Schedule At A Glance

SUNDAY, OCTOBER 8, 2006

IEEE IAS Conference Registration	2nd Floor Registration Desk	7:00am – 7:00pm
Guest Hospitality: IEEE IAS Guest Hospitality	Suite 421	12:00pm – 6:00pm

Tutorials

Application-Driven Design and Control of Brushless Permanent Magnet Motors	Meeting Room 8	8:00am – 12:00pm
Design and Control of Interior Permanent Magnet Motor Drives	Meeting Room 9	1:00pm – 5:00pm
Power Converters for Utility Applications	Meeting Room 12	8:00am – 5:00pm
Matching Drive Solutions to Industrial Control Applications	Meeting Room 11	8:00am – 5:00pm

Committee Meetings:

Technical Books Coordinating Committee	Meeting Room 13	2:00pm – 4:00pm
PSE Red Book Working Group	Meeting Room 8	2:00pm – 4:00pm
PSP Generator Grounding Working Group	Meeting Room 1	2:00pm – 3:30pm
PSP Islanding Working Group	Meeting Room 2	3:30pm – 4:30pm
PSE Executive Committee	Meeting Room 3	4:00pm – 5:00pm
PSP Executive Committee	Meeting Room 4	4:00pm – 5:00pm

Special Event:

IEEE IAS Welcome Reception	Grand Ballroom F-J	6:00pm – 7:00pm

MONDAY, OCTOBER 9, 2006

IEEE IAS Conference Registration	2nd Floor Registration Desk	7:00am – 7:00pm
Authors Breakfast	Il Terrazzo	7:00am – 8:00am
Spouse/Companion Breakfast	Private Dining Café Waterside	7:00am – 8:00am
Guest Hospitality: IEEE IAS Guest Hospitality	Suite 421	7:00am – 6:00pm

Committee, Subcommittee and Working Group Meetings

PSE Forensics Working Group	Meeting Room 2	8:00am - 10:00am
PSE Green Book Working Group	Meeting Room 3	8:00am - 9:00am
PSP Blue Book Working Group	Meeting Room 8	8:00am - 9:00am
PSE Equipment Reliability Working Group	Meeting Room 9	8:00am - 9:00am
PSE White Book Working Group	Meeting Room 10	8:00am - 9:00am
PSE Grounding Subcommittee	Meeting Room 11	9:00am - 10:00am
PSP Molded-Case Breaker Working Group	Meeting Room 12	9:00am - 10:00am
PSE Reliability Analysis Techniques Working Group	Meeting Room 13	9:00am - 10:00am
PSE Gray Book Working Group	Meeting Room 3	9:00am - 10:00am
PSE Yellow Book Working Group	Meeting Room 8	10:00am - 11:00am
PSE Violet Book Working Group	Meeting Room 9	10:00am - 11:00am
PSP Buff Book Working Group	Meeting Room 10	10:00am - 11:00am
PSE Voltage Sag Working Group	Meeting Room 11	10:00am - 11:00am
PSE Orange Book Working Group	Meeting Room 2	10:00am - 11:00am
PSE Safety, Operations, & Maintenance Subcommittee	Meeting Room 3	11:00am - 12:00pm
PSP Bus and Breaker Failure Working Group	Meeting Room 11	11:00am - 12:00pm
PSE Gold Book Working Group	Meeting Room 12	11:00am - 12:00pm
PSE Emerald Book Working Group	Meeting Room 13	11:00am - 12:00pm
PSE Technical Program Committee	Meeting Room 2	12:00pm - 1:30pm
Energy Systems Committee and Bronze Book Meeting	Meeting Room 8	1:00pm - 2:00pm

Schedule At A Glance

PSE Emergency & Standby Systems Subcommittee	Meeting Room 13	1:30pm - 2:30pm
PSE Brown Book Working Group	Meeting Room 9	1:30pm - 2:30pm
PSP Protection & Coordination Subcommittee	Meeting Room 3	1:30pm - 2:00pm
PSE Reliability Subcommittee	Meeting Room 10	1:30pm - 2:30pm
Codes and Standards Working Group, P1605	Meeting Room 11	1:30pm - 4:30pm
PSP Medium-Voltage Subcommittee	Meeting Room 12	2:00pm - 2:30pm
ES Bronze Book Working Group	Meeting Room 13	2:30pm - 3:30pm
PSE Power Quality Subcommittee	Meeting Room 3	2:30pm - 3:30pm
PSP Surge Protection Subcommittee	Meeting Room 9	2:30pm - 3:00pm
PSE Power System Analysis Subcommittee	Meeting Room 8	2:30pm - 4:00pm
PSP Low-Voltage Protection Subcommittee	Meeting Room 2	3:00pm - 3:30pm
ES Utility Deregulation Subcommittee	Meeting Room 9	3:30pm - 4:30pm
PSE Design Subcommittee	Meeting Room 10	3:30pm - 4:30pm
PSP Main Committee	Meeting Room 12	3:30pm - 4:30pm
I&CPS Future Meetings Committee	Meeting Room 2	4:00pm - 5:00pm
ES Main Committee	Meeting Room 13	4:30pm - 6:00pm
PSE Main Committee	Meeting Room 3	4:30pm - 6:00pm
Codes and Standards Committee	Meeting Room 8	4:30pm - 6:00pm
Industry Automation and Control Committee	Salon II	6:00pm - 8:00pm
Metal Industry Committee	Salon I	6:00pm - 7:00pm
PALC and MSDAD Committees Joint Meeting	Meeting Room 7	6:00pm - 7:30pm
Industrial Drives Committee	Meeting Room 6	6:00pm - 8:00pm
Power, Electronics, Devices, & Components Committee	Salon VI	6:45 pm - 8:00pm
I&CPS Department Operating Committee	Meeting Room 8	7:00pm - 9:00pm

Special Event:

Myron Zucker Student Luncheon	Grand Ballroom GH	12:00pm - 2:00pm

Tutorial:

Underwriters Laboratory (UL) Standards	Meeting Room 1	1:00pm - 5:00pm

Monday Technical Sessions

Session 1 Automotive Applications – Generators and Actuators	Salon IV	8:00am – 12:00pm
Session 2 Permanent Magnet Motors II	Salon V	8:00am – 12:00pm
Session 3 Induction Machine Drives I	Meeting Room 6	8:00am – 12:00pm
Session 4 Primary Metal, Power Quality, Casting	Salon I	8:00am – 12:00pm
Session 5 Active Power Filters	Meeting Room 4	8:00am – 12:00pm
Session 6 Alternative Energy Applications	Meeting Room 5	8:00am – 12:00pm
Session 7 Ballasts for Fluorescent Lamps	Meeting Room 7	8:00am – 12:00pm
Session 9 Novel Power Semiconductor Devices: SiC and More	Salon VI	8:00am – 12:00pm
Session 10 Linear Machines and Actuators	Salon IV	2:00pm – 6:00pm
Session 11 Induction Motors II	Salon V	2:00pm – 6:00pm
Session 12 PM Machine Drives I	Meeting Room 6	2:00pm – 6:00pm
Session 13 Strip Control, Wire Drawing, Slab Quality	Salon I	2:00pm – 6:00pm
Session 14 Rectifiers	Meeting Room 4	2:00pm – 6:00pm
Session 15 PWM and Control Techniques	Meeting Room 5	2:00pm – 6:00pm
Session 16 Intelligent Controls	Salon II	2:00pm – 6:00pm
Session 17 Special Session on Displays (MSDAD Committee)	Meeting Room 7	2:00pm – 6:00pm
Session 19 Power Modules and Thermal Issues	Salon VI	2:00pm – 6:00pm

TUESDAY, OCTOBER 10, 2006

IEEE IAS Conference Registration	2nd Floor Registration Desk	7:00am – 7:00pm
Authors Breakfast	Il Terrazzo	7:00am – 8:00am
Spouse/Companion Breakfast	Private Dining Café Waterside	7:00am – 8:00am
Guest Hospitality: IEEE IAS Guest Hospitality	Suite 421	7:00am – 6:00pm

Committee, Subcommittee and Working Group Meetings

Electric Machines Committee	Salon IV	6:00pm - 8:00pm
Appliance Industry Committee	Salon V	6:00pm - 8:00pm
Mining Industry Committee	Salon I	6:00pm - 7:30pm
Industrial Power Converter Committee	Meeting Room 4	6:00pm - 8:00pm

Special Event:

IEEE IAS Awards Lunch	Grand Ballroom F-J	12:00pm - 2:00pm

Tutorial:

Protection of Power Transformers	Meeting Room 1	8:00am - 5:00pm

Tuesday Technical Sessions

Session 20 Induction Motors I	Salon IV	8:00am – 12:00pm
Session 21 Low-Cost Motor Drive Systems and Applications	Salon V	8:00am – 12:00pm
Session 22 Drives I	Meeting Room 6	8:00am – 12:00pm
Session 23 Safety and Productivity	Salon I	8:00am – 12:00pm
Session 24 Multilevel Converters	Meeting Room 4	8:00am – 12:00pm
Session 25 Utility Interface and Power Quality I	Meeting Room 5	8:00am – 12:00pm
Session 26 Advanced Controls	Salon II	8:00am – 12:00pm
Session 27 Ballasts for HID Lamps #1	Meeting Room 7	8:00am – 12:00pm
Session 28 Energy System I	Salon III	8:00am – 12:00pm
Session 29 Advancements and Innovations in Power Device Components	Salon VI	8:00am – 12:00pm
Session 30 Reluctance Machines	Salon IV	2:00pm – 6:00pm
Session 31 Energy Conversion Components and Devices	Salon V	2:00pm – 6:00pm
Session 32 Traction Drives	Meeting Room 6	2:00pm – 6:00pm
Session 33 High-Power Rectifiers and Drives	Salon I	2:00pm – 6:00pm
Session 34 Industrial Power Converter Products and Services	Meeting Room 4	2:00pm – 6:00pm
Session 8 Power Systems Reliability/Power Systems Design	Meeting Room 5	2:00pm – 6:00pm
Session 35 Industrial Controls	Salon II	2:00pm – 6:00pm
Session 36 Ballasts for HID Lamps #2	Meeting Room 7	2:00pm – 6:00pm
Session 37 Energy System II	Salon III	2:00pm – 6:00pm
Session 38 Semiconductor Modeling	Salon VI	2:00pm – 6:00pm

WEDNESDAY, OCTOBER 11, 2006

IEEE IAS Conference Registration	2nd Floor Registration Desk	7:00am – 7:00pm
Authors Breakfast	Il Terrazzo	7:00am – 8:00am
Spouse/Companion Breakfast	Private Dining Café Waterside	7:00am – 8:00am
Guest Hospitality: IEEE IAS Guest Hospitality	Suite 421	7:00am – 6:00pm

Schedule At A Glance

Special Events

President's Banquet	Grand Ballroom A-F	7:00pm – 9:30pm

Tutorial:

Design and Operation of Motor Bus Transfer Schemes at Power Plants and Medium Voltage Industrial Facilities	Meeting Room 1	8:00am - 5:00pm

Wednesday Technical Sessions

Session 39 Permanent Magnet Motors I	Salon IV	8:00am – 12:00pm
Session 40 Faults and Diagnostics II	Salon V	8:00am – 12:00pm
Session 41 Automotive Applications – Drives & Systems	Meeting Room 6	8:00am – 12:00pm
Session 42 PM Machine Drives II	Salon I	8:00am – 12:00pm
Session 43 Inverters	Meeting Room 4	8:00am – 12:00pm
Session 44 Utility Interface and Power Quality II	Meeting Room 5	8:00am – 12:00pm
Session 45 Motion Control Systems	Salon II	8:00am – 12:00pm
Session 46 Light Sources & Novel Concepts	Meeting Room 7	8:00am – 12:00pm
Session 47 Power System Protection I	Salon III	8:00am – 12:00pm
Session 48 Integration and Magnetics	Salon VI	8:00am – 12:00pm
Session 49 PM Design Optimization	Salon IV	2:00pm – 6:00pm
Session 50 Inter ior Permanent Magnet Motors	Salon V	2:00pm – 6:00pm
Session 51 Special Drives	Meeting Room 6	2:00pm – 6:00pm
Session 52 PM Sensorless Drives	Salon I	2:00pm – 6:00pm
Session 53 Design, Control & Analysis in Power Converters	Meeting Room 4	2:00pm – 6:00pm
Session 54 Soft Switching and Resonant Converters	Meeting Room 5	2:00pm – 6:00pm
Session 55 Energy System III	Salon II	2:00pm – 6:00pm
Session 56 Light and Applications	Meeting Room 7	2:00pm – 6:00pm
Session 57 Power System Protection II	Salon III	2:00pm – 6:00pm
Session 58 Drive Circuits, Paralleling Considerations &EMI	Salon VI	2:00pm – 6:00pm

THURSDAY, OCTOBER 12, 2006

IEEE IAS Conference Registration	Florida Ballroom Foyer	7:00am – 7:00pm
Authors Breakfast	Il Terrazzo	7:00am – 8:00am
Spouse/Companion Breakfast	Private Dining Café Waterside	7:00am – 8:00am
Guest Hospitality: IEEE IAS Guest Hospitality	Suite 421	7:00am – 12:00pm

Thursday Technical Sessions

Session 59 Faults and Diagnostics I	Salon IV	8:00am – 12:00pm
Session 60 AC Machines and Generators	Salon V	8:00am – 12:00pm
Session 61 Induction Machine Drives II	Meeting Room 6	8:00am – 12:00pm
Session 62 Drives II	Salon I	8:00am – 12:00pm
Session 63 DC/DC Converters	Meeting Room 4	8:00am – 12:00pm
Session 64 Control Applications and Issues	Meeting Room 5 (includes Drives and EMI)	8:00am – 12:00pm
Session 18 Power Systems Analysis / Power Quality	Salon II	8:00am – 12:00pm
Session 65 Special Session on LEDs	Meeting Room 7	8:00am – 12:00pm
Session 66 Power System Protection III	Salon III	8:00am – 12:00pm

Technical Program Schedule

MONDAY TECHNICAL SESSIONS

Session 1	Automotive Applications - Generators and Actuators	Salon IV	8:00 am – 12:00 pm
Session 2	Permanent Magnet Motors II	Salon V	8:00 am – 12:00 pm
Session 3	Induction Machine Drives I	Meeting Room 6	8:00 am – 12:00 pm
Session 4	Primary Metal, Power Quality, Casting	Salon I	8:00 am – 12:00 pm
Session 5	Active Power Filters	Meeting Room 4	8:00 am – 12:00 pm
Session 6	Alternative Energy Applications	Meeting Room 5	8:00 am – 12:00 pm
Session 7	Ballasts for Fluorescent Lamps	Meeting Room 7	8:00 am – 12:00 pm
Session 9	Novel Power Semiconductor Devices: SiC and More	Salon VI	8:00 am – 12:00 pm
Session 10	Linear Machines and Actuators	Salon IV	2:00 pm – 6:00 pm
Session 11	Induction Motors II	Salon V	2:00 pm – 6:00 pm
Session 12	PM Machine Drives I	Meeting Room 6	2:00 pm – 6:00 pm
Session 13	Strip Control, Wire Drawing, Slab Quality	Salon I	2:00 pm – 6:00 pm
Session 14	Rectifiers	Meeting Room 4	2:00 pm – 6:00 pm
Session 15	PWM and Control Techniques	Meeting Room 5	2:00 pm – 6:00 pm
Session 16	Intelligent Controls	Salon II	2:00 pm – 6:00 pm
Session 17	Special Session on Displays (MSDAD Committee)	Meeting Room 7	2:00 pm – 6:00 pm
Session 19	Power Modules and Thermal Issues	Salon VI	2:00 pm – 6:00 pm

TUESDAY TECHNICAL SESSIONS

Session 20	Induction Motors I	Salon IV	8:00 am – 12:00 pm
Session 21	Low-Cost Motor Drive Systems and Applications	Salon V	8:00 am – 12:00 pm
Session 22	Drives I	Meeting Room 6	8:00 am – 12:00 pm
Session 23	Safety and Productivity	Salon I	8:00 am – 12:00 pm
Session 24	Multilevel Converters	Meeting Room 4	8:00 am – 12:00 pm
Session 25	Utility Interface and Power Quality I	Meeting Room 5	8:00 am – 12:00 pm
Session 26	Advanced Controls	Salon II	8:00 am – 12:00 pm
Session 27	Ballasts for HID Lamps #1	Meeting Room 7	8:00 am – 12:00 pm
Session 28	Energy System I	Salon III	8:00 am – 12:00 pm
Session 29	Advancements and Innovations in Power Device Components	Salon VI	8:00 am – 12:00 pm
Session 30	Reluctance Machines	Salon IV	2:00 pm – 6:00 pm
Session 31	Energy Conversion Components and Devices	Salon V	2:00 pm – 6:00 pm
Session 32	Traction Drives	Meeting Room 6	2:00 pm – 6:00 pm
Session 33	High-Power Rectifiers and Drives	Salon I	2:00 pm – 6:00 pm
Session 34	Industrial Power Converter Products and Services	Meeting Room 4	2:00 pm – 6:00 pm
Session 8	Power Systems Reliability/Power Systems Design	Meeting Room 5	2:00 pm – 6:00 pm
Session 35	Industrial Controls	Salon II	2:00 pm – 6:00 pm
Session 36	Ballasts for HID Lamps #2	Meeting Room 7	2:00 pm – 6:00 pm
Session 37	Energy System II	Salon III	2:00 pm – 6:00 pm
Session 38	Semiconductor Modeling	Salon VI	2:00 pm – 6:00 pm

WEDNESDAY TECHNICAL SESSIONS

Session 39	Permanent Magnet Motors I	Salon IV	8:00 am – 12:00 pm
Session 40	Faults and Diagnostics II	Salon V	8:00 am – 12:00 pm
Session 41	Automotive Applications - Drives & Systems	Meeting Room 6	8:00 am – 12:00 pm
Session 42	PM Machine Drives II	Salon I	8:00 am – 12:00 pm
Session 43	Inverters	Meeting Room 4	8:00 am – 12:00 pm
Session 44	Utility Interface and Power Quality II	Meeting Room 5	8:00 am – 12:00 pm
Session 45	Motion Control Systems	Salon II	8:00 am – 12:00 pm
Session 46	Light Sources & Novel Concepts	Meeting Room 7	8:00 am – 12:00 pm
Session 47	Power System Protection I	Salon III	8:00 am – 12:00 pm
Session 48	Integration and Magnetics	Salon VI	8:00 am – 12:00 pm
Session 49	PM Design Optimization	Salon IV	2:00 pm – 6:00 pm
Session 50	Interior Permanent Magnet Motors	Salon V	2:00 pm – 6:00 pm
Session 51	Special Drives	Meeting Room 6	2:00 pm – 6:00 pm
Session 52	PM Sensorless Drives	Salon I	2:00 pm – 6:00 pm
Session 53	Design, Control and Analysis in Power Converters	Meeting Room 4	2:00 pm – 6:00 pm
Session 54	Soft Switching and Resonant Converters	Meeting Room 5	2:00 pm – 6:00 pm
Session 55	Energy System III	Salon II	2:00 pm – 6:00 pm
Session 56	Light and Applications	Meeting Room 7	2:00 pm – 6:00 pm
Session 57	Power System Protection II	Salon III	2:00 pm – 6:00 pm
Session 58	Drive Circuits, Paralleling Considerations and EMI	Salon VI	2:00 pm – 6:00 pm

THURSDAY TECHNICAL SESSIONS

Session 59	Faults and Diagnostics I	Salon IV	8:00 am – 12:00 pm
Session 60	AC Machines and Generators	Salon V	8:00 am – 12:00 pm
Session 61	Induction Machine Drives II	Meeting Room 6	8:00 am – 12:00 pm
Session 62	Drives II	Salon I	8:00 am – 12:00 pm
Session 63	DC/DC Converters	Meeting Room 4	8:00 am – 12:00 pm
Session 64	Control Applications and Issues (includes Drives and EMI)	Meeting Room 5	8:00 am – 12:00 pm
Session 18	Power Systems Analysis / Power Quality	Salon II	8:00 am – 12:00 pm
Session 65	Special Session on LEDs	Meeting Room 7	8:00 am – 12:00 pm
Session 66	Power System Protection III	Salon III	8:00 am – 12:00 pm

