Capability. *Vijay, M. D.*, +, *TIE Sept. 2020 7529-7539*
- Series-Connected-Based Offshore Wind Farms With Full-Bridge Modular Multilevel Converter as Grid- and Generator-side Converters. *Guo, G.*, +, *TIE April 2020 2798-2809*
- Simultaneous Common-Mode Voltage Reduction and Neutral-Point Voltage Balance Scheme for the Quasi-Z-Source Three-Level T-Type Inverter. *Qin, C.*, +, *TIE March 2020 1956-1967*
- Single-Stage High-Efficiency 48/1 V Sigma Converter With Integrated Magnetics. *Ahmed, M.H.*, +, *TIE Jan. 2020 192-202*
- Single-Stage Voltage Balancer With High-Frequency Isolation for Bipolar LVDC Distribution System. *Lee, J.*, +, *TIE May 2020 3596-3606*
- Step-by-Step Threshold Design Methodology of Switching Frequency Regulation for a Generalized Resonant DC–DC Converter. *Huang, J.*, +, *TIE Dec. 2020 10975-10980*
- Suppression of Second-Order Harmonic Current for Droop-Controlled Distributed Energy Resource Converters in DC Microgrids. *Liu, G.*, +, *TIE Jan. 2020 358-368*
- The Output Voltage Control Strategy for DSEG With Controlled Rectification Based on Conduction Angle Estimation. *Wang, K.*, +, *TIE May 2020 3350-3360*
- Unified Reduced Model for a Dual-Control Scheme of the High-Speed Response Brushless Excitation System of Synchronous Generators. *Noland, J.K.*, +, *TIE June 2020 4474-4484*
- Vector Shifted Model Predictive Power Control of Three-Level Neutral-Point-Clamped Rectifiers. *Zhou, D.*, +, *TIE Sept. 2020 7157-7166*
- Voltage Grid Supporting by Using Variable Structure Adaptive Virtual Impedance for LCL-Voltage Source Converter DG Converters. *Fonseca, T.Q.*, +, *TIE Nov. 2020 9326-9336*
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- A New Soft Switching DC–DC Converter With High Voltage Gain Capability. *Mohseni, P.*, +, *TIE Sept. 2020 7386-7398*
- A Novel High Step-Up High Efficiency Interleaved DC–DC Converter With Coupled Inductor and Built-In Transformer for Renewable Energy Systems. *Nouri, T.*, +, *TIE Aug. 2020 6505-6516*
- An Ultra-High Step-Up DC–DC Converter With Extendable Voltage Gain and Soft-Switching Capability. *Alavi, P.*, +, *TIE Nov. 2020 9238-9250*
- Closed-Loop Control and Boundary for CCM and DCM of Nonisolated Inverting $N \times$ Multilevel Boost Converter for High-Voltage Step-Up Applications. *Iqbal, A.*, +, *TIE April 2020 2863-2874*
- Highly Efficient Single-Phase Buck–Boost Variable-Frequency AC–AC Converter With Inherent Commutation Capability. *Sharifi, S.*, +, *TIE May 2020 3640-3649*
- Study and Analysis of Pulsating and Nonpulsating Input and Output Current of Ultrahigh-Voltage Gain Hybrid DC–DC Converters. *Andrade, A.M.S.S.*, +, *TIE May 2020 3776-3787*
- Voltage regulators**
- A Reliable Single-Phase Bipolar Buck–Boost Direct PWM AC–AC Converter With Continuous Input/Output Currents. *Ahmed, H.F.*, +, *TIE Dec. 2020 10253-10265*
- An Output Capacitorless Low-Dropout Regulator With a Low- V_{DD} Inverting Buffer for the Mobile Application. *Park, J.*, +, *TIE Oct. 2020 8931-8935*
- Cooperative CC–CV Charging of Supercapacitors Using Multicharger Systems. *Li, H.*, +, *TIE Dec. 2020 10497-10508*
- Design Considerations of Sequential Switching Shunt Regulator for High-Power Applications. *Zhu, H.*, +, *TIE Nov. 2020 9358-9369*
- Optimal Tracking With Disturbance Rejection of Voltage Source Inverters. *Teng, J.*, +, *TIE June 2020 4957-4968*
- Voltage Grid Supporting by Using Variable Structure Adaptive Virtual Impedance for LCL-Voltage Source Converter DG Converters. *Fonseca, T.Q.*, +, *TIE Nov. 2020 9326-9336*
- Voltage-source converters**
- A CM Filter Configuration for Grid-Tied Voltage Source Converters. *Gulur, S.*, +, *TIE Oct. 2020 8100-8111*
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- An Induction Machine With Tapped Stator Windings for LCI-Fed Medium Voltage Drive Applications. *Titus, J.*, +, *TIE Sept. 2020 7217-7227*
- Comparative Analysis of an MV Neutral Point Clamped AC–CHB Converter With DC Fault Ride-Through Capability. *Collins, C.T.*, +, *TIE April 2020 2834-2843*
- Cosimulation of Shifted-Frequency/Dynamic Phasor and Electromagnetic Transient Models of Hybrid LCC-MMC DC Grids on Integrated CPU–GPUs. *Shu, D.*, +, *TIE Aug. 2020 6517-6530*

