

Transmission lines; cf. Power transmission lines
Transportation; cf. Land transportation; Rail ...; Road ...
Triboelectricity
 coal - clay triboelectrification. *Inculet, I.I., + , T-IA Mar/Apr 85* 514-517
Tunnels; cf. Guided radio
Turbines
 cogeneration systems economic comparison of ac motors or and steam turbine mechanical drives. *McConnell, J.E., T-IA Mar/Apr 85* 375-381

V

Varistors
 metal oxide varistor selection as surge protective devices in low-voltage applications. *Martzloff, F.D., T-IA Jan/Feb 85* 99-106
 MOV (metal-oxide-varistor) surge arresters for substation equipment protection. *Niebuhr, W.D., T-IA Jul/Aug 85* 1081-1086
Vegetation; cf. Agriculture
Vehicles
 electric wheelchairs; dynamic modeling. *Johnson, B.W., + , T-IA Sep/Oct 85* 1284-1293
Vehicles; cf. Elevators
Vibrations; cf. Mechanical factors
Voltage breakdown; cf. Dielectric breakdown

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A

ac generators; cf. Induction generators; Reluctance generators
ac machines; cf. ac motors
ac motor drives
 GTO PWM inverter operation for parallel-set, high-power ac drives. *Hashii, M., + , IAS 85 467-472*
 online area equalization algorithm for adjustable-speed ac drives with nonconstant voltage source. *Ramshaw, R.S., + , IAS 85 454-459*
 phase-back voltage control; equivalent circuit. *Khater, F.M.H., + , IAS 85 798-804*
 synchronous current regulator for ac drives; comparison with current-regulated PWM inverters. *Rowan, T.M., + , IAS 85 487-495*
 two optimal PWM schemes for current-source inverters; off-line optimization of individual switching angles and subharmonic modulation. *Namuduri, C., + , IAS 85 1087-1100*
ac motor drives; cf. Induction motor drives; Power conversion, ac - ac; Power conversion, dc - ac; Pulse-width modulation, inverters; Synchronous motor drives
ac motors
 dynamic motor tests from synchronously sampled wave forms. *Wright, F.H., + , IAS 85 742-747*
 real-time monitoring of electromagnetic torque of multiphase machines. *Vas, P., + , IAS 85 732-737*
ac motors; cf. Induction motors; Linear motors; Permanent magnet motors; Stepping motors; Synchronous motors
Acoustic noise; cf. Rotating-machine acoustic noise
Adaptive control
 aperiodic distortion in power systems; adaptive compensation using reactively loaded electronic power converter. *van Wyk, J.D., + , IAS 85 312-317*
 dc motor drives; microprocessor-based adjustable-speed drive. *Naitoh, H., + , IAS 85 524-528*
 induction motor secondary resistance identification using model-reference adaptive control. *Sugimoto, H., + , IAS 85 613-620*
 inverter-fed induction motor servo drives; sensing line voltages for parameter adaptation from transistor-base drive signals. *Krishnan, R., + , IAS 85 570-577*
 robotic arm actuated by dc drive; microprocessor-based adaptive control under load variations. *Denat, J.P., + , IAS 85 432-435*
 sliding mode control of induction motor; microcomputer implementation. *Bose, B.K., IAS 85 479-486*
 variable structure control of self-controlled synchronous motor drive. *Namuduri, C., + , IAS 85 503-509*
Adaptive control, linear systems
 detuned minimum-variance self-tuning feedforward controller; application to electric furnace. *Chai, T.-Y., + , IAS 85 1645-1649*

+ Check author entry for coauthors

Voltage control

induction machine phase balancing by unsymmetrical thyristor voltage control. *Muljadi, E., + , T-IA May/Jun 85* 669-679
 three-phase delta-connected inductive load controlled by SCR-diode switch. *Sharma, V.K., + , T-IA May/Jun 85* 555-561
Voltage regulation; cf. Voltage control

W

Waste materials; cf. Radioactive pollution

Water heaters
 heat pump water heater control. *Shaffer, J.E., Jr., T-IA Sep/Oct 85* 1254-1256
Welding; cf. Arc welding
Wheelchairs
 electric wheelchairs; dynamic modeling. *Johnson, B.W., + , T-IA Sep/Oct 85* 1284-1293 **Wound-rotor motors; cf.** Induction motors
Writing
 specifications writing for electrical work. *Pack, B., T-IA Sep/Oct 85* 1313-1318

X

X-ray imaging

electric fields in charged toner layer on photoreceptor and X-ray imaging. *Mukherjee, M.K., + , T-IA Mar/Apr 85* 535-540

Aerosols

detector for extremely small charged aerosol particles in nanometer size range. *Masuda, S., + , IAS 85 1384-1389*

Aerosols; cf. Spraying

Agriculture; cf. Spraying

Air pollution; cf. Electrostatic precipitators; Thermal power generation, air pollution

Alarm systems; cf. Monitoring

Alpha particle detectors

alpha-particle corona streamer counters; effect of temperature on performance characteristics. *Fouad, L., IAS 85 1435-1440*

Amorphous materials/devices; cf. Glass materials/devices

Arc heating

real-time measurement of electric arc furnace disturbances and parameter variations. *Lavers, J.D., + , IAS 85 108-115*

Arc welding

robotic arc welding in downhand position; control subject to constant weld travel speed constraint. *Fernandez, K., + , IAS 85 1634-1644*

Automobiles; cf. Road vehicles

B

Bandstop filters; cf. Notch filters

Batteries

selecting and sizing batteries. *Migliaro, M.W., IAS 85 345-353*

Batteries; cf. Uninterruptible power systems

Bipolar transistor switches; cf. Power bipolar transistor switches

Breakdown; cf. Dielectric breakdown; Gas discharges; Second breakdown; Semiconductor device breakdown

Bridge circuits

bridge rectifier with input filter; open-loop instability. *Shahrodi, E.B., + , IAS 85 1244-1249*

current balance in parallel power diodes of three-phase bridge rectifier. *Peeran, S.M., + , IAS 85 994-1000*

four-quadrant transistor rectifier in bridge connection with sinusoidal input currents. *Rodriguez, J., IAS 85 1055-1061*

three-phase current-source bridge inverter for induction motor drive and flexible PNM capability. *Biswas, S.K., + , IAS 85 1069-1074*

two parallel bridge rectifiers driving superconducting-magnet energy-storage coil; microcomputer-controlled current balancing. *Kustom, R.L., + , IAS 85 1101-1104*

Brushless rotating machines

brushless dc motor drives; torque ripple minimization. *Le-Huy, H., + , IAS 85 790-797*

† Check author entry for subsequent corrections/comments

IGT/COMFET latching characteristics and application to brushless dc motor drive. *SuKumar, V.*, +, *IAS 85 1777-1782*
 switched reluctance brushless drives; operating principles and design considerations. *Ray, W.F.*, +, *IAS 85 1769-1776*
 synchronous motor drive; low-speed PWM VSI-fed brushless self-excited motor drive. *Nonaka, S.*, +, *IAS 85 726-731*
Business economics; cf. Industrial power system economics

C

CAD (computer-aided design); cf. Design automation
CAM (computer-aided manufacturing); cf. Manufacturing automation
Capacitance transducers
 glass embedded capacitive-type water sensors; design optimization via modeling. *Boules, N.*, +, *IAS 85 1441-1448*
Capacitors; cf. Ceramic capacitors
Cathode-ray tube displays
 lighting of office spaces containing video display terminals; potential effect on productivity. *Brabson, G.K.*, *IAS 85 1783-1786*
Ceramic capacitors
 snubbers for power switches; nonlinear capacitance turnoff snubber. *Steyn, C.G.*, +, *IAS 85 923-928*
Ceramic materials/devices
 ceramic-based ozonizers using high-frequency discharge. *Masuda, S.*, +, *IAS 85 1353-1358*
Chaos
 temporal and spacial behavior of flow for onset of turbulence in electrohydrodynamic instability. *Yamazaki, H.*, +, *IAS 85 1534-1538*
Chemical industry; cf. Petrochemical industry
Choppers
 characteristics of chopper-fed single-phase induction motors. *Roy, G.*, +, *IAS 85 1075-1080*
 chopper integrated voltage control method for speed control of dc motor. *Irie, H.*, +, *IAS 85 405-410*
 current-limit-controlled chopper-fed separately excited dc motor; design modeling and stability analysis. *Naik, K.B.*, +, *IAS 85 1594-1601*
 high-frequency four-quadrant chopper using GTO for electric rolling stock. *Ashiya, M.*, +, *IAS 85 262-268*
 microsequencer control of four-quadrant synchronous chopper - converter combination. *Divan, D.M.*, +, *IAS 85 1105-1112*
 multiphase thyristor dc choppers driving separately excited motor; generalized analytic approach. *Bhadra, S.N.*, +, *IAS 85 399-404*
 step-up chopper drive with regeneration for battery operated vehicle control. *Dubey, G.K.*, +, *IAS 85 1052-1054*
Circuit breakers
 failures of circuit breakers applied between unsynchronized 13.8 kV electrical distribution systems. *Deaton, R.J.*, +, *IAS 85 376-382*
 standardization of benchmarks for protective-device time - current curves. *St. Pierre, C.R.*, +, *IAS 85 388-398*
 vapor-jet-control current-limiting technique; application to low-voltage breakers. *Yoshiyasu, H.*, +, *IAS 85 383-387*
Circuit breakers; cf. dc circuit breakers
Circuits; cf. Bridge circuits; Nonlinear circuits
Coal
 induction motor traction drives for large coal-handling equipment; vector control method. *Wasko, C.R.*, *IAS 85 681-684*
Cogeneration
 failures of circuit breakers applied between unsynchronized 13.8 kV electrical distribution systems. *Deaton, R.J.*, +, *IAS 85 376-382*
 safeguards for interconnected power production sources with facility or utility; impact of NEC Article 705. *Johnson, G.S.*, +, *IAS 85 318-322*
Commercial and industrial power systems; cf. Industrial power systems
Communication systems; cf. Underground electromagnetic communication
Computer-aided design; cf. Design automation
Computer-aided manufacturing; cf. Manufacturing automation
Computer facilities
 power and signal grounding for control and computer rooms. *Lewis, W.*, *IAS 85 9-22*
Computer graphics; cf. Engineering drawings
Computer interfaces, human factors; cf. Displays, human factors
Computers; cf. Personal computers
Conductivity
 electrical conductivity of packed particle beds; experimental results on glass beds. *Bares, J.*, *IAS 85 1424-1428*
Conductors; cf. Power transmission lines
Contactors
 testing and evaluation of low-voltage ac airbreak contactors. *Narasimha, G.*, *IAS 85 1627-1633*
Control systems; cf. Digital control; Feedforward systems; Industrial control; Industrial power system control; Manufacturing automation; Poles and zeros; Process control; Programmable control; Servosystems

Corona

alpha-particle corona streamer counters; effect of temperature on performance characteristics. *Fouad, L.*, *IAS 85 1435-1440*
 mathematical-physical model of corona from surges on high-voltage lines. *Abdel-Salam, M.*, +, *IAS 85 1364-1371*
Corona; cf. Electrostatic precipitators
Current control
 synchronous current regulator for ac drives; comparison with current-regulated PWM inverters. *Rowan, T.M.*, +, *IAS 85 487-495*
Current limiters; cf. Fault current limiters
Current transducers
 precision dc current sensor for closed-loop applications. *Cilyo, F.F.*, *IAS 85 1602-1605*
Cycloconverters; cf. Power conversion, ac - ac

D

Data acquisition; cf. Measurement-system data handling
Data flow computing
 data flow structure for maintainable software in railway electric substation control systems. *Suzuki, Y.*, +, *IAS 85 219-223*
dc - dc power conversion; cf. Power conversion, dc - dc
dc circuit breakers
 rapid-transit system application criteria. *Sarkar, S.*, *IAS 85 269-273*
dc motor drives
 brushless dc motor drives; torque ripple minimization. *Le-Huy, H.*, +, *IAS 85 790-797*
 chopper integrated voltage control method for speed control of dc motor. *Irie, H.*, +, *IAS 85 405-410*
 current-limit-controlled chopper-fed separately excited dc motor; design modeling and stability analysis. *Naik, K.B.*, +, *IAS 85 1594-1601*
 high-frequency four-quadrant chopper using GTO for electric rolling stock. *Ashiya, M.*, +, *IAS 85 262-268*
 IGT/COMFET latching characteristics and application to brushless dc motor drive. *SuKumar, V.*, +, *IAS 85 1777-1782*
 microprocessor-based adjustable-speed drive using model-reference adaptive control. *Naitoh, H.*, +, *IAS 85 524-528*
 microsequencer control of four-quadrant synchronous chopper - converter combination. *Divan, D.M.*, +, *IAS 85 1105-1112*
 multiphase thyristor dc choppers driving separately excited motor; generalized analytic approach. *Bhadra, S.N.*, +, *IAS 85 399-404*
 open-loop and closed-loop performance of an ac - dc PWM-converter-controlled separately excited dc motor drive. *Doradla, S.R.*, +, *IAS 85 411-418*
 oscillatory-mode tabular brushless dc motor drive with microprocessor-based controller. *Topmiller, D.A.*, +, *IAS 85 536-541*
 robot joint servo; digital control. *Jakubowicz, A.*, +, *IAS 85 419-425*
 robotic arm actuated by dc drive; microprocessor-based adaptive control under load variations. *Denat, J.P.*, +, *IAS 85 432-435*
dc motor drives; cf. Power conversion, ac - dc
dc power systems
 mine dc power track/trolley haulage systems; impedance calculation for fuse protection. *Tylavsky, D.J.*, *IAS 85 206-212*
 ungrounded dc systems, selective ground-fault detection relay. *Ho, C.*, +, *IAS 85 201-205*
dc power systems; cf. Rail-transportation electrical systems
dc power transmission lines; cf. HVDC transmission lines
Decoupling of systems, linear
 universal finishing mills; automatic gauge control using decoupling control method. *Fukutani, K.*, +, *IAS 85 1658-1671*
Design automation
 technology trends in CAD/CAM. *Weisberg, D.E.*, *IAS 85 129-133*
Dielectric breakdown
 prebreakdown phenomena and gas chemical reactions in water; pulsed HV discharges. *Clements, J.S.*, +, *IAS 85 1372-1383*
Dielectric breakdown; cf. Gas discharges
Dielectric materials/devices; cf. Liquid dielectric materials/devices
Digital control
 low-cost control for glass manufacture. *Qualey, D.*, +, *IAS 85 97-99*
 robot joint servo; digital control. *Jakubowicz, A.*, +, *IAS 85 419-425*
 robotic arm actuated by dc drive; microprocessor-based adaptive control under load variations. *Denat, J.P.*, +, *IAS 85 432-435*
Digital control; cf. Specific topic
Diode lasers; cf. Semiconductor lasers
Discharges; cf. Gas discharges
Discrete-time systems; cf. Linear systems
Displays, human factors
 lighting of office spaces containing video display terminals; potential effect on productivity. *Brabson, G.K.*, *IAS 85 1783-1786*
Distortion
 aperiodic distortion in power systems; adaptive compensation using reactively loaded electronic power converter. *van Wyk, J.D.*, +, *IAS 85 312-317*

Distortion; cf. Harmonic distortion

Distributed control

low-cost control for glass manufacture. *Qualey, D., +, IAS 85 97-99*

Distribution of electric power; cf. Industrial power systems

Documentation

universal programming documentation for programmable controllers. *Brickley, J.H., IAS 85 145*

E

Economics; cf. Industrial power system economics; Power system economics

Educational technology

educational tools for visualization of applied electroquasistatic and magnetoquasistatic phenomena using personal computers. *Hoburg, J.F., IAS 85 1449-1454*

Electric automobiles; cf. Road-vehicle electric propulsion

Electric heating; cf. Heating

Electric machines; cf. Motors

Electric shock

protective flash equipment to improve safety of operators. *Jordan, W.C., IAS 85 1729-1732*

Electric shock; cf. Mining industry, safety

Electric variables control; cf. Current control; Voltage control

Electric variables transducers; cf. Capacitance transducers; Current transducers

Electrical engineering education; cf. Electromagnetic engineering education; Power engineering education

Electrochemical devices

solid electrolyte cell for power-plant SO₂ emission monitor. *Jones, J.E., IAS 85 1612-1626*

Electrohydrodynamics

convective flow pattern in dielectric regime in nematic liquid crystals. *Yamazaki, H., +, IAS 85 3*

electrohydrodynamic simulation of electrostatic precipitators. *Atten, P., +, IAS 85 1528-1533*

finite-amplitude convection of liquids subjected to unipolar injection; numerical modeling. *Castellanos, A., +, IAS 85 1580-1585*

inductive electrodynamic pump in vertical orientation; theory. *Seyed-Yagoobi, J., +, IAS 85 1567-1573*

inductive electrohydrodynamic pump in vertical orientation; experimental study. *Seyed-Yagoobi, J., +, IAS 85 1574-1579*

influence of electrohydrodynamics on D-E hysteresis in ferroelectric liquid crystals. *Imasaki, M., +, IAS 85 1542-1547*

influence of external noises on electrohydrodynamics in nematic liquid crystal. *Kai, S., +, IAS 85 1555-1562*

particle trajectories in high-gradient dielectric separation under transverse mode in nonconducting liquid. *Shalom, A.L., +, IAS 85 1590-1593*

stratified gas - liquid two-phase electrohydrodynamics in pipe flow. *Chang, J.-S., IAS 85 1586-1589*

temporal and spacial behavior of flow for onset of turbulence in electrohydrodynamic instability. *Yamazaki, H., +, IAS 85 1534-1538*

transient oscillation phenomena in electrohydrodynamic instability of nematic liquid crystals. *Kai, S., +, IAS 85 1548-1554*

Electrolysis; cf. Electrochemical processes

Electromagnetic engineering education

educational tools for visualization of applied electroquasistatic and magnetoquasistatic phenomena using personal computers. *Hoburg, J.F., IAS 85 1449-1454*

Electromagnetic heating; cf. Induction heating; Resistance heating

Electromagnetic induction; cf. Induction heating

Electromagnetic interference; cf. Electrostatic interference

Electromagnetic interference, conducted

conductive interference in rapid-transit signaling system; model. *Holmstrom, F.R., IAS 85 230-237*

Electromagnetic measurements; cf. Magnetic measurements

Electromagnetic transient analysis; cf. Power system transients

Electromagnets, pulsed

detailed design of 13-kA 13-kV dc solid-state turn-off switch for use in nuclear fusion reactor. *Praeg, W.F., IAS 85 1221-1226*

Electrooptic materials/devices; cf. Liquid crystal materials/devices

Electrophoresis

electrophoretic liquid developers for continuous-tone electrophotography. *Murray, H., IAS 85 1497-1501*

particle trajectories in high-gradient dielectric separation under transverse mode in nonconducting liquid. *Shalom, A.L., +, IAS 85 1590-1593*

Electrophotography

crossover function for insulative and conductive two-component magnetic brush development in electrophotography; intermediate conductivities. *Folkins, J.J., IAS 85 1510-1514*

diode laser printer with organic photoconductor and triboelectric magnetic toner; electrophotographic properties. *Shimada, A., +, IAS 85 1480-1484*

electrical conductivity of packed particle beds used in electrophotography. *Bares, J., IAS 85 1424-1428*

electrical properties of conductive two-component xerographic developer; electroded cell measurements. *Hays, D.A., IAS 85 1515-1519*

electrophoretic liquid developers for continuous-tone electrophotography. *Murray, H., IAS 85 1497-1501*

mapping field lines and equipotentials in electric field problems using charge simulation technique. *Elmoursi, A.A., +, IAS 85 1467-1473*

proposal for electrophotography using temporary dielectric layer. *Mukherjee, M.K., +, IAS 85 1396-1398*

simulation of toner depositing process in xerographic image studies. *Teshigawara, T., +, IAS 85 1520-1524*

single-component development process using edge enhancement effects of floating electrodes; model. *Takeda, F., +, IAS 85 1491-1496*

single-component electrophotographic development system; design of electrostatic fields. *Sakamoto, K., +, IAS 85 1502-1509*

toner charge spectrograph for real-time display of toner charge distribution, using electrostatic precipitator for particle separation. *Bares, J., IAS 85 1525-1527*

xerographic development using single-component triboelectrically charged nonmagnetic toner. *Hosoya, M., +, IAS 85 1485-1490*

Electrostatic analysis

adapting available finite-element heat transfer programs to solve 2-D and 3-D electrostatic field problems. *Ostergaard, D.F., IAS 85 1455-1461*

educational tools for visualization of applied electroquasistatic and magnetoquasistatic phenomena using personal computers. *Hoburg, J.F., IAS 85 1449-1454*

electric field solutions of Laplace's equation using personal computer spreadsheet programs. *Crowley, J.M., IAS 85 1474-1479*

finite-element/method of characteristics computations of self-consistent charge density; electric field structures. *Hoburg, J.F., +, IAS 85 1399-1406*

mapping field lines and equipotentials in electric field problems using charge simulation technique. *Elmoursi, A.A., +, IAS 85 1467-1473*

Electrostatic devices

alpha-particle corona streamer counters; effect of temperature on performance characteristics. *Fouad, L., IAS 85 1435-1440*

ceramic-based ozonizers using high-frequency discharge. *Masuda, S., +, IAS 85 1353-1358*

Electrostatic induction

inductive electrodynamic pump in vertical orientation; theory. *Seyed-Yagoobi, J., +, IAS 85 1567-1573*

inductive electrohydrodynamic pump in vertical orientation; experimental study. *Seyed-Yagoobi, J., +, IAS 85 1574-1579*

Electrostatic interference

electrostatic discharge protection for VLSI circuits. *Greason, W.D., IAS 85 1429-1434*

