PLENARY SESSION

SPONSORING COMMITTEE	PAPER TTILE	AUTHORS
Industrial Lighting and Displays Committee - Presentation only	100 Years of Magic, Technology and Support from the Lighting Committee	Jo Olsen, Osram Sylvania Inc., USA
Industrial Automation & Control Committee	Study of Modified 4-Phase Interleaved Fuel Cell Converter for High Gain High-Power Aplications	Phatipat Thounthong, Nichamon Poonoi, Panarit Sethakul, King Mongkut's University of Technology North Bangkok, Thailand; and Bernard Davat, Nancy University, France
Electrostatic Processes Comittee	Recent Developments of Electrostatic Technologies in Environmental Remediation	Akira Mizuno, Toyohashi University of Technology, Japan
Power Systems Engineering Committee	Of International Terminology and Wiring Methods Used in the Matter of Bonding and Earthing of Low-Voltage Power Systems	Massimo Mitolo, Chu & Gassman, United States; Michele Tartaglia, Ingegneria Elettrica, Politecnico di Torino, Italy; and Sergio Panetta, I-GARD Corp., Canada
Mining Industry Committee - Presentation only	Mining: Electrical Safety; Power Systems for Mining Machines; Testing and Instrumentation of Mining Machines	Thomas Novak, NIOSH, USA; Jorge Pontt; Technical University Federico Santa Maria, Chile; and Galina Mirzaeva,The University of Newcastle, Australia

Paper #	SESSIONS	AUTHORS
	Monday 2:00 pm - 6:00 pm	
	INDUSTRIAL AUTOMATION AND CONTROL - Intelligent Control of Systems	**Authors**
01p1	Self-tuning of the PID Controller for a Digital Excitation Control System	Kiyong Kim, Basler Electric Company, United States; Pranesh Rao, Basler Electric Company, United States; and Jeff Burnworth, Basler Electric Company, United States
01p2	Contribution to determination of domain of attraction in power systems: Application to drives with input filter	Didier Marx, GREEN-ENSEM, France; Serge Pierfederici, GREEN-ENSEM, France; Babak Nahid-Mobarakeh, GREEN-ENSEM, France; and Bernard Davat, GREEN-ENSEM, France
01p3	Control of A Single Phase Inverter Using Fuzzy Logic	Shahrin Ayob, University Teknologi Malaysia, Malaysia; Zinal Salam, Universiti Teknologi Malaysia, Malaysia; Naziha Azli, Universiti Teknolo0gi Malaysia, Malaysia; and Malik Elbuluk, University of Akron, United States
01p4	Online Efficiency Optimization of a Fuzzy Logic Controller Based IPMSM Drive	Mohammad Uddin, Lakehead University, Canada; and Ronald Rebeiro, Lakehead University, Canada
01p5	Implementation of an Intelligent Reconfiguration Algorithm for an Electric Ship Power System	Pinaki Mitra, Missouri University of Science Technology, United States; and Ganesh Kumar Venayagamoorthy, Missouri University of Science and Technology, United States
01p6	Implementation of Wavelet Controller for Battery Storage System of Hybrid Electric Vehicle	M. A. S. K. Khan, Memorial University of Newfoundl, Canada; M. J. Hinchey, Memorial University of Newfoundl, Canada; and M. A. Rahman, Memorial University of Newfoundland, Canada

APPLIANCE INDUSTRY COMMITTEE - Appliance Technologies and Systems	Authors
02p1	Quality Assurance Testing for Magnetization Quality Assessment of BLDC Motors used in Compressors	Kwangwoon Lee, Mokpo National Maritime University, South Korea; Jongman Hong, Korea University, South Korea; Sang Bin Lee, Korea University, South Korea; and Sangtaek Lee, Samsung Electronics, South Korea
02p2	Estimation of Magnet Reduction in Single-Phase Line-Start Permanent Magnet Synchronous Motor	Liang Fang, Hanyang University, Korea, Republic of; Byeong-Hwa Lee, Hanyang University, Korea, Republic of; Jung-pyo Hong, Hanyang University, Korea, Republic of; and Hyuk Nam, LG Electronics Inc., Korea, Republic of
02p3	Inductance Measurement of Interior Permanent Magnet Synchronous Motor in Stationary Reference Frame	Tao Sun, Hanyang University, Korea, Republic of; Soon-O Kwon, Hanyang University, Korea, Republic of; Jung-Pyo Hong, Hanyang University, Korea, Republic of; and Geun-Ho Lee, Hanyang University, Korea, Republic of
02p4	A Initial Current Control Method for PWM Converter against Low DC-Link Voltage	Bon-Gwan Gu, Korea Electronics Technology Institute, Korea, Republic of; Jun-Hyuk Choi, Korea Electronics Technology Institute, Korea, Republic of; and In-Soung Jung, Korea Electronics Technology Institute, Korea, Republic of

INDUSTRIAL LIGHTING AND DISPLAYS COMMITTEE- HID Lamps and Ballasts	Authors
03p1	Analysis of a High-Reliability Soft-Start Igniter for HID Lamps	Wang Yifeng, Harbin Institute of Technology, China; Zhang Xiangjun, Harbin Institute of Technology, China; and Xu Dianguo, Harbin Institute of Technology, China
