Monday Morning, October 4

Session #1: Induction Motors—1

(Sponsoring Technical Committee: Electric Machines)
Session Chair: Aldo Boglietti, Politecnico di Torino
Session Organizer: Aldo Boglietti, Politecnico di Torino

Paper #IAS01p1:Determination of the Magnetic Losses in Induction Motors Based on the Generalized Epstein Test

André G. Tôrres,Universidade Federal de Minas Gerais
Braz J. Cardoso Filho,Universidade Federal de Minas Gerais
Renato O. C. Lyra,Universidade Federal de Minas Gerais
Marco A. Cunha,ACESITA S.A.
Sebastião C. Paolinelli,ACESITA S.A.

Paper #IAS01p2:An Investigation into the Electromagnetic Behavior of the Vector Controlled Induction Motor Drives

J. Joddar,University of Missouri–Rolla
W. Zhu,University of Missouri–Rolla
B. Fahimi,University of Missouri–Rolla
S. Pekarek,University of Missouri–Rolla

Paper #IAS01p3:Soft Started Induction Motor Modeling and Heating Issues for Different Starting Profiles Using a Flux Linkage ABC-Frame of Reference

Mark G. Solveson,Eaton Corporation
Behrooz Mirafzal,Marquette University
Nabeel A. O. Demerdash,Marquette University

Paper #IAS01p4:Estimating the Parameters of an Induction Motor in Open-Loop and Closed-Loop Operation

A. J. Netto,UFCG
P. R. Barros,UFCG
C. B. Jacobina,UFCG
A. M. N. Lima,UFCG

Paper #IAS01p5:Starting and Vector Control of Series-Connected Wound-Rotor Induction Motor in Super Synchronous Mode

E. M. Rashad,Memorial University of Newfoundland
T. S. Radwan,Memorial University of Newfoundland
M. A. Rahman,Memorial University of Newfoundland

Session #2: Salient Pole Machines

(Sponsoring Technical Committee: Electric Machines)
Session Chair: Alan Wallace, Oregon State University
Session Organizer: Franco Leonardi, Ford

Paper #IAS02p1:Iron Losses in Salient Permanent Magnet Machines at Field-weakening Operation

F. Magnussen,Royal Institute of Technology AND abb
Y. K. Chin,Royal Institute of Technology

J. Soulard,Royal Institute of Technology
A. Broddefalk,Surahammars Bruks AB
S. Eriksson,Royal Institute of Technology
C. Sadarangani,Royal Institute of Technology

Paper #IAS02p2:Uncontrolled Generation in Interior Permanent Magnet Machines
C. Z. Liaw,University of Adelaide
W. L. Soong,University of Adelaide
B. A. Welchko,General Motors
N. Ertugrul,University of Adelaide

Paper #IAS02p3:Synchronous Frame Current Control of Multi-Phase Synchronous Motor—Part I: Modeling and Current Control Based on Multiple d-q Spaces Concept Under Balanced Condition
Hyung-Min Ryu,Seoul National University
Ji-Woong Kim,Seoul National University
Seung-Ki Sul,Seoul National University

Paper #IAS02p4:A Cross Saturation Model for Interior Permanent Magnet Synchronous Machine: Application to a Starter Generator
L. Chédot,Valeo Electrical System
G. Friedrich,University of Technology of Compiègne

Paper #IAS02p5:Right Harmonic Spectrum for the Back-Electromotive Force of an n-Phase Synchronous Motor
Eric Semail,Ensam
Xavier Kestelyn,Ensam
Alain Bouscayrol,Ensam

Paper #IAS02p6:Design to Improve Starting Performance of Line-Start Synchronous Reluctance Motor for Household Appliances
H. Nam,Changwon National University
S. B. Park,Changwon National University
G. H. Kang,Changwon National University
J. P. Hong,Changwon National University
J. B. Eom,LG Electronics Inc.
T. U. Jung,LG Electronics Inc.

Paper #IAS02p7:"Determination of Effective Air-Gap Length of Reluctance Synchronous Motors from Experimental Data
Prabhakar Neti,University of Victoria
Subhasis Nandi,University of Victoria

Session #3: Active Power Filters

(Sponsoring Technical Committee: Industrial Power Converter)
Session Chair: Burak Ozpineci, Oak Ridge National Laboratory
Session Organizer: Hiro Akagi, Tokyo Institute of Technology

Paper #IAS03p1:Distributed Active Filter Systems (DAFS): A new approach to power system harmonics
Huu-Phuc To,University of New South Wales

Faz Rahman,University of New South Wales
Colin Grantham,University of New South Wales

Paper #IAS03p2:An Adaptive Algorithm for Controlling Reactive Power Compensation in Active Power Filters

Huu-Phuc To,University of New South Wales
Faz Rahman,University of New South Wales
Colin Grantham,University of New South Wales

Paper #IAS03p3:Robust Deadbeat Current Control with Adaptive Predictor for Three-Phase Voltage-Source Active Power Filter

Katsumi Nishida,Yamaguchi University
Tarek Ahmed,Yamaguchi University
Mutuo Nakaoka,Yamaguchi University

Paper #IAS03p4:Time Delay and Dead-Time Compensation for a Current Controlled Four-Leg Voltage Source Inverter Utilized as a Shunt Active Filter

Marthinus G. F. Gous,University of Stellenbosch
Hendrik. J. Beukes,University of Stellenbosch

Paper #IAS03p5:A Current-Fed HF Link Direct DC/AC Converter with Active Harmonic Filter for Fuel Cell Power Systems

Yu Jin Song,Texas A&M University
Se-Kyo Chung,Gyeongsang National University
Prasad N. Enjeti,Texas A&M University

Paper #IAS03p6:A Novel Control Method for Shunt Active Power Filters Using SVPWM

Wang Jianze,Harbin Institute of Technology
Peng Fenghua,Harbin Institute of Technology
Wu Qitao,Harbin Institute of Technology
Ji Yanchao,Harbin Institute of Technology
Yaping Du,Hong Kong Polytechnic University

Paper #IAS03p7:An Active In-Line Notch Filter for Reducing Acoustic Noise in Drives

J. A. Ferreira,Delft University of Technology
P. Dorland,South African Breweries
F. G. de Beer,Netherlands Organization for Applied Scientific Research (TNO)

Session #4: Inverters

(Sponsoring Technical Committee: Industrial Power Converter)
Session Chair: Bill Peterson, E&M Power
Session Organizer: Frede Blaabjerg, Aalborg University

Paper #IAS04p1:Maximum Constant Boost Control of the Z-Source Inverter

Miaosen Shen,Michigan State University
Jin Wang,Michigan State University
Alan Joseph,Michigan State University
Fang Z. Peng,Michigan State University
Leon M. Tolbert,University of Tennessee
Donald J. Adams,Oak Ridge National Laboratory

Paper #IAS04p2:Pulse-Width Modulation of Z-Source Inverters

Poh Chiang Loh,Nanyang Technological University
D. Mahinda Vilathgamuwa,Nanyang Technological University
Yue Sen Lai,Nanyang Technological University
Geok Tin Chua,Nanyang Technological University
Yunwei Li,Nanyang Technological University

Paper #IAS04p3:Parallel Operation of Voltage Source Inverters with Minimal Intermodule Reactors

Bin Shi,University of Wisconsin–Madison
Giri Venkataramanan,University of Wisconsin–Madison

Paper #IAS04p4:Design of Plug-In Repetitive Controllers for Single-Phase PWM Inverters

Leandro Michels,Federal University of Santa Maria
Humberto Pinheiro,Federal University of Santa Maria
Hilton A. Gründling,Federal University of Santa Maria

Paper #IAS04p5:Zero Vector Modulation Method for Voltage Source Inverter Operating near Zero Output Frequency

Silva Hiti,General Motors
David Tang,General Motors
Constantin Stancu,General Motors
Eric Ostrom,General Motors

Paper #IAS04p6:Odd-Harmonic Repetitive Controlled CVCF PWM Inverter with Phase Lead Compensation

Keliang Zhou,Nanyang Technological University
Kay-Soon Low,Nanyang Technological University
Soon-Hie Tan,Nanyang Technological University
Danwei Wang,Nanyang Technological University
Yong-Qiang Ye,Nanyang Technological University

Session #5: Primary Metal & Caster

(Sponsoring Technical Committee: Metals)
Session Chair: Louis Drienhoefer, Alcoa Inc.
Session Organizer: S. Douglas Cromey, Alcan Inc.

Paper #IAS05p1:Mathematical Model Based Coking Control System

S. Mitra,Steel Authority of India Ltd
S. S. Bandopadhyay,formerly with Steel Authority of India Ltd
S. Majumdar,Steel Authority of India Ltd
M. Gangadaran,Steel Authority of India Ltd
U. Bhaskar,Steel Authority of India Ltd
B. Chakraborty,Steel Authority of India Ltd
B. K. Santra,Steel Authority of India Ltd
N. Neogi,Steel Authority of India Ltd

Paper #IAS05p2:Design and Analysis of a Linear Type Electromagnetic Stirrer

S. Milind,Indian Institute of Science

V. Ramanarayanan,Indian Institute of Science

Paper #IAS05p3:Measurement of Temperature Profiles in the Electrodes of Arc Furnaces for Silicon Metal Production

José Fariña,University of Vigo
Juan J. Rodríguez-Andina,University of Vigo
Javier Bullón,Polígono Industrial de Sabón
Ángel Lorenzo,Polígono Industrial de Sabón

Paper #IAS05p4:Optimization of the Level Sensor Position for a Continuous Slab Caster

Raul Miranda,Universidad Autonoma Metropolitana-Azcapotzalco
Miguel Barron,Universidad Autonoma Metropolitana-Azcapotzalco
Antonio de Ita,Universidad Autonoma Metropolitana-Azcapotzalco
Luis Hoyos,Universidad Autonoma Metropolitana-Azcapotzalco
Jesus Gonzalez,Universidad Autonoma Metropolitana-Azcapotzalco

Paper #IAS05p5:Optimal and Efficient Solutions in the Presence of Time-Correlated Disturbances for Trajectory Tracking Control of Dynamic Multistage ROT Cooling Process

Nicholas S. Samaras,Larissa Institute of Technology
Nicholas T. Batis,Larissa Institute of Technology

Products and Services Session #6: Current Sensing Technologies

(Sponsoring Technical Committee: Power Electronic Devices)
Session Chair: Adam Konopka, Baldor Electric
Session Organizer: Rich Lukaszewski, Rockwell

Session #7: Plasma Reactors

(Sponsoring Technical Committee: Electrostatic Processes)
Session Chair: Reece Roth, University of Tennessee at Knoxville
Session Organizer: Tetsuji Oda, University of Tokyo

Paper #IAS07p1:Prospective Industrial Applications of the One Atmosphere Uniform Glow Discharge Plasma

J. Reece Roth.,University of Tennessee

Paper #IAS07p2:NO3—Reduction for Flue Gas Cleaning using Wet-type Plasma Reactor

Youhei Kinoshita,Toyohashi University of Technology
Hiromitsu Ikeda,Toyohashi University of Technology
Kazunori Takashima,Toyohashi University of Technology
Shinji Katsura,Toyohashi University of Technology
Akira Mizuno,Toyohashi University of Technology

Paper #IAS07p3:Study on the Improvement of Energy Efficiency in the Treatment of Dilute Trichloroethylene with Dielectric Barrier Discharge

SangBo Han,The University of Tokyo
Tetsuji Oda,The University of Tokyo

Paper #IAS07p4:A New Type of Corona Discharge Reactor for Simultaneous Removal of NO and SO2 from Flue Gas

Li-Min Dong,Harbin University of Science and Technology
Wei Lu,Heilongjiang Province Environmental Monitor Center
Xiao-Chun Chi,Harbin University of Science and Technology
Jia-Yang Yang,Harbin University of Science and Technology

Paper #IAS07p5:Degradation of Indigo Carmine Using Bipolar Pulsed Dielectric Barrier Discharge (DBD) in the Water–Air Mixture

Ruo-bing Zhang,Dalian University of Technology
Guo-feng Li,Dalian University of Technology
Yan Wu,Dalian University of Technology

Paper #IAS07p6:Observation of Ground-State OH by LIF Technique in DC Nozzle-to-Plate Positive Streamer Coronas

Marek Kocik,Institute of Fluid Flow Machinery
Jerzy Mizeraczyk,Institute of Fluid Flow Machinery
Seiji Kanazawa,Oita University
Atsushi Kajiwara,Oita University
Jun-ichi Kumagai,Oita University
Toshikazu Ohkubo,Oita University
Yukiharu Nomoto,Oita University
Jen-Shih Chang,McMaster University

Paper #IAS07p7:Influence of Electrode Configuration on Energy Utilization for SO2 Removal in Flue Gas with Pulsed Corona Plasma

Bingyan Dong,Dalian University of Technology and Jiangxi University of Technology
Guofeng, Li,Dalian University of Technology
Yan Wu,Dalian University of Technology
Jie Li,Dalian University of Technology

Session #8: Permanent Magnet Motor Drives

(Sponsoring Technical Committee: Industrial Drives)
Session Chair: Thomas Jahns, Univ of Wisconsin–Madison
Session Organizer: Nitin Patel, Advanced Tech. Vehicles

Paper #IAS08p1:Optimum Torque Control of Permanent Magnet AC Machines in the Field-Weakened Region

Gabriel Gallegos-Lopez,Delphi Corporation
Fani S. Gunawan,Delphi Corporation
James E. Walters,Delphi Corporation

Paper #IAS08p2:Magnet Flux Nulling Control of Interior PM Machine Drives for Improved Response to Short-Circuit Faults

Brian A. Welchko,General Motors Advanced Technology Center
Jackson Wai,University of Wisconsin–Madison
Thomas M. Jahns,University of Wisconsin–Madison
Thomas A. Lipo,University of Wisconsin–Madison

Paper #IAS08p3:Synchronous Frame Current Control of Multi-Phase Synchronous Motor—Part II: Asymmetric Fault Condition due to Open Phases

Hyung-Min Ryu,Seoul National University
Ji-Woong Kim,Seoul National University

Seung-Ki Sul,Seoul National University

Paper #IAS08p4:Investigation of Inverterless Control of Interior Permanent Magnet Alternators

C. Z. Liaw,University of Adelaide
D. M. Whaley,University of Adelaide
W. L. Soong,University of Adelaide
N. Ertugrul,University of Adelaide

Paper #IAS08p5:Current Polarity Detection-based Simple Position Sensorless Drive of IPMSM for AC Compressor in HEV

T. Kosaka,University of Leicester
M. Fujitsuna,DENSO Corporation
T. Takahashi,Nagoya Institute of Technology
N. Matsui,Nagoya Institute of Technology

Paper #IAS08p6:Feedforward Control of High-Speed Solid-Rotor Synchronous Reluctance Machines with Rotor Dynamics Model

Jae-Do Park,The Pennsylvania State University
Heath Hofmann,The Pennsylvania State University
Claude Khalizadeh,Pentadyne Power Corporation

Paper #IAS08p7:P.M. Assisted Synchronous Reluctance Drive for Minimal Hybrid Application

P. Guglielmi,Politecnico di Torino
G. Giraudo,Politecnico di Torino
G. M. Pellegrino,Politecnico di Torino
A. Vagati,Politecnico di Torino

Session #9: Fluorescent Ballasts

(Sponsoring Technical Committee: Production & Application of Light)
Session Chair: Jim Lester, Sylvania
Session Organizer: Bill Peterson, E&M Power

Paper #IAS09p1:A Low-Size Multi-Power-Level Single-Transistor Ballast for Low Pressure Fluorescent Lamps, Using a Piezoelectric Transformer

Matthias Radecker,Fraunhofer-Institut für Autonome intelligente Systeme
Fábio E. Bisogno,Fraunhofer-Institut für Autonome intelligente Systeme
Alois Knoll,Fraunhofer-Institut für Autonome intelligente Systeme
Alfredo V. Carazo,Face Electronics LC
Gunther Löhmann,Osram GmbH
Gerald Deboy,Infineon Technologies AG

Paper #IAS09p2:Improvement in Control Stability for High-Efficiency Electronic Ballast

Yuuji Takahashi,Toshiba Lighting & Technology Corporation
Keiichi Shimizu,Toshiba Lighting & Technology Corporation

Paper #IAS09p3:Adaptive Preheat and Strike of Microcontroller Based Ballas

Qinghong Yu,Universal Lighting Technologies
Christopher Radzinski,Universal Lighting Technologies
Jay Dernovsek,Universal Lighting Technologies

Paper #IAS09p4:Self-Oscillating Electronic Ballast Evaluation Through Non-Linear Dynamic Systems Analysis

Alysson R. Seidel,UFSM
Luís F. Pereira,PUCRS
Ricardo N. Do Prado,UFSM

Paper #IAS09p5:A Full-Digital Dimming Ballast with a Digital Power Controller (DPC) for a Fluorescent Lamp

In-Hwan Oh,Fairchild Semiconductor
Madhu Rayabhari,Fairchild Semiconductor
Maurizio A. Zecchini,Fairchild Semiconductor

Paper #IAS09p6:Low Voltage DC supplied Dimmable Ballast for 1 x 36 W T8 Lamp

Peter Green,International Rectifier

Monday Afternoon, October 4

Session #10: Special Machines

(Sponsoring Technical Committee: Electric Machines)
Session Chair: Jerry Lloyd, Emerson Electric
Session Organizer: Patrick Chapman, University of Illinois

Paper #IAS10p1:A Millimeter-Scale Electric Generator

Matthew K. Senesky,University of California, Berkeley
Seth R. Sanders,University of California, Berkeley

Paper #IAS10p2:Micro-Stepping Control of Ultrasonic Stepping Motors

K. T. Chau,
Bin Shi,The University of Hong Kong
Min-Qiang Hu,Southeast University
Long Jing,Southeast University
Ying Fan,Southeast University

Paper #IAS10p3:A Short Cylinder Ultrasonic Motor With Novel Excitation Mode

K. T. Chau,The University of Hong Kong
Bin Shi,The University of Hong Kong
Long Jing,Southeast University
Min-Qiang Hu,Southeast University
Ying Fan,Southeast University

Paper #IAS10p4:A Novel Three-Phase Doubly Salient Permanent Magnet Machine for Wind Power Generation

K. T. Chau,The University of Hong Kong
Ying Fan,The University of Hong Kong
Ming Cheng,Southeast University

Paper #IAS10p5:Study with Magnetic Property Measurement of Soft Magnetic Composite Material and Its Application in Electrical Machines

Jian Guo Zhu,University of Technology, Sydney
YouGuang Guo,University of Technology, Sydney

Paper #IAS10p6:Theoretical and Experimental Research on Hybrid-Magnetic-Circuit Multi-Couple Motor

Ping Zheng,Harbin Institute of Technology
Yong Liu,Harbin Institute of Technology
Tiecheng Wang,Harbin Institute of Technology
Shukang Cheng,Harbin Institute of Technology

Paper #IAS10p7:Comparison and Review of Electric Machines for Integrated Starter Alternator Applications

William Cai,Delco Remy America, Inc.