Electrostatic precipitators

direct-coupled subnanosecond pulse energization in electrostatic precipitators. *Masuda, S., +, IAS 85 1288-1294*

direct-coupled subnanosecond pulse energization in electrostatic precipitators. *Masuda, S., +, IAS 85 1288-1294*

effect of tubular precipitator length on precipitation efficiency; computer modeling. *Fouad, L., IAS 85 1300-1305*

electrohydrodynamic simulation of electrostatic precipitators. *Atten, P., +, IAS 85 1528-1533*

electrostatic precipitation using spiral corona electrodes; sparkover and voltage - current characteristics. *Sokar, S.K., +, IAS 85 1325-1336*

electrostatically augmented bag filters using triboelectric charger; pilot test. *Kawamura, T., IAS 85 1412-1417*

finite element/method of characteristics computations of self-consistent charge density; modeling of electrostatic precipitators. *Hoburg, J.F., +, IAS 85 1399-1406*

interactive personal computer modeling of voltage - current curves for electrostatic precipitators. *Lawless, P.A., +, IAS 85 1462-1466*

intermittent energization of wide spacing electrostatic precipitation for power savings; comparison of two methods. *Kawamura, T., IAS 85 1308-1314*

model of positive pulsed streamers for electron energization. *Nair, R., +, IAS 85 1306-1307*

modeling particulate charging in electrostatic precipitators. *Lawless, P.A., +, IAS 85 1407-1411*

statistical data processing scheme for electrostatic precipitator experiments for benefit assessment. *Dinelli, G., +, IAS 85 1295-1299*

three-dimensional tuft corona and particle sneakage; numerical simulation. *Yamamoto, T., +, IAS 85 1359-1363*

G

- toner charge spectrograph for real-time display of toner charge distribution, using electrostatic precipitator for particle separation. *Bares, J.*, IAS 85 1525-1527
- Electrostatic processes**
 charging characteristics of particles in electrostatic separators. *Mugeraya, S.*, +, IAS 85 1315-1324
 multibbling instability of charged liquid drops. *Elghazaly, H.A.*, +, IAS 85 1337-1342
 relaxation pipe for diminution of static electricity in flowing petroleum. *Kitamura, N.*, +, IAS 85 1563-1566
 separation of small particles suspended in liquid by nonuniform travelling field produced by three-phase electric curtain device. *Masuda, S.*, +, IAS 85 1418-1423
- Electrostatic processes; cf.** Gas discharges; Spraying; Triboelectricity
- Electrostatic recording; cf.** Electrophotography
- Elevators**
 mine hoist electrical system inspection and testing. *Lever, P.J.A.*, +, IAS 85 192-194
- Energy storage; cf.** Superconducting magnets, energy storage
- Engineering drawings**
 power system protective device coordination using microcomputer-assisted drafting. *Wing, A.P.*, IAS 85 332-336
- Engineering education; cf.** Electromagnetic engineering education; Power engineering education
- Environmental radiation effects; cf.** Radioactive pollution
- Estimation**
 mine power demand in longwalls; estimation using probability functions. *Minasiewicz, S.*, +, IAS 85 213-218

F

- Fault current limiters**
 vapor-jet-control current-limiting technique; application to low-voltage breakers. *Yoshiyasu, H.*, +, IAS 85 383-387
- Fault diagnosis; cf.** Industrial power system faults
- Feedforward systems**
 detuned minimum-variance self-tuning feedforward controller; application to electric furnace. *Chai, T.-Y.*, +, IAS 85 1645-1649
 induction motor drives; tuning feedforward field-oriented controllers. *Lorenz, R.D.*, IAS 85 607-612
- Ferroelectric materials/devices**
 influence of electrohydrodynamics on D-E hysteresis in ferroelectric liquid crystals. *Imasaki, M.*, +, IAS 85 1542-1547
 snubbers for power switches; nonlinear capacitance turnoff snubber. *Steyn, C.G.*, +, IAS 85 923-928
- Ferroelectric materials/devices; cf.** Specific device
- FET switches; cf.** Power FET switches
- FETs; cf.** IGFETs; Power FETs
- Fiber optics; cf.** Optical fibers
- Filtering; cf.** Estimation
- Filters**
 active power filters using multiple voltage-source PWM converters; control strategy. *Akagi, H.*, +, IAS 85 460-466
- Filters; cf.** High-pass filters; Low-pass filters; Notch filters
- Finite-element methods**
 ac permanent magnet motors; synchronous performance prediction and improvement. *Ishizaki, A.*, +, IAS 85 824-831
 adapting available finite-element heat transfer programs to solve 2-D and 3-D electrostatic field problems. *Ostergaard, D.F.*, IAS 85 1455-1461
 finite-element/method of characteristics computations of self-consistent charge density; electric field structures. *Hoburg, J.F.*, +, IAS 85 1399-1406
 linear induction motor drives design by field analysis and finite-element methods. *Dawson, G.E.*, +, IAS 85 1762-1768
- Fires**
 firestop applications in walls and floors using elastomeric-based intumescent technology. *O'Hara, M.A.*, IAS 85 1737-1741
- Flashover**
 protective flash equipment to improve safety of operators. *Jordan, W.C.*, IAS 85 1729-1732
- Fluorescent lamps; cf.** Lighting
- Frequency conversion**
 rectifier - inverter frequency changers with suppressed dc link components. *Ziogas, P.D.*, +, IAS 85 1180-1189
- Frequency conversion; cf.** Power conversion, ac - ac
- Function generators; cf.** Signal generators
- Fuses**
 dc fuses for power semiconductor circuits. *Howe, A.F.*, +, IAS 85 916-922
 mine dc power track/trolley haulage systems; impedance calculation for fuse protection. *Tylavsky, D.J.*, IAS 85 206-212
 standardization of benchmarks for protective-device time - current curves. *St. Pierre, C.R.*, +, IAS 85 388-398

+ Check author entry for coauthors

Gas-discharge devices; cf. Electrophotography**Gas discharges**

- bipolar spray charging for leaf-tip corona reduction by space-charge control. *Cooper, S.C.*, +, IAS 85 1346-1352
 ceramic-based ozonizers using high-frequency discharge. *Masuda, S.*, +, IAS 85 1353-1358
 model of positive pulsed streamers for electron energization. *Nair, R.*, +, IAS 85 1306-1307

Gas discharges; cf. Corona; Flashover; Sparks**Glass industry**

- batch control methods. *Bowen, B.D.*, IAS 85 93-96
 electric glass furnaces; 3-D mathematical model for glass flow and heat transfer. *Choudhary, M.*, IAS 85 73-85
 electric melter design. *Drummond, C.H.*, +, IAS 85 61-66
 microprocessor-based control systems for low-cost effective control. *Qualey, D.*, +, IAS 85 97-99
 remotely operated glass melter for nuclear waste; electrical power supply, controls, and instruments. *Haideri, A.Q.*, IAS 85 86-92
 resistance of glass in multiphase multielectrode glass furnace; modeling method. *Ghandakly, A.*, IAS 85 67-72

Glass materials/devices

- glass embedded capacitive-type water sensors; design optimization via modeling. *Boules, N.*, +, IAS 85 1441-1448

Grounding

- impedance effects in large grounding systems; computer analysis. *Simpson, I.B.K.*, +, IAS 85 354-360
 mine power system grounding research. *Cooley, W.L.*, +, IAS 85 176-184
 power and signal grounding for control and computer rooms. *Lewis, W.*, IAS 85 9-22

Guideway-transportation propulsion

- linear induction motor drives design by field analysis and finite-element methods. *Dawson, G.E.*, +, IAS 85 1762-1768

H

Harmonic distortion; cf. Industrial power system harmonics; Power system harmonics**Health; cf.** Occupational health and safety**Heating; cf.** Induction heating; Process heating; Resistance heating**High-pass filters**

- harmonic distortion reduction in industrial power systems. *Gonzalez, D.A.*, +, IAS 85 361-370

Human factors; cf. Displays, human factors**HVDC transmission lines**

- finite-element/method of characteristics computations of self-consistent charge density; electric field structures. *Hoburg, J.F.*, +, IAS 85 1399-1406

Hysteresis nonlinearities

- influence of electrohydrodynamics on D-E hysteresis in ferroelectric liquid crystals. *Imasaki, M.*, +, IAS 85 1542-1547

I

IGFETs

- IGT/COMFET latching characteristics and application to brushless dc motor drive. *SuKumar, V.*, +, IAS 85 1777-1782
 insulated-gate transistors; comparison of punchthrough and non-punchthrough structures. *Yilmaz, H.*, +, IAS 85 905-908
 insulated-gate transistors; 1200-V m-channel IGT structure and process optimization. *Chen, L.-S.*, +, IAS 85 909-911

Induction; cf. Electrostatic induction**Induction generators**

- paralleled with capacitors and ac power lines through dc-link converters; extending commutating range of converter. *Hayashi, Y.*, +, IAS 85 621-626
 pulse-width controlled three switch static exciter. *Sood, P.K.*, +, IAS 85 653-661

Induction heating

- clamped six-pulse cycloinverter with parallel compensated load. *Quaicoe, J.E.*, +, IAS 85 1213-1220

Induction motor drives

- acoustic noise reduction for PWM inverter-fed induction motor; optimum inverter waveforms. *Takahashi, I.*, +, IAS 85 641-646
 auto-sequentially commutated current link inverters; modified control method for fast-response drives. *Deng, D.*, +, IAS 85 662-671
 base drive for PWM transistor inverter with high power and frequency. *Upadhyay, A.K.*, +, IAS 85 1020-1024
 characteristics of chopper-fed single-phase induction motors. *Roy, G.*, +, IAS 85 1075-1080

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- control of inverter-fed induction motor drive using state observer and rotor resistance identification. *Kubota, H.*, +, *IAS 85* 601–606
- current-source drive system with good dynamic performance and simple control. *Dewan, S.B.*, +, *IAS 85* 1650–1657
- current-source GTO inverter with sinusoidal inputs and outputs. *Hombu, M.*, +, *IAS 85* 1033–1039
- effects of machine parameters on torque characteristics studied using new vector control concept. *Ueda, R.*, +, *IAS 85* 578–585
- feedforward field-oriented control; tuning for high-performance applications. *Lorenz, R.D.*, *IAS 85* 607–612
- field-oriented control and field acceleration method analysis using matrix transformation analysis. *Alashhab, F.*, +, *IAS 85* 586–600
- field-oriented control; microprocessor-based variable-frequency drive. *Gu, L.*, +, *IAS 85* 558–563
- GTO thyristors for variable-frequency PWM induction motor drives. *Bishop, K.W.J.*, *IAS 85* 685–689
- instability of variable-frequency drives fed from voltage-source inverters. *Chin, T.H.*, *IAS 85* 704–709
- integral-cycle-control of single-phase motors. *Abdel-Salam, M.*, +, *IAS 85* 805–813
- limit-cycle control of flux and torque induction for quick response and high efficiency. *Takahashi, I.*, +, *IAS 85* 496–502
- microprocessor-controlled ac servo drives; synchronous motors compared with induction motors. *Lessmeier, R.*, +, *IAS 85* 529–535
- parameter adaptation for inverter-fed induction motor drives; sensing line voltages from transistor-base drive signals. *Krishnan, R.*, +, *IAS 85* 570–577
- pulse-width modulation method that uses less commutations per cycle via feedback connection. *Mangal, M.*, +, *IAS 85* 1040–1045
- regenerative controller for voltage-source inverter drive. *Liptak, J.M.*, +, *IAS 85* 1672–1677
- road-vehicle propulsion; two-phase inverter induction motor drive for low cost and high reliability. *Goodarzi, G.A.*, +, *IAS 85* 716–725
- robust multivariable control strategies for current-source-inverter fed induction motor drives. *Sivakumar, S.*, +, *IAS 85* 510–523
- secondary resistance identification using model-reference adaptive control. *Sugimoto, H.*, +, *IAS 85* 613–620
- sliding mode control of induction motor; microcomputer implementation. *Bose, B.K.*, *IAS 85* 479–486
- software realization of PWM for microprocessor control of induction motor drive. *Pollmann, A.*, *IAS 85* 698–703
- three-phase current-source bridge inverter for induction motor drive and flexible PNM capability. *Biswas, S.K.*, +, *IAS 85* 1069–1074
- thrusters for tethered submersibles; variable-frequency induction motor drive with power MOSFET inverter. *Mauch, K.*, +, *IAS 85* 710–715
- traction drives for large waterside coal-handling equipment; vector control method. *Wasko, C.R.*, *IAS 85* 681–684
- vector control drives for process applications. *Wasko, C.R.*, *IAS 85* 134–137
- vector control; effects of secondary resistance variation. *Harashima, F.*, +, *IAS 85* 548–553
- vector control; microprocessor-based controller using rotor time-constant identification method. *Koyama, M.*, +, *IAS 85* 564–569
- vector controlled high-performance ac induction motor drives; design and applications. *Kume, T.*, +, *IAS 85* 690–697
- voltage source inverter controlling ac motor; use of two pulse inverters to improve power factor and waveforms. *Kohlmeier, H.*, +, *IAS 85* 1081–1086
- voltage-source-inverter fed drive using flux Park vector as feedback signal; microcomputer-based controller. *Sathiakumar, S.*, +, *IAS 85* 554–557
- 2000-kW, 8000-rpm drive with GTO inverters. *Tanaka, H.*, +, *IAS 85* 676–680
- Induction motor drives; cf.** Power conversion, dc – ac; Pulse-width modulation, inverters
- Induction motor protection**
during unbalanced system faults. *Eltom, A.H.*, +, *IAS 85* 371–375
- Induction motors**
flux and torque sensing method. *Lipo, T.A.*, +, *IAS 85* 765–769
personal computer application for design and performance analysis of. *Jeyasurya, B.*, +, *IAS 85* 759–764
steep-fronted surge propagation in line-end coil of large induction motor; application of multiconductor transmission line theory. *McLaren, P.G.*, +, *IAS 85* 1678–1682
variable-frequency reluctance – induction motor having high stability. *Verma, S.P.*, *IAS 85* 777–782
- Induction motors; cf.** Linear induction motors
- Inductive energy storage; cf.** Superconducting magnets, energy storage
- Industrial control**
personal computer add-on boards for data acquisition, bus controller, and waveform synthesizer. *Chen, F.*, +, *IAS 85* 1606–1611
power and signal grounding for control and computer rooms. *Lewis, W.*, *IAS 85* 9–22
- Industrial control; cf.** Manufacturing automation; Programmable control
- Industrial power system control**
data flow structure for maintainable software in railway electric substation control systems. *Suzuki, Y.*, +, *IAS 85* 219–223
static VAR compensator for hot strip mill. *Gruhl, K.G.*, +, *IAS 85* 1756–1761
- Industrial power system economics**
cost of electric service interruptions to industrial and commercial consumers; results of mail survey. *Billinton, R.*, +, *IAS 85* 289–294
- Industrial power system faults**
mine power system analysis using computer methods. *Trutt, F.C.*, +, *IAS 85* 169–175
phase-to-phase voltage dips at motor load due to phase-to-ground faults in the supply system. *Waters, S.S.*, +, *IAS 85* 297–301
transient model of three-phase naturally commutated inverter including line and inverter faults. *Harrington, R.J.*, +, *IAS 85* 1203–1212
- Industrial power system faults; cf.** Industrial power system protection
- Industrial power system harmonics**
active power filters using multiple voltage-source PWM converters; control strategy. *Akagi, H.*, +, *IAS 85* 460–466
evaluating harmonic levels. *Day, A.L.*, +, *IAS 85* 306–311
filter design to reduce harmonic distortion. *Gonzalez, D.A.*, +, *IAS 85* 361–370
- Industrial power system protection**
coordination of protective devices using microcomputer-assisted drafting. *Wing, A.P.*, *IAS 85* 332–336
dc fuses for power semiconductor circuits. *Howe, A.F.*, +, *IAS 85* 916–922
failures of circuit breakers applied between unsynchronized 13.8 kV electrical distribution systems. *Deaton, R.J.*, +, *IAS 85* 376–382
impedance effects in large grounding systems; computer analysis. *Simpson, I.B.K.*, +, *IAS 85* 354–360
metal oxide varistors for surge protection of power semiconductor devices; dynamic behavior. *Jinzenji, T.*, +, *IAS 85* 929–934
mine dc power track/trolley haulage systems; impedance calculation for fuse protection. *Tylavsky, D.J.*, *IAS 85* 206–212
mine power system grounding research. *Cooley, W.L.*, +, *IAS 85* 176–184
power and signal grounding for control and computer rooms. *Lewis, W.*, *IAS 85* 9–22
power converter surge protection; selecting protective devices. *Skibinski, G.*, +, *IAS 85* 940–948
protection of thyristors against overvoltage with break-over diodes. *Lawatsch, H.*, +, *IAS 85* 935–939
protective flash equipment to improve safety of operators. *Jordan, W.C.*, *IAS 85* 1729–1732
rapid-transit car protection systems. *Kusko, A.*, *IAS 85* 285–288
safeguards for interconnected power production sources with facility or utility; impact of NEC Article 705. *Johnson, G.S.*, +, *IAS 85* 318–322
sensitive ground-fault relaying for mine power systems. *Morley, L.A.*, +, *IAS 85* 185–191
standardization of benchmarks for protective-device time – current curves. *St. Pierre, C.R.*, +, *IAS 85* 388–398
ungrounded dc systems, selective ground-fault detection relay. *Ho, C.*, +, *IAS 85* 201–205
- Industrial power system protection; cf.** Industrial power system faults
- Industrial power system reliability**
aperiodic distortion in power systems; adaptive compensation using reactively loaded electronic power converter. *van Wyk, J.D.*, +, *IAS 85* 312–317
cost of electric service interruptions to industrial and commercial consumers; results of mail survey. *Billinton, R.*, +, *IAS 85* 289–294
mine power system reliability. *Stanek, E.K.*, +, *IAS 85* 154–168
- Industrial power system testing**
mine hoist electrical system inspection and testing. *Lever, P.J.A.*, +, *IAS 85* 192–194
- Industrial power system transients**
phase-to-phase voltage dips at motor load due to phase-to-ground faults in the supply system. *Waters, S.S.*, +, *IAS 85* 297–301
real-time measurement of electric arc furnace disturbances and parameter variations. *Lavers, J.D.*, +, *IAS 85* 108–115
transient model of three-phase naturally commutated inverter including line and inverter faults. *Harrington, R.J.*, +, *IAS 85* 1203–1212
- Industrial power systems**
ampacities calculation for industrial underground cable installations. *Hegyri, J.*, +, *IAS 85* 333–344
cycloconverter linking commercial and high-frequency distribution lines; basic characteristics. *Fukao, T.*, +, *IAS 85* 975–983
power cables in petrochemical complexes; 1985 update. *Frasure, J.W.*, +, *IAS 85* 42–54
- Industrial power systems; cf.** Cogeneration; Mining industry, safety; Rail-transportation electrical systems

Insulated-gate FETs; cf. IGFETs
Insulation; cf. Insulators; Liquid dielectric materials/devices
Insulators
 field optimization of high-voltage insulators via profile modification algorithm. *Abdel-Salam, M.*, +, *IAS 85 1389–1395*
Insulators; cf. Flashover
Integrated circuits; cf. Very large-scale integration
Interference; cf. Electromagnetic interference; Electrostatic interference; Noise
Interruption; cf. Circuit breakers
Inverters; cf. Power conversion, dc – ac; Pulse-width modulation, inverters
Ionization; cf. Gas discharges
Ions
 Coulomb crystallization in charged droplet sprays; generation of two-dimensional ion clouds. *Kelly, A.J.*, *IAS 85 1343–1345*

J

JFETs; cf. Power FETs

L

Lamps; cf. Lighting
Land transportation; cf. Rail transportation; Road transportation
Laplace equations
 electric field solutions of Laplace's equation using personal computer spreadsheet programs. *Crowley, J.M.*, *IAS 85 1474–1479*
 mapping field lines and equipotentials in electric field problems using charge simulation technique with Laplace and Poisson's equations. *Elmoursi, A.A.*, +, *IAS 85 1467–1473*
Large-scale integration; cf. Very large-scale integration
Laser applications
 diode laser printer with organic photoconductor and triboelectric magnetic toner; electrophotographic properties. *Shimada, A.*, +, *IAS 85 1480–1484*
Life estimation
 high-frequency operation of fluorescent lamps with solid-state ballasts; life measurements. *Verderber, R.R.*, +, *IAS 85 1724–1728*
Lighting
 controls selection for optimum energy savings. *Chen, K.*, +, *IAS 85 1697–1705*
 fluorescent lamp system performance simulation; minimum lamp wall temperature measurement. *Siminovich, M.J.*, +, *IAS 85 1706–1711*
 fluorescent lamp systems; effect of filament power removal. *Verderber, R.R.*, +, *IAS 85 1689–1693*
 fluorescent lighting systems; performance and economic comparisons. *Hammer, E.E.*, +, *IAS 85 1712–1723*
 high-frequency operation of fluorescent lamps with solid-state ballasts; life measurements. *Verderber, R.R.*, +, *IAS 85 1724–1728*
 lighting of office spaces containing video display terminals; potential effect on productivity. *Brabson, G.K.*, *IAS 85 1783–1786*
 phase-control dimmers using power FETs. *Burkhart, R.M.*, +, *IAS 85 1694–1696*
Lightning, power systems
 power converter surge protection; selecting protective devices. *Skibinski, G.*, +, *IAS 85 940–948*
Linear induction motors
 transportation drives design by field analysis and finite-element techniques. *Dawson, G.E.*, +, *IAS 85 1762–1768*
Linear motors
 oscillatory-mode tabular brushless dc motor drive with microprocessor-based controller. *Topmiller, D.A.*, +, *IAS 85 536–541*
Linear motors; cf. Linear induction motors
Linear systems; cf. Adaptive control, linear systems; Decoupling of systems, linear; Observers, linear systems; Poles and zeros, linear systems; Robustness, linear systems
Linear systems, stochastic; cf. Stochastic optimal control, linear systems
Liquid crystal materials/devices
 convective flow pattern in dielectric regime in nematic liquid crystals. *Yamazaki, H.*, +, *IAS 85 83*
 influence of electrohydrodynamics on D-E hysteresis in ferroelectric liquid crystals. *Imasaki, M.*, +, *IAS 85 1542–1547*
 influence of external noises on electrohydrodynamics in nematic liquid crystal. *Kai, S.*, +, *IAS 85 1555–1562*
 temporal and spacial behavior of flow for onset of turbulence in electrohydrodynamic instability. *Yamazaki, H.*, +, *IAS 85 1534–1538*
 transient oscillation phenomena in electrohydrodynamic instability of nematic liquid crystals. *Kai, S.*, +, *IAS 85 1548–1554*
Liquid dielectric materials/devices
 glass embedded capacitive-type water sensors; design optimization via modeling. *Boules, N.*, +, *IAS 85 1441–1448*