03p2	Reduced Order Model for Envelope and Small-Signal Analysis of a Phase-Controlled Triple LCpCs Resonant Inverter for Electronic Ballast Applications	Christian Branas, University of Cantabria, Spain; Francisco J. Azcondo, University of Cantabria, Spain; and Rosario Casanueva, University of Cantabria, Spain
03p3	An Alternative Optical Method for Acoustic Resonance Detection in HID Lamps	Walter Kaiser, University of Sao Paulo, Brazil; Ricardo Marques, University of Sao Paulo, Brazil; and Alexander Fernandez Correa, University of Sao Paulo, Brazil
03p4	Single Switch Off-Line Ballast With PFC for Low Metal Halide Lamps	Jorge Garcia, University of Oviedo, Spain; Antonio Calleja, University of Oviedo, Spain; David Gacio, University of Oviedo, Spain; Javier Ribas, University of Oviedo, Spain; and Emilio Corominas, University of Oviedo, Spain
03p5	Single Stage High Power Factor Electronic ballast for HID Lamps using DifferentialConnection	Murilo Cervi, UFSM-CT-GEDRE, Brazil; Tiago B Marchesan, UFSM-CT-GEDRE, Brazil; José Marcos Alonso Álvarez, University of Oviedo,, Spain; and Ricardo n do Prado, UFSM-CT-GEDRE, Brazil
03p6	An intelligent system for street lighting control and measurement	Gustavo W Denardin, UFSM-CT-GEDRE, Brazil; Carlos H Barriquello, UFSM-CT-GEDRE, Brazil; Rafael A Pinto, UFSM-CT-GEDRE, Brazil; Marcelo f Silva, UFSM-CTISM-GEDRE, Brazil; Alexre Campos, UFSM-CT-GEDRE, Brazil; and Ricardo n do Prado, UFSM-CT-GEDRE, Brazil
03p7	Experimental and Simulated Straightening of Metal Halide Arcs Using Power Modulation	Jo Olsen, Sylvania, USA

METAL INDUSTRY COMMITTEE - Power Systems and Blast Furnace	Authors
04p1	Innovative Differential Protection of Power Transformers Using Low Energy Current Sensors	Ljubomir Kojovic, Cooper Power Systems, United States; Martin Bishop, Cooper Power Systems, United States; and Dharam Sharma, Nucor-Yamato Steel Company, United States
04p2	Design, Analysis and Operation of the Electrical Distribution System for a Modern Electric Arc Furnace and Ladle Melt Furnace	Thomas Dionise, Eaton Corporation, United States; Richard White, Charter Manufacturing Co., Inc., United States; and Jeffrey Baron, P.S.D. Inc., United States
04p3	A New Flicker Contribution Tracing Method Based on Individual Reactive Current Components of Multiple EAFs at PCC	Erinc Altintas, TEIAS, METU, Turkey; Ozgul SALOR, TUBITAK - UZAY, Turkey; Isik CADIRCI, TUBITAK - UZAY, Hacettepe University, Turkey; and Muammer ERMIS, METU, Turkey
04p4	Comprehensive Analysis for Modernization of 100 t Electric Arc Furnace for Steel Production	SORIN IOAN DEACONU, POLITECHNICA UNIVERSITY OF TIMISOARA, Romania; MARCEL TOPOR, POLITECHNICA UNIVERSITY OF TIMISOARA, Romania; GABRIEL NICOLAE POPA, POLITECHNICA UNIVERSITY OF TIMISOARA, Romania; and IOSIF POPA, POLITECHNICA UNIVERSITY OF TIMISOARA, Romania

	INDUSTRIAL AUTOMATION AND CONTROL COMMITTEE - Industrial Applications Control	Authors
05p1	An Universal Active Power Filter Controller System	Subhashish Bhattacharya, NC STATE UNIVERSITY, United States; Hesameddin Mirzaee Teshnizi, NC STATE UNIVERSITY, United States; and Babak Parkhideh, NC STATE UNIVERSITY, United States
05p2	Modified Synchronous Reference Frame Strategy for Selective-Tuned Single Phase Hybrid Active Power Filter	Carlos Henrique da Silva, Universidade Federal de Itajubá, Brazil; Rondineli Rodrigues Pereira, Universidade Federal de Itajubá, Brazil; Luiz Eduardo Borges da Silva, Universidade Federal de Itajubá, Brazil; Germano Lambert Torres, Universidade Federal de Itajubá, Brazil; and João Onofre Pereira Pinto, Universidade Federal do Mato Grosso do Sul, Brazil
05p3	Improved Predictive Current Control for Grid Connected Inverter Applications with Parameter Estimation	Yohan Baek, Hanyang University, Korea, Republic of; Kui-Jun Lee, Hanyang University, Korea, Republic of; and Dong-Seok Hyun, Hanyang University, Korea, Republic of
05p4	Nonlinear Stabilization of a DC-Bus Supplying a Constant Power Load	Ahmed-Bilal Awan, GREEN-ENSEM, France; Babak Nahid-Mobarakeh, GREEN-ENSEM, France; Serge Pierfederici, GREEN-ENSEM, France; and Farid Meibody-Tabar, GREEN-ENSEM, France
05p5	Regeneration Energy Management in AC Mining Drives for Providing Control Power	Joy Mazumdar, Siemens Energy and Automation, United States
05p6	Wide Range Temperature Sensors for Harsh Environments	Malik Elbuluk, University of Akron, United States; Ahmad Hammoud, ASRC, Inc., United States; and Richard Patterson, NASA Glenn Research Center, United States
	TUESDAY 8:00 am - Noon	
	INDUSTRIAL AUTOMATION AND CONTROL COMMITTEE - Control of Machines and Drives	Authors
06p1	Static Torque Method to Estimate Temperature Rise in High Power Induction Motors	ramdane lateb, Converteam , France; Abdollah Mirzaian, Converteam , France; Jean Charles Mercier, Converteam, France; and Pascal Emmanuelle, Converteam, France
