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Location: Room 217A

March 17, 2015 8:30 - 12:00

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Wisam Moussa, *International Rectifier*

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Location: Room 217BC

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Location: Room 213A

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Location: Room 213D

March 17, 2015 8:30 - 12:00

Session Chairs: Jaber Abu Qahouq, *University of Alabama*
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Session T8: Integrated and HF DC-DC Converters

Location: Room 217A

March 18, 2015 8:30 - 10:00

Session Chairs: Zhigang Liang, *International Rectifier*
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Session T9: Single Phase AC-DC Converters

Location: Room 217BC

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Session Chairs: Dusty Becker, *Emerson*
Pritam Das, *National University of Singapore*

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Ali Bazzi, *University of Connecticut*

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Kent Wanner, *John Deere*

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Session T12: Conductive and Inductive Chargers for Electric Vehicles

Location: Room 213A

March 18, 2015 8:30 - 10:00

Session Chairs: Omer Onar, *Oak Ridge National Laboratory*
Khurram Afridi, *University of Colorado, Boulder*

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Bulent Sarlioglu, *University of Wisconsin, Madison*

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Haihua Zhou, *International Rectifier*

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Location: Room 217BC

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Session Chairs: Alex Q. Huang, *North Carolina State University*
 Juan Carlos Balda, *University of Arkansas*

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Location: Room 217D

March 18, 2015 14:00 - 17:30

Session Chairs: Babak Nahidmobarakeh, *University of Lorraine*
Yichao Tang, *University of Maryland*

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Session T18: LED Drivers

Location: Room 218/219

March 18, 2015 14:00 - 17:30

Session Chairs: Jim Spangler, *Spangler Prototype Inc.*
Zobair Roohani, *International Rectifier*

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Location: Room 213A	
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Location: Room 213BC

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 Julia Zhang, *Oregon State University*

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Alberto Zapico, <i>Universidad de Oviedo, Spain</i>	
Alberto Rodríguez, <i>Universidad de Oviedo, Spain</i>	
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Location: Room 213D

March 18, 2015 14:00 - 17:30

Session Chairs: Sheldon Williamson, *University of Ontario Institute of Technology*
Vahidreza Nasirian, *University of Texas, Arlington*

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Session T22: DC-DC Converter Applications

Location: Room 213A

March 19, 2015 8:30 - 11:20

Session Chairs: Olivier Trescases, *University of Toronto*
Xin Zhou, *Maxim Integrated*

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Session T23: System Integration

Location: Room 213BC

March 19, 2015 8:30 - 11:20

Session Chairs: Ernie Parker, *Crane Aerospace & Electronics*
John Vigars, *Allegro Microsystems*

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Session T24: Modeling of AC Energy Converters and Systems

Location: Room 213D

March 19, 2015 8:30 - 11:20

Session Chairs: Zobair Roohani, *International Rectifier*
Ali Davoudi, *University of Texas, Arlington*

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Changwoo Yoon, *Aalborg University, Denmark*
Xiongfei Wang, *Aalborg University, Denmark*
Claus Leth Bak, *Aalborg University, Denmark*
Frede Blaabjerg, *Aalborg University, Denmark*

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Alexander Young, *ON Semiconductor, United States*
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Charlie Liu, *ON Semiconductor, United States*

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Tiefu Zhao, *Eaton Corporation, United States*
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Session T26: Renewable Wind I

Location: Room 217BC

March 19, 2015 8:30 - 11:20

Session Chairs: William Erdman, *Cinch LLC*
Haoyu Wang, *Shanghai Tech University*

A 2.3-MW Medium-Voltage, Three-Level Wind Energy Inverter Applying a Unique Bus Structure and 4.5-kV Si/SiC Hybrid Isolated Power Modules 1282

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Jonathan Keller, *National Renewable Energy Laboratory, United States*
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Xiaojie Wu, *China University of Mining and Technology, China*

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Session T27: Power Electronics for Transportation Electrification

Location: Room 217D

March 19, 2015 8:30 - 11:20

Session Chairs: Omer Onar, *Oak Ridge National Laboratory*
Sheldon Williamson, *University of Ontario Institute of Technology*

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Andishe Moshirvaziri, <i>University of Toronto, Canada</i>	
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Berker Bilgin, *McMaster University, Canada*
Ali Emadi, *McMaster University, Canada*

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Noboru Miyamoto, *Mitsubishi Electric Corp., Japan*
Yosuke Nakata, *Mitsubishi Electric Corp., Japan*
Toshiya Nakano, *Mitsubishi Electric Corp., Japan*
John Donlon, *Powerex, Inc., United States*
Eric Motto, *Powerex, Inc., United States*

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A Novel Vehicular Integrated Power System Realized with Multi-Port Series AC Link Converter 1353

Babak Farhangi, *Texas A&M University, United States*
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Ruoyu Hou, *McMaster University, Canada*
Pierre Magne, *McMaster University, Canada*
Berker Bilgin, *McMaster University, Canada*
Ali Emadi, *McMaster University, Canada*

A Novel Design and Performance Characterization of a Very High Current Low Voltage DC-DC Converter for Application in Micro and Mild Hybrid Vehicles 1367

Anuradha Ogale, *University of Wisconsin, Madison, United States*
Bulent Sarlioglu, *University of Wisconsin, Madison, United States*
Yang Wang, *Johnson Controls Inc., United States*

Session T28: WBG Power Device Based Applications

Location: Room 218/219

March 19, 2015 8:30 - 11:20

Session Chairs: Jin Wang, *Ohio State University*
Yifeng Wu, *Transphorm, Inc.*

Advanced Induction Heating Appliances using High-Voltage GaN Gate Injection Transistors 1375

Hector Sarnago, *Universidad de Zaragoza, Spain*
O. Lucia, *Universidad de Zaragoza, Spain*
J.M. Burdío, *Universidad de Zaragoza, Spain*