Session #11: Switched Reluctance Machines

(Sponsoring Technical Committee: Electric Machines)
Session Chair: Keith Bradley, University of Nottingham
Session Organizer: Ronghai Qu, GE

Paper #IAS11p1:Prediction of Electromagnetic Forces and Vibrations in SRMs Operating at Steady State and Transient Speeds

Zhangjun Tang,Stryker Instruments
Pragasen Pillay,Clarkson University
Yicheng Chen,Clarkson University
Avoki M. Omekanda,Delphi Research Labs

Paper #IAS11p2:Design and Optimization of High Torque, Low Ripple Switched Reluctance Motor with Flux Barrier for Direct Drive

J. Hur,Korea Electronic Technology Inst.
G. H. Kang,Changwon National University
J. Y. Lee,Changwon National University
J. P. Hong,Changwon National University
B. K. Lee,Korea Electric Research Inst.

Paper #IAS11p3:Simplified Control of Switched Reluctance Machines for AC Generation

R. G. Lopez,The University of Texas at El Paso
B. Diong,The University of Texas at El Paso

Paper #IAS11p4:GA-based Computer Aided Autonomous Electromagnetic Design of Switched Reluctance Servomotor Drives

T. Kosaka,University of Leicester
C. Pollock,University of Leicester
T. Shikayama,Yaskawa Electric Corporation
T. Nakagami,Nagoya Institute of Technology
Y. Kano,Nagoya Institute of Technology
N. Matsui,Nagoya Institute of Technology

Paper #IAS11p5:Instantaneous Shaft Radial Force Control with Sinusoidal Excitations for Switched Reluctance Motors

Feng-Chieh Lin,Tamkang University

Sheng-Ming Yang,Tamkang University

Paper #IAS11p6:Design and Performance Analysis of a Switched Reluctance Motor for Low Duty Cycle Operation

M. Faizul Momen,The University of Akron
Iqbal Husain,The University of Akron

Products and Services Session #12: Products and Services

(Sponsoring Technical Committee: Industrial Power Converter)
Session Chair: Leon Tolbert, University of Tennessee
Session Organizer: Leon Tolbert, University of Tennessee

Session #13: Rectifiers

(Sponsoring Technical Committee: Industrial Power Converter)
Session Chair: Alex Julian, Naval Postgraduate School
Session Organizer: Jose Rodriguez, Universidad Federico Santa Maria

Paper #IAS13p1:Novel Three-Phase High-Quality Multi-Resonant Rectifiers Operating with Zero-Current-Switching and Constant Switching Frequency

Jagjitpati Shukla,Indian Institute of Technology
B. G. Fernandes,Indian Institute of Technology

Paper #IAS13p2:An Auxiliary-Supply-Assisted Twelve-Pulse Diode Rectifier with Reduced Input Current Harmonics

Fukuda Shoji,Hokkaido University
Ohta Masaaki,Hokkaido University

Paper #IAS13p3:Comparative Analysis of Multiple-Loops Linear and Non-Linear Control Schemes Applied to a Three-Phase Three-Switch Three-Level Rectifier

H. Y. Kanaan,Saint-Joseph University
K. Al-Haddad,École de Technologie Supérieure
F. Fnaiech,University of Tunis

Paper #IAS13p4:Design of DC Link Current Observer for a Three-Phase Active Rectifier with Feedforward Control

Zhongfu Zhou,University of Sussex
Yanzhen Liu,American Superconductor
P. J. Unsworth,University of Sussex

Paper #IAS13p5:Current Distribution in Paralleled Thyristors: A Comparative Analysis of Five Real Cases in High Current Transformer—Rectifiers

Ricardo Fuentes,Universidad Técnica Federico Santa María

Paper #IAS13p6:Single-Switch Step-Up/Down Three-Phase Rectifier with Sinusoidal Input Current

Congwei Liu,Ryerson University
Jianyun Chai,Tsinghua University
Xudong Sun,Tsinghua University
Sanmin Wei,Ryerson University

Session #14: Power Quality, Robot Control, & Discharge Machining

(Sponsoring Technical Committee: Metals)
Session Chair: S. Douglas Cromey, Alcan Inc.
Session Organizer: S. Douglas Cromey, Alcan Inc.

Paper #IAS14p1:Equipment Failures Caused by Power Quality Disturbances
Ashish Bendre,DRS Power and Control Technologies
Deepak Divan,SoftSwitching Technologies
William Kranz,SoftSwitching Technologies
William Brumsickle,SoftSwitching Technologies

Paper #IAS14p2:Using Measurements and Analytical Studies to Minimize Power Quality Issues Impacting Tin Mill Operations
Thomas J. Dionise,Eaton Electrical
Visuth Lorch,Eaton Electrical

Paper #IAS14p3:Two-Folded Implementation of a Twelve-Pulse TCR with Dissimiliar Transformers for a Ladle Furnace: Reactive Power Compensation and Power System Redundancy
N. Köse,TUBITAK Bilten
B. Mutluer,TUBITAK Bilten and Middle East Technical University
M. Ermis,TUBITAK Bilten and Middle East Technical University
A. Terciyanli,TUBITAK Bilten
B. Gültekin,TUBITAK Bilten
F. Bilgin,TUBITAK Bilten
C. Ermis,TUBITAK Bilten
S. Hasbay,ISDEMIR Iron & Steel Works Inc.
M. Keyifli,ISDEMIR Iron & Steel Works Inc.
T. Ahi,ISDEMIR Iron & Steel Works Inc.

Paper #IAS14p4:Electrical Discharge Machining for Sharpening Diamond Disks
Jesus Doval-Gandoy,University of Vigo
Ramón Pasandin,HEGASA
Bernardo Fernandez,HEGASA

Paper #IAS14p5:Paralleled LCsCp Resonant Converters for Spark Erosion Applications
Rosario Casanueva,University of Cantabria
Francisco J. Azcondo,University of Cantabria
Christian Brañas,University of Cantabria
Salvador Bracho,University of Cantabria

Session #15: Magnetic Components

(Sponsoring Technical Committee: Power Electronic Devices)
Session Chair: Jean-Pierre KERADEC, Laboratoire d'Electrotechnique de Grenoble; Charlie SULLIVAN, Dartmouth University
Session Organizer: Jean-Luc SCHANEN, Laboratoire d'Electrotechnique de Grenoble

Paper #IAS15p1:Design of Equivalent Circuits and Characterization Strategy for n-Input Coupled Inductors
X. Margueron,Laboratoire d'Electrotechnique de Grenoble
J-P. Keradec,Laboratoire d'Electrotechnique de Grenoble

Paper #IAS15p2:Design of a New Air-Cored Current Transformer: Analytical Modeling and Experimental Validation

D. Porto,Swiss Federal Institute of Technology
J. L. Bermudez,Swiss Federal Institute of Technology
F. Rachidi,Swiss Federal Institute of Technology
E. Favre,LEM Group
B. Richard,LEM Group

Paper #IAS15p3:PEEC-like Analytical Calculation of Static Leakage Inductances of H.F. Transformers

D. Magot,Laboratoire d'Electrotechnique de Grenoble
X. Margueron,Laboratoire d'Electrotechnique de Grenoble
J-P. Keradec,Laboratoire d'Electrotechnique de Grenoble

Paper #IAS15p4:Modeling of Soft Magnetic Composites

Yanhong Cui,Rensselaer Polytechnic Institute
G. B. Kliman,Rensselaer Polytechnic Institute

Paper #IAS15p5:Gapped-Inductor Foil Windings with Low AC and DC Resistance

Jennifer D. Pollock,Dartmouth College,
Charles R. Sullivan,Dartmouth College,

Session #16: Plasma Chemical Processes

(Sponsoring Technical Committee: Electrostatic Processes)
Session Chair: Toshiaki Yamamoto, Osaka Prefecture University
Session Organizer: Seiji Kanazawa, Oita University

Paper #IAS16p1:Plasma Surface Modification of Gold and Palladium Catalysts for CO Oxidation

R. Sharma,University of Arkansas at Little Rock
R. D. Rimmer,University of Arkansas at Little Rock
B. J. Davis,University of Arkansas at Little Rock
R. Shekhawat,University of Arkansas at Little Rock
J. Gunamgari,University of Arkansas at Little Rock
M. K. Mazumder1,University of Arkansas at Little Rock
D. A. Lindquist,University of Arkansas at Little Rock

Paper #IAS16p2:Plasma-Driven Catalyst Process for the Decomposition of VOCs

Hyun-Ha Kim,National Institute of Advanced Industrial Science and Technology
Seung-Min Oh,National Institute of Advanced Industrial Science and Technology
Atsushi Ogata,National Institute of Advanced Industrial Science and Technology
Shigeru Futamura,National Institute of Advanced Industrial Science and Technology

Paper #IAS16p3:NOx Reduction Using Nitrogen Nonthermal Plasma Desorption

Masaaki Okubo,Osaka Prefecture University
Masaki Inoue,Osaka Prefecture University
Tomoyuki Kuroki,Osaka Prefecture University
Toshiaki Yamamoto,Osaka Prefecture University

Paper #IAS16p4:Charge Behavior Observation on/in Plasma Processed Thin Films by LIPP During Thermal Heating for TSDC Analysis

Tetsuji Oda,The University of Tokyo
Kouji Yamashita,The University of Tokyo

Paper #IAS16p5:Plasma Reforming of Aliphatic Hydrocarbons with CO2

Shigeru Futamura,National Institute of Advanced Industrial Science and Technology
Annadurai Gurusamy,National Institute of Advanced Industrial Science and Technology

Paper #IAS16p6:Water Vapor Desorption and Adsorbent Regeneration Using Nonthermal Plasma

Toshiaki Yamamoto,Osaka Prefecture University
Goichi Tanioka,Osaka Prefecture University
Masaaki Okubo,Osaka Prefecture University
Tomoyuki Kuroki,Osaka Prefecture University

Paper #IAS16p7:Experimental and Numerical Investigations for CF4 Decomposition Using RF Low Pressure Plasma

Tomoyuki Kuroki,Osaka Prefecture University
Shingo Tanaka,Osaka Prefecture University
Masaaki Okubo,Osaka Prefecture University
Toshiaki Yamamoto,Osaka Prefecture University

Session #17: Induction Motor Drives

(Sponsoring Technical Committee: Industrial Drives)
Session Chair: Robert Bertz, Univ of New Castle
Session Organizer: Mahesh Swamy, Yaskawa Electric

Paper #IAS17p1:Adjustable Speed Drives with Square-Wave Input Current: A Cost Effective Step in Development to Improve their Performance

Christian Klumpner,University of Nottingham
Adrian Timbus,Aalborg University
Frede Blaabjerg,Aalborg University
Paul Thøgersen,Danfoss Drives A/S

Paper #IAS17p2:Extended High Speed Operation via Electronic Winding Change Method for AC Motors

Mahesh M. Swamy,Yaskawa Electric America
Tsuneo J. Kume,Yaskawa Electric America
Akihiko Maemura,Yaskawa Electric Corporation
Shinya Morimoto,Yaskawa Electric Corporation

Paper #IAS17p3:Direct Torque Control Schemes for Split-Phase Induction Machine

Kamalesh Hatua,Honeywell Technology Solutions Lab Pvt. Ltd.
V. T. Ranganathan,Indian Institute of Science

Paper #IAS17p4:Compensation Control of Matrix Converter Fed Induction Motor Drive under Abnormal Input Voltage Conditions

Kai Sun,Tsinghua University
Daning Zhou,Tsinghua University
Lipei Huang,Tsinghua University

Kouki Matsuse,Meiji University

Paper #IAS17p5:High Performance Speed Sensorless Control of an Induction Motor Drive Using a Minimalist Single-Phase PWM Converter

Olorunfemi Ojo,Tennessee Technological University
Zhiqiao Wu,Tennessee Technological University
Gan Dong,Tennessee Technological University

Paper #IAS17p6:A Novel Six-Phase Series-connected Two-Motor Drive with Decoupled Dynamic Control

Martin Jones,Liverpool John Moores University
Slobodan N. Vukosavic,Liverpool John Moores University
Emil Levi,Liverpool John Moores University
Atif Iqbal,Liverpool John Moores University

Paper #IAS17p7:Reduction of Parameter Sensitivity in an Induction Motor Current Regulator using Integrated Pilot Sensors in the Low-Side Switches

Sibaprasad Chakrabarti,University of Wisconsin–Madison
Thomas M. Jahns,University of Wisconsin–Madison
Robert D. Lorenz,University of Wisconsin–Madison

Session #18: HID Ballasts

(Sponsoring Technical Committee: Production & Application of Light)
Session Chair: Jo Olsen, Osram Sylvania
Session Organizer: Bill Peterson, E&M Power

Paper #IAS18p1:New HF Square-Waveform Ballast for Low Wattage Metal Halide Lamps Free of Acoustic Resonances

J. Garcia,University of Oviedo
J. Cardesín,University of Oviedo
M. Alonso,University of Oviedo
J. Ribas,University of Oviedo
A. Calleja,University of Oviedo

Paper #IAS18p2:Acoustic Resonance Band Detection Workbench for HID Lamps

J. C. Antón,University of Oviedo
C. Blanco,University of Oviedo
F. Ferrero,University of Oviedo
J. Viera,University of Oviedo
N. Bordel,University of Oviedo
A. Martín,University of Oviedo
G. Zissis,Université Paul Sabatier

Paper #IAS18p3:A Novel Low Frequency Electronic Ballast for HID Lamps

Hua Li,Zhejiang University
Miaosen Shen,Zhejiang University
Zhaoming Qian,Michigan State University

Paper #IAS18p4:Analysis and Design of a New Hot-Striking Igniter for HID Lamp

Yifeng Jiang,Zhejiang University
Qiukai Huang,Zhejiang University

Min Chen,Zhejiang University
Zhaoming Qian,Zhejiang University

Paper #IAS18p5:Supply Voltage Fluctuation Characteristics of Leakage Transformer Type Operating Circuit with Bypass Circuit for a Metal Halide Lamp
Hidenobu Miyake,Kyudenko Co. Ltd.
Michio Iemura,Sojo University

Paper #IAS18p6:Power Fed Electronic Ballast
Francisco J. Azcondo,University of Cantabria
Christian Brañas,University of Cantabria
Rosario Casanueva,University of Cantabria
Salvador Bracho,University of Cantabria

Paper #IAS18p7:Stacked Buck Converter for HID Lamps
D. H. J. van Casteren,Technical University of Eindhoven
M. A. M. Hendrix,Technical University of Eindhoven

Tuesday Morning, October 5

Session #19: Diagnostics
(Sponsoring Technical Committee: Electric Machines)
Session Chair: Gerard Capolino, University of Picardie
Session Organizer: Jason Stack, Navy

Paper #IAS19p1:Effects of Load on Diagnosing Broken Bar Faults in Induction Motors Using the Pendulous Oscillation of the Rotor Magnetic Field Orientation
Behrooz Mirafzal,Marquette University
Nabeel. A. O. Demerdash,Marquette University

Paper #IAS19p2:Diagnosis and Numerical Simulation of Large Hydra-Generator under Steady-State after Heating Faults of Insulation Aging
Zhou Feng,Harbin Institute of Technology
Li Weili,Harbin Institute of Technology
Cheng Shukang,Harbin Institute of Technology
Dong Huanzhong,The Third Product Works

Paper #IAS19p3:Sensitive and Reliable Detection of Broken Rotor Bar Fault in Induction Motors
Boqiang Xu,North China Electric Power University
Heming Li,North China Electric Power University
Liling Sun,North China Electric Power University

Paper #IAS19p4:Calculation of Circulating Bearing Currents in Machines of Inverter-based Drive Systems
A. Muetze,Darmstadt University of Technology
A. Binder,Darmstadt University of Technology

Paper #IAS19p5:Online Stator Resistance Estimation for Thermal Monitoring of Converter Fed Induction Motors Using Pseudo Random Modified PWM

Lance C. Benn,University of KwaZulu-Natal
Bruce Burton,University of KwaZulu-Natal
Ron G. Harley,Georgia Institute of Technology

Paper #IAS19p6:Diagnostics of Induction Machines Using the Zero Sequence Voltage

Pablo García,University of Oviedo,
Fernando Briz,University of Oviedo,
Michael W. Degner,Ford Motor Company
Alberto B. Diez,University of Oviedo,

Paper #IAS19p7:Monitoring of Induction Machines by Maximum Covariance Method for Frequency Tracking

Alberto Bellini,University of Parma
Giovanni Franceschini,University of Parma
Carla Tassoni,University of Parma

Session #20: Power Systems Reliability

(Sponsoring Technical Committee: Power System Engineering)
Session Chair: William Braun, Owens Corning Science & Tech.
Session Organizer: William Braun, Owens Corning Science & Tech.