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prebreakdown phenomena and gas chemical reactions in water; pulsed HV discharges. *Clements, J.S.*, +, *IAS 85 1372–1383*
Liquid flow; cf. Pipelines; Pumps
Liquid insulation; cf. Liquid dielectric materials/devices
Liquids
 multisibling instability of charged liquid drops. *Elghazaly, H.A.*, +, *IAS 85 1337–1342*
Liquids; cf. Magnetic liquids; Spraying
Load flow analysis
 mine power system analysis using computer methods. *Trutt, F.C.*, +, *IAS 85 169–175*
Load flow control
 parallel resonant converter output regulation and bidirectional power flow control using controlled-output. *Tsai, F.S.*, +, *IAS 85 1124–1129*
Load leveling; cf. Power generation peaking capacity
Low-pass filters
 reactively loaded PWM converter as fast source of reactive power. *van Wyk, J.D.*, +, *IAS 85 1113–1123*

M

Magnetic energy storage; cf. Superconducting magnets, energy storage
Magnetic fluids; cf. Magnetic liquids
Magnetic liquids
 electromagnetic stirring; design of direct-cooled stirrers. *Mulcahy, J.A.*, +, *IAS 85 100–107*
 magnetofluidynamics applications in metallurgy. *Alexion, C.C.*, +, *IAS 85 122–128*
Magnetic measurements
 induction motors; flux and torque sensing method. *Lipo, T.A.*, +, *IAS 85 765–769*
Maintenance; cf. Software maintenance
Manipulators; cf. Robots
Manufacturing automation
 technology trends in CAD/CAM. *Weisberg, D.E.*, *IAS 85 129–133*
Marine-vehicle propulsion; cf. Underwater vehicle propulsion
Materials handling
 induction motor traction drives for large coal-handling equipment; vector control method. *Wasko, C.R.*, *IAS 85 681–684*
Materials handling; cf. Pipelines; Pumps; Robots
Measurement; cf. Magnetic measurements
Measurement-system data handling
 personal computer add-on boards for data acquisition, bus controller, and waveform synthesizer. *Chen, F.*, +, *IAS 85 1606–1611*
 statistical data processing scheme for electrostatic precipitator experiments for benefit assessment. *Dinelli, G.*, +, *IAS 85 1295–1299*
Mechanical factors
 firestop applications in walls and floors using elastomeric-based intumescent technology. *O'Hara, M.A.*, *IAS 85 1737–1741*
Mechanical variables control; cf. Size control; Torque control
Mechanical variables measurement; cf. Thickness measurement; Torque measurement
Metals industry
 cold rolling mill electrical equipment and control; recent developments. *Oberhaus, R.E.*, +, *IAS 85 1748–1755*
 conversion of existing cold tandem mill into fully continuous mill. *Hishiya, H.*, +, *IAS 85 1742–1747*
 electromagnetic stirring; design of direct-cooled stirrers. *Mulcahy, J.A.*, +, *IAS 85 100–107*
 hot strip mill thickness control system. *Ferguson, I.J.*, +, *IAS 85 116–121*
 magnetofluidynamics applications in metallurgy. *Alexion, C.C.*, +, *IAS 85 122–128*
 static VAR compensator for hot strip mill. *Gruhl, K.G.*, +, *IAS 85 1756–1761*
 universal finishing mills; automatic gauge control using decoupling control method. *Fukutani, K.*, +, *IAS 85 1658–1671*
Microcomputer applications; cf. Specific topic
Minimization methods; cf. Optimization methods
Minimum-energy control
 lighting controls selection for optimum energy savings. *Chen, K.*, +, *IAS 85 1697–1705*
Mining industry
 harmonic simulation of cycloconverter operation in mine power system. *McCall, J.C.*, +, *IAS 85 195–200*
 mine dc power track/trolley haulage systems; impedance calculation for fuse protection. *Tylavsky, D.J.*, *IAS 85 206–212*
 mine power demand in longwalls; estimation using probability functions. *Minasiewicz, S.*, +, *IAS 85 213–218*
 mine power system analysis using computer methods. *Trutt, F.C.*, +, *IAS 85 169–175*

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Mining industry, safety

- mine hoist electrical system inspection and testing. *Lever, P.J.A., + , IAS 85 192-194*
- mine monitoring and communications research by West Virginia University and Auburn University. *Nutter, R.S., Jr., + , IAS 85 146-153*
- mine power system grounding research. *Cooley, W.L., + , IAS 85 176-184*
- mine power system reliability. *Stanek, E.K., + , IAS 85 154-168*
- sensitive ground-fault relaying for mine power systems. *Morley, L.A., + , IAS 85 185-191*

Modulation/demodulation; cf. Phase modulation**Monitoring**

- mine monitoring and communications research by West Virginia University and Auburn University. *Nutter, R.S., Jr., + , IAS 85 146-153*

Monitoring; cf. Power system monitoring**MOSFET switches; cf. Power FET switches****MOSFETs; cf. IGFETs****Motor drives**

- input current analysis of motor drives with rectifier converters. *Camp, P.M., IAS 85 672-675*
- mine hoist electrical system inspection and testing. *Lever, P.J.A., + , IAS 85 192-194*
- phase-to-phase voltage dips at motor load due to phase-to-ground faults in the supply system. *Waters, S.S., + , IAS 85 297-301*
- safety and security considerations in application of programmable controllers. *Minish, W.O., IAS 85 1733-1736*

Motor drives; cf. ac motor drives; dc motor drives; Induction motor drives; Linear motors; Pulse-width modulation, inverters; Reluctance motor drives; Road-vehicle electric propulsion; Stepping motors; Synchronous motor drives; Traction motor drives**Motors**

- instructional laboratory with computer-controlled testing and data collection. *Laramore, R., + , IAS 85 738-741*

Motors; cf. ac motors; Induction motors; Linear motors; Permanent magnet motors; Synchronous motors**Multiconductor transmission lines**

- steep-fronted surge propagation in line-end coil of large induction motor; application of multiconductor transmission line theory. *McLaren, P.G., + , IAS 85 1678-1682*

N

Noise

- influence of external noises on electrohydrodynamics in nematic liquid crystal. *Kai, S., + , IAS 85 1555-1562*

Nonhomogeneous media; cf. Random media**Nonlinear circuits**

- snubbers for power switches; nonlinear capacitance turnoff snubber. *Steyn, C.G., + , IAS 85 923-928*

Nonlinear differential equations; cf. Chaos**Nonlinear magnetics**

- predicting inrush currents in transformers. *Jwa, C.K., + , IAS 85 302-305*

Nonlinear magnetics; cf. Rotating-machine nonlinear analysis**Nonlinear systems; cf. Chaos; Stability, nonlinear systems****Nonlinearities; cf. Hysteresis nonlinearities****Notch filters**

- harmonic distortion reduction in industrial power systems. *Gonzalez, D.A., + , IAS 85 361-370*

Nuclear fusion devices; cf. Plasma confinement**Nuclear radiation effects; cf. Radioactive pollution****Numerical methods; cf. Finite-element methods; Optimization methods**

O

Observers, linear systems

- control of inverter-fed induction motor drive using state observer and rotor resistance identification. *Kubota, H., + , IAS 85 601-606*

Occupational health and safety

- safety and security considerations in application of programmable controllers. *Minish, W.O., IAS 85 1733-1736*

Occupational health and safety; cf. Electric shock; Mining industry, safety**Office automation**

- lighting of office spaces containing video display terminals; potential effect on productivity. *Brabson, G.K., IAS 85 1783-1786*

Optical detectors; cf. Photovoltaic detectors**Optical fiber transducers**

- fiber-optic sensors in petrochemical plants. *Maggioli, V.J., IAS 85 3-8*

Optimal control; cf. Minimum-energy control**Optimal control, linear systems**

- power electronics applications of linear quadratic regulator with adjustable damping control. *Miguchi, Y., + , IAS 85 1130-1140*

Optimal control, linear systems; cf. Adaptive control, linear systems; Stochastic optimal control, linear systems**Optimization methods**

- field optimization of high-voltage insulators via profile modification algorithm. *Abdel-Salam, M., + , IAS 85 1389-1395*

Ozone

- ceramic-based ozonizers using high-frequency discharge. *Masuda, S., + , IAS 85 1353-1358*

P

Parameter estimation

- parameter estimation and dynamic performance of permanent magnet synchronous motors. *Enjeti, P., + , IAS 85 627-633*

Parameter identification

- control of inverter-fed induction motor drive using state observer and rotor resistance identification. *Kubota, H., + , IAS 85 601-606*
- induction motor drive using microprocessor-based vector control with rotor time-constant identification method. *Koyama, M., + , IAS 85 564-569*
- induction motor secondary resistance identification using model-reference adaptive control. *Sugimoto, H., + , IAS 85 613-620*

Partial differential equations; cf. Finite-element methods; Laplace equations**Partial discharges; cf. Corona****Particle charging; cf. Electrostatic processes****Particle production; cf. Aerosols; Spraying****Particle separators**

- charging characteristics of particles in electrostatic separators. *Mugeraya, S., + , IAS 85 1315-1324*
- separation of small particles suspended in liquid by nonuniform travelling field produced by three-phase electric curtain device. *Masuda, S., + , IAS 85 1418-1423*

Particle spectroscopy; cf. Spectroscopy**Particulate measurements**

- electrical conductivity of packed particle beds used in electrophotography. *Bares, J., IAS 85 1424-1428*

Permanent magnet motors

- axial-field permanent-magnet synchronous motor drives; performance and design. *Krishnan, R., + , IAS 85 634-640*
- brushless dc motor drives; torque ripple minimization. *Le-Huy, H., + , IAS 85 790-797*
- interior permanent magnet synchronous motors for adjustable-speed drives. *Jahns, T.M., + , IAS 85 814-823*
- mid-range resonance analysis method. *Casey, L.F., + , IAS 85 838-847*
- oscillatory-mode tabular brushless dc motor drive with microprocessor-based controller. *Topmiller, D.A., + , IAS 85 536-541*
- parameter estimation and dynamic performance of permanent magnet synchronous motors. *Enjeti, P., + , IAS 85 627-633*
- synchronous performance prediction and improvement. *Ishizaki, A., + , IAS 85 824-831*

Personal computer applications

- educational tools for visualization of applied electroquasistatic and magnetoquasistatic phenomena using personal computers. *Hoburg, J.F., IAS 85 1449-1454*

- electric field solutions of Laplace's equation using personal computer spreadsheet programs. *Crowley, J.M., IAS 85 1474-1479*

- interactive personal computer modeling of voltage - current curves for electrostatic precipitators. *Lawless, P.A., + , IAS 85 1462-1466*

- personal computer application for design and performance analysis of. *Jeyasurya, B., + , IAS 85 759-764*

Personal computer applications; cf. Specific topic**Personal computers**

- add-on boards for data acquisition, bus controller, and waveform synthesizer. *Chen, F., + , IAS 85 1606-1611*

Petrochemical industry

- fiber-optic sensors in petrochemical plants. *Maggioli, V.J., IAS 85 3-8*
- power cables in petrochemical complexes; 1985 update. *Frasure, J.W., + , IAS 85 42-54*

Petroleum industry; cf. Pipelines**Phase control**

- microprocessor-based controller for phase-controlled bridge rectifier connected to weak ac systems. *Mirbod, A., + , IAS 85 1250-1258*

Phase modulation

- phase-modulated, resonant power conversion techniques for high-frequency link inverters. *Pitel, I.J., IAS 85 1163-1172*

Photoconducting materials/devices; cf. Electrophotography**Photodetectors; cf. Photovoltaic detectors****Photovoltaic detectors**

- relays based on power MOSFET switch driven by photovoltaic cell. *Lislak, K.P., + , IAS 85 960-965*

Photovoltaic power systems

- utility-interactive photovoltaic power conditioning system. *Khoder, A., + , IAS 85 1151-1155*

Pipelines

- relaxation pipe for diminution of static electricity in flowing petroleum. *Kitamura, N.*, +, *IAS 85 1563-1566*
 stratified gas - liquid two-phase electrohydrodynamics in pipe flow. *Chang, J.-S.*, +, *IAS 85 1586-1589*

Plasma confinement

- detailed design of 13-kA 13-kV dc solid-state turn-off switch for use in nuclear fusion reactor. *Praeg, W.F.*, *IAS 85 1221-1226*

Plasmas; cf. Gas discharges**Poisson distributions**

- mapping field lines and equipotentials in electric field problems using charge simulation technique with Laplace and Poisson's equations. *Elmoursi, A.A.*, +, *IAS 85 1467-1473*

Poles and zeros, linear systems

- root-testing method for third and fourth-order discrete-data systems; real-time implementation on microprocessor. *Luo, F.L.*, +, *IAS 85 1683-1688*

Power bipolar transistor switches

- base drive for PWM transistor inverter with high power and frequency. *Upadhyay, A.K.*, +, *IAS 85 1020-1024*
 GTO thyristor developments for inverter applications; comparison with bipolar transistors. *Thomas, B.*, +, *IAS 85 882-888*
 high-switching-frequency PWM inverter with hybrid Darlingtion switches for uninterruptible power supplies; design considerations. *Manjunath, H.V.*, +, *IAS 85 1025-1032*
 induction generator excitation; PW-controlled three switch static exciter. *Sood, P.K.*, +, *IAS 85 653-661*
 insulated-gate transistors; comparison of punchthrough and non-punchthrough structures. *Yilmaz, H.*, +, *IAS 85 905-908*
 insulated-gate transistors; 1200-V m-channel IGT structure and process optimization. *Chen, L.-S.*, +, *IAS 85 909-911*
 model parameters determination for SPICE2 circuit analysis. *Pong, M.H.*, +, *IAS 85 894-899*
 pulswidth modulated inverter with parallel-connected transistors using current-sharing reactors. *Matsui, K.*, *IAS 85 1015-1019*
 uninterruptible power systems, PWM inverter technology extended to incorporate transistor switching power stages. *Griffith, D.C.*, +, *IAS 85 1141-1144*
 utility-interactive photovoltaic power conditioning system. *Khoder, A.*, +, *IAS 85 1151-1155*
 3-phase controlled current PWM converter with leading power factor; experimental results and analysis. *Ooi, B.T.*, +, *IAS 85 1008-1014*

Power bipolar transistors

- second breakdown in high-voltage operation. *Takata, I.*, +, *IAS 85 900-904*

Power cable thermal factors

- ampacities calculation for industrial underground cable installations. *Hegy, J.*, +, *IAS 85 333-344*
 ampacities calculation for underground cables; limitations to 1984 NEC tables. *Brown, M.T.*, +, *IAS 85 323-331*

Power cables

- industrial power systems in petrochemical complexes; 1985 update. *Frasure, J.W.*, +, *IAS 85 42-54*

Power cables; cf. HVDC transmission lines; Power transmission lines**Power capacitors**

- snubbers for power switches; nonlinear capacitance turnoff snubber. *Steyn, C.G.*, +, *IAS 85 923-928*

Power conditioning; cf. Power conversion**Power conversion**

- power converter surge protection; selecting protective devices. *Skibinski, G.*, +, *IAS 85 940-948*
 PWM and phase-controlled power electronic converters modeling, analysis and digital simulation. *Ma, X.*, *IAS 85 1195-1202*

Power conversion; cf. Induction motor drives; Pulse-width modulation, power converters; Thyristor converters**Power conversion, ac - ac**

- clamped six-pulse cycloinverter with parallel compensated load. *Quaicoe, J.E.*, +, *IAS 85 1213-1220*
 cycloconverter linking commercial and high-frequency distribution lines; basic characteristics. *Fukao, T.*, +, *IAS 85 975-983*
 harmonic simulation of cycloconverter operation in mine power system. *McCall, J.C.*, +, *IAS 85 195-200*
 multi-parallel asymmetrical cycloconverter having improved power factor and waveforms; switching and control schemes for thyristors. *Takahashi, I.*, +, *IAS 85 1274-1280*

Power conversion, ac - dc

- analysis of 3-phase ac - dc converters under unbalanced supply conditions. *Rashid, M.H.*, +, *IAS 85 1190-1194*
 bridge rectifier with input filter; open-loop instability. *Shahrodi, E.B.*, +, *IAS 85 1244-1249*
 convection-cooled silicon diode rectifier cubicle for light rail and heavy rail transit substations. *Hodgson, W.R.*, +, *IAS 85 238-261*
 current balance in parallel power diodes of three-phase bridge rectifier. *Peeran, S.M.*, +, *IAS 85 994-1000*

- four-quadrant transistor rectifier in bridge connection with sinusoidal input currents. *Rodriguez, J.*, *IAS 85 1055-1061*
 harmonics produced by rectifiers and adjustable-speed drives; effect on other equipment in power system. *Rice, D.E.*, *IAS 85 23-41*
 induction generator with dc-link converters; extending commutating range of converter. *Hayashi, Y.*, +, *IAS 85 621-626*
 input current analysis of motor drives with rectifier converters. *Camp, P.M.*, *IAS 85 672-675*
 microprocessor-based controller for phase-controlled bridge rectifier connected to weak ac systems. *Mirbod, A.*, +, *IAS 85 1250-1258*
 microsequencer control of four-quadrant synchronous chopper - converter combination. *Divan, D.M.*, +, *IAS 85 1105-1112*
 modeling of ac - dc converters using average circuit method. *Olivier, E.*, +, *IAS 85 1281-1287*
 pulswidth modulated ac to dc converter using GTO thyristors. *Kataoka, T.*, +, *IAS 85 966-974*
 rectifier - inverter frequency changers with suppressed dc link components. *Ziogas, P.D.*, +, *IAS 85 1180-1189*
 three-phase ac - dc PWM converter with sinusoidal ac currents and minimum filter requirements. *Malesani, L.*, +, *IAS 85 1227-1232*
 two parallel bridge rectifiers driving superconducting-magnet energy-storage coil; microcomputer-controlled current balancing. *Kustom, R.L.*, +, *IAS 85 1101-1104*
 variable-frequency drive effects on power line. *Jarc, D.A.*, +, *IAS 85 55-60*

Power conversion, dc - ac

- analysis method for three-phase PWM inverter/rectifier converters based on function. *Wiechmann, E.P.*, +, *IAS 85 984-993*
 auto-sequentially commutated current link inverters; modified control method for fast-response drives. *Deng, D.*, +, *IAS 85 662-671*
 bilateral dc - ac converter with high-frequency link; uninterruptible power supply applications. *Manias, S.*, +, *IAS 85 1156-1162*
 GTO inverter design for ac motor drives. *Mattern, K.E.*, +, *IAS 85 138-144*
 high-frequency variable-voltage half-bridge inverter. *Mirbod, A.*, +, *IAS 85 949-954*
 phase-modulated, resonant power conversion techniques for high-frequency link inverters. *Pitel, I.J.*, *IAS 85 1163-1172*
 rectifier - inverter frequency changers with suppressed dc link components. *Ziogas, P.D.*, +, *IAS 85 1180-1189*
 reducing output current harmonics of current source inverter via interphase transformer. *Miyairi, S.*, +, *IAS 85 1046-1051*
 transient model of three-phase naturally commutated inverter including line and inverter faults. *Harrington, R.J.*, +, *IAS 85 1203-1212*
 unipolar converter for variable-reluctance motor drives. *Bass, J.T.*, +, *IAS 85 1062-1068*
 utility-interactive photovoltaic power conditioning system. *Khoder, A.*, +, *IAS 85 1151-1155*

Power conversion, dc - ac; cf. Induction motor drives; Pulse-width modulation, inverters; Synchronous motor drives**Power conversion, dc - dc**

- effects of parasitic losses on performance of series resonant converter. *Oruganti, R.*, +, *IAS 85 1233-1243*
 multifunction dc - dc converter as power conditioner for solar or wind energy systems. *Ferrieux, J.-P.*, +, *IAS 85 1001-1007*
 parallel resonant converter output regulation and bidirectional power flow control using controlled-output. *Tsai, F.S.*, +, *IAS 85 1124-1129*
 phase-modulated, resonant power conversion techniques for high-frequency link inverters. *Pitel, I.J.*, *IAS 85 1163-1172*
 pulse-width-modulated resonant converter for high-output-voltage power supply. *Turnbull, F.G.*, +, *IAS 85 1145-1150*
 switch-mode power supplies; modeling and design. *Ferrieux, J.-P.*, +, *IAS 85 1173-1179*

Power conversion, dc - dc; cf. Choppers**Power conversion harmonics**

- active power filters using multiple voltage-source PWM converters; control strategy. *Akagi, H.*, +, *IAS 85 460-466*
 analysis of 3-phase ac - dc converters under unbalanced supply conditions. *Rashid, M.H.*, +, *IAS 85 1190-1194*
 conductive interference in rapid-transit signaling system; model. *Holmstrom, F.R.*, *IAS 85 230-237*
 effect of harmonics produced by rectifiers and adjustable speed drives on other equipment in power system. *Rice, D.E.*, *IAS 85 23-41*
 filter design to reduce harmonic distortion. *Gonzalez, D.A.*, +, *IAS 85 361-370*
 harmonic simulation of cycloconverter operation in mine power system. *McCall, J.C.*, +, *IAS 85 195-200*
 reducing output current harmonics of current source inverter via interphase transformer. *Miyairi, S.*, +, *IAS 85 1046-1051*
 utility-interactive photovoltaic power conditioning system. *Khoder, A.*, +, *IAS 85 1151-1155*
 variable-frequency drive effects on power line. *Jarc, D.A.*, +, *IAS 85 55-60*

