2012 Twenty-Seventh Annual IEEE Applied Power Electronics Conference and Exposition

(APEC 2012)

Orlando, Florida, USA
5 – 9 February 2012

Pages 1-856

IEEE Catalog Number: CFP12APE-PRT
ISBN: 978-1-4577-1215-9

TABLE OF CONTENTS

Session T01: DC-DC Converters: Applications

Location: Coronado A/B
February 7, 2012 8:30 - 12:00
Session Chairs: Jim Marinos, *Payton America Inc*
Fariborz Musavi, *Delta-Q Technologies*

Session T02: Special Topics on Solar Energy Harvesting

Location: Coronado C/D
February 7, 2012 8:30 - 12:00
Session Chairs: Robert Balog, *Texas A&M*

Session T03: Inverter Control

Location: Coronado E/F
February 7, 2012 8:30 - 12:00
Session Chairs: Tobias Geyer, *University of Auckland*
Fang Luo, *Virginia Polytechnic Institute and State University*

Session T04: Silicon Devices

Location: Fiesta 1-2
February 7, 2012 8:30 - 12:00
Session Chairs: Chuck Mullett, *Onsemi*
Carl Blake, *Transphorm, Inc.*

Session T05: Rectifer and Inverter: Modeling and Control

Location: Fiesta 3-4
February 7, 2012 8:30 - 12:00
Session Chairs: Zach Pan, *ABB*

Session T06: Grid Connected Inverter Applications in Renewable Energy Systems

Location: Fiesta 7-8
February 7, 2012 8:30 - 12:00
Session Chairs: Yi Huang, *AMETEK*
Hui Li, *Florida State University*

Session T07: AC-DC Converters I

Location: Fiesta 9-10
February 7, 2012 8:30 - 12:00
Session Chairs: Dustin Becker, *Emerson Network Power*
Chris Jones, *Emerson*

Session T08: DC-DC Converters: Magnetics

Location: Coronado A/B
February 8, 2012 8:30 - 10:15
Session Chairs: Stephen Carlsen, *Raytheon*
Jim Marinos, *Payton America Inc*

Session T09: Misc. Technologies for Renewable Energy Systems

Location: Coronado C/D
February 8, 2012 8:30 - 10:15
Session Chairs: Alexis Kwasinski, *University of Texas, Austin*

Session T10: Converter Topology I

Location: Coronado E/F
February 8, 2012 8:30 - 10:15
Session Chairs: Jinjun Liu, *Xi'an Jiaotong University*
Fang Zheng Peng, *Michigan State University*

Session T11: Power Supply on Chip Magnetics

Location: Fiesta 1-2
February 8, 2012 8:30 - 10:15
Session Chairs: Charles Sullivan, *Dartmouth College*
Matthew Wilkowski, *Enpirion*

Session T12: Modeling, Simulation and Control of Storage Units

Location: Fiesta 3-4
February 8, 2012 8:30 - 10:15
Session Chairs: Omer Onar, *Oak Ridge National Laboratory*
Ali Davoudi, *University of Texas at Arlington*

Session T13: EMI

Location: Fiesta 7-8
February 8, 2012 8:30 - 10:15
Session Chairs: Berker Bilgin, *MacAUTO, Canada Excellence Research Center*
Jonathan Kimball, *Missouri S&T*

Session T14: Packaging and Nanotechnology

Location: Fiesta 9-10
February 8, 2012 8:30 - 10:15
Session Chairs: Ernie Parker, *Crane Aerospace and Electronics*
Chuck Mullett, *Onsemi*

Session T15: DC-DC Converters: Bidirectional

Location: Coronado A/B
February 8, 2012 14:00 - 17:30
Session Chairs: Chris Mi, *University of Michigan, Dearborn*
Peyman Asadi, *International Rectifier*

Session T16: Applications of Power Electronics in Renewable Energy Harvesting I

Location: Coronado C/D
February 8, 2012 14:00 - 17:30
Session Chairs: Morgan Kiani, *Texas Christian University*
Juan Carlos Balda, *University of Arkansas*

Session T17: Electric Machines and Drives

Location: Coronado E/F
February 8, 2012 14:00 - 17:30
Session Chairs: Steve Pekarek, *Purdue University*
Kent Wanner, *Phoenix International*

Session T18: Power Electronics Applications I

Location: Fiesta 1-2
February 8, 2012 14:00 - 17:30
Session Chairs: Miaosen Shen, *United Technologies*
Seon-Hwan Hwang, *Florida State University*

Session T19: DC-DC Converters: Control I

Location: Fiesta 3-4
February 8, 2012 14:00 - 17:30
Session Chairs: Hamid Behjati, *University of Texas at Arlington*
Jaber Abu Qahouq, *The University of Alabama*

Session T20: Inverter Control for Key Issues Solution

Location: Fiesta 7-8
February 8, 2012 14:00 - 17:30
Session Chairs: Liming Liu, *Florida State University*
Guijia Su, *Oak Ridge National Laboratory*

Session T21: AC-DC Converters II

Location: Fiesta 9-10
February 8, 2012 14:00 - 17:30
Session Chairs: Gerry Moschopoulos, *University of Western Ontario*