DC Fault Analysis Models of Three Converter Topologies Considering Control Effects. *Li, Y.*, +, *TIE Nov. 2020 9480-9491*

DC Fault Current Blocking With the Coordination of Half-Bridge MMC and the Hybrid DC Breaker. *Iman-Eini, H.*, +, *TIE July 2020 5503-5514*

DC Fault Detection in Meshed MTdc Systems Based on Transient Average Value of Current. *Li, Y.*, +, *TIE March 2020 1932-1943*

Design, Analysis, and Impacts of Sinusoidal LC Filter on Pulsewidth Modulated Inverter Fed-Induction Motor Drive. *Mishra, P.*, +, *TIE April 2020 2678-2688*

Double-Thyristor-Based Protection for Valve-Side Single-Phase-to-Ground Faults in HB-MMC-Based Bipolar HVDC Systems. *Li, G.*, +, *TIE July 2020 5810-5815*

Electrothermal Transient Behavioral Modeling of Thyristor-Based Ultrafast Mechatronic Circuit Breaker for Real-Time DC Grid Emulation. *Lin, N.*, +, *TIE March 2020 1660-1670*

Enhanced Braking Control for the Induction Machine Using Scalar Control. *Costa, C.A.*, +, *TIE Nov. 2020 9133-9142*

Failure Prediction of Submodule Capacitors in Modular Multilevel Converter by Monitoring the Intrinsic Capacitor Voltage Fluctuations. *Ronanki, D.*, +, *TIE April 2020 2585-2594*

Fault Diagnosis and Monitoring of Modular Multilevel Converter With Fast Response of Voltage Sensors. *Zhang, J.*, +, *TIE June 2020 5071-5080*

HVdc Reactor Reduction Method Based on Virtual Reactor Fault Current Limiting Control of MMC. *Li, X.*, +, *TIE Dec. 2020 9991-10000*

Improved Reweighted Zero-Attracting Quaternion-Valued LMS Algorithm for Islanded Distributed Generation System at IM Load. *Kewat, S.*, +, *TIE May 2020 3705-3716*

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Minimum-Loss Control Strategy for a Dual-VSI DFIG DC System. *Marques, G.D.*, +, *TIE Oct. 2020 8175-8185*

Optimization of Cell Voltage and Circulating Current With Zero-Mean Current Command Injection in Modular Multilevel Converters. *Wu, T.*, +, *TIE Nov. 2020 9429-9438*

Performance and Reliability Review of 650 V and 900 V Silicon and SiC Devices: MOSFETs, Cascode JFETs and IGBTs. *Gonzalez, J.O.*, +, *TIE Sept. 2020 7375-7385*

Pole Balancing and Thermal Management in Multiterminal HVdc Grids Using Single H-Bridge-Based Current Flow Controllers. *Balasubramaniam, S.*, +, *TIE June 2020 4623-4634*

Power Capability Improvement of Interior Permanent Magnet Synchronous Motor Drives Using Capacitive Network. *Lee, K.*, +, *TIE Dec. 2020 10109-10120*

Power Quality Enhancement Using Euclidean Direction Search Based Control Technique. *Badoni, M.*, +, *TIE March 2020 2231-2240*

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Seamless Transition of Synchronous Inverters Using Synchronizing Virtual Torque and Flux Linkage. *Ramezani, M.*, +, *TIE Jan. 2020 319-328*

Sensorless SynRG Based Variable Speed Wind Generator and Single-Stage Solar PV Array Integrated Grid System With Maximum Power Extraction Capability. *Vijay, M.D.*, +, *TIE Sept. 2020 7529-7539*

Solar PV Energy Generation System Interfaced to Three Phase Grid With Improved Power Quality. *Singh, A.K.*, +, *TIE May 2020 3798-3808*

Voltage-Source Converter Energy Efficiency Classification in Accordance With IEC 61800-9-2. *Aarniovuori, L.*, +, *TIE Oct. 2020 8242-8251*

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Improved Classification Scheme Using Fused Wavelet Packet Transform Based Features for Intelligent Myoelectric Prostheses. *Pancholi, S.*, +, *TIE Oct. 2020 8517-8525*

Motion Characteristic Recognition of Transmission Lines Based on Inertial Measurement. *Yang, J.*, +, *TIE Oct. 2020 8860-8867*

