

Student Presentations: Inductor Design and EMI MitigationPanel Discussion co-chairs: *Dong Dong, CPES; Troy Beechner, RCT Systems*

Presenters	Presentations
Shuo Wang	Coupled Inductor Design for Multi-phase PFC Converter
Feiyang Zhu	Multi-phase Coupled Inductor Analysis For Multi-phase Voltage Regulators
Ripun Phukan	Highly Integrated Monolithic Filter Building Block for Silicon Carbide based Three-Phase Interleaved Converters
Xingchen Zhao	Design of a PCB-Based Common-Mode EMI Filter of a 100 kW SiC Inverter for High-Altitude Application
Victoria Baker	Common-Source Inductance Induced Voltage Overshoot and Self-Sustained Oscillation in Active Bidirectional Switches

Student Presentations: High Frequency Transformer DesignPanel Discussion co-chairs: *Qiang Li, CPES; Bing Lu, Texas Instruments*

Presenters	Presentations
Feng Jin	A Novel Core Structure for Integrated Transformer of Three Phase DC/DC Converters
Tianlong Yuan	High power transformer with controllable leakage inductance
Pranav Raj Prakash	Design Optimizations of the PCB winding Matrix Transformer for LLC Converters
Minh Ngo	Magnetic Design and Validation of a 500 kHz, 18 kW Intra-Leaved Litz Wire Transformer for Battery Charging Applications
Zheqing Li	High-Frequency Transformer Design with Medium-Voltage Insulation for Solid-State Transformer (SST)

Student Presentations: Insulation Design of Magnetic ComponentsPanel Discussion co-chairs: *Rolando Burgos, CPES; Francisco Canales, ABB*

Presenters	Presentations
He Song	A Compact High-Power Single-Turn Inductor for 6 kV SiC-based Power Electronics Building Blocks
Ning Yan	Design of Insulation System in High-Frequency Auxiliary Power Supply for Medium Voltage Applications
Keyao Sun	Insulation Design of Wireless Auxiliary Power Supply for Medium Voltage Converters
Le Wang	Piezoelectric Transformer-Based High Step-Down Voltage-Ratio DC/DC Converter

Student Presentations: Development and Robustness of WBG DevicesPanel Discussion co-chairs: *Yuhao Zhang, CPES; Rudy Wang, Delta Electronics*

Presenters	Presentations
Yunwei Ma	Tri-gate GaN Junction High-Electron-Mobility Transistors
Ming Xiao	Medium-Voltage Multi-Channel AlGaIn/GaN Power Schottky Barrier Diodes
Ruizhe Zhang	Dynamic Breakdown Voltage and Overvoltage Ruggedness of 600 V/650 V Commercial p-gate GaN HEMTs
Qihao Song	Surge Energy and Overvoltage Robustness of Cascode GaN HEMTs
Joseph Kozak	Hard-Switched Overvoltage Robustness of p-Gate GaN HEMTs at Increasing Temperature

Student Presentations: Packaging and Characterization of WBG DevicesPanel Discussion co-chairs: *Guo-Quan Lu, CPES; Wenli Zhang, Texas Instruments*

Presenters	Presentations
Chao Ding	A Double-Side Cooled SiC MOSFET Power Module with Sintered-silver Interposers
Zichen Zhang	Double-Side Cooled Medium-Voltage Power Module with Sintered-Silver Joints Demonstrated in an 8-kV Silicon Carbide Diode Module
Shengchang Lu	Packaging and Characterization of a 650 V, 150 A eGaN HEMT for High-temperature Application
David Nam	SiC MOSFET Characterization, Packaging, and Reliability at 300 °C
Jacob Gersh	Evaluation of Low-Pressure-Sintered Multi-Layer Substrates for Medium-Voltage SiC Power Modules

Student Presentations: High-Density Integration of WBG and UWBG DevicesPanel Discussion co-chairs: *Christina DiMarino, CPES; Stéphane Azzopardi, SAFRAN GROUP*

Presenters	Presentations
Boyan Wang	High Surge Current Capability in Ultra-Wide Bandgap Gallium Oxide Power Rectifiers through Device-Package Co-Optimization
Jack Knoll	Design and Analysis of a PCB Embedded SiC Half-bridge Module
Narayan Rajagopal	Design of a High-Density Integrated Power Electronics Building Block (iPEBB) based on 1.7 kV SiC MOSFETs on a Common Substrate
Tianyu Zhao	Design of Three-level Flying-capacitor Commutation Cells with Four Paralleled 650V/60A GaN HEMTs