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Benjamin K. Rhea, <i>Auburn University, United States</i>	
William E. Abell, <i>Auburn University, United States</i>	
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Ashish Shrivastav, <i>North Carolina State University, United States</i>	
Subhashish Bhattacharya, <i>North Carolina State University, United States</i>	
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Sachin Madhusoodhanan, <i>North Carolina State University, United States</i>	
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Kamalesh Hatua, <i>Indian Institute of Technology Madras, India</i>	
Subhashish Bhattacharya, <i>North Carolina State University, United States</i>	
Sei-Hyung Ryu, <i>Cree Inc., United States</i>	
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Dragan Maksimovic, <i>University of Colorado, Boulder, United States</i>	
Daniel Friedrichs, <i>Covidien Surgical Solutions, United States</i>	
James Gilbert, <i>Covidien Surgical Solutions, United States</i>	
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Daniel J. Costinett, <i>University of Tennessee, United States</i>	
Fred Wang, <i>University of Tennessee, United States</i>	
Benjamin J. Blalock, <i>University of Tennessee, United States</i>	

Session T29: Resonant and Soft-Switching DC-DC Converters

Location: Room 213A

March 19, 2015 14:00 - 17:30

Session Chairs: Bulent Sarlioglu, *University of Wisconsin, Madison*
Xin Zhou, *Maxim Integrated*

Efficiency Optimization of LLC Resonant Converters Operating in Wide Input- and/or Output-Voltage Range by On-the-Fly Topology-Morphing Control 1420

Milan M. Jovanović, *Delta Products Corporation, United States*

Brian T. Irving, *Delta Products Corporation, United States*

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Hongfei Wu, *Nanjing University of Aeronautics and Astronautics, China*

Tian Xia, *Nanjing University of Aeronautics and Astronautics, China*

Yan Xing, *Nanjing University of Aeronautics and Astronautics, China*

Peng Xu, *Nanjing University of Aeronautics and Astronautics, China*

Haibing Hu, *Nanjing University of Aeronautics and Astronautics, China*

Zhuoran Zhang, *Nanjing University of Aeronautics and Astronautics, China*

The Third Harmonics Current Injection Scheme for LLC Topology to Reduce the RMS of the Output Current 1435

Ren Ren, *Nanjing University of Aeronautics and Astronautics, China*

Fanghua Zhang, *Nanjing University of Aeronautics and Astronautics, China*

Zhiyuan Shen, *Nanjing University of Aeronautics and Astronautics, China*

Shuo Liu, *Nanjing University of Aeronautics and Astronautics, China*

Impedance Control Network Resonant DC-DC Converter for Wide-Range High-Efficiency Operation 1440

Jie Lu, *University of Colorado, Boulder, United States*

David J. Perreault, *Massachusetts Institute of Technology, United States*

Khurram K. Afridi, *University of Colorado, Boulder, United States*

Charge Current Control for LLC Resonant Converter 1448

Hangseok Choi, *Fairchild Semiconductor, United States*

Series-Resonant Converter with Reduced-Frequency-Range Control 1453

Yungtaek Jang, *Delta Products Corporation, United States*

Milan M. Jovanović, *Delta Products Corporation, United States*

Juan M. Ruiz, *Delta Products Corporation, United States*

Gang Liu, *Fudan University / Delta Power Electronics, China*

A Novel Active-Current-Sharing Method for Interleaved Resonant Converters 1461

Yungtaek Jang, *Delta Products Corporation, United States*

Milan M. Jovanović, *Delta Products Corporation, United States*

Juan M. Ruiz, *Delta Products Corporation, United States*

Misha Kumar, *Delta Products Corporation, United States*

Gang Liu, *Fudan University / Delta Power Electronics, China*

Fourth Order L3C Resonant Converter for Wide Output Voltage Regulation 1467

Navid Shafiei, *University of British Columbia, Canada*
Martin Ordonez, *University of British Columbia, Canada*
Chris Botting, *Delta-Q Technologies Corp., Canada*
Marian Craciun, *Delta-Q Technologies Corp., Canada*
Murray Edington, *Delta-Q Technologies Corp., Canada*

A 1.2 MHz, 25 V to 100 V GaN-based Resonant Dickson Switched-Capacitor Converter with 1011 W/in³ (61.7 kW/L) Power Density 1472

Benjamin B. Macy, *University of Illinois, Urbana-Champaign, United States*
Yutian Lei, *University of Illinois, Urbana-Champaign, United States*
Robert C.N. Pilawa-Podgurski, *University of Illinois, Urbana-Champaign, United States*

Session T30: Power Converter Control

Location: Room 213BC

March 19, 2015 14:00 - 17:30

Session Chairs: Bilal Akin, *University of Texas, Dallas*
Mahshid Amirabadi, *University of Illinois, Chicago*

Harmonics Mitigation of Dead Time Effects in PWM Converters using a Repetitive Controller 1479

Yongheng Yang, *Aalborg University, Denmark*
Keliang Zhou, *University of Glasgow, United Kingdom*
Huai Wang, *Aalborg University, Denmark*
Frede Blaabjerg, *Aalborg University, Denmark*

Implementation of Parabolic Current Control for Dual-Carrier PWM 1487

Lanhua Zhang, *Virginia Polytechnic Institute and State University, United States*
Jason Dominic, *Virginia Polytechnic Institute and State University, United States*
Bin Gu, *Virginia Polytechnic Institute and State University, United States*
Baifeng Chen, *Virginia Polytechnic Institute and State University, United States*
Cong Zheng, *Virginia Polytechnic Institute and State University, United States*
Jih-Sheng Lai, *Virginia Polytechnic Institute and State University, United States*

Oversampled Dead-Beat Current Controller for Voltage Source Converters 1493

Simone Buso, *Università di Padova, Italy*
Tommaso Caldognetto, *Università di Padova, Italy*
Danilo Iglesias Brandao, *Universidade Estadual de Campinas, Brazil*

