



Oral Presentations

Monday, October 30th

Session: DC-DC Isolated I 12:30PM-2:10PM
Design and Implementation of a 12 kW Scalable Electronic-Embedded Transformer (EET)-based DC Transformer (DCX) with Trapezoidal Current [#1358]
Yuliang Cao and Dong Dong

Session: DC-DC Isolated I 12:30PM-2:10PM
Single-Stage 48 V/1.8 V Coupled-Transformer Voltage Regulator (CTVR) [#878]
Xin Lou, Feiyang Zhu, Zheqing Li, Qiang Li and Fred C. Lee

Session: DC-DC Converters II 2:30PM-4:10PM
Comparative Study of DC-DC Converter Supplying Pulsated Current for Solid Oxide Fuel Cell Application [#1415]
Mattia Iurich, Ahmed Saafan, Boran Fan, Dong Dong, Rolando Burgos, Casey Brown, Hossein Ghezal-Ayagh and Roberto Petrella

Session: DC-DC Isolated II 2:30PM-4:10PM
A Scalable Electronic-Embedded Transformer (EET), a New Concept toward Ultra-high-frequency High-power Transformer in DC-DC Converters [#1657]
Yuliang Cao and Dong Dong

Session: Distributed Energy Integration 2:30PM-4:10PM
A Grid-Supporting Rectifier with Frequency and Voltage Regulation Capabilities [#1431]
Biqi Wang, Rolando Burgos and Bo Wen

Wednesday, November 1st

Session: Packaging I - Modeling and Design 8:30AM-10:10AM
Medium-Voltage Co-Packaged Charge-Balanced GaN SHJ-SBD with a SiC MOSFET in a Boost Phase-Leg Power Module [#1166]
Danielle Lester, Mark Cairnie and Christina DiMarino

Session: Packaging II - New Concepts 10:30AM-12:10PM
Packaging of a 10-kV Double-Side Cooled Silicon Carbide Diode Module With Thin Substrates Coated by a Nonlinear Resistive Polymer-Nanoparticle Composite [#1668]
Guo-Quan Lu and Zichen Zhang

Session: Solid-State Transformers 2:00PM-3:40PM
A Transformer Design with PCB Litz Wire Concept for Solid State Transformer [#1191]
Zheqing Li, Feng Jin, Xin Lou, Yi-Hsun Hsieh, Qiang Li and Fred C. Lee



Session: Device Testing and Monitoring Methods

4:00PM-5:40PM

Practical Insulation Testing of 10 kV SiC MOSFET Modules [#1248]

Joshua Stewart, David Nam, Arthur Mendes, Xiang Lin, Dong Dong and Rolando Burgos

Session: Multilevel Converters II

4:00PM-5:40PM

Hybrid Modular Multilevel Converters for High-AC/Low-DC Medium-Voltage Applications [#1683]

Jayesh Kumar Motwani, Jian Liu, Rolando Burgos, Zhi Zhou and Dong Dong

Session: Multilevel Converters II

4:00PM-5:40PM

Closed-Loop Capacitor Voltage Balancing Scheme for Modular Multilevel Converters Operated in Switching-Cycle Balancing Mode [#1666]

Jayesh Kumar Motwani, Boran Fan, Yu Rong, Dushan Boroyevich, Dong Dong and Rolando Burgos

Session: Solid State Circuit Breaker for Transportation Applications

4:00PM-5:40PM

The Analysis Design and Optimization of an Electronic MOV Circuit for the Solid-State Circuit Breaker Applications [#911]

Yuntao Xu, Di Zhang, Keck Brandon, Lakshmi Ravi, Dehao Qin and Zheyu Zhang

Thursday, November 2nd

Session: Power Converter EMI

10:30AM-12:10PM

Simplified Wide-Band Frequency Models for Single and Multi-layered Boost Inductors [#973]

Ripun Phukan, Shin-Yu Chen, Dong Dong and Rolando Burgos

Session: Power Converter EMI

10:30AM-12:10PM

Modeling of Conducted EMI Emissions in 10 kV SiC MOSFET Based Power Electronics Building Blocks [#1494]

Ashkan Barzkar, Boran Fan, He Song, Joshua Stewart, Rolando Burgos, Dong Dong and Dushan Boroyevich



Posters

Monday, October 30th

Poster Session 1

5:00PM-6:40PM

Scalability Study of Modular Hybrid DC Circuit Breaker with Embedded Auxiliary Power Supply [#528]

Jian Liu, Lakshmi Ravi, Dong Dong, Rolando Burgos and Steve Schmalz

Tuesday, October 31st

Poster Session 2

10:30AM-12:10PM

Sweep Frequency Response Analysis to Monitor and Identify Changes in the Impedance of a Photovoltaic Panel Measured Online using a Power Optimizer [#1359]

Jeet Panchal, Bo Wen and Rolando Burgos

Poster Session 3

2:30PM-4:10PM

A Five-level Hybrid Modular Multilevel Converter with High Efficiency and Power Density [#529]

Jian Liu and Dong Dong

Poster Session 3

2:30PM-4:10PM

Effects of Encapsulant Properties on the Thermo-Mechanical Reliability of Double-Side Cooled Power Modules for Traction Inverters [#1087]

Filip Boshkovski, Carl Nicholas, Zichen Zhang, Paul Paret, Khai Ngo and Guo-Quan Lu

Thursday, November 2nd

Poster Session 4

2:00PM-3:40PM

EMI Mitigation for SiC MOSFET Power Modules Using Integrated Common-Mode Screen [#1696]

Taha Moaz, Narayanan Rajagopal, Christina DiMarino and Michael Fish

Poster Session 4

2:00PM-3:40PM

Noise Propagation Study within Gate Drivers for Medium-Voltage High Power SiC-Based Converters, Caused by Near Field Coupling [#887]

He Song and Dushan Boroyevich

Poster Session 4

2:00PM-3:40PM

High-Density Forced Air-Cooling Duct for 211-kW SiC-Based Aircraft Propulsion Inverters [#1219]

Che-Wei Chang, Xingchen Zhao, Ripun Phukan, Rolando Burgos, Simon Uicich, Pascal Asfaux and Dong Dong