Session T22: DC-DC Converters: Modeling

Location: Coronado A/B
February 9, 2012 8:30 - 11:30
Session Chairs: Chris Mi, *University of Michigan, Dearborn*
Peyman Asadi, *International Rectifier*

Session T23: Applications of Power Electronics in Renewable Energy Harvesting II

Location: Coronado C/D
February 9, 2012 8:30 - 11:30
Session Chairs: Babak Fahimi, *University of Texas at Dallas*
Art Barnes, *University of Arkansas*

Session T24: Motor Drives and Inverters I

Location: Coronado E/F
February 9, 2012 8:30 - 11:30
Session Chairs: Hamid Toliyat, *Texas A&M University*
Robert Shaw, *Phoenix International*

Session T25: Lighting I

Location: Fiesta 1-2
February 9, 2012 8:30 - 11:30
Session Chairs: Cahit Gezgin, *International Rectifier*

Session T26: Magnetics

Location: Fiesta 3-4
February 9, 2012 8:30 - 11:30
Session Chairs: Ed Herbert, *Co-Chair, PSMA Magnetics Committee*
Matthew Wilkowski, *Enpirion*

Session T27: AC-DC Converter Topologies and Control

Location: Fiesta 7-8
February 9, 2012 8:30 - 11:30
Session Chairs: Jin Wang, *Ohio State University*
Yaosuo Xue, *Siemens Corporate Research Inc.*

Session T28: DC-DC Converters: Control II

Location: Fiesta 9-10
February 9, 2012 8:30 - 11:30
Session Chairs: Jim Spangler, *Argonne National Laboratory*
Amir Rahimi, *International Rectifier*

Session D01: AC-DC Converters III

Location: Veracruz
February 9, 2012 11:30 - 13:30
Session Chairs: Alireza Khaligh, *IIT-Chicago*

Session D02: DC-DC Converters

Location: Veracruz
February 9, 2012 11:30 - 13:30
Session Chairs: Alireza Khaligh, *IIT-Chicago*

Session D03: Power Electronics for Utility Interface

Location: Veracruz
February 9, 2012 11:30 - 13:30
Session Chairs: Alireza Khaligh, *IIT-Chicago*

Session D04: Motor Drives and Inverters II

Location: Veracruz
February 9, 2012 11:30 - 13:30
Session Chairs: Alireza Khaligh, *IIT-Chicago*

Session D05: Devices and Components

Location: Veracruz
February 9, 2012 11:30 - 13:30
Session Chairs: Alireza Khaligh, *IIT-Chicago*

Session D06: System Integration

Location: Veracruz
February 9, 2012 11:30 - 13:30
Session Chairs: Alireza Khaligh, *IIT-Chicago*

Session D07: Modeling, Simulation and Control

Location: Veracruz
February 9, 2012 11:30 - 13:30
Session Chairs: Alireza Khaligh, *IIT-Chicago*

Session D08: Renewable Energy Systems

Location: Veracruz
February 9, 2012 11:30 - 13:30
Session Chairs: Alireza Khaligh, *IIT-Chicago*

Session D09: Vehicular Electronics II

Location: Veracruz
February 9, 2012 11:30 - 13:30
Session Chairs: Alireza Khaligh, *IIT-Chicago*

Session D10: Power Electronics Applications III

Location: Veracruz
February 9, 2012 11:30 - 13:30
Session Chairs: Alireza Khaligh, *IIT-Chicago*

Session D11: Packaging

Location: Veracruz
February 9, 2012 11:30 - 13:30
Session Chairs: Alireza Khaligh, *IIT-Chicago*

Session T29: DC-DC Converters: High Performance

Location: Coronado A/B
February 9, 2012 14:00 - 17:30
Session Chairs: Arnold Alderman, *Anagenesis Inc*

Session T30: Lighting II

Location: Coronado C/D
February 9, 2012 14:00 - 17:30
Session Chairs: Berker Bilgin, *MacAUTO, Canada Excellence Research Center*
Donald Boughton, *International Rectifier*

Session T31: Converter Topology II

Location: Coronado E/F
February 9, 2012 14:00 - 17:30
Session Chairs: Jin Wang, *Ohio State University*
Bill Wu, *Ryerson University*

Session T32: Power Electronics Applications II

Location: Fiesta 1-2
February 9, 2012 14:00 - 17:30
Session Chairs: Jim Marinos, *Payton America Inc*
Omer Onar, *Oak Ridge National Laboratory*

Session T33: Gan and SiC Devices and Applications

Location: Fiesta 3-4
February 9, 2012 14:00 - 17:30
Session Chairs: Carl Blake, *Transphorm, Inc.*
Doug Hopkins, *University at Buffalo*

Session T34: Misc. Modeling, Simulation and Control

Location: Fiesta 7-8
February 9, 2012 14:00 - 17:30
Session Chairs: Omer Onar, *Oak Ridge National Laboratory*

Session T35: Vehicular Electronics I

Location: Fiesta 9-10
February 9, 2012 14:00 - 17:30
Session Chairs: Alireza Khaligh, *IIT-Chicago*
Jim Spangler, *Argonne National Laboratory*