Analysis and Compensation of Dead-Time Effect Considering Parasitic Capacitance and Ripple Current 1501

Chengmin Li, *Zhejiang University, China*
Yunjie Gu, *Zhejiang University, China*
Wuhua Li, *Zhejiang University, China*
Xiangning He, *Zhejiang University, China*
Zuyi Dong, *Shanghai Electric, China*
Guodong Chen, *Shanghai Electric, China*
Chengbin Ma, *Shanghai Electric, China*
Luhua Zhang, *Shanghai Electric, China*

Optimizing Efficiency and Performance for Single-Phase Photovoltaic Inverter with Dual-Half Bridge Converter	1507
Yuzhi Zhang, <i>University of Arkansas, United States</i>	
Janviere Umuhoza, <i>University of Arkansas, United States</i>	
Haoyan Liu, <i>University of Arkansas, United States</i>	
Chris Farnell, <i>University of Arkansas, United States</i>	
Alan Mantooth, <i>University of Arkansas, United States</i>	

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Jun Wang, <i>Virginia Polytechnic Institute and State University, United States</i>	
Rolando Burgos, <i>Virginia Polytechnic Institute and State University, United States</i>	
Dushan Boroyevich, <i>Virginia Polytechnic Institute and State University, United States</i>	

Improvement of Control-Law Derivation for D-Σ Digital Controlled Three-Phase Four-Wire Inverter	1520
T.-F. Wu, <i>National Tsing Hua University, Taiwan</i>	
L.-C. Lin, <i>National Tsing Hua University, Taiwan</i>	
P.-H. Lin, <i>National Tsing Hua University, Taiwan</i>	
Y.-H. Chen, <i>National Tsing Hua University, Taiwan</i>	
Y.-R. Chang, <i>Institute of Nuclear Energy Research, Taiwan</i>	

Characteristic Analysis and Experimental Verification of a Novel Capacitor Voltage Control Strategy for Three-Phase MMC-DSTATCOM	1528
Chen Xu, <i>Huazhong University of Science and Technology, China</i>	
Ke Dai, <i>Huazhong University of Science and Technology, China</i>	
Yong Kang, <i>Huazhong University of Science and Technology, China</i>	
Cong Liu, <i>State Grid Hunan Electric Power Corporation, China</i>	

Vector based Dead-Time Compensation for a Three-Level T-Type Converter	1534
Xiong Li, <i>University of Texas, Dallas, United States</i>	
Serkar Dusmez, <i>University of Texas, Dallas, United States</i>	
Bilal Akin, <i>University of Texas, Dallas, United States</i>	
Kaushik Rajashekara, <i>University of Texas, Dallas, United States</i>	

Session T31: Inverter Control II

Location: Room 213D

March 19, 2015 14:00 - 17:30

Session Chairs: Keith Corzine, *Clemson*

Dimitri Torregrossa, *École Polytechnique Fédérale de Lausanne*

Hybrid Position Controller for an Indirect Field-Oriented Induction Motor Drive	1541
Antonio B. de Souza Jr., <i>Universidade Federal do Ceará, Brazil</i>	
Tobias R. Fernandes Neto, <i>Universidade Federal do Ceará, Brazil</i>	
Dalton de A. Honório, <i>Universidade Federal do Ceará, Brazil</i>	
Luiz Henrique S.C. Barreto, <i>Universidade Federal do Ceará, Brazil</i>	
Laurinda L.N. dos Reis, <i>Universidade Federal do Ceará, Brazil</i>	

A New Sensor-Less Position Estimation Method for a Nine-Phase Interior Permanent Magnet Machine using a High Frequency Injection in a Non-Torque Generating Circuit	1548
Mehdi Ramezani, <i>Tennessee Technological University, United States</i>	
Olorunfemi Ojo, <i>Tennessee Technological University, United States</i>	

A Modulation Strategy to Control the Matrix Converter under Unbalanced Input Voltage Conditions	1556
Jaya Deepti Dasika, <i>Halliburton Energy Services, United States</i> Maryam Saeedifard, <i>Georgia Institute of Technology, United States</i>	
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DSP-based Sensorless Speed Control Drive System for Two-Phase Synchronous Motors	1570
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Yi Deng, <i>Georgia Institute of Technology, United States</i> Maryam Saeedifard, <i>Georgia Institute of Technology, United States</i> Ronald G. Harley, <i>Georgia Institute of Technology, United States</i>	

Session T32: Wireless Power Transfer

Location: Room 217A

March 19, 2015 14:00 - 17:30

Session Chairs: Juan Rivas, *Stanford University*

Sheldon Williamson, *University of Ontario Institute of Technology*

Wireless Phase – Locked Loop Control for Inductive Power Transfer Systems 1601

Eleni Gati, *National Technical University of Athens, Greece*

Georgios Kampitsis, *National Technical University of Athens, Greece*

Ioannis Stavropoulos, *National Technical University of Athens, Greece*

Stavros Papathanassiou, *National Technical University of Athens, Greece*

Stefanos Manias, *National Technical University of Athens, Greece*

The ZVS Voltage-Mode Class-D Amplifier, an eGaN® FET-Enabled Topology for Highly Resonant Wireless Energy Transfer 1608

Michael A. de Rooij, *Efficient Power Conversion Corporation, United States*

Wireless Charging Power Control for HESS through Receiver Side Voltage Control 1614

Toshiyuki Hiramatsu, *University of Tokyo, Japan*

Xiaoliang Huang, *University of Tokyo, Japan*

Masaki Kato, *University of Tokyo, Japan*

Takehiro Imura, *University of Tokyo, Japan*

Yoichi Hori, *University of Tokyo, Japan*

Phase-Shift and Amplitude Control for an Active Rectifier to Maximize the Efficiency and Extracted Power of a Wireless Power Transfer System 1620