Optimized Ensemble Extreme Learning Machine for Classification of Electrical Insulators Conditions. *Stefenon, S.F.*, +, *TIE June 2020 5170-5178*

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A TDF Model in Induction Machines for Loose Bearing Diagnosis by Neutral Voltage. *Jafarian, M.J.*, +, *TIE Oct. 2020 8155-8163*

Wearable computers

All-Day Mobile Healthcare Monitoring System Based on Heterogeneous Stretchable Sensors for Medical Emergency. *Lee, S.*, +, *TIE Oct. 2020 8808-8816*

Second-Order Information Recovery in Oriented-Plane Curvature Reproduction. *Zeng, T.*, +, *TIE Jan. 2020 725-735*

Wearable robots

A Modular Wearable Finger Interface for Cutaneous and Kinesthetic Interaction: Control and Evaluation. *Chinello, F.*, +, *TIE Jan. 2020 706-716*

Cooperative Manipulation of Wearable Dual-Arm Exoskeletons Using Force Communication Between Partners. *Wu, X.*, +, *TIE Aug. 2020 6629-6638*

Decoupling Finger Joint Motion in an Exoskeletal Hand: A Design for Robot-Assisted Rehabilitation. *Pu, S.*, +, *TIE Jan. 2020 686-697*

DMP-Based Motion Generation for a Walking Exoskeleton Robot Using Reinforcement Learning. *Yuan, Y.*, +, *TIE May 2020 3830-3839*

Weibull distribution

Thermal Overload and Insulation Aging of Short Duty Cycle, Aerospace Motors. *Madonna, V.*, +, *TIE April 2020 2618-2629*

Welding

Broadband Mode Decomposition and Its Application to the Quality Evaluation of Welding Inverter Power Source Signals. *Peng, Y.*, +, *TIE Nov. 2020 9734-9746*

Welding electrodes

Real-Time CU-Net-Based Welding Quality Inspection Algorithm in Battery Production. *Zhang, H.*, +, *TIE Dec. 2020 10942-10950*

Robust PMDC Motor Control for Accurate Wire Feeding in GMAW Using Back EMF. *Paul, A.K.*, +, *TIE Jan. 2020 413-420*

Welds

Real-Time CU-Net-Based Welding Quality Inspection Algorithm in Battery Production. *Zhang, H.*, +, *TIE Dec. 2020 10942-10950*

Wheels

An Explicit Nonlinear Model Predictive ABS Controller for Electro-Hydraulic Braking Systems. *Tavernini, D.*, +, *TIE May 2020 3990-4001*

Control of Antilock Braking Systems Using Disturbance Observer With a Novel Nonlinear Sliding Surface. *Phadke, S.B.*, +, *TIE Aug. 2020 6815-6823*

Design of a New Relieving-DC-Saturation Hybrid Reluctance Machine for Fault-Tolerant In-Wheel Direct Drive. *Zhao, X.*, +, *TIE Nov. 2020 9571-9581*

Experimental Analysis and Optimization of a Contactless Eddy-Current-Based Speed Sensor for Smooth Conductive Surfaces. *Gong, C.*, +, *TIE Oct. 2020 8817-8828*

High-Order Disturbance-Observer-Based Sliding Mode Control for Mobile Wheeled Inverted Pendulum Systems. *Huang, J.*, +, *TIE March 2020 2030-2041*

In-Dressing Acoustic Map by Low-Cost Piezoelectric Transducer. *Lofrano Dotto, F.R.*, +, *TIE Aug. 2020 6927-6936*

Wheel Slip Control for the Electric Vehicle With In-Wheel Motors: Variable Structure and Sliding Mode Methods. *Savitski, D.*, +, *TIE Oct. 2020 8535-8544*

Wide band gap semiconductors

1-kV Input 1-MHz GaN Stacked Bridge LLC Converters. *Zhang, Z.*, +, *TIE Nov. 2020 9227-9237*

In situ Degradation Monitoring of SiC MOSFET Based on Switching Transient Measurement. *Pu, S.*, +, *TIE June 2020 5092-5100*

A 2–10 MHz GaN HEMTs Half-Bridge Driver With Bandgap Reference Comparator Clamping and Dual Level Shifters for Automotive Applications. *Yan, R.*, +, *TIE Feb. 2020 1446-1454*

A 20-W Wide Bandwidth GaN HEMT Power Amplifier for VHF/UHF Applications. *Kim, J.*, +, *TIE Dec. 2020 10905-10910*

A Closed-Loop Modulation Scheme for Duty Cycle Compensation of PWM Voltage Distortion at High Switching Frequency Inverter. *Ren, R.*, +, *TIE Feb. 2020 1475-1486*

