



Technical Session Presentations

Lecture Sessions

Tuesday, February 27, 2024

8:30 AM – 12:00 PM T02 - Resonant DC DC Converters

T02.3 - *Design of a High Current, 1 MHz, 5 kW Partial Power Processing Converter with Hybrid Flex PCB for 80 C Ambient Automotive Conditions*

Technical Lecture Presenter: **Minh Ngo**

Wednesday, February 28, 2024

8:30 AM – 12:00 PM T09 - Bi-Directional DC DC Converter

T09.1 - *Resonant Commutation Technique for Scalable Electronic-Embedded Transformer DCX with Bidirectional Switch*

Technical Lecture Presenter: **Yuliang Cao**

8:30 AM – 12:00 PM T10 - Solid-State Transformers

T10.8 - *A 100 kW, 405 kHz HFT for Power Electronic Building Blocks (PEBBs) with a Compact MV Electrical Insulation Design*

Technical Lecture Presenter: **Sharifa Sharfeldden**

8:30 AM – 12:00 PM T13 - Control of Power Electronic Converters II

T13.5 - *Small-Signal Modeling of Multiphase V^2 Constant On-Time Control with Phase Overlapping*

Technical Lecture Presenter: **Sundaramoorthy Sridhar**

8:30 AM – 12:00 PM T14 - GaN Devices

T14.6 - *Unclamped-Inductive-Switching Based Output Capacitance Loss Characterization with Extended Test Capability*

Technical Lecture Presenter: **Qihao Song**

T14.8 - *Exceptional Gate Overvoltage Robustness in P-Gate GaN HEMT with Integrated Circuit Interface*

Technical Lecture Presenter: **Bixuan Wang**

8:30 AM – 12:00 PM T16 - Magnetic Applications I

T16.2 - *Evaluation and Comparison of Discrete Magnetics and Integrated Magnetics for High Power LLC Converters*

Technical Lecture Presenter: **Feng Jin**

1:30 PM – 5:00 PM T17 - POL & Multiphase DC DC Converters

T17.2 - *Analysis of Parasitic Stored Energy Loss and PCB Layout Optimization for 48V-to-1V Series-Capacitor Buck*

Technical Lecture Presenter: **Xinmiao Xu**

T17.4 - *A 2400 W/in³ 1.8 V Bus Converter Enabling Vertical Power Delivery for Next-Generation Processors*

Technical Lecture Presenter: **Pranav Raj Prakash**

T17.5 - *Ultra-Low-Profile Twisted Core Inductor for Vertical Power Delivery Voltage Regulator*

Technical Lecture Presenter: **Adhistira Madhyasta Naradhipa**

1:30 PM – 5:00 PM T24 - Charging Systems

T24.3 - *A 22-kW On-Board Charger (OBC) with an Integrated Planar Inductor and Transformer*

Technical Lecture Presenter: **Tianlong Yuan**

Thursday, February 29, 2024

8:30 AM – 11:10 AM T27 - Topologies & Passives for Utility Interface

T27.6 - *Design and Optimization with Litz Wire Version of PCB in Solid-State Transformer*

Technical Lecture Presenter: **Zheqing Li**

8:30 AM – 11:10 AM T28 - Design Techniques for Noise & EMI Reduction

T28.1 - *Investigation on Noise Caused by Vgs and Near Field Coupling on Gate Drivers PCBs for Medium Voltage SiC-Based Converters*

Technical Lecture Presenter: **He Song**

T28.5 - *Discussion on Gate Driver CM Noise and its Minimization Using Wheatstone Bridge Structure with Integrated Rogowski Sensor*

Technical Lecture Presenter: **He Song**

T28.6 - *A Novel Technique to Measure Parasitic Capacitances Affecting CM Noise Emissions*

Technical Lecture Presenter: **Tyler McGrew**

8:30 AM – 11:10 AM T29 - *Practical Design Considerations for Power Modules*

T29.5 - *Modeling and Analysis of Multi-Layer High-Voltage Power Modules Design Using Generalized Multiport Network*

Technical Lecture Presenter: **Yu Chen**

T29.5 - *Modeling and Analysis of Multi-Layer High-Voltage Power Modules Design Using Generalized Multiport Network*

Technical Lecture Presenter: **Yu Chen**

8:30 AM – 11:10 AM T30 - *Device Modeling & Simulation*

T30.5 - *A Passive Balancing Method for Dynamic Current Sharing of Paralleled SiC MOSFETs with Kelvin-Source Connection*

Technical Lecture Presenter: **Che-Wei Chang**

1:30 PM – 3:10 PM T34 - *Soft Switching DC DC Converters*

T34.1 - *Rotation Control of Synchronize Rectifier to Improve Thermal Performance of LLC Converter Under Boost Mode Operation*

Technical Lecture Presenter: **Feng Jin**

Dialogue Sessions

Thursday, February 29, 2024 - 11:30 AM – 1:30 PM

D01 - AC-DC Converters II

D01.7 - *Three-Level Flying-Capacitor-Based 100 W USB-C PD GaN Charger in Aircraft Applications*

Technical Dialogue Presenter: **Tianyu Zhao**

D03 - Low-Power DC-DC Converters

D03.14 - *An Accurate Temperature-Based Method for Fast Switching Loss Extraction of WBG Device*

Technical Dialogue Presenter: **Qiuzhe Yang**

D05 - Motor Drives & Inverters

D05.2 - *Hybrid Modulation Method for Single Phase Full Bridge CRM Inverter to Improve Reactive Power Capability*

Technical Dialogue Presenter: **Xingyu Chen**

D08 - Modeling & Simulation

D08.2 - *Modelling of a Planar Omnidirectional Wireless Power Transfer System*

Technical Dialogue Presenter: **Xipei Yu**

D14 - Harvest, AC & HF Power Applications, & Power Quality

D14.2 - *Power Quality Impact of Residential LED Lighting Systems with Integrated TRIAC-Based Dimmer*

Technical Dialogue Presenter: **Jeet Panchal**