

# 2020 Index

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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.

The Author Index contains the primary entry for each item, listed under the first author's name. The primary entry includes the coauthors' names, the title of the paper or other item, and its location, specified by the publication abbreviation, year, month, and inclusive pagination. The Subject Index contains entries describing the item under all appropriate subject headings, plus the first author's name, the publication abbreviation, month, and year, and inclusive pages. Note that the item title is found only under the primary entry in the Author Index.

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A High-Voltage UWB Pulse Generator Using Passive Amplification in 65-nm CMOS. *Gao, S., +, TCSI Dec. 2020 5530-5539*

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An Efficient Implementation of the NewHope Key Exchange on FPGAs. *Xing, Y., +, TCSI March 2020 866-878*

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**Quantum gates**

VPQC: A Domain-Specific Vector Processor for Post-Quantum Cryptography Based on RISC-V Architecture. *Xin, G., +, TCSI Aug. 2020 2672-2684*

**R****Radar**

A 12-GHz Calibration-Free All-Digital PLL for FMCW Signal Generation With 78 MHz/μs Chirp Slope and High Chirp Linearity. *Shen, Z., +, TCSI Dec. 2020 4445-4456*

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Tunable Block Floating-Point Quantizer With Fractional Exponent for Compressing Non-Uniformly Distributed Signals. *Tsai, P., +, TCSI April 2020 1245-1254*

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An Efficient Sinusoid-Like Pseudo Random Sequence Modulator/Demodulator System With Reduced Adjacent Channel Leakage and High Rejection to Random and Systematic Interference. *Shao, J., +, TCSI Nov. 2020 3790-3803*

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  - A 270-mV 6T SRAM Using Row-Based Dual-Phase V<sub>DD</sub> Control in 28-nm CMOS. *Lu, C., +, TCSI Dec. 2020 4774-4783*
  - A Broadband Doherty Power Amplifier With Hybrid Class-EFJ Mode. *Zhang, Z., +, TCSI Dec. 2020 4270-4280*
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  - A Multi-Folded MCML for Ultra-Low-Voltage High-Performance in Deeply Scaled CMOS. *Palumbo, G., +, TCSI Dec. 2020 4696-4706*
  - A PVT-Resilient, Highly-Linear Fifth-Order Ring-Oscillator-Based Filter. *Osman, H., +, TCSI Dec. 2020 4295-4308*
  - Automated Deep Neural Learning-Based Optimization for High Performance High Power Amplifier Designs. *Kouhalvandi, L., +, TCSI Dec. 2020 4420-4433*
  - Broadband Balun-LNA Employing Local Feedback  $g_m$ -Boosting Technique and Balanced Loads for Low-Power Low-Voltage Applications. *Kim, S., +, TCSI Dec. 2020 4631-4640*
  - Cell Weighting and Gate Inductive Peaking Techniques for Wideband Noise Suppression in Distributed Amplifiers. *Mesgari, B., +, TCSI Dec. 2020 4507-4520*
  - Compensation Network Optimal Design Based on Evolutionary Algorithm for Inductive Power Transfer System. *Chen, W., +, TCSI Dec. 2020 5664-5674*
  - Controllability of Deep-Coupling Dynamical Networks. *Wu, J., +, TCSI Dec. 2020 5211-5222*
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- Torque**
- A Self-Matching Complementary-Reference Sensing Scheme for High-Speed and Reliable Toggle Spin Torque MRAM. *Wang, J., +, TCSI Dec. 2020 4247-4258*
- Touch sensitive screens**
- A -24 dB in-Band Noise-Immunity Mutual Capacitance Readout System for Variable Refresh Rate of Active-Matrix OLED Display. *Ko, S.H., TCSI April 2020 1126-1135*
  - Differential Coded Multiple Signaling Method With Fully Differential Receiver for Mutual Capacitive Fingerprint TSP. *Heo, S., +, TCSI Jan. 2020 74-85*
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- A Low-Complexity 6DOF Magnetic Tracking System Based on Pre-Computed Data Sets for Wearable Applications. *Guzman, D.A.F., +, TCSI Dec. 2020 5065-5078*
  - Discrete-Communication-Based Bipartite Tracking of Networked Robotic Systems via Hierarchical Hybrid Control. *Ding, T., +, TCSI April 2020 1402-1412*
- Training data**
- A Calibration Technique for Simultaneous Estimation of Actual Sensing Matrix Coefficients on Modulated Wideband Converters. *Byambadorj, Z., +, TCSI Dec. 2020 5561-5573*
  - Hardware-Algorithm Co-Design of a Compressed Fuzzy Active Learning Method. *Jokar, E., +, TCSI Dec. 2020 4932-4945*
- Trajectory**
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- Transforms**
- Dynamic Harmonic Analysis With FIR Filters Designed With O-Splines. *Serna, J.A.d.l.O., TCSI Dec. 2020 5092-5100*