06p2	Characteristic of Independent Two AC Motor Drives Fed by a Five-Leg Inverter	Kazuo Oka, Meiji University, Japan; Yusuke Ohama, Meiji University, Japan; Hisao Kubota, Meiji University, Japan; Ichiro Miki, Meiji University, Japan; and Kouki Matsuse, Meiji University, Japan
06p3	Analysis and Suppression of Torque Ripple for Doubly Salient Electro-magnetic Motor	Le Zhang, Nanjing univ. of aero. astro., China; Bo Zhou, Nanjing univ. of aero. astro., China; and Fang-shun Cheng, Nanjing univ. of aero. and astro., China
06p4	Bearingless Five-Axis Rotor Levitation with Two Pole Pair Separated Conical Motors	Peter Kascak, University of Toledo, United States; Ralph Jansen, NASA Glenn Research Center, United States; Timothy Dever, NASA Glenn Research Center, United States; Aleksr Nagorny, ResMed Motor Technologies Inc., United States; and Kenneth Loparo, Case Western Reserve University, United States
06p5	Study on the Hunting in High Speed Hysteresis Motors Due to the Rotor Hysteresis Material	Abolfazl Halvaei Niasar, University of Kashan, Iran, Islamic Republic of; Hassan Moghbelli, Texas A&M University at Qatar , Qatar; and Abolfazl Vahedi, Iran University of Science & Technology, Iran, Islamic Republic of
	POWER SYSTEM ENGINEERING COMMITTEE - Session I	Authors
07p1	Investigation of Circulating Ground Currents Occurring During UPS/Generator Paralleling	William A. Brown, Schneider Electric, United States; James M. Kennedy, Raging Wire Enterprise Solutions, United States; and Charles Linkhart, Raging Wire Enterprise Solutions, United States
07p2	Generator Pitch and Associated Concerns When Paralleling Generators	Paul G. Cardinal, Shell, United States
07p3	Design of Tie Line Tripping and Load Shedding Scheme for Distribution Microgrid System with Wind Power Generation	C.S. Chen, I-shou University, Taiwan; C.T. Hsu, Southern Taiwan University, Taiwan; Y.J. Lin, I-shou University, Taiwan; H.J. Chuang, Kao-Yuan University, Taiwan; and Y.J. Ju, National Sun Yat-sen University, Taiwan
07p4	A Practical Guide to the Mechanics of Performing an Arc Flash Study at Commercial & Industrial Facilities	William H. Maxwell, C&S Engineers, United States; Joseph Kessler, NY Power Authority, United States; Corey Kelkenberg, NY Power Authority, United States; and Mohammed Safiuddin, University at Buffalo, United States

INDUSTRIAL LIGHTING AND DISPLAYS COMMITTEE- Fluorescent Lamps and Ballasts and Novel Applications	Authors
08p1	Universal Input Voltage Self-Oscillating Electronic Ballast with Feedforward Control	Alysson Seidel, UFSM - CTISM - GEDRE, Brazil; Ricardo Prado, UFSM - CT - GEDRE, Brazil; Juliano Lopes, UFSM - CT - GEDRE, Brazil; Marcelo Silva, UFSM - CT - GEDRE, Brazil; and Rafael Pinto, UFSM - CT - GEDRE, Brazil
08p2	A NEW LAMP SOCKET PROTECTION TECHNIQUE FOR SELF OSCILLATING ELECTRONIC FLUORESCENT BALLASTS	Ameya Shrotriya, Northern Illinois University, United States; and Donald Zinger, Northern Illinois University, United States
08p3	Electronic Ballast for 119W UV Lamp Controlled by Microprocessor	Wang Yijie, Harbin Institute of Technology, China; Zhang Xiangjun, Harbin Institute of Technology, China; and Xu Dianguo, Harbin Institute of Technology, China
08p4	Predictive evaluation of fluorescent lamp lifetime	david buso, Université de Toulouse, LAPLACE , France; Sounil Bhosle, Université de Toulouse, LAPLACE, France; georges zissis, Université de Toulouse, LAPLACE, France; Markus Mayhrofer, TridonicAtco GmbH & Co KG, Austria; Stefan Zudrell-Koch, TridonicAtco GmbH & Co KG, Austria; Mikael Severinsson, Aura Light International, Sweden; Aron Rydhem, Aura Light International, Sweden; and Robert Ruscassié, Université de Pau, LGE, France
08p5	Dimmable Lighting System Strategy Based on Integral Compact Fluorescent Lamps with Digital Compensation	Gustavo Denardin, UFSM - CT - GEDRE, Brazil; Alysson Seidel, UFSM - CTISM - GEDRE, Brazil; Ricardo Prado, UFSM - CT - GEDRE, Brazil; Rafael Pinto, UFSM - CT - GEDRE, Brazil; Marcelo Silva, UFSM - CT - GEDRE, Brazil; Mikhail Polonskii, UPF, Brazil; and Juliano Lopes, UFSM - CT - GEDRE, Brazil
METAL INDUSTRY COMMITTEE - Casting, Rolling, Forming	Authors
09p1	Developing a Hot-mode Experimental Apparatus for Property Investigations of Electromagnetic Stirring System	Sheng-Yang Lin, China Steel Corporation, Taiwan; Weng-Jay Lee, China Steel Corporation, Taiwan; Jen-Hsin Chen, China Steel Corporation, Taiwan; and Cheng-Tsung Liu, National Sun Yat-Sen University, Taiwan
09p2	Progress in Development of a Control Model for a Tandem Hot Metal Strip Rolling Process	John Pittner, University of Pittsburgh, United States; and Marwan A. Simaan, University of Central Florida, United States