Paper #IAS20p1:Response of Power Cables to Fast Transient Loads

Robert E. Henry,Bechtel National Inc.

Paper #IAS20p2:Electrical Power System in Buildings with Higher Risk for Seismic Event

Giuseppe Parise,University of Rome "La Sapienza"
Luigi Martirano,University of Rome "La Sapienza"

Paper #IAS20p3:The First 110 KV/35 KV–31.5 MVA Cast Resin Transformer

David C. M. Yuen,affiliation not sited
Vincent Choi,Edison Electrical Group
Liu Zhi Gao,JMC Electrical Group
Jun Han,JMC Electrical Group

Paper #IAS20p4:Identification of Power Frequency Industrial Magnetic Field Sources for Shielding Purposes

A. Canova,Politecnico di Torino
F. Freschi,Politecnico di Torino
M. Repetto,Politecnico di Torino
M. Tartaglia,Politecnico di Torino

Paper #IAS20p5:Load Modelling for Steady-State and Transient Analysis of Low-Voltage dc Systems

Daniel Nilsson,Chalmers University of Technology
Ambra Sannino,Chalmers University of Technology

Session #21: Multilevel Converters

(Sponsoring Technical Committee: Industrial Power Converter)
Session Chair: Grahame Holmes, Monash University
Session Organizer: Geza Joos, McGill University

Paper #IAS21p1:Design and Comparison of Medium Voltage Multi-Level Converters for Industry Applications
Dietmar Krug,Berlin University of Technology
Mariusz Malinowski,Berlin University of Technology
Steffen Bernet,Berlin University of Technology

Paper #IAS21p2:Multiple Input Converters for Fuel Cells
Burak Ozpineci,Oak Ridge National Laboratory
Leon M. Tolbert,Oak Ridge National Laboratory and The University of Tennessee
Zhong Du,The University of Tennessee

Paper #IAS21p3:Comparative Evaluation of Modulation Algorithms for Neutral Point Clamped Converters
Ashish Bendre,DRS Power and Control Technologies
Slobodan Krstic,DRS Power and Control Technologies
James Vander Meer,DRS Power and Control Technologies
Giri Venkataramanan,University of Wisconsin–Madison

Paper #IAS21p4:Multilevel DC Link Inverter
Gui-Jia Su,Oak Ridge National Laboratory

Paper #IAS21p5:Extended Operation of Flying Capacitor Multilevel Inverters
Jing Huang,University of Missouri–Rolla
Keith Corzine,University of Missouri–Rolla

Paper #IAS21p6:A Novel Hybrid Diode-Clamp Cascade Multilevel Converter for High Power Application
Kai Ding,Huazhong University of Science & Technology
Yun-ping Zou,Huazhong University of Science & Technology
Zhan Wang,Huazhong University of Science & Technology
Zhi-chao Wu,Huazhong University of Science & Technology
Yun Zhang,Huazhong University of Science & Technology

Paper #IAS21p7:New Configurations for the Three-Phase Asymmetrical Multilevel Inverter
S. Mariethoz,EPFL
A. Rufer,EPFL

Session #22: Design, Control and Analysis in Power Converters

(Sponsoring Technical Committee: Industrial Power Converter)
Session Chair: Jim Galloway, J. H. Galloway & Associates
Session Organizer: Philip Kjær, Vestas Wind Systems A/S

Paper #IAS22p1:A Novel Detection Method of Active and Reactive Currents in Single-Phase Circuits Using the Correlation and Cross-Correlation Coefficients and Its Applications

Toshihiko Tanaka,Shimane University
Kengo Ueda,Shimane University
Kuniaki Satou,Shimane University
Shinji Fukuma,Fukui University

Paper #IAS22p2:Dynamic Improvement in UPS by Means of Control Delay Minimization

P. Mattavelli,University of Udine
F. Polo,Socomec Sicon
S. Sattin,Socomec Sicon
F. Dal Lago,Socomec Sicon

Paper #IAS22p3:Analysis of Loss and Junction Temperature in Power Semiconductors of the Matrix Converter Using Simple Simulation Methods

Akihiro Odaka,Fuji Electric Advanced Technology Co., Ltd.
Jun-ichi Itoh,Fuji Electric Advanced Technology Co., Ltd.
Ikuya Sato,Fuji Electric Advanced Technology Co., Ltd.
Hideki Ohguchi,Fuji Electric Advanced Technology Co., Ltd.
Hirokazu Kodachi,Fuji Electric Advanced Technology Co., Ltd.
Naoya Eguchi,Fuji Electric Advanced Technology Co., Ltd.
Hidetoshi Umida,Fuji Electric Advanced Technology Co., Ltd.

Paper #IAS22p4:Synchronous Frame PI Current Regulators in a Virtually Translated System

Hyunbae Kim,Samsung Electronics
Robert D. Lorenz,University of Wisconsin–Madison

Paper #IAS22p5:On-Line and Off-Line Control Design in Power Electronics and Drives Using Genetic Algorithms

Pericle Zanchetta,University of Nottingham
Mark Sumner,University of Nottingham
Francesco Cupertino,Politecnico di Bari Politecnico di Bari
Maria Marinelli,Politecnico di Bari
Ernesto Mininno,

Paper #IAS22p6:Reactor Vibration Analysis in Consideration of Coupling between the Magnetic Field and Vibration

Tetsuhiro Ishikawa,Toyota Motor Co, Ltd.
Hiroo Sugiyama,Toyota Motor Co, Ltd.
Emiko Baba,Toyota Techno Service Co, Ltd.
Ryusuke Oka,Toyota Communication System Co, Ltd.

Paper #IAS22p7:Development of Calculation Toolbox for Harmonic Estimation on Multi-pulse Drives

Lucian Asiminoaei,Aalborg University
Steffan Hansen,Aalborg University
Frede Blaabjerg,Danfoss Drives A/S

Session #23: Hot and Cold Rolling

(Sponsoring Technical Committee: Metals)
Session Chair: Juergen Schwahn, Alcan Inc.

Session Organizer: S. Douglas Cromey, Alcan Inc.

Paper #IAS23p1:Transient Wrinkling Analysis of Steel Web Rolling
Dong-Teak Chung,Korea University of Technology & Education
Kee-Hyun Shin,Konkuk University

Paper #IAS23p2:An Improvement of the Thermal Model for Producing the Ultra-Thin Strips in a Conventional Hot Strip Mill
Yuan-Liang Hsu,China Steel Corporation
Chang-Huei Wu,Yuan-Ze University

Paper #IAS23p3:Camber Measurement System in a Hot Rolling Mill
C. Fraga,University of Oviedo
R. C. Gonzalez,University of Oviedo
J. A. Cancelas,University of Oviedo
J. M. Enguita,University of Oviedo
L. A. Rodriguez Loredo,Aceralia Steel Company

Paper #IAS23p4:Pointwise Linear Quadratic Optimal Control of a Tandem Cold Rolling Mill
John Pittner,University of Pittsburgh
Marwan A. Simaan,University of Pittsburgh

Paper #IAS23p5:Applications of Digital Image Processing Technique for Steel Mill Non-Contacting Conveyance System Operations
Cheng-Tsung Liu,National Sun Yat-Sen University
Yung-Yi Yang,National Sun Yat-Sen University
Sheng-Yang Lin,China Steel Corporation

Paper #IAS23p6:Thickness Quality Control and Diagnosis System For Tinplate Rolling Mills
Jose M. Enguita,University of Oviedo
Cesar Fraga,University of Oviedo
Abel A. Cuadrado,University of Oviedo
Yolanda Fernandez,University of Oviedo
Jose L. Rendueles,Aceralia Corporacion Siderurgica
Guillermo Vecino,Aceralia Corporacion Siderurgica

Products and Services Session #24: Status of High Temperature Devices and Components

(Sponsoring Technical Committee: Power Electronics Devices)
Session Chair: Hsueh-Rong Chang, Rockwell
Session Organizer: Rich Lukaszewski, Rockwell

Session #25: Electrostatic Spraying and Biological Applications

(Sponsoring Technical Committee: Electrostatic Processes)
Session Chair: Akira Mizuno, Toyohashi University of Technology
Session Organizer: Hidekatsu Fujishima, Oaska Prefecture University

Paper #IAS25p1:Electrostatic Application of Carpet Yarn Spin Finishes as a Strategy for Reducing Environmental Water Pollution: Theoretical Basis

S. Edward Law,University of Georgia

Paper #IAS25p2:Enhancement of Blood Compatibility of Implants by Helium Plasma Treatment

S. De,University of Arkansas at Little Rock
R. Sharma,University of Arkansas at Little Rock
N. Ali,University of Arkansas at Little Rock
M. K. Mazumder,University of Arkansas at Little Rock

Paper #IAS25p3:Sterilization Characteristics by a Coaxial Microwave Plasma Flow at Atmospheric Pressure

Takehiko Sato,Tohoku University
Kazunari Fujioka,Adtec Plasma Technology Co. Ltd.
Raju Ramasamy,Adtec Plasma Technology Co. Ltd.
Takuya Urayama,Adtec Plasma Technology Co. Ltd.
Shuitsu Fujii,Adtec Plasma Technology Co. Ltd.

Paper #IAS25p4:Deposition of Charged Inhaled Aerosols With Transient Airflow In Sequential Lung Airway Model

Diew Koolpiruck,Brunel University
Simant Prakoonwit,Brunel University
Wamadeva Balachandran,Brunel University

Paper #IAS25p5:Effect of Electrostatic Charge and Size Distributions on Respirable Aerosol Deposition in Lung Model

D. Saini,University of Arkansas at Little Rock
J. Gunamgari,University of Arkansas at Little Rock
C. Zulaloglu,University of Arkansas at Little Rock
R. A. Sims,University of Arkansas at Little Rock
M. K. Mazumder,University of Arkansas at Little Rock

Paper #IAS25p6:Use of Carbon Nanostructures for Hydrogen Storage for Environmentally Safe Automotive Applications

A. S. Biris,University of Arkansas at Little Rock
A. R. Biris,National Institute for Isotopic and Molecular Technologies
D. Lupu,National Institute for Isotopic and Molecular Technologies
D. Buzatu,3National Center for Toxicology Research
J. Darsey,University of Arkansas at Little Rock
M. K. Mazumder,University of Arkansas at Little Rock

Session #26: Sensorless Permanent Magnet Motor Drives

(Sponsoring Technical Committee: Industrial Drives)
Session Chair: Seung-Ki. Sul, Seoul National University
Session Organizer: Edward Lin, Baldor Electric Co.

Paper #IAS26p1:Robust Estimator Design for Signal Injection-based IPM Synchronous Machine Drives

Pierré Vadstrup,Grundfos Management A/S
Robert D. Lorenz,University of Wisconsin–Madison

Paper #IAS26p2:Sensorless Control of PMSM Drives Using a Combination of Voltage Model and HF Signal Injection

Antti Piippo,Helsinki University of Technology
Marko Hinkkanen,Helsinki University of Technology
Jorma Luomi,Helsinki University of Technology

Paper #IAS26p3:Initial Position Estimation and Low Speed Sensorless Control of Synchronous Motors in Consideration of Magnetic Saturation Based on System Identification Theory

Shinji Ichikawa,Nagoya University
Mutuwo Tomita,Gifu National College of Technology
Shinji Doki,Nagoya University
Shigeru Okuma,Nagoya University

Paper #IAS26p4:Carrier Signal Injection based Sensorless Control Methods for IPM Synchronous Machine Drives

Hyunbae Kim,Samsung Electronics
Robert D. Lorenz,University of Wisconsin– Madison

Paper #IAS26p5:Circuit Configuration and Performance of a Position-Sensorless IPM Motor Drive System

Satoshi Ogasawara,Utsunomiya University
Hirofumi Akagi,Tokyo Institute of Technology

Paper #IAS26p6:Sensorless Direct Torque Control of Five-Phase Interior Permanent Magnet Motor Drives

Leila Parsa,Texas A&M University
Hamid A. Toliyat,Texas A&M University

Paper #IAS26p7:New "D-State-Observer" Based Sensorless Vector Control for Permanent Magnet Synchronous Motors

Shinji Shinnaka,Kanagawa University

Session #27: Industrial Applications of Light

(Sponsoring Technical Committee: Production & Application of Light)
Session Chair: Georges Zissis, CPAT
Session Organizer: Francis Dawson, University of Toronto

Paper #IAS27p1:Recent Progress of UV Lamps for Industries

Yukihiro Morimoto,Ushio Inc.
Taku Sumitomo,Ushio Inc.
Masaki Yoshioka,Ushio Inc.
Tetsu Takemura,Ushio Inc.

Paper #IAS27p2:Monitoring of Ultraviolet Light Sources for Water Disinfection

Gordon Knight,Trojan Technologies Inc.

Paper #IAS27p3:Development of a Powerful Vortex Stabilized Water-Wall Flash Lamp for RTP Applications

T. Thrum,Vortek Industries Ltd.
D. Camm,Vortek Industries Ltd.
S. Dets,Vortek Industries Ltd.
A. Hewett,Vortek Industries Ltd.
I. Rudic,Vortek Industries Ltd.
G. C. Stuart,Vortek Industries Ltd.
A. Viel,Vortek Industries Ltd.