A Complete Switching Analytical Model of Low-Voltage eGaN HEMTs and Its Application in Loss Analysis. *Chen, J.*, +, *TIE Feb. 2020 1615-1625*

A High Step Up SEPIC-Based Converter Based on Partly Interleaved Transformer. *Gao, S.*, +, *TIE Feb. 2020 1455-1465*

A Multiresonant Gate Driver for High-Frequency Resonant Converters. *Gu, L.*, +, *TIE Feb. 2020 1405-1414*

Analysis and Design of a 1-MHz Bidirectional Multi-CLLC Resonant DC–DC Converter With GaN Devices. *Wang, Y.*, +, *TIE Feb. 2020 1425-1434*

Analysis and Implementation of a High Voltage Gain 1 MHz Bidirectional DC–DC Converter. *Dung, N.A.*, +, *TIE Feb. 2020 1415-1424*

Characterization of Static and Dynamic Behavior of 1200 V Normally off GaN/SiC Cascode Devices. *Wang, Y.*, +, *TIE Dec. 2020 10284-10294*

Design, Analysis, and Impacts of Sinusoidal LC Filter on Pulsewidth Modulated Inverter Fed-Induction Motor Drive. *Mishra, P.*, +, *TIE April 2020 2678-2688*

Digitally Controlled Gate Current Source-Based Active Gate Driver for Silicon Carbide MOSFETs. *Sukhatme, Y.*, +, *TIE Dec. 2020 10121-10133*

Electromagnetic Induced Failure in GaN-HEMT High-Frequency Power Amplifier. *Sangwan, V.*, +, *TIE July 2020 5708-5716*

Evaluation of the off-State Base-Emitter Voltage Requirement of the SiC BJT With a Regenerative Proportional Base Driver Circuit and Their Application in an Inverter. *McNeill, N.*, +, *TIE Sept. 2020 7179-7189*

Fully Soft-Switched High Step-Up Nonisolated Three-Port DC–DC Converter Using GaN HEMTs. *Faraji, R.*, +, *TIE Oct. 2020 8371-8380*

High and Very High Frequency Power Supplies for Industrial Applications. *Wang, Y.*, +, *TIE Feb. 2020 1400-1404*

High Efficiency High Density 1 MHz 380–12 V DCX With Low FoM Devices. *Wu, X.*, +, *TIE Feb. 2020 1648-1656*

Imbalance Current Analysis and Its Suppression Methodology for Parallel SiC MOSFETs with Aid of a Differential Mode Choke. *Zeng, Z.*, +, *TIE Feb. 2020 1508-1519*

InGaN RGB Light-Emitting Diodes With Monolithically Integrated Photodetectors for Stabilizing Color Chromaticity. *Li, K.H.*, +, *TIE June 2020 5154-5160*

Investigation of Harmonic Losses in a Two-Pole Slotless Permanent-Magnet Motor Due to Wide Bandgap Inverter Supply. *Millinger, J.*, +, *TIE Aug. 2020 6280-6289*

Lateral GaN Schottky Barrier Diode for Wireless High-Power Transfer Application With High RF/DC Conversion Efficiency: From Circuit Construction and Device Technologies to System Demonstration. *Dang, K.*, +, *TIE Aug. 2020 6597-6606*

Modulation Induced Current Imbalance and Its Sensorless Control of a GaN-Based Four-Phase DC–DC Power Amplifier. *Wang, C.*, +, *TIE Feb. 2020 1520-1531*

Performance and Reliability Review of 650 V and 900 V Silicon and SiC Devices: MOSFETs, Cascode JFETs and IGBTs. *Gonzalez, J.O.*, +, *TIE Sept. 2020 7375-7385*

Single-Stage High-Efficiency 48/1 V Sigma Converter With Integrated Magnetics. *Ahmed, M.H.*, +, *TIE Jan. 2020 192-202*

The Impact of Temperature and Switching Rate on Dynamic Transients of High-Voltage Silicon and 4H-SiC NPN BJTs: A Technology Evaluation. *Jahdi, S.*, +, *TIE June 2020 4556-4566*

Wideband amplifiers

A Fault-Tolerant Wideband Amplifier Based on Distributed Amplification Topology. *Zheng, S.Y.*, +, *TIE June 2020 4516-4526*

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A Brushless Doubly Fed Generator Based on Permanent Magnet Field Modulation. *Zhang, J.*, +, *TIE May 2020 3505-3516*

Common-Mode and Phase-to-Ground Voltage Reduction in Back-to-Back Power Converters With Discontinuous PWM. *Samanes, J.*, +, *TIE Sept. 2020 7499-7508*

Wind power plants

A Brushless Doubly Fed Generator Based on Permanent Magnet Field Modulation. *Zhang, J.*, +, *TIE May 2020 3505-3516*