- voltage source inverter controlling ac motor; use of two pulse inverters to improve power factor and waveforms. *Kohlmeier, H.*, + , IAS 85 1081-1086
- Power demand**
mine power demand in longwalls; estimation using probability functions. *Minasiewicz, S.*, + , IAS 85 213-218
- Power distribution ...; cf.** Industrial power system ...
- Power electronics; cf.** Power semiconductor devices
- Power engineering education**
motor testing laboratory with computer-controlled testing and data collection. *Laramore, R.*, + , IAS 85 738-741
- Power factor; cf.** Reactive power
- Power FET switches**
four-quadrant transistor rectifier in bridge connection with sinusoidal input currents. *Rodriguez, J.*, IAS 85 1055-1061
high-switching-frequency PWM inverter with hybrid Darlington switches for uninterruptible power supplies; design considerations. *Manjunath, H.V.*, + , IAS 85 1025-1032
IGT/COMFET latching characteristics and application to brushless dc motor drive. *SuKumar, V.*, + , IAS 85 1777-1782
insulated-gate transistors; comparison of punchthrough and non-punchthrough structures. *Yilmaz, H.*, + , IAS 85 905-908
insulated-gate transistors; 1200-V m-channel IGT structure and process optimization. *Chen, L.-S.*, + , IAS 85 909-911
lighting dimmers using FETs. *Burkhart, R.M.*, + , IAS 85 1694-1696
relays based on power MOSFET switch driven by photovoltaic cell. *Lislak, K.P.*, + , IAS 85 960-965
thrusters for tethered submersibles; variable-frequency induction motor drive with power MOSFET inverter. *Mauch, K.*, + , IAS 85 710-715
unipolar converter for variable-reluctance motor drives. *Bass, J.T.*, + , IAS 85 1062-1068
- Power FETs**
vertical JFET operated in bipolar mode with normally off characteristics. *Bellone, S.*, + , IAS 85 889-893
- Power flow ...; cf.** Load flow ...
- Power generation; cf.** Cogeneration
- Power generation availability; cf.** Power generation peaking capacity
- Power generation meteorological factors; cf.** Thermal power generation, air pollution
- Power generation peaking capacity**
two parallel bridge rectifiers driving superconducting-magnet energy-storage coil; microcomputer-controlled current balancing. *Kustom, R.L.*, + , IAS 85 1101-1104
- Power semiconductor devices**
dc fuses for power semiconductor circuits. *Howe, A.F.*, + , IAS 85 916-922
metal oxide varistors for surge protection of power semiconductor devices; dynamic behavior. *Jinzenji, T.*, + , IAS 85 929-934
snubbers for power switches; nonlinear capacitance turnoff snubber. *Steyn, C.G.*, + , IAS 85 923-928
- Power semiconductor devices; cf.** Power bipolar transistors; Power FETs; Power semiconductor diodes; Thyristors
- Power semiconductor diode switches**
model parameters determination for SPICE2 circuit analysis. *Pong, M.H.*, + , IAS 85 894-899
- Power semiconductor diodes**
current balance in parallel power diodes of three-phase bridge rectifier. *Peeran, S.M.*, + , IAS 85 994-1000
protection of thyristors against overvoltage with break-over diodes. *Lawatsch, H.*, + , IAS 85 935-939
second breakdown in high-voltage operation. *Takata, I.*, + , IAS 85 900-904
1200-V 150-A fast-recovery diode. *Balodis, V.*, + , IAS 85 912-915
- Power supplies; cf.** Power conversion; Uninterruptible power systems
- Power system control; cf.** Industrial power system control; Load flow control
- Power system economics**
cost of electric service interruptions to industrial and commercial consumers; results of mail survey. *Billinton, R.*, + , IAS 85 289-294
long-term shortage cost analysis; current research at EPRI. *Ricci, P.F.*, IAS 85 295-296
- Power system economics; cf.** Industrial power system economics
- Power system faults; cf.** Industrial power system faults; Power system transients; Protective relaying
- Power system harmonics**
reactively loaded PWM converter as fast source of reactive power. *van Wyk, J.D.*, + , IAS 85 1113-1123
- Power system harmonics; cf.** Industrial power system harmonics
- Power system meteorological factors; cf.** Lightning, power systems
- Power system monitoring**
design criteria for microprocessor-based monitor for ac power systems. *Bonert, R.*, + , IAS 85 748-752
- Power system protection; cf.** Circuit breakers; Industrial power system protection; Lightning, power systems; Power system transients; Protective relaying
- Power system relaying; cf.** Protective relaying
- Power system reliability**
cost of electric service interruptions to industrial and commercial consumers; results of mail survey. *Billinton, R.*, + , IAS 85 289-294
long-term shortage cost analysis; current research at EPRI. *Ricci, P.F.*, IAS 85 295-296
- Power system reliability; cf.** Industrial power system reliability
- Power system stability, transient**
phase-to-phase voltage dips at motor load due to phase-to-ground faults in the supply system. *Waters, S.S.*, + , IAS 85 297-301
- Power system testing; cf.** Industrial power system testing
- Power system transient stability; cf.** Power system stability, transient
- Power system transients**
mathematical-physical model of corona from surges on high-voltage lines. *Abdel-Salam, M.*, + , IAS 85 1364-1371
- Power system transients; cf.** Industrial power system transients
- Power systems; cf.** dc power systems; Uninterruptible power systems
- Power transmission; cf.** Load flow analysis
- Power transmission lines**
mathematical-physical model of corona from surges on high-voltage lines. *Abdel-Salam, M.*, + , IAS 85 1364-1371
- Power transmission lines; cf.** HVDC transmission lines
- Power transmission lines, underground**
ampacities calculation for industrial underground cable installations. *Hegy, J.*, + , IAS 85 333-344
- Precipitators; cf.** Electrostatic precipitators
- Printing**
diode laser printer with organic photoconductor and triboelectric magnetic toner; electrophotographic properties. *Shimada, A.*, + , IAS 85 1480-1484
- Probability**
mine power demand in longwalls; estimation using probability functions. *Minasiewicz, S.*, + , IAS 85 213-218
- Probability; cf.** Poisson distributions
- Process control; cf.** Industrial control; *Specific industry*
- Process heating**
detuned minimum-variance self-tuning feedforward controller; application to electric furnace. *Chai, T.-Y.*, + , IAS 85 1645-1649
- Process heating; cf.** Arc heating; Cogeneration; Glass industry; Induction heating; Metals industry; Resistance heating
- Programmable control**
safety and security considerations in application of programmable controllers. *Minish, W.O.*, IAS 85 1733-1736
universal programming documentation for programmable controllers. *Brickley, J.H.*, IAS 85 145
- Proportional control**
finite-time settling-control-based current controller for thyristor dual-converter. *Tadakuma, S.*, + , IAS 85 426-431
- Propulsion; cf.** Guideway-transportation propulsion; Traction motor drives; Underwater vehicle propulsion
- Protection/safety; cf.** Electric shock; Fires; Industrial power system protection; Mining industry, safety; Occupational health and safety
- Protective relaying**
personal computer application for design and performance analysis of. *Jeyasurya, B.*, + , IAS 85 759-764
- Protective relaying; cf.** Industrial power system protection
- Pulse-width modulation, inverters**
acoustic noise reduction for PWM inverter-fed induction motor; optimum inverter waveforms. *Takahashi, I.*, + , IAS 85 641-646
base drive for PWM transistor inverter with high power and frequency. *Upadhyay, A.K.*, + , IAS 85 1020-1024
current-controlled inverter control based on current deviation vector. *Nabae, A.*, + , IAS 85 473-478
current-source GTO inverter with sinusoidal inputs and outputs. *Hombu, M.*, + , IAS 85 1033-1039
fully digitized inverters for induction motor drives using PWM method. *Murai, Y.*, + , IAS 85 448-453
GTO current-source inverter with PWM control techniques. *Nonaka, S.*, + , IAS 85 442-447
GTO inverter design for ac motor drives. *Mattern, K.E.*, + , IAS 85 138-144
GTO PWM inverter operation for parallel-set, high-power ac drives. *Hashii, M.*, + , IAS 85 467-472
GTO thyristors for variable-frequency PWM induction motor drives. *Bishop, K.W.J.*, IAS 85 685-689
high-switching-frequency PWM inverter with hybrid Darlington switches for uninterruptible power supplies; design considerations. *Manjunath, H.V.*, + , IAS 85 1025-1032
microcomputer-implemented PWM inverter using optimum pattern of switching angles. *Mishriky, A.H.*, + , IAS 85 1259-1263

- online area equalization algorithm for adjustable-speed ac drives with nonconstant voltage source. *Ramshaw, R.S., +*, IAS 85 454-459
- pulse-width modulation method that uses less commutations per cycle via feedback connection. *Mangal, M., +*, IAS 85 1040-1045
- pulsewidth modulated inverter with parallel-connected transistors using current-sharing reactors. *Matsui, K., IAS 85 1015-1019*
- PWM technique for microcomputer-based inverter with on-line pulse pattern computation; real time operation. *Taniguchi, K., +*, IAS 85 1264-1268
- regenerative controller for voltage-source inverter drive. *Liptak, J.M., +*, IAS 85 1672-1677
- road-vehicle propulsion; two-phase inverter induction motor drive for low cost and high reliability. *Goodarzi, G.A., +*, IAS 85 716-725
- software realization of PWM for microprocessor control of induction motor drive. *Pollmann, A., IAS 85 698-703*
- synchronous current regulator for ac drives; comparison with current-regulated PWM inverters. *Rowan, T.M., +*, IAS 85 487-495
- three-phase current-source bridge inverter for induction motor drive and flexible PNM capability. *Biswas, S.K., +*, IAS 85 1069-1074
- three-phase sinusoidal PWM inverter using microprocessor reference signal for switching. *Taniguchi, K., +*, IAS 85 1269-1273
- two optimal PWM schemes for current-source inverters; off-line optimization of individual switching angles and subharmonic modulation. *Namuduri, C., +*, IAS 85 1087-1100
- uninterruptible power systems, PWM inverter technology extended to incorporate transistor switching power stages. *Griffith, D.C., +*, IAS 85 1141-1144
- waveform distortion and correction circuit for PWM inverters with switching lag-times. *Murai, Y., +*, IAS 85 436-441
- Pulse-width modulation, inverters; cf.** Induction motor drives; Synchronous motor drives
- Pulse-width modulation, power converters**
- active power filters using multiple voltage-source PWM converters; control strategy. *Akagi, H., +*, IAS 85 460-466
- analysis method for three-phase PWM inverter/rectifier converters based on function. *Wiechmann, E.P., +*, IAS 85 984-993
- induction generator excitation; PW-controlled three switch static exciter. *Sood, P.K., +*, IAS 85 653-661
- open-loop and closed-loop performance of an ac - dc PWM-converter-controlled separately excited dc motor drive. *Doradla, S.R., +*, IAS 85 411-418
- pulse-width-modulated resonant converter for high-output-voltage power supply. *Turnbull, F.G., +*, IAS 85 1145-1150
- pulsewidth modulated ac to dc converter using GTO thyristors. *Kataoka, T., +*, IAS 85 966-974
- PWM and phase-controlled power electronic converters modeling, analysis and digital simulation. *Ma, X., IAS 85 1195-1202*
- reactively loaded PWM converter as fast source of reactive power. *van Wyk, J.D., +*, IAS 85 1113-1123
- three-phase ac - dc PWM converter with sinusoidal ac currents and minimum filter requirements. *Malesani, L., +*, IAS 85 1227-1232
- 3-phase controlled current PWM converter with leading power factor; experimental results and analysis. *Ooi, B.T., +*, IAS 85 1008-1014
- Pulsed magnets; cf.** Electromagnets, pulsed
- Pumps**
- inductive electrodynamic pump in vertical orientation; theory. *Seyed-Yagoobi, J., +*, IAS 85 1567-1573
- inductive electrohydrodynamic pump in vertical orientation; experimental study. *Seyed-Yagoobi, J., +*, IAS 85 1574-1579
- R
- Radiation detectors; cf.** Alpha particle detectors
- Radioactive pollution**
- remotely operated glass melter for nuclear waste; electrical power supply, controls, and instruments. *Haideri, A.Q., IAS 85 86-92*
- Rail-traffic control**
- conductive interference in rapid-transit signaling system; model. *Holmstrom, F.R., IAS 85 230-237*
- Rail transportation; cf.** Guideway transportation
- Rail-transportation electrical systems**
- conductive interference in rapid-transit signaling system; model. *Holmstrom, F.R., IAS 85 230-237*
- convection-cooled silicon diode rectifier cubicle for light rail and heavy rail transit substations. *Hodgson, W.R., +*, IAS 85 238-261
- data flow structure for maintainable software in railway electric substation control systems. *Suzuki, Y., +*, IAS 85 219-223
- dc circuit breaker application criteria. *Sarkar, S., IAS 85 269-273*
- evaluating capability of traction power supply system to support peak transient service levels. *Gross, R.C., +*, IAS 85 224-229
- mine dc power track/trolley haulage systems; impedance calculation for fuse protection. *Tylavsky, D.J., IAS 85 206-212*
- protection systems for rapid-transit cars. *Kusko, A., IAS 85 285-288*
- substation spacing determination for ac and dc systems. *Kneschke, T.A., IAS 85 274-284*
- Rail-transportation electrical systems; cf.** Rail-transportation propulsion
- Rail-transportation propulsion**
- high-frequency four-quadrant chopper using GTO for electric rolling stock. *Ashiya, M., +*, IAS 85 262-268
- Rail-transportation propulsion; cf.** Rail-transportation electrical systems
- Random media**
- temporal and spacial behavior of flow for onset of turbulence in electrohydrodynamic instability. *Yamazaki, H., +*, IAS 85 1534-1538
- Reactive power**
- analysis of 3-phase ac - dc converters under unbalanced supply conditions. *Rashid, M.H., +*, IAS 85 1190-1194
- Reactive power control**
- aperiodic distortion in power systems; adaptive compensation using reactively loaded electronic power converter. *van Wyk, J.D., +*, IAS 85 312-317
- cycloconverter linking commercial and high-frequency distribution lines; basic characteristics. *Fukao, T., +*, IAS 85 975-983
- multi-parallel asymmetrical cycloconverter having improved power factor and waveforms; switching and control schemes for thyristors. *Takahashi, I., +*, IAS 85 1274-1280
- reactively loaded PWM converter as fast source of reactive power. *van Wyk, J.D., +*, IAS 85 1113-1123
- static VAR compensator for hot strip mill. *Gruhl, K.G., +*, IAS 85 1756-1761
- three-phase ac - dc PWM converter with sinusoidal ac currents and minimum filter requirements. *Malesani, L., +*, IAS 85 1227-1232
- voltage source inverter controlling ac motor; use of two pulse inverters to improve power factor and waveforms. *Kohlmeier, H., +*, IAS 85 1081-1086
- 3-phase controlled current PWM converter with leading power factor; experimental results and analysis. *Ooi, B.T., +*, IAS 85 1008-1014
- Rectifiers**
- rectifiers for intermittent energization of wide-spacing electrostatic precipitation. *Kawamura, T., IAS 85 1308-1314*
- Rectifiers; cf.** Power conversion, ac - dc
- Relays; cf.** Protective relaying; Semiconductor relays
- Reliability; cf.** Power system reliability
- Reliability testing; cf.** Life estimation
- Reluctance generators**
- voltage-source inverter self-excited superhigh-speed system. *Fukao, T., IAS 85 647-652*
- Reluctance motor drives**
- switched reluctance brushless drives; operating principles and design considerations. *Ray, W.F., +*, IAS 85 1769-1776
- switched reluctance motor drive in integral-horsepower sizes. *Harris, M.R., +*, IAS 85 783-789
- switched reluctance motor drive with microprocessor-based four-quadrant control. *Bose, B.K., +*, IAS 85 542-547
- unipolar converter for variable-reluctance motor drives. *Bass, J.T., +*, IAS 85 1062-1068
- Reluctance motors**
- energy-efficient cageless motor control using only terminal voltage and current. *El-Antably, A., +*, IAS 85 753-758
- energy-efficient motor having 6-pole axially laminated anisotropic rotor. *El-Antably, A., +*, IAS 85 770-776
- variable-frequency reluctance - induction motor having high stability. *Verma, S.P., IAS 85 777-782*
- Resistance heating**
- electric glass furnaces; 3-D mathematical model for glass flow and heat transfer. *Choudhary, M., IAS 85 73-85*
- glass melter design. *Drummond, C.H., +*, IAS 85 61-66
- remotely operated glass melter for nuclear waste; electrical power supply, controls, and instruments. *Haideri, A.Q., IAS 85 86-92*
- resistance of glass in multiphase multielectrode glass furnace; modeling method. *Ghandakly, A., IAS 85 67-72*
- Road-vehicle electric propulsion**
- step-up chopper drive with regeneration for battery operated vehicle control. *Dubey, G.K., +*, IAS 85 1052-1054
- two-phase inverter induction motor drive for low cost and high reliability. *Goodarzi, G.A., +*, IAS 85 716-725
- Road-vehicle propulsion; cf.** Road-vehicle electric propulsion
- Robots**
- dc-drive-actuated robotic arm; microprocessor-based adaptive. *Denat, J.P., +*, IAS 85 432-435
- dc servo joint; digital control. *Jakubowicz, A., +*, IAS 85 419-425
- robotic arc welding in downhand position; control subject to constant weld travel speed constraint. *Fernandez, K., +*, IAS 85 1634-1644
- Robustness, linear systems**
- robust multivariable control strategies for current-source-inverter fed induction motor drives. *Sivakumar, S., +*, IAS 85 510-523

Roots; cf. Poles and zeros
Rotating-machine acoustic noise
 induction motor fed by PWM inverter; inverter waveforms to reduce acoustic noise. *Takahashi, I.*, + , IAS 85 641–646
Rotating-machine measurements
 induction motors; flux and torque sensing method. *Lipo, T.A.*, + , IAS 85 765–769
Rotating-machine nonlinear analysis
 ac permanent magnet motors; synchronous performance prediction and improvement. *Ishizaki, A.*, + , IAS 85 824–831
Rotating-machine stability
 current-limit-controlled chopper-fed separately excited dc motor; design modeling and stability analysis. *Naik, K.B.*, + , IAS 85 1594–1601
 mid-range resonance analysis method. *Casey, L.F.*, + , IAS 85 838–847
 synchronous-motor oscillating torque problems. *Goodman, E.D.*, + , IAS 85 832–837
 variable-frequency induction motor drives fed from voltage-source inverter; instability considerations. *Chin, T.H.*, IAS 85 704–709
 variable-frequency reluctance – induction motor having high stability. *Verma, S.P.*, IAS 85 777–782
Rotating-machine testing
 dynamic motor tests from synchronously sampled wave forms. *Wright, F.H.*, + , IAS 85 742–747
 instructional laboratory with computer-controlled testing and data collection. *Laramore, R.*, + , IAS 85 738–741
Rotating-machine transient analysis
 steep-fronted surge propagation in line-end coil of large induction motor; application of multiconductor transmission line theory. *McLaren, P.G.*, + , IAS 85 1678–1682
Rotating machines; cf. ac motors; Brushless rotating machines; Induction generators; Motors