Tuesday Afternoon, October 5

Session #28: Permanent Magnet Machines—1

(Sponsoring Technical Committee: Electric Machines)
Session Chair: Tom Jahns, University of Wisconsin
Session Organizer: Ed Lovelace, Satcon Technologies

Paper #IAS28p1:Approach to Decrease Rotor Iron Losses of High Speed or Torque BLDC Motors

A. Cassat,Seagate Technology Inc. and Ecole Polytechnique Fédérale de Lausanne
C. Espanet,University of Franche-Comté

Paper #IAS28p2:Performance Analysis of Fractional Slot Wound PM-Motors for Low Speed Applications

Pia Salminen,Lappeenranta University of Technology
Markku Niemelä,Lappeenranta University of Technology
Juha Pyrhönen,Lappeenranta University of Technology
Juhani Mantere,ABB Oy

Paper #IAS28p3:Optimal Flux Weakening in Surface PM Machines Using Concentrated Windings

Ayman M. EL-Refaie,University of Wisconsin–Madison
Thomas M. Jahns,University of Wisconsin–Madison

Paper #IAS28p4:Fault-Tolerant Five-Phase Permanent Magnet Motor Drives

Leila Parsa,Texas A&M University
Hamid A. Toliyat,Texas A&M University

Paper #IAS28p5:Permanent Magnet Brushless Machines with Unequal Tooth Widths and Similar Slot and Pole Numbers

D. Ishak,University of Sheffield,
Z. Q. Zhu,University of Sheffield,
D. Howe,University of Sheffield,

Paper #IAS28p6:Pole Optimization of Brushless DC Motor

Ping Zheng,Harbin Institute of Technology
Yong Liu,Harbin Institute of Technology
Tiecheng Wang,Harbin Institute of Technology
Shukang Cheng,Harbin Institute of Technology

Paper #IAS28p7:Design of Spoke Type BLDC Motors with High Power Density for Traction Applications

Byoung-Kuk Lee,Korea Electrotechnology Research Institute
Gyu-Hong Kang,Changwon National University
Jin Hur,Korea Electronics Technology Institute
Dong-Wook You,Korea Electrotechnology Research Institute

Session #29: Safety and Productivity in the Mining Industry

(Sponsoring Technical Committee: Mining)
Session Chair: John J. Sammarco, National Institute for Occupational Safety and Health
Session Organizer: Michael R. Yenchek, National Institute for Occupational Safety and Health

Paper #IAS29p1:High-Power Regenerative Converter for Ore Transportation under Failure Conditions

J. Pontt,Technical University Federico Santa María
J. Rodríguez,Technical University Federico Santa María
R. Huerta,Technical University Federico Santa María
P. Newman,Technical University Federico Santa María
Werner Michel,University of Applied Sciences
Christian Lastra,Compañía Minera Los Pelambres

Paper #IAS29p2:Operation of High Power Cycloconverter-Fed Gearless Drives under Abnormal Conditions

J. Pontt,Universidad Federico Santa Maria Casilla
J. Rodríguez,Universidad Federico Santa Maria Casilla
K. Tischler,Siemens AG
N. Becker,Siemens AG
J. Rebolledo,Universidad Federico Santa Maria Casilla

Paper #IAS29p3:Multilevel Current Source Inverter Topology Based on Dual Structure Associations

Sangshin Kwak,affiliate not sited
Hamid A. Toliyat,Texas A&M University

Paper #IAS29p4:Current Source Connection of Electrolytic Cell Electrodes: An Improvement for Electrowinning and Electrorefinery

Eduardo P. Wiechmann,University of Concepcion
Guillermo A. Vidal,University of Concepcion
Antonio J. Pagliero,University of Concepcion

Paper #IAS29p5:Resonances and Overvoltages in a Medium Voltage Fan Motor Drive with Long Cables in an Underground Mine

J. Rodríguez,T. University Federico Santa María
J. Pontt,T. University Federico Santa María
C. Silva,T. University Federico Santa María
R. Musalem,T. University Federico Santa María
P. Newman,T. University Federico Santa María
S. Fuentes,T. University Federico Santa María

Paper #IAS29p6:Corona Discharge Initiated Mine Explosions

H. K. Sacks,Virginia Polytechnic Institute and State University

Thomas Novak,Virginia Polytechnic Institute and State University

Session #30: DC/DC Converters

(Sponsoring Technical Committee: Industrial Power Converter)
Session Chair: Bob Guenther, NWL
Session Organizer: Bill Peterson, E&M Power

Paper #IAS30p1:A New Approach to Reducing Output Ripple in Switched-Capacitor-based Step-Down DC–DC Converters

Jifeng Han,Oregon State University
Annette von Jouanne,Oregon State University
Gabor C. Temes,Oregon State University

Paper #IAS30p2:A Novel Combined Converter with Naturally Sharing Input-Current and High Voltage Gain Applied in Aeronautical Power Supplies

Jianjiang Shi,Zhejiang University
Lifeng ChenZhejiang University
Xiangning He,Zhejiang University
Yangguang Yan,Nanjing University of Aeronautics & Astronautics

Paper #IAS30p3:A Critical Evaluation and Design of Bi-Directional DC/DC Converters for Super-Capacitors Interfacing in Fuel Cell Applications

M. Cacciato,University of Rome "La Sapienza"
F. Caricchi,University of Rome "La Sapienza"
F. Giulii Capponi,University of Rome "La Sapienza"
E. Santini,University of Rome "La Sapienza"

Paper #IAS30p4:High Power DC–DC Converter and Fuel Cell Distributed Generation System

HaiPing Xu,Chinese Academy of Sciences
XuHui Wen,Chinese Academy of Sciences
Li Kong,Chinese Academy of Sciences

Paper #IAS30p5:Design and Analysis of a Current-Mode Controlled Battery/Ultracapacitor Hybrid

Shengyi Liu,University of South Carolina
Roger A. Dougal,University of South Carolina

Paper #IAS30p6:Analysis and Control of a Buck DC–DC Converter Operating with Constant Power Load in Sea and Undersea Vehicles

Claudio Rivetta,Illinois Institute of Technology
Ali Emadi,Illinois Institute of Technology
Geoffrey A. Williamson,Illinois Institute of Technology
Ranjit Jayabalan,University of Missouri–Rolla
Babak Fahimi,University of Missouri–Rolla

Session #31: Alternative Energy Applications

(Sponsoring Technical Committee: Industrial Power Converter)
Session Chair: Annette von Jouanne, Oregon State University
Session Organizer: Burak Ozpineci, Oak Ridge National Laboratory

Paper #IAS31p1:Multiobjective MPPT/Charging Controller for Stand-alone PV Power Systems under Different Insolation and Load Conditions

Zhenhua Jiang,University of South Carolina
Roger A. Dougal,University of South Carolina

Paper #IAS31p2:Design and Control of a Low Power DC–AC Converter Fed by a Photovoltaic Array

F. Belkacem,University of Picardie "Jules Verne"
D. Diallo,University of Picardie "Jules Verne"
G. A. Capolino,University of Picardie "Jules Verne"

Paper #IAS31p3:A Novel Fifteen Level Inverter for Photovoltaic Power Supply System

Abdul Rahiman Beig,National Institute of Technology
Udaya Kumar R. Y.,National Institute of Technology
V. T. Ranganathan,National Institute of Technology

Paper #IAS31p4:A New Soft Switching Direct Converter for Residential Fuel Cell Power System

Han Ju Cha,Texas A&M University
Prasad N. Enjeti,Texas A&M University

Paper #IAS31p5:A Modular PV Regulator Based on Microcontroller with Maximum Power Point Tracking

Jorge Arias,University of Oviedo
F. F Linera,.University of Oviedo
J. Martín-Ramos,University of Oviedo
Alberto M. Pernía,University of Oviedo
José Cambronero,Torytrans S.L.

Paper #IAS31p6:An Advanced Power Converter Topology to Significantly Improve the CO Tolerance of the PEM Fuel Cell Power Systems

Woojin Choi,Texas A&M University
Prasad N. Enjeti,Texas A&M University
Anthony J. Appleby,Texas A&M University

Session #32: Sensors, Measurements,Communication & Fault Detection

(Sponsoring Technical Committee: Industrial Automation & Control)
Session Chair: T. Hamrita, University of Georgia
Session Organizer: R. Petrella, University of L'Aquila

Paper #IAS32p1:An Embedded System for Position and Speed Measurement Adopting Incremental Encoders

Marco Faccio,University of L'Aquila
Paolo Grande,University of L'Aquila
Francesco Parasiliti,University of L'Aquila
Roberto Petrella,University of L'Aquila
Marco Tursini,University of L'Aquila

Paper #IAS32p2:Navigation of Mobile Sensors Using PSO and Embedded PSO in a Fuzzy Logic Controller

Ganesh K. Venayagamoorthy,University of Missouri–Rolla
Sheetal Doctor,University of Missouri–Rolla

Paper #IAS32p3:Anodic Nano-Porous Humidity Sensing Thin Films for the Commercial and Industrial Applications

Michael J. Haji-Sheikh,Northern Illinois University
Joe Ervin,Northern Illinois University
Michael Andersen,Northern Illinois University

Paper #IAS32p4:Improved Operation of Networked Control Systems using Lebesgue Sampling

Roy McCann,University of Arkansas
Anil Kumar Gunda,University of Arkansas
Suchit Reddy Damugatla,University of Arkansas

Paper #IAS32p5:Sensorless Position Control of DC Actuators for Automotive Applications

A. Consoli,University of Catania
G. Bottiglieri,University of Catania
R. Letor,STMicroelectronics
R. Ruggeri,STMicroelectronics
A. Testa,University of Messina
S. De Caro,University of Messina

Paper #IAS32p6:Estimation of Stator Winding Faults in Induction Motors Using an Adaptive Observer Scheme

Carsten Skovmose Kallesøe,Grundfos Management A/S
Pierre Vadstrup,Grundfos Management A/S
Henrik Rasmussen,Aalborg University
Roozbeh Izadi-Zamanabadi,Aalborg University

Session #33: SiC Device and High Performance Applications

(Sponsoring Technical Committee: Power Electronic Devices)
Session Chair: Leo LORENZ, IMPHINEON
Session Organizer: Jean-Luc SCHANEN, Laboratoire d'Electrotechnique de Grenoble

Paper #IAS33p1:Evaluating Conduction Loss of a Parallel IGBT-MOSFET Combination

Jonathan W. Kimball,University of Illinois at Urbana–Champaign
Patrick L. Chapman,University of Illinois at Urbana–Champaign

Paper #IAS33p2:4H-SiC GTO Thyristor and p-n Diode Loss Models for HVDC Converter

Madhu Sudhan Chinthavali,Oak Ridge National Laboratory
Leon M. Tolbert,The University of Tennessee
Burak Ozpineci,Oak Ridge National Laboratory

Paper #IAS33p3:Modeling and Characterization of a Merged PiN-Schottky Diode with Doping Compensation of the Drift Region

S. Musumeci,University of Catania

R. Pagano,University of Catania
A. Raciti,University of Catania
F. Frisina,STMicroelectronics
M. Melito,STMicroelectronics
M. Saggio,STMicroelectronics

Paper #IAS33p4:Characterization of SiC PiN Diode Forward Bias Degradation
Allen Hefner,National Institute of Standards and Technology
Ty McNutt,University of Arkansas
Adwoa AkuffoHoward University
Ranbir Singh,National Institute of Standards and Technology
Colleen Ellenwood,National Institute of Standards and Technology
Dave Berning,National Institute of Standards and Technology
Mrinal K. Das,Cree Inc.
Joseph J. Sumakeris,Cree Inc.
Robert Stahlbush,Naval Research Laboratory

Paper #IAS33p5:High Temperature Design and Testing of a DC–DC Power Converter with Si and SiC Devices
Biswajit Ray,Bloomsburg University
Russell L. Spyker,Air Force Research Laboratory

Paper #IAS33p6:1 MHz Power Factor Correction Boost Converter with SiC Schottky Diode
P.-O. Jeannin,Laboratoire d'Electrotechnique de Grenoble
D. Frey,Laboratoire d'Electrotechnique de Grenoble
J.-C. Podvin,Laboratoire d'Electrotechnique de Grenoble
J.-P. Ferrieux,Laboratoire d'Electrotechnique de Grenoble
J. Barbaroux,Laboratoire d'Electrotechnique de Grenoble
J.-L. Schanen,Laboratoire d'Electrotechnique de Grenoble
B. Rivet,STMicroelectronics

Paper #IAS33p7:Minimizing Magnetic Components Losses in a new DC–DC Converter for Portable Fuel Cell Applications
G. Lefevre,Laboratoire d'Electrotechnique de Grenoble
J. P. Ferrieux,Laboratoire d'Electrotechnique de Grenoble
J. Barbaroux,Laboratoire d'Electrotechnique de Grenoble
P. Boggetto,Axane
P. Charlat,Axane

Session #34: Charging and Discharging

(Sponsoring Technical Committee: Electrostatic Processes)
Session Chair: Malay Mazumder, University of Arkansas at Little Rock
Session Organizer: Carlos Calle, NASA Kennedy Space Center

Paper #IAS34p1:Measurement of Charge Distribution of Highly Charged Particles by E-SPART Analyzer
P. K. Srirama,University of Arkansas at Little Rock
M. K. Mazumder,University of Arkansas at Little Rock

Paper #IAS34p2:Electrodynamic Removal of Contaminant Particles and Its Applications
A. S. Biris,University of Arkansas at Little Rock

D. Saini,University of Arkansas at Little Rock
P. K. Srirama,University of Arkansas at Little Rock
M. K. Mazumder,University of Arkansas at Little Rock
R. A. Sims,University of Arkansas at Little Rock
C. I. Calle,Kennedy Space Center
C. R. Buhler,Kennedy Space Center

Paper #IAS34p3:Analysis and Modeling of Electrostatic Discharge in a Tactile Glass Featured Watch

Paolo Germano,Swiss Federal Institute of Technology
Mircea Crivii,Swiss Federal Institute of Technology
Daniele Demarco,Swiss Federal Institute of Technology
Yves Perriard,Swiss Federal Institute of Technology
Lionel Paratte,ETA SA Manufacture Horlogère Suisse
Roger Marquis,ETA SA Manufacture Horlogère Suisse

Paper #IAS34p4:An Overview of the Technical Policy Developed by Renault to Manage ESD Risks in Airbags

Jean Rivenc,Renault SAS
Javier Vazquez-Garcia,Renault SAS
Peniamin Matossian,Renault SAS
Brahim el Banani,Renault SAS
André Agneray,Renault SAS

Paper #IAS34p5:Discharge Current from Lift-up Device

Yutaka Soda,Sony Corporation

Session #35: Sensorless Induction Motor Drives

(Sponsoring Technical Committee: Industrial Drives)
Session Chair: G. Capolino, Univ of Picardie
Session Organizer: Victor Stefanovic, Consultant

Paper #IAS35p1:Rotor Position Estimation of AC Machines Using the Zero Sequence Carrier Signal Voltage

Fernando Briz,University of Oviedo
Michael W. Degner,Ford Motor Company
Pablo García,University of Oviedo
Juan M. Guerrero,University of Oviedo

Paper #IAS35p2:Rotor Position Estimation for Induction Machines at Zero and Low Frequency Utilizing Zero Sequence Currents

C. Spiteri Staines,The University of Nottingham
G. M. Asher,The University of Nottingham
M. Sumner,The University of Nottingham

Paper #IAS35p3:Sensorless Acquisition of the Rotor Position Angle for Induction Motors with Arbitrary Stator Windings

Jorge Juliet,Universidad Federíco Santa María
Joachim Holtz,University of Wuppertal

Paper #IAS35p4:An Adaptive Sliding Mode Observer for Induction Motor Sensorless Speed Control

Jingchuan Li,The Ohio State University
Longya Xu,The Ohio State University
Zheng Zhang,Whirlpool Corporation

Paper #IAS35p5:A Novel Nonlinear and Intelligent Control Technique for Induction Motor Drive Systems

A. Kaletsanos,Metallurgic Industry Halcor
F. Xepapas,National Technical University of Athens
S. N. Manias,National Technical University of Athens

Paper #IAS35p6:Direct Torque Control for Dual-Three Phase Induction Motor Drives

R. Bojoi,Politecnico di Torino
F. Farina,Politecnico di Torino
G. Griva,Politecnico di Torino
F. Profumo,Politecnico di Torino
A. Tenconi,Politecnico di Torino

Paper #IAS35p7:An Adaptive Speed Observer Based on a New Total Least-Squares Neuron for Induction Machine Drives

Maurizio Cirrincione,Institute on Intelligent Systems for the Automation
Marcello Pucci,Institute on Intelligent Systems for the Automation
Giansalvo Cirrincione,University of Picardie-Jules Verne
Gérard-André Capolino,University of Picardie-Jules Verne

Session #36: Lighting Systems

(Sponsoring Technical Committee: Production & Application of Light)
Session Chair: Mark Fellows, Philips
Session Organizer: Bill Peterson, E&M Power

Paper #IAS36p1:Electrode Erosion in Pulse Operated High-Pressure-Sodium Lamps

Walter Kaiser,Escola Politécnica da Universidade de São Paulo
Alexander Fernandez Correa,Escola Politécnica da Universidade de São Paulo
Ricardo Paulino Marques,Escola Politécnica da Universidade de São Paulo

Paper #IAS36p2:A Control Fieldbus Applied to Electronic Ballasts Management

Roberto P. Silveira,,Universidade Federal de Santa Maria
Gustavo W. Denardin,Universidade Federal de Santa Maria
Tiago B. Marchesan,Universidade Federal de Santa Maria
Alexandre Campos,Universidade Federal de Santa Maria
Ricardo N. do Prado,Universidade Federal de Santa Maria

Paper #IAS36p3:Aspects of Energy Consumption in Large Lighting Systems

J. Václavík,Technical University of Liberec
M. Novák,Technical University of Liberec
A. Richter,Technical University of Liberec
G. Zissis,University of Toulouse

Paper #IAS36p4:Lamp Driver Concepts for Dielectric Barrier Discharge Lamps and Evaluation of a 110 W Ballast

Wolfram Sowa,OSRAM GmbH
Reinhard Lecheler,OSRAM GmbH

Paper #IAS36p5:"NumeLiTe": An Energy Efficient Lighting System for Roadways and a Commercial Application of a Dimming Power Supply
R. RuscassiéUniv. Montpellier II
J. B. Rouffet,Univ Toulouse
M. Huber,Knobel AG Lichttechnische komponenten
E. Maechler,Knobel AG Lichttechnische komponenten
U. Rast,Knobel AG Lichttechnische komponenten
G. Zissis,Univ Toulouse
C. Glaize,Univ. Montpellier II

Paper #IAS36p6:Evaluation of a High Efficiency Boost Stage to Supply a Permanent LED Emergency Lighting System
A. J. Calleja,Universidad de Oviedo
M. Rico-Secades,Universidad de Oviedo
J. Cardesín,Universidad de Oviedo
J. Ribas,Universidad de Oviedo
E. L. Corominas,Universidad de Oviedo
J. M. Alonso,Universidad de Oviedo
J. García,Universidad de Oviedo