09p3	Automatic Pattern Classification of Real Metallographic Images	Vesna Zeljkovic, Delaware State University, United States; Pavel Praks, VSB - Technical University of Ostrava, , Czech Republic; Robert Vincelette , Delaware State University, United States; Claude Tameze, Delaware State University, United States; and Ladislav Válek, ArcelorMittal Ostrava plc, Ostrava, Czech Republic
09p4	DC and Pulsed DC TIG Welding with a Scalable Power Supply	Rosario Casanueva, University of Cantabria, Spain; Francisco J. Azcondo, University of Cantabria, Spain; F. Javier Diaz, University of Cantabria, Spain; and Christian Brañas, University of Cantabria, Spain
09p5	Low Cost System for Weld Tracking Based on Artificial Vision	
09p6	Geometry Modification of a Fieldshaper to intensify the magnetic pressure in an Electromagnetic Forming system	Alireza karimi, Esfahan Regional Electrical Company (EREC), Iran, Islamic Republic of; Kaveh Niayesh, University of Tehran, Iran, Islamic Republic of; and Mohammad Amin Bahmani, University of Tehran, Iran, Islamic Republic of
09p7	Ethernet/IP Applications for Electrical Industrial Systems	Jody Warren, Fluor Corporation, United States
ELECTROSTATIC PROCESSES COMMITTEE - Electrostatic Applications	Authors
10p1	The Low Voltage Electrostatic Discharge on the Contacting Point	Tetsuji Oda, The Univeristy of Tokyo, Japan; Hiraku Miyasaka, The University of Tokyo, Japan; Yuto Ono, The University of Tokyo, Japan; and Ryo Ono, The University of Tokyo, Japan
10p2	Nozzleless EHD spraying for fine droplet production in liquid-in-liquid system	Masayuki Sato, Professor Emeritus, Gunma University, Japan; Naomasa Okubo, Gunma University, Japan; Takayuki Ohshima, Gunma University, Japan; Tomoo Nakane, Nihon University, Japan; Bing Sun, Dalian Maritime University, China; and Kuniko Urashima, Ministry of Education, Culture, Sports, Science and Technology, Japan
10p3	A High- Voltage AC/DC resonant converter based on PRC with single capacitor as an output filter	Pedro J. Villegas, Universidad de Oviedo, Spain; J. Diaz, Universidad de Oviedo, Spain; J. A. Martin-Ramos, Universidad de Oviedo, Spain; Alberto Martin-Pernia, Universidad de Oviedo, Spain; and J. A. Martinez, Universidad de Oviedo, Spain
10p4	Study of Eradicating Invasive Organisms from Ballast Water with Pulsed Discharge in Liquid	Bing Sun, Dalian Maritime university, China; Xuemei Wang, Dalian Maritime university, China; Xiaomei Zhu, Dalian Maritime university, China; and Masayuki Sato, Dalian Maritime university, China

POWER SYSTEM PROTECTION COMMITTEE & CODES AND STANDARDS COMMITTEE SESSION		**Authors**
11p1	Risk Analysis for NEC Article 708 Critical Operations Power Systems	Robert G. Arno, HP Critical Facility Services, United States; Evangelos Stoyas, Power Systems Consulting, United States; and Robert Schuerger, HP Critical Facility Services, United States
11p2	The Effect of Non-Sinusoidal Current Waveforms on Electro-Mechanical & Solid State Overcurrent Relay Operation	P. M. Donohue, Downer EDI Engineering, Australia; and Syed Islam, Curtin University, Australia
11p3	Application of Microprocessor Based Protective Relays in Power Systems	Bruno Osorno, California State University Northridge, United States
MINING INDUSTRY COMMITTEE - Mining Safety and Instrumentation		**Authors**
12p1	Power Electronics Tools-software for effective training and engineering inmining applications	Francisco Barrios, UTFSM, Chile; Pablo Neira, UTFSM, Chile; and Jorge Pontt, UTFSM, Chile
12p2	POST-ACCIDENT MINE COMMUNICATIONSAND TRACKING SYSTEMS	Thomas Novak, The National Institute for Occupational Safety Health, United States; David P. Snyder, The National Institute for Occupational Safety Health, United States; and Jeffery L. Kohler, The National Institute for Occupational Safety and Health, United States
12p3	Current topics on reliability of high power electrical machines employedin mining applications	Jorge Pontt, Technical University F. Santa María, Chile
12p4	Diagnostics of insulation condition and risk evaluation of electrical machines employed in mining application	Jorge Pontt, Technical University F. Santa María, Chile
12p5	Evaluation of Visual Performance when Using Incandescent, Fluorescent, and LED Machine Lights in Mesopic Conditions	M.A. Reyes, NIOSH, United States; S. Gallagher, NIOSH, United States; and J. Sammarco, NIOSH, United States
12p6	Improving Productivity and Energy Efficiencyin Copper Electrowinning Plants	Eduardo P. Wiechmann, University of Concepcion, Chile; Anibal S. Morales, University of Concepcion, Chile; and Pablo Aqueveque, University of Concepcion, Chile