Andreas Berger, *Johannes Kepler University Linz, Austria*

Matteo Agostinelli, *Infineon Technologies Austria AG, Austria*

Sanna Vesti, *Infineon Technologies Austria AG, Austria*

Jesús Á. Oliver, *Universidad Politécnica de Madrid, Spain*

José A. Cobos, *Universidad Politécnica de Madrid, Spain*

Mario Huemer, *Johannes Kepler University Linz, Austria*

Output Current Characterization of Parallel-Series/Series Compensated Resonant Converter for Contactless Power Transfer 1625

Jia Hou, *Nanjing University of Aeronautics and Astronautics, China*

Qianhong Chen, *Nanjing University of Aeronautics and Astronautics, China*

Siu-Chung Wong, *Hong Kong Polytechnic University, China*

Xiaoyong Ren, *Nanjing University of Aeronautics and Astronautics, China*

Xinbo Ruan, *Nanjing University of Aeronautics and Astronautics, China*

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Jaber A. Abu Qahouq, *University of Alabama, United States*

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Hung-I Hsieh, *National Chiayi University, Taiwan*

Ting-Hsiung Huang, *Chung Yuan Christian University, Taiwan*

Sheng-Fang Shih, *National Chiayi University, Taiwan*

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Zhigang Dang, <i>University of Alabama, United States</i>	
Jaber A. Abu Qahouq, <i>University of Alabama, United States</i>	

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Sangcheol Moon, <i>Fairchild Semiconductor, Korea, South</i>	
Gun-Woo Moon, <i>KAIST, Korea, South</i>	

Session T33: Utility & Mixed Applications of Power Electronics

Location: Room 217BC

March 19, 2015 14:00 - 17:30

Session Chairs: Paul Schimel, *International Rectifier*
Omer Onar, *Oak Ridge National Laboratory*

A Detailed Power Loss Analysis of Modular Multilevel Converter	1658
Feyzullah Ertürk, <i>Middle East Technical University, Turkey</i>	
Ahmet M. Hava, <i>Middle East Technical University, Turkey</i>	

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S. Mekhilef, <i>University of Malaya, Malaysia</i>	

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Fang Zhuo, <i>Xi'an Jiaotong University, China</i>	
Xiaokang Liu, <i>Xi'an Jiaotong University, China</i>	
Minghua Zhu, <i>Xi'an Jiaotong University, China</i>	
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Feng Wang, <i>Xi'an Jiaotong University, China</i>	

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Alberto S. Lock, <i>Universidade Federal da Paraíba, Brazil</i>	
Edison R.C. da Silva, <i>Universidade Federal da Paraíba, Brazil</i>	
Darlan A. Fernandes, <i>Universidade Federal da Paraíba, Brazil</i>	
M. Elbuluk, <i>University of Akron, United States</i>	

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Chenghui Zhang, <i>Shandong University, China</i>	
Naxin Cui, <i>Shandong University, China</i>	
Josep M. Guerrero, <i>Aalborg University, Denmark</i>	
Kai Sun, <i>Tsinghua University, China</i>	

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Aboelkasim Bakeer, <i>Aswan University, Egypt</i>	
Mohamed A. Ismeil, <i>Aswan University, Egypt</i>	
Mohamed Orabi, <i>Aswan University, Egypt</i>	

A Bridgeless BHB ZVS-PWM AC-AC Converter for High-Frequency Induction Heating Applications and Non-Smoothed DC-Link Characteristics	1707
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Yuki Nakagawa, <i>Kobe University, Japan</i>	
Mutsuo Nakaoka, <i>Kyungnam University, Korea, South</i>	

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Fanghua Zhang, <i>Nanjing University of Aeronautics and Astronautics, China</i>	
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Wuji Meng, <i>Nanjing University of Aeronautics and Astronautics, China</i>	
Jinlong Wang, <i>Nanjing University of Aeronautics and Astronautics, China</i>	

Session T34: Photovoltaics

Location: Room 217D

March 19, 2015 14:00 - 17:30

Session Chairs: Brandon Pierquet, *Tesla Motors*
Haoyu Wang, *Shanghai Tech University*

A PEF based Control for Single-Phase Multifunctional SECS with Adaptive DC Link Structure for PCC Voltage Variations	1722
Chinmay Jain, <i>Indian Institute of Technology Delhi, India</i>	
Bhim Singh, <i>Indian Institute of Technology Delhi, India</i>	

A Capacitance Minimization Control Strategy for Single-Phase PV Quasi-Z-Source Inverter	1730
Yan Zhou, <i>Ford Motor Company, United States</i>	
Hongbo Li, <i>Florida State University, United States</i>	
Hui Li, <i>Florida State University, United States</i>	
Xinchun Lin, <i>Huazhong University of Science and Technology, China</i>	

Multi-Phase Smart Converter for PV System	1736
Zhongsheng Cao, <i>Virginia Polytechnic Institute and State University, United States</i>	
Qiang Li, <i>Virginia Polytechnic Institute and State University, United States</i>	
Fred C. Lee, <i>Virginia Polytechnic Institute and State University, United States</i>	

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Xiaotian Zhang, <i>Imperial College London, United Kingdom</i>	
Timothy C. Green, <i>Imperial College London, United Kingdom</i>	

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 Lixing Fu, *Ohio State University, United States*
 He Li, *Ohio State University, United States*
 Mohammed Alsolami, *Ohio State University, United States*
 Xuan Zhang, *Ohio State University, United States*
 Jin Wang, *Ohio State University, United States*
 Jie Zhang, *Hubei University of Technology, China*

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 Yushan Liu, *Texas A&M University at Qatar, Qatar*
 Haitham Abu-Rub, *Texas A&M University at Qatar, Qatar*
 Baoming Ge, *Texas A&M University, United States*