Wednesday Morning, October 6

Session #37: Permanent Magnet Machines—2

(Sponsoring Technical Committee: Electric Machines)
Session Chair: Nicola Bianchi, University of Padova
Session Organizer: Nicola Bianchi, University of Padova

Paper #IAS37p1:Analytical Design Method of Polyphase Claw-Pole Machines
J. Cros,Université Laval
J. R. Figueroa,Université Laval
P. Viarouge,Université Laval

Paper #IAS37p2:PM Wind Generator Comparison of Different Topologies
Yicheng Chen,Clarkson University
Pragasen Pillay,Clarkson University
Azeem Khan,University of Cape Town

Paper #IAS37p3:Axial-Flux PM Starter/Alternator Machine with a Novel Mechanical Device for Extended Flux Weakening Capabilities
L. Del Ferraro,University of Roma "La Sapienza"
F. Caricchi,University of Roma "La Sapienza"
F. Giulii Capponi,University of Roma "La Sapienza"
G. De Donato,University of Roma "La Sapienza"

Paper #IAS37p4:Application of Direct Drive Wheel Motor for Fuel Cell Electric and Hybrid Electric Vehicle Propulsion System

K. Rahman,General Motors
N. Patel,General Motors
T. Ward,General Motors
J. Nagashima,General Motors
F. Caricchi,University of Rome "La Sapienza"
F. Crescimbini,University ROMA TRE

Paper #IAS37p5:Increasing Field Weakening Capability of an Axial Flux PM Machine
Juan A. Tapia,University of Concepcion
Delvis Gonzalez,University of Concepcion
Rogel R. Wallace,University of Concepcion
M. Anibal Valenzuela,University of Concepcion

Products and Services Session #38: Motor/Generator Related Technologies

(Sponsoring Technical Committee: Electric Machines)
Session Chair: Co Huynh, Calnetix
Session Organizer: Rob Cuzner, DRS Power & Controls Technology

Panel Session #39: Power Electronics Building Block Concepts

(Sponsoring Technical Committee: Industrial Power Converter)
Session Chair: Yuri Khersonsky, Consultant
Session Organizer: Yuri Kheronsky, Consultant

Session #40: Utility Interface and Power Quality I

(Sponsoring Technical Committee: Industrial Power Converter)
Session Chair: Bill Brumsikle, Soft Switching Technology
Session Organizer: Giri Venkataramanan, University of Wisconsin–Madison

Paper #IAS40p1:A 21-Level (Line-to-Line) BTB System Based on Series Connection of Sixteen Converter-Cells for Power Flow Control: Experimental Verifications by a 200-V, 10-kW Laboratory System
Makoto Hagiwara,Tokyo Institute of Technology
Hideaki Fujita,Tokyo Institute of Technology
Hirofumi Akagi,Tokyo Institute of Technology

Paper #IAS40p2:Micro-Grid Power Quality Enhancement Using a Three-Phase Four-Wire Grid-Interfacing Compensator
Y. W. Li,Nanyang Technological University
D. M. Vilathgamuwa,Nanyang Technological University
P. C. Loh,Nanyang Technological University

Paper #IAS40p3:A Three-Phase Utility Power Supply Based on the Matrix Converter
Dimosthenis Katsis,US Army Research Laboratory
Patrick Wheeler,University of Nottingham
Jon Clare,University of Nottingham
Pericle Zanchetta,University of Nottingham

Paper #IAS40p4:Controller Design for Dynamic Voltage Restorer with Harmonics Compensation Function

Young-Hoon Cho,Hyundai-mobis Co.,LTD
Seung-Ki Sul,Seoul National University

Paper #IAS40p5:Control Technique for the Compensation of Current Harmonics with Tolerance to Line Voltage Dips
Alberto Pigazo,University of Cantabria
Ramón I. Diego,University of Cantabria
Víctor M. Moreno,University of Cantabria

Paper #IAS40p6:Reduce Beat and Harmonics in Grid-Connected Three-Level Voltage Source Converters with Low Switching Frequencies
F. Wang,Virginia Polytechnic Institute and State University

Paper #IAS40p7:A Multi-Function Power Quality Utility for Connecting Co-generation Systems to the Power Mains
R. L. A. Ribeiro,Rio Grande do Norte
O. O. Barbosa,Universidade Federal da Paraíba
A. M. N. Lima,Universidade Federal da Paraíba
C. B. Jacobina,Universidade Federal da Paraíba
E. R. C. da Silva,Universidade Federal da Paraíba
E. R. Braga Fl.,Universidade Federal da Paraíba

Session #41: Industrial Controls & Mechatronics

(Sponsoring Technical Committee: Industrial Automation & Control)
Session Chair: M. N. Uddin, Lakehead University
Session Organizer: M. N. Uddin, Lakehead University

Paper #IAS41p1:Impact of Correlation Errors on the Optimum Kalman Filter Gain Identification in a Single Sensor Environment
Rafael Cardoso,Universidade Federal de Santa Maria
Elder Moreira Hemerly,Centro Técnico Aeroespacial
Helder Tavares Câmara,Universidade Federal de Santa Maria
Hilton Abílio Gründling,Universidade Federal de Santa Maria

Paper #IAS41p2:H∞ Position Control with Robust Friction Compensation for a Two-Mass System
K. Peter,University of Bremen
B. Orlik,University of Bremen

Paper #IAS41p3:Optimal Control Switching of Thyristor Controlled Braking Resistor for Transient Stability Augmentation
Ahmed Rubaai,Howard University
Donatus Cobbinah,Howard University

Paper #IAS41p4:A Robust Two-Degree-of-Freedom Control Design Technique and its Practical Application
Robert Miklosovic,Cleveland State University
Zhiqiang Gao,Cleveland State University

Paper #IAS41p5:Text Independent Automatic Speaker Recognition Using Self-Organizing Maps

Alexandre Teixeira Mafra,Escola Politécnica da USP
Marcelo Godoy Simões,Colorado School of Mines

Paper #IAS41p6:On Properties and Applications of a New Form of Discrete Time Optimal Control Law

Zhiqiang Gao,Cleveland State University
Shaohua Hu,Harvard University

Session #42: Power Modules

(Sponsoring Technical Committee: Power Electronic Devices)
Session Chair: Robert PASTERCZYK, MGE UPS SYSTEM; Patrick CHAPMAN, University of Illinois
Session Organizer: Jean-Luc SCHANEN, Laboratoire d'Electrotechnique de Grenoble

Paper #IAS42p1:Inside a Power Module ...

C. Martin,Laboratoire d'Electrotechnique de Grenoble
J. L. Schanen,Laboratoire d'Electrotechnique de Grenoble
R. Pasterczyk,MGE UPS System

Paper #IAS42p2:Power Electronics Modules for Inverter Applications using Flip-Chip on Flex-Circuit Technology

H. N. Shah,Rensselaer Polytechnic Institute
Y. Xiao,Rensselaer Polytechnic Institute
T. P. Chow,Rensselaer Polytechnic Institute
R. J. Gutmann,Rensselaer Polytechnic Institute
E. R. Olson,University of Wisconsin–Madison
S-H. Park,University of Wisconsin–Madison
W-K. Lee,University of Wisconsin–Madison
J. J. Connors,University of Wisconsin–Madison
T. M. Jahns,University of Wisconsin–Madison
R. D. Lorenz,University of Wisconsin–Madison

Paper #IAS42p3:4.5 kV Press Pack IGBT Designed for Ruggedness and Reliability

Simon Eicher,ABB Switzerland Ltd.
Munaf Rahimo,ABB Switzerland Ltd.
Evgeny Tsyplakov,ABB Switzerland Ltd.
Daniel Schneider,ABB Switzerland Ltd.
Arnost Kopta,ABB Switzerland Ltd.
Ulrich Schlapbach,ABB Switzerland Ltd.
Eric Carroll,ABB Switzerland Ltd.

Paper #IAS42p4:Application Characteristics of an Experimental RB-IGBT (Reverse Blocking IGBT) Module

E. R. Motto,Powerex Incorporated
J. F. Donlon,Powerex Incorporated
M. Tabata,Mitsubishi Electric Power Semiconductor Device Works
H. Takahashi,Mitsubishi Electric Power Semiconductor Device Works
Y. Yu,Mitsubishi Electric Power Semiconductor Device Works
G. Majumdar,Mitsubishi Electric Power Semiconductor Device Works

Paper #IAS42p5:Design and Optimization of Embedded Power Chip Modules for Double-sided Cooling

Jian Yin,Virginia Polytechnic Institute and State University
J. D. van Wyk,Virginia Polytechnic Institute and State University
W. G. Odendaal,Virginia Polytechnic Institute and State University
Zhenxian Liang,Virginia Polytechnic Institute and State University

Session #43: Corona Discharging

(Sponsoring Technical Committee: Electrostatic Processes)
Session Chair: K. Robinson, Eastman Kodak
Session Organizer: Ed Law, University of Georgia

Paper #IAS43p1:Characterisation of Dual Corona Electrodes for Electrostatic Processes Applications

Abdelber Bendaoud,University Djillali Liabes
Amar Tilmatine,University Djillali Liabes
Karim Medles,University Djillali Liabes
Mustapha Rahli,University of Sciences and Technology
Mihai Huzau,University Institute of Technology
Lucian Dascalescu,University Institute of Technology

Paper #IAS43p2:Corona and Spark Discharges Occurring between a Grounded Sphere and an Array of Charged Multiple Electrodes

Toshiyuki Sugimoto,Yamagata University
Koichiro Chiba,Yamagata University
Yoshio Higashiyama,Yamagata University

Paper #IAS43p3:DC Corona Discharge from a Wire Particle Floated with a Micro-Gap in Parallel Plate Electrodes

Yusuke Kudo,Yamagata University
Toshiyuki Sugimoto,Yamagata University
Yoshio Higashiyama,Yamagata University

Paper #IAS43p4:Influence of Particle Concentration on Corona Discharge in the CAROLA Collector of Oil Droplets

A. M. Bologa,Forschungszentrum Karlsruhe GmbH
H-R. Paur,Forschungszentrum Karlsruhe GmbH
H. Seifert,Forschungszentrum Karlsruhe GmbH
J. Handte,Handte & Co. GmbH

Paper #IAS43p5:Computational and Experimental Study of Ionic Space Charge Generated by Combined Corona-Electrostatic Electrode Systems

Laurentiu Marius Dumitran,University Politehnica
Lucian Dascalescu,University Institute of Technology
Pierre Atten,CNRS
Petru V. Notingher1,University Politehnica

Paper #IAS43p6:Investigation of Electrostatic Discharge (ESD) for a Three Body Problem with Small Gaps

William D. Greason,The University of Western Ontario

Paper #IAS43p7:Current Waveform of Space Charge Discharge Occurred in a Charged Particle Cloud

Yoshio Higashiyama,Yamagata University
Hiroyuki Kikuchi,Yamagata University
Toshiyuki Sugimoto,Yamagata University

Session #44: Swiched Reluctance Motor Drives

(Sponsoring Technical Committee: Industrial Drives)
Session Chair: Nobuyuki Matsui, Nagoya Institute of Technology
Session Organizer: Joe Xiang, Visteon Corporation

Paper #IAS44p1:Design of an SRM-based Actuator for High-Performance Steering Vane Control on the Landing Craft Air Cushion (LCAC) Hovercraft

Jifeng Han,Oregon State University
Xiaolin Zhou,Oregon State University
Annette von Jouanne,Oregon State University
Alan Wallace,Oregon State University
Dallas Marckx,Chinook Power Technologies, LLC
Greg Hjelmeland,Chinook Power Technologies, LLC
Jerry Lloyd,Emerson Motor Company
Pete Wung,Emerson Motor Company

Paper #IAS44p2:High Performance Four-Quadrant Switched Reluctance Traction Drive Based on DITC

Nisai H. Fuengwarodsakul,Aachen University
Marcus Menne,DaimlerChrysler AG
Robert B. Inderka,DaimlerChrysler AG
Rik W. De Doncker,Aachen University

Paper #IAS44p3:Theory and Operation of a Four Quadrant Switched Reluctance Motor Drive with a Single Controllable Switch– The Lowest Cost Four Quadrant Brushless Motor Drive

R. Krishnan,Virginia Tech
Sung-Yeul Park,Virginia Tech
Keunsoo Ha,Virginia Tech

Paper #IAS44p4:A Hybrid Sensorless SRM Drive with Eight- and Six-Switch Converter Topologies

A. Khalil,The University of Akron
I. Husain,The University of Akron
S. A. Hossain,Globe Motors
S. Gopalakrishnan,Delphi Research Labs
A. Omekanda,Delphi Research Labs
B. Lequesne,Delphi Research Labs
H. Klode,Delphi E&C Systems

Paper #IAS44p5:SRM Power Converter for Operation with High Demagnetization Voltage

Amit Kumar Jain,University of Minnesota
Ned Mohan,University of Minnesota

Paper #IAS44p6:Load Invariant Sensorless Control of an SRM Drive Using High Frequency Signal Injection

Ekrem Kayikci,University of Wisconsin–Madison
Michael C. Harke,University of Wisconsin–Madison
Robert D. Lorenz,University of Wisconsin–Madison

Paper #IAS44p7:A Study of Dead-Time of PWM Rectifier of Voltage-Source Inverter without DC Link Components and Its Operating Characteristics of Induction Motor

Kenichi Iimori,Kagoshima University
Katsuji Shinohara,Kagoshima University
Kichiro Yamamoto,Kagoshima University

Session #45: LED and Other Lamps

(Sponsoring Technical Committee: Production & Application of Light)
Session Chair: Ricardo Nederson do Prado, Federal University of Santa Maria
Session Organizer: Bill Peterson, E&M Power

Paper #IAS45p1:Modeling the Electrical Behavior of Fluorescent Lamps on the Basis of a Self-Consistent Collisional-Radiative Model

K. H. Loo,University of Sheffield
D. A. Stone,University of Sheffield
R. C. Tozer,University of Sheffield
M. Jinno,University of Sheffield
R. Devonshire,University of Sheffield

Paper #IAS45p2:Driver for High Efficiency LED Based on Flyback Stage with Current Mode Control for Emergency Lighting System

M. Rico-Secades,Universidad de Oviedo
A. J. Calleja,Universidad de Oviedo
J. Cardesín,Universidad de Oviedo
J. Ribas,Universidad de Oviedo
E. L. Corominas,Universidad de Oviedo
J. M. Alonso,Universidad de Oviedo
J. García,Universidad de Oviedo

Paper #IAS45p3:Comparison of the Emission of a High Pressure Na Lamp Working at 50 Hz and at High Frequency

Antonio Martín,University of Oviedo
Nerea Bordel,University of Oviedo
Cecilio Blanco,University of Oviedo
Juan c. Alvarez,University of Oviedo
Georges Zissis,University Paul Sabatier

Paper #IAS45p4:Calculation of the Impedance of an Axisymetric DBD Lamp for Power Supply Design Purposes

S. Bhosle,Université Paul Sabatier
G. Zissis,Université Paul Sabatier
J. J. Damelincourt,Université Paul Sabatier
F. P. Dawson,University of Toronto

Paper #IAS45p5:An Effective LED Dimming Approach

Prathyusha Narra,Northern Illinois University
Donald S. Zinger,Northern Illinois University

Paper #IAS45p6:Parallel Connected LEDs Operated at High Frequency to Improve Current Sharing
Srinivasa M. Baddela,Advanced Transformer
Donald S. Zinger,Northern Illinois University

Wednesday Afternoon, October 6

Session #46: Permanent Magnet Machines 3

(Sponsoring Technical Committee: Electric Machines)
Session Chair: Zach Fu, Visteon
Session Organizer: Zach Fu, Visteon

Paper #IAS46p1:BEGA—A Biaxial Excitation Generator for Automobiles: Comprehensive Characterization and Test Results
Sever Scridon,Beespeed Automatizari Ltd. Timişoara
Ion Boldea,University Politehnica of Timişoara
Lucian Tutelea,University Politehnica of Timişoara
Frede Blaabjerg,Aalborg University
Ewen Ritchie,Aalborg University

Paper #IAS46p2:Three-Dimensional Force Analyses of an Axial-flow Radial-flux Permanent Magnet Motor with Magnetic Suspension
Cheng-Tsung Liu,National Sun Yat-Sen University
Tsung-Shiun Chiang,National Sun Yat-Sen University

Paper #IAS46p3:A Study on Eddy-Current Losses in Rotors of Surface Permanent Magnet Synchronous Machines
Masatsugu Nakano,Mitsubishi Electric Corporation
Haruyuki Kometani,Mitsubishi Electric Corporation
Mitsuhiro Kawamura,Toshiba Mitsubishi-Electric Industrial Systems Corporation

Paper #IAS46p4:Effect of Axial Segmentation of Permanent Magnets on Rotor Loss of Modular Brushless Machines
J. D. Ede,The University of Sheffield
K. Atallah,The University of Sheffield
G. W. Jewell,The University of Sheffield
J. B. Wang,The University of Sheffield
D. Howe,The University of Sheffield

Paper #IAS46p5:Modelling of Permanent Magnet AC Machine by Taking into Account Dynamic and Static Inductances
C. Attaianese,University of Cassino
V. Nardi,University of Cassino
G. Tomasso,University of Cassino

Paper #IAS46p6:Assessment of Torque Components in Brushless Permanent Magnet Machines Through Numerical Analysis of the Electromagnetic Field

D. M. Ionel,A.O. Smith Corp.
M. Popescu,University of Glasgow
M. McGilp,University of Glasgow
T. J. E. Miller,University of Glasgow
S. Dellinger,A.O. Smith Corp.