Bearing Corrosion Failure Diagnosis of Doubly Fed Induction Generator in Wind Turbines Based on Stator Current Analysis. *Chen, X.*, +, *TIE May 2020 3419-3430*

Crowbarless Symmetrical Low-Voltage Ride Through Based on Flux Linkage Tracking For Brushless Doubly Fed Induction Generators. *Zhang, A.*, +, *TIE Sept. 2020 7606-7616*

Full Converter Control for Variable-Speed Wind Turbines Without Integral Controller or PLL. *Koiwa, K.*, +, *TIE Nov. 2020 9418-9428*

In-Service Wind Turbine DFIG Diagnosis Using Current Signature Analysis. *Artigao, E.*, +, *TIE March 2020 2262-2271*

Mileage-Responsive Wind Power Smoothing. *Lyu, X.*, +, *TIE June 2020 5209-5212*

Minimum-Loss Control Strategy for a Dual-VSI DFIG DC System. *Marques, G.D.*, +, *TIE Oct. 2020 8175-8185*

Naturally Damaged Wind Turbine Blade Bearing Fault Detection Using Novel Iterative Nonlinear Filter and Morphological Analysis. *Liu, Z.*, +, *TIE Oct. 2020 8713-8722*

Parallel Nine-Phase Generator Control in a Medium-Voltage DC Wind System. *Beik, O.*, +, *TIE Oct. 2020 8112-8122*

Sensorless SynRG Based Variable Speed Wind Generator and Single-Stage Solar PV Array Integrated Grid System With Maximum Power Extraction Capability. *Vijay, M.D.*, +, *TIE Sept. 2020 7529-7539*

Series-Connected-Based Offshore Wind Farms With Full-Bridge Modular Multilevel Converter as Grid- and Generator-side Converters. *Guo, G.*, +, *TIE April 2020 2798-2809*

Weak Grid Inertia WEGS With Hybrid Generalized Integrator for Power Quality Improvement. *Chishti, F.*, +, *TIE Feb. 2020 1113-1123*

Wind turbines

An Incorrect Data Detection Method for Big Data Cleaning of Machinery Condition Monitoring. *Xu, X.*, +, *TIE March 2020 2326-2336*

Bearing Corrosion Failure Diagnosis of Doubly Fed Induction Generator in Wind Turbines Based on Stator Current Analysis. *Chen, X.*, +, *TIE May 2020 3419-3430*