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- Transmission line measurements**
- Power Amplifier With Load Impedance Sensing Incorporated Into the Output Matching Network. Donahue, D.T., +, TCSI Dec. 2020 5113-5124
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- An Integrated, Software-Defined FDD Transceiver: Distributed Duplexing Theory and Operation. Tapen, T., +, TCSI Jan. 2020 271-283
- Design of a 77-GHz LC-VCO With a Slow-Wave Coplanar Stripline-Based Inductor. Sharma, E., +, TCSI Feb. 2020 378-388
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- Trees (mathematics)**
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- Turing Meets Circuit Theory: Not Every Continuous-Time LTI System Can be Simulated on a Digital Computer. Boche, H., +, TCSI Dec. 2020 5051-5064
- Tutorials**
- Incremental Delta-Sigma ADCs: A Tutorial Review. Tan, Z., +, TCSI Dec. 2020 4161-4173
- Two-port networks**
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**U****UHF amplifiers**

Wideband 28-nm CMOS Variable-Gain Amplifier. *Asgari, V., +, TCSI Jan. 2020 37-47*

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Analysis and Design of N-Path Band-Pass Filters With Negative Base Band Resistance. *Zolkov, E., +, TCSI July 2020 2250-2262*

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**UHF integrated circuits**

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Low-Power All-Digital Multiphase DLL Design Using a Scalable Phase-to-Digital Converter. *Angeli, N., +, TCSI April 2020 1158-1168*

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An Ultra-Low-Power Low-Voltage WuTx With Built-In Analog Sensing for Self-Powered WSN. *Karami, M.A., +, TCSI July 2020 2274-2287*

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Bandwidth Enhancement of Doherty Power Amplifier Using Modified Load Modulation Network. *Li, M., +, TCSI June 2020 1824-1834*

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Adaptive Finite-Time Control for High-Order Nonlinear Systems With Multiple Uncertainties and its Application. *Min, H., +, TCSI May 2020 1752-1761*

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**V****Varactors**

A 65–81 GHz CMOS Dual-Mode VCO Using High Quality Factor Transformer-Based Inductors. *Basaligheh, A., +, TCSI Dec. 2020 4533-4543*

A Millimeter-Wave Reconfigurable On-Chip Coupler With Tunable Power-Dividing Ratios in 0.13- $\mu$ m BiCMOS Technology. *Yang, Y., +, TCSI May 2020 1516-1526*

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**Very large scale integration**

Beamspace Channel Estimation for Massive MIMO mmWave Systems: Algorithm and VLSI Design. *Mirfarshbafan, S.H., +, TCSI Dec. 2020 5482-5495*

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A 580 nW Dual-Input Energy Harvester IC Using Multi-Task MPPT and a Current Boost Converter for Heterogeneous Source Combining. *Chandrathna, S.C., +, TCSI Dec. 2020 5650-5663*

Active Interface for Piezoelectric Harvesters Based on Multi-Variable Maximum Power Point Tracking. *Costanzo, L., +, TCSI July 2020 2503-2515*

**Video coding**

3D-HEVC Bipartition Modes Encoder and Decoder Design Targeting High-Resolution Videos. *Sanchez, G., +, TCSI Feb. 2020 415-427*

A Binary Line Buffer Circuit Featuring Lossy Data Compression at Fixed Maximum Data Rate. *Napoli, E., +, TCSI Jan. 2020 121-134*

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A Closed-Loop, All-Electronic Pixel-Wise Adaptive Imaging System for High Dynamic Range Videography. *Zhang, J., +, TCSI June 2020 1803-1814*

**Video signal processing**

A  $4K \times 2K @ 60\text{fps}$  Multifunctional Video Display Processor for High Perceptual Image Quality. *Wang, H., +, TCSI Feb. 2020 451-463*

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**Visual perception**

FPGA-Based Low-Visibility Enhancement Accelerator for Video Sequence by Adaptive Histogram Equalization With Dynamic Clip-Threshold. *Xu, C., +, TCSI Nov. 2020 3954-3964*

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Low-Energy Voice Activity Detection via Energy-Quality Scaling From Data Conversion to Machine Learning. *Teo, J.H., +, TCSI April 2020 1378-1388*

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Analysis and Design of Integrated Voltage Regulators for Supply Noise Rejection During System-Level ESD. *Xiu, Y., +, TCSI Dec. 2020 4199-4210*

CMOS High-Efficiency Wireless Battery Charging System With Global Power Control Through Backward Data Telemetry for Implantable Medical Devices. *Wu, C., +, TCSI Dec. 2020 5624-5635*

Low-Power All-Digital Multiphase DLL Design Using a Scalable Phase-to-Digital Converter. *Angeli, N., +, TCSI April 2020 1158-1168*

**Voltage dividers**

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**Voltage measurement**

Power Amplifier With Load Impedance Sensing Incorporated Into the Output Matching Network. *Donahue, D.T., +, TCSI Dec. 2020 5113-5124*

Switched-Capacitor-Assisted Power Gating for Ultra-Low Standby Power in CMOS Digital ICs. *Sankar, S., +, TCSI Dec. 2020 4281-4294*

Variability-Aware Modeling of Filamentary Oxide-Based Bipolar Resistive Switching Cells Using SPICE Level Compact Models. *Bengel, C., +, TCSI Dec. 2020 4618-4630*

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Comprehensive Conception of High Step-Up DC–DC Converters With Coupled Inductor and Voltage Multipliers Techniques. *Schmitz, L., +, TCSI June 2020 2140-2151*

**Voltage regulators**

A 92%-Efficiency Battery Powered Hybrid DC–DC Converter for IoT Applications. *Elhebeary, M., +, TCSI Oct. 2020 3342-3351*

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