IAS 2006 Technical Program Sessions

MONDAY MORNING SESSIONS

ELECTRIC MACHINES COMMITTEE

Monday, 9 October • 8:00 AM – 12:00 PM • Salon IV
Session 1- Automotive Applications: Generators and Actuators

Session Chair: Bruno Lequesne, Delphi, USA,
Session Organizer: Tomy Sebastian, Delphi, USA

IAS01p1 Ironless Axial Flux PM Machine with Active Mechanical Flux Weakening for Automotive Applications
L. Del Ferraro, University of Rome "La Sapienza", Italy
F. Giulii Capponi, University of Rome "La Sapienza", Italy
R. Terrigi, University of Rome "La Sapienza", Italy
F. Caricchi, University of Rome "La Sapienza", Italy
O. Honorati University of Rome "La Sapienza", Italy

IAS01p2 Novel Selection of the Slot/Pole Ratio of the PMSM for Auxiliary Automobile
Makoto Yoneda, Oriental Motor Co., Ltd., Japan
Masahiro Shoji, Musashi Institute of Technology, Japan
Yongjae Kim, Musashi Institute of Technology, Japan
Hideo Dohmeki, Musashi Institute of Technology, Japan

IAS01p3 Optimal Control for a Wound Rotor Synchronous Starter Generator
A. Girardin, Valeo Electrical System, France; University of Technology of Compiègne, France
G. Friedrich, University of Technology of Compiègne, France

IAS01p4 Design and Analysis of a Double-Stator Cup-Rotor PM Integrated-Starter-Generator
Dong Zhang, Shanghai University, China
K. T. Chau, The University of Hong Kong, China
Shuangxia Niu, The University of Hong Kong, China
J. Z. Jiang, Shanghai University, China

IAS01p5 Low-Speed Output Power Improvement of an Interior PM Automotive Alternator
C. Z. Liaw, University of Adelaide, Australia
W. L. Soong, University of Adelaide, Australia
N. Ertugrul, University of Adelaide, Australia

ELECTRIC MACHINES COMMITTEE

Monday, 9 October • 8:00 AM – 12:00 PM • Salon V
Session 2—Permanent Magnet Motors II

Session Chair: Robert D. Lorenz, University of Wisconsin, USA
Session Organizer: Mohammad S. Islam, Delphi, USA

IAS02p1 Magnetic Loading of Fractional-slot, Three-phase PM Motors with Non-overlapped Coils
Nicola Bianchi, University of Padova, Italy
Silverio Bolognani, University of Padova, Italy
Michele Dai Pré, University of Padova, Italy

IAS02p2 Cogging Torque Reduction in Permanent Magnet Machines
Luke Dosiek, Clarkson University, USA
Pragasen Pillay, Clarkson University, USA

IAS02p3 Modified Vector Control Algorithm for Increasing Partial-load Efficiency of Fractional-slot Concentrated Winding Surface PM Machines
Ayman M. EL-Refaie, GE Global Research Center, USA
Thomas M. Jahns, University of Wisconsin–Madison, USA
John W. McKeever, Oak Ridge National Laboratory, USA

IAS02p4 Determination of the Thermal Convection Coefficient for a Small Electric Motor
Miroslav Markoviç,Ecole Polytechnique Fédérale de Lausanne, Switzerland
Laurie Saunders, Ecole Polytechnique Fédérale de Lausanne, Switzerland
Yves Perriard, Ecole Polytechnique Fédérale de Lausanne, Switzerland

IAS02p5 Electromagnetic and Mechanical Design of a Fractional-slot-windings Axial-flux PM Synchronous Machine with Soft Magnetic Compound Stator
Fabrizio Marignetti, University of Cassino, Italy
Giovanni Tomassi, University of Cassino, Italy
Piergiacomo Cancelliere, University of Cassino, Italy
Vincenzo Delli Colli, University of Cassino, Italy
Roberto Di Stefano, University of Cassino, Italy
Maurizio Scarano, University of Cassino, Italy

IAS02p6 Novel Integrated Bearingless Hollow-shaft Drive
Thomas Schneeberger, ETH Zurich, Switzerland
Johann W. Kolar, ETH Zurich, Switzerland

IAS02p7 Modeling and Simulation of Direct Torque Controlled PMSM Drive System Incorporating Structural and Saturation Saliencies
Ying Yan, University of Technology, Australia
Jianguo Zhu, University of Technology, Australia
Youguang Guo, University of Technology, Australia
Haiwei Lu, University of Technology, Australia

INDUSTRIAL DRIVES COMMITTEE

Monday, 9 October • 8:00 AM – 12:00 PM • Meeting Room 6
Session 3—Induction Machine Drives I

Session Chair: Gerard A. Capolino, University of Picardie - "Jules Verne", France
Session Organizer: Mark Sumner, University of Nottingham, UK

IAS03p1 Reduction in Bearing Currents in Doubly-fed Induction Generators
A. M. Garcia, Ford Motor Company, USA
D. G. Holmes, Monash University, Australia
T. A. Lipo, University of Wisconsin–Madison, USA

IAS03p2 Stability Improvement of V/F Controlled Large Capacity Voltage-source Inverter-fed Induction Motor
Kentaro Suzuki, Toshiba Corporation, Japan
Suzuo Saito, Toshiba Corporation, Japan
Toshiaki Kudor,Toshiba Corporation, Japan
Atsushi Tanaka, Toshiba Corporation, Japan
Yasuhiro Andoh, Toshiba Mitsubishi-electric Industrial Systems Corporation, Japan

IAS03p3 Sensorless Control of Induction Motors for Maximum Steady-State Torque and Fast Dynamics at Field Weakening
H. Abu-Rub, University of Wuppertal, Germany
H. Schmirgel, University of Wuppertal, Germany
J. Holtz, University of Wuppertal, Germany

IAS03p4 Current Control of Induction Machines in the Field-weakened Region
Gabriel Gallegos-López, Delphi Corporation, USA
Fani S. Gunawan, Delphi Corporation, USA
James E. Walters, Delphi Corporation, USA

IAS03p5 A Robust Method for Field Weakening Operation of Induction Motor Drives with Maximum Torque Capability
Domenico Casadei, University of Bologna, Italy
Giovanni Serra, University of Bologna, Italy
Angelo Tani, University of Bologna, Italy
Luca Zarri, University of Bologna, Italy

IAS03p6 A New Algorithm for Improved Dip/Sag Detection with Application to Improved Performance of Wind Turbine Generators
P. Barendse, University of Cape Town, South Africa
R. Naidoo, University of Cape Town, South Africa
P. Pillay, University of Cape Town, South Africa

METALS INDUSTRY COMMITTEE

Monday, 9 October • 8:00 AM – 12:00 PM • Salon I
Session 4—Primary Metal, Power Quality, Casting

Session Chair and Organizer: S. Douglas Cromey, Novelis Inc., Canada

IAS04p1 Thyristor Switched Series Reactor for Electric Arc Furnaces
Marcelo Murta G. Cardoso, Belgo-Arcelor Brasil, Brazil
Braz J. Cardoso Filho, Universidade Federal de Minas Gerais, Brazil

IAS04p2 Field Data-based Study on Electric Arc Furnace Flicker Mitigation
Chong Han, North Carolina State University, USA
Alex Q. Huang, North Carolina State University, USA
Subhashish Bhattacharya, North Carolina State University, USA
Mike Ingram, Tennessee Valley Authority, USA

IAS04p3 Harmonic Filter Analysis and Redesign for a Modern Steel Facility with Two Melt Furnaces Using Dedicated Capacitor Banks
Thomas J. Dionise, Eaton Electrical, USA
Visuth Lorch, Eaton Electrical, USA

IAS04p4 Wavelet Analysis in Arc Furnace Systems
E. A. Cano Plata, National University of Colombia–Manizales, Colombia

IAS04p5 Dynamic Characteristics Investigations of an In-mold Electromagnetic Stirrer for Steel Plate Manufacturing Process
Cheng-Tsung Liu, National Sun Yat-Sen University, Taiwan
Yen-Ming Chen, National Sun Yat-Sen University, Taiwan
Jen-Hsin Chen, China Steel Corporation, Taiwan
Muh-Jung Lu, China Steel Corporation, Taiwan

INDUSTRIAL POWER CONVERTER COMMITTEE

Monday, 9 October • 8:00 AM – 12:00 PM • Meeting Room 4
Session 5—Active Power Filters

Session Chair: Fred Wang, Virginia Polytechnic Institute and State University, USA
Session Organizer: S. Bhattacharya, North Carolina State University, USA

IAS05p1 Active Filter Implementation Using a Generalized Nonactive Power Theory
Yan Xu, The University of Tennessee, USA
Leon M. Tolbert, The University of Tennessee, USA; Oak Ridge National Laboratory, USA
John N. Chiasson, The University of Tennessee, USA
Jeremy B. Campbell, Oak Ridge National Laboratory, USA
Fang Z. Peng, Michigan State University, USA

IAS05p2 Parallel Operation of One-Cycle Controlled Three-Phase Active Power Filter
Yang Chen, University of California–Irvine, USA
Keyue Smedley, University of California–Irvine, USA

IAS05p3 A Novel Voltage Mode Control of Parallel Active Power Filter
Xiaoyu Wang, Xi'an Jiaotong University, China
Jinjun Liu, Xi'an Jiaotong University, China
Chang Yuan, Xi'an Jiaotong University, China
Zhaoan Wang, Xi'an Jiaotong University, China

IAS05p4 A Dynamic Tuning Method for Distributed Active Filter Systems
Po-Tai Cheng, National Tsing Hua University, Taiwan
Tzung-Lin Lee, National Tsing Hua University, Taiwan

IAS05p5 New Current Control Structure for Shunt Active Power Filters
Lucian Asiminoaei, Aalborg University, Denmark
Cristian Lascu, University Politehnica of Timifloara, Romania
Frede Blaabjerg, Aalborg University, Denmark
Ion Boldea, University Politehnica of Timifloara, Romania

IAS05p6 Adaptive Compensation of Reactive Power with Shunt Active Power Filters
Lucian Asiminoaei, Aalborg University, Denmark
Frede Blaabjerg, Aalborg University, Denmark
Steffan Hansen, Danfoss Drives A/S, Denmark
Paul Thoegersen, KK-Electronic A/S, Denmark

INDUSTRIAL POWER CONVERTER COMMITTEE

Monday, 9 October • 8:00 AM – 12:00 PM • Meeting Room 5
Session 6—Alternative Energy Applications

Session Chair: Geza Joos, McGill University, Canada
Session Organizer: Philip Carne Kjaer, Vestas, Denmark

IAS06p1 A Hybrid Energy System Using Cascaded H-Bridge Converter
Hui Li, Florida State University, USA
Zhong Du, North Carolina State University, USA
Kaiyu Wang, Florida State University, USA
Leon M. Tolbert, The University of Tennessee, USA
Danwei Liu, Florida State University, USA

IAS06p2 Novel Voltage Controller for Stand-alone Induction Generator using PWM-VSI
G. V. Jayaramaiah, Indian Institute of Technology Bombay, India
B. G. Fernandes, Indian Institute of Technology Bombay, India

IAS06p3 The Internal Model Current Control for Wind Turbine Driven Doubly-fed Induction Generator
Jia-bing Hu, Zhejiang University, China
Yi-kang He, Zhejiang University, China
Jian Guo Zhu, University of Technology, Australia

IAS06p4 Attenuation of Wind Power Fluctuations in Wind Turbine Generators using a DC Bus Capacitor-based Filtering Control Scheme
Wei Li, McGill University, Canada
Géza Joós, McGill University, Canada
Chad Abbey, McGill University, Canada

IAS06p5 Current-source Topology for Wind Turbines Capable of Providing Leading Power Factor While Reducing Line Current Harmonics
P. Tenca, University of Wisconsin–Madison, USA
A. A. Rockhill, University of Wisconsin–Madison, USA
T. A. Lipo, University of Wisconsin–Madison, USA

IAS06p6 A Multi-Stage Converter for Domestic Generation Systems Based on Fuel Cells
Mario Cacciato, University of Catania, Italy
Alfio Consoli, University of Catania, Italy
Rosario Attanasio, STMicroelectronics, Italy
Francesco Gennaro, STMicroelectronics, Italy

PRODUCTION AND APPLICATION OF LIGHT COMMITTEE

Monday, 9 October • 8:00 AM – 12:00 PM • Meeting Room 7
Session 7—Ballasts for Fluorescent Lamps

Session Chair: Ron Hui, Hong Kong City University, China
Session Organizer: Georges Zissis, University Toulouse 3, France

IAS07p1 Impact of Current Crest Factor at High and Low Frequency Operation on Fluorescent Lamp Electrodes
Walter Kaiser, Escola Politécnica da Universidade de São Paulo, Brazil
Ricardo Paulino Marques, Escola Politécnica da Universidade de São Paulo, Brazil
Alexander Fernandez Correa, Escola Politécnica da Universidade de São Paulo, Brazil

IAS07p2 Simulation the Impedance of Electrodeless Fluorescent Lamp
Yuming Chen, Fudan Universty, China
Dahua Chen, Fudan Universty, China

IAS07p3 Designing a Wide Range High Performance Platform for Multiple Lamps
Masashi Sekine, International Rectifier, USA
Zan Huang, International Rectifier, USA

IAS07p4 Fluorescent Lamp Ballast Based on a Class-E Resonant Inverter Using a Piezoelectric Transformer
J. Ribas, Universidad de Oviedo, Spain
J. A. Martín, Universidad de Oviedo, Spain
J. García, Universidad de Oviedo, Spain
J. Cardesin, Universidad de Oviedo, Spain
A. J. Calleja, Universidad de Oviedo, Spain
M. Rico-Secades, Universidad de Oviedo, Spain

IAS07p5 Frequency Diagnostic Universal Fault Protection for Current-fed Parallel Resonant Ballast
Qinghong Yu, Osram Sylvania, USA
Joe Parisella, Osram Sylvania, USA

IAS07p6 Optimized Magnetic Components Improve Efficiency of Compact Fluorescent Lamps
Jennifer D. Pollock, Dartmouth College, USA
Charles R. Sullivan, Dartmouth College, USA

POWER ELECTRONICS DEVICES & COMPONENTS COMMITTEE

Monday, 9 October • 8:00 AM – 12:00 PM • Salon VI
Session 9—Novel Power Semiconductor Devices: SiC and More

Session Chair: Jerry Hudgins, University of Nebraska- Lincoln, USA
Session Organizer: Enrico Santi, University of South Carolina, USA

IAS09p1 Comparison of Static and Switching Characteristics of 1200V 4H-SiC BJT and 1200V Si-IGBT
Yan Gao, North Carolina State University, USA
Alex Q. Huang, North Carolina State University, USA
Sumi Krishnaswami, Cree Inc., USA
Jim Richmond, Cree Inc., USA
Anant K. Agarwal, Cree Inc., USA

IAS09p2 Recent Advances in High-Voltage, High-Frequency Silicon-Carbide Power Devices
Allen Hefner, National Institute of Standards and Technology, USA
Sei-Hyung Ryu, Cree Inc., USA
Brett Hull, Cree Inc., USA
David Berning, National Institute of Standards and Technology, USA
Colleen Hood, National Institute of Standards and Technology, USA
Jose M. Ortiz-Rodriguez, National Institute of Standards and Technology, USA
Angel Rivera-Lopez, National Institute of Standards and Technology, USA
Tam Duong, National Institute of Standards and Technology, USA
Adwoa Akuffo, National Institute of Standards and Technology, USA
Madelaine Hernandez-Mora, National Institute of Standards and Technology, USA

IAS09p3 Generalized Test Bed for High-Voltage, High-Power SiC Device Characterization
David Berning, National Institute of Standards and Technology, USA
Allen Hefner, National Institute of Standards and Technology, USA
Jose M. Ortiz-Rodriguez, National Institute of Standards and Technology, USA
Colleen Hood, National Institute of Standards and Technology, USA
Angel Rivera, National Institute of Standards and Technology, USA

IAS09p4 A SiC-based Converter as a Utility Interface for a Battery System
Hui Zhang, The University of Tennessee, USA
Leon M. Tolbert, The University of Tennessee, USA; Oak Ridge National Laboratory, USA
Burak Ozpineci, Oak Ridge National Laboratory, USA
Madhu S. Chinthavali, Oak Ridge National Laboratory, USA

IAS09p5 Control Power Self-Generation and Sensors Integration in Emitter Turn-off (ETO) Thyristor
Bin Chen, North Carolina State University, USA
Alex Q. Huang, North Carolina State University, USA
Stanley Atcitty, North Carolina State University, USA

IAS09p6 Trench Power JFET with Integrated Junction Barrier Schottky Diode
Yang Gao, North Carolina State University, USA
Alex Q. Huang, North Carolina State University, USA
Yan Gao, North Carolina State University, USA

IAS09p7 A Resonant Drive Circuit for GaN Power MOSHFET
B. Wang, University of South Carolina, USA
N. Tipirneni, University of South Carolina, USA
M. Riva, Universita' degli Studi di Milano, Italy
A. Monti, University of South Carolina, USA
G. Simin, University of South Carolina, USA
E. Santi, University of South Carolina, USA

MONDAY AFTERNOON SESSIONS

ELECTRIC MACHINES COMMITTEE

Monday, 9 October • 2:00 PM – 6:00 PM • Salon IV
Session 10—Linear Machines and Actuators

Session Chair and Organizer: Elena Lomonova, Eindhoven University of Technology, The Netherlands

IAS10p1 Micro-Actuator for New Implantable Hearing Device
Hans Bernhard, Helbling Technik Bern AG, Switzerland
Christof Stieger, Inselspital University Hospital of Berne, Switzerland

IAS10p2 The Cycloid Permanent Magnetic Gear
F. T. Joergensen, Aalborg University, Denmark
T. O. Andersen, Aalborg University, Denmark
P. O. Rasmussen, Aalborg University, Denmark

IAS10p3 Ultrasonic Transducer Model for Optimization of a Spinal Tissue Ablation System
John Murphy, Ecole Polytechnique Fédérale de Lausanne, Switzerland
Daniel Porto, Ecole Polytechnique Fédérale de Lausanne, Switzerland
Yves Perriard, Ecole Polytechnique Fédérale de Lausanne, Switzerland

IAS10p4 Comparison of Linear Switched Reluctance Machines for Vertical Propulsion Application: Analysis, Design and Experimental Correlation
N. S. Lobo, Virginia Polytechnic Institute and State University, USA
H. S. Lim, Virginia Polytechnic Institute and State University, USA
R. Krishnan, Virginia Polytechnic Institute and State University, USA

IAS10p5 Model-based Commutation of a Long-Stroke Magnetically Levitated Linear Actuator
C. M. M. van Lierop, Eindhoven University of Technology, The Netherlands
J. W. Jansen, Eindhoven University of Technology, The Netherlands
A. A. H. Damen, Eindhoven University of Technology, The Netherlands
E. A. Lomonova, Eindhoven University of Technology, The Netherlands
P. P. J. van den Bosch, Eindhoven University of Technology, The Netherlands
A. J. A. Vandenput, Eindhoven University of Technology, The Netherlands

IAS10p6 Rapid Eddy Current Loss Calculation for Transverse Flux Linear Motor
Ji-Young Lee, Korea Electrotechnology Research Institute, Korea
Do-Hyun Kang, Korea Electrotechnology Research Institute, Korea
Jung-Hwan Jang, Korea Electrotechnology Research Institute, Korea
Jung-Pyo Hong, Changwon National University, Korea

IAS10p7 Design and Bidirectional Motion Control of Double-side LSM with Slotless Iron-cored Stator and PM mover Using Control Parameters Estimation and Discrete System Modeling
S. M. Jang, Chungnam National University, Korea
D. J. You, Chungnam National University, Korea

ELECTRIC MACHINES COMMITTEE

Monday, 9 October • 2:00 PM – 6:00 PM • Salon V
Session 11—Induction Motors II

Session Chair: Annette Muetze, University of Wisconsin-Madison, USA
Session Organizer: Dan Ionel, A. O. Smith, USA