S

Safety; cf. Protection/safety
Second breakdown
 power transistors and power diodes at high voltage. *Takata, I.*, + , IAS 85 900–904
Self-tuning regulators; cf. Adaptive control
Semiconductor device breakdown
 electrostatic discharge protection for electronic systems. *Greason, W.D.*, IAS 85 1429–1434
Semiconductor device fabrication; cf. *Specific device*
Semiconductor device thermal factors; cf. Second breakdown
Semiconductor devices; cf. Power semiconductor devices
Semiconductor diodes; cf. Power semiconductor diodes
Semiconductor lasers
 diode laser printer with organic photoconductor and triboelectric magnetic toner; electrophotographic properties. *Shimada, A.*, + , IAS 85 1480–1484
Semiconductor relays
 relays based on power MOSFET switch driven by photovoltaic cell. *Lislak, K.P.*, + , IAS 85 960–965
Semiconductor switches
 snubbers for power switches; nonlinear capacitance turnoff snubber. *Steyn, C.G.*, + , IAS 85 923–928
Semiconductor switches; cf. Power bipolar transistor switches; Power FET switches; Power semiconductor diode switches; Thyristors
Sensitivity analysis/optimization, linear systems; cf. Robustness, linear systems
Sensors; cf. Transducers
Separators; cf. Particle separators
Servosystems
 axial-field permanent-magnet synchronous motor drives; performance and design. *Krishnan, R.*, + , IAS 85 634–640
 microprocessor-controlled ac servo drives; synchronous motors compared with induction motors. *Lessmeier, R.*, + , IAS 85 529–535
 parameter adaptation for inverter-fed induction motor drives; sensing line voltages from transistor-base drive signals. *Krishnan, R.*, + , IAS 85 570–577
 power electronics applications of linear quadratic regulator with adjustable damping control. *Miguchi, Y.*, + , IAS 85 1130–1140
 vector controlled high-performance ac induction motor drives; design and applications. *Kume, T.*, + , IAS 85 690–697
Servosystems; cf. Robots; Stepping motors
Shock; cf. Electric shock
Signal estimation; cf. Estimation
Signal generators
 personal computer add-on boards for data acquisition, bus controller, and waveform synthesizer. *Chen, F.*, + , IAS 85 1606–1611
Size control
 hot strip mill thickness control system. *Ferguson, I.J.*, + , IAS 85 116–121
 universal finishing mills; automatic gauge control using decoupling control method. *Fukutani, K.*, + , IAS 85 1658–1671
Size measurement; cf. Thickness measurement
Software documentation; cf. Documentation
Software maintenance
 data flow structure for maintainable software in railway electric substation control systems. *Suzuki, Y.*, + , IAS 85 219–223
Software reusability
 adapting available finite-element heat transfer programs to solve 2-D and 3-D electrostatic field problems. *Ostergaard, D.F.*, IAS 85 1455–1461
Solar power generation
 multifunction dc – dc converter as power conditioner for solar or wind energy systems. *Ferrieux, J.-P.*, + , IAS 85 1001–1007
Solar power generation; cf. Wind power generation
Solid lasers; cf. Semiconductor lasers
Sparks
 electrostatic precipitation using spiral corona electrodes; sparkover and voltage – current characteristics. *Sokar, S.K.*, + , IAS 85 1325–1336
Spectroscopy
 toner charge spectrograph for electrophotography. *Bares, J.*, IAS 85 1525–1527
Spraying
 bipolar spray charging for leaf-tip corona reduction by space-charge control. *Cooper, S.C.*, + , IAS 85 1346–1352
 Coulomb crystallization in charged droplet sprays; generation of two-dimensional ion clouds. *Kelly, A.J.*, IAS 85 1343–1345
 multisibling instability of charged liquid drops. *Elghazaly, H.A.*, + , IAS 85 1337–1342
Stability; cf. Rotating-machine stability
Stability, nonlinear systems
 bridge rectifier with input filter; open-loop instability. *Shahrodi, E.B.*, + , IAS 85 1244–1249
 transient oscillation phenomena in electrohydrodynamic instability of nematic liquid crystals. *Kai, S.*, + , IAS 85 1548–1554
Standards
 ampacities calculation for underground cables; limitations to 1984 NEC tables. *Brown, M.T.*, + , IAS 85 323–331
 safeguards for interconnected power production sources with facility or utility; impact of NEC Article 705. *Johnson, G.S.*, + , IAS 85 318–322
 standardization of benchmarks for protective-device time – current curves. *St. Pierre, C.R.*, + , IAS 85 388–398
State estimation, linear systems; cf. Observers, linear systems
Steam generation; cf. Cogeneration
Steel industry; cf. Metals industry
Stepping motors
 mid-range resonance analysis method. *Casey, L.F.*, + , IAS 85 838–847
Stochastic optimal control, linear systems
 detuned minimum-variance self-tuning feedforward controller; application to electric furnace. *Chai, T.-Y.*, + , IAS 85 1645–1649
Submarine ...; cf. Underwater ...
Substations; cf. Rail-transportation electrical systems
Superconducting magnets, energy storage
 two parallel bridge rectifiers driving superconducting-magnet energy-storage coil; microcomputer-controlled current balancing. *Kustom, R.L.*, + , IAS 85 1101–1104
Surface charging; cf. Spraying; Triboelectricity
Surface discharges
 electrostatic discharge protection for electronic systems. *Greason, W.D.*, IAS 85 1429–1434
Surges; cf. Power system transients; Transient analysis
Switched systems, linear
 modeling of ac – dc converters using average circuit method. *Olivier, E.*, + , IAS 85 1281–1287
Switches/switching; cf. Semiconductor switches
Switchgear; cf. Circuit breakers; Contactors
Switchgear testing
 testing and evaluation of low-voltage ac airbreak contactors. *Narasimha, G.*, IAS 85 1627–1633
Switching transients
 metal oxide varistors for surge protection of power semiconductor devices; dynamic behavior. *Jinzenji, T.*, + , IAS 85 929–934
 power converter surge protection; selecting protective devices. *Skibinski, G.*, + , IAS 85 940–948
Synchronous converters
 synchronous current regulator for ac drives; comparison with current-regulated PWM inverters. *Rowan, T.M.*, + , IAS 85 487–495
Synchronous generators
 damping inrush current during state of induction. *Denno, K.*, IAS 85 854–858
Synchronous generators; cf. Reluctance generators

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Synchronous motor drives

- axial-field permanent-magnet synchronous motor drives; performance and design. *Krishnan, R.*, + , *IAS 85* 634–640
- concentrated winding machine that develops square-wave EMF. *Xiang, W.F.*, + , *IAS 85* 848–853
- interior permanent magnet synchronous motors for adjustable-speed drives. *Jahns, T.M.*, + , *IAS 85* 814–823
- low-speed drive; PWM VSI-fed brushless self-excited motor with high-order harmonics supplied to stator. *Nonaka, S.*, + , *IAS 85* 726–731
- microprocessor-controlled ac servo drives; synchronous motors compared with induction motors. *Lessmeier, R.*, + , *IAS 85* 529–535
- variable structure control of self-controlled synchronous motor drive. *Namuduri, C.*, + , *IAS 85* 503–509
- Synchronous motor drives; cf.** Reluctance motor drives
- Synchronous motors**
- oscillating torque problems analyzed using modified *d-q* axis model. *Goodman, E.D.*, + , *IAS 85* 832–837
- Synchronous motors; cf.** Permanent magnet motors; Reluctance motors

T

- Telemetry; cf.** Measurement-system data handling
- Temperature control; cf.** Process heating
- Temperature measurement**
- fluorescent lamp system performance simulation; minimum lamp wall temperature measurement. *Siminovich, M.J.*, + , *IAS 85* 1706–1711
- Testing; cf.** Life estimation; Rotating-machine testing
- Thermal factors**
- alpha-particle corona streamer counters; effect of temperature on performance characteristics. *Fouad, L.*, *IAS 85* 1435–1440
- Thermal power generation; cf.** Cogeneration
- Thermal power generation, air pollution**
- SO₂ emission monitor using solid electrolyte cell. *Jones, J.E.*, *IAS 85* 1612–1626
- Thermal variables control; cf.** Process heating
- Thermal variables measurement; cf.** Temperature measurement
- Thickness measurement**
- hot strip mill thickness control system. *Ferguson, I.J.*, + , *IAS 85* 116–121
- Thyristor circuits**
- detailed design of 13-kA 13-kV dc solid-state turn-off switch for use in nuclear fusion reactor. *Praeg, W.F.*, *IAS 85* 1221–1226
- Thyristor converters**
- finite-time settling-control-based current controller for thyristor dual-converter. *Tadakuma, S.*, + , *IAS 85* 426–431
- pulsewidth modulated ac to dc converter using GTO thyristors. *Kataoka, T.*, + , *IAS 85* 966–974
- Thyristor converters; cf.** Power conversion
- Thyristor motor drives**
- GTO inverter design for ac motor drives. *Mattern, K.E.*, + , *IAS 85* 138–144
- GTO thyristors for variable-frequency PWM induction motor drives. *Bishop, K.W.J.*, *IAS 85* 685–689
- high-frequency four-quadrant chopper using GTO for electric rolling stock. *Ashiya, M.*, + , *IAS 85* 262–268
- 2000-kW, 8000-rpm drive with GTO inverters. *Tanaka, H.*, + , *IAS 85* 676–680

Thyristor motor drives; cf. Motor drives**Thyristors**

- GTO thyristor developments for inverter applications; comparison with bipolar transistors. *Thomas, B.*, + , *IAS 85* 882–888
- GTO thyristors in isolated base module. *Connolly, A.P.*, + , *IAS 85* 955–959
- high-power double-interdigitated GTO thyristor. *Silard, A.*, + , *IAS 85* 865–867
- protection of thyristors against overvoltage with break-over diodes. *Lawatsch, H.*, + , *IAS 85* 935–939
- static induction thyristor irradiated by protons to improve switching speed. *Nakamura, Y.*, + , *IAS 85* 859–864
- 2.5-kV 800-A monolithic reverse-conducting GTO thyristor. *Matsuda, H.*, + , *IAS 85* 871–875
- 2500-V GTO thyristor with two interdigitation levels thyristor. *Silard, A.*, + , *IAS 85* 868–870
- 4.5-kV 3-kA GTO thyristor; turn-on and turn-off characteristics. *Hashimoto, O.*, + , *IAS 85* 876–881

Torque control

- effects of machine parameters on torque characteristics studied using new vector control concept. *Ueda, R.*, + , *IAS 85* 578–585

Torque control; cf. Motor drives**Torque measurement**

- induction motors; flux and torque sensing method. *Lipo, T.A.*, + , *IAS 85* 765–769

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- multiphase ac machine electromagnetic torque; real-time monitoring. *Vas, P.*, + , *IAS 85* 732–737

Traction motor drives

- induction motor traction drives for large coal-handling equipment; vector control method. *Wasko, C.R.*, *IAS 85* 681–684
- Traction motor drives; cf.** Guideway-transportation propulsion; Rail-transportation propulsion; Road-vehicle electric propulsion

Traffic control; cf. Rail-traffic control**Transducers; cf.** Optical fiber transducers**Transformers**

- predicting inrush currents in transformers. *Jwa, C.K.*, + , *IAS 85* 302–305
- reducing output current harmonics of current source inverter via interphase transformer. *Miyairi, S.*, + , *IAS 85* 1046–1051

Transient analysis

- transient oscillation phenomena in electrohydrodynamic instability of nematic liquid crystals. *Kai, S.*, + , *IAS 85* 1548–1554

Transient analysis; cf. Industrial power system transients; Power system transients; Rotating-machine transient analysis; Switching transients**Transient stability; cf.** Power system stability, transient**Transistors; cf.** Power bipolar transistors; Power FETs**Transmission lines; cf.** Multiconductor transmission lines; Power transmission lines**Transportation; cf.** Guideway transportation; Rail transportation; Road transportation**Triboelectricity**

- diode laser printer with organic photoconductor and triboelectric magnetic toner; electrophotographic properties. *Shimada, A.*, + , *IAS 85* 1480–1484

- electrostatically augmented bag filters using triboelectric charger; pilot test. *Kawamura, T.*, *IAS 85* 1412–1417

- xerographic development using single-component triboelectrically charged nonmagnetic toner. *Hosoya, M.*, + , *IAS 85* 1485–1490

Tunnels; cf. Underground electromagnetic communication

U

Underground electromagnetic communication

- mine monitoring and communications research by West Virginia University and Auburn University. *Nutter, R.S., Jr.*, + , *IAS 85* 146–153

Underground power cables; cf. Power transmission lines, underground**Underwater vehicle propulsion**

- thrusters for tethered submersibles; variable-frequency induction motor drive with power MOSFET inverter. *Mauch, K.*, + , *IAS 85* 710–715

Uninterruptible power systems

- bilateral dc to ac converter with high-frequency link; battery changing. *Manias, S.*, + , *IAS 85* 1156–1162
- high-switching-frequency PWM inverter with hybrid Darlington switches for uninterruptible power supplies; design considerations. *Manjunath, H.V.*, + , *IAS 85* 1025–1032
- uninterruptible power systems, PWM inverter technology extended to incorporate transistor switching power stages. *Griffith, D.C.*, + , *IAS 85* 1141–1144

V

Varistors

- metal oxide varistors for surge protection of power semiconductor devices; dynamic behavior. *Jinzenji, T.*, + , *IAS 85* 929–934

Very large-scale integration

- electrostatic discharge protection for VLSI circuits. *Greason, W.D.*, *IAS 85* 1429–1434

Voltage breakdown; cf. Dielectric breakdown**Voltage control**

- chopper integrated voltage control method for speed control of dc motor. *Irie, H.*, + , *IAS 85* 405–410

W

Water

- glass embedded capacitive-type water sensors; design optimization via modeling. *Boules, N.*, + , *IAS 85* 1441–1448

Waveform generators; cf. Signal generators**Welding; cf.** Arc welding**Wind power generation**

- multifunction dc – dc converter as power conditioner for solar or wind energy systems. *Ferrieux, J.-P.*, + , *IAS 85* 1001–1007

Workstations, human factors; cf. Displays, human factors

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X

Xerography; cf. Electrophotography

Z

Zeros; cf. Poles and zeros

1985 THIRTY-SEVENTH ANNUAL CONFERENCE OF ELECTRICAL ENGINEERING PROBLEMS IN THE RUBBER AND PLASTICS INDUSTRIES

April 15 – 16, 1985, Akron, OH

A

ac motor drives

design considerations for GTO inverters in ac motor drive applications. *Mattern, K.E., + , RAPCON 85 10-16 ac motor drives; cf. Induction motor drives; Synchronous motor drives*

C

CAD (computer-aided design); cf. Design automation**CAM (computer-aided manufacturing); cf. Manufacturing automation****Cascade systems**

advantages of cascaded temperature controllers as used on plastic extruders. *Carr, D.M., RAPCON 85 21-28*

Chemical industry; cf. Plastics industry**Computer software documentation; cf. Documentation****Control systems; cf. Digital control; Manufacturing automation; Process control; Programmable control**

D

dc motor drives

preprogrammed digital coordination for dc drivers. *DiNardo, R., RAPCON 85 53-59*

Design automation

technology trends in CAD/CAM. *Weisberg, D.E., RAPCON 85 1-5*

Digital control

digital technique for controlling mixture of two or more materials. *Minnich, C.A., + , RAPCON 85 29-36*

preprogrammed digital coordination for dc drivers. *DiNardo, R., RAPCON 85 53-59*

Digital image processing; cf. Image processing**Displays**

color graphics for diagnostic applications in plant environment. *Sandusky, C.F., RAPCON 85 60-61*

Documentation

programming documentation software for PLCs. *Brickley, J.H., RAPCON 85 41-42*

F

Fault diagnosis

color graphics for diagnostic applications in plant environment. *Sandusky, C.F., RAPCON 85 60-61*

G

Graphic displays; cf. Displays

I

Image processing

measuring rubber bank weight by processing two-dimensional images; structure, algorithm accuracy. *Nagano, J., RAPCON 85 37-40*

Induction motor drives

ac vector control drives for process applications; performance capabilities. *Wasko, C.R., RAPCON 85 6-9*

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proper selection of induction motors for use with inverters. *Baglione, D.A., RAPCON 85 48-52*

Industrial control; cf. Manufacturing automation; Process control; Programmable control

Interconnected systems; cf. Cascade systems

M

Maintenance

color graphics for diagnostic applications in plant environment. *Sandusky, C.F., RAPCON 85 60-61*

Manufacturing automation

technology trends in CAD/CAM. *Weisberg, D.E., RAPCON 85 1-5*

Manufacturing automation; cf. Process control; Programmable control

Materials processing

digital technique for controlling mixture of two or more materials. *Minnich, C.A., + , RAPCON 85 29-36*

Mechanical variables measurement; cf. Weight measurement

Motor drives; cf. ac motor drives; dc motor drives; Induction motor drives; Synchronous motor drives

Multiprocessing

automation of tire press through multiprocessor programmable controller. *Aldridge, R., RAPCON 85 43-47*

P

Plastics industry

advantages of cascaded temperature controllers as used on plastic extruders. *Carr, D.M., RAPCON 85 21-28*

high-efficiency variable-speed ac drive for Banbury mixer. *Lawrence, R.G., RAPCON 85 17-20*

Power conversion, dc – ac; cf. ac motor drives

Process control

advantages of cascaded temperature controllers as used on plastic extruders. *Carr, D.M., RAPCON 85 21-28*

digital technique for controlling mixture of two or more materials. *Minnich, C.A., + , RAPCON 85 29-36*

measuring rubber bank weight by processing two-dimensional images; structure, algorithm accuracy. *Nagano, J., RAPCON 85 37-40*

Programmable control

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preprogrammed digital coordination for dc drivers. *DiNardo, R., RAPCON 85 53-59*

programming documentation software for PLCs. *Brickley, J.H., RAPCON 85 41-42*

Proportional control

advantages of cascaded temperature controllers as used on plastic extruders. *Carr, D.M., RAPCON 85 21-28*

R

Reliability; cf. Maintenance**Rubber industry**

measuring rubber bank weight by processing two-dimensional images; structure, algorithm accuracy. *Nagano, J., RAPCON 85 37-40*

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S

Software documentation; cf. Documentation**Synchronous motor drives**high-efficiency variable-speed ac drive for Banbury mixer. *Lawrence, R.G., RAPCON 85 17-20*

T

Temperature controladvantages of cascaded temperature controllers as used on plastic extruders. *Carr, D.M., RAPCON 85 21-28***Thyristor motor drives**design considerations for GTO inverters in ac motor drive applications. *Mattern, K.E., + , RAPCON 85 10-16* †

W

Weight measurementmeasuring rubber bank weight by processing two-dimensional images; structure, algorithm accuracy. *Nagano, J., RAPCON 85 37-40***1985 JOINT ASME/IEEE RAILROAD CONFERENCE**

April 16 – 18, 1985, New York City, NY

C

Control systems; cf. Rail-transportation control systems

D

Developing nationsac locomotives in India; 25 years of experience. *Dorairaj, K.R., RRCON 85 69-107***Diesel engines**diesel – electric locomotives in the US; overview. *Martin, J.J., + , RRCON 85 116-129*electric locomotive propulsion systems driven by diesel engine; future aspects. *Hapeman, M.J., + , RRCON 85 108-115*

E

Energy resourcesanalytic model of rail car energy consumption. *English, G.W., + , RRCON 85 1-7***Expert systems**rule-based system for train automatic stop control. *Ito, H., + , RRCON 85 48-52*

K

Knowledge-based systems; cf. Expert systems

P

Power systems; cf. Rail-transportation electrical systems

R

Rail transportationanalytic model of rail car energy consumption. *English, G.W., + , RRCON 85 1-7*gravity-assisted rapid transit; operations analysis. *Weiss, D.M., RRCON 85 8-18***Rail-transportation control systems**Automated People Mover microprocessor-based train control; operating and maintenance experiences. *Robbins, A.S., RRCON 85 53-58*microprocessor control of wheel slip events. *Burt, H.G.P., + , RRCON 85 19-28*rule-based system for train automatic stop control. *Ito, H., + , RRCON 85 48-52***Rail-transportation electrical systems**electrification of Deseret Western Railway. *Hayes, H.I., + , RRCON 85 42-47*power supply system for electrification of North Jersey Coast Line. *Kneschke, T.A., RRCON 85 29-41***Rail-transportation propulsion**ac locomotives in India; 25 years of experience. *Dorairaj, K.R., RRCON 85 69-107*diesel – electric locomotive propulsion systems. *Hapeman, M.J., + , RRCON 85 108-115*diesel – electric locomotives in the US; overview. *Martin, J.J., + , RRCON 85 116-129*General Motors GF6C electric locomotive. *Rao, N.U., RRCON 85 59-68***Rail-transportation reliability**microprocessor control of wheel slip events. *Burt, H.G.P., + , RRCON 85 19-28***Rapid transit; cf. Urban transportation**

U

Urban transportationAutomated People Mover microprocessor-based train control; operating and maintenance experiences. *Robbins, A.S., RRCON 85 53-58*microprocessor control of wheel slip events. *Burt, H.G.P., + , RRCON 85 19-28*gravity-assisted rapid transit; operations analysis. *Weiss, D.M., RRCON 85 8-18***1985 ANNUAL PULP AND PAPER INDUSTRY TECHNICAL CONFERENCE**

April 23 – 26, 1985, Houston, TX

A

ac motor drivespaper-machine retrofit using ac vector control drives. *Rector, H., + , PAPCON 85 91-94***ac motors**solid-state ac motor starters in pulp and paper industry. *Bowerfind, J., + , PAPCON 85 126-131***Angular velocity measurement**improved methods of measuring machinery speeds via adaptive integral processor. *Fritz, R.J., PAPCON 85 53-57*

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Arc discharges; cf. Circuit breakers; Interrupters
Availability; cf. Maintenance

C

Cablestray cable flame testing. *Cancelosi, J.R., + , PAPCON 85 17-23***Circuit breakers**comparison of vacuum and SF₆ technologies at 5 kV through 38 kV. *Swindler, D.L., PAPCON 85 98-103*guidelines for application of vacuum contactors. *Farag, S.F., + , PAPCON 85 37-42*

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Circuit breakers; cf. Interrupters

Cogeneration

grounding considerations in cogeneration. *Woodbury, F.A., PAPCON 85 43-52*

solar energy cogeneration system at Shenandoah, Georgia. *Ney, E.J., + , PAPCON 85 30-36*

Communication system planning

communication strategies for pulp and paper applications. *Hammond, B.A., PAPCON 85 24-29*

Computer software documentation; cf. Documentation

Control systems; cf. Distributed control; Programmable control

D

dc motors

basic dc machine theory review. *Hall, R., PAPCON 85 58-64*

Distributed control

electromagnetic interference and grounding considerations in distributed control systems. *Shulman, L., PAPCON 85 7-10*

programmable controller and distributive control installation practices. *Crane, R., PAPCON 85 1-6*

Documentation

programming and documentation guidelines for programmable controller applications. *Scarboro, D.W., PAPCON 85 119-125*

E

Economics; cf. Industrial power system economics; Manufacturing economics

Electromagnetic interference

electromagnetic interference and grounding considerations in distributed control systems. *Shulman, L., PAPCON 85 7-10*

Energy management

industrial electrical efficiency study of Champion International's plywood/hardboard mill in Lebanon, Oregon. *Brewer, R., + , PAPCON 85 95-97*

study of electrical energy use by pumping systems in paper-mill bleach plant. *Gault, T., + , PAPCON 85 132-137*

F

Fault tolerance; cf. Industrial power system faults

Fires

tray cable flame testing. *Cancelosi, J.R., + , PAPCON 85 17-23*

G

Gas-insulated substations

design and reliability of high-voltage substations; gas-insulated substations vs. conventional ones. *Luehrmann, H.M., PAPCON 85 11-16*

Gas interrupters; cf. SF₆ interrupters

Grounding

electromagnetic interference and grounding considerations in distributed control systems. *Shulman, L., PAPCON 85 7-10*

grounding considerations in cogeneration. *Woodbury, F.A., PAPCON 85 43-52*

H

Harmonic analysis

automated online harmonic measurement system for industrial power system. *Velazquez, D.J., + , PAPCON 85 109-118*

I

Induction motors

paper-machine retrofit using ac vector control drives. *Rector, H., + , PAPCON 85 91-94*

Industrial control; cf. Programmable control

Industrial power system economics

industrial electrical efficiency study of Champion International's plywood/hardboard mill in Lebanon, Oregon. *Brewer, R., + , PAPCON 85 95-97*

study of electrical energy use by pumping systems in paper-mill bleach plant. *Gault, T., + , PAPCON 85 132-137*

Industrial power system faults

multivoltage short-circuit duty calculation for industrial power systems. *Simpson, R.H., PAPCON 85 74-90*

Industrial power system faults; cf. Industrial power system protection

Industrial power system protection

design and reliability of high-voltage substations; gas-insulated substations vs. conventional ones. *Luehrmann, H.M., PAPCON 85 11-16*

grounding considerations in cogeneration. *Woodbury, F.A., PAPCON 85 43-52*

multivoltage short-circuit duty calculation for industrial power systems. *Simpson, R.H., PAPCON 85 74-90*

Industrial power system protection; cf. Industrial power system faults; Motor protection

Industrial power systems; cf. Cogeneration

Interrupters

guidelines for application of vacuum contactors. *Farag, S.F., + , PAPCON 85 37-42*

Interrupters; cf. Circuit breakers; SF₆ interrupters; Vacuum interrupters

L

Legal factors

maintenance contracts; types and utilization. *Melton, E.M., PAPCON 85 72-73*

M

Maintenance

maintenance contracts; types and utilization. *Melton, E.M., PAPCON 85 72-73*

Manufacturing automation; cf. Programmable control

Manufacturing economics

study of electrical energy use by pumping systems in paper-mill bleach plant. *Gault, T., + , PAPCON 85 132-137*

Manufacturing economics; cf. Industrial power system economics; Motor economics

Measurement; cf. Monitoring

Microcomputer applications

programmable controller and distributive control installation practices. *Crane, R., PAPCON 85 1-6*

Monitoring

automated online harmonic measurement system for industrial power system. *Velazquez, D.J., + , PAPCON 85 109-118*

Motion transducers; cf. Velocity transducers

Motor drives

improved methods of measuring machinery speeds via adaptive integral processor. *Fritz, R.J., PAPCON 85 53-57*

velocity and position transducers for adjustable-speed drives. *Dessner, H., + , PAPCON 85 104-108*

Motor drives; cf. ac motor drives

Motor protection

multivoltage short-circuit duty calculation for industrial power systems. *Simpson, R.H., PAPCON 85 74-90*

problems associated with motor start-up using instantaneous trip devices. *Bartheld, R.G., + , PAPCON 85 65-67*

Motors; cf. ac motors; dc motors; Induction motors

O

Optical fiber applications

review of optical fiber theory and use in industrial applications. *Kitay, D.L., + , PAPCON 85 68-71*

P

Planning; cf. Communication system planning

Position transducers

velocity and position transducers for adjustable-speed drives. *Dessner, H., + , PAPCON 85 104-108*

Power generation; cf. Cogeneration

Power ...; cf. Industrial power system ...