Paper #IAS46p7:Design Considerations of Sinusoidally Excited Permanent Magnet Machines for Low Torque Ripple Applications

Mohammad S. Islam,Delphi Steering
Sayeed Mir,Delphi Steering
Tomy Sebastian,Delphi Steering
Samuel Underwood,Delphi Steering

Session #47: Power Systems Design

(Sponsoring Technical Committee: Power System Engineering)
Session Chair: Jim Harvey, University of Michigan Hospital
Session Organizer: Matt Dozier, iDesign Services, Inc

Paper #IAS47p1:Arc Flash Boundary Calculations Using Computer Software Tools

Mark D. Gibbs,BWXT-Y12

Paper #IAS47p2:Predictive Maintenance of Vacuum Switchgear

Sheng Su,Changsha University of Science and Technology
Xiangjun Zeng,Changsha University of Science and Technology
K. K. Li,The HongKong Polytenic University
W. L. Chan,The HongKong Polytenic University
Weiguo Li,Wuhan University

Paper #IAS47p3:Current Methods for Conducting an Arc Flash Hazard Analysis

Aidan M. Graham,Eaton Electrical
Michael Hodder,Eaton Electrical
Giuse Gates,Eaton Electrical

Paper #IAS47p4:A New Analytical Language for Clearing Procedures in Electrical Installations

Giuseppe Parise,University of Rome "La Sapienza"
Erling Hesla,Hesla & Associates

Paper #IAS47p5:System Management Strategy to Monitor Insulated Power Cables

Giuseppe Parise,University of Rome "La Sapienza"
Luigi Martirano,University of Rome "La Sapienza"

Paper #IAS47p6:Electrical Safety Related Isolation on Industrial Machines with Multiple Entry Points—Follow-up Paper: Additional Developments

William E. Anderson,The Procter & Gamble Company

Session #48: Soft Switching and Resonant Converters

(Sponsoring Technical Committee: Industrial Power Converter)

Session Chair: Po-Tai Cheng, National Tsing Hua University
Session Organizer: Bob Guenther, NWL

Paper #IAS48p1:A Three-Phase Soft-Switched Isolated AC/DC Converter without Auxiliary Circuit

Staffan Norrga,Royal Institute of Technology
Stephan Meier,Royal Institute of Technology
Stefan Östlund,Royal Institute of Technology

Paper #IAS48p2:A Modified PWM Control Technique for Full Bridge ZVS DC–DC Converter with Equal Losses for All Devices

Liviu Mihalache,Power Conversion Technologies Inc.

Paper #IAS48p3:A Novel Resonant Transition Half-Bridge Converter

B. Swaminathan,Indian Institute of Science
V. Ramanarayanan,Indian Institute of Science

Paper #IAS48p4:A Novel Phase Shift Controlled ZVZCS Full Bridge DC–DC Converter: Analysis and Design Considerations

Xinke Wu,Zhejiang University
Chen Zhao,Zhejiang University
Junming Zhang,Zhejiang University
Zhaoming Qian,Zhejiang University

Paper #IAS48p5:A Comparative Analysis for ZVT PWM Converters with Resonant Auxiliary Circuit—RAC

M. L. Martins,Federal University of Santa Maria
J. L. Russi,Federal University of Santa Maria
H. L. Hey,Federal University of Santa Maria

Paper #IAS48p6:Realisation of the Resonant Reset ZVS Forward Converter for Distributed Power Supplies using New SiC Power Transistor

Ashot Melkonyan,University of Kassel
Leo Lorenz,Infineon Technologies Asia Pacific Pte. Ltd.

Session #49: Converter Applications and Implementation Issues

(Sponsoring Technical Committee: Industrial Power Converter)
Session Chair: Yuri Khersonsky, Consultant
Session Organizer: Seung-Ki Sul, Seoul National University of Technology

Paper #IAS49p1:A 150 kVA Vector Controlled Matrix Converter Induction Motor Drive

T. F. Podlesak,S. Army Research Laboratory
D. Katsis,S. Army Research Laboratory
P. W. Wheeler,University of Nottingham
J. C. Clare,University of Nottingham
L. Empringham,University of Nottingham
M. Bland,University of Nottingham

Paper #IAS49p2:Model Conducted EMI Emission of Switching Modules for Converter System EMI Characterization and Prediction

Qian Liu,Virginia Polytechnic Institute and State University

Fred Wang,Virginia Polytechnic Institute and State University
Dushan Boroyevich,Virginia Polytechnic Institute and State University

Paper #IAS49p3:Analysis and Design of IGBT-based AC/AC Direct Converters Built of Conventional Current Source Inverter Modules
Dorin O. Neacsu,Consultant

Paper #IAS49p4:Identification of Essential Coupling Path Models for Conducted EMI Prediction in Switching Power Converters
Jin Meng,Navy University of Engineering
Weiming Ma,Navy University of Engineering
Lei Zhang,Navy University of Engineering
Zhihua Zhao,Navy University of Engineering

Paper #IAS49p5:Conducted EMI Characteristic and Its Implications to Filter Design in Three-Phase Diode Front-End Converters
W. Shen,Virginia Polytechnic Institute and State University
F. Wang,Virginia Polytechnic Institute and State University
D. Boroyevich,Virginia Polytechnic Institute and State University

Paper #IAS49p6:Evaluation of the Single Sided Matrix Converter Driven Switched Reluctance Motor
A. S. Goodman,The University of Nottingham
K. J. Bradley,The University of Nottingham
P. W. Wheeler,The University of Nottingham

Paper #IAS49p7:Comparison and Mitigation of Common Mode Voltage in Power Converter Topologies
Sanmin Wei,Ryerson University
N. Zargari,Rockwell Automation Canada
Bin Wu,Ryerson University
S. Rizzo,Rockwell Automation Canada

Session #50: Motion Controls

(Sponsoring Technical Committee: Industrial Automation & Control)
Session Chair: G. K. Venayagamoorty, University of Missouri–Rolla
Session Organizer: G. K. Venayagamoorty, University of Missouri–Rolla

Paper #IAS50p1:Back-EMF Estimation-based Sensorless Control of PMSM: Robustness with Respect to Measurement Errors and Inverter Irregularities
Babak Nahid-Mobarakeh,CREA
Farid Meibody-Tabar,Institut National Polytechnique de Lorraine
François-Michel Sargos,Institut National Polytechnique de Lorraine

Paper #IAS50p2:Fuzzy Logic Controller Based Cost Effective Four-Switch, Three-Phase Inverter Fed IPM Synchronous Motor Drive System
M. Nasir Uddin,Lakehead University
T. S. Radwan,Memorial University of Newfoundland
M. A. Rahman,Memorial University of Newfoundland

Paper #IAS50p3:Application of Chaotic-Motion Motors to Industrial Mixing Processes
K. T. Chau,The University of Hong Kong
Shuang Ye,The University of Hong Kong
Yuan Gao,The University of Hong Kong
J. H. Chen,Tsinghua University

Paper #IAS50p4:Compensating Structural Dynamics for Servo Driven Industrial Machines with Acceleration Feedback
George W. Younkin,Bull's Eye Research, Inc.

Paper #IAS50p5:Limitations of Simplified Fuzzy Logic Controller for IPM Motor Drive
Casey Butt,Memorial University of Newfoundland
M. A. Rahman,Memorial University of Newfoundland

Paper #IAS50p6:Digital Second Order Sliding Mode Control for a Synchronous Reluctance Motor
M. Mohamadian,IROST
M. M. Pedram,Tarbiat Moallem University
F. Ashrafzadeh,Whirlpool Corp.

Session #51: Device Integration Strategies

(Sponsoring Technical Committee: Power Electronic Devices)
Session Chair: Enrico SANTI, University of South Carolina; Hardus ODENDAAL, CPES
Session Organizer: Jean-Luc SCHANEN, Laboratoire d'Electrotechnique de Grenoble

Paper #IAS51p1:Integrated Monolithic Over-Voltage Protection Circuit with Adjustable Threshold Voltage
M.Fisal Alkayal,Domaine Universitaire
Jean-Christophe Crebier,Domaine Universitaire

Paper #IAS51p2:A Novel Driving and Protection Circuit for Reverse Blocking IGBT Used in Matrix Converter
Zhichao Liu,Tsinghua University
Daning Zhou,Tsinghua University
Kai Sun,Tsinghua University
Lipei Huang,Tsinghua University
Kouki Matsuse,Meiji University
Kiyoaki Sasagawa,Fuji Electric Advanced Technology Co., Ltd.

Paper #IAS51p3:Gate Driver Supply of Power Switches without Galvanic Insulation
R. Mitova,INPG-CNRS
J-C. Crébier,INPG-CNRS
L. Aubard,INPG-CNRS
C. Scheaffer,INPG-CNRS

Paper #IAS51p4:Characterization, Parameter Identification and Modeling of a New Monolithic Emitter-Switching Bipolar Transistor
S. Musumeci,University of Catania
R. Pagano,University of Catania
A. Raciti,University of Catania
C. Porto,STMicroelectronics

C. Ronsisvalle,STMicroelectronics
R. Scollo,STMicroelectronics

Paper #IAS51p5:A Chip-level Process for Power Switching Module Integration and Packaging

Zhenxian Liang,Virginia Polytechnic Institute and State University
J. D. van Wyk,Virginia Polytechnic Institute and State University
Fred C. Lee,Virginia Polytechnic Institute and State University

Paper #IAS51p6:SPETO: A Superior Power Switch for High Power, High Frequency, Low Cost Converters

Bin Zhang,Virginia Polytechnic Institute and State University
Alex Q. Huang,Virginia Polytechnic Institute and State University
Bin Chen,Virginia Polytechnic Institute and State University
Stanley Atcitty,Sandia National Laboratories
Mike Ingram,Tennessee Valley Authority

Session #52: Electrostatic Separation and Deposition

(Sponsoring Technical Committee: Electrostatic Processes)
Session Chair: Lucian Dasculescu, University Institute of Technology
Session Organizer: Wamadeva Balachandran, Brunel University

Paper #IAS52p1:Effect of Ambient Humidity on the Outcome of Electrostatic Separation Processes

Lucian Dascalescu,University Institute of Technology
Adrian Mihalcioiu,University Institute of Technology
Amar Tilmatine,University Sidi-bel-abbès
Karim Medles,University Sidi-bel-abbès
Adrian Samuila,University Institute of Technology

Paper #IAS52p2:Preparation of Oxygen Ion Conducting Doped LaGaO3 Thin Films on Porous Substrates by Pulsed Laser Deposition

Mitsugi Fumiaki,Oita University
Kanazawa Seiji,Oita University
Maeda Yutaka,Oita University
Suita Shinya,Oita University
Ohkubo Toshikazu,Oita University
Nomoto Yukiharu,Oita University
Takita Yusaku,Oita University
Ishihara Tatsumi,Kyushu University

Paper #IAS52p3:Set Point Identification and Robustness Testing of Electrostatic Separation Processes

Karim Medles,University Djillali Liabes
Amar Tilmatine,University Djillali Liabes
Farid Miloua,University Djillali Liabes
Abdelber Bendaoud,University Djillali Liabes
Mohamed Younes,University Djillali Liabes
Mostéfa Rahli,University of Sciences and Technology
Lucian Dascalescu,University Institute of Technology

Paper #IAS52p4:Characterization of Wire Corona Electrodes at Various Discharge Gaps in Electrostatic Separation Processes

Alexandru Iuga,Technical University of Cluj-Napoca
Adrian Samuila,Technical University of Cluj-Napoca and University Institute of Technology
Marius Blajan,Technical University of Cluj-Napoca and University Institute of Technology
Radu Beleca,Technical University of Cluj-Napoca
Roman Morar,Technical University of Cluj-Napoca
Lucian Dascalescu,University Institute of Technology

Paper #IAS52p5:High-Voltage Monitoring in Electrostatic Separators

Adrian Mihalcioiu,University Institute of Technology and Technical University of Cluj-Napoca
Vasile Neamtu,Technical University of Cluj-Napoca
Anca Stochita,University Institute of Technology
Lucian Dascalescu,University Institute of Technology

Paper #IAS52p6:Considerations about Obtaining Some Different Distinct Qualities of Protection Layer of Metallic Surfaces by Covering in Different Electric Fields

Ioan Ionescu,Valahia University of Targoviste
Gheorghe Marin,Institute for Research in Electrostatics

Session #53: Drives Interface Issues

(Sponsoring Technical Committee: Industrial Drives)
Session Chair: Fred Wang, Virginia Tech
Session Organizer: M. Naidu, Delphi

Paper #IAS53p1:Experimental Evaluation of the Endangerment of Ball Bearings due to Inverter-Induced Bearing Currents

A. Muetze,Darmstadt University of Technology
A. Binder,Darmstadt University of Technology
H. Vogel,Siemens AG
J. Hering,FAG Kugelfischer AG

Paper #IAS53p2:Application of the Transmission Line Theory to the Frequency Domain Analysis of the Motor Voltage Stress Caused by PWM Inverters

Giovanna Oriti,Power Engineering Consultants
Alexander L. Julian,Power Engineering Consultants

Paper #IAS53p3:A Passive EMI Filter for Preventing High-Frequency Leakage Current from Flowing through the Inverter Heat Sink of an Adjustable-Speed Motor Drive System

Hirofumi Akagi,Tokyo Institute of Technology
Takafumi Doumoto,Tokyo Institute of Technology

Paper #IAS53p4:Evaluation of Medium Voltage Electric Propulsion Drive for Electromagnetic Compatibility Using Multi-Domain Modeling

Rob Cuzner,DRS Power and Control Technologies
Craig Goshaw,DRS Power and Control Technologies
Thi Nguyen,DRS Power and Control Technologies
Ashish Bendre,DRS Power and Control Technologies

Paper #IAS53p5:Demonstration of Attitude Control and Bus Regulation with Flywheels

Peter Kascak,University of Toledo
Ralph Jansen,University of Toledo
Barbara Kenny,NASA Glenn Research Center

Paper #IAS53p6:Acoustic Noise Reduction for an Inverter-fed Three-Phase Induction Motor

Nasrin Hashemi,Monash University
Robin Lisner,Monash University
Donald Grahame Holmes,Monash University

Paper #IAS53p7:Integrated Doubly-fed Electric Alternator/Active Filter (IDEA), a Viable Power Quality Solution, for Wind Energy Conversion Systems

Mehdi T. Abolhassani,Texas A&M University
Prasad Enjeti,Texas A&M University
Hamid A. Toliyat,Texas A&M University

Session #54: Energy Systems I

(Sponsoring Technical Committee: Energy Systems)
Session Chair: Greg Nolan, PSEG Power, LLC
Session Organizer: Greg Nolan, PSEG Power, LLC

Paper #IAS54p1:Reactive Compensation Techniques to Improve the Ride-Through of Induction Generators during Disturbance

Chai Chompoo-inwai,University of Texas at Arlington
Chitra Yingvivatanapong,University of Texas at Arlington
K. Methaprayoon,University of Texas at Arlington
Wei-Jen Lee,University of Texas at Arlington

Paper #IAS54p2:Integrated High Speed Intelligent Utility Tie Unit for Disbursed/Renewable Generation Facilities

Worakarn Wongsaichua,The University of Texas at Arlington
Wei-Jen Lee,The University of Texas at Arlington
Soontorn Oraintara,The University of Texas at Arlington
Chiman Kwan,Intelligent Automation, Inc
Frank Zhang,Intelligent Automation, Inc

Paper #IAS54p3:Optimal Operation Strategy for Cogeneration Power Plants

Shun-Hsien Huang,The University of Texas at Arlington
Bin-Kwie Chen,Tatung University
Wen-Chen Chu,Tatung University
Wei-Jen Lee,The University of Texas at Arlington

Paper #IAS54p4:Fuel Consumption Minimisation of a Micro-Grid

Carlos A. Hernandez-Aramburo,Imperial College London
Tim C. Green,Imperial College London

Paper #IAS54p5:Static VAR Compensator-based Voltage Regulation Implementation of Single-Phase Self-Excited Induction Generator

Tarek Ahmed,Yamaguchi University
Katsumi Nishida,Yamaguchi University
Mutsuo Nakaoka,Yamaguchi University