Modeling and Control of a Three-Port DC-DC Converter for PV-Battery Systems 1768
 Jianwu Zeng, *University of Nebraska, Lincoln, United States*
 Wei Qiao, *University of Nebraska, Lincoln, United States*
 Liyan Qu, *University of Nebraska, Lincoln, United States*

A Self-Reconfiguration Control Regarding Recovery Effect to Improve the Discharge Efficiency in the Distributed Battery Energy Storage System 1774
 Yong-Yong Cai, *Nanjing University of Aeronautics and Astronautics, China*
 Zhiliang Zhang, *Nanjing University of Aeronautics and Astronautics, China*
 Yue Zhang, *Jiangsu Electric Power Company / Nanjing Power Supply Company, China*
 Yan-Fei Liu, *Queen's University, Canada*

Session T35: Grid and Microgrid Interfaces

Location: Room 218/219

March 19, 2015 14:00 - 17:30

Session Chairs: Fernando Briz, *University of Oviedo, Spain*
 Haihua Zhou, *International Rectifier*

Harmonic Interaction Analysis in Grid Connected Converter using Harmonic State Space (HSS) Modeling 1779
 Junbum Kwon, *Aalborg University, Denmark*
 Xiongfei Wang, *Aalborg University, Denmark*
 Claus Leth Bak, *Aalborg University, Denmark*
 Frede Blaabjerg, *Aalborg University, Denmark*

A Constant Duty Cycle Control, Single-Phase Inverter Design for Distributed Static Series Compensators 1787
 Alexander Brissette, *University of Colorado, Boulder, United States*
 Anderson Hoke, *University of Colorado, Boulder, United States*
 Dragan Maksimović, *University of Colorado, Boulder, United States*

Fractionally Rated Transformer-Less Unified Power Flow Controllers for Interconnecting Synchronous AC Grids 1795
 Deepak Gunasekaran, *Michigan State University, United States*
 Shuitao Yang, *Michigan State University, United States*
 Fang Zheng Peng, *Michigan State University, United States*

Current Control of Grid Converters Connected with Series AC Capacitor 1800

Xiongfei Wang, *Aalborg University, Denmark*
Frede Blaabjerg, *Aalborg University, Denmark*
Poh Chiang Loh, *Aalborg University, Denmark*
Ying Pang, *KK Wind Solutions a/s, Denmark*

Control and Implementation of Converter based AC Transmission Line Emulation 1807

Bo Liu, *University of Tennessee, United States*
Sheng Zheng, *University of Tennessee, United States*
Yiwei Ma, *University of Tennessee, United States*
Fred Wang, *University of Tennessee, United States*
Leon M. Tolbert, *University of Tennessee, United States*

An Accurate Power-Sharing Control Method based on Circulating-Current Power Model for Voltage-Source-Inverter Parallel System 1815

Mingzhi Gao, *Zhejiang University, China*
Canhui Zhang, *Zhejiang University, China*
Maohang Qiu, *Zhejiang University, China*
Weiheng Li, *Zhejiang University, China*
Min Chen, *Zhejiang University, China*
Zhaoming Qian, *Zhejiang University, China*

Double Synchronous Frame Current Regulation of Distributed Generation Systems under Unbalanced Voltage Conditions without Sequence Current Separation 1822

R. Kabiri, *RMIT University, Australia*
D.G. Holmes, *RMIT University, Australia*
B.P. McGrath, *RMIT University, Australia*

Harmonic Analysis and Practical Implementation of a Two-Phase Microgrid System 1830

M. Alibeik, *Indiana University-Purdue University Indianapolis, United States*
E.C. Dos Santos Jr., *Indiana University-Purdue University Indianapolis, United States*
Y. Yang, *Aalborg University, Denmark*
X. Wang, *Aalborg University, Denmark*
F. Blaabjerg, *Aalborg University, Denmark*

Self-Disciplined Stabilization of DC Microgrids by Passivity-based Control 1838

Yunjie Gu, *Zhejiang University, China*
Wenjuan Zheng, *Shanghai Marine Equipment Research Institute, China*
Wuhua Li, *Zhejiang University, China*
Xiangning He, *Zhejiang University, China*

Session D1: AC-DC Converters

Location: Ballroom AB

March 19, 2015 11:30 - 14:00

Session Chairs: Nathan Weise, *University of Maine*
Daniel Costinett, *University of Tennessee*

A Single-Stage Three-Phase AC/DC Converter with Y- Δ Three-Phase Transformer 1845

Ling Gu, *Nanjing University of Aeronautics and Astronautics, China*
Ke Jin, *Nanjing University of Aeronautics and Astronautics, China*