IAS11p1 Steady State Modeling of Series-connected Five-phase and Six-phase Two-motor Drives
Emil Levi, Liverpool John Moores University, UK
Martin Jones, Liverpool John Moores University, UK
Slobodan N. Vukosavic, Liverpool John Moores University, UK
Hamid A. Toliyat, Texas A&M University, USA

IAS11p2 Universal Induction Motor Model with Low-to-High Frequency Response Characteristics
Behrooz Mirafzal, Rockwell Automation, USA
Gary Skibinski, Rockwell Automation, USA
Ranga Tallam, Rockwell Automation, USA
David Schlegel, Rockwell Automation, USA
Richard Lukaszewski, Rockwell Automation, USA

IAS11p3 Efficiency Analysis of PWM Inverter-fed Three-Phase and Dual Three-Phase Induction Machines
A. Boglietti, Politecnico di Torino, Italy
R. Bojoi, Politecnico di Torino, Italy
A. Cavagnino, Politecnico di Torino, Italy
A. Tenconi, Politecnico di Torino, Italy

IAS11p4 Experimental Uncertainty in Estimation of the Losses and Efficiency of Induction Motors
Wenping Cao, University of Teesside, UK
K. J. Bradley, University of Nottingham, UK
H. Zhang, University of Nottingham, UK
I. French, University of Teesside, UK

IAS11p5 A Sensorless Adaptive Stator Winding Temperature Estimator for Mains-fed Induction Machines with Continuous Operation, Periodic Duty Cycles
Zhi Gao, Georgia Institute of Technology, USA
Thomas G. Habetler, Georgia Institute of Technology, USA
Ronald G. Harley, Georgia Institute of Technology, USA
Roy S. Colby, Schneider Electric, USA

IAS11p6 Space-Vector State Model of Induction Machines Including Rotor Slotting Effects: Towards a New Category of Observers
Maurizio Cirrincione, Université de Technologie de Belfort-Montbéliard, France
Marcello Pucci, Institute on Intelligent Systems for the Automation, Italy
Giansalvo Cirrincione, University of Picardie-Jules Verne, France
Abdellatif Miraoui, Université de Technologie de Belfort-Montbéliard (UTBM), France

IAS11p7 Modeling of a Dual Stator Winding Induction Machine Including the Effect of Main Flux Linkage Magnetic Saturation
Zhiqiao Wu, Tennessee Technological University, USA
Olorunfemi Ojo, Tennessee Technological University, USA

INDUSTRIAL DRIVES COMMITTEE

Monday, 9 October • 2:00 PM – 6:00 PM • Meeting Room 6
Session 12—PM Machine Drives I

Session Chair: Annette Muetze, University of Wisconsin-Madison, USA
Session Organizer: F. Briz del Blanco, University of Ovieda, Spain

IAS12p1 Fault Tolerant, Brushless DC Motor Drive for Electro-Hydraulic Actuation System in Aerospace Application
Xiaoyan Huang, University of Nottingham, UK
Keith Bradley, University of Nottingham, UK
Andrew Goodman, University of Nottingham, UK
Chris Gerada, University of Nottingham, UK
Pat Wheeler, University of Nottingham, UK
Jon Clare, University of Nottingham, UK
Chris Whitley, Smiths Aerospace Actuation Ltd., UK

IAS12p2 Robust Magnetic Polarity Estimation for Initialization of PM Synchronous Machines with Near Zero Saliency
Dejan Raca, University of Wisconsin–Madison, USA
Michael C. Harke, University of Wisconsin–Madison, USA
Robert D. Lorenz, University of Wisconsin–Madison, USA

IAS12p3 Dual Inverter Strategy for High Speed Operation of HEV Permanent Magnet Synchronous Motor
Joon Sung Park, Postech University, S. Korea
Kwanghee Nam, Postech University, S. Korea

IAS12p4 Advantages of Inset PM Machines for Zero-speed Sensorless Position Detection
Nicola Bianchi, University of Padova, Italy
Silverio Bolognani, Hyundai Motor Company, Korea
Ji–Hoon Jang, Seoul National University, Korea
Seung–Ki Sul, Seoul National University, Korea

IAS12p5 Output Maximization Control for Wind Generation System with Interior Permanent Magnet Synchronous Generator
Shigeo Morimoto, Osaka Prefecture University, Japan
Hajime Kato, Osaka Prefecture University, Japan
Masayuki Sanada, Osaka Prefecture University, Japan
Yoji Takeda, Osaka Prefecture University, Japan

METALS INDUSTRY COMMITTEE

Monday, 9 October • 2:00 PM – 6:00 PM • Salon I
Session 13—Strip Control, Wire Drawing, Slab Quality
Session Chair: Thomas J. Dionise, Eaton Electrical, USA
Session Organizer: S. Douglas Cromey, Novelis Inc., Canada

IAS13p1 Application of Self Organizing Maps to Predict Centerline Segregation in Steel Slabs
Ana Díaz, Arcelor España, Spain
Luis Sancho, Arcelor España, Spain
Eugenia Díaz, University of Oviedo, Spain
Antonio López, University of Oviedo, Spain
José A. Sirgo, University of Oviedo, Spain

IAS13p2 Measurement of Centerline Segration in Steel Slabs
José A. Sirgo, University of Oviedo, Spain
Rubén Campo, University of Oviedo, Spain
Antonio López, University of Oviedo, Spain
Ana Díaz, Arcelor España, Spain
Luis Sancho, Arcelor España, Spain

IAS13p3 Compensation for Uneven Temperature in Flatness Control Systems for Steel Strips
Rubén Usamentiaga, University of Oviedo, Spain
Daniel F. García, University of Oviedo, Spain
Diego González, University of Oviedo, Spain
Julio Molleda, University of Oviedo, Spain

IAS13p4 A Low-Cost System for Flatness Monitoring in Metal Processes
J. M. Lopera, University of Oviedo, Spain
P. J. Villegas, University of Oviedo, Spain
F. F. Linera, University of Oviedo, Spain
F. Hernández-Magadan, University of Oviedo, Spain
J. Martin-Ramos, University of Oviedo, Spain
J. Díaz, University of Oviedo, Spain
G. Vecino, Aceralia-GrupoArcelor, Spain
J. L. Rendueles, Aceralia-GrupoArcelor, Spain

IAS13p5 On-Line Torque and Drawing Force Estimation in Wire Drawing Process from Electric Motor Variables
Marcelo M. Stopa, Centro Federal de Educação Tecnológica de Minas Gerais, Brazil
Braz J. Cardoso Filho, Universidade Federal de Minas Gerais, Brazil

INDUSTRIAL POWER CONVERTER COMMITTEE

Monday, 9 October • 2:00 PM – 6:00 PM • Meeting Room 4
Session 14—Rectifiers

Session Chair: S. Bhattacharya, North Carolina State University, USA
Session Organizer: Klumpner Christian, University of Nottingham, UK

IAS14p1 Unified One-Cycle Controller for Bidirectional Boost Power Factor Correction Rectifiers
Aluisio A. M. Bento, Universidade Federal de Campina Grande, Brazil
Euzeli C. dos Santos Jr., Universidade Federal de Campina Grande, Brazil
Edison R. C. da Silva, Universidade Federal de Campina Grande, Brazil

IAS14p2 Damping of PWM Current-Source Rectifier Using a a Hybrid Combination Approach
Y. W. Li, Ryerson University, Canada
B. Wu, Ryerson University, Canada
N. Zargari, Rockwell Automation, Canada
J. Wiseman, Rockwell Automation, Canada
D. Xu, Ryerson University, Canada

IAS14p3 Active Rectifier Inner Current Loop without Reference Frame Transformations in Feedback
Eric Seymour, Advanced Energy Industries, USA
Annabelle Pratt, Advanced Energy Industries, USA

IAS14p4 Control of Three-Phase Power Factor Corrected Rectifier in Balanced and Unbalanced Systems
Jun Wen, University of California–Irvine, USA
Keyue Smedley, University of California–Irvine, USA

IAS14p5 Ship Propulsion AC–DC Conversion System Modeling and Design
Giovanna Oriti, Power Engineering Consultant, USA
Rob M. Cuzner, DRS Power & Control Technologies, Inc., USA

IAS14p6 A 20-kW, 10-kHz, Single-Phase Multilevel Active-Front-End Converter with Reactive Power Control
Konstantin P. Louganski, Jinju National University
Jih-Sheng Lai, Virginia Polytechnic Institute and State University, USA

INDUSTRIAL POWER CONVERTER COMMITTEE

Monday, 9 October • 2:00 PM – 6:00 PM • Meeting Room 5
Session 15—PWM and Control Techniques

Session Chair: Yaow-Ming Chen, National Chung-Cheng University, Taiwan
Session Organizer: Yen-Shin Lai, National Taipei University of Technology, Taiwan

IAS15p1 Math Demonstration and Practical Application of Fundamental Voltage Amplitude Linear Output -based SVPWM Overmodulation Control
Liwei Zhang, Beijing Jiaotong University, China
Xuhui Wen, Chinese Academy of Sciences, China
Jun Liu, Chinese Academy of Sciences, China
Trillion Q. Zheng, Beijing Jiaotong University, China

IAS15p2 Extra Wide Input Voltage Range and High Efficiency DC–DC Converter Using Hybrid Modulation
Xinke Wu, Zhejiang University, PR China
Wei Lu, Zhejiang University, PR China
Junming Zhang, Zhejiang University, PR China
Zhaoming Qian, Zhejiang University, PR China

IAS15p3 Cascaded Three-Level Inverters with Synchronized Space-Vector Modulation
V. Oleschuk, Academy of Sciences of Moldova, Moldova
F. Profumo, Politecnico di Torino, Italy
A. Tenconi, Politecnico di Torino, Italy
R. Bojoi, Politecnico di Torino, Italy
A. M. Stankovic, Northeastern University, USA

IAS15p4 Multilevel Operation of a Dual Two-Level Inverter with Power Balancing Capability
Gabriele Grandi, University of Bologna, Italy
Claudio Rossi, University of Bologna, Italy
Alberto Lega, University of Bologna, Italy
Domenico Casadei, University of Bologna, Italy

IAS15p5 A Hybrid 2/3 Level Converter with Minimum Switch Count
Liviu Mihalache, Power Conversion Technologies Inc., USA

IAS15p6 Dual Z-Source Inverter with Three-Level Reduced Common Mode Switching
F. Gao, Nanyang Technological University, Singapore
P. C. Loh, Nanyang Technological University, Singapore
F. Blaabjerg, Aalborg University, Denmark
D. M. Vilathgamuwa, Nanyang Technological University, Singapore

IAS15p7 Pulse-Width Modulation for Five-Phase Converters Based on Device Turn-On Times
Olorunfemi Ojo, Tennessee Technological University, USA
Gan Dong, Tennessee Technological University, USA
Zhiqiao Wu, Tennessee Technological University, USA

INDUSTRIAL AUTOMATION AND CONTROL COMMITTEE

Monday, 9 October • 2:00 PM – 6:00 PM • Salon II
Session 16—Intelligent Controls

Session Chair and Organizer: Donald Zinger, Northern Illinois University, USA

IAS16p1 Bio-inspired Algorithms for the Design of Multiple Optimal Power System Stabilizers: SPPSO and BFA
Tridib K. Das, University of Missouri–Rolla, USA
Ganesh K. Venayagamoorthy, University of Missouri–Rolla, USA

IAS16p2 Fault-Tolerant Optimal Neurocontrol for a Static Synchronous Series Compensator Connected to a Power Network
Wei Qiao, Georgia Institute of Technology, USA
Ronald G. Harley, Georgia Institute of Technology, USA

IAS16p3 Power System Control with an Embedded Neural Network in Hybrid System Modeling
Seung-Mook Baek, Yonsei University, Korea
Jung-Wook Park, Yonsei University, Korea
Ganesh K. Venayagamoorthy, University of Missouri–Rolla, USA

IAS16p4 Automated Online Design of Robust Speed Digital Controllers for Variable Speed Drives
Nnamdi Okaeme, University of Nottingham, UK
Pericle Zanchetta, University of Nottingham, UK
Mark Sumner, University of Nottingham, UK

IAS16p5 Intelligent Tool for Determining the True Harmonic Current Contribution of a Customer in a Power Distribution Network
J. Mazumdar, Georgia Institute of Technology, USA
R. Harley, Georgia Institute of Technology, USA
F. Lambert, Georgia Institute of Technology, USA
G. K. Venayagamoorthy, University of Missouri–Rolla, USA
M. L. Page, Georgia Power Company, USA

IAS16p6 Real-Time Implementation of a Dual Function Neuron-based Wide Area SVC Damping Controller
Sandhya R. Jetti, University of Missouri–Rolla, USA
Ganesh K. Venayagamoorthy, University of Missouri–Rolla, USA

PRODUCTION AND APPLICATION OF LIGHT COMMITTEE

Monday, 9 October • 2:00 PM – 6:00 PM • Meeting Room 7
Session 17—Special Session on Displays (MSDAD Committee)

Session Chair and Organizer: Horoaki Ikeda, IKEDA Technologies, Japan

IAS17p1 Progress in Large Screen Plasma Display and New Approach for Extra Large Screen System with Plasma Tube Technology
Kenji Awamoto, Fujitsu Laboratories Ltd., Japan
Manabu Ishimoto, Fujitsu Laboratories Ltd., Japan
Hitoshi Hirakawa, Fujitsu Laboratories Ltd., Japan
Tsutae Shinoda, Fujitsu Laboratories Ltd., Japan; University of Tokyo, Japan

IAS17p2 Wide Color Gamut Displays Using LED Backlight—Signal Processing Circuits
Hiroaki Sugiura, Mitsubishi Electric Corporation, Japan
Hideyuki Kaneko, Mitsubishi Electric Corporation, Japan
Shuichi Kagawa, Mitsubishi Electric Corporation, Japan
Jun Someya, Mitsubishi Electric Corporation, Japan
Hideki Tanizoe, Mitsubishi Electric Corporation, Japan

IAS17p3 Flexible Displays for Digital TV Broadcasting
Fumio Sato, NHK Science and Technical Research Laboratories, Japan
Taiichiro Kurita, NHK Science and Technical Research Laboratories, Japan
Shizuo Tokito, NHK Science and Technical Research Laboratories, Japan
Hideo Fijikake, NHK Science and Technical Research Laboratories, Japan
Hiroshi Kikuchi, NHK Science and Technical Research Laboratories, Japan
Youji Inoue, NHK Science and Technical Research Laboratories, Japan

IAS17p4 White Organic Light-Emitting Diodes (WOLEDs)
P. Destruel, Université Paul Sabatier, France
G. Ablart, Université Paul Sabatier, France
P. Jolinat, Université Paul Sabatier, France
I. Séguy, Université Paul Sabatier, France
J. Farenc, Université Paul Sabatier, France

IAS17p5 Driver's Perception of Images in Automotive Multicolor Display Systems
Shigeru Okabayashi, Meijo University, Japan
Hiromasa Miura, Meijo University, Japan
Noboru Sugie, Meijo University, Japan
Toyohiko Hatada, Tokyo Institute of Polytechnics, Japan

POWER ELECTRONICS DEVICES & COMPONENTS COMMITTEE

Monday, 9 October • 2:00 PM – 6:00 PM • Salon VI
Session 19—Power Modules and Thermal Issues

Session Chair: Angelo Raciti, DIEES, Italy
Session Organizer: Hardus Odendaal, Virginia Polytechnic Institute and State University, USA

IAS19p1 Characterization of a Multilevel HV-IGBT Module for Distribution Applications
Jih-Sheng Lai, Virginia Polytechnic Institute and State University, USA
Allen Hefner, National Institute of Standards and Technology, USA
Arindam Maitra, EPRI-Solutions, USA
Frank Goodman, Electric Power Research Institute, USA

IAS19p2 Junction Temperature Prediction of a Multiple-Chip IGBT Module under DC Condition
Lixiang Wei, Rockwell Automation, USA
Russ J. Kerkman, Rockwell Automation, USA
Richard A. Lukaszewski, Rockwell Automation, USA
Brian P. Brown, Rockwell Automation, USA
Neil Gollhardt, Rockwell Automation, USA
Bruce W. Weiss, Rockwell Automation, USA

IAS19p3 A New 1200 V Converter-Inverter-Brake (CIB) Module Family Featuring CSTBT Chips and a New 1200 V High Voltage Integrated Circuit (HVIC)
John Donlon, Powerex, Inc., USA
Eric Motto, Powerex, Inc., USA
Marco Honsberg, Mitsubishi Electric Europe BV, Germany
Mitsuharu Tabata, Mitsubishi Electric Corporation, Japan
Hiroshi Sakata, Mitsubishi Electric Corporation, Japan

IAS19p4 Novel Dual-side Thermal Interfacing of IPM for Elevated-temperature Applications
Jie Chang, Florida State University, USA
Changming Liao, Florida State University, USA

IAS19p5 Expanded Thermal Model for IGBT Modules
B. Lu, University of Nebraska, USA
J. L. Hudgins, University of Nebraska, USA
A. T. Bryant, University of Warwick, UK
E. Santi, University of South Carolina, USA
P. R. Palmer, Cambridge University, UK

IAS19p6 Electro-Thermal Design of a Heat Pipe -based High Power Voltage Source Converter Using Emitter Turn-Off Thyristor
Karan Tewari, North Carolina State University, USA
Shoubhik R. Doss, North Carolina State University, USA
Bin Chen, North Carolina State University, USA
Alex Q. Huang, North Carolina State University, USA
Subhashish Bhattacharya, North Carolina State University, USA
Zhong Du, North Carolina State University, USA

IAS19p7 Fabrication and Thermal Performance of Yhin Flat Heat Pipes with Innovative Sintered Copper Wick Structure
N. Popova, INPG, France
C. Schaeffer, INPG, France
Y. Avenas, INPG, France
G. Kapelski, INPG, France

TUESDAY MORNING SESSIONS

ELECTRIC MACHINES COMMITTEE

Tuesday, 10 October • 8:00 AM – 12:00 PM • Salon IV
Session 20—Induction Motors I

Session Chair: Sandy Smith, University of Manchester, UK
Session Organizer: Aldo Boglietti, Politecnico di Torino, Italy

IAS20p1 Analysis of the Endwinding Cooling Effects in TEFC Induction Motors
A. Boglietti, Politecnico di Torino, Italy
A. Cavagnino, Politecnico di Torino, Italy

IAS20p2 Novel Direct Field and Direct Torque Control of Six-Phase Induction Machine with Special Phase Current Waveform
Yong-le Ai, University of Stellenbosch, South Africa
Maarten J. Kamper, University of Stellenbosch, South Africa
Abraham D. Le Roux, University of Stellenbosch, South Africa

IAS20p3 Impact of PWM Schemes on Induction Motor Losses
Y. Wu, Cambridge University, UK
R. A. McMahon, Cambridge University, UK
Y. Zhan, University of Alberta, Canada
A. M. Knight, University of Alberta, Canada

IAS20p4 A Multi-Sliced Finite Element Model for Induction Machines Incorporating Inter-Bar Current
Piotr J. Holik, The University of Glasgow, UK
David G. Dorrell, The University of Glasgow, UK
Patrick Lombard, CEDRAT, France
Hans-Jørgen Thougaard, Grundfos Management A/S, Denmark
Finn Jensen, Grundfos Management A/S, Denmark

IAS20p5 Computation of Core Losses in Electrical Machines Using Improved Models for Laminated Steel
D. M. Ionel, A.O. Smith Corp., USA
M. Popescu, The University of Glasgow, UK
M. McGilp, The University of Glasgow, UK
T. J. E. Miller, The University of Glasgow, UK
S. Dellinger, A.O. Smith Corp., USA
R. J. Heideman, A.O. Smith Corp., USA

IAS20p6 Vibration Suppression of a Flexible Shaft with a Simplified Bearingless Induction Motor Drive
Akira Chiba, Tokyo University of Science, Japan
Tadashi Fukao, iTSCOM, Japan
M. Azizur Rahman, Memorial University of Newfoundland, Canada