Process heating; cf. Cogeneration

Programmable control

programmable controller and distributive control installation practices. *Crane, R., PAPCON 85 1-6*

programming and documentation guidelines for programmable controller applications. *Scarboro, D.W., PAPCON 85 119-125*

Protection/safety; cf. Fires; Grounding; Industrial power system protection; Motor protection

Pulp and paper industry

communication strategies for pulp and paper applications. *Hammond, B.A., PAPCON 85 24-29*

S

- SF₆ interrupters**
 comparison of vacuum and SF₆ technologies at 5 kV through 38 kV.
Swindler, D.L., PAPCON 85 98-103
- Software documentation; cf. Documentation**
- Solar power generation**
 solar energy cogeneration system at Shenandoah, Georgia. *Ney, E.J., +, PAPCON 85 30-36*
- Spectral analysis; cf. Harmonic analysis**
- Steam generation; cf. Cogeneration**
- Substations; cf. Gas-insulated substations**
- Switches/switching; cf. Vacuum switches**
- Switchgear; cf. Circuit breakers; Interrupters**

T

- Testing**
 tray cable flame testing. *Cancelosi, J.R., +, PAPCON 85 17-23*

1985 RURAL ELECTRIC POWER CONFERENCE

April 28 - 30, 1985, Springfield, IL

A

- Animal husbandry**
 stray voltage in livestock facilities. *Gustafson, R.J., REPCON 85 Paper C2/1-19*

C

- Capacitor switching**
 control of switched capacitors on distribution systems. *Harder, J.E., +, REPCON 85 Paper C3/1-7*
- Cogeneration**
 consumer-owned generation facilities; metering considerations. *Nason, R.R., +, REPCON 85 Paper C4/1-8*
- Construction**
 computer-generated material explosion procedure of generating materials listings for rural powerline construction. *Hasenbeck, G.T., +, REPCON 85 Paper A2/1-15*

E

- Electric shock**
 stray voltage in livestock facilities. *Gustafson, R.J., REPCON 85 Paper C2/1-19*
- Electric variables measurement; cf. Power system measurements**

F

- Forecasting; cf. Load forecasting**

G

- Grounding; cf. Electric shock**

H

- Harmonic distortion; cf. Power system harmonics**

I

- Imaging/mapping; cf. Infrared imaging/mapping**
- Industrial power systems; cf. Cogeneration**
- Infrared imaging/mapping**
 infrared inspection as power system protective maintenance procedure.
Boza, P.S., +, REPCON 85 Paper C1/1-4
- Inspection**
 infrared inspection as power system protective maintenance procedure.
Boza, P.S., +, REPCON 85 Paper C1/1-4
- Inventory control**
 computer-generated material explosion procedure of generating materials listings for rural powerline construction. *Hasenbeck, G.T., +, REPCON 85 Paper A2/1-15*

+ Check author entry for coauthors

- Thermal power generation; cf. Cogeneration**
- Transmission lines; cf. Cables**

V

- Vacuum interrupters**
 comparison of vacuum and SF₆ technologies at 5 kV through 38 kV.
Swindler, D.L., PAPCON 85 98-103
- Vacuum switches**
 guidelines for application of vacuum contactors. *Farag, S.F., +, PAPCON 85 37-42*
- Vacuum switches; cf. Vacuum interrupters**
- Velocity measurement; cf. Angular velocity measurement**
- Velocity transducers**
 velocity and position transducers for adjustable-speed drives. *Dessner, H., +, PAPCON 85 104-108*

L

- Lightning, power systems**
 deadfront arresters for protection of underground systems. *Barger, J.L., REPCON 85 Paper B5/1-4*
- Load forecasting**
 forecasting models for rural electric cooperatives; survey of 21 cooperatives. *Mayo, L.G., REPCON 85 Paper A5/1-3*
 microcomputer in electric utility load and energy forecasting. *Wenham, G.R., REPCON 85 Paper A4/1-6*

M

- Measurement; cf. Power system measurements**
- Microcomputer applications**
 microcomputer in electric utility load and energy forecasting. *Wenham, G.R., REPCON 85 Paper A4/1-6*
 rural electric cooperatives' use of personal computers; data input techniques and algorithms. *Woodside, W.L., Jr., REPCON 85 Paper A1/1-12*

O

- Optical imaging/mapping; cf. Infrared imaging/mapping**

P

- Poles (structures); cf. Power distribution mechanical factors**
- Power cables**
 design options for underground rural distribution system; insulating materials and cable jacketing. *Landinger, C.C., REPCON 85 Paper B4/1-6*
- Power demand; cf. Load forecasting**
- Power distribution**
 rural electric cooperatives' use of personal computers; data input techniques and algorithms. *Woodside, W.L., Jr., REPCON 85 Paper A1/1-12*
- Power distribution control**
 control of switched capacitors on distribution systems. *Harder, J.E., +, REPCON 85 Paper C3/1-7*
- Power distribution economics**
 application of economic principles in electric system design. *Galey, M.E., REPCON 85 Paper B2/1-7*
 selection of most economical conductor for new construction on electric distribution system. *Soper, J.W., REPCON 85 Paper B1/1-10*
- Power distribution faults; cf. Power distribution protection**
- Power distribution mechanical factors**
 computer-generated material explosion procedure of generating materials listings for rural powerline construction. *Hasenbeck, G.T., +, REPCON 85 Paper A2/1-15*
 eliminating short guy leads through better pole embedment. *Schepers, M.G., +, REPCON 85 Paper D1/1-13*
- Power distribution protection**
 deadfront arresters for protection of underground systems. *Barger, J.L., REPCON 85 Paper B5/1-4*

† Check author entry for subsequent corrections/comments

padmounted distribution switchgear. *Golze, R.W., REPCON 85 Paper B6/1-3*

Power generation; cf. Cogeneration

Power system control; cf. Power distribution control

Power system economics; cf. Power distribution economics

Power system harmonics
 measurements and analysis of power system harmonics. *Balsler, S.J., + , REPCON 85 Paper C5/1-11*

Power system maintenance
 infrared inspection as power system protective maintenance procedure. *Boza, P.S., + , REPCON 85 Paper C1/1-4*

Power system measurements
 analysis and measurements of power system harmonics. *Balsler, S.J., + , REPCON 85 Paper C5/1-11*
 consumer-owned generation facilities; metering considerations. *Nason, R.R., + , REPCON 85 Paper C4/1-8*

Power system mechanical factors; cf. Power distribution mechanical factors

Power system protection; cf. Lightning, power systems; Power distribution protection

Power transformer testing
 loss evaluation information for purchases of transformers. *Moore, S.P., REPCON 85 Paper B3/1-4*

Power transmission lines, underground
 deadfront arresters for protection of underground systems. *Barger, J.L., REPCON 85 Paper B5/1-4*
 design options for underground rural distribution system; insulating materials and cable jacketing. *Landing, C.C., REPCON 85 Paper B4/1-6*

Process heating; cf. Cogeneration

R

Rural areas
 application of economic principles in electric system design. *Galey, M.E., REPCON 85 Paper B2/1-7*
 computer-generated material explosion procedure of generating materials listings for rural powerline construction. *Hasenbeck, G.T., + , REPCON 85 Paper A2/1-15*

design options for underground rural distribution system; insulating materials and cable jacketing. *Landing, C.C., REPCON 85 Paper B4/1-6*

forecasting models for rural electric cooperatives; survey of 21 cooperatives. *Mayo, L.G., REPCON 85 Paper A5/1-3*

microcomputer in electric utility load and energy forecasting. *Wenham, G.R., REPCON 85 Paper A4/1-6*

rural electric cooperatives use of personal computers; data input techniques and algorithms. *Woodside, W.L., Jr., REPCON 85 Paper A1/1-12*

selection of most economical conductor for new construction on electric distribution system. *Soper, J.W., REPCON 85 Paper B1/1-10*

S

Shock; cf. Electric shock

Steam generation; cf. Cogeneration

Switches/switching; cf. Capacitor switching

Switchgear
 padmounted distribution switchgear. *Golze, R.W., REPCON 85 Paper B6/1-3*

T

Thermal power generation; cf. Cogeneration

U

Underground power cables; cf. Power transmission lines, underground

V

Varistors
 deadfront arresters for protection of underground systems. *Barger, J.L., REPCON 85 Paper B5/1-4*

1985 THIRTY-SIXTH ANNUAL INTERNATIONAL APPLIANCE TECHNICAL CONFERENCE
 April 29 - 30, 1985, Madison, WI

A

ac motor drives; cf. Induction motor drives

Air pollution
 catalytic technology to reduce hazardous gases in indoor areas. *Collins, M.F., + , ATCON 85 Paper GG1-12*

Alloys
 heat-resistant alloys for porcelain enameling of furnace muffles, radiant tubes, and alloy tooling. *Skarda, J.J., ATCON 85 Paper S1-16*
 55% Al - Zn coated steel for home appliance applications; evaluation. *Cleary, H.J., + , ATCON 85 Paper Q1-30*

Aluminum materials/devices
 55% Al - Zn coated steel for home appliance applications; evaluation. *Cleary, H.J., + , ATCON 85 Paper Q1-30*

Appliances; cf. Home appliances

C

Ceramic materials/devices
 gas-fired hob with smooth black glass ceramic top for stovetop cooking; design and development. *Rieck, F.G., ATCON 85 Paper P1-27*
 glass - ceramic hob for stovetop cooking. *Scheidler, H., ATCON 85 Paper W1-30*
 quartz halogen heating elements for use with electric hob ceramic cooktops. *Adams, F.J., + , ATCON 85 Paper T1-12*

Clothes dryers
 designing electronic controls for clothes dryers. *Casetta, H.L., + , ATCON 85 Paper MM1-12*

Consumer products
 cordless portable power tools; evaluation. *Neumann, P.W., ATCON 85 Paper C1-9*

+ Check author entry for coauthors

electromechanical cantilever blade appliance switch. *Reid, B., ATCON 85 Paper E1-7*

sensing device for washing machines. *Boscolo, A., + , ATCON 85 Paper X1-10*

Consumer products; cf. Appliances; Product safety

Control systems
 designing electronic controls for clothes dryers. *Casetta, H.L., + , ATCON 85 Paper MM1-12*
 electronic control system for infrared heating surface cooktops. *Payne, T.R., ATCON 85 Paper M1-13*
 electronic reliability in control of HVAC and appliances. *Eckman, R.L., ATCON 85 Paper KK1-9*
 sensing device for washing machines. *Boscolo, A., + , ATCON 85 Paper X1-10*

Cooking appliances
 convection vs. radiant mode of self-cleaning electric range oven; energy consumption, time, and food quality. *Lytton, J.Z., + , ATCON 85 Paper PP1-2*
 electronic control system for infrared heating surface cooktops. *Payne, T.R., ATCON 85 Paper M1-13*
 energy utilization, product yields, and consumer evaluation of turkey roasted in four oven types at two power settings. *Rasdall, J.O., + , ATCON 85 Paper RR1-12*
 energy utilization, time, and quality of foods prepared in microwave/convection vs. conventional electric range oven. *Cullars, B.A., + , ATCON 85 Paper NN1-13*
 gas-fired hob with smooth black glass ceramic top for stovetop cooking; design and development. *Rieck, F.G., ATCON 85 Paper P1-27*
 gas-fired self-cleaning oven. *Lawrence, W.T., + , ATCON 85 Paper U1-9*
 glass - ceramic hob for stovetop cooking; effect on home appliance market. *Scheidler, H., ATCON 85 Paper W1-30*
 infrared-jet impingement gas cooktop for home use; design and field test. *Shukla, K.C., + , ATCON 85 Paper N1-27*

† Check author entry for subsequent corrections/comments

interlock switch for microwave oven door. *Happ, L.R., ATCON 85 Paper D1-12*

quartz halogen heating elements for use with electric hob ceramic cooktops. *Adams, F.J., + , ATCON 85 Paper T1-12*

Cooling; cf. Refrigerators

D

Die casting; cf. Metals

Disconnecting switches

interlock switch for microwave oven door. *Happ, L.R., ATCON 85 Paper D1-12*

Displays, human factors

touch control display switch module for appliances. *Grandle, R.W., ATCON 85 Paper LL1-4*

E

Electric machines; cf. Motors

Electromagnetic heating

energy utilization, product yields, and consumer evaluation of turkey roasted in four oven types at two power settings. *Rasdall, J.O., + , ATCON 85 Paper RR1-12*

energy utilization, time, and quality of foods prepared in microwave/convection vs. conventional electric range oven. *Cullars, B.A., + , ATCON 85 Paper NN1-13*

interlock switch for microwave oven door. *Happ, L.R., ATCON 85 Paper D1-12*

Electromechanical switches; cf. Switches/switching

Environmental factors; cf. Air pollution; Waste materials

F

Feedback systems; cf. Control systems

FET switches

FET dc speed control switch for cordless portable power tools; evaluation. *Neumann, P.W., ATCON 85 Paper C1-9*

Furnaces; cf. Heating

G

Gas appliances

energy-efficient instantaneous gas water heater with improved safety features. *Ushimaru, K., + , ATCON 85 Paper Y1-12*

gas-fired hob with smooth black glass ceramic top for stovetop cooking; design and development. *Rieck, F.G., ATCON 85 Paper P1-27*

gas-fired self-cleaning oven. *Lawrence, W.T., + , ATCON 85 Paper U1-9*

infrared-jet impingement gas cooktop for home use; design and field test. *Shukla, K.C., + , ATCON 85 Paper N1-27*

H

Heating

energy-efficient instantaneous gas water heater with improved safety features. *Ushimaru, K., + , ATCON 85 Paper Y1-12*

heat-resistant alloys for porcelain enameling of furnace muffles, radiant tubes, and alloy tooling. *Skarda, J.J., ATCON 85 Paper S1-16*

laundry wastewater recycler and heater appliance; design and test results. *Guarino, V.J., ATCON 85 Paper Z1-12*

Heating; cf. Cooking appliances; Temperature control

Home appliances

adjustable-speed motor drives used in appliance industry; overview. *James, M., ATCON 85 Paper B1-6*

applications of fiber-optics for appliance industry. *Pater, C., ATCON 85 Paper EE1-6*

designing electronic controls for clothes dryers. *Casetta, H.L., + , ATCON 85 Paper MM1-12*

die casting process in appliance industry. *Lovejoy, M., ATCON 85 Paper R1-10*

electromechanical cantilever blade appliance switch. *Reid, B., ATCON 85 Paper E1-7*

electronic reliability in control of HVAC and appliances. *Eckman, R.L., ATCON 85 Paper KK1-9*

laundry wastewater recycler and heater appliance; design and test results. *Guarino, V.J., ATCON 85 Paper Z1-12*

sensing device for washing machines. *Boscolo, A., + , ATCON 85 Paper X1-10*

thin-film platinum for appliance temperature control. *Clayton, W.A., ATCON 85 Paper V1-11*

touch control display switch module for appliances. *Grandle, R.W., ATCON 85 Paper LL1-4*

55% Al - Zn coated steel for home appliance applications; evaluation. *Cleary, H.J., + , ATCON 85 Paper Q1-30*

work of IEC on international standardization to improve trade and safety of household appliances. *Bansse, M.-C., ATCON 85 Paper L1-8*

Home appliances; cf. Cooking appliances; Gas appliances; Refrigerators

Human factors; cf. Displays, human factors

I

IEC; cf. International Electrotechnical Commission

Induction motor drives

adjustable-speed motor drives used in appliance industry; overview. *James, M., ATCON 85 Paper B1-6*

Infrared heating

electronic control system for infrared heating surface cooktops. *Payne, T.R., ATCON 85 Paper M1-13*

infrared-jet impingement gas cooktop for home use; design and field test. *Shukla, K.C., + , ATCON 85 Paper N1-27*

International Electrotechnical Commission

work of IEC on international standardization to improve trade and safety of household appliances. *Bansse, M.-C., ATCON 85 Paper L1-8*

M

Manufacturing

die casting process in appliance industry. *Lovejoy, M., ATCON 85 Paper R1-10*

Metals industry

die casting process in appliance industry. *Lovejoy, M., ATCON 85 Paper R1-10*

Microwave ovens; cf. Cooking appliances

Microwave radiation protection

interlock switch for microwave oven door. *Happ, L.R., ATCON 85 Paper D1-12*

Motor drives

adjustable-speed motor drives used in appliance industry; overview. *James, M., ATCON 85 Paper B1-6*

Motor drives; cf. Induction motor drives

Motors

positive temperature coefficient resistors in permanent split capacitor single-phase motors. *Haggerty, J.K., ATCON 85 Paper F1-12*

O

Optical fiber applications

applications of fiber-optics for appliance industry. *Pater, C., ATCON 85 Paper EE1-6*

Ovens; cf. Cooking appliances

P

Plastic materials/devices

specialty modified polystyrene for refrigerator liners. *Hoge, A.R., + , ATCON 85 Paper DD1-12*

XYDAR resins, new family of aromatic polyester injection moldable polymers. *Norton, G.R., + , ATCON 85 Paper CC1-12*

Platinum materials/devices

thin-film platinum for appliance temperature control. *Clayton, W.A., ATCON 85 Paper V1-11*

Polymers; cf. Plastic materials/devices

Porcelain enameling

heat-resistant alloys for porcelain enameling of furnace muffles, radiant tubes, and alloy tooling. *Skarda, J.J., ATCON 85 Paper S1-16*

Product safety

interlock switch for microwave oven door. *Happ, L.R., ATCON 85 Paper D1-12*

work of IEC on international standardization to improve trade and safety of household appliances. *Bansse, M.-C., ATCON 85 Paper L1-8*

Q

Quality assurance

electronic reliability in control of HVAC and appliances. *Eckman, R.L., ATCON 85 Paper KK1-9*

Quartz materials/devices

quartz halogen heating elements for use with electric hob ceramic cooktops. *Adams, F.J., +*, *ATCON 85* Paper T1-12

R

Refrigerators

adaptive demand defrost and two-zone control and monitor system for home refrigerators. *Knoop, D., +*, *ATCON 85* Paper G1-12

automatically controlled defrosting cycle for home refrigerators. *Allard, J., +*, *ATCON 85* Paper H1-11

electronic monitor and diagnostic system for refrigerators. *Sauter, K.E.*, *ATCON 85* Paper K1-9

specially modified polystyrene for refrigerator liners. *Hoge, A.R., +*, *ATCON 85* Paper DD1-12

Resin materials/devices

specially modified polystyrene for refrigerator liners. *Hoge, A.R., +*, *ATCON 85* Paper DD1-12

XYDAR resins, new family of aromatic polyester injection moldable polymers. *Norton, G.R., +*, *ATCON 85* Paper CC1-12

Resistance heating; cf. Cooking appliances**Resistors**

positive temperature coefficient resistors in permanent split capacitor single-phase motors. *Haggerty, J.K.*, *ATCON 85* Paper F1-12

Rotating machines; cf. Motors

S

Standards

work on international standardization to improve trade and safety of household appliances. *Bansse, M.-C.*, *ATCON 85* Paper L1-8