Inhibiting Mains Current Distortion for SWISS Rectifier – a Three-Phase Buck-Type Harmonic Current Injection PFC Converter	1850
Ruirui Chen, <i>FSP-Powerland Technology Inc., China</i>	
Yuan Yao, <i>FSP-Powerland Technology Inc., China</i>	
Le Zhao, <i>FSP-Powerland Technology Inc., China</i>	
Ming Xu, <i>Xi'an Jiaotong University, China</i>	
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Hao Wu, <i>Hong Kong Polytechnic University, Hong Kong</i>	
Siu-Chung Wong, <i>Hong Kong Polytechnic University, Hong Kong</i>	
C.K. Tse, <i>Hong Kong Polytechnic University, Hong Kong</i>	
Qianhong Chen, <i>Nanjing University of Aeronautics and Astronautics, China</i>	
Performance Comparison of Three-Step and Six-Step PWM in Average-Current-Controlled Three-Phase Six-Switch Boost PFC Rectifier	1861
Laszlo Huber, <i>Delta Products Corporation, United States</i>	
Misha Kumar, <i>Delta Products Corporation, United States</i>	
Milan M. Jovanović, <i>Delta Products Corporation, United States</i>	
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Xiaogao Xie, <i>Hangzhou Dianzi University, China</i>	
Kunsheng Peng, <i>Hangzhou Dianzi University, China</i>	
Chen Zhao, <i>Hangzhou Dianzi University, China</i>	
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Amit K. Singh, <i>National University of Singapore, Singapore</i>	
Pritam Das, <i>National University of Singapore, Singapore</i>	
S.K. Panda, <i>National University of Singapore, Singapore</i>	
A Novel Control Scheme of Three-Phase Single-Switch DCM Boost PFC Converter	1881
Kai Yao, <i>Nanjing University of Science and Technology, China</i>	
Qingsai Meng, <i>Nanjing University of Science and Technology, China</i>	
Wenbin Hu, <i>Nanjing University of Science and Technology, China</i>	
Weijie Tang, <i>Nanjing University of Science and Technology, China</i>	
Jianguo Lyu, <i>Nanjing University of Science and Technology, China</i>	
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Rolando Burgos, <i>Virginia Polytechnic Institute and State University, United States</i>	
Dushan Boroyevich, <i>Virginia Polytechnic Institute and State University, United States</i>	
A Power Supply Topology Operating at Highly Discontinuous Input Voltages for Two-Wire Connected Control Devices in Digital Load-Side Transmission (DLT) Systems for Intelligent Lighting	1897
Lukas Lohaus, <i>Rheinisch-Westfälische Technische Hochschule Aachen, Germany</i>	
Arne Rossius, <i>Rheinisch-Westfälische Technische Hochschule Aachen, Germany</i>	
Ralf Wunderlich, <i>Rheinisch-Westfälische Technische Hochschule Aachen, Germany</i>	
Stefan Heinen, <i>Rheinisch-Westfälische Technische Hochschule Aachen, Germany</i>	

Zero Voltage Switching Differential Inverters	1905
Behnam Koushki, <i>Queen's University, Canada</i>	
Alireza Safaee, <i>Queen's University, Canada</i>	
Praveen Jain, <i>Queen's University, Canada</i>	
Alireza Bakhshai, <i>Queen's University, Canada</i>	

Characterization and Evaluation of 600 V Range Devices for Active Power Factor Correction in Boundary and Continuous Conduction Modes	1911
Juan C. Hernandez, <i>Danmarks Tekniske Universitet, Denmark</i>	
Lars P. Petersen, <i>Danmarks Tekniske Universitet, Denmark</i>	
Michael A.E. Andersen, <i>Danmarks Tekniske Universitet, Denmark</i>	

Multi-Mode Controlled Push-Pull Boost Power Factor Corrector	1917
Chung-Yi Lin, <i>Virginia Polytechnic Institute and State University / Flextronics Power, United States</i>	
Jih-Sheng Lai, <i>Virginia Polytechnic Institute and State University, United States</i>	
Yu-Kang Lo, <i>Lite-On Technology Corp., Taiwan</i>	
Huang-Jen Chiu, <i>National Taiwan University of Science and Technology, Taiwan</i>	
Cheng-Yen Yang, <i>National Taiwan University of Science and Technology, Taiwan</i>	
Yu-Chen Liu, <i>Virginia Polytechnic Institute and State University / National Taiwan University of Science and Technology, United States</i>	

New Way to Regulate DC Link Voltage for Adaptive Travel Adaptor Applications	1924
Jason Guo, <i>Fairchild Semiconductor, United States</i>	

Session D2: DC-DC Converters I

Location: Ballroom AB

March 19, 2015 11:30 - 14:00

Session Chairs: Dave Freeman, *Texas Instruments*
Haihua Zhou, *International Rectifier*

Adaptive-on-Time Control Technique for Output Ripple Reduction and Light-Load Efficiency Enhancement in Low-Power Switched-Capacitor DC-DC Regulators	1930
Zhe Hua, <i>University of Texas, Dallas, United States</i>	
Hoi Lee, <i>University of Texas, Dallas, United States</i>	

A Single-Stage Three-Port Boost Converter with High Voltage Gain based on the Bidirectional Version of the Three-State Switching Cell	1934
Diego B.S. Alves, <i>Universidade Federal do Ceará, Brazil</i>	
Paulo P. Praça, <i>Universidade Federal do Ceará, Brazil</i>	
Demercil S. Oliveira Jr., <i>Universidade Federal do Ceará, Brazil</i>	
Luiz H.S.C. Barreto, <i>Universidade Federal do Ceará, Brazil</i>	
Luiz C.G. de Freitas, <i>Universidade Federal de Uberlândia, Brazil</i>	

Research and Realization of a Novel Active Common-Mode EMI Filter	1941
Xinli Chang, <i>Xi'an Jiaotong University, China</i>	
Wenjie Chen, <i>Xi'an Jiaotong University, China</i>	
Yuehong Yang, <i>Xi'an Jiaotong University, China</i>	
Kangping Wang, <i>Xi'an Jiaotong University, China</i>	
Xu Yang, <i>Xi'an Jiaotong University, China</i>	