IAS20p7 Vibratory and Acoustic Behavior of Induction Traction Motors, Machine Design Improvement
V. Lanfranchi, Université de Technologie de Compiegne, France
A. Ait-Hammouda, Université de Technologie de Compiegne, France
G. Friedrich, Université de Technologie de Compiegne, France
M. Hecquet, Ecole Centrale de Lille, France
A. Randria, Alstom Transport, France

APPLICATION INDUSTRY COMMITTEE

Tuesday, 10 October • 8:00 AM – 12:00 PM • Salon V
Session 21—Low-Cost Motor Drive Systems and Applications

Session Chair and Organizer: Zheng Zhang, Whirlpool Corporation, USA

IAS21p1 A New Low-Cost Hybrid Switched Reluctance Motor for Adjustable-Speed Pump Applications
K. Y. Lu, Aalborg University, Denmark
P. O. Rasmussen, Aalborg University, Denmark
S. J. Watkins, Aalborg University, Denmark
F. Blaabjerg, Aalborg University, Denmark

IAS21p2 Chaoization of a Single-Phase Induction Motor for Washing Machines
S. Ye, The University of Hong Kong, China
K. T. Chau, The University of Hong Kong, China
Shuangxia Niu, The University of Hong Kong, China

IAS21p3 A Novel Starting Method of the SPM-Type BLDC Motors without Position Sensor for Reciprocating Compressor
Dae-kyong Kim, Korea Electronics Technology Institute, Korea; Hanyang University, Korea
Kwang-woon Lee, Samsung Electronics, Korea
Byung-taek Kim, Kunsan University, Korea
Byung-il Kwon, Hanyang University, Korea

IAS21p4 Sensorless Direct Field-oriented Control of Three-Phase Induction Motor Drives for Low Cost Applications
R. Bojoi, Politecnico di Torino, Italy
P. Guglielmi, Politecnico di Torino, Italy
G. Pellegrino, Politecnico di Torino, Italy

IAS21p5 Sliding Mode Sensorless Control of PM Synchronous Motor for Direct-Driven Washing Machines
Song Chi, The Ohio State University, USA
Longya Xu, The Ohio State University, USA
Zheng Zhang, Whirlpool Corporation, USA

INDUSTRIAL DRIVES COMMITTEE

Tuesday, 10 October • 8:00 AM – 12:00 PM • Meeting Room 6
Session 22—Drives I

Session Chair and Organizer: Mahesh Swamy, Yaskawa Electric, USA

IAS22p1 Common Mode and Differential Mode Analysis of Three Phase Cables for PWM AC Drives
Gary Skibinski, Rockwell Automation, USA
Rangarajan Tallam, Rockwell Automation, USA
Robert Reese, Rockwell Automation, USA
Brian Buchholz, Rockwell Automation, USA
Richard Lukaszewski, Rockwell Automation, USA

IAS22p2 Effects and Compensation of Dead-time and Minimum Pulse-width Limitations in Two-level PWM Voltage Source Inverters
Brian A. Welchko, General Motors Advanced Technology Center, USA
Steven E. Schulz, General Motors Advanced Technology Center, USA
Silva Hiti, General Motors Advanced Technology Center, USA

IAS22p3 Accuracy and Bandwidth Limits of Carrier Signal Injection-based Sensorless Control Methods
Pablo García, University of Oviedo, Spain
Fernando Briz, University of Oviedo, Spain
Michael W. Degner, Ford Motor Company, USA
David Díaz-Reigosa, University of Oviedo, Spain

IAS22p4 Identification of the Mechanical Parameters for Servo Drive
Tae-Suk Kwon, Seoul National University, Korea
Seung-Ki Sul, Seoul National University, Korea
Hiroshi Nakamura, Yaskawa Electric Corporation, Japan
Kazuhiro Tsuruta, Kyushu Sangyo University, Japan

IAS22p5 A Dead Time Compensation Method in Voltage-fed PWM Inverter
Ho-Seon Ryu, Korea Electric Power Research Institute, Korea
Ick-Hun Lim, Korea Electric Power Research Institute, Korea
Joo-Hyun Lee, Korea Electric Power Research Institute, Korea
Seon-Hwan Hwang, Pusan National University, Korea
Jang-Mok Kim, Pusan National University, Korea

IAS22p6 Disturbance Torque and Motion State Estimation Using Low Resolution Position Interfaces
Tod R. Tesch, Ballard Power Systems, USA
Robert D. Lorenz, University of Wisconsin–Madison, USA

IAS22p7 Why Do Incremental Encoders Do a Reasonably Good Job in Electrical Drives with Digital Control?
Ralph M. Kennel, Wuppertal University, Germany

MINING INDUSTRY COMMITTEE

Tuesday, 10 October • 8:00 AM – 12:00 PM • Salon I
Session 23—Safety and Productivity

Session Chair: Jorge Pontt, Technical University Federico Santa Maria, Chile
Session Organizer: John J Sammarco, National Institute for Occupational Health and Safety, USA

IAS23p1 A Method for Estimating the Probability of Lightning Causing a Methane Ignition in an Underground Mine
H. K. Sacks, Virginia Polytechnic Institute and State University, USA
Thomas Novak, Virginia Polytechnic Institute and State University, USA

IAS23p2 Efficient Artificial Lighting System for Surface Mine Haul Roads
M. Aruna, National Institute of Technology Karnataka, India
R. Y. UdayKumar, National Institute of Technology Karnataka, India

IAS23p3 Safety, Reliability and Economics in Mining Systems
Jorge Pontt, UTFSM, Chile
José Rodríguez, UTFSM, Chile
Juan Dixon, Pontificia Universidad, Chile

IAS23p4 Fuzzy Modeling Approaches for the Prediction of Machine Utilization in Hard Rock Tunnel Boring Machines
Marcelo G. Simões, Colorado School of Mines, USA
Taehong Kim, Parsons Brinckerhoff Quade & Douglas, Inc., USA

IAS23p5 Through-the-Earth, Two-Way, Mine Emergency, Voice Communication Systems
Thomas D. Barkand, U.S. Department of Labor, USA
Nicholas W. Damiano, U.S. Department of Labor, USA
Wesley A. Shumaker, U.S. Department of Labor, USA

INDUSTRIAL POWER CONVERTER COMMITTEE

Tuesday, 10 October • 8:00 AM – 12:00 PM • Meeting Room 4
Session 24—Multilevel Converters

Session Chair: Edison da Silva, University of Campina Grande, Brazil
Session Organizer: Lixiang Wei, Rockwell Automation-Allen Bradley, USA

IAS24p1 A Neural Point Voltage Balancing Method for Multi-Level GTO Inverters
Lazhar Ben-Brahim, Qatar University, Qatar

IAS24p2 A Multilevel Modular Capacitor Clamped DC–DC Converter
Faisal H. Khan, The University of Tennessee, USA
Leon M. Tolbert, The University of Tennessee, USA

IAS24p3 Multilevel Cascade Inverter with Voltage and Current Output Regulated Using a Passivity-based Controller
H. Miranda, CIEP–FI–UASLP, Mexico
V. Cárdenas, CIEP–FI–UASLP, Mexico
G. Espinosa-Pérez, DEPFI–UNAM, Mexico
D. Noriega-Pineda, DEPFI–UNAM, Mexico

IAS24p4 Multisource DC–DC Converter for the Supply of Hybrid Multilevel Converter
S. Mariethoz, University of Nottingham, UK
A. Rufer, Ecole Polytechnique Fédérale de Lausanne, Switzerland

IAS24p5 A Simple and Reliable PWM Synchronization and Phase-Shift Method for Cascaded H-Bridge Multilevel Inverters Based on a Standard Serial Communication Protocol
Young-Min Park, Hyundai Heavy Industries Company, Korea; Korea University, Korea
Han-Seong Yoo, Hyundai Heavy Industries Company, Korea
Hyun-Won Lee, Hyundai Heavy Industries Company, Korea
Myung-Gil Jung, Hyundai Heavy Industries Company, Korea
Se-Hyun Lee, Hyundai Heavy Industries Company, Korea
Choong-Dong Lee, Hyundai Heavy Industries Company, Korea
Sang-Bin Lee, Korea University, Korea
Ji-Yoon Yoo, Korea University, Korea

INDUSTRIAL POWER CONVERTER COMMITTEE

Tuesday, 10 October • 8:00 AM – 12:00 PM • Meeting Room 5
Session 25—Utility Interface and Power Quality I

Session Chair: Jinjun Liu, Xian Jiaotong University, China
Session Organizer: Sewan Choi, Seoul National University of Technology, Korea

IAS25p1 A Cost Effective, Three-Phase Grid-Connected Inverter with Maximum Power Point Tracking
Yang Chen, University of California–Irvine, USA
Keyue Smedley, University of California–Irvine, USA
Jack Brouwer, University of California–Irvine, USA

IAS25p2 Dynamic Behavior of a 21-Level (Line-to-Line) BTB System Based on Series Connection of Sixteen Converter-Cells under a Single-Line-to-Ground Fault Condition: Experimental Verification by a 200-V, 20-kW Laboratory System
Makoto Hagiwara, Tokyo Institute of Technology, Japan
Keiji Wada, Tokyo Institute of Technology, Japan
Hideaki Fujita, Tokyo Institute of Technology, Japan
Hirofumi Akagi, Tokyo Institute of Technology, Japan

IAS25p3 A Transformerless Two-Level Inverter -based Static Var Generator with Multiple Functions in Medium Voltage Application
Kuang Li, Xi'an Jiaotong University, China
Jinjun Liu, Xi'an Jiaotong University, China
Guopeng Zhao, Xi'an Jiaotong University, China
Zhaoan Wang, Xi'an Jiaotong University, China

IAS25p4 Linear and Nonlinear Control of Distributed Power Generation Systems
Adrian V. Timbus, Aalborg University, Denmark
Remus Teodorescu, Aalborg University, Denmark
Frede Blaabjerg, Aalborg University, Denmark
Marco Liserre, Polytechnic of Bari, Italy
Pedro Rodriguez, Technical University of Catalonia, Spain

IAS25p5 Design of an Impulse Commutation Bridge for the Solid-State Transfer Switch
Po-Tai Cheng, National Tsing Hua University, Taiwan
Yu-Hsing Chen, National Tsing Hua University, Taiwan

IAS25p6 Design and Implementation of a Utility Interactive Converter for Small Distributed Generation
Ruben Barros Godoy, Federal University of Mato Grosso do Sul, Brazil
Helder Zandonadi Maia, Federal University of Mato Grosso do Sul, Brazil
Faete Jacques Teixeira Filho, Federal University of Mato Grosso do Sul, Brazil
Luigi Galotto Júnior, Federal University of Mato Grosso do Sul, Brazil
João Onofre Pereira Pinto, Federal University of Mato Grosso do Sul, Brazil
Gilberto Shimada Tatibana, Federal University of Mato Grosso do Sul, Brazil

IAS25p7 An ETO Thyristor and Modular H-Bridge PWM Converter-based 4.5 MVA STATCOM: 480 V/500 A Transformerless Grid-Connected Experimentation
Chong Han, North Carolina State University, USA
Bin Chen, North Carolina State University, USA
Karan Tewari, North Carolina State University, USA
Wei Liu, North Carolina State University, USA
Alex Q. Huang, North Carolina State University, USA
Mike Ingram, Tennessee Valley Authority, USA
Abdel-Aty Edris, Electric Power Research Institute, USA
Stanley Atcitty, Sandia National Laboratories, USA

INDUSTRIAL AUTOMATION AND CONTROL COMMITTEE

Tuesday, 10 October • 8:00 AM – 12:00 PM • Salon II
Session 26—Advanced Controls

Session Chair: D. Kankam, NASA Glenn Research Center, USA
Session Organizer: M. N. Uddin, Lakehead University, Canada

IAS26p1 AC Voltage Regulation of a Bidirectional High-Frequency Link Converter Using a Deadbeat Controller
L. S. Toh, Universiti Teknologi Malaysia, Malaysia
M. Z. Ramli, Universiti Teknologi Malaysia, Malaysia
Z. Salam, Universiti Teknologi Malaysia, Malaysia
Malik E. Elbuluk, University of Akron, USA

IAS26p2 Study on Grid Connected Inverter Used in High Power Wind Generation System
Qiang Zhang, Hefei University of Technology, China
Lewei Qian, Florida State University, USA
Chongwei Zhang, Hefei University of Technology, China
David Cartes, Florida State University, USA

IAS26p3 Bayesian Network Supervision on Fault Tolerant Fuel Cells
Luis A.M. Riascos, University of Sao Paulo, Brazil
Fábio G. Cozman, University of Sao Paulo, Brazil
Paulo E. Miyagi, University of Sao Paulo, Brazil
Marcelo G. Simões, Colorado School of Mines, USA

IAS26p4 An Improved Adaptive Detection Method for Power Quality Improvement
Lewei Qian, Florida State University, USA
David Cartes, Florida State University, USA
Hui Li, Florida State University, USA

IAS26p5 Real-Time Implementation of a STATCOM on a Wind Farm Equipped with Doubly-fed Induction Generators
Wei Qiao, Georgia Institute of Technology, USA
Ganesh K. Venayagamoorthy, University of Missouri–Rolla, USA
Ronald G. Harley, Georgia Institute of Technology, USA

PRODUCTION AND APPLICATION OF LIGHT COMMITTEE

Tuesday, 10 October • 8:00 AM – 12:00 PM • Meeting Room 7
Session 27—Ballasts for HID Lamps #1

Session Chair: Walter Kaiser, Escola Polite?cnica da Universidade de Sa?o Paulo, Bresil
Session Organizer: Georges Zissis, University Toulouse 3, France

IAS27p1 Electronic Ballast to Supply HID Lamps Based on Differential Connection of Two DC–DC Converters
Murilo Cervi, Federal University of Santa Maria, Brazil
Tiago Bandeira Marchesan, Federal University of Santa Maria, Brazil
Alexandre Campos, Federal University of Santa Maria, Brazil
Ricardo Nederson do Prado, Federal University of Santa Maria, Brazil

IAS27p2 An Improved Dimmable Electronic Ballast with T-type Resonant Inverter at Very High Frequency
Weixia Liang, Zhejiang University, China
Min Chen, Zhejiang University, China
Conglei Shao, Zhejiang University, China
Yifeng Jiang, Zhejiang University, China
Zhaoming Qian, Zhejiang University, China

IAS27p3 Dimming Characteristics of Large Scale, High-Intensity-Discharge (HID) Lamp Lighting Networks using a Central, Energy Saving System
Wei Yan, City University of Hong Kong, China
S. Y. R. Hui, City University of Hong Kong, China

IAS27p4 A Constant Power Control Strategy of Electronic Ballast for HID Lamp
Jianbing Xu, Zhejiang University, China
Min Chen, Zhejiang University, China
Ting Zhang, Zhejiang University, China
Zhaoming Qian, Zhejiang University, China

IAS27p5 Power Control Strategy of Electronic Ballast for HID Lamps
Min Chen, Zhejiang University, China
Jianbing Xu, Zhejiang University, China
Weixia Liang, Zhejiang University, China
Zhaoming Qian, Zhejiang University, China

IAS27p6 A Family of Electronic Ballasts Integrating Power Factor Correction and Power Control Stages to Supply HPS Lamps
Tiago Bandeira Marchesan, Universidade Federal de Santa Maria, Brazil
Murilo Cervi, Universidade Federal de Santa Maria, Brazil
Alexandre Campos, Universidade Federal de Santa Maria, Brazil
Ricardo Nederson do Prado, Universidade Federal de Santa Maria, Brazil

IAS27p7 Investigation of the Series Inductance Value of Step-Up Transformers for HID Lamps Igniters
J. Garcia, University of Oviedo, Spain
J. Cardesin, University of Oviedo, Spain
J. A. Martin, University of Oviedo, Spain
M. Dalla-Costa, University of Oviedo, Spain
J. M. Lopera, University of Oviedo, Spain

ENERGY SYSTEMS COMMITTEE

Tuesday, 10 October • 8:00 AM – 12:00 PM • Salon III
Session 28—Energy System I

Session Chair and Organizer: Wei-Jen Lee, University of Texas at Arlington, USA

IAS28p1 Comparison of Two Optimal Control Strategies for a Grid Independent Photovoltaic System
Richard L. Welch, University of Missouri–Rolla, USA
Ganesh K. Venayagamoorthy, University of Missouri–Rolla, USA

IAS28p2 Intelligent Integration of a Wind Farm to an Utility Power Network with Improved Voltage Stability
Vamsi K. Polisetty, University of Missouri–Rolla, USA
Sandhya R. Jetti, University of Missouri–Rolla, USA
Ganesh K. Venayagamoorthy, University of Missouri–Rolla, USA
Ronald G. Harley, Georgia Institute of Technology, USA

IAS28p3 Modeling and Passivity-based Control of Hybrid Sources: Fuel Cell and Supercapacitors
M. Becherif, UTBM, France
M. Y. Ayad, UTBM, France
A. Miraoui, UTBM, France

IAS28p4 Impact Study on Intentional Islanding of Distributed Generation Connected to Radial Subtransmission System in Thailand's Electric Power System
Pradit Fuangfoo, Provincial Electricity Authority, Thailand
Wei-Jen Lee, University of Texas at Arlington, USA
Ming-Tse Kuo, University of Texas at Arlington, USA

IAS28p5 Control and Design of DC-Grids for Offshore Wind Farms
Christoph Meyer, RWTH Aachen University, Germany
Markus Höing, RWTH Aachen University, Germany
Anders Peterson, RWTH Aachen University, Germany
Rik W. De Doncker, RWTH Aachen University, Germany

POWER ELECTRONICS DEVICES & COMPONENTS COMMITTEE

Tuesday, 10 October • 8:00 AM – 12:00 PM • Salon VI
Session 29—Advancements & Innovations in Power Device Components - Products & Services Presentations

Session Chair: Richard F. Schmerda, DRS Power and Control Technologies, Inc., USA
Session Organizer: Richard Lukaszewski, Rockwell Automation, USA

Thermal Design with New Chip Technology IGBT4 and EmCon4
Michael Hornkamp, Infineon Technologies Industrial Power, Inc., Germany

Latest Advances in Transfer Molded Package Technology
John Donlon, Powerex, Inc., USA
Eric Motto, Powerex, Inc., USA

Investigations of New Structure for High Temperature IGBT Module
Eiji Mochizuki, Fuji Electric Device Technology
Masafumi Horio, Fuji Electric Device Technology
Rikihiro Maruyama, Fuji Electric Device Technology
Tatsuo Nishizawa, Fuji Electric Device Technology
Y. Takahashi, Fuji Electric Device Technology

Investigations of all Lead Free IGBT Module Structure with Low Thermal Resistance and High Reliability
Eiji Mochizuki, Fuji Electric Device Technology
Yoshitaka Nishimura, Fuji Electric Device Technology
A. Morozumumi, Fuji Electric Device Technology
Y. Takahashi, Fuji Electric Device Technology

Large Area 1200V Silicon Carbide Schottky Diodes
David Hinchley, Semelab PLC, UK
Roger Bassett, AREVA T&D Technology Centre

TUESDAY AFTERNOON SESSIONS

ELECTRIC MACHINES COMMITTEE

Tuesday, 10 October • 2:00 PM – 6:00 PM • Salon IV
Session 30—Reluctance Machines

Session Chair: Roy McCann, University of Arkansas, USA
Session Organizer: Avoki Omekanda, Delphi, USA

IAS30p1 Two-Phase SRM with Flux Reversal Free Stator: Concept, Analysis, Design and Experimental Verification
Seok-Gyu Oh, Jinju National University, Korea
R. Krishnan, Virginia Polytechnic Institute and State University, USA

IAS30p2 Effectiveness of Noise Reducing Measures in Switched Reluctance Drives
Jens O. Fiedler, RWTH Aachen University, Germany
Knut A. Kasper, RWTH Aachen University, Germany
Felipe Chaparro, RWTH Aachen University, Germany
Rik W. De Doncker, RWTH Aachen University, Germany

IAS30p3 Radial Force Control of a Switched Reluctance Motor with Two-Phase Sinusoidal Excitations
Feng-Chieh Lin, Tamkang University, Taiwan
Sheng-Ming Yang, Tamkang University, Taiwan