Paper #IAS54p6:Hybrid Fuel Cell Strategies for Clean Power Generation
Kaushik Rajashekara,Energenix Center

Thursday Morning, October 7

Session #55: Linear Actuators

(Sponsoring Technical Committee: Electric Machines)
Session Chair: Uday Deshpande, Black & Decker
Session Organizer: Uday Deshpande, Black & Decker

Paper #IAS55p1:Multi-Axis Maglev Nanopositioner for Precision Manufacturing and Manipulation Applications
Shobhit Verma,Texas A&M University
Won-jong Kim,Texas A&M University
Huzefa Shakir,Texas A&M University

Paper #IAS55p2:Analysis of Permanent Magnet Type Transverse Flux Linear Motor by Coupling 2D Finite Element Method on 3D Equivalent Magnetic Circuit Network Method
Ji-Young Lee,Changwon National University
Jung-Pyo Hong,Changwon National University
Do-Hyun Kang,Korea Electrotechnology Research Institute

Paper #IAS55p3:Force Characteristic Analysis of PMLSMs for Magnetic Levitation Stage Based on Three-Dimensional Equivalent Magnetic Circuit Network
Gyu-Hong Kang,Chang-won National University
Jin Hur,Chang-won National University
Byoung-Kuk Lee,Chang-won National University
Jung-Pyo Hong,Chang-won National University

Paper #IAS55p4:3D Motion in Magnetic Actuator Modelling
Philippe Wendling,Magsoft Corporation
Vincent Leconte,Schneider Electric
Patrick Lombard,Cedrat
Richard Ruiz,Cedrat
Christophe Guerin,Cedrat
Christian Bataille,Schneider Electric

Paper #IAS55p5:Analysis and Initial Synthesis of a Novel Linear Actuator with Active Magnetic Suspension
Anton V. Lebedev,Eindhoven University of Technology
Elena A. Lomonova,Eindhoven University of Technology
Peter G. van Leuven,Eindhoven University of Technology
Joris Steinberg,Eindhoven University of Technology
Dick A. H. Laro,Delft University of Technology

Paper #IAS55p6:Stator Iron Loss of Tubular Permanent Magnet Machines

Yacine Amara,University of Sheffield
Jiabin Wang,University of Sheffield
David Howe,University of Sheffield

Paper #IAS55p7:A Multi-Physics Model of Planar Electro-Active Polymer Actuators
Christoph Hackl,Technical University of Munich
Hong-Yue Tang,University of Wisconsin–Madison
Robert D. Lorenz,University of Wisconsin–Madison
Lih-Sheng Turng,University of Wisconsin–Madison
Dierk Schröder,Technical University of Munich

Session #56: Power Systems Analysis

(Sponsoring Technical Committee: Power System Engineering)
Session Chair: Wei-Jen Lee, University of Texas at Arlington
Session Organizer: Wei-Jen Lee, University of Texas at Arlington

Paper #IAS56p1:A Fuzzy-Norm Approach for Optimal Multi-Objective Single-Tuned Harmonic Filter Planning
Yuan-Lin Chen,MingChi Institute of Technology

Paper #IAS56p2:Optimal Sensor Placement Technique for Locating Multiple Harmonic Sources on a Radial Distribution Feeder"
Mandhir Sahni,The University of Texas at Arlington
Wei-Jen Lee,The University of Texas at Arlington

Paper #IAS56p3:Application of Colored Petri Nets to Distribution Systems Temperature Adaptive Switching Operation
Yu-Lung Ke,Kun Shan University of Technology

Paper #IAS56p4:Relliability Assessment of a Backup Gas Turbine Generation System for a Critical Industry Load Using Monte Carlo Simulation Model
A. A. Chowdhury,MidAmerican Energy Company
D. O. Koval,University of Alberta

Paper #IAS56p5:System Reliability Worth Assessment Using the Customer Survey Approach
A. A. Chowdhury,MidAmerican Energy Company
T. C. Mielnik,MidAmerican Energy Company
L. E. Lawton,Population Research Systems
M. J. Sullivan,Population Research Systems
A. Katz,Population Research Systems
D. O. Koval,University of Alberta

Paper #IAS56p6:Algorithm to Evaluate Substations Reliability with Cut and Path Sets
Miguel Vega,Instituto de Investigaciones Eléctricas
Héctor G. Sarmiento,Instituto de Investigaciones Eléctricas

Paper #IAS56p7:Reliability and Availability Data Collection Program for Power Distribution, Power Generation, and HVAC Components of Commercial, Industrial, and Utility Installations

Peyton S. Hale Jr.,U.S. Army Corps of Engineers
Robert G. Arno,Alion Science and Technology
D. David Dylis,Alion Science and Technology

Session #57: PWM and Control Techniques

(Sponsoring Technical Committee: Industrial Power Converter)
Session Chair: Edison da Silva, University of Campina Grande
Session Organizer: Jeff Reichard, Integrated Electronics

Paper #IAS57p1:A Neural-Network-based Space Vector PWM of a Five-Level Voltage-fed Inverter

Nicolau Pereira Filho,Univ. Federal de Mato Grosso do Sul and Universidade Federal de Itajubá
João O. P. Pinto,Univ. Federal de Mato Grosso do Sul
Bimal K. Bose,University of Tennessee
Luiz E. Borges da Silva,Universidade Federal de Itajubá

Paper #IAS57p2:Control Method of NPC Inverter for Continuous Operation under One Phase Fault Condition

Gun-Tae Park,Hanyang University
Tae-Jin Kim,Hanyang University
Dae-Wook Kang,Hanyang University
Dong-Seok Hyun,Hanyang University

Paper #IAS57p3:Harmonics Optimization of the Voltage Balancing Control for Multilevel Converter/Inverter Systems

Zhiguo Pan,Michigan State University
Fang Z. Peng,Michigan State University

Paper #IAS57p4:A PWM Strategy for Four-Leg Voltage Source Converters and Applications to a Novel Line Interactive UPS in a Three-Phase Four-Wire System

Jang-Hwan Kim,Seoul National University
Seung-Ki Sul,Seoul National University
Hyosung Kim,Cheonan National Technical College
Jun-Keun Ji,Soonchunhyang University

Paper #IAS57p5:Harmonic Elimination for Multilevel Converter with Programmed PWM Method

Zhong Du,The University of Tennessee
Leon M. Tolbert,The University of Tennessee
John N. Chiasson,The University of Tennessee

Paper #IAS57p6:A Generalized Over-Modulation Methodology for Current Regulated Three-phase Voltage Source Converters

Gan Dong,Tennessee Technological University
Olorunfemi Ojo,Tennessee Technological University

Paper #IAS57p7:Carrier-based Discontinuous PWM Modulation for Current Source Converters

Olorunfemi Ojo,Tennessee Technological University
Sravan Vanaparthy,Tennessee Technological University

Session #58: Utility Interface and Power Quality II

(Sponsoring Technical Committee: Industrial Power Converter)
Session Chair: Frede Blaabjerg, Aalborg University
Session Organizer: Sewan Choi, Seoul National University of Technology

Paper #IAS58p1:Novel Topology of a Line Interactive UPS Using PQR Instantaneous Power Theory

Hyosung Kim,Cheonan National Technical College
Jun-Keun Ji,Soonchunhyang University
Jang-Hwan Kim,Seoul National University
Seung-Ki Sul,Seoul National University
Kyung-Hwan Kim,EWHA Technologies Information Company in Korea

Paper #IAS58p2:Protection Schemes for a Dynamic Voltage Restorer

Sidelmo M. Silva,Universidade Federal de Minas Gerais
Fernando Albert Eleutério,Universidade Federal de Minas Gerais
André de Souza Reis,Universidade Federal de Minas Gerais
Braz J. Cardoso Filho,Universidade Federal de Minas Gerais

Paper #IAS58p3:A Control Scheme in Hybrid Synchronous-Stationary Frame for PWM AC/DC Converter under Generalized Unbalanced Operating Conditions

Yongsug Suh,ABB Switzerland Ltd.
Thomas A. Lipo,University of Wisconsin–Madison

Paper #IAS58p4:Closed-Loop State Variable Control of Dynamic Voltage Restorers with Fast Compensation Characteristics

Géza Joós,McGill University
Su Chen,Concordia University
Luiz Lopes,Concordia University

Paper #IAS58p5:Performance Evaluation of PLL Algorithms for Single-Phase Grid-connected Systems

Sidelmo M. Silva,Universidade Federal de Minas Gerais
Bruno M. Lopes,Universidade Federal de Minas Gerais
Braz J. Cardoso Filho,Universidade Federal de Minas Gerais
Rodrigo P. Campana,Universidade Federal de Minas Gerais
Wallace C. Boaventura,Universidade Federal de Minas Gerais

Paper #IAS58p6:A Controlling Method for Charging Photovoltaic Generation Power Obtained by an MPPT Control Method to Series Connected Ultra-Electric Double Layer Capacitors

Nobuyoshi Mutoh,Tokyo Metropolitan Institute of Technology
Takayoshi Inoue,Tokyo Metropolitan Institute of Technology

Session #59: Electro-Thermal Issues

(Sponsoring Technical Committee: Industrial Automation & Control)
Session Chair: K. Suzuki, Hatsuoi-Cho
Session Organizer: R. McCann, University of Arkansas

Paper #IAS59p1:Automatic Profiling of a Steady State Temperature Field in Thermo-Chemical Systems and Devices

Piotr Ostrowski,Warsaw Technical University
Wojciech Łobodziński,Industrial Institute of Electronics
Adam Skorek,University of Quebec at Trois-Rivieres

Paper #IAS59p2:Current Rating of Multicore Cables

Heinrich Brakelmann,University of Duisburg
Peter Lauter,Steag Encotec Ltd.
George Anders,Kinectrics Inc.

Paper #IAS59p3:Increasing Ampacity of Cables by an Application of Ventilated Pipes

Heinrich Brakelmann,University of Duisburg
George Anders,Kinectrics Inc.

Session #60: Thermal Management

(Sponsoring Technical Committee: Power Electronic Devices)
Session Chair: Jean-Luc SCHANEN, Xerox Corporation; Jean-Francois de PALMA, FERRAZ
Session Organizer: Jean-Luc SCHANEN, Laboratoire d'Electrotechnique de Grenoble

Paper #IAS60p1:Analytical Investigation of Flat Silicon Micro Heat Spreader

S. Tzanova,Laboratoire d'Electrotechnique de Grenoble
M. Ivanova,Laboratoire d'Electrotechnique de Grenoble
Y. Avenas,Laboratoire d'Electrotechnique de Grenoble
C. Schaeffer,Laboratoire d'Electrotechnique de Grenoble

Paper #IAS60p2:Power Density Improvement in Integrated Electromagnetic Passive Modules with Embedded Heat Extractors

Wenduo Liu,Virginia Polytechnic Institute and State University
Jaco Dirker,Rand Afrikaans University
J. D. van Wyk,Virginia Polytechnic Institute and State University

Paper #IAS60p3:Assessment of Thermo-Mechanics for an Integrated Power Electronics Switching Stage

Y. Pang,Virginia Polytechnic Institute and State University
E. P. Scott,Virginia Polytechnic Institute and State University
N. Zhu,Virginia Polytechnic Institute and State University
J. D. van Wyk,Virginia Polytechnic Institute and State University
Z. Liang,Virginia Polytechnic Institute and State University

Paper #IAS60p4:Improving the Thermal Management of AC–DC Converters using Integration Technologies

E. C. W. de Jong,Delft University of Technology
J. A. Ferreira,Delft University of Technology
P. Bauer,Delft University of Technology

Paper #IAS60p5:A Modular, Laminar 42/14 V DC/DC Converter Concept with Integrated Thermal Busbar

J. Popović,Delft University of Technology
J. A. Ferreira,Delft University of Technology

Paper #IAS60p6:Thermal Analysis for Improved Packaging of Four-Channel 42 V/14 V DC/DC Converter

Seung-Yo Lee,Intronics, Inc.
Arthur G. Pfaelzer,Intronics, Inc.
J. D. van Wyk,Virginia Polytechnic Institute and State University

Paper #IAS60p7:The Analyses of Pre-Arcing Period and Modeling of a High Breaking Capacity Fuse-Link in SABER

Alexandru Fogorosi,Aalborg University
Frede Blaabjerg,Aalborg University

Session #61: Computational Electrostatics and Electrohydrodynamics

(Sponsoring Technical Committee: Electrostatic Processes)
Session Chair: Palghet Ramesh, Xerox Corporation
Session Organizer: Jamal Yagoobi, Illinois Institute of Technology

Paper #IAS61p1:Control of Liquid Flow Distribution Utilizing EHD Conduction Pumping Mechanism

Yinshan Feng,Illinois Institute of Technology
Jamal Seyed-Yagoobi,Illinois Institute of Technology

Paper #IAS61p2:Molecular Dynamic Simulation of Electron Bubble Transport in n-Hexane Liquid

T. Funakawa,Brunel University
W. Balachandran,Brunel University

Paper #IAS61p3:Modeling of Gas Reactions in Denitrification from Flue Gas by Discharge Plasma

Li-Min Dong,Harbin University of Science and Technology
Zhi-Qiang Zhou,Harbin University of Science and Technology

Paper #IAS61p4:Simulating Digital Exposure of Xerographic Photoreceptors using the Domain Decomposition Method

P. S. Ramesh,Xerox Corporation

Paper #IAS61p5:Induction Charging of Granular Materials in an Electric Field

Y. Wu,University of Western Ontario
G. S. P. Castle,University of Western Ontario
I. I. Inculet,University of Western Ontario

Paper #IAS61p6:Electrostatic Droplet-Formation in Water/Oil Flow in a Microchannel System

Michihiko Nakano,Toyohashi University of Technology
Naohito Nakai,Toyohashi University of Technology
Masahumi Inoue,Toyohashi University of Technology
Kazunori Takashima,Toyohashi University of Technology
Shinji Katsura,Toyohashi University of Technology
Akira Mizuno,Toyohashi University of Technology

Session #62: Brushless and Synchronous Reluctance Motor Drives

(Sponsoring Technical Committee: Industrial Drives)
Session Chair: Alfredo Vagati, Politecnico Di Torino
Session Organizer: John Miller, Design Services

Paper #IAS62p1:Novel Initial Position Detection Technique for Three-Phase Brushless DC Motor without Position and Current Sensors
Yen-Shin Lai,National Taipei University of Technology
Fu-San Shyu,National Taipei University of Technology

Paper #IAS62p2:AC Brushless Drive with Low Resolution Hall-Effect Sensors for an Axial Flux PM Machine
F. Giulii Capponi,University of Rome "La Sapienza"
G. De Donato,University of Rome "La Sapienza"
L. Del Ferraro,University of Rome "La Sapienza"
O. Honorati,University of Rome "La Sapienza"
M. C. Harke,University of Wisconsin–Madison
R. D. Lorenz,University of Wisconsin–Madison

Paper #IAS62p3:Direct Torque Control of Brushless DC Drives with Reduced Torque Ripple
Y. Liu,University of Sheffield
Z. Q. Zhu,University of Sheffield
D. Howe,University of Sheffield

Paper #IAS62p4:A New Starting Method of BLDC Motors without Position Sensor
Wook-Jin Lee,Seoul National University
Seung-Ki Sul,Seoul National University

Paper #IAS62p5:A Direct Torque Controller for Limited Speed Range Applications of Brushless Doubly-fed Reluctance Motors
Milutin Jovanović,Northumbria University
Jian Yu,PB Power
Emil Levi,John Moores University

Paper #IAS62p6:A Maximum Torque per Ampere Vector Control Strategy for Synchronous Reluctance Motors Considering Saturation and Iron Losses
E. M. Rashad,Memorial University of Newfoundland
T. S. Radwan,Memorial University of Newfoundland
M. A. Rahman,Memorial University of Newfoundland

Paper #IAS62p7:Reversible Six-Phase AC Motor Drive Systems with Reduced Switch Count
C. B. Jacobina,Universidade Federal de Campina Grande
M. B. de R. Corrêa,Universidade Federal de Campina Grande and Centro Federal de Educação Tecnológica de Alagoas
C. R. da Silva,Universidade Federal de Campina Grande and Centro Federal de Educação Tecnológica do Ceará
T. M. Oliveira,Universidade Federal de Campina Grande
E. R. C. da Silva,Universidade Federal de Campina Grande

Session #63: Power Systems Protection 1

(Sponsoring Technical Committee: Power System Protection)
Session Chair: Carey J. Cook, S&C Electric Company
Session Organizer: Rasheet Rifaat, Jacobs Canada, Inc.