Digital Multiphase Constant On-Time Regulator Supporting Energy Proportional Computing	1946
A. Zafarana, <i>STMicroelectronics, Italy</i>	
O. Zambetti, <i>STMicroelectronics, Italy</i>	
G. Lingua, <i>STMicroelectronics, Italy</i>	
S. Saggini, <i>Università degli Studi di Udine, Italy</i>	
 A High Step-Down Non-Isolated Bus Converter with Partial Power Conversion based on Synchronous LLC Resonant Converter	 1950
Liquan Chen, <i>Nanjing University of Aeronautics and Astronautics, China</i>	
Hongfei Wu, <i>Nanjing University of Aeronautics and Astronautics, China</i>	
Peng Xu, <i>Nanjing University of Aeronautics and Astronautics, China</i>	
Haibing Hu, <i>Nanjing University of Aeronautics and Astronautics, China</i>	
Chengan Wan, <i>Beijing Spacecrafts, China</i>	
 A Novel Ide Control to Improve Light Load Efficiency for a Full-Bridge DC/DC Converter	 1956
Sean Xu, <i>Texas Instruments Inc., United States</i>	
Jason Wang, <i>Texas Instruments Inc., China</i>	
 A High-Frequency Resonant Gate Driver for Enhancement-Mode GaN Power Devices	 1961
Yu Long, <i>University of Tennessee, United States</i>	
Weimin Zhang, <i>University of Tennessee, United States</i>	
Daniel Costinett, <i>University of Tennessee, United States</i>	
Benjamin B. Blalock, <i>University of Tennessee, United States</i>	
Luke L. Jenkins, <i>Auburn University, United States</i>	
 A Single Stage 54V to 1.8V Multi-Phase Cascaded Buck Voltage Regulator Module	 1966
K.K. Leong, <i>Infineon Technologies Austria AG, Austria</i>	
G. Deboy, <i>Infineon Technologies Austria AG, Austria</i>	
K. Krischan, <i>Technische Universität Graz, Austria</i>	
A. Muetze, <i>Technische Universität Graz, Austria</i>	
 Self-Oscillating Galvanic Isolated Bidirectional Very High Frequency DC-DC Converter	 1974
Jeppe A. Pedersen, <i>Danmarks Tekniske Universitet, Denmark</i>	
Mickey P. Madsen, <i>Danmarks Tekniske Universitet, Denmark</i>	
Arnold Knott, <i>Danmarks Tekniske Universitet, Denmark</i>	
Michael A.E. Andersen, <i>Danmarks Tekniske Universitet, Denmark</i>	
 A New Family of GaN Transistors for Highly Efficient High Frequency DC-DC Converters	 1979
David Reusch, <i>Efficient Power Conversion Corporation, United States</i>	
Johan Strydom, <i>Efficient Power Conversion Corporation, United States</i>	
Alex Lidow, <i>Efficient Power Conversion Corporation, United States</i>	
 Predictive Adaptive Method for Synchronous Rectification	 1986
Alberto Iorio, <i>STMicroelectronics, Italy</i>	
Alberto Bianco, <i>STMicroelectronics, Italy</i>	
Maurizio Foresta, <i>STMicroelectronics, Italy</i>	
Giuseppe Scappatura, <i>STMicroelectronics, Italy</i>	
Claudio Adragna, <i>STMicroelectronics, Italy</i>	
Silvio DeSimone, <i>STMicroelectronics, Italy</i>	

Bi-Directional Piezoelectric Transformer based Converter for High-Voltage Capacitive Applications	1993
Martin S. Rødgaard, <i>Noliac A/S, Denmark</i>	
Dynamical Modeling of Power Converters with Power Semiconductor Filter	1999
Wing-To Fan, <i>City University of Hong Kong, Hong Kong</i> Kuen-Faat Yuen, <i>City University of Hong Kong, Hong Kong</i> Henry Shu-Hung Chung, <i>City University of Hong Kong, Hong Kong</i>	
A 100V Reconfigurable Synchronous Gate Driver with Comparator-based Dynamic Dead-Time Control for High-Voltage High-Frequency DC-DC Converters	2007
Lin Cong, <i>University of Texas, Dallas, United States</i> Jing Xue, <i>University of Texas, Dallas, United States</i> Hoi Lee, <i>University of Texas, Dallas, United States</i>	
Design and Analysis of an Ultra-High Efficiency Phase Shifted Full Bridge GaN Converter	2011
Rakesh Ramachandran, <i>University of Southern Denmark, Denmark</i> Morten Nymand, <i>University of Southern Denmark, Denmark</i>	
A High Efficiency Wireless DC-DC Converter	2017
Andrei Savu, <i>Rompower International S.R.L., Romania</i> Adrian Lita, <i>Rompower International S.R.L., Romania</i> Ionel Dan Jitaru, <i>Rompower Energy Systems Inc., United States</i>	
The Cost-Efficient, Common-Ground, Non-Isolated Three-Port Converter Deduced from the Single-Inductor Dual-Output (SIDO) Topology	2020
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Session D3: DC-DC Converters II

Location: Ballroom AB

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Session Chairs: Akshay Kumar Rathore, *National University of Singapore*
William G. Dunford, *University of British Columbia*

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Nihal Kularatna, <i>University of Waikato, New Zealand</i>	
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Luca Scandola, <i>Università di Padova / Infineon Technologies Italia S.r.l., Italy</i>	
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Seung-Min Lee, <i>KACO new energy Inc., Korea, South</i>	
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X. Li, <i>GE Global Research Center, United States</i>	
P.M. Cioffi, <i>General Electric Global Research Center, United States</i>	
R.L. Sellick, <i>GE Global Research Center, United States</i>	
R.K. Gupta, <i>First Solar, United States</i>	

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Location: Ballroom AB

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Jing Xu, *ABB*

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Juhamatti Korhonen, <i>Lappeenranta University of Technology, Finland</i>	
Tatu Musikka, <i>Lappeenranta University of Technology, Finland</i>	
Liudmila Smirnova, <i>Lappeenranta University of Technology, Finland</i>	
Olli Pyrhönen, <i>Lappeenranta University of Technology, Finland</i>	
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Session D5: Power Electronics for Utility Interface II

Location: Ballroom AB

March 19, 2015 11:30 - 14:00

Session Chairs: Dong Cao, *North Dakota State University*
Davide Giacomini, *International Rectifier*

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Julien Cordier, *Technische Universität München, Germany*

Ralph Kennel, *Technische Universität München, Germany*

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Shuitao Yang, *Michigan State University, United States*

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Fang Zheng Peng, *Michigan State University, United States*