IAS30p4 New Approach to Power Equation for Comparison of Doubly Salient Electrical Machines
Jianzhong Zhang, Southeast University, China
Ming Cheng, Southeast University, China
Wei Hua, Southeast University, China
Xiaoyong Zhu, Southeast University, China

IAS30p5 Torque Performance of Optimally Designed Six-Phase Reluctance DC Machine
Edward T. Rakgati, University of Stellenbosch, South Africa
Maarteen J. Kamper, University of Stellenbosch, South Africa
Abraham D. Le Roux, University of Stellenbosch, South Africa

IAS30p6 Rotor Flux–Barrier Design for Torque Ripple Reduction in Synchronous Reluctance Motors
Nicola Bianchi, University of Padova, Italy
Silverio Bolognani, University of Padova, Italy
Diego Bon, University of Padova, Italy
Michele Dai Pré, University of Padova, Italy

IAS30p7 Constrained Optimization of High Power Synchronous Reluctance Motor Using Non-Linear Reluctance Network Modeling
T. Raminosoa, Institutnational polytechnique de Lorraine-Nancy, France
I. Rasoanarivo, Institutnational polytechnique de Lorraine-Nancy, France
F-M. Sargos, Institut national polytechnique de Lorraine-Nancy, France
R. N. Andriamalala, Institut national polytechnique de Lorraine-Nancy, France

APPLICATION INDUSTRY COMMITTEE

Tuesday, 10 October • 2:00 PM – 6:00 PM • Salon V
Session 31—Energy Conversion Components and Devices

Session Chair: Dengming Peng, Whirlpool Corporation, USA
Session Organizer: Zheng Zhang, Whirlpool Corporation, USA

IAS31p1 Software-based Separation of Conductive EMI Signals
Po-Shen Chen, National Taipei University of Technology, Taiwan
Yen-Shin Lai, National Taipei University of Technology, Taiwan

IAS31p2 Modelling and pPerformance Analysis of a Wind/Diesel Hybrid Power System
Atul S. Kini, National Institute of Technology Karnataka, India
R. Y. Udaykumar, National Institute of Technology Karnataka, India

IAS31p3 Latest Progress in Power Modules for Appliance Inverter Applications
E. Motto, Powerex Incorporated, USA
J. Donlon, Powerex Incorporated, USA
Shinya Shirakawa, Mitsubishi Electric Corporation, Japan
Toru Iwagami, Mitsubishi Electric Corporation, Japan
Hisashi Kawafuji, Mitsubishi Electric Corporation, Japan
Mamoru Seo, Mitsubishi Electric Corporation, Japan
Katsumi Satou, Mitsubishi Electric Corporation, Japan

IAS31p4 New Motion Control Architecture Simplifies Washing Machine Motor Control System Development
Aengus Murray, International Rectifier, USA
Eddy Ho, International Rectifier, USA

INDUSTRIAL DRIVES COMMITTEE
Tuesday, 10 October • 2:00 PM – 6:00 PM • Meeting Room 6
Session 32—Traction Drives

Session Chair: Hamid Toliyat, University of Texas A&M, USA
Session Organizer: M.F. Rahman, University of New South Wales, Australia

IAS32p1 Wound Rotor Salient Pole Synchronous Machine Drive for Electric Traction
Claudio Rossi, University of Bologna, Italy
Domenico Casadei, University of Bologna, Italy
Alessio Pilati, University of Bologna, Italy
Matteo Marano, University of Bologna, Italy

IAS32p2 Sensorless Power Control for Induction Motor Drives Fed by a Matrix Converter
Kyo-Beum Lee, Chonbuk National University, Korea
Frede Blaabjerg, Aalborg University, Denmark

IAS32p3 Experimental Study on a PEMFC-fed Railway Vehicle Motor Drive System
Takemasa Furuya, Railway Technical Research Institute, Japan
Keiichiro Kondo, Railway Technical Research Institute, Japan
Takamitsu Yamamoto, Railway Technical Research Institute, Japan

IAS32p4 Field-oriented Control of Dual Three-Phase Induction Motor Drives using a Luenberger Flux Observer
R. Bojoi, Politecnico di Torino, Italy
G. Griva, Politecnico di Torino, Italy
F. Profumo, Politecnico di Torino, Italy

IAS32p5 A Sliding Mode Flux Observer for Direct Torque Controlled Integrated Starter/Alternator
Jun Zhang, The University of New South Wales, Australia
M. Faz Rahman, The University of New South Wales, Australia

IAS32p6 Stator Flux Trajectory Tracking Control for High-Performance Drives
Nikolaos Oikonomou, University of Wuppertal, Germany
Joachim Holtz, University of Wuppertal, Germany

IAS32p7 Optimal Power and Torque Control of a Brushless DC (BLDC) Motor/Generator Drive in Electric and Hybrid Electric Vehicles
Taehyung Kim, University of Michigan–Dearborn, USA
Hyung-Woo Lee, Korea Railroad Research Institute, Korea
Leila Parsa, Rensselaer Polytechnic Institute, USA
Mehrdad Ehsani, Texas A&M University, USA

MINING INDUSTRY COMMITTEE

Tuesday, 10 October • 2:00 PM – 6:00 PM • Salon I
Session 33—High-Power Rectifiers and Drives

Session Chair and Organizer: John Sammarco, National Institute for Occupational Health and Safety, USA

IAS33p1 Multi-Cell High-Current Rectifier
Eduardo P. Wiechmann, University of Concepcion, Chile
Pablo E. Aqueveque, University of Concepcion, Chile
Aníbal S. Morales, University of Concepcion, Chile
Pablo F. Acuña, University of Concepcion, Chile
Rolando P. Burgos, Virginia Polytechnic Institute and State University, USA

IAS33p2 On the Efficiency and Reliability of High-Current Rectifiers
Pablo E. Aqueveque, University of Concepcion, Chile
Eduardo P. Wiechmann, University of Concepcion, Chile
Rolando P. Burgos, Virginia Polytechnic Institute and State University, USA

IAS33p3 Resonance Mitigation and Dynamical Behavior of Systems with Harmonic Filters for Improving Reliability in Mining Plants
J. Pontt, Technical University Federico Santa Maria, Chile
J. Rodriguez, Technical University Federico Santa Maria, Chile
J. San Martin, Technical University Federico Santa Maria, Chile
R. Aguilera, Technical University Federico Santa Maria, Chile
R. Bernal, Technical University Federico Santa Maria, Chile
P. Newman, Technical University Federico Santa Maria, Chile

IAS33p4 Integrated Monitoring and Control of Cycloconverter Drive System for Fault Diagnosis and Predictive Maintenance
J. Pontt, Technical University Federico Santa Maria, Chile
José Rodríguez, Technical University Federico Santa Maria, Chile
Erardo Cáceres, Technical University Federico Santa Maria, Chile
Ian Illanes, Technical University Federico Santa Maria, Chile

IAS33p5 A New All AC Gearless Drive System for Large Mining Draglines
Walter Koellner, Siemens Energy & Automation Inc., USA

INDUSTRIAL POWER CONVERTER COMMITTEE

Tuesday, 10 October • 2:00 PM – 6:00 PM • Meeting Room 4
Session 34— Industrial Power Converter Products and Services Presentations

Session Chair and Organizer: Leon Tolbert, University of Tennessee – Knoxville, USA

Power Electronic Converters for Renewable Energy Applications
Ray Hudson, Xantrex Technology Inc., USA

Wind Power Technology and grid connection
Morten Lindholm, Vesta Wind System, Denmark

Power Conversion for Renewable Energy and Oil & Gas
Richard Zhang, GE Global Research Center, USA

High Power Density IGBT and IGCT Technology for Drives and Frequency Converters
Oscar Apeldoorn, ABB Switzerland LTD, Switzerland

DC-DC Converter for Fuel Cell and Hybrid Vehicle
Lizhi Zhu, Ballard Power Systems, USA

Integrated Power Modules Simplify System Designs
John Mookken, Affiliation not cited

Application of high-current, high-junction-temperature SiC field effect transistors in traction motor drives
Mike Mazzola, SemiSouth Laboratories Inc., USA

POWER SYSTEM ENGINEERING COMMITTEE

Tuesday, 10 October • 2:00 PM – 6:00 PM • Meeting Room 5
Session 8—Power Systems Reliability/Power Systems Design

Session Chair: Bill Braun, Owens Corning, USA
Session Organizer: Jim Harvey, University of Michigan Hospitals, USA

IAS08p1 What Five 9's Really Means and Managing Expectations
Robert Arno, Alion Science and Technology, USA
Peter Gross, EYP Mission Critical Facilities, Inc., USA
Robert Schuerger, EYP Mission Critical Facilities, Inc., USA

IAS08p2 A Novel Fuzzy Logic Technique for Power Transformer Asset Management
M. Arshad, British Columbia Hydro, Canada
S. M. Islam, Curtin University of Technology, Australia

IAS08p3 Electrical Network Design Studies for Natural Gas Liquefaction Plants
R. C. Wilson, Mott MacDonald Transmission and Distribution-Scotland, UK
C. L. Dall, Mott MacDonald Transmission and Distribution-Scotland, UK
K. S. Smith, Mott MacDonald Transmission and Distribution-Scotland, UK

IAS08p4 Robust Optimization of Multilayer Conductors of HTS AC Cable Using PSO and Perturbation Analysis
Shuhong Wang, Xi'an Jiaotong University, China
Jie Qiu, Xi'an Jiaotong University, China
Zhen Zhao, Xi'an Jiaotong University, China
Xinying Liu, Xi'an Jiaotong University, China
Jian Guo Zhu, University of Technology, Australia
Youguang Guo, University of Technology, Australia
Zhi Wei Lin, University of Technology, Australia

IAS08p5 AC Impedance Measurement by Line-to-Line Injected Current
J. Huang, University of Missouri–Rolla, USA
K.A. Corzine, University of Missouri–Rolla, USA

IAS08p6 Development and Implementation of Delphi Corporation's Electrical Safe Work Practices (ESWP) Program
Andrew Hernandez, Delphi Corporation, USA
Mark Fridline, Delphi Corporation, USA

INDUSTRIAL AUTOMATION AND CONTROL COMMITTEE

Tuesday, 10 October • 2:00 PM – 6:00 PM • Salon II
Session 35—Industrial Controls

Session Chair and Organizer: G. Venayagamoorty, University of Missouri-Rolla, USA

IAS35p1 Fixed-Order H-infinity Decentralized Control with Model-based Feedforward for Elastic Web Winding Systems
Dominique Knittel, University of Strasbourg I, France
Marc Vedrines, Institute National des Sciences Appliquées de Strasbourg, France
Didier Henrion, LAAS-CNRS, France
Prabhakar Pagilla, Oklahoma State University, USA

IAS35p2 Proposal of the Stationary Discontinuous Armature Permanent Magnet Linear Synchronous Motor for Factory Automation Systems
Yong-Jae Kim, Musashi Institute of Technology, Japan
Masaya Watada, Musashi Institute of Technology, Japan
Hideo Dohmeki, Musashi Institute of Technology, Japan

IAS35p3 Development of an Automatic On-line Gap Detection Scheme for Levitated Industrial Steel Plate Conveyance System
Cheng-Tsung Liu, National Sun Yat-Sen University, Taiwan
Yung-Yi Yang, National Sun Yat-Sen University, Taiwan
Sheng-Yang Lin, China Steel Corporation, Taiwan

IAS35p4 Expert System -based Dynamic Load Shedding Scheme for Shipboard Power Systems
Zhiping Ding, Florida State University, USA
Sanjeev Srivastava, Florida State University, USA
Dave Cartes, Florida State University, USA

IAS35p5 Nonlinear Modified PI Control of Multi-Module GCSCs in a Large Power System
Swakshar Ray, University of Missouri–Rolla, USA
Ganesh K. Venayagamoorthy, University of Missouri–Rolla, USA

IAS35p6 An Improved Stochastic Load Model for Industrial Power Market
N. S. Sisworahardjo, University of South Alabama, USA
M. S. Alam, University of South Alabama, USA
A. A. El-Keib, The Petroleum Institute, United Arab Emirates

IAS35p7 dSPACE DSP-based Rapid Prototyping of Fuzzy PID Controls for High Performance Brushless Servo Drives
Ahmed Rubaai, Howard University, USA
Abdul Ofoli, Howard University, USA
Marcel Castro, Howard University, USA

PRODUCTION AND APPLICATION OF LIGHT COMMITTEE

Tuesday, 10 October • 2:00 PM – 6:00 PM • Meeting Room 7
Session 36—Ballasts for HID Lamps #2

Session Chair: M. Rico-Secades, Universidad de Oviedo, Spain
Session Organizer: Georges Zissis, University Toulouse 3, France

IAS36p1 Influence of Mount Structure on Performance of Ceramic Metal Halide Lamps
Junming Tu, Philips Lighting Company, USA

IAS36p2 Investigations into LFSW Ballast-induced Instabilities in Ceramic Metal Halide Lamps
Ray G. Gibson, Philips Lighting Company, USA

IAS36p3 2.65 MHz Self-Oscillating Complementary Electronic Ballast with Constant-Lamp-current Control for Metal Halide Lamp
Ray-Lee Lin, National Cheng Kung University, Taiwan
Zhi-Qiang Wang, National Cheng Kung University, Taiwan
Yan-Der Lee, National Cheng Kung University, Taiwan

IAS36p4 Analysis, Design and Experimentation of a Closed Loop, Metal Halide Lamp Electronic Ballast
M. A. Dalla Costa, Universidad de Oviedo, Spain
J. M. Alonso, Universidad de Oviedo, Spain
J. García-García, Universidad de Oviedo, Spain
J. Cardesín, Universidad de Oviedo, Spain
J. Ribas, Universidad de Oviedo, Spain

IAS36p5 Physics-based MATLAB Model for Ceramic Metal Halide Lamps
D. H. J. van Casteren, Technical University of Eindhoven, The Netherlands
J. L. Duarte, Technical University of Eindhoven, The Netherlands
M. A. M. Hendrix, Technical University of Eindhoven, The Netherlands

IAS36p6 Investigation on HID Lamps Impedance Using Commercial Lamps
R. Ruscassié, Université Montpellier II, France
C. Glaize, Université Montpellier II, France
G. Zissis, Université Toulouse III, France

ENERGY SYSTEMS COMMITTEE

Tuesday, 10 October • 2:00 PM – 6:00 PM • Salon III
Session 37—Energy System II

Session Chair and Organizer: Wei-Jen Lee, University of Texas at Arlington, USA

IAS37p1 Economic Evaluation of a Distribution Automation Project
Chun-Lien Su, National Kaohsiung Marine University, Taiwan
Jen-Ho Teng, I-Shou University, Taiwan

IAS37p2 Ocean Wave Energy Conversion—A Survey
A. Muetze, University of Wisconsin–Madison, USA
J. G. Vining, University of Wisconsin–Madison, USA

IAS37p3 On-Line Dynamic Cable Rating System for an Industrial Power Plant in the Restructured Electric Market
Shun-Hsien Huang, Energy Systems Research Center, USA
Wei-Jen Lee, Energy Systems Research Center, USA
Ming-Tse Kuo, Energy Systems Research Center, USA

IAS37p4 Estimation of Electric Load Composition on a Utility Side
Soon Lee, Yonsei University, Korea
Jung-Wook Park, Yonsei University, Korea

IAS37p5 The Optimal LC Compensator Corresponding to Maximum Annual Reduction in the Source Losses
Ahmed Faheem Zobaa, Cairo University, Egypt
Wei-Jen Lee, University of Texas at Arlington, USA

POWER ELECTRONICS DEVICES & COMPONENTS COMMITTEE

Tuesday, 10 October • 2:00 PM – 6:00 PM • Salon VI
Session 38—Semiconductor Modeling

Session Chair: Enrico Santi, University of South Carolina, USA
Session Organizer: Alper Akdag, ABB Semiconductors Inc., Switzerland

IAS38p1 Power MOSFET Switching Loss Analysis: A New Insight
Z. John Shen, University of Central Florida, USA
Yali Xiong, University of Central Florida, USA
Xu Cheng, University of Central Florida, USA
Yue Fu, University of Central Florida, USA
Pavan Kumar, Intel Corporation, USA

IAS38p2 Modeling and Simulation of Low-Voltage MOSFETs Accounting for the Effect of the Gate Parasitic-RC Distribution
F. Chimento, University of Catania, Italy
S. Musumeci, University of Catania, Italy
F. Privitera, University of Catania, Italy
A. Raciti, University of Catania, Italy
F. Frisina, STMicroelectronics, Italy
A. Magrì, STMicroelectronics, Italy
M. Melito, STMicroelectronics, Italy

IAS38p3 Physical Modeling and Parameter Extraction Procedure for p-i-n Diodes with Lifetime Control
L. Lu, University of South Carolina, USA
A. Bryant, University of Warwick, UK
E. Santi, University of South Carolina, USA
J. L. Hudgins, University of Nebraska, USA
P. R. Palmer, Cambridge University, UK

IAS38p4 Physics-based Model of IGBT Including MOS Side Two-Dimensional Effects
L. Lu, University of South Carolina, USA
A. Bryant, University of Warwick, UK
E. Santi, University of South Carolina, USA
J. L. Hudgins, University of Nebraska, USA
P. R. Palmer, Cambridge University, UK

IAS38p5 Exploration of Power Device Reliability using Compact Device Models and Fast Electro-Thermal Simulation
A. Bryant, University of Warwick, UK
P. A. Mawby, University of Warwick, UK
P. R. Palmer, Cambridge University, UK
E. Santi, University of South Carolina, USA
J. L. Hudgins, University of Nebraska, USA

IAS38p6 SOA in High Power Semiconductors
Alper Akdag, ABB Switzerland Ltd., Switzerland

WEDNESDAY MORNING SESSIONS

ELECTRIC MACHINES COMMITTEE

Wednesday, 11 October • 8:00 AM – 12:00 PM • Salon IV
Session 39—Permanent Magnet Motors I

Session Chair: Z. Q. Zhu, University of Sheffield, UK
Session Organizer: Roy McCann, University of Arkansas, USA

IAS39p1 Embedded Finite-Element Solver for Computation of Permanent-Magnet Brushless Motors
T. J. E Miller, The University of Glasgow, UK
M. Popescu, The University of Glasgow, UK
C. Cossar, The University of Glasgow, UK
M. I. McGilp, The University of Glasgow, UK
M. Olaru, The University of Glasgow, UK
A. J. Davies, Areva T&D Technology Centre, UK
J. P. Sturgess, Areva T&D Technology Centre, UK
A. M. Sitzia, Areva T&D Technology Centre, UK

IAS39p2 Impact of Winding Layer Number and Magnet Type on Synchronous Surface PM Machines Designed for Wide Constant-Power Speed Range Operation
Ayman M. EL-Refaie, GE Global Research Center, USA
Thomas M. Jahns, University of Wisconsin–Madison, USA

IAS39p3 Design Considerations for Permanent Magnet Brushless Machines for Zero-Speed Sensorless Position Estimation
R. Wrobel, University of Bristol, UK
A. S. Budden, University of Bristol, UK
D. Holliday, University of Bristol, UK
P. H. Mellor, University of Bristol, UK
P. Sangha, Goodrich Corporation, UK

IAS39p4 Vibration Characteristics of Modular Permanent Magnet Brushless AC Machines
Jiabin Wang, University of Sheffield, UK
Zhen P. Xia, University of Sheffield, UK
David Howe, University of Sheffield, UK
Stephen A. Long, Rolls-Royce plc, UK

IAS39p5 Analytical and Experimental Investigation of a Low Torque, Ultra-High Speed Drive System
C. Zwyssig, ETH Zurich, Switzerland
S. D. Round, ETH Zurich, Switzerland
J. W. Kolar, ETH Zurich, Switzerland

IAS39p6 Investigation of Proximity Losses in a High Speed Brushless Permanent Magnet Motor
Phil H. Mellor, University of Bristol, UK
Rafal Wrobel, University of Bristol, UK
Neville McNeill, University of Bristol, UK

ELECTRIC MACHINES COMMITTEE

Wednesday, 11 October
8:00 AM – 12:00 PM
Salon V
Session 40—Faults and Diagnostics II

Session Chair: Uday Deshpande, Dewalt, USA
Session Organizer: Ronghai Qu, GE CRD, USA