12p7	Measurement System of Cathodic Currents in Electrorefining Processes with Multicircuital Technology	Pablo Aqueveque N., University of Concepcion, Chile; Eduardo P. Wiechmann, University of Concepcion, Chile; and Aníbal S. Morales, University of Concepcion, Chile
	TUESDAY 2:00 pm - 6:00 pm	
INDUSTRIAL AUTOMATION AND CONTROL COMMITTEE - Automation and Control in Renewable Energy Systems		**Authors**
13p1	Fault Tolerance of DFIG Wind Turbine with a Series Grid Side Passive Impedance Network	Xiangwu Yan, North China Electric Power University, China; Giri Venkataramanan, University of Wisconsin – Madison, United States; Patrick Flannery, American Superconductor, Middleton, United States; and Yang Wang, University of Wisconsin-Madison, United States
13p2	Regressive Method for the Determination of Fuel Cell Pem Parameters in Order to Develop a Fuel Cell Pem Emulator	Dimitri Torregrossa, UTBM-SET, France; Benjamin Blunier, UTBM-SET, France; and Abdellatif Miraoui, UTBM-SET, France
13p3	Performance Evaluation of Fuel Cell/Battery/Supercapacitor Hybrid Power Source for Vehicle Applications	Phatiphat Thounthong, King Mongkut's University of Technology North Bangkok, Thailand; Panarit Sethakul, King Mongkut's University of Technology North Bangkok, Thailand; Stéphane Raël, Nancy University, France; and Bernard Davat, Nancy University, France
13p4	Constant Power Control and Fault-Ride-Through Enhancement of DFIG Wind Turbines with Energy Storage	Liyan Qu, Ansoft, LLC, United States; and Wei Qiao, University of Nebraska-Lincoln, United States

	POWER SYSTEM ENGINEERING COMMITTEE - Session II	**Authors**
14p1	A Initial Current Control Method for PWM Converteragainst Low DC-Link Voltage	Bon-Gwan Gu, Korea Electronics Technology Institute, Korea, Republic of; Jun-Hyuk Choi, Korea Electronics Technology Institute, Korea, Republic of; and In-Soung Jung, Korea Electronics Technology Institute, Korea, Republic of
14p2	Power Supply for an Electric Vehicle Charging System for a Large Parking Deck	Shane Hutchinson, North Carolina State University, United States; Mesut Baran, North Carolina State University, United States; and Srdjan Lukic, North Carolina State University, United States
14p3	Implementation of Neural Network Controlled Three-Leg VSC and a Transformer as Three-Phase Four-Wire DSTATCOM	Bhim Singh, Indian Institute of Technology, India; P Jayaprakash, Indian Institute of Technology, India; Sunil Kumar, Indian Institute of Technology, India; and D P Kothari, Vellore Institute of Technology, India
14p4	New Islanding Detection Method for Inverter-Based Distributed Generation Considering Its Switching Frequency	Soo-Hyoung Lee, Yonsei University, Korea, Republic of; and Jung-Wook Park, Yonsei University, Korea, Republic of
14p5	Redundant, High Density, High Efficiency Double Conversion Uninterruptible Power System	Eduardo Kazuhide Sato, Toshiba Mitsubishi-Electric Industrial Systems Corporation, Japan; Masahiro Kinoshita, Toshiba Mitsubishi-Electric Industrial Systems Corporation, Japan; Yushin Yamamoto, Toshiba Mitsubishi-Electric Industrial Systems Corporation, Japan; and Tatsuaki Amboh, Toshiba Mitsubishi-Electric Industrial Systems Corporation, Japan
	INDUSTRIAL LIGHTING AND DISPLAYS COMMITTEE- LEDs and Drivers	**Authors**
15p1	Single-Stage Flyback Power-Factor-Correction Front-End for HB LED Application	Yuequan Hu, Delta Products Corporation, United States; Laszlo Huber, Delta Products Corporation, United States; and Milan Jovanovic, Delta Products Corporation, United States
15p2	System Analysis of CCM Dual-Loop Controlled Light-Emitting-Diode Boost Driver	Ray-Lee Lin, National Cheng Kung University, Taiwan; and Yi-Fan Chen, National Cheng Kung University, Taiwan
15p3	Equivalent Circuit Model of Light-Emitting-Diode for System Analyses of Lighting Drivers	Ray-Lee Lin, National Cheng Kung University, Taiwan; and Yi-Fan Chen, National Cheng Kung University, Taiwan
15p4	LED Lamp with a Compact Emergency Lighting System	Rafael A. Pinto, UFSM-CT-GEDRE, Brazil; Marcelo R. Cosetin, UFSM-CT-GEDRE, Brazil; Marcelo F. da Silva, UFSM-CTISM-GEDRE, Brazil; Gustavo Denardin, UFSM-CT-GEDRE, Brazil; Alexre Campos, UFSM-CT-GEDRE, Brazil; and Ricardo N. do Prado, UFSM-CT-GEDRE, Brazil
15p5	System Analysis of DCM Dual-Loop Controlled Light-Emitting-Diode Boost Driver	Ray-Lee Lin, National Cheng Kung University, Taiwan; and Yi-Fan Chen, National Cheng Kung University, Taiwan
15p6	Application of High-Brightness LEDs in Tissue Human and their Therapeutic Interaction	Mauro C. Moreira, UFSM-CT-GEDRE, Brazil; Alexre Campos, UFSM-CT-GEDRE, Brazil; and Ricardo N do Prado, UFSM-CT-GEDRE, Brazil