Paper #IAS63p1:Fault Location Using Traveling Wave for Power Networks
Xiangjun Zeng,Changsha University of Science and Technoloy
K. K. Li,The HongKong Polytechnic University
Zhengyi Liu,Changsha University of Science and Technoloy
Xianggen Yin,Huazhong University of Science and Technoloy

Paper #IAS63p2:Real-Time Testing of a WPT-based Protection Algorithm for Three-phase Power Transformers
S. A. Saleh,Memorial University of Newfoundland
M. A. Rahman,Memorial University of Newfoundland

Paper #IAS63p3:Application of Numeric Protective Relay Circuit Breaker Duty Monitoring
Gerald Dalke,Basler Electric Company
John Horak,Basler Electric Company

Paper #IAS63p4:Reprinted by permission: MV Generator Low-Resistance Grounding and Stator Ground Fault Damage
Alex Wu,Global Engineering Company
Yousin Tang,Global Engineering Company
Dale Finney,GE Power Management

Paper #IAS63p5:Some Ground Fault Protection Schemes Implemented on FTU for Industrial Power Systems
Xiangjun Zeng,Changsha University of Science and Technology
K. K. Li,The Hong Kong Polytechnic University
Guo Zigang,Changsha University of Science and Technology
Sheng Su,Changsha University of Science and Technology

Paper #IAS63p6:Using EMTP for Evaluation of Surge Current Distribution in Metallic Gridlike Structures
Q. B. Zhou,Hong Kong Polytechnic University
Y. dY,Hong Kong Polytechnic University

Paper #IAS63p7:Evaluation and Performance Comparisons of Digital Distance Protection Algorithms
H. Khorashadi-Zadeh,The University of Birjand
H. Daneshi,Illinois Institute of Technology

Thursday Afternoon, October 7

Session #64: Induction Motors—2

(Sponsoring Technical Committee: Electric Machines)
Session Chair: Malakondaiah Naidu, Delphi

Session Organizer: Malakondaiah Naidu, Delphi

Paper #IAS64p1:TEFC Induction Motors Thermal Models: A Parameter Sensitivity Analysis

A. Boglietti,Politecnico di Torino
A. Cavagnino,Politecnico di Torino
D. A. Staton,Politecnico di Torino

Paper #IAS64p2:An Efficient Thermal Model for Induction Machines

Ogbonnaya I. Okoro,University of Nigeria
Bernd Weidemann,University of Kassel
Olorunfemi Ojo,Tennessee Tech University

Paper #IAS64p3:Implementation and Calorimetric Verification of Models for Wide Speed Range Three-Phase Induction Motors for Use in Washing Machines

P. D. Malliband,Cambridge University
R. A. McMahon,Cambridge University

Paper #IAS64p4:No Tooling Cost Process for Induction Motors Energy Efficiency Improvements

A. Boglietti,Politecnico di Torino
A. Cavagnino,Politecnico di Torino
L. Ferraris,Politecnico di Torino
M. Lazzari,Politecnico di Torino
G. Luparia,FIMET Motori & Riduttori

Paper #IAS64p5:Design Optimization of Induction Motors for Aerospace Applications

Christian Koechli,Swiss Federal Institute of Technology Lausanne
Barry K. Fussell,University of New Hampshire
Steven R. Prina,Applimotion, Inc.
Darwin A. James,Parker Hannifin
Yves Perriard,Swiss Federal Institute of Technology Lausanne

Paper #IAS64p6:The Implications of Winding Faults in Induction Motor Drives

C. Gerada,University of Nottingham
K. J. Bradley,University of Nottingham
M. Sumner,University of Nottingham
P. Wheeler,University of Nottingham
S. Pickering,University of Nottingham
J. Clare,University of Nottingham
C. Whitley,Smiths Aerospace Actuation Systems
G. Towers,Smiths Aerospace Actuation Systems

Paper #IAS64p7:Split-Phase Claw-Pole Induction Machines with Soft Magnetic Composite Cores

Ronghai Qu,General Electric Company
Gerald B. Kliman,affiliation not indicated
Ralph Carl,General Electric Company

Session #65: Semiconductor Models and Capacitors

(Sponsoring Technical Committee: Power Electronic Devices)

Session Chair: John Siefken, ABB Semiconductors
Session Organizer: Jean-Luc SCHANEN, Laboratoire d'Electrotechnique de Grenoble

Paper #IAS65p1:The Use of Condition Maps in the Design and Testing of Power Electronic Circuits and Devices

A. T. Bryant,Cambridge University
N-A. Parker-Allotey,Cambridge University
P. R. Palmer,Cambridge University

Paper #IAS65p2:Multi-Level Device Models Developed for the Virtual Test Bed (VTB)

X. Wang,University of South Carolina
L. Lu,University of South Carolina
S. Pytel,University of South Carolina
D. Franzoni,University of South Carolina
E. Santi,University of South Carolina
J. L. Hudgins,University of Nebraska
P. R. Palmer,University of Cambridge

Paper #IAS65p3:Physics-based Modeling of NPT and PT IGBTs at Deep Cryogenic Temperatures

A. Caiafa,University of South Carolina
A. Snezhko,University of South Carolina
J. L. Hudgins,University of Nebraska
E. Santi,University of South Carolina
R. Prozorov,University of South Carolina
P. R. Palmer,University of Cambridge

Paper #IAS65p4:Destruction-free Parameter Extraction for a Physics-based Circuit Simulator IGCT Model

X. Wang,University of South Carolina
J. L. Hudgins,University of South Carolina
E. Santi,University of South Carolina
P. R. Palmer,University of Cambridge

Paper #IAS65p5:Half-Order Modelling of Supercapacitors

D. Riu,Domaine universitaire
N. Retière,Domaine universitaire
D. Linzen,University of Technology

Paper #IAS65p6:Stacked Foil Type Large-Sized Aluminum Electrolytic Capacitors

Genho Takano,Nippon Chemi-Con Corporation
Makoto Shimizu,Nippon Chemi-Con Corporation
Kentar Nakaaki,Nippon Chemi-Con Corporation
Mitchell Weaver,United Chemi-Con, Inc.
Masayuki Kudo,United Chemi-Con, Inc.

Paper #IAS65p7:DC Bus Electrolytic Capacitor Stress in Adjustable-Speed Drives under Input Voltage Unbalance and Sag Conditions

Kevin Lee,Eaton Electrical
Thomas M. Jahns,University of Wisconsin–Madison
Giri Venkataramanan,University of Wisconsin–Madison
William E. Berkopec,Eaton Electrical

Session #66: Power Systems Engineering and Protection

(Sponsoring Technical Committee: Power System Engineering/Power System Protection/CS)

Session Chair: Jim Harvey, University of Michigan Hospital
Session Organizer: Matt Dozier, iDesign Services, Inc.

Paper #IAS66p1:Practical Problems Associated with the Operation of ASDs Based on Active Front End Converters in Power Distribution Systems

Luis Morán,Universidad de Concepción
José Espinoza,Universidad de Concepción
Mauricio Ortíz,Universidad de Concepción
José Rodríguez,Universidad Técnica Fed. Sta. María
Juan Dixon,Universidad Católica de Chile

Paper #IAS66p2:Voltage Sag Analysis and Solution for an Industrial Plant with Embedded Induction Motors

Angel Felce,Inelectra S.A.C.A.
Guillermo Matas,Inelectra S.A.C.A.
Ysmael Da Silva,Inelectra S.A.C.A.

Paper #IAS66p3:Modeling Effects of Voltage Unbalances in Industrial Distribution Systems with Adjustable Speed Drives

Kevin Lee,Eaton Electrical
Giri Venkataramanan,University of Wisconsin–Madison
Thomas M. Jahns,University of Wisconsin–Madison

Paper #IAS66p4:Impact Assessment of Automated Meter Reading Systems on Diary Cows

Arindam Maitra,EPRI PEAC Corp.
Doug Dorr,EPRI PEAC Corp.

Paper #IAS66p5:The Application of Silicon Avalanche Diodes on Low-Voltage Power Systems

Andreas Beutel,University of the Witwatersrand
John Van Coller,University of the Witwatersrand

Session #67: Intelligent Controls & Applications

(Sponsoring Technical Committee: Industrial Automation & Control)

Session Chair: A. Rubaai, Howard University
Session Organizer: Z. Gao, Cleveland State University

Paper #IAS67p1:Neural Network Based Sensorless Maximum Wind Energy Capture with Compensated Power Coefficient

Hui Li,Florida State University
K. L. Shi,Florida State University
P. McLaren,Florida State University

Paper #IAS67p2:A Current-Sensorless Three-Phase Active Rectifier with Fuzzy-Logic Control

C. Cecati,Univ. of L'Aquila
A. Dell'Aquila,Polytechnic of Bari
A. Lecci,Polytechnic of Bari
M. Liserre,Polytechnic of Bari

Paper #IAS67p3:Fuzzy Logic Average Current-Mode Control for DC–DC Converters Using an Inexpensive 8-Bit Microcontroller
Dake He,Auburn University
R. M. Nelms,Auburn University

Paper #IAS67p4:Hardware Implementation of an Adaptive Network-based Fuzzy Controller for DC–DC Converters
Ahmed Rubaai,Howard University
Abdul Ofoli,Howard University

Paper #IAS67p5:Development of a Self-Tuned Neuro-Fuzzy Controller for Induction Motor Drives
M. Nasir Uddin,Lakehead University
Hao Wen,Lakehead University

Paper #IAS67p6:Modified Takagi-Sugeno Fuzzy Logic Based Controllers for a Static Compensator in a Multimachine Power System
Salman Mohagheghi,Georgia Institute of Technology
Ronald G. Harley,Georgia Institute of Technology
Ganesh K. Venayagamoorthy,University of Missouri–Rolla

Paper #IAS67p7:Dynamic Optimization of a Multimachine Power System with a FACTS Device Using Identification and Control ObjectNets
Ganesh K. Venayagamoorthy,University of Missouri–Rolla

Session #68: Filtering and EMI

(Sponsoring Technical Committee: Power Electronic Devices)
Session Chair: Rich LUKASZEWSKI, ROCKWELL; Adam KONOPKA, BALDOR ELECTRIC
Session Organizer: Jean-Luc SCHANEN, Laboratoire d'Electrotechnique de Grenoble

Paper #IAS68p1:Analytical Estimation of Common Mode Conducted EM in PWM Inverter
Xuejun Pei,Huazhong University of Science and Technology
Kai Zhang,Huazhong University of Science and Technology
Yong Kang,Huazhong University of Science and Technology
Jian Chen,Huazhong University of Science and Technology

Paper #IAS68p2:EMC Study of a Three Phase Inverter-fed Motor Drives
B. Revol,Domaine Universitaire
J. Roudet,Domaine Universitaire
J. L. Schanen,Domaine Universitaire
P. Loizelet,Schneider Toshiba Inverter Europe

Paper #IAS68p3:Active and Passive Series Compensation of Common Mode Voltage in Adjustable Speed Drive System

Adam Kempski,University of Zielona Gora
Robert Smolenski,University of Zielona Gora
Emil Kot,University of Zielona Gora
Zbigniew Fedyczak,University of Zielona Gora

Paper #IAS68p4:Extraction of Parasitic Parameters of EMI Filters Using Scattering Parameters

Shuo Wang,Virginia Polytechnic Institute and State University
W. G. Odendaal,Virginia Polytechnic Institute and State University
F. C. Lee,Virginia Polytechnic Institute and State University

Paper #IAS68p5:Application of Structural Winding Capacitance Cancellation for Integrated EMI Filters by Embedding Conductive Layers

Rengang Chen,Virginia Polytechnic Institute and State University
J. D. van Wyk,Virginia Polytechnic Institute and State University
Shuo Wang,Virginia Polytechnic Institute and State University
W. G. Odendaal,Virginia Polytechnic Institute and State University

Session #69: Electrostatic Measurement and Controls

(Sponsoring Technical Committee: Electrostatic Processes)
Session Chair: Norbert Grass, Siemens
Session Organizer: William Greason, University of Western Ontario

Paper #IAS69p1:Analysis, Design and Experimentation of a High Voltage Power Supply for Ozone Generation Based on the Current-fed Parallel-Resonant Push–Pull Inverter

J. M. Alonso,Universidad de Oviedo
J. García,Universidad de Oviedo
A. J. Calleja,Universidad de Oviedo
J. Ribas,Universidad de Oviedo
J. Cardesín,Universidad de Oviedo

Paper #IAS69p2:A Critical Approach to Measure Streaming Current: Case of Fuels Flowing through Conductive and Insulating Polymer Pipes

J. Vazquez-Garcia,Renault
J. Rivenc,Renault
A. Agneray,Renault
T. Paillat,Laboratoire d'Etudes Aérodynamiques
G. Touchard,Laboratoire d'Etudes Aérodynamiques

Paper #IAS69p3:Characteristic Evaluation for Synchronous Motors Using a Universal Drive System

Yoko Amano,Maizuru National College of Technology
Satoshi Ogasawara,Utsunomiya University

Paper #IAS69p4:Imbalance of the Charge on a Carrier Moving through a Gaseous Medium

Zdenek Kucerovsky,The University of Western Ontario
William D. Greason,The University of Western Ontario

Paper #IAS69p5:Measurement of Flowing Charges with an Electrostatic Voltmeter

Maciej A. Noras,Trek, Inc.

Paper #IAS69p6:Electrification of Jets of Diesel Oil: Comparison between Malvern and PDPA Measurements

P. Baudel,Laboratoire d'Etudes Aérodynamiques
P. Braud,Laboratoire d'Etudes Aérodynamiques
C. Refin,Laboratoire d'Etudes Aérodynamiques
H. Romat,Laboratoire d'Etudes Aérodynamiques
A. Agneray,Renault

Session #70: Drives Applications

(Sponsoring Technical Committee: Industrial Drives)
Session Chair: Michael Giesselmann, Texas Tech. University
Session Organizer: Vladimir Blasko, Otis Elevator

Paper #IAS70p1:Development of a Traction System for the Gauge Changing Train

Keiichiro Kondo,Railway Technical Research Institute
Hiroshi Hata,Railway Technical Research Institute
Kenichi Uruga,Railway Technical Research Institute
Nobuo Terauchi,Railway Technical Research Institute

Paper #IAS70p2:Different Viable Torque Control Schemes of Induction Motor for Electric Propulsion Systems

M. Vasudevan,St.Joseph's College of Engineering
R. Arumugam,Anna University

Paper #IAS70p3:Torque Tracking Strategy for Anti-Slip Control In Railway Traction Systems with Common Supplies

J. N. Verhille,Siemens Transportation Systems and L2EP Lille
A. Bouscayrol,L2EP Lille
P. J. Barre,L2EP Lille
J. C. Mercieca,L2EP Lille
J. P. Hautier,L2EP Lille
E. Semail,L2EP Lille

Paper #IAS70p4:A Control Method to Suitably Distribute Electric Braking Force between Front and Rear Wheels in Electric Vehicle Systems with Independently Driven Front and Rear Wheels

Nobuyoshi Mutoh,Tokyo Metropolitan Institute of Technology
Kazuya Takita,Tokyo Metropolitan Institute of Technology

Paper #IAS70p5:Design and Control of a Kilo-Amp DC/AC Inverter for Integrated Starter-Generator (ISG) Applications

Jingbo Liu,The Ohio State University
Jiangang Hu,The Ohio State University
Longya Xu,The Ohio State University

Paper #IAS70p6:Double-fed Asynchronous Motor-Generator Equipped with a Three-Level VSI Cascade

A. Hodder,Swiss Federal Institute of Technology of Lausanne
J.-J. Simond,Swiss Federal Institute of Technology of Lausanne
A. Schwery,Alstom Power

Paper #IAS70p7:The Electrical Variable Transmission
Martin J. Hoeijmakers,Delft University of Technology
Jan A. Ferreira,Delft University of Technology

Session #71: Energy System II

(Sponsoring Technical Committee: Energy Systems)
Session Chair: Greg Nolan, PSEG Power, LLC
Session Organizer: Greg Nolan, PSEG Power, LLC

Paper #IAS71p1:Model of a Regenerative Fuel Cell-Supported Wind Turbine AC Power Generating System
W. Carter,The University of Texas at El Paso
B. M. Diong,The University of Texas at El Paso

Paper #IAS71p2:Energy Management of Hydrogen-based Stand-Alone Renewable Energy System by Using Boost and Buck Converters
Kodjo Agbossou.,Université du Québec à Trois-Rivières
Sousso Kélouwani,Université du Québec à Trois-Rivières
Adil Anouar,Université du Québec à Trois-Rivières
Mohanlal Kolhe,Université du Québec à Trois-Rivières

Paper #IAS71p3:Remote Micro-Hydroelectric Power Generation System
Ben Seitz,affiliation not indicated
Cesar Salire,affiliation not indicated
Gary Harwood,affiliation not indicated
James N. Peterson,affiliation not indicated
Herbert L. Hess,affiliation not indicated

Paper #IAS71p4:State Space Modeling of Parallel Self-Excited Induction Generators for Wind Farm Simulation
F. A. Farret,The Federal University of Santa Maria
B. Palle,Colorado School of Mines
M. Godoy Simões,Colorado School of Mines

Paper #IAS71p5:Modeling, Control and Power Quality Evaluation of a PEM Fuel Cell Based Power Supply System for Residential Use
M. Tanrioven,University of South Alabama
M. S. Alam,University of South Alabama