IAS40p1 Analysis of Stator Winding Inter-Turn Short-Circuit Faults in Induction Machines for Identification of the Faulty Phase
Ahmed Sayed-Ahmed, Marquette University, USA
Chia-Chou Yeh, Marquette University, USA
Nabeel A. O. Demerdash, Marquette University, USA
Behrooz Mirafzal, Rockwell Automation, USA

IAS40p2 Diagnostic Technique Based on Rotor Modulating Signals Signature Analysis for Doubly-fed Induction Machines in Wind Generator Systems
Domenico Casadei, University of Bologna, Italy
Fiorenzo Filippetti, University of Bologna, Italy
Claudio Rossi, University of Bologna, Italy
Andrea Stefani, University of Bologna, Italy
Amine Yazidi, University of Picardie "Jules Verne", France
Gerard Andre Capolino, University of Picardie "Jules Verne", France

IAS40p3 A Nonintrusive and In-Service Motor Efficiency Estimation Method using Air-Gap Torque with Considerations of Condition Monitoring
Bin Lu, Georgia Institute of Technology, USA
Thomas G. Habetler, Georgia Institute of Technology, USA
Ronald G. Harley, Georgia Institute of Technology, USA

IAS40p4 New Rotor Fault Indicators for Squirrel Cage Induction Motors
Claudio Bruzzese, University of Rome "La Sapienza", Italy
Onorato Honorati, University of Rome "La Sapienza", Italy
Ezio Santini, University of Rome "La Sapienza", Italy
Donato Sciunnache, University of Rome "La Sapienza", Italy

IAS40p5 Distinguishing Load Torque Oscillations and Eccentricity Faults in Induction Motors Using Stator Current Wigner Distributions
Martin Blödt, ENSEEIHT, France
Jérémi Regnier, ENSEEIHT, France
Jean Faucher, ENSEEIHT, France

IAS40p6 Application of Real-Time Rotor Current Measurements Using Bluetooth Wireless Technology in Study of the Brushless Doubly-fed Induction) Machine (BDFM)
Ehsan Abdi-Jalebi, University of Cambridge, UK
Richard McMahon, University of Cambridge, UK

IAS40p7 An Advanced Stator Winding Insulation Quality Assessment Technique for Inverter-fed Machines
Jinkyu Yang, Korea University, Korea
Jintae Cho, Korea University, Korea
Sang Bin Lee, Korea University, Korea
Jiyoon Yoo, Korea University, Korea

INDUSTRIAL DRIVES COMMITTEE

Wednesday, 11 October • 8:00 AM – 12:00 PM • Meeting Room 6
Session 41—Automotive Applications—Drives & Systems

Session Chair and Organizer: Tomy Sebastian, Delphi Corporation, USA

IAS41p1 Switched Reluctance and Permanent Magnet Brushless Motors in Highly Dynamic Situations: A Comparison in the Context of Electric Brakes
Avoki M. Omekanda, Delphi Corporation, USA
Bruno Lequesne, Delphi Corporation, USA
Harald Klode, Delphi Corporation, USA
Suresh Gopalakrishnan, General Motors, USA
Iqbal Husain, University of Akron, USA

IAS41p2 A Prognostic and Warning System for Power Electronic Modules in Electric, Hybrid, and Fuel Cell Vehicles
Y. Xiong, University of Central Florida, USA
X. Cheng, University of Central Florida, USA
Z. J. Shen, University of Central Florida, USA
C. Mi, University of Michigan–Dearborn, USA
H. Wu, University of Michigan–Dearborn, USA
V. Garg, Ford Motor Company, USA

IAS41p3 Control Design of an Induction Machine-based Integrated Starter Alternator for 42 V PowerNet
C. P. Mudannayake, The University of New South Wales, Australia
M. F. Rahman, The University of New South Wales, Australia

IAS41p4 Evaluation of SOFC Hybrid Systems for Automotive Propulsion Applications
Kaushik Rajashekara, Rolls-Royce Corporation, USA
John A. MacBain, Delphi Corporation, USA
M. James Grieve, Delphi Corporation, USA

IAS41p5 Methods to Control Wheel Locks and Wheel Spins for Electric Vehicles with the Structure Having Independently Driven Front and Rear Wheels
Nobuyoshi Mutoh, Tokyo Metropolitan University, Japan
Hiromichi Yahagi, Tokyo Metropolitan University, Japan

IAS41p6 Control of Two Permanent Magnet Machines Using Five-Leg Inverter for Automotive Applications
Gui-Jia Su, Oak Ridge National Laboratory, USA
Lixin Tang, Oak Ridge Associated Universities, USA
Xianghui Huang, GE Global Research, USA

IAS41p7 Temperature Supervision of an Integrated Starter Generator
Christophe Forgez, Université de Technologie de Compiegne, France
Emmanuel Foulon, Ecole Polytechnique de l'Université de Nantes, France
Luc Loron, Ecole Polytechnique de l'Université de Nantes, France
Sokha Ly, Valeo Electrical Systems, France
Cedric Plasse, Valeo Electrical Systems, France

INDUSTRIAL DRIVES COMMITTEE

Wednesday, 11 October • 8:00 AM – 12:00 PM • Salon I
Session 42—PM Machine Drives II

Session Chair: M. F. Rahman, The University of New South Wales, Australia
Session Organizer: Leila Parsa, Renesselaer Polytechnic Institute, USA

IAS42p1 Implementation Issues and Performance Evaluation of Surface-Mounted PM Machine Drives with Hall-Effect Position Sensors and a Vector-Tracking Observer
M. C. Harke, University of Wisconsin–Madison, USA
G. De Donato, University of Rome "La Sapienza", Italy
F. Giulii Capponi, University of Rome "La Sapienza", Italy
T. R. Tesch, Ballard Power Systems, USA
R. D. Lorenz, University of Wisconsin–Madison, USA

IAS42p2 Assessment of Pulse-Width Modulation Techniques for Brushless DC Motor Drives
Yen-Shin Lai, National Taipei University of Technology, Taiwan
Yong-Kai Lin, National Taipei University of Technology, Taiwan

IAS42p3 Fault Tolerant Strategies for BLDC Motor Drives under Switch Faults
Byoung-Gun Park, Hanyang University, Korea
Tae-Sung Kim, Hanyang University, Korea
Ji-Su Ryu, Hanyang University, Korea
Dong-Seok Hyun, Hanyang University, Korea

IAS42p4 Commutation Torque Ripple Minimization in Direct Torque Controlled PM Brushless DC Drives
Y. Liu, University of Sheffield, UK
Z. Q. Zhu, University of Sheffield, UK
D. Howe, University of Sheffield, UK

IAS42p5 Design and Development of Brushless Variable Speed Motor Drive for Low Cost and High Efficiency
Keunsoo Ha, Virginia Polytechnic Institute and State University, USA
Cheewoo Lee, Virginia Polytechnic Institute and State University, USA
Jaehyuck Kim, Virginia Polytechnic Institute and State University, USA
R. Krishnan, Virginia Polytechnic Institute and State University, USA
Seok-Gyu Oh, Virginia Polytechnic Institute and State University, USA

IAS42p6 A New On-Line Torque Estimator for Brushless Permanent Magnet Motor Drives: Validation through the i-„ Diagram
Calum Cossar, The University of Glasgow, UK
T. J. E. Miller, The University of Glasgow, UK
Mircea Popescu, The University of Glasgow, UK
Malcolm McGilp, The University of Glasgow, UK
Mircea Olaru, The University of Glasgow, UK

INDUSTRIAL POWER CONVERTER COMMITTEE

Wednesday, 11 October • 8:00 AM – 12:00 PM • Meeting Room 4
Session 43—Inverters

Session Chair: Rik De Doncker, RWTH-Aachen, Germany
Session Organizer: Poh Chiang LOH, Nanyang Technological University, Singapore

IAS43p1 A New Single-Staged Bi-Directional High Frequency Link Inverter Design
Feng Tian, University of Central Florida, USA
Kasemsan Siri, University of Central Florida, USA
Issa Batarseh, University of Central Florida, USA

IAS43p2 Control of the Z-Source Inverter for Fuel Cell-Battery Hybrid Vehicles to Eliminate Undesirable Operation Modes
Miaosen Shen, Michigan State University, USA
Fang Z. Peng, Michigan State University, USA

IAS43p3 A Comparison of Redundant Inverter Topologies to Improve Voltage Source Inverter Reliability
Alexander L. Julian, Naval Postgraduate School, USA
Giovanna Oriti, Power Engineering Consultant, USA

IAS43p4 A New Three-Phase Inverter for UPS Application
Lihua Li, University of California–Irvine, USA
Keyue Smedley, University of California–Irvine, USA
Taotao Jin, University of California–Irvine, USA

IAS43p5 Voltage Control Method with High Order Compensation Loop for Micro-Energy PWM Inverter Supply Units
M. J. Kamper, University of Stellenbosch, South Africa
D. M. Jacobs, Sasol Limited, South Africa

IAS43p6 Behavior and Loss Modeling of a Three-Phase Resonant Pole Inverter Operating with 120? Double FlatTop Modulation
Klaus Rigbers, RWTH Aachen University, Germany
Stephan Thomas, RWTH Aachen University, Germany
Ulrich Böke, Philips Research Laboratories, Germany
Rik W. De Doncker, RWTH Aachen University, Germany

INDUSTRIAL POWER CONVERTER COMMITTEE

Wednesday, 11 October • 8:00 AM – 12:00 PM • Meeting Room 5
Session 44—Utility Interface and Power Quality II

Session Chair: Po-Tai Cheng, National Tsing Hua University, Taiwan
Session Organizer: Alexander L. Julian, Naval Postgraduate School, USA

IAS44p1 Investigating the Vulnerability of Slip Energy Recovery Converters to Voltage Dips
Simon Q. Davies, University of the Witwatersrand, South Africa
John M. Van Coller, University of the Witwatersrand, South Africa

IAS44p2 Improved Power Quality Control and Intelligent Protection for Grid Connected Power Electronic Converters, using Real Time Parameter Estimation
Mark Sumner, University of Nottingham, UK
Abdullah Abusorrah, University of Nottingham, UK
David Thomas, University of Nottingham, UK
Pericle Zanchetta, University of Nottingham, UK

IAS44p3 Control and Performance of a Medium-Voltage Transformerless Cascade PWM STATCOM with Star-Configuration
Tsurugi Yoshii, Tokyo Institute of Technology, Japan
Shigenori Inoue, Tokyo Institute of Technology, Japan
Hirofumi Akagi, Tokyo Institute of Technology, Japan

IAS44p4 Symmetry Compensation using a H-Bridge Multilevel STAT-COM with Zero Sequence Injection
R. E. Betz, University of Newcastle, Australia
T. Summers, University of Newcastle, Australia
T. Furney, University of Newcastle, Australia

IAS44p5 An Optimal Combination Modulation Strategy for a Seven-Level Cascade Multilevel Converter-based STATCOM
Yu Liu, North Carolina State University, USA
Zhong Du, North Carolina State University, USA
Alex Q. Huang, North Carolina State University, USA
Subhashish Bhattacharya, North Carolina State University, USA

IAS44p6 Field-oriented Control of Self-Exited Induction Generator for Distributed Cogeneration Plants
A. Bellini, University of Modena Reggio Emilia, Italy
G. Franceschini, University of Parma, Italy
E. Lorenzani, University of Parma, Italy
C. Tassoni, University of Parma, Italy
M. Tomaiuolo, University of Parma, Italy

INDUSTRIAL AUTOMATION AND CONTROL COMMITTEE

Wednesday, 11 October • 8:00 AM – 12:00 PM • Salon II
Session 45—Motion Control Systems

Session Chair and Organizer: A. Rubaai, Howard University, USA

IAS45p1 On-Line Parameter Estimation-based Speed Control of PM AC Motor Drive in Flux Weakening Region
M. Nasir Uddin, Lakehead University, Canada
Md. Muminul Islam Chy, Lakehead University, Canada

IAS45p2 Hybrid Stochastic and Neural Network Approach for Efficient FPGA Implementation of a Field-oriented Induction Motor Drive Controller
Da Zhang, Florida State University, USA
Hui Li, Florida State University, USA

IAS45p3 State Control of Servo Drives with Flexible Structural Components
Oliver Zirn, University of Applied Sciences Giessen, Germany
Ekkehard Batzies, University of Applied Sciences Giessen, Germany
Sascha Weikert, Swiss Federal Institute of Technology, Switzerland
Tobias Schöller, Rückle GmbH Werkzeugfabrik, Germany

IAS45p4 Implementation of Emotional Controller for Interior Permanent Magnet Synchronous Motor Drive
R. M. Milasi, University of Tehran, Iran
Caro Lucas, University of Tehran, Iran
B. N. Arrabi, University of Tehran, Iran
T. S. Radwan, Memorial University of Newfoundland, Canada
M. A. Rahman, Memorial University of Newfoundland, Canada

IAS45p5 New General MRAS Adaptive Scheme to Estimate Stator and Rotor Resistance of Induction Motors
Han Li, Chinese Academy of Science, PR China
Wen Xuhui, Chinese Academy of Science, PR China
Chen Guilan, Chinese Academy of Science, PR China

PRODUCTION AND APPLICATION OF LIGHT COMMITTEE

Wednesday, 11 October • 8:00 AM – 12:00 PM • Meeting Room 7
Session 46—Light Sources & Novel Concepts

Session Chair: Francis Dawson, University of Toronto, Canada
Session Organizer: Georges Zissis, University Toulouse 3, France

IAS46p1 Study the Buffer Gas for Microwave Sulfur Lamp
Yuming Chen, Fudan University, China
Dahua Chen, Fudan University, China

IAS46p2 Implementation of an Efficiency Indicator in an Electrical Modeling of a Dielectric Barrier Discharge Lamp
S. Bhosle, Université Toulouse III, France
G. Zissis, Université Toulouse III, France
J. J. Damelincourt, Université Toulouse III, France
A. Capdevila, Université Toulouse III, France
K. Gupta, University of Toronto, Canada
F. P. Dawson, University of Toronto, Canada
V. F. Tarasenko, High Current Electronics Institute, Russia

IAS46p3 Color Shift of Head Lamps for Automotive Lighting over Lifetime
M. Kettlitz, INP Greifswald, Germany
O. Krylova, INP Greifswald, Germany
D. Ehrlichmann, OSRAM, Germany
K. Günther, OSRAM, Germany
L. Vollmer, OSRAM, Germany

IAS46p4 Using Tapped-Inductor Converters as Led Drivers
M. Rico-Secades, Universidad de Oviedo, Spain
J. Garcia, Universidad de Oviedo, Spain
J. Cardesin, Universidad de Oviedo, Spain
A. J. Calleja, Universidad de Oviedo, Spain

IAS46p5 Characteristics of the Getter Materials Used in High Intensity Discharge Lamps
A. Corazza, SAES Getters S.p.A., Italy
S. Giorgi, SAES Getters S.p.A., Italy
C. Boffito, SAES Getters S.p.A., Italy
V. Massaro, SAES Getters S.p.A., Italy
D. Caccia, SAES Getters S.p.A., Italy

POWER SYSTEM PROTECTION COMMITTEE

Wednesday, 11 October • 8:00 AM – 12:00 PM • Salon III
Session 47—Power System Protection I

Session Chair and Organizer: Rasheek Rifaat, Jacobos Engineering-Calgary, Canada

IAS47p1 Effects of High Fault Currents on Ground Grid Design
Massimo Mitolo, Chu & Gassman, USA
Peter E. Sutherland, GE Energy Services, USA
R. Natarajan, Burns & McDonnell, USA

IAS47p2 Effects of Electrical Currents and Bonding Requirements in Buildings
Massimo Mitolo, Chu & Gassman, USA

IAS47p3 A Simplified Model of the Lightning Performance of a Driven Rod Earth Electrode in Multi-Layer Soil that Includes the Effect of the Soil Ionisation
Kenneth J. Nixon, University of the Witwatersrand, South Africa
Ian R. Jandrell, University of the Witwatersrand, South Africa
Andrew J. Phillips, Electric Power Research Institute, USA

IAS47p4 TN-Island Grounding System and the House of the Future
Giuseppe Parise, University of Rome "La Sapienza", Italy
Luigi Martirano, University of Rome "La Sapienza", Italy
Massimo Mitolo, Chu & Gassman, USA

IAS47p5 Analysis of Lightning Transients in a DC Traction Power System of Electrified Railway Using EMTP
Qi-Bin Zhou, The Hong Kong Polytechnic University, China
Y. Du, The Hong Kong Polytechnic University, China

IAS47p6 Transmission Line Frequency Impedance Characteristic and Its Influence in Transient Protection
Li Lei, Changsha University of Science and Technology, China
Xiangjun Zeng, Changsha University of Science and Technology, China
Jianhua Liu, Changsha University of Science and Technology, China
Zhengyi Liu, Changsha University of Science and Technology, China
Qian Lv, Changsha University of Science and Technology, China
Xiaoli Zhang, Changsha University of Science and Technology, China

POWER ELECTRONICS DEVICES & COMPONENTS COMMITTEE

Wednesday, 11 October • 8:00 AM – 12:00 PM • Salon VI
Session 48—Integration and Magnetics

Session Chair: Bill Dillard, Archangel Systems Inc., USA
Session Organizer: Charles R. Sullivan, Dartmouth Collge, USA

IAS48p1 Frequency Scaling Effects of Integrated Passive Components in High Frequency Power Conversion
Chucheng Xiao, Virginia Polytechnic Institute and State University, USA
W. G. Odendaal, Virginia Polytechnic Institute and State University, USA

IAS48p2 LCT Integration Optimization on a Printed Circuit Board Technology Platform
E. C. W. de Jong, Delft University of Technology, The Netherlands
J. A. Ferreira, Delft University of Technology, The Netherlands
P. Bauer, Delft University of Technology, The Netherlands

IAS48p3 Mixed Energy Transfer (MET) Innovative Structure Based on LCT and Comparison with Traditional Structures
Benjamin Vallet, Institut National Polytechnique de Grenoble, France
Yves Lembeye, Institut National Polytechnique de Grenoble, France
Jean Paul Ferrieux, Institut National Polytechnique de Grenoble, France

IAS48p4 Busbar Design: How to Spare Nanohenries ?
J. M. Guichon, Laboratoire d'Electrotechnique de Grenoble, France
J. Aimé, Laboratoire d'Electrotechnique de Grenoble, France
J. L. Schanen, Laboratoire d'Electrotechnique de Grenoble, France
C. Martin, Laboratoire d'Electrotechnique de Grenoble, France
J. Roudet, Laboratoire d'Electrotechnique de Grenoble, France
E. Clavel, Laboratoire d'Electrotechnique de Grenoble, France
M. Arpillière, STIE, France
R. Pasterczyk, MGE UPS SYSTEM, France
Y. Le Floch, CEDRAT, France

IAS48p5 Comparison of Loss in Single-Layer and Multi-Layer Windings with a DC Current Component
Magdalena E. Dale, Dartmouth College, USA
Charles R. Sullivan, Dartmouth College, USA

IAS48p6 Design of an Inductive Contactless Power System for Multiple Users
Fredrik F. A. Van der Pijl, Technical University of Delft, The Netherlands
Jan A. Ferreira, Technical University of Delft, The Netherlands
Pavol Bauer, Technical University of Delft, The Netherlands
Henk Polinder, Technical University of Delft, The Netherlands

IAS48p7 Effect of Geometry Variation of LTCC-Distributed Air-Gap Filter Inductor on Light Load Efficiency of DC–DC Converters
Michele H. Lim, Virginia Polytechnic Institute and State University, USA
J. D. van Wyk, Virginia Polytechnic Institute and State University, USA
Zhenxian Liang, Virginia Polytechnic Institute and State University, USA

WEDNESDAY AFTERNOON SESSIONS

ELECTRIC MACHINES COMMITTEE

Wednesday, 11 October • 2:00 PM – 6:00 PM • Salon IV
Session 49—PM Design Optimization

Session Chair and Organizer: Yves Perriard, Swiss Federal Institute of Technology, Switzerland