	METAL INDUSTRY COMMITTEE - ARC Flash Considerations	**Authors**
16p1	ARC FLASH – Getting Started	Doug Cromey, Novelis, Canada; and Brian Tureski, Eaton , Canada
16p2	Closing the Gaps in Arc Flash Hazard Mitigation A Review of US, Canada, and EU Standards	H. Landis Floyd II, DuPont, United States
16p3	Arc-Flash Energy Mitigation by Fast Energy Capture	George Roscoe, GE, United States; Tom Papallo, GE, United States; and Marcelo E Valdes, GE, United States
16p4	Innovative Techniques for Mitigating Arc Flash Exposure	David Shipp, Eaton Corporation, USA; David Wood, Eaton Corporation, USA

	ELECTROSTATIC PROCESSES COMMITTEE - Non-thermal Plasma Applications	Authors
17p1	Electrostatic charging and precipitation of diesel soot	Hideaki Hayashi, Toyohashi University of Technology, Japan; Yasuhiro Takasaki, Toyohashi University of Technology, Japan; Kazuki Kawahara, Toyohashi University of Technology, Japan; Tomoya Takenaka, Toyohashi University of Technology, Japan; Kazunori Takashima, Toyohashi University of Technology, Japan; Akira Mizuno, Toyohashi University of Technology, Japan; and Moo Been Chang, National Central University, Taiwan
17p2	A Case Study of ESP Electrical Characteristics from a Thermal Power Station	Gabriel Nicolae Popa, "Politehnica" University Timisoara, Romania; Victor Vaida, Thermal Power Plant Mintia Deva, Romania; Cristian Abrudean, "Politehnica" University Timisoara, Romania; Sorin Ioan Deaconu, "Politehnica" University Timisoara, Romania; and Iosif Popa, "Politehnica" University Timisoara, Romania
17p3	Decomposition of Phenol in Water by Gas Phase Pulse Discharge Plasma	Yan Wu, Dalian University of Technology, China; Jie Li, Dalian University of Technology, China; Guo-feng Li, Dalian University of Technology, China; Nan Li, Dalian University of Technology, China; Guang-zhou Qu, Dalian University of Technology, China; Chang-hai Sun, Dalian University of Technology, China; and Masayuki Sato, Gunma University, Japan
17p4	Decomposition of Pentachlorophenol Using Combination of Densification by Granular Activated Carbon Adsorption and Dielectric Barrier Discharge	Jie Li, Dalian University of Technology, China; Guang-zhou Qu, Dalian University of Technology, China; Na Lu, Dalian University of Technology, China; Guo-feng Li, Dalian University of Technology, China; Chang-hai Sun, Dalian University of Technology, China; and Yan Wu, Dalian University of Technology, China
17p5	Electrostatic Deposition of Fine Particles for Fabrication of Porous Ceramic Filter	Guo-feng Li, Dalian University of Technology, China; Zhi-qiang Wang, Dalian University of Technology, China; and Ning-hui Wang, Dalian University of Technology, China
	ENERGY SYSTEMS COMMITTEE - Session I	Authors
18p1	Optimal Design of a Small Scale Wind Power Generation System for a Rural and Low Capacity Factor Area	Chai/Chow Chompoo-inwai, KMITL, Thail; S. Banjongjit, KMITL, Thail; W. Tangsrianukul, KMITL, Thail; D. Suksawas, KMITL, Thail; and Wei-Jen Lee, University of Texas at Arlington, United States
18p2	Parallel Operation of DFIGs in Three Phase Four Wire Autonomous Wind Energy Conversion System	Puneet K. Goel, Ministry of Power, India; Bhim Singh, IIT Delhi, India; S.S. Murthy, IIT Delhi, India; and Navin Kishore, NTPC Ltd., India
18p3	BESS Based Voltage and Frequency Controller for Stand Alone Wind Energy Conversion System Employing PMSG	V Sheeja, Indian Institute of Technology, India; Bhim Singh, Indian Institute of Technology, India; and R Uma, Indian Institute of Technology, India
18p4	Energy Recovery Electric Bicycle with Two-Quadrant DC Motor Drivers	Yu-Lung Ke, National Penghu University, Taiwan; Ying-Chun Chuang, Kun Shan University, Taiwan; and Hung-Shiang Chuang, Kao Yuan University, Taiwan
18p5	A Multifunctional Single-Phase Voltage Source Inverter in Perspective of the Smart Grid Initiative	Renata Carnieletto, Federal University of Santa Maria, Brazil; Siddharth Suryanarayanan, Colorado School of Mines, United States; Marcelo G. Simões, Colorado School of Mines, United States; and Felix A. Farret, Federal University of Santa Maria, Brazil
	MINING INDUSTRY COMMITTEE - Mining Machines and Drive Control	Authors
19p1	Real Time Power Quality Measurements from a Conventional AC Dragline	Pankaj Pit, Siemens Energy Automation, United States; Joy Mazumdar, Siemens Energy Automation, United States; Thomas May, Siemens Energy Automation, United States; and Walter Koellner, Siemens Energy and Automation, United States
19p2	Evaluation of Current Density in DC MotorBrushes for Mining Machines Based on Air GapField Measurement	G. Mirzaeva, University of Newcastle, Australia; R.E. Betz, University of Newcastle, Australia; and T.J. Summers, University of Newcastle, Australia