Switches/switching

electromechanical cantilever blade appliance switch. *Reid, B.*, *ATCON 85* Paper E1-7

touch control display switch module for appliances. *Grandle, R.W.*, *ATCON 85* Paper LL1-4

Switches/switching; cf. Disconnecting switches

T

Temperature control

adaptive demand defrost and two-zone control and monitor system for home refrigerators. *Knoop, D., +*, *ATCON 85* Paper G1-12

1985 ANNUAL TEXTILE INDUSTRY TECHNICAL CONFERENCE

May 8 - 9, 1985, Greenville, SC

A

ac motors; cf. Induction motors

Availability; cf. Maintenance

C

Computer power supplies

power systems disturbances and considerations for power conditioning, with emphasis on protection of computers. *Nash, H.O., Jr., +*, *TEXCON 85* Paper 10

Control systems; cf. Programmable control

E

Economics; cf. Power system economics**Energy management**

electrical metering for energy management; objectives and applications. *Stebbins, W.L.*, *TEXCON 85* Paper 1

Energy measurement

electrical metering for energy management; objectives and applications. *Stebbins, W.L.*, *TEXCON 85* Paper 1

F

Fault current limiters

current-limiting fuses; limitations. *Moylan, W.J.*, *TEXCON 85* Paper 7

+ Check author entry for coauthors

automatically controlled defrosting cycle for home refrigerators. *Allard, J., +*, *ATCON 85* Paper H1-11

electronic monitor and diagnostic system for refrigerators. *Sauter, K.E.*, *ATCON 85* Paper K1-9

thin-film platinum for appliance temperature control. *Clayton, W.A.*, *ATCON 85* Paper V1-11

Temperature transducers; cf. Thermistors**Thermal factors**

heat-resistant alloys for porcelain enameling of furnace muffles, radiant tubes, and alloy tooling. *Skarda, J.J.*, *ATCON 85* Paper S1-16

Thermal factors; cf. Temperature control**Thermistors**

positive temperature coefficient resistors in permanent split capacitor single-phase motors. *Haggerty, J.K.*, *ATCON 85* Paper F1-12

Thermoplastics

XYDAR resins, new family of aromatic polyester injection moldable polymers. *Norton, G.R., +*, *ATCON 85* Paper CC1-12

Thin-film devices

thin-film platinum for appliance temperature control. *Clayton, W.A.*, *ATCON 85* Paper V1-11

Transistors

FET dc Darlington transistors for dc speed control circuits in cordless portable power tools; evaluation. *Neumann, P.W.*, *ATCON 85* Paper C1-9

W

Washing machines

laundry wastewater recycler and heater appliance; design and test results. *Guarino, V.J.*, *ATCON 85* Paper Z1-12

sensing device for washing machines. *Boscolo, A., +*, *ATCON 85* Paper X1-10

Waste materials

laundry wastewater recycler and heater appliance; design and test results. *Guarino, V.J.*, *ATCON 85* Paper Z1-12

Water heaters

energy-efficient instantaneous gas water heater with improved safety features. *Ushimaru, K., +*, *ATCON 85* Paper Y1-12

Z

Zinc materials/devices

55% Al - Zn coated steel for home appliance applications; evaluation. *Cleary, H.J., +*, *ATCON 85* Paper Q1-30

Fault diagnosis; cf. Power system faults**Fault tolerance; cf. Power system faults****Frequency control**

effects of adjustable frequency controllers on ac line. *Jones, C.B.*, *TEXCON 85* Paper 2

Fuses

current-limiting fuses; limitations. *Moylan, W.J.*, *TEXCON 85* Paper 7

I

IEC; cf. International Electrotechnical Commission**Induction motors**

transient inrush current in high-efficiency and standard motors. *Scheda, F.A.*, *TEXCON 85* Paper 6

Industrial control; cf. Programmable control**Industrial power system maintenance**

maintenance of solid-state controls and microprocessor-based controllers. *Gombash, J.D.*, *TEXCON 85* Paper 3

International Electrotechnical Commission

European drives for textile industry; standards and applications. *Koellner, W.*, *TEXCON 85* Paper 9

Interrupters; cf. Fuses

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M

Maintenance

maintenance of solid-state controls and microprocessor-based controllers. *Gombash, J.D., TEXCON 85* Paper 3

Manufacturing automation; cf. Programmable control

Monitoring; cf. Maintenance

Motor drives

European drives for textile industry; standards and applications. *Koellner, W., TEXCON 85* Paper 9

microprocessor use in ac and dc drives. *Webb, J., TEXCON 85* Paper 4

Motors; cf. Induction motors

O

Optical fiber applications

fiber-optic basics and use in textile industry. *Maggioli, V.J., TEXCON 85* Paper 5

P

Power conditioning

power systems disturbances and considerations for power conditioning, with emphasis on protection of computers. *Nash, H.O., Jr., + , TEXCON 85* Paper 10

Power distribution maintenance; cf. Industrial power system maintenance

Power system economics

electrical metering for energy management; objectives and applications. *Stebbins, W.L., TEXCON 85* Paper 1

Power system faults

power systems disturbances and considerations for power conditioning, with emphasis on protection of computers. *Nash, H.O., Jr., + , TEXCON 85* Paper 10

C

Cables; cf. Control cables

Capacitor switching

guidelines for applying shunt capacitors on industrial power systems. *Vilcheck, W.S., + , ICPS 85* 109–119

Computer power supplies

grounding of computers and other similar sensitive equipment. *Lee, R.H., ICPS 85* 7–9

NEC (National Electrical Code) application to installation of sensitive electronic equipment. *Lewis, W.H., ICPS 85* 10–23

surge protection of computers and other sensitive equipment. *Lee, R.H., ICPS 85* 103–108

Connectors; cf. Power cable connecting

Control cables

single-line power and data transmission link. *Georgopoulos, C.J., + , ICPS 85* 126–131

Control systems; cf. Industrial power system control

Cross-linked polyethylene insulation; cf. Polyethylene-insulated cables, cross-linked

Current limiters; cf. Fault current limiters

D

Data communication

single-line power and data transmission link. *Georgopoulos, C.J., + , ICPS 85* 126–131

E

Electrodes; cf. Grounding electrodes

Emergency/standby power systems

bypassing and isolation of automatic transfer switches. *Castenschiold, R., ICPS 85* 99–102

Energy management

energy consumption in restaurants; results of measurements in 7 restaurants. *Claar, C.N., ICPS 85* 121–125

+ Check author entry for coauthors

Power system measurements; cf. Energy measurement

Power system protection; cf. Fuses; Power system faults

Process control; cf. Textile industry

Programmable control

microprocessor use in ac and dc drives. *Webb, J., TEXCON 85* Paper 4

programmable controllers for textile finishing ranges. *Evans, J.D., TEXCON 85* Paper 8

S

Standards

European drives for textile industry; standards and applications.

Koellner, W., TEXCON 85 Paper 9

Standards; cf. International Electrotechnical Commission

Surges

transient inrush current in high-efficiency and standard motors. *Scheda, F.A., TEXCON 85* Paper 6

T

Textile industry

European drives for textile industry; standards and applications.

Koellner, W., TEXCON 85 Paper 9

fiber-optic basics and use in textile industry. *Maggioli, V.J., TEXCON 85* Paper 5

maintenance of solid-state controls and microprocessor-based controllers. *Gombash, J.D., TEXCON 85* Paper 3

programmable controllers for textile finishing ranges. *Evans, J.D., TEXCON 85* Paper 8

Transient analysis

transient inrush current in high-efficiency and standard motors. *Scheda, F.A., TEXCON 85* Paper 6

1985 INDUSTRIAL & COMMERCIAL POWER SYSTEMS TECHNICAL CONFERENCE

May 13 – 16, 1985, Denver, CO

F

Fault current limiters

current-limiting fuses for various applications. *Ranjan, R., ICPS 85* 64–70

Fault diagnosis; cf. Industrial power system faults

Fires

electrical analysis of office building fire. *Sparling, T.E., ICPS 85* 90–98

Food industry

energy consumption in restaurants; results of measurements in 7 restaurants. *Claar, C.N., ICPS 85* 121–125

Frequency measurement

on-line harmonic measurements; benefits of using automated data acquisition system. *Toth, J.J., III, + , ICPS 85* 48–57

Fuses

current-limiting fuses for various applications. *Ranjan, R., ICPS 85* 64–70

G

Grounding

failure analysis of components due to 480-V ground faults. *Love, D.J., Sr., + , ICPS 85* 58–63

isolated grounding electrodes for computers. *Lee, R.H., ICPS 85* 7–9

Grounding electrodes

steel as ground grid conductor. *Sen, P.K., ICPS 85* 1–6

H

Harmonic distortion; cf. Industrial power system harmonics

I

IEEE standards

surge voltage protection fundamentals; preview of chapter in forthcoming new edition of IEEE Red Book (IEEE Std 141). *Word, G.E., ICPS 85* 78–85

Industrial power system control

guidelines for applying shunt capacitors on industrial power systems. *Vilcheck, W.S., + , ICPS 85* 109–119

† Check author entry for subsequent corrections/comments

Industrial power system faults
 failure analysis of components due to 480-V ground faults. *Love, D.J., Sr., + , ICPS 85 58-63*

Industrial power system faults; cf. Industrial power system protection

Industrial power system harmonics
 on-line harmonic measurements; benefits of using automated data acquisition system. *Toth, J.J., III, + , ICPS 85 48-57*

Industrial power system maintenance
 bypassing and isolation of automatic transfer switches. *Castenschiold, R., ICPS 85 99-102*

Industrial power system protection
 surge protection of computers and other sensitive equipment. *Lee, R.H., ICPS 85 103-108*
 surge voltage protection fundamentals; preview of chapter in forthcoming new edition of IEEE Red Book (IEEE Std 141). *Word, G.E., ICPS 85 78-85*
 undercarpet cable systems; safety aspects and applications for office and commercial uses. *Kobus, J.R., ICPS 85 42-47*

Industrial power system protection; cf. Industrial power system faults; Lightning, power systems; Protective relaying

Industrial power system reliability; cf. Emergency/standby power systems

Industrial power system transients
 surge protection of computers and other sensitive equipment. *Lee, R.H., ICPS 85 103-108*
 surge voltage protection fundamentals; preview of chapter in forthcoming new edition of IEEE Red Book (IEEE Std 141). *Word, G.E., ICPS 85 78-85*

L

Lightning, power systems
 shattering effect of lightning; pressure from heating of air by stroke current. *Lee, R.H., ICPS 85 86-89*
 surge protection of computers and other sensitive equipment. *Lee, R.H., ICPS 85 103-108*

M

Maintenance; cf. Industrial power system maintenance
Measurement; cf. Frequency measurement

O

Office automation
 undercarpet cable systems; safety aspects and applications for office and commercial uses. *Kobus, J.R., ICPS 85 42-47*

P

Paper-insulated cables
 medium-voltage paper-insulated lead-covered cables; advances in jointing systems using heat-shrinkable components. *Mackevich, J., + , ICPS 85 29-34*

Polyethylene-insulated cables, cross-linked
 modified XLPE with tree retardation. *Fisher, E.J., + , ICPS 85 35-41*

Power cable connecting
 medium-voltage paper-insulated lead-covered cables; advances in jointing systems using heat-shrinkable components. *Mackevich, J., + , ICPS 85 29-34*

Power cable installation
 improved cable pulling; use of friction theory and lubrication techniques. *Weitz, G.C., ICPS 85 24-28*

Power cables
 undercarpet cable systems; safety aspects and applications for office and commercial uses. *Kobus, J.R., ICPS 85 42-47*

Power cables; cf. Paper-insulated cables

Power ...; cf. Industrial power system ...

Protection/safety
 electrical analysis of office building fire. *Sparling, T.E., ICPS 85 90-98*
 undercarpet cable systems; safety aspects and applications for office and commercial uses. *Kobus, J.R., ICPS 85 42-47*

Protective relaying
 field testing of current differential relay circuits. *Schwartz, T.F., ICPS 85 72-77*

R

Reactive power control
 guidelines for applying shunt capacitors on industrial power systems. *Vilcheck, W.S., + , ICPS 85 109-119*

Relays; cf. Protective relaying

S

Safety; cf. Protection/safety
Shunt compensation; cf. Reactive power control

Standards
 NEC (National Electrical Code) application to installation of sensitive electronic equipment. *Lewis, W.H., ICPS 85 10-23*

Standards; cf. IEEE standards

Standby systems; cf. Emergency/standby power systems

Switches/switching
 bypassing and isolation of automatic transfer switches. *Castenschiold, R., ICPS 85 99-102*

T

Telemetry; cf. Wire telemetry
Transient analysis; cf. Industrial power system transients

U

Uninterruptible power systems; cf. Emergency/standby power systems

W

Wire telemetry
 single-line power and data transmission link. *Georgopoulos, C.J., + , ICPS 85 126-131*

X

XLPE (cross-linked polyethylene) insulation; cf. Polyethylene-insulated cables, cross-linked

1985 TWENTY-SEVENTH IEEE CEMENT INDUSTRY TECHNICAL CONFERENCE

May 19 - 24, 1985, New Orleans, LA

A

ac motor drives; cf. Synchronous motor drives
Accidents; cf. Protection/safety

Air pollution
 analysis of carbon monoxide and other gaseous emissions as means of controlling and monitoring air-to-fuel ratio in kilns. *Hansen, E.R., CITCON 85 Paper I.4/1-14*
 pulse energization applied to cement plant precipitator for emission requirements compliance. *Lausen, P., + , CITCON 85 Paper I.1/1-19*

+ Check author entry for coauthors

C

Cement industry
 distributed control implementation for modernization of cement plant control systems. *Steelman, D.M., CITCON 85 Paper II.1/1-17*
 equipment for introducing bags onto spouts of rotary packers. *Pintor, G., + , CITCON 85 Paper II.3/1-5*
 load flow programs applied to cement plant design and modification. *Rogers, D.R., CITCON 85 Paper IV.2/1-8*
 Mine Safety and Health Administration and relation between production increases and safety in cement industry. *Bernard, R.L., CITCON 85 Paper III.2/1-10*

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- optimized production and energy conservation in cement industry. *Nilsson, T.R., + , CITCON 85 Paper V.4/1-9*
- process monitoring, control and electronic power systems for Ulco cement production line. *Toscani, L., + , CITCON 85 Paper II.4/1-9*
- recommendations for power and signal grounding in control and computer rooms in cement industry. *Lewis, W.H., CITCON 85 Paper IV.3/1-14*
- safety and health performance in cement industry since 1916. *Hickey, J.A., CITCON 85 Paper III.1/1-11*
- trends in cement-industry motor drives in Asian countries. *Suzuki, H., + , CITCON 85 Paper V.3/1-6*
- trends in cement mill drives in Europe. *Zins, R., + , CITCON 85 Paper V.2/1-14*
- trends in cement mill drives in the US. *Thomas, P.F., CITCON 85 Paper V.1/1-4*
- Control systems; cf. Process control; Programmable control**
- Cycloconverters; cf. Power conversion, ac - ac**
- D
- Distributed control**
modernization of cement plant control systems. *Steelman, D.M., CITCON 85 Paper II.1/1-17*
- E
- Electrostatic precipitators**
pulse energization applied to cement plant precipitator for emission requirements compliance. *Lausen, P., + , CITCON 85 Paper I.1/1-19*
- Energy management**
conserving energy in cement industry through high-efficiency motor drives. *Nilsson, T.R., + , CITCON 85 Paper V.4/1-9*
- Environmental factors; cf. Air pollution**
- G
- Grounding**
high-resistance grounding in cement industry; user's experience. *Foster, J.W., + , CITCON 85 Paper IV.1/1-15*
- recommendations for power and signal grounding in control and computer rooms in cement industry. *Lewis, W.H., CITCON 85 Paper IV.3/1-14*
- I
- Induction motor drives**
solid-state motor controllers in cement industry. *Staub, A.O., + , CITCON 85 Paper V.5/1-8*
- Induction motor drives; cf. Synchronous motor drives**
- L
- Load flow analysis**
use of load flow programs for cement plant design and modifications. *Rogers, D.R., CITCON 85 Paper IV.2/1-8*
- M
- Maintenance**
guidelines for roller mill maintenance in cement industry. *Schonbach, B.H., CITCON 85 Paper III.3/1-36*
- safety and maintenance programs of ocean-going cement-carrying barges. *Magliocca, T., CITCON 85 Paper III.4/1-25*
- Manufacturing automation; cf. Programmable control**
- Marine-vehicle maintenance**
safety and maintenance programs of ocean-going cement-carrying barges. *Magliocca, T., CITCON 85 Paper III.4/1-25*
- Measurement; cf. Testing**
- Minimum-energy control**
conserving energy in cement industry through high-efficiency motor drives. *Nilsson, T.R., + , CITCON 85 Paper V.4/1-9*
- Monitoring; cf. Process monitoring**
- Motor drives**
conserving energy in cement industry through high-efficiency motor drives. *Nilsson, T.R., + , CITCON 85 Paper V.4/1-9*
- solid-state motor controllers in cement industry. *Staub, A.O., + , CITCON 85 Paper V.5/1-8*
- Motor drives; cf. Induction motor drives; Synchronous motor drives**
- N
- Neutron activation analysis**
prompt gamma neutron activation analysis of raw cement mixes. *Weiss, S.J., + , CITCON 85 Paper II.2/1-15*
- Neutron radiation effects; cf. Neutron activation analysis**
- O
- Occupational health and safety**
cement industry safety and health performance. *Hickey, J.A., CITCON 85 Paper III.1/1-11*
- Mine Safety and Health Administration and relation between production increases and safety in cement industry. *Bernard, R.L., CITCON 85 Paper III.2/1-10*
- Occupational health and safety; cf. Protection/safety**
- Optimal control; cf. Minimum-energy control**
- P
- Packaging**
equipment for introducing empty cement bags onto spouts of rotary packers. *Pintor, G., + , CITCON 85 Paper II.3/1-5*
- Particle separators**
cement grinding efficiency improvement by means of separators. *Herrmann, C., CITCON 85 Paper I.5/1-11*
- Pollution; cf. Air pollution**
- Power transmission; cf. Load flow analysis**
- Precipitators; cf. Electrostatic precipitators**
- Process control**
effect of burning process on production of low-alkali cement. *Wolter, A., + , CITCON 85 Paper I.2/1-18*
- electronic data processing and power electronic systems for Ulco cement production line. *Toscani, L., + , CITCON 85 Paper II.4/1-9*
- Process control; cf. Process monitoring**
- Process heating**
analysis of carbon monoxide and other gaseous emissions as means of controlling and monitoring air-to-fuel ratio in kilns. *Hansen, E.R., CITCON 85 Paper I.4/1-14*
- effect of burning process on production of low-alkali cement. *Wolter, A., + , CITCON 85 Paper I.2/1-18*
- kinetics of decarbonization of raw meals and combustion of solid fuels in precalciners; test apparatus and test results. *Kupper, D., + , CITCON 85 Paper I.3/1-28*
- Process monitoring**
analysis of carbon monoxide and other gaseous emissions as means of controlling and monitoring air-to-fuel ratio in kilns. *Hansen, E.R., CITCON 85 Paper I.4/1-14*
- process monitoring, control and electronic power systems for Ulco cement production line. *Toscani, L., + , CITCON 85 Paper II.4/1-9*
- prompt gamma neutron activation analysis of raw cement mixes. *Weiss, S.J., + , CITCON 85 Paper II.2/1-15*
- Programmable control**
distributed control implementation for modernization of cement plant control systems. *Steelman, D.M., CITCON 85 Paper II.1/1-17*
- Protection/safety**
accident/injury history of cement industry. *Hickey, J.A., CITCON 85 Paper III.1/1-11*
- hazardous grounding practices in cement industry and recommended changes. *Lewis, W.H., CITCON 85 Paper IV.3/1-14*
- maintenance and safety of ocean-going cement-carrying barges. *Magliocca, T., CITCON 85 Paper III.4/1-25*
- Mine Safety and Health Administration and relation between production increases and safety in cement industry. *Bernard, R.L., CITCON 85 Paper III.2/1-10*
- Protection/safety; cf. Grounding**
- S
- Safety; cf. Protection/safety**
- Separators; cf. Particle separators**
- Synchronous motor drives**
trends in cement-industry motor drives in Asian countries. *Suzuki, H., + , CITCON 85 Paper V.3/1-6*
- trends in cement mill drives in Europe. *Zins, R., + , CITCON 85 Paper V.2/1-14*
- trends in cement mill drives in the US. *Thomas, P.F., CITCON 85 Paper V.1/1-4*

6500-hp cement-industry ball mill motor drive; operating experience.
Curan, R.J., + , CITCON 85 Paper V.6/1-8

T

Temperature control; cf. Process heating

1985 MINING INDUSTRY TECHNICAL CONFERENCE
June 5 - 7, 1985, Golden, CO

A

ac motor drives; cf. Induction motor drives

C

Cable shielding; cf. Power cable shielding
Control systems; cf. Programmable control

Conveyors
sequential conveyor systems; power demand estimation using probabilistic model. *Minasiewicz, S., + , MITCON 85 25-28*

Corrosion
steel grounding grids; design and corrosion considerations. *Sen, P.K., MITCON 85 5-10*

D

dc motor drives
electronic control of mine hoist; recent developments. *Madisetti, V.K., + , MITCON 85 16-24*

Density measurement
Slurry Monitor, device for precision density measurement of slurries flowing in pipelines. *Kachel, G.C., MITCON 85 34-39*

E

Elevators
electronic control of mine hoist; recent developments. *Madisetti, V.K., + , MITCON 85 16-24*

G

Grounding
safety grounding specification in performance language. *Helfrich, W.J., + , MITCON 85 45-51*
simplified methods of assuring safe grounding systems. *Riegner, T.M., MITCON 85 1-4*
steel grounding grids; design and corrosion considerations. *Sen, P.K., MITCON 85 5-10*