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Location: Ballroom AB

March 19, 2015 11:30 - 14:00

Session Chairs: Ali Bazzi, *University of Connecticut*
Julia Zhang, *Oregon State University*

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L.M.A. Caseiro, *Universidade de Coimbra, Portugal*

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Session D8: Drives and Inverters II

Location: Ballroom AB

March 19, 2015 11:30 - 14:00

Session Chairs: Maryam Saeedifard, *Georgia Tech*
Kent Wanner, *John Deere*

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Location: Ballroom AB

March 19, 2015 11:30 - 14:00

Session Chairs: H. Zhang, *Transphorm*

Jason Kulick, *Indiana Integrated Circuits, LLC*

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Richard Y. Zhang, <i>Massachusetts Institute of Technology, United States</i>	
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Klaus Olesen, <i>Danfoss Silicon Power GmbH, Germany</i>	
Lars Paulsen, <i>Danfoss Silicon Power GmbH, Germany</i>	
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J. Acero, *Universidad de Zaragoza, Spain*
J. Serrano, *Universidad de Zaragoza, Spain*
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C.P. Dick, *Fachhochschule Köln, Germany*
E. Waffenschmidt, *Fachhochschule Köln, Germany*
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Stig Munk-Nielsen, *Aalborg University, Denmark*
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M.A. Bahmani, *Chalmers University of Technology, Sweden*
T. Thiringer, *Chalmers University of Technology, Sweden*
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Yichao Tang, *University of Maryland, College Park, United States*
Bruce Lee, *University of Maryland, College Park, United States*
Mert Vural, *University of Maryland, College Park, United States*
Peter Kofinas, *University of Maryland, College Park, United States*
Alireza Khaligh, *University of Maryland, College Park, United States*

Session D11: Power System Solutions

Location: Ballroom AB

March 19, 2015 11:30 - 14:00

Session Chairs: John Vigars, *Allegro Microsystems*
Ernie Parker, *Crane Aerospace & Electronics*

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Chih-Lun Wang, *Ford Motor Company, United States*
Chingchi Chen, *Ford Motor Company, United States*

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Jonathan Bradshaw, <i>ABB Switzerland Ltd., Switzerland</i>	
Ivica Stevanović, <i>Federal Office of Communications, Switzerland</i>	
Francisco Canales, <i>ABB Switzerland Ltd., Switzerland</i>	
Wim Van-Der-Merwe, <i>ABB Switzerland Ltd., Switzerland</i>	
Didier Cottet, <i>ABB Switzerland Ltd., Switzerland</i>	
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U. Drofenik, <i>ABB Switzerland Ltd., Switzerland</i>	
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Session D12: Modeling and Simulation

Location: Ballroom AB

March 19, 2015 11:30 - 14:00

Session Chairs: Jaber Abu Qahouq, *University of Alabama*
Sheldon Williamson, *University of Ontario Institute of Technology*

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Siyu He, <i>Auburn University, United States</i>	
John Y. Hung, <i>Auburn University, United States</i>	
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Wenguan Wang, <i>City University of Hong Kong, Hong Kong</i>	
Alex Chun-For Liu, <i>City University of Hong Kong, Hong Kong</i>	
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Ricky Wing-Hong Lau, <i>City University of Hong Kong, Hong Kong</i>	
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Abdul R. Beig, *Petroleum Institute, U.A.E.*

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Dushan Boroyevich, *Virginia Polytechnic Institute and State University, United States*

Rolando Burgos, *Virginia Polytechnic Institute and State University, United States*

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Artur Ulatowski, *University of Connecticut, United States*

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A Comprehensive Analysis of Magnet Defect Faults in Permanent Magnet Synchronous Motors 2779

Mohsen Zafarani, *University of Texas, Dallas, United States*

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Bilal Akin, *University of Texas, Dallas, United States*

Session D13: Control

Location: Ballroom AB

March 19, 2015 11:30 - 14:00

Session Chairs: Ali Davoudi, *University of Texas, Arlington*

Pietro Scalia, *Texas Instruments*

Improving Light Load Efficiency in a Series Capacitor Buck Converter by Uneven Phase Interleaving 2784

Pradeep S. Shenoy, *Texas Instruments Inc., United States*

Mike Amaro, *Texas Instruments Inc., United States*

Active Power Sharing in Input-Series-Input-Parallel Output-Series Connected DC/DC Converters 2790

Yiqing Lian, *University of Strathclyde, United Kingdom*

G.P. Adam, *University of Strathclyde, United Kingdom*

D. Holliday, *University of Strathclyde, United Kingdom*

S.J. Finney, *University of Strathclyde, United Kingdom*

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Xin Liu, *Huazhong University of Science and Technology, China*

Xinchun Lin, *Huazhong University of Science and Technology, China*

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Yong Kang, *Huazhong University of Science and Technology, China*

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Yongning Chi, <i>China Electric Power Research Institute, China</i>	
Yan Li, <i>China Electric Power Research Institute, China</i>	
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Location: Ballroom AB

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Session Chairs: Bulent Sarlioglu, *University of Wisconsin, Madison*

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Location: Ballroom AB

March 19, 2015 11:30 - 14:00

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Chris Siegl, *Fairchild Semiconductor International, Inc.*

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Location: Ballroom AB

March 19, 2015 11:30 - 14:00

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Liming Liu, *ABB*

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Location: Ballroom AB

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Jing Xu, *ABB*

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Location: Ballroom AB

March 19, 2015 11:30 - 14:00

Session Chairs: Pradeep Shenoy, *Texas Instruments*
Abhijit Pathak, *International Rectifier*

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Session D21: Power Electronics Applications II

Location: Ballroom AB

March 19, 2015 11:30 - 14:00

Session Chairs: Dimitri Torregrossa, *École Polytechnique Fédérale de Lausanne*
Abhijit Pathak, *International Rectifier*

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Yu Zhang, *Xidian University, China*

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