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PCIM Conference 2026 – preliminary program

Tuesday, 9 June 2026

08:15 **Community Coffee**

Stage: Tokio

09:00 **Opening / Award Ceremony**

Stage:Tokio

09:45 **Keynote**
The GaN Evolution: Lateral, Vertical, and Bidirectional — What's Next?
Michael Basler, Fraunhofer IAF, DE
Chairperson: Johann W. Kolar, ETH Zurich, CH

10:30 **Coffee Break**

Stage: Tokio
GaN Devices
Chairperson: Thomas Neyer, Infineon Technologies, DE

11:00 **1.2 kV Integrated Power Switch with PSJ GaN, Si IGBT and SiC Diode**
Alireza Sheikhan, The University of Sheffield, UK

11:20 **SmartGaN: First Smart Cut-Based Engineered Substrate for High-Performance GaN Power Devices**
Youssef Hamdaoui, University of Lille, FR

11:40 **GaN-HEMTs vs. GaN-"Bricks" – A Device Concept Comparison**
Richard