19p3	Passive Filters for High Power Cycloconverter Grinding Mill Drives	Pablo Aravena, University of Concepción, Chile; Giovanni Vallebuona, University of Concepción, Chile; Luis Morán, University of Concepción, Chile; Juan Dixon, University of Santiago, Chile; and Orlando Godoy, University of Santiago, Chile
19p4	INTERACTION BETWEEN PASSIVE FILTER AND HIGH POWER CYCLOCONVERTER DRIVE	Cristhian Olivares, University of Concepción, Chile; Pablo Astudillo, University of Concepción, Chile; Luis Morán, University of Concepción, Chile; and Juan Dixon, University of Santiago, Chile
19p5	A New Hybrid Filter Topology for Sub and Inter-harmonic Attenuation in Cycloconverter-Fed Drives Applications	Pablo Aravena, University of Concepción, Chile; Luis Morán, University of Concepción, Chile; Juan Dixon, University of Santiago, Chile; José Espinoza, University of Concepción, Chile; and Orlando Godoy, University of Santiago, Chile
19p6	Automatic Guidance System for Trolley-Powered Mining Haul Trucks	Ramzy R. Obaid, King Abdul Aziz University, Saudi Arabia; and Raed H. Ahmad, King Abdul Aziz University, Saudi Arabia
19p7	Predictive control of active filtering for industrial mining installations	José Simpson, UTFSM, Chile; Adolfo Paredes, UTFSM, Chile; Jorge Pontt, UTFSM, Chile; and Cesar Silva, UTFSM, Chile

WEDNESDAY 8:00 am - Noon

	INDUSTRIAL AUTOMATION AND CONTROL COMMITTEE - Control of Power Converters	Authors
20p1	A New Strategy to Step-Size Control of Adaptive Filters in the Harmonic Detection for Shunt Active Power Filter	Rondineli Rodrigues Pereira, Universidade Federal de Itajubá, Brazil; Carlos Henrique da Silva, Universidade Federal de Itajubá, Brazil; Luiz Eduardo Borges da Silva, Universidade Federal de Itajubá, Brazil; Germano Lambert Torres, Universidade Federal de Itajubá, Brazil; and Giscard Francimeire Cintra Veloso, Universidade Federal de Itajubá, Brazil
20p2	A Novel Topology and Control Strategy for Single Power Hybrid Asymmetrical Multilevel Converter	Li Sun, Harbin Institute of Technology, China; Quntao An, Harbin Institute of Technology, China; Xingtao Sun, Harbin Institute of Technology, China; and Ke Zhao, Harbin Institute of Technology, China
20p3	Modulation Strategy for Fault-tolerant Three-phase Four-switch Inverters	Quntao An, Harbin Institute of Technology, China; Li Sun, Harbin Institute of Technology, China; Ke Zhao, Harbin Institute of Technology, China; and Lizhi Sun, Harbin Institute of Technology, China
20p4	Flicker Mitigation and Load Balancing in Steel Plants Power Systems by OCC-Hexagram Converter Based STATCOM	Mikhail Slepchenkov, University of California, United States; and Keyue Smedley, University of California, United States
20p5	Control of Multi-Level Three-Phase Dual Current Source Inverters for High Power Industrial Applications	Robert Dawley, ESP Electronic Systems Protection Inc., United States; and Subhashish Bhattacharya, NC STATE UNIVERSITY, United States
	POWER SYSTEM ENGINEERING COMMITTEE - Session III	Authors
21p1	Electrical and Thermal Analysis of Parallel Single-Conductor Cable Installations	Y. Du, The Hong Kong Polytechnic University, Hong Kong; and X.H. Wang, The Hong Kong Polytechnic University, Hong Kong
21p2	TRANSITIONS THEORY FOR INTERSECTIONS/NODES AND GENERALIZED EUCLIDEAN KINEMATICS IN OPERATION OF ELECTRICAL INSTALLATIONS	Giuseppe Parise, Sapienza University of Rome, Italy
21p3	Shore-to-Ship Power Supply System For a Cruise Ship	Dev Paul, AECOM, United States; and Vahik Haddian, The Port of Los Angeles, United States
21p4	The Supremacy of Embedded Redundancy over Redundancy at System Level in Mission Critical Facilities	Masoud Pourali, Primary Integration Power LLC, United States
21p5	Revisiting the Determination of Busway Impedance Using First Principles	Carlton R. Rodrigues, Schneider Electric North America - Square D Company, United States; Glenn O'Nan, Schneider Electric North America - Square D Company, United States; Dan Wittmer, Schneider Electric North American Operating Division - Square D Company, United States; and John Richter, Schneider Electric North American Operating Division - Square D Company, United States
21p6	Industrial and commercial power system automation system based on a hybrid network architecture	C. S. Gehrke, UFCG, Brazil; F. Salvadori, UFPB, Brazil; M. de Campos, UNIJUÍ, Brazil; A. C. Oliveira, UFCG, Brazil; D. R. Hüller, UFCG, Brazil; and P. C. Sausen, UNIJUÍ, Brazil
	INDUSTRIAL LIGHTING AND DISPLAYS COMMITTEE- Displays	Authors
22p1	Readability of Characters on Display Faceplates in Terms of Human Sensation	Tetsuya Muraoka, Polytechnic University in Tokyo, Japan; Noboru Nakashima, Polytechnic University in Tokyo, Japan; and Hiroaki Ikeda, IKEDA Technologies, Inc, Japan