IAS49p1 Particle Swarm Optimisation for the Design of Brushless Permanent Magnet Machines
Rafal Wrobel, University of Bristol, UK
Phil H. Mellor, University of Bristol, UK

IAS49p2 Brushless DC Motor Optimization Process—Choice between Standard or Straight Tooth Shape
Yves Perriard, Ecole Polytechnique Fédérale de Lausanne, France
Patrick Ragot, Ecole Polytechnique Fédérale de Lausanne, France
Miroslav Markovic, Ecole Polytechnique Fédérale de Lausanne, France

IAS49p3 Permanent Magnet Machine Design Practice and Optimization
Wen Ouyang, University of Wisconsin–Madison, USA
Damir Zarko, University of Zagreb, Croatia
T. A. Lipo, University of Wisconsin–Madison, USA

IAS49p4 Design and Optimization of a Nine-Phase Axial-Flux PM Synchronous Generator with Concentrated Winding for Direct-Drive Wind Turbine
Darius Vizireanu, Ecole Centrale de Lille, France
Stéphane Brisset, Ecole Centrale de Lille, France
Pascal Brochet, Ecole Centrale de Lille, France

IAS49p5 Electromagnetic and Thermal Design of a Linear Actuator Using Output Polynomial Mapping
L. Encica, Eindhoven University of Technology, The Netherlands
J. J. H. Paulides, Eindhoven University of Technology, The Netherlands
E. A. Lomonova, Eindhoven University of Technology, The Netherlands
A. J. A. Vandenput, Eindhoven University of Technology, The Netherlands

IAS49p6 Optimal Design for Noise Reduction in Interior Permanent Magnet Motor
Sang-Ho Lee, Changwon National University, Korea
Jung-Pyo Hong, Changwon National University, Korea
Woo-Taik Lee, Changwon National University, Korea
Sang-Moon Hwang, Pusan National University, Korea
Ji-Young Lee, Korea Electrotechnology Research Institute, Korea
Young-Kyoun Kim, Samsung Electronics Co., Ltd., Korea

IAS49p7 Optimization Technique for Improving Torque Performance of Concentrated Winding Interior PM Synchronous Motor with Wide Speed Range
Sung-Il Kim, Changwon National University, Korea
Ji-Hyung Bhan, Changwon National University, Korea
Jung-Pyo Hong, Changwon National University, Korea
Ki-Chae Lim, Dongsung Electric Machine Co., Ltd., Korea

ELECTRIC MACHINES COMMITTEE

Wednesday, 11 October • 2:00 PM – 6:00 PM • Salon V
Session 50—Interior Permanent Magnet Motors

Session Chair: Thomas Jahns, University of Wisconsin, USA
Session Organizer: Nicola Bianchi, University of Padova, Italy

IAS50p1 Design and Experimental Verification of a 50 kW Interior Permanent Magnet Synchronous Machine
Thomas M. Jahns, University of Wisconsin–Madison, USA
Seok-Hee Han, University of Wisconsin–Madison, USA
Ayman M. EL-Refaie, University of Wisconsin–Madison, USA
Jei-Hoon Baek, University of Wisconsin–Madison, USA
Metin Aydin, Caterpillar Inc., USA
Mustafa K. Guven, Caterpillar Inc., USA
Wen L. Soong, University of Adelaide, Australia

IAS50p2 Design of Ultra Low Acoustic Noise and High Power Density Direct Drive Machines with Double Rotor
Yuichi Yoshikawa, Matsushita Electric Industrial Co., Ltd., Japan
Hu Li, Matsushita Electric Industrial Co., Ltd., Japan
Hiroshi Murakami, Matsushita Electric Industrial Co., Ltd., Japan

IAS50p3 Influence of Rotor Configuration on Sensorless Control for Interior Permanent Magnet Synchronous Motors
Nobuyuki Imai, Honda R&D Co., Ltd., Japan
Shigeo Morimoto, Osaka Prefecture University, Japan
Masayuki Sanada, Osaka Prefecture University, Japan
Yoji Takeda, Osaka Prefecture University, Japan

IAS50p4 Impact of Maximum Back-EMF Limits on the Performance Characteristics of Interior Permanent Magnet Synchronous Machines
Seok-Hee Han, University of Wisconsin–Madison, USA
Thomas M. Jahns, University of Wisconsin–Madison, USA
Mustafa K. Guven, Caterpillar Inc., USA

IAS50p5 Diagnosis and Protection of IPM Motors Using Wavelet Packet Transform
M. A. S. K. Khan, Memorial University of Newfoundland, Canada
T. S. Radwan, Memorial University of Newfoundland, Canada
M. A. Rahman, Memorial University of Newfoundland, Canada

IAS50p6 Reducing Torque Pulsation of Multi-Phase Interior Permanent Magnet Machines
Leila Parsa, Rensselaer Polytechnic Institute, USA
Taehyung Kim, University of Michigan, USA

IAS50p7 Performance Comparison of IPMSM with Distributed and Concentrated Windings
Soon-O Kwon, Changwon National University, Korea
Sung-Il Kim, Changwon National University, Korea
Peng Zhang, Changwon National University, Korea
Jung-Pyo Hong, Changwon National University, Korea

INDUSTRIAL DRIVES COMMITTEE

Wednesday, 11 October • 2:00 PM – 6:00 PM • Meeting Room 6
Session 51—Special Drives

Session Chair: Robert Lorenz, University of Wisconsin-Madison, USA
Session Organizer: Elena Lomonova, Eindhoven Technology University, The Netherlands

IAS51p1 Sensorless Rotor Position Estimation in Synchronous Reluctance Motors Exploiting a Flux Deviation Approach
A. Consoli, University of Catania, Italy
G. Scarcella, University of Catania, Italy
G. Scelba, University of Catania, Italy
A. Testa, University of Messina, Italy
D. Triolo, University of Messina, Italy

IAS51p2 A Position Sensorless Drive Technique for Switched Reluctance Motor with Consideration of Magnetic Saturation at Low and Medium Speeds
Akitomo Komatsuzaki, Meiji University, Japan
Kazumasa Yoshida, Meiji University, Japan
Ichiro Miki, Meiji University, Japan

IAS51p3 A Simplified Novel Sensorless Control of SRM
Dong-Hee Lee, Kyungsung University, Korea
Tae-Hyoung Kim, Kyungsung University, Korea
Jin-Woo Ahn, Kyungsung University, Korea

IAS51p4 Torque Ripple Reduction Drive of Single-Phase SRM with PFC
Jianing Liang, Kyungsung University, Korea
Zhen-Guo Lee, Kyungsung University, Korea
Dong-Hee Lee, Kyungsung University, Korea
Jin-Woo Ahn, Kyungsung University, Korea

IAS51p5 Analysis of Torque Dynamics for Switched Reluctance Drives with Instantaneous Torque Control
Nisai H. Fuengwarodsakul, RWTH Aachen University, Germany
Jens O. Fiedler, RWTH Aachen University, Germany
Rik W. De Doncker, RWTH Aachen University, Germany

IAS51p6 Contactless Energy Transfer to a Moving Actuator
Jeroen de Boeij, Eindhoven University of Technology, The Netherlands
Elena Lomonova, affiliation not cited
Jorge Duarte, affiliation not cited
André Vandenput, affiliation not cited

INDUSTRIAL DRIVES COMMITTEE

Wednesday, 11 October • 2:00 PM – 6:00 PM • Salon I
Session 52—PM Sensorless Drives

Session Chair: Tom Jahns, University of Wisconsin-Madison, USA
Session Organizer: Fabio Giulii Capponi, University of Rome, Italy

IAS52p1 Dynamic Properties of Back-emf -based Sensorless Drives
Luiz A. de S. Ribeiro, CEFET-MA, Brazil
Michael C. Harke, University of Wisconsin–Madison, USA
Robert D. Lorenz, University of Wisconsin–Madison, USA

IAS52p2 Eddy Current Effects on Rotor Position Estimation for Sensorless Control of PM Synchronous Machine
Jiangang Hu, The Ohio State University, USA
Longya Xu, The Ohio State University, USA
Jingbo Liu, Rockwell Automation, USA

IAS52p3 Initial Rotor Polarity Detection and Sensorless Control of PM Synchronous Machines
Joachim Holtz, University of Wuppertal, Germany

IAS52p4 Sensorless Control for Four-Switch Three-Phase Brushless DC Motor Drives
Cheng-Tsung Lin, National Taiwan University, Taiwan
Chung-Wen Hung, National Taiwan University, Taiwan
Chih-Wen Liu, National Taiwan University, Taiwan

IAS52p5 A New Current-Ratio-Oriented Simple Vector Control Method for Starting Up Sensorless Drive of Permanent-Magnet Synchronous Motors—Feedback Control of Effective/Reactive Currents Based on "MIR Strategy"
Shinji Shinnaka, Kanagawa University, Japan

IAS52p6 Implementation and Sensorless Vector-Control Design and Tuning Strategy for SMPM Machines in Fan-type Applications
Parag Kshirsagar, Virginia Polytechnic Institute and State University, USA
Rolando P Burgos, Virginia Polytechnic Institute and State University, USA
Alessandro Lidozzi, RomaTre University, Italy
Jihoon Jang, Hyundai Motor Company, Korea
Fred Wang, Virginia Polytechnic Institute and State University, USA
Dushan Boroyevich, Virginia Polytechnic Institute and State University, USA
Seung-Ki Sul, Seoul National University, Korea

IAS52p7 Sensorless Control of Permanent Magnet Generator in Wind Turbine Application
Reza Esmaili, General Motors, USA
Longya Xu, Ohio State University, USA

INDUSTRIAL POWER CONVERTER COMMITTEE

Wednesday, 11 October • 2:00 PM – 6:00 PM • Meeting Room 4
Session 53—Design, Control and Analysis in Power Converters

Session Chair: Apeldoorn Oscar, ABB-Schweiz, Switzerland
Session Organizer: Kevin Lee, Eaton Corporation, USA

IAS53p1 A Novel Circuit Topology of Three-Phase Direct AC–AC PWM Voltage Regulator
Nabil A. Ahmed, Sophia University, Japan
Masafumi Miyatake, Sophia University, Japan
Hyun Woo Lee, Kyungnam University, Korea
Mutsuo Nakaoka, Kyungnam University, Korea

IAS53p2 Output Protection Strategies for Matrix Converters in Distributed Generation Applications
B. W. Augdahl, Schweitzer Engineering Laboratories, Inc., USA
H. L. Hess, University of Idaho, USA
B. K. Johnson, University of Idaho, USA

IAS53p3 A Simple Current Control for Matrix Converter
Milton E. de Oliveira Filho, Campinas University, Brazil
Ernesto Ruppert Filho, Campinas University, Brazil
K. E. B. Quinderé, Campinas University, Brazil
Jonas R. Gazoli, Campinas University, Brazil

IAS53p4 DC-Capacitance Estimation of DC-Link Capacitors using AC Voltage Injection in AC/DC/AC PWM Converters
Ahmed. G. Abo-Khalil, Yeungnam University, Korea
Dong-Choon Lee, Yeungnam University, Korea

IAS53p5 Constructing a Novel Power Converter by Matrix Converter Theory and Z-Source Inverter Concepts for ISA 42 V PowerNet System
Keping You, The University of New South Wales, Australia
M. F. Rahman, The University of New South Wales, Australia

IAS53p6
Single-Phase to Three-Phase DC-Link Three-Leg Converter with Minimization of the Capacitor Currents
C. B. Jacobina, Universidade Federal de Campina Grande, Brazil
E. C. dos Santos Jr., Universidade Federal de Campina Grande, Brazil
I. S. de Freitas, Universidade Federal de Campina Grande, Brazil
M. B. R. Correa, Universidade Federal de Campina Grande, Brazil
E. R. C. da Silva, Universidade Federal de Campina Grande, Brazil

INDUSTRIAL POWER CONVERTER COMMITTEE

Wednesday, 11 October • 2:00 PM – 6:00 PM • Meeting Room 5
Session 54—Soft Switching and Resonant Converters

Session Chair: Deepak Divan, Georgia Institute of Technology, USA
Session Organizer: Robert Guenther, NWL, USA

IAS54p1 High Efficiency, High Power Density DC–DC Converter with Wide Input Range
Xiangcheng Wang, University of Central Florida, USA
Feng Tian, University of Central Florida, USA
Yinxing Li, Baoji College of Art and Science, China
Issa Batarseh, University of Central Florida, USA

IAS54p2 Comparison of Two Soft Switching DC–DC Converters for Fuel Cell Applications
Aude Ivanes, Institut National Polytechnique de Grenoble, France
Bang Viet Dang, Institut National Polytechnique de Grenoble, France
Yves Lembeye, Institut National Polytechnique de Grenoble, France
Jean Paul Ferrieux, Institut National Polytechnique de Grenoble, France
Jean Barbaroux, Institut National Polytechnique de Grenoble, France

IAS54p3 A New High Frequency Linked Soft-Switching PWM DC–DC Converter with High and Low Side DC Rail Active Edge Resonant Snubbers for High Performance Arc Welder
Khairy Fathy, Kyungnam University, Korea
Toshimitsu Doi, Daihen Corporation, Japan
Keiki Morimoto, Daihen Corporation, Japan
Hyun Woo Lee, Kyungnam University, Korea
Mutsuo Nakaoka, Kyungnam University, Korea; Industrial College of Technology University, Japan

IAS54p4 Multiphase LLC Series Resonant Converter for Microprocessor Voltage Regulation
Taotao Jin, University of California–Irvine, USA
Keyue Smedley, University of California–Irvine, USA

IAS54p5 A New Circuit Geometry SAZZ for an EV Drive Application
Yukinori Tsuruta, Yokohama National University, Japan
Masaki Bando, Yokohama National University, Japan
Yoshihiro Ito, Yokohama National University, Japan
Atsuo Kawamura, Yokohama National University, Japan

IAS54p6 LCC Zero-Voltage-Switching Buck Converter with Synchronous Rectifier
Osama Abdel-Rahman, University of Central Florida, USA
Jun Liu, University of Central Florida, USA
Liangbin Yao, University of Central Florida, USA
Issa Batarseh, University of Central Florida, USA
Hong Mao, Emerson Network Power, USA

IAS54p7 N Interleaved Boost Converter with a Novel ZVT Cell Using a Single Resonant Inductor for High Power Applications
Nam-Ju Park, Hanyang University, Korea
Dong-Seok Hyun, Hanyang University, Korea

ENERGY SYSTEMS COMMITTEE

Wednesday, 11 October • 2:00 PM – 6:00 PM • Salon II
Session 55—Energy System III

Session Chair and Organizer: Wei-Jen Lee, University of Texas at Arlington, USA

IAS55p1 A Fully Analytical PEM Fuel Cell System Model for Control Applications
Felix Grasser, Ecole Polytechnique Fédérale de Lausanne, France
Alfred C. Rufer, Ecole Polytechnique Fédérale de Lausanne, France

IAS55p2 Cost Considerations on Fuel Cell Renewable Energy Systems
M. Godoy Simoes, Colorado School of Mines, USA
Caroline S. Uriarte, Colorado School of Mines, USA
Felix. A. Farret, Federal University of Santa Maria, Brazil

IAS55p3 A Novel Motor Energy Monitoring Scheme using Wireless Sensor Networks
Bin Lu, Georgia Institute of Technology, USA
Thomas G. Habetler, Georgia Institute of Technology, USA
Ronald G. Harley, Georgia Institute of Technology, USA

IAS55p4 Solid Oxide Fuel Cell/Gas Turbine Hybrid APU System for Aerospace Applications
Kaushik Rajashekara, Delphi Corporation, USA
James Grieve, Delphi Corporation, USA
David Daggett, Boeing Commercial Airplanes, USA

PRODUCTION AND APPLICATION OF LIGHT COMMITTEE

Wednesday, 11 October • 2:00 PM – 6:00 PM • Meeting Room 7
Session 56—Light and Applications

Session Chair and Organizer: Georges Zissis, University Toulouse 3, France

IAS56p1 Influence of Voltage and Frequency Dimming on Power Losses in HF Electronic Ballasts for Compact Fluorescent Lamps
Mohsin Ayaz Shafi, University of Cambridge, UK
R. A. McMahon, University of Cambridge, UK

IAS56p2 Comparison of Class E and Half Bridge Inverters for Use in Electronic Ballasts
Ashish Ekbote, Northern Illinois University, USA
Donald S. Zinger, Northern Illinois University, USA

IAS56p3 Physical and Mathematical Meaning of the Alpha Constant, Einstein's Equation, and Planck Dimensions
Ed Hammer, HammerTek Advisory LLC, USA

IAS56p4 Extended Simplification of Einstein's Famous Equation
Ed Hammer, HammerTek Advisory LLC, USA

IAS56p5 Predicted Resonance with Alpha Constant and Einstein's Equation
Ed Hammer, HammerTek Advisory LLC, USA

POWER SYSTEM PROTECTION COMMITTEE

Wednesday, 11 October • 2:00 PM – 6:00 PM • Salon III
Session 57—Power System Protection II

Session Chair: Carey Cook, S&C Electric Company, USA
Session Organizer: Rasheek Rifaat, Jacobs Engineering,-Calgary, Canada

IAS57p1 On Outdoor Lighting Installations Grounding Systems
Massimo Mitolo, Chu & Gassman, USA

IAS57p2 Power Lines Made by Many Parallel Single Core Cables: A Case Study
Fabio Freschi, Politecnico di Torino, Italy
Michele Tartaglia, Politecnico di Torino, Italy

IAS57p3 Ferroresonance in a 13.8 kV Distribution Line
Peter E. Sutherland, EPRI Solutions, Inc., USA
Robert Manning, United Illuminating Co., USA

IAS57p4 Voltage Sag Compensation with Z-Source Inverter-based Dynamic Voltage Restorer
D. M. Vilathgamuwa, Nanyang Technological University, Singapore
C. J. Gajanayake, Nanyang Technological University, Singapore
P. C. Loh, Nanyang Technological University, Singapore
Y.W. Li, Nanyang Technological University, Singapore

IAS57p5 A Parametric Model Approach to Arc Fault Detection for DC and AC Power Systems
S. Arunachalam, University of Texas at El Paso, USA
B. Diong, Texas Christian University, USA

IAS57p6 Automatic Bus Transfer Problems in the 6.3 kV Switchgear of Hellenic Petroleum Polypropylene Plant
S. J. Kiartzis, Hellenic Petroleum SA, Greece

POWER ELECTRONICS DEVICES & COMPONENTS COMMITTEE

Wednesday, 11 October • 2:00 PM – 6:00 PM • Salon VI
Session 58—Drive Circuits, Paralleling Considerations and EMI

Session Chair: Braham Ferreira, Delft University of Technology, The Netherlands
Session Organizer: Jean-Luc Schanen, LEG, France

IAS58p1 Real-Time Optimization of IGBT/Diode Cell Switching under Active Voltage Control
Y. Wang, University of Cambridge, UK
P. R. Palmer, University of Cambridge, UK
T. C. Lim, University of Strathclyde, UK
S. J. Finney, University of Strathclyde, UK
A. T. Bryant, University of Warwick, UK

IAS58p2 Optimized Gate Drivers for Internally Commutated Thyristors (ICTs)
Peter Köllensperger, RWTH Aachen University, Germany
Rik W. De Doncker, RWTH Aachen University, Germany

IAS58p3 Experiment and Simulation Studies of Current Distribution in Paralleled Thyristors
J. Wu, University of Cambridge, UK
Z. Wang, University of Cambridge, UK
P. R. Palmer, University of Cambridge, UK
A. T. Bryant, University of Warwick, UK
D. Remy, Alstom Power Electrical and Control Systems, France
E. Santi, University of South Carolina, USA
J. L. Hudgins, University of Nebraska, USA

IAS58p4 Power MOSFETs Paralleling Operation for High Power High Density Converters
Hongfang Wang, Virginia Polytechnic Institute and State University, USA
Fred Wang, Virginia Polytechnic Institute and State University, USA

IAS58p5 High Frequency Modeling of a Converter with an RF-EMI Filter
Andrew C. Baisden, Virginia Polytechnic Institute and State University, USA
Dushan Boroyevich, Virginia Polytechnic Institute and State University, USA
Jacobus Daniel van Wyk, Virginia Polytechnic Institute and State University, USA