I

Induction motor drives
electronic control of mine hoist; recent developments. *Madisetti, V.K., + , MITCON 85 16-24*

Industrial power system protection
intrinsically safe power system for underground coal mines. *Chengwei, G., MITCON 85 40-44*

L

Lubrication
excavator lubrication control using programmable control. *Frankovich, F.D., MITCON 85 29-33*

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Testing

kinetics of decarbonization of raw meals and combustion of solid fuels in precalciners; test apparatus and test results. *Kupper, D., + , CITCON 85 Paper I.3/1-28*

Thermal variables control; cf. Process heating

Thyristor motor drives

trends in cement-industry motor drives in Asian countries. *Suzuki, H., + , CITCON 85 Paper V.3/1-6*
trends in cement mill drives in Europe. *Zins, R., + . CITCON 85 Paper V.2/1-14*

M

Materials handling

excavator lubrication control using programmable control. *Frankovich, F.D., MITCON 85 29-33*

Materials handling; cf. Conveyors; Pipelines

Mechanical factors

excavator lubrication control using programmable control. *Frankovich, F.D., MITCON 85 29-33*

Mining industry

conductive-rubber shields for low-voltage portable cables in mines; recent developments. *Tomlinson, J.N., + , MITCON 85 11-15*

electronic control of mine hoist; recent developments. *Madisetti, V.K., + , MITCON 85 16-24*

excavator lubrication control using programmable control. *Frankovich, F.D., MITCON 85 29-33*

sequential conveyor systems; power demand estimation using probabilistic model. *Minasiewicz, S., + , MITCON 85 25-28*

Slurry Monitor, device for precision density measurement of slurries flowing in pipelines. *Kachel, G.C., MITCON 85 34-39*

Mining industry, safety

intrinsically safe power system for underground coal mines. *Chengwei, G., MITCON 85 40-44*

safety grounding specification in performance language. *Helfrich, W.J., + , MITCON 85 45-51*

simplified methods of assuring safe grounding systems. *Riegner, T.M., MITCON 85 1-4*

Motor drives; cf. dc motor drives; Induction motor drives

O

Occupational health and safety; cf. Mining industry, safety

P

Pipelines

Slurry Monitor, device for precision density measurement of slurries flowing in pipelines. *Kachel, G.C., MITCON 85 34-39*

Power cable shielding

conductive-rubber shields for low-voltage portable cables in mines; recent developments. *Tomlinson, J.N., + , MITCON 85 11-15*

Power demand

sequential conveyor systems; power demand estimation using probabilistic model. *Minasiewicz, S., + , MITCON 85 25-28*

Power system protection; cf. Industrial power system protection

Programmable control

excavator lubrication control using programmable control. *Frankovich, F.D., MITCON 85 29-33*

Protection/safety; cf. Mining industry, safety

R

Rubber materials/devices

conductive-rubber shields for low-voltage portable cables in mines; recent developments. *Tomlinson, J.N., + , MITCON 85 11-15*

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S

Shielding; cf. Power cable shielding
Steel materials/devicessteel grounding grids; design and corrosion considerations. *Sen, P.K., MITCON 85 5-10***1985 THIRTY-SECOND ANNUAL PETROLEUM AND CHEMICAL INDUSTRY CONFERENCE**

September 9 - 11, 1985, Houston, TX

A

ac motor drives; cf. Synchronous motor drives**ac motors; cf. Induction motors****Air break switches**vacuum, SF₆ and air-break contactors for medium-voltage controllers. *Lister, C.A., PCICON 85 55-63***ANSI standards**switchgear assemblies; comparison of ANSI and IEC standards. *Klotz, S.A., + , PCICON 85 65-71***Arc discharges**escalating arcing ground fault phenomenon. *Dunki-Jacobs, J.R., PCICON 85 19-23*

B

Bearings (mechanical)oil mist lubrication for electric motors; present status. *Towne, C.A., + , PCICON 85 165-170*

C

Cable shielding; cf. Power cable shielding**Cables; cf. Wire communication cables****Ceramic materials/devices**process heating; ceramic heater and skin effect heater. *Hulett, R.H., + , PCICON 85 79-82***Chemical industry; cf. Petroleum industry; Pumps****Cogeneration**electrical aspects of system design. *Hogwood, E.E., Jr., + , PCICON 85 237-249*energy recovery from pipeline pressure-reducing stations using hydraulic turbine to drive variable-speed electric generator. *Kemp, G., + , PCICON 85 127-134***Compressors**synchronous motor driven reciprocating compressors; starting and operation on limited-capacity utility system. *Merhej, S.J., + , PCICON 85 217-224*synchronous motors with cylindrical rotors for compressor drives in petrochemical industry. *Bredthauer, J., + , PCICON 85 191-206***Computer facilities**computer grounding; conflicts between manufacturers' recommendations and National Electrical Code. *Buschart, R.J., PCICON 85 301-306*computer grounding; isolated grounding systems. *Lee, R.H., PCICON 85 297-299*computer grounding suggestions for industrial facilities. *Maggioli, V.J., PCICON 85 313-318*grounding of process control computers and distributed control systems; National Electrical Code and present grounding practice. *Zipse, D.W., PCICON 85 307-312***Computer power supplies**solar powered microprocessors at remote locations to measure fluid flow. *Rogers, R.H., PCICON 85 261-264***Conductors**short-time current carrying capacity of conductors. *Hus, J., PCICON 85 265-268***Contactors**vacuum, SF₆ and air-break contactors for medium-voltage controllers. *Lister, C.A., PCICON 85 55-63***Contactors; cf. Vacuum contactors****Control systems; cf. Process control****Corrosion**cathodic protection in large industrial plants. *Moore, L.J., PCICON 85 151-156*cathodic protection of pipelines and gas wells using solar photovoltaic power system and dc hysteresis effect. *Durham, M.O., PCICON 85 145-150*

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Substationssteel grounding grids; design and corrosion considerations. *Sen, P.K., MITCON 85 5-10*

V

Vehicles; cf. Elevators**Current measurement; cf. Current transformers****Current transformers**industrial power systems; selection of current transformers for relay applications. *Shipp, D., PCICON 85 157-164*

D

Data communicationdatabus cables for industrial process plants. *Bow, K., + , PCICON 85 269-282*expected benefits of new data communication standards for pipeline operations. *Turner, E.B., PCICON 85 257-260***Distributed control**grounding of process control computers and distributed control systems; National Electrical Code and present grounding practice. *Zipse, D.W., PCICON 85 307-312*

E

Electrical equipment enclosures; cf. Hazardous areas**Electrochemical factors; cf. Corrosion****Electromagnetic heating; cf. Induction heating; Resistance heating****Electromagnetic induction**longitudinal electric field of power transmission line near pipeline. *Frazier, M.J., + , PCICON 85 135-144***Electromagnetic induction; cf. Induction heating****Electromagnetic interference, reactive; cf. Power transmission**
electromagnetic interference**Explosions; cf. Hazardous areas**

F

Fansmulti-speed induction motors for pump or fan drives; selection and application. *Heredos, F.P., PCICON 85 119-122***Fault diagnosis; cf. Industrial power system faults****Fires; cf. Hazardous areas****Fluid flow control**waxy crude oil flow from reservoir; distributed electric heating to prevent deposition of wax on tubing. *Arkampour, K.H., PCICON 85 225-235***Fluid flow control; cf. Fans; Pumps****Fluid flow measurement**solar powered microprocessors at remote locations to measure fluid flow. *Rogers, R.H., PCICON 85 261-264*

G

Gas discharges; cf. Arc discharges**Gas industry; cf. Natural gas industry****Gas interrupters; cf. SF₆ interrupters****Grounding**computer grounding; conflicts between manufacturers' recommendations and National Electrical Code. *Buschart, R.J., PCICON 85 301-306*computer grounding; isolated grounding systems. *Lee, R.H., PCICON 85 297-299*computer grounding suggestions for industrial facilities. *Maggioli, V.J., PCICON 85 313-318*grounding of process control computers and distributed control systems; National Electrical Code and present grounding practice. *Zipse, D.W., PCICON 85 307-312*

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H

- Harmonic distortion; cf.** Industrial power system harmonics
- Hazardous areas**
classification guidelines; comparison of U.S. and IEC guidelines. *Short, W.A., PCICON 85 73-78*
electrical area classification for petroleum and chemical industries. *Penny, N., + , PCICON 85 25-35*
- Heating; cf.** Induction heating; Pipeline heating; Resistance heating
- Hysteresis (magnetics)**
cathodic protection of pipelines and gas wells using solar photovoltaic power system and dc hysteresis effect. *Durham, M.O., PCICON 85 145-150*

I

- IEC; cf.** International Electrotechnical Commission
- IEEE standards**
electric heating; tutorial introduction to IEEE Std 844-1985, Recommended Practice for Electrical Impedance, Induction, and Skin Effect Heating of Pipelines and Vessels. *Erickson, C.J., + , PCICON 85 37-42*
- Induction; cf.** Electromagnetic induction
- Induction heating**
tutorial introduction to IEEE Std 844-1985, Recommended Practice for Electrical Impedance, Induction, and Skin Effect Heating of Pipelines and Vessels. *Erickson, C.J., + , PCICON 85 37-42*
- Induction motor drives; cf.** Power conversion, dc - ac
- Induction motors**
determining motor efficiency by field testing. *Becnel, C.L., + , PCICON 85 251-255*
effect of harmonics on squirrel-cage motor losses and temperature rise. *Cummings, P.G., PCICON 85 291-295*
lightning protection for submersible oilwell pumps. *Brinner, T.R., + , PCICON 85 109-118*
mechanical and thermal considerations in motor design. *Clark, P.E., + , PCICON 85 171-179*
multi-speed induction motors for pump or fan drives; selection and application. *Heredos, F.P., PCICON 85 119-122*
rotor failures in squirrel-cage induction motors. *Bonnett, A.H., + , PCICON 85 181-190*
transient voltage protection for induction motors including electrical submersible pumps. *Dillard, S., + , PCICON 85 101-107*
- Industrial power system economics; cf.** Motor economics
- Industrial power system faults**
escalating arcing ground fault phenomenon. *Dunki-Jacobs, J.R., PCICON 85 19-23*
ground-fault current carried by cable shield; protection of shield. *Hamer, P.S., + , PCICON 85 11-18*
post-fault restart and process recovery; computer modeling. *Roennspiess, O.E., + , PCICON 85 207-215*
- Industrial power system faults; cf.** Industrial power system protection
- Industrial power system harmonics**
analyzing system to predict and resolve harmonic resonance problems. *Klein, T.W., + , PCICON 85 283-289*
- Industrial power system protection**
metal oxide arresters for protecting rotating machines. *Harder, J.E., + , PCICON 85 1-9*
selection of current transformers for relay applications. *Shipp, D., PCICON 85 157-164*
- Industrial power system protection; cf.** Industrial power system faults; Lightning, power systems; Motor protection
- Interference; cf.** Power transmission electromagnetic interference
- International Electrotechnical Commission**
hazardous area classification; comparison of U.S. and IEC guidelines. *Short, W.A., PCICON 85 73-78*
switchgear assemblies; comparison of ANSI and IEC standards. *Klotz, S.A., + , PCICON 85 65-71*
- Interrupters; cf.** SF₆ interrupters
- Inverters; cf.** Power conversion, dc - ac

L

- Lightning, power systems**
protection for submersible oilwell pumps. *Brinner, T.R., + , PCICON 85 109-118*
transient voltage protection for induction motors including electrical submersible pumps. *Dillard, S., + , PCICON 85 101-107*
- Lubrication**
oil mist lubrication for electric motors; present status. *Towne, C.A., + , PCICON 85 165-170* Bearings (mechanical)

+ Check author entry for coauthors

M

- Marine electrical equipment; cf.** Underwater electrical equipment
- Mechanical factors; cf.** Bearings (mechanical); Rotating-machine mechanical factors
- Motor drives**
conversion of 480-V motor starters from air break to vacuum break. *Hill, J.D., + , PCICON 85 51-54*
vacuum, SF₆ and air-break contactors for medium-voltage controllers. *Lister, C.A., PCICON 85 55-63*
- Motor drives; cf.** Fans; Pumps; Synchronous motor drives
- Motor economics**
centrifugal pumps in petroleum and chemical industries; energy savings programs. *Arminton, J.K., + , PCICON 85 43-50*
determining motor efficiency by field testing. *Becnel, C.L., + , PCICON 85 251-255*
- Motor protection**
guidelines for motor protection. *Annacchino, M.A., PCICON 85 83-90*
lightning protection for submersible oilwell pumps. *Brinner, T.R., + , PCICON 85 109-118*
metal oxide arresters for protecting rotating machines. *Harder, J.E., + , PCICON 85 1-9*
oil mist lubrication for electric motors; present status. *Towne, C.A., + , PCICON 85 165-170*
transient voltage protection for induction motors including electrical submersible pumps. *Dillard, S., + , PCICON 85 101-107*
- Motors; cf.** Induction motors

N

- Natural gas industry**
cathodic protection of pipelines and gas wells using solar photovoltaic power system and dc hysteresis effect. *Durham, M.O., PCICON 85 145-150*

O

- Oil industry; cf.** Petroleum industry

P

- Petroleum industry**
electric heating; tutorial introduction to IEEE Std 844-1985, Recommended Practice for Electrical Impedance, Induction, and Skin Effect Heating of Pipelines and Vessels. *Erickson, C.J., + , PCICON 85 37-42*
hazardous area classification; comparison of U.S. and IEC guidelines. *Short, W.A., PCICON 85 73-78*
hazardous area classification for electrical equipment installations. *Penny, N., + , PCICON 85 25-35*
process heating; ceramic heater and skin effect heater. *Hulett, R.H., + , PCICON 85 79-82*
synchronous motors with cylindrical rotors for compressor drives in petrochemical industry. *Bredthauer, J., + , PCICON 85 191-206*
waxy crude oil flow from reservoir; distributed electric heating to prevent deposition of wax on tubing. *Afkampour, K.H., PCICON 85 225-235*
- Petroleum industry; cf.** Natural gas industry; Pipelines; Pumps
- Photovoltaic power systems**
cathodic protection of pipelines and gas wells using solar photovoltaic power system and dc hysteresis effect. *Durham, M.O., PCICON 85 145-150*
solar powered microprocessors at remote locations to measure fluid flow. *Rogers, R.H., PCICON 85 261-264*
- Pipeline heating**
electric heating; tutorial introduction to IEEE Std 844-1985, Recommended Practice for Electrical Impedance, Induction, and Skin Effect Heating of Pipelines and Vessels. *Erickson, C.J., + , PCICON 85 37-42*
- Pipelines**
cathodic protection of pipelines and gas wells using solar photovoltaic power system and dc hysteresis effect. *Durham, M.O., PCICON 85 145-150*
energy recovery from pipeline pressure-reducing stations using hydraulic turbine to drive variable-speed electric generator. *Kemp, G., + , PCICON 85 127-134*
expected benefits of new data communication standards for pipeline operations. *Turner, E.B., PCICON 85 257-260*
longitudinal electric field of power transmission line near pipeline. *Frazier, M.J., + , PCICON 85 135-144*
solar powered microprocessors at remote locations to measure fluid flow. *Rogers, R.H., PCICON 85 261-264*

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- Pipelines; cf. Pumps**
- Power cable installation**
specifying, manufacturing, testing and installation of long submarine cables. *Hoffman, E.G., + , PCICON 85 91-100*
- Power cable shielding**
ground-fault current carried by cable shield; protection of shield. *Hamer, P.S., + , PCICON 85 11-18*
- Power cable testing**
specifying, manufacturing, testing and installation of long submarine cables. *Hoffman, E.G., + , PCICON 85 91-100*
- Power conversion, dc - ac**
adjustable-frequency inverter application for petroleum pipeline pumps. *Link, P.J., + , PCICON 85 123-126*
- Power conversion harmonics**
effect on squirrel-cage motor losses and temperature rise. *Cummings, P.G., PCICON 85 291-295*
- Power generation; cf. Cogeneration**
- Power supplies; cf. Computer power supplies**
- Power system stability**
industrial plant post-fault restart and process recovery; computer modeling. *Roennspiess, O.E., + , PCICON 85 207-215*
- Power system transients; cf. Industrial power system transients; Lightning, power systems**
- Power system ...cf. Industrial power system ...**
- Power transmission electromagnetic interference**
pipeline near or below ground; transmission line longitudinal electric field. *Frazier, M.J., + , PCICON 85 135-144*
- Process control**
databus cables for industrial process plants. *Bow, K., + , PCICON 85 269-282*
grounding of process control computers and distributed control systems; National Electrical Code and present grounding practice. *Zipse, D.W., PCICON 85 307-312*
- Process heating**
ceramic heater and skin effect heater. *Hulett, R.H., + , PCICON 85 79-82*
electric heating; tutorial introduction to IEEE Std 844-1985, Recommended Practice for Electrical Impedance, Induction, and Skin Effect Heating of Pipelines and Vessels. *Erickson, C.J., + , PCICON 85 37-42*
- Process heating; cf. Cogeneration**
- Protection/safety; cf. Hazardous areas; Motor protection**
- Protective relaying; cf. Current transformers**
- Pumps**
adjustable-frequency inverter application for petroleum pipeline pumps. *Link, P.J., + , PCICON 85 123-126*
centrifugal pumps in petroleum and chemical industries; energy savings programs. *Armintor, J.K., + , PCICON 85 43-50*
lightning protection for submersible oilwell pumps. *Brinner, T.R., + , PCICON 85 109-118*
multi-speed induction motors for pump or fan drives; selection and application. *Heredos, F.P., PCICON 85 119-122*
transient voltage protection for induction motors including electrical submersible pumps. *Dillard, S., + , PCICON 85 101-107*

R

- Reactive power control**
synchronous motor driven reciprocating compressors; starting and operation on limited-capacity utility system. *Merhej, S.J., + , PCICON 85 217-224*
- Resistance heating**
waxy crude oil flow from reservoir; distributed electric heating to prevent deposition of wax on tubing. *Afkhampour, K.H., PCICON 85 225-235*
- Rotating-machine mechanical factors**
motor design to minimize mechanical and thermal problems. *Clark, P.E., + , PCICON 85 171-179*
rotor failures in squirrel-cage induction motors. *Bonnett, A.H., + , PCICON 85 181-190*
- Rotating-machine mechanical factors; cf. Bearings (mechanical)**
- Rotating-machine protection; cf. Motor protection**
- Rotating-machine testing**
determining motor efficiency by field testing. *Becnel, C.L., + , PCICON 85 251-255*
- Rotating-machine thermal factors**
effect of harmonics on squirrel-cage motor losses and temperature rise. *Cummings, P.G., PCICON 85 291-295*
motor design to minimize mechanical and thermal problems. *Clark, P.E., + , PCICON 85 171-179*

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S

- Safety; cf. Protection/safety**
- SF₆ interrupters**
vacuum, SF₆ and air-break contactors for medium-voltage controllers. *Lister, C.A., PCICON 85 55-63*
- Shielding; cf. Power cable shielding**
- Skin effect**
electric heating; tutorial introduction to IEEE Std 844-1985, Recommended Practice for Electrical Impedance, Induction, and Skin Effect Heating of Pipelines and Vessels. *Erickson, C.J., + , PCICON 85 37-42*
process heating; ceramic heater and skin effect heater. *Hulett, R.H., + , PCICON 85 79-82*
- Solar power generation; cf. Photovoltaic power**
- Standards**
computer grounding; conflicts between manufacturers' recommendations and National Electrical Code. *Buschart, R.J., PCICON 85 301-306*
expected benefits of new data communication standards for pipeline operations. *Turner, E.B., PCICON 85 257-260*
grounding of process control computers and distributed control systems; National Electrical Code and present grounding practice. *Zipse, D.W., PCICON 85 307-312*
hazardous area classification; comparison of U.S. and IEC guidelines. *Short, W.A., PCICON 85 73-78*
- Standards; cf. ANSI standards; IEEE standards; International Electrotechnical Commission**
- Steam generation; cf. Cogeneration**
- Submarine ...; cf. Underwater ...**
- Surges; cf. Industrial power system protection; Lightning, power systems**
- Switches/switching; cf. Air break switches**
- Switchgear**
standards for switchgear assemblies; comparison of ANSI and IEC standards. *Klotz, S.A., + , PCICON 85 65-71*
- Switchgear; cf. Contactors**
- Switching transients**
transient voltage protection for induction motors including electrical submersible pumps. *Dillard, S., + , PCICON 85 101-107*
- Synchronous motor drives**
compressor drives; starting and operation on limited-capacity utility system. *Merhej, S.J., + , PCICON 85 217-224*
cylindrical rotor machines for compressor drives in petrochemical industry. *Bredthauer, J., + , PCICON 85 191-206*

T

- Temperature control; cf. Process heating**
- Testing; cf. Rotating-machine testing**
- Thermal factors**
short-time current carrying capacity of conductors. *Hus, J., PCICON 85 265-268*
- Thermal factors; cf. Rotating-machine thermal factors**
- Thermal power generation; cf. Cogeneration**
- Thermal variables control; cf. Process heating**
- Transformers; cf. Current transformers**

U

- Underwater electrical equipment**
lightning protection for submersible oilwell pumps. *Brinner, T.R., + , PCICON 85 109-118*
transient voltage protection for induction motors including electrical submersible pumps. *Dillard, S., + , PCICON 85 101-107*
- Underwater power cables**
specifying, manufacturing, testing and installation of long submarine cables. *Hoffman, E.G., + , PCICON 85 91-100*

V

- Vacuum contactors**
conversion of 480-V motor starters from air break to vacuum break. *Hill, J.D., + , PCICON 85 51-54*
vacuum, SF₆ and air-break contactors for medium-voltage controllers. *Lister, C.A., PCICON 85 55-63*

W

- Wire communication cables**
databus cables for industrial process plants. *Bow, K., + , PCICON 85 269-282*

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