22p2	LCD backlight control for visibility of monocular head-mounted displays	Takashi Yamazoe, Waseda University, Japan; Shinsuke Kishi, Waseda University, Japan; Takashi Shibata, Waseda University, Japan; and Takashi Kawai, Waseda University, Japan
22p3	Illumination Watermarking Technique Using Orthogonal Transforms	Yasunori ISHIKAWA, Kanagawa Institute of Technology, Japan; Kazutake UEHIRA, Kanagawa Institute of Technology, Japan; and Kazuhisa YANAKA, Kanagawa Institute of Technology, Japan
22p4	An Ultra-High Definition Spatial Light Modulation Device Driven by Spin-Polarized Electrons	Kenichi Aoshima, Japan Broadcasting Corporation, Japan; Nobuhiko Funabashi, Japan Broadcasting Corporation, Japan; Kenji Machida, Japan Broadcasting Corporation, Japan; Yasuyoshi Miyamoto, Japan Broadcasting Corporation, Japan; Kiyoshi Kuga, Japan Broadcasting Corporation , Japan; Naoki Shimidzu, Japan Broadcasting Corporation , Japan; and Fumio Sato, Japan Broadcasting Corporation, Japan
22p5	Viewing-zone control of large full-color LED display for 3-D and digital signage	Hirotsugu Yamamoto, The University of Tokushima, Japan; Tomoya Kimura, The University of Tokushima, Japan; Shinya Matsumoto, The University ofTokushima, Japan; and Shiro Suyama, The University of Tokushima, Japan
22p6	New Type of Extra Large Area Film Display with Plasma Tube Array Technology and Its New Applications	Hitoshi Hirakawa, Shinoda Plasma Co.,Ltd., Japan; Manabu Ishimoto, Shinoda Plasma Co.,Ltd., Japan; Kenji Awamoto, Shinoda Plasma Co.,Ltd., Japan; and Tsutae Shinoda, Shinoda Plasma Co.,Ltd., Japan

	ENERGY SYSTEMS COMMITTEE - Session II	**Authors**
23p1	Highly-Efficient Battery Chargers with Parallel-Loaded Resonant Converters	Ying-Chun Chuang, Kun Shan University, Taiwan; Yu-Lung Ke, National Penghu University, Taiwan; and Shun-Yi Chang, Kun Shan University, Taiwan
23p2	Estimation of Wind Turbine Rotor Power Coefficient Using RMP Model	GumTae Son, Yonsei Univ., Korea, Republic of; Hee-Jin Lee Lee, Yonsei Univ., Korea, Republic of; and Jung-Wook Park, Yonsei University, Korea, Republic of
23p3	Identification of Cost Effective Energy Saving Measures in Buildings through a Software Tool	A. Prudenzi, University of L'Aquila, Italy; and A. Silvestri, University of L'Aquila, Italy
23p4	OPTIMUM SIZING AND PLACEMENT OF DISTRIBUTED AND RENEWABLE ENERGY SOURCES IN ELECTRIC POWER DISTRIBUTION SYSTEMS	Benjamin Kroposki, NREL, United States; P.K. Sen, Colorado School of Mines, United States; and Keith Malmedal, NEI Electric Power Engineering, Inc., United States
23p5	Fuel Cell Current Ripple Mitigation by Interleaved Technique for High Power Applications	Phatiphat Thounthong, King Mongkut's University of Technology, Thail; Panarit Sethakul, King Mongkut's University of Technology, Thail; Stéphane Raël, Nancy Université, France; and Bernard Davat, Nancy Université, France
	WEDNESDAY 2:00 pm - 6:00 pm	
	INDUSTRIAL AUTOMATION AND CONTROL COMMITTEE - Advanced Sensing and Real Time Control	**Authors**
24p1	Motion control of elastic joint based on Kalman optimization with evolutionary algorithm	Sébastien CARRIERE, LAPLACE\INPT, France; Stéphane CAUX, LAPLACE\INPT, France; and Maurice FADEL, LAPLACE\INPT, France
24p2	New Estimation of Electromagnetic Sound Power Radiated by a PM Machine: an Active and Passive Control Guideline	Dimitri Torregrossa, UTBM-SET, France; François Peyraut, UTBM-M3M, France; Christophe Espanet, UFC-FEMTO, France; Alain Cassat, EPFL, Switzerl; and Abdellatif Miraoui, UTBM-SET, France
24p3	Magnetic Characteristics and Excess Eddy Current Losses	Yu Zhang, Clarkson University, United States; Ming-C. Cheng, Clarkson University, United States; and Pragasen Pillay, Concordia University, Canada
24p4	Paralleling DC/DC switched converters based on piezoelectric transformers	Juan Diaz, Universidad de Oviedo, Spain; Ferno Nuño, Universidad de Oviedo, Spain; David Gacio, Universidad de Oviedo, Spain; Pedro J. Villegas, Universidad de Oviedo, Spain; and Miguel J. Prieto, Universidad de Oviedo, Spain
24p5	A Real-Time Implementation of a PBIL based Stabilizing Controller for Synchronous Generator	Komla Folly, Missouri University of Science Technology, United States; and Ganesh Kumar Venayagamoorthy, Missouri University of Science and Technology, United States
24p6	Design of the Feed-Forward Controller of a Single-phase AC/DC PWM converter in parallel for high-speed trains	Hwan-jin Jung, Hanyang University, Korea, Republic of;Byoung-gun Park, Hanyang University, Korea, Republic of; and Dong-Seok Hyun, Hanyang University, Korea, Republic of