IAS58p6 Layout Techniques for Reduction of Common Mode Current in Static Converters
Jérémie Aimé, Institut National Polytechnique de Grenoble, France
James Roudet, Institut National Polytechnique de Grenoble, France
Christian Vollaire, Ecole Centrale de Lyon CEGELY, France
Philippe Baudesson, Schneider Electric, France
Jacques Ecrabey, Schneider Electric, France

IAS58p7 Simplified Design of Common Mode Chokes for Reduction of Motor Ground Currents in Inverter Drives
Annette Annette, University of Wisconsin–Madison, USA
Charles R. Sullivan, Dartmouth College, USA

THURSDAY MORNING SESSIONS

ELECTRIC MACHINES COMMITTEE

Thursday, 12 October • 8:00 AM – 12:00 PM • Salon IV
Session 59—Faults and Diagnostics I

Session Chair and Organizer: Gerard Capolino, University of Picardie Jules Verne, France

IAS59p1 Estimation of Static Eccentricity Severity in Induction Motors for On-Line Condition Monitoring
Jason Grieger, University of Adelaide, Australia
Randy Supangat, University of Adelaide, Australia
Nesimi Ertugrul, University of Adelaide, Australia
Wen L. Soong, University of Adelaide, Australia
Douglas A. Gray, University of Adelaide, Australia
Colin Hansen, University of Adelaide, Australia

IAS59p2 Monitoring of Induction Machine Currents by High Frequency Resolution Analysis
Alberto Bellini, University of Modena and Reggio Emilia, Italy
Fiorenzo Filippetti, University of Bologna, Italy
Domenico Casadei, University of Bologna, Italy
Amine Yazidi, University of Picardie "Jules Verne", France
Gerard Capolino, University of Picardie "Jules Verne", France

IAS59p3 Detection of Rotor Faults in Field-oriented Controlled Induction Machines
E. Serna, University of Siegen, Germany
J. M. Pacas, University of Siegen, Germany

IAS59p4 Non-Stationary Motor Fault Detection Using Recent Quadratic Time-Frequency Representations
Satish Rajagopalan, Georgia Institute of Technology, USA
Thomas G. Habetler, Georgia Institute of Technology, USA
Ronald G. Harley, Georgia Institute of Technology, USA
José A. Restrepo, Universidad Simón Bolívar, Venezuela
José M. Aller, Universidad Simón Bolívar, Venezuela

IAS59p5 A Model of Dual Stator Winding Induction Machine in Case of Stator and Rotor Faults for Diagnosis Purpose
R. N. Andriamalala, Université Henri Poincaré, France
H. Razik, Université Henri Poincaré, France
G. Didier, Université Henri Poincaré, France
F. M. Sargos, Université Henri Poincaré, France
C. R da Silva, Universidade Federal da Paraíba, Brazil
E. R. C da Silva, Universidade Federal da Paraíba, Brazil

IAS59p6 Diagnosis of Rotor Faults in Closed Loop Induction Motor Drives
S. M. A. Cruz, University of Coimbra, Portugal
A. J. M. Cardoso, University of Coimbra, Portugal

IAS59p7 Detection of Rotor Faults in Squirrel Cage Induction Motors using Adjustable Speed Drives
Carla C. Martins Cunha, Universidade Federal do Espírito Santo, Brazil
Braz J. Cardoso Filho, Universidade Federal de Minas Gerais, Brazil

ELECTRIC MACHINES COMMITTEE

Thursday, 12 October • 8:00 AM – 12:00 PM • Salon V
Session 60—AC Machines and Generators

Session Chair and Organizer: Andy Knight, University of Alberta, Canada

IAS60p1 Stator Inter-Turn Fault Detection of Synchronous Machines Using Field Current Signature Analysis
Prabhakar Neti, University of Victoria, Canada
Subhasis Nandi, University of Victoria, Canada

IAS60p2 Optimization of Shield Thickness of Finite Length Rotors for Eddy Current Loss Minimization
Manoj R. Shah, GE Global Research Center, USA
Sang Bin Lee, Korea University, Korea

IAS60p3 Prototyping a Composite SMC/Steel Axial-Flux PM Wind Generator
M. A. Khan, University of Cape Town, South Africa
P. Pillay, Clarkson University, USA
N. R. Batane, Clarkson University, USA
D. J. Morrison, Clarkson University, USA

IAS60p4 Design and Analysis of a New Hybrid Excited Doubly Salient Machine Capable of Field Control
Xiaoyong Zhu, Southeast University, PR China
Ming Cheng, Southeast University, PR China
Wei Hua, Southeast University, PR China
Jianzhong Zhang, Southeast University, PR China
Wenxiang Zhao, Southeast University, PR China

IAS60p5 Over-Current Simulation Test for High Temperature Superconducting Generator
Wensen Wang, General Electric, USA
Liang Li, General Electric, USA
Tao Zhang, General Electric, USA
James Alexander, General Electric, USA
Xianrui Huang, General Electric, USA
Trifon E. Laskaris, General Electric, USA
James. W. Bray, General Electric, USA
James M. Fogarty, General Electric, USA

IAS60p6 Performance and Vibration Analysis of a 75 kW Brushless Double-fed Induction Generator Prototype
F. Rüncos, WEG Electrical Equipments S.A., Brazil
R. Carlson, Universidade Federal de Santa Catarina, Brazil
N. Sadowski, Universidade Federal de Santa Catarina, Brazil
P. Kuo-Peng, Universidade Federal de Santa Catarina, Brazil
H. Voltolini, Universidade Tecnologica Federal do Parana, Brazil

IAS60p7 Design of Flux-Switching Permanent Magnet Machine Considering the Limitation of Inverter and Flux-Weakening Capability
Wei Hua, Southeast University, China
Ming Cheng, Southeast University, China
Z. Q. Zhu, University of Sheffield, UK
D. Howe, University of Sheffield, UK

INDUSTRIAL DRIVES COMMITTEE

Thursday, 12 October • 8:00 AM – 12:00 PM • Meeting Room 6
Session 61—Induction Machine Drives II

Session Chair: Pragasen Pillay, Clarkson University, USA
Session Organizer: Peter Magyar, Hella Corp., Germany

IAS61p1 Frame Alignment Stability Issues in Natural Field Orientation
R. E. Betz, University of Newcastle, Australia
G. Mirzaeva, University of Newcastle, Australia

IAS61p2 An Unique Ultracapacitor Direct Integration Scheme in Multilevel Motor Drives for Large Vehicle Propulsion
Shuai Lu, University of Missouri–Rolla, USA
Keith A. Corzine, University of Missouri–Rolla, USA
Mehdi Ferdowsi, University of Missouri–Rolla, USA

IAS61p3 Observer-based Estimation of Stator Winding Faults in Delta-connected Induction Motors: An LMI Approach
Carsten Skovmose Kallesøe, Grundfos Management A/S, Denmark
Pierre Vadstrup, Grundfos Management A/S, Denmark
Henrik Rasmussen, Aalborg University, Denmark
Roozbeh Izadi-Zamanabadi, Aalborg University, Denmark

IAS61p4 A New Method for Induction Motors Parameter Estimation Using Genetic Algorithms and Transient Speed Measurements
Andrew Trentin, University of Nottingham, UK
Pericle Zanchetta, University of Nottingham, UK
Patrick Wheeler, University of Nottingham, UK
Jon Clare, University of Nottingham, UK
Robert Wood, US Army Research Laboratory, USA
Dimos Katsis, US Army Research Laboratory, USA

IAS61p5 Direct Torque Control with Reduced Switching Losses for Asymmetric Multilevel Inverter-fed Induction Motor Drives
Samir Kouro, Universidad Técnica Federico Santa María, Chile
Rafael Bernal, Universidad Técnica Federico Santa María, Chile
Hernán Miranda, Universidad Técnica Federico Santa María, Chile
José Rodríguez, Universidad Técnica Federico Santa María, Chile
Jorge Pontt, Universidad Técnica Federico Santa María, Chile

IAS61p6 A Luenberger-Sliding Mode Observer for On-line Parameter Estimation and Adaptation in High-Performance Induction Motor Drives
S. M. Nayeem Hasan, The University of Akron, USA
Iqbal Husain, The University of Akron, USA

INDUSTRIAL DRIVES COMMITTEE

Thursday, 12 October • 8:00 AM – 12:00 PM • Salon I
Session 62—Drives II

Session Chair: Fabio Giulii Capponi, University of Rome, Italy
Session Organizer: Yen-shin Lai, National Technological University of Taiwan, Taiwan

IAS62p1 A Protection of the Electrolytic Capacitor-less Drive System against the Input Grid Interruption
Wook-Jin Lee, Seoul National University, Korea
Seung-Ki Sul, Seoul National University, Korea
Young-Seok Shim, Hyundai Elevator Co., Ltd., Korea

IAS62p2 Integration of the Measurement Vector Insertion Method (MVIM) with Discontinuous PWM for Enhanced Single Current Sensor Operation
Hongrae Kim, University of Wisconsin–Madison, USA
Thomas M. Jahns, University of Wisconsin–Madison, USA

IAS62p3 Compensation of Zero-Current Clamping Effects for Sensorless Drives Based on High-Frequency Signal Injection
Chan-Hee Choi, Yeungnam University, Korea
Jul-Ki Seok, Yeungnam University, Korea

IAS62p4 Slip Gain Estimation for Indirect Field Controlled Drives Using Stator Transient Signals
Juan M. Guerrero, University of Oviedo, Spain
Michael W. Degner, University of Oviedo, Spain
Fernando Briz, Ford Motor Company, USA

IAS62p5 Application of General Space Vector Modulation Approach of AC–AC Matrix Converter Theory to a New Bidirectional Converter for ISA 42 V System
Keping You, The University of New South Wales, Australia
M. F. Rahman, The University of New South Wales, Australia

IAS62p6 Sensorless Speed Control of Traveling Wave Ultrasonic Motor
Markus Flueckiger, Ecole Polytechnique Fédérale de Lausanne, Switzerland
Matteo Bullo, Ecole Polytechnique Fédérale de Lausanne, Switzerland
Yves Perriard, Ecole Polytechnique Fédérale de Lausanne, Switzerland

IAS62p7
Novel Converter Concept for Bearingless Slice Motor Systems
Martin.T. Bartholet, Swiss Federal Institute of Technology Zurich, Switzerland
Thomas Nussbaumer, Swiss Federal Institute of Technology Zurich, Switzerland
Peter Dirnberger, Linz Competence Center of Mechatronics, Austria
Johann.W. Kolar, Swiss Federal Institute of Technology Zurich, Switzerland

INDUSTRIAL POWER CONVERTER COMMITTEE

Thursday, 12 October • 8:00 AM – 12:00 PM • Meeting Room 4
Session 63—DC/DC Converters

Session Chair: Jason Lai, Virginia Polytechnic Institute and State University, USA
Session Organizer: A. M. Khambadkone, National University of Singapore, Singapore

IAS63p1 High Efficiency and Fully Integrated Self Powering Technique for VIPer-based Flyback Converters
Nicolas Rouger, INPG, France
Stéphane Catellani, INPG, France
Jean-Christophe Crébier, INPG, France

IAS63p2 Robust Controller Using Polynomial Chaos Theory
A. Smith, University of South Carolina, USA
A. Monti, University of South Carolina, USA
F. Ponci, University of South Carolina, USA

IAS63p3 High Efficient Interleaved Multi-Channel DC–DC Converter Dedicated to Mobile Applications
Blaise Destraz, Ecole Polytechnique Fédérale de Lausanne, Switzerland
Yannick Louvrier, Ecole Polytechnique Fédérale de Lausanne, Switzerland
Alfred Rufer, Ecole Polytechnique Fédérale de Lausanne, Switzerland

IAS63p4 Design of a Redundant Paralleled Voltage Regulator Module System with Improved Efficiency and Dynamic Response
Santanu K. Mishra, International Rectifier, USA
Steve Zhou, International Rectifier, USA
Wenkang Huang, International Rectifier, USA
George Schuellein, International Rectifier, USA

IAS63p5 Implementing Power Buffer Functionality in a DC–DC Converter by Geometric Control
Wayne W. Weaver, University of Illinois at Champaign-Urbana, USA
Philip T. Krein, University of Illinois at Champaign-Urbana, USA

IAS63p6 Quasi Linear DC–DC Converters
Deepak M. Divan, Georgia Institute of Technology, USA
Satish Rajagopalan, Georgia Institute of Technology, USA

IAS63p7 A Novel Current Tripler Rectification Topology for Isolated DC–DC Converters in High Current Applications
Liangbin Yao, University of Central Florida, USA
Osama Abdel-Rahman, University of Central Florida, USA
Issa Batarseh, University of Central Florida, USA
Hong Mao, Astec Power Advanced Technology, USA

INDUSTRIAL POWER CONVERTER COMMITTEE

Thursday, 12 October • 8:00 AM – 12:00 PM • Meeting Room 5
Session 64—Control Applications and Issues (includes Drives and EMI)

Session Chair: Pericle Zanchetta, University of Nottingham, UK
Session Organizer: Solero Luca, University "Romatre", Italy

IAS64p1 Intracorporeal Microvalve Activation System Using a Transcutaneous Parallel Resonant Converter without Magnetic Core
Alberto M. Pernía, University of Oviedo, Spain
Iván C. Orille, University of Oviedo, Spain
J. A. Martinez, University of Oviedo, Spain
J. Martín-Ramos, University of Oviedo, Spain
J. A. Canal, Valnalon, Spain

IAS64p2 High Efficiency Energy Storage System Design for Hybrid Electric Vehicle with Motor Drive Integration
Shuai Lu, University of Missouri–Rolla, USA
Keith A. Corzine, University of Missouri–Rolla, USA
Mehdi Ferdowsi, University of Missouri–Rolla, USA

IAS64p3 Optimal Design of a Hybrid Winding Structure for Planar Contactless Battery Charging Platform
Xun Liu, City University of Hong Kong, China
S. Y. Hui, City University of Hong Kong, China

IAS64p4 Control of an Open Winding Machine in a Grid-Connected Distributed Generation System
Mu-Shin Kwak, Seoul National University, Korea
Seung-Ki Sul, Seoul National University, Korea

IAS64p5 Design Optimization of Industrial Motor Drive Power Stage Using Genetic Algorithms
F. Wang, Virginia Polytechnic Institute and State University, USA
W. Shen, Virginia Polytechnic Institute and State University, USA
D. Boroyevich, Virginia Polytechnic Institute and State University, USA
S. Ragon, Phoenix Integration, Inc., USA
V. Stefanovic, V-S Drives, USA
M. Arpilliere, Schneider Toshiba Inverter Europe, France

IAS64p6 Investigation of the Near Field Coupling Effects on Common Mode EMI in Power Converter
Wei Chen, Zhejiang University, China
Limin Feng, Zhejiang University, China
Henglin Chen, Zhejiang University, China
Zhaoming Qian, Zhejiang University, China

IAS64p7 Analysis and Experimental Results of Load Adaptive Voltage Regulator for Battery Powered Applications
Jaber A. Abu Qahouq, Intel Corporation, USA
Lilly Huang, Intel Corporation, USA
Osama Abdel-Rahman, University of Central Florida, USA
Issa Batarseh, University of Central Florida, USA

POWER SYSTEM ENGINEERING COMMITTEE

Thursday, 12 October • 8:00 AM – 12:00 PM • Salon II
Session 18—Power Systems Analysis / Power Quality

Session Chair: Peter Sutherland, General Electric, USA
Session Organizer: Chris Melhorn, Electrotek, USA

IAS18p1 Effect of Rooftop Exposure in Direct Sunlight on Conduit Ambient Temperatures
David Brender, Copper Development Association Inc., USA
Travis Lindsey, Travis Lindsey Consulting Services, Inc., USA

IAS18p2 A Constant Gain Adaptive Observer for Speed and Resistances Identification
Xiaohong Nian, Zhuzhou Electric Locomotive Research Institute, PR China; Central South University, PR China
Jian Wang, Zhuzhou Electric Locomotive Research Institute, PR China; Central South University, PR China
Weihua Gui, Central South University, PR China
Jirong Huang, Zhuzhou Electric Locomotive Research Institute, PR China; Central South University, PR China
Zhiwu Huang, Central South University, PR China

IAS18p3 Performance of a Distribution Intelligent Universal Transformer under Source and Load Disturbances
Jih-Sheng Lai, Virginia Polytechnic Institute and State University, USA
Arindam Maitra, EPRI-Solutions, USA
Frank Goodman, Electric Power Research Institute, USA

IAS18p4 Retrofit of Power Centers within an Airport
D. S. Guenther, CH2M Hill, USA
S. D. Bergstrom, Harris Group Inc., USA

IAS18p5 Real-Time Implementation and Testing of a Wavelet-Controlled Dynamic Voltage Restorer System
S. A. Saleh, Memorial University of Newfoundland, Canada
M. A. Rahman, Memorial University of Newfoundland, Canada

IAS18p6 Transient Behavior of Three-phase Shell Transformers in a Distribution Feeder
Vinod Simha, The University of Texas at Arlington, USA
Wei-Jen Lee, The University of Texas at Arlington, USA

PRODUCTION AND APPLICATION OF LIGHT COMMITTEE

Thursday, 12 October • 8:00 AM – 12:00 PM • Meeting Room 7
Session 65—Special Session on LEDs

Session Chair and Organizer: Joeb Jacobs, Philips Research Laboratories, Germany

IAS65p1 LEDs in Real Lighting Applications: From Niche Markets to General Lighting
Matthias Wendt, Philips Lighting, Germany
Jan-Willem Andriesse, Philips Lighting, The Netherlands

IAS65p2 Advanced Electronic Driver for Power LEDs with Integrated Colour Management
Franz Bernitz, Osram GmbH, Germany
Oskar Schallmoser, Osram GmbH, Germany
Wolfram Sowa, Osram GmbH, Germany

IAS65p3 Control of LEDs
B. Ackermann, Philips Research Laboratories, Germany
V. Schulz, Philips Research Laboratories, Germany
C. Martiny, Philips Research Laboratories, Germany
A. Hilgers, Philips Research Laboratories, Germany
X. Zhu, Philips Research Laboratories, China

IAS65p4 Illumination and Color Management in Solid State Lighting
Kevin Lima, Avago Technologies, Malaysia
Joon Chok Lee, Avago Technologies, Malaysia
George Panotopoulos, Avago Technologies, USA
Rene Helbing, Avago Technologies, USA

IAS65p5 Driver Electronics for LEDs
Georg Sauerländer, Philips Research Laboratories, Germany
Dirk Hente, Philips Research Laboratories, Germany
Harald Radermacher, Philips Research Laboratories, Germany
Eberhard Waffenschmidt, Philips Research Laboratories, Germany
Joep Jacobs, Philips Research Laboratories, Germany

POWER SYSTEM PROTECTION COMMITTEE

Thursday, 12 October • 8:00 AM – 12:00 PM • Salon III
Session 66—Power System Protection III
Session Chair: Charles J. Mozina, Beckwith, USA
Session Organizer: Rasheek Rifaat, Jacobs Engineering-Calgary, Canada

IAS66p1 Analysis and Design of GaInSn Current Limiter
Huaren Wu, Nanjing Normal University, China
Xiaohui Li, Nanjing Normal University, China
Min Zhang, Nanjing University of Science and Technology, China
D. Stade, Ilmenau Technical University, Germany
H. Schau, Ilmenau Technical University, Germany

IAS66p2 Comprehensive Design of Electrical Installations by Integrating System Configuration and Operational Safety Aspects
Erling Hesla, Hesla & Associates, USA
Giuseppe Parise, University of Rome "La Sapienza", Italy
Rasheek M. Rifaat, Jacobs Canada Inc., Canada

IAS66p3 Effect of Single-Phase Reclosing on Industrial Loads
Peter E. Sutherland, GE Energy Services, USA
Tom A. Short, EPRI Solutions, Inc., USA

IAS66p4 Grounding Fault Protection with Phase Current Difference for Ineffectively Earthed Power Systems
Wang Yuanyuan, Changsha University of Science and Technology, China
Zeng Xiangjun, Changsha University of Science and Technology, China
Su Sheng, Changsha University of Science and Technology, China