Student Presentations: Design of High-Frequency Power Converters**Panel Discussion co-chairs:** *Dong Dong, CPES; Rui Zhou, EnerSys*

Presenters	Presentations
Ahmed Nabih	High Power Density 1MHz 3kW 400V-48V LLC Converter for Datacenters with improved Core Loss and Termination Loss
Rimon Gadelrab	A WBG Based 400/48V LLC Converter Operating at 500KHz with 99% Efficiency
Phu Hieu Pham	11 kW Bidirectional On-board Battery Charger
Yuliang Cao	Design of High-density Isolated Bi-directional Soft-switching Resonant DC-DC Converter with Partial Power Processing
Boran Fan	15 kW Step-up Mode SiC Matrix Converter Design with 3D Commutation-loop Layout and PCB Aluminum Nitride Cooling Inlay

Student Presentations: Analysis and Optimization of High-Frequency Power Converters**Panel Discussion co-chairs:** *Khai Ngo, CPES; Dheeraj Jain, Würth Elektronik*

Presenters	Presentations
Bo Li	A Constant-Current ZVS Class-E DC-DC Converter with A Loosely Coupled Transformer with PCB Windings
Cong Tu	Series-Resonator Buck Converter for Datacenters and Automotive Power Distribution System
Chunyang Zhao	Medium Voltage Solid State Transformer Based Extreme Fast EV Charger
Qian Li	Hierarchical Optimization Design of Medium-Voltage Modular Converter Based Energy Management
Md Abdul Gaffar	Integrated Power Electronics Building Block Circuit Design and Analysis

Student Presentations: Modeling and Control of High-Frequency Power Converters**Panel Discussion co-chairs:** *Qiang Li, CPES; Juanjuan Sun, Powerland*

Presenters	Presentations
Qing Lin	Small-Signal Modeling and Stability Analysis of a Turbine- Generator-Rectifier System with Electromechanical Dynamics
Xingyu Chen	Control of Critical Mode Totem-Pole PFC Rectifier
Xin Lou	Modeling and Control for 48V/1V Sigma Converter
Gibong Son	Phase Shedding Control and Circulating Current Analysis of Two-Channel Paralleled Soft-Switching Three-Phase Inverter

Student Presentations: Insulation Evaluation and Circuit BreakersPanel Discussion co-chairs: *Igor Cvetkovic, CPES; Colin Davidson, GE Grid Solutions*

Presenters	Presentations
Yue Xu	High Power Density Medium Voltage Converter Integration via Active Electric Field Management
Joshua Stewart	Medium Voltage PCB-based DC Bus Design Considering Current Handling Capability
Mark Cairnie	Optimization of Electric-Field Grading Plates in a PCB-Integrated Bus Bar for a High-Density 10 kV SiC MOSFET Power Module
Jian Liu	High Power Density Design of Power Electronic Interrupter in Hybrid DC Circuit Breaker
Lakshmi Ravi	Evaluation of SiC MOSFETs for Solid State Circuit Breakers in dc Distribution Applications

Student Presentations: Advanced Gate Driver DesignPanel Discussion co-chairs: *Rolando Burgos, CPES; Sriram Chandrasekaran, Raytheon Technologies*

Presenters	Presentations
Slavko Mocevic	Gate-Driver Integrated Junction Temperature Estimation of SiC MOSFET Modules
Xiang Lin	Hybrid Voltage Balancing Approach for Series-Connected 10 kV SiC MOSFETs for DC-AC Medium-Voltage Power Conversion Applications
Jiewen Hu	Enhanced Gate Driver Design for SiC-Based Generator Rectifier Unit for Airborne Applications
Tam Nguyen	Switching Current Measurement Based on Power Module Parasitics
Paul Mourges	Variable Gate Voltage Active Gate Driver to Reduce Drain-Source Overshoot and Control Drain Current Rate of Change

Student Presentations: Modeling and Control for High-Power SystemsPanel Discussion co-chairs: *Bo Wen, CPES; Lennart Harnefors, ABB*

Presenters	Presentations
Biqi Wang	Fault Characteristic Analysis in 56 Bus Distribution System with Penetration of Utility-scale PV Generation
Yu Rong	A Distributed Communication and Control System for Modular Power Converters with Sub-ns Synchronization Accuracy
Vladimir Mitrovic	Real-Time Network Protocols for Gate Driver Communication and Control
Jianghui Yu	Control of Converters Having Integrated Capacitor Blocked Transistor Cells
Yugal Gupta	Modeling and Control of Modular Multilevel Converter