- Composite Hierarchical Pitch Angle Control for a Tidal Turbine Based on the Uncertainty and Disturbance Estimator. *Yin, X.*, +, *TIE Jan. 2020* 329-339
- Crowbarless Symmetrical Low-Voltage Ride Through Based on Flux Linkage Tracking For Brushless Doubly Fed Induction Generators. *Zhang, A.*, +, *TIE Sept. 2020* 7606-7616
- Detection of Winding Asymmetries in Wound-Rotor Induction Motors via Transient Analysis of the External Magnetic Field. *Zamudio-Ramirez, I.*, +, *TIE June 2020* 5050-5059
- Full Converter Control for Variable-Speed Wind Turbines Without Integral Controller or PLL. *Koiva, K.*, +, *TIE Nov. 2020* 9418-9428
- In-Service Wind Turbine DFIG Diagnosis Using Current Signature Analysis. *Artigao, E.*, +, *TIE March 2020* 2262-2271
- Mileage-Responsive Wind Power Smoothing. *Lyu, X.*, +, *TIE June 2020* 5209-5212
- Naturally Damaged Wind Turbine Blade Bearing Fault Detection Using Novel Iterative Nonlinear Filter and Morphological Analysis. *Liu, Z.*, +, *TIE Oct. 2020* 8713-8722
- Parallel Nine-Phase Generator Control in a Medium-Voltage DC Wind System. *Beik, O.*, +, *TIE Oct. 2020* 8112-8122
- Sensorless SynRG Based Variable Speed Wind Generator and Single-Stage Solar PV Array Integrated Grid System With Maximum Power Extraction Capability. *Vijay, M. D.*, +, *TIE Sept. 2020* 7529-7539
- Virtual Temperature Detection of Semiconductors in a Megawatt Field Converter. *Rannestad, B.*, +, *TIE Feb. 2020* 1305-1315
- Weak Grid Intertie WEGS With Hybrid Generalized Integrator for Power Quality Improvement. *Chishtii, F.*, +, *TIE Feb. 2020* 1113-1123
- Windings**
- A 20 MHz Low-Profile DC–DC Converter With Magnetic-Free Characteristics. *Guan, Y.*, +, *TIE Feb. 2020* 1555-1567
- A New Coupled Inductor Nonisolated High Step-Up Quasi Z-Source DC–DC Converter. *Samadian, A.*, +, *TIE July 2020* 5389-5397
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- Wireless channels**
- Massive MIMO With Massive Connectivity for Industrial Internet of Things. *Lee, B.M.*, +, *TIE June 2020* 5187-5196
- SmartLoc: Smart Wireless Indoor Localization Empowered by Machine Learning. *Li, L.*, +, *TIE Aug. 2020* 6883-6893
- Wireless LAN**
- A Multiperson Behavior Feature Generation Model Based on Noise Reduction Using WiFi. *Wenyuan, L.*, +, *TIE June 2020* 5179-5186
- Leaderless Consensus of Ring-Networked Mobile Robots via Distributed Saturated Control. *Lu, P.*, +, *TIE Dec. 2020* 10723-10731
- Wireless sensor networks**
- A Game Approach to Distributed Robust Optimal Filtering With Consensus Through Multiple Sensors: Theory and Application. *Feng, Y.*, +, *TIE Nov. 2020* 9693-9702
- A Gossip-Based Distributed Algorithm for Economic Dispatch in Smart Grids With Random Communication Link Failures. *Wang, R.*, +, *TIE June 2020* 4635-4645
- Charge-Based Supercapacitor Storage Estimation for Indoor Sub-mW Photovoltaic Energy Harvesting Powered Wireless Sensor Nodes. *Yue, X.*, +, *TIE March 2020* 2411-2421
- Modeling and State-of-Charge Estimation of Supercapacitor Considering Leakage Effect. *Saha, P.*, +, *TIE Jan. 2020* 350-357
- SCSMA: A Smart CSMA/CA Using Blind Learning for Wireless Sensor Networks. *Nguyen, T.T.*, +, *TIE Dec. 2020* 10981-10988
- Thermoelectric Energy Harvesting From Gradients in the Earth Surface. *Sigrist, L.*, +, *TIE Nov. 2020* 9460-9470
- Wires (electric)**
- Thermal Overload and Insulation Aging of Short Duty Cycle, Aerospace Motors. *Madonna, V.*, +, *TIE April 2020* 2618-2629
- Work-holding devices**
- Performance Enhancement of RCS and Application to Tracking Control of Chuck-Workpiece Systems. *Zhou, L.*, +, *TIE May 2020* 4056-4065
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- Y**
- Young's modulus**
- Piezoelectric Motor Utilizing an Alumina/PZT Transducer. *Wu, J.*, +, *TIE Aug. 2020* 6762-6772
- Z**
- Zero current switching**
- A 13.56-MHz Full-Bridge Class-D ZVS Inverter With Dynamic Dead-Time Control for Wireless Power Transfer Systems. *Tebianian, H.*, +, *TIE Feb. 2020* 1487-1497
- A High Step-Down Buck Converter With Self-Driven Synchronous Rectifier. *Soleymani, B.*, +, *TIE Dec. 2020* 10266-10273
- A High-Frequency Link Matrix Rectifier With a Pure Capacitive Output Filter in a Discontinuous Conduction Mode. *Lan, D.*, +, *TIE Jan. 2020* 4-15
- A Hybrid Interleaved DC–DC Converter With a Wide Step-Up Regulation Range and Ultralow Voltage Stress. *Hu, X.*, +, *TIE July 2020* 5479-5489
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- A ZVT Bidirectional Converter With Coupled-Filter-Inductor and Elimination of Input Current Notches. *Mohammadi, M.R.*, +, *TIE Sept. 2020* 7461-7469
- Active Class E Rectifier for DC Output Voltage Regulation in Megahertz Wireless Power Transfer Systems. *Liu, M.*, +, *TIE May 2020* 3618-3628
- An Approach Towards Extreme Fast Charging Station Power Delivery for Electric Vehicles with Partial Power Processing. *Iyer, V.M.*, +, *TIE Oct. 2020* 8076-8087
- An Interleaved Three-Phase PWM Single-Stage Resonant Rectifier With High-Frequency Isolation. *Li, G.*, +, *TIE Aug. 2020* 6572-6582
- An Ultra-High Step-Up DC–DC Converter With Extendable Voltage Gain and Soft-Switching Capability. *Alavi, P.*, +, *TIE Nov. 2020* 9238-9250
- Analysis and Design of the LLC Resonant Converter With Variable Inductor Control Based on Time-Domain Analysis. *Wei, Y.*, +, *TIE July 2020* 5432-5443
- Bidirectional Isolated Current-Source DAB Converter With Extended ZVS/ZCS Range and Reduced Energy Circulation for Storage Applications. *Blinov, A.*, +, *TIE Dec. 2020* 10552-10563
- Fully Soft-Switched High Step-Up Nonisolated Three-Port DC–DC Converter Using GaN HEMTs. *Faraji, R.*, +, *TIE Oct. 2020* 8371-8380
- High-Efficiency Zero-Voltage-Switching Totem-Pole Bridgeless Rectifier With Integrated Inrush Current Limiter Circuit. *Jeong, Y.*, +, *TIE Sept. 2020* 7421-7429
- High-Frequency Resonant ZVS Boost Converter With Grounded Switches and Continuous Input Current. *Jabbari, M.*, +, *TIE Feb. 2020* 1059-1067
- Magnetic Coupling Branch Based Dual-Input/Output DC–DC Converters With Improved Cross-Regulation and Soft-Switching Operation. *Liu, Y.*, +, *TIE Sept. 2020* 7167-7178
- Minimization of Abnormal Output Voltage Rising for LLC Resonant Converter at Very Light Load. *Kim, C.*, *TIE Dec. 2020* 10295-10303
- Soft Switching Bidirectional Converter for Reflex Charger With Minimum Switches. *Ahmadi, F.*, +, *TIE Oct. 2020* 8355-8362
- Soft-Switched High Step-Up Quasi-Z-Source DC–DC Converter. *Poorali, B.*, +, *TIE June 2020* 4547-4555
- Soft-Switching Bidirectional Buck/Boost Converter With a Lossless Passive Snubber. *Mohammadi, M.R.*, +, *TIE Oct. 2020* 8363-8370

- Triple-Compound-Full-Bridge-Based Multi-Input Converter With Wide Zero-Voltage Switching Range and Wide Conversion Gain. *Zeng, J., +, TIE Nov. 2020 9260-9272*
- Zero Voltage Switching Control Method for MHz Boundary Conduction Mode Converters. *Hernandez, J.C., +, TIE Feb. 2020 1544-1554*
- Zero voltage switching**
- 1-kV Input 1-MHz GaN Stacked Bridge LLC Converters. *Zhang, Z., +, TIE Nov. 2020 9227-9237*
- A 13.56-MHz Full-Bridge Class-D ZVS Inverter With Dynamic Dead-Time Control for Wireless Power Transfer Systems. *Tebianian, H., +, TIE Feb. 2020 1487-1497*
- A 300-kHz 6.6-kW SiC Bidirectional LLC Onboard Charger. *Li, H., +, TIE Feb. 2020 1435-1445*
- A Dual Half-Bridge Converter With Current Doubler Rectifier. *Zhao, L., +, TIE Aug. 2020 6398-6406*
- A GaN-Based DC–DC Module for Railway Applications: Design Consideration and High-Frequency Digital Control. *Fu, M., +, TIE Feb. 2020 1638-1647*
- A High-Frequency Link Matrix Rectifier With a Pure Capacitive Output Filter in a Discontinuous Conduction Mode. *Lan, D., +, TIE Jan. 2020 4-15*
- A New and Modular Active Snubber Cell for Inverters. *Bodur, H., +, TIE Jan. 2020 288-296*
- A New Soft Switching DC–DC Converter With High Voltage Gain Capability. *Mohseni, P., +, TIE Sept. 2020 7386-7398*
- A Novel Current Modulation Method to Eliminate Low-Frequency Harmonics in Single-Stage Dual Active Bridge AC–DC Converter. *Zengin, S., +, TIE Feb. 2020 1048-1058*
- A PWM ZVS High-Frequency-Link Three-Phase Inverter With T-Type NPC Unfolder. *Pal, A., +, TIE Sept. 2020 7146-7156*
- A ZVT Bidirectional Converter With Coupled-Filter-Inductor and Elimination of Input Current Notches. *Mohammadi, M.R., +, TIE Sept. 2020 7461-7469*
- Active Class E Rectifier for DC Output Voltage Regulation in Megahertz Wireless Power Transfer Systems. *Liu, M., +, TIE May 2020 3618-3628*
- An Active-Clamping ZVS Interleaved Buck/Boost Bidirectional Converter With One Auxiliary Switch. *Mohammadi, M.R., TIE Sept. 2020 7430-7438*
- An Approach Towards Extreme Fast Charging Station Power Delivery for Electric Vehicles with Partial Power Processing. *Iyer, V.M., +, TIE Oct. 2020 8076-8087*
- An H5-Bridge-Based Asymmetric LLC Resonant Converter With an Ultrawide Output Voltage Range. *Li, C., +, TIE Nov. 2020 9503-9514*
- An Interleaved Secondary-Side Modulated LLC Resonant Converter for Wide Output Range Applications. *Li, Z., +, TIE Feb. 2020 1124-1135*
- An Interleaved Three-Phase PWM Single-Stage Resonant Rectifier With High-Frequency Isolation. *Li, G., +, TIE Aug. 2020 6572-6582*
- An Ultra-High Step-Up DC–DC Converter With Extendable Voltage Gain and Soft-Switching Capability. *Alavi, P., +, TIE Nov. 2020 9238-9250*
- Analysis and Design of Phase-Shift Pulse-Frequency-Modulated Full-Bridge LCC Resonant Converter. *Chen, Y., +, TIE Feb. 2020 1092-1102*
- Analysis and Design of the LLC Resonant Converter With Variable Inductor Control Based on Time-Domain Analysis. *Wei, Y., +, TIE July 2020 5432-5443*
- Analysis and Optimal Design of High-Frequency and High-Efficiency Asymmetrical Half-Bridge Flyback Converters. *Li, M., +, TIE Oct. 2020 8312-8321*
- Analysis, Design, and Implementation of a ZVT High Step-Up DC–DC Converter With Continuous Input Current. *Fani, R., +, TIE Dec. 2020 10455-10463*
- Bidirectional Isolated Current-Source DAB Converter With Extended ZVS/ZCS Range and Reduced Energy Circulation for Storage Applications. *Blinov, A., +, TIE Dec. 2020 10552-10563*
- Burst-Mode and Phase-Shift Hybrid Control Method of LLC Converters for Wide Output Range Applications. *Shi, L., +, TIE Feb. 2020 1013-1023*
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- Direct Single-Power-Conversion Bidirectional Grid-Connected Inverter Solving Commutation Problem. *Jeong, S., +, TIE Dec. 2020 10335-10345*
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- Enhanced Dual-Active-Bridge DC–DC Converter for Balancing Bipolar Voltage Level of DC Distribution System. *Lee, J., +, TIE Dec. 2020 10399-10409*
- Fully Soft-Switched High Step-Up Nonisolated Three-Port DC–DC Converter Using GaN HEMTs. *Faraji, R., +, TIE Oct. 2020 8371-8380*
- High-Efficiency Zero-Voltage-Switching Totem-Pole Bridgeless Rectifier With Integrated Inrush Current Limiter Circuit. *Jeong, Y., +, TIE Sept. 2020 7421-7429*
- High-Frequency Resonant ZVS Boost Converter With Grounded Switches and Continuous Input Current. *Jabbari, M., +, TIE Feb. 2020 1059-1067*
- High-Frequency Single-Switch ZVS Gate Driver Based on a Class Φ_2 Resonant Inverter. *Jedi, H., +, TIE June 2020 4527-4535*
- IGCT Low-Current Switching—TCAD and Experimental Characterization. *Stamenkovic, D., +, TIE Aug. 2020 6302-6311*
- Magnetic Coupling Branch Based Dual-Input/Output DC–DC Converters With Improved Cross-Regulation and Soft-Switching Operation. *Liu, Y., +, TIE Sept. 2020 7167-7178*
- Minimization of Abnormal Output Voltage Rising for LLC Resonant Converter at Very Light Load. *Kim, C., TIE Dec. 2020 10295-10303*
- Modulation Scheme of Dual Active Bridge Converter for Seamless Transitions in Multiworking Modes Compromising ZVS and Conduction Loss. *Guo, Z., TIE Sept. 2020 7399-7409*
- Single-Stage Voltage Balancer With High-Frequency Isolation for Bipolar LVDC Distribution System. *Lee, J., +, TIE May 2020 3596-3606*
- Soft Switching Bidirectional Converter for Reflex Charger With Minimum Switches. *Ahmadi, F., +, TIE Oct. 2020 8355-8362*
- Soft-Switched High Step-Up Quasi-Z-Source DC–DC Converter. *Poorali, B., +, TIE June 2020 4547-4555*
- Soft-Switching Bidirectional Buck/Boost Converter With a Lossless Passive Snubber. *Mohammadi, M.R., +, TIE Oct. 2020 8363-8370*
- Triple-Compound-Full-Bridge-Based Multi-Input Converter With Wide Zero-Voltage Switching Range and Wide Conversion Gain. *Zeng, J., +, TIE Nov. 2020 9260-9272*
- Weighted Efficiency Enhancement for Single-Power-Conversion Microinverters Using Hybrid-Mode Modulation Strategy. *Kim, K., +, TIE Dec. 2020 10243-10252*
- Zero Voltage Switching Control Method for MHz Boundary Conduction Mode Converters. *Hernandez, J.C., +, TIE Feb. 2020 1544-1554*
- Zinc**
- Neurofuzzy-Based Plant-Wide Hierarchical Coordinating Optimization and Control: An Application to Zinc Hydrometallurgy Plant. *Xie, S., +, TIE March 2020 2207-2219*
- Zinc compounds**
- Joint SoC and SoH Estimation for Zinc–Nickel Single-Flow Batteries. *Li, S., +, TIE Oct. 2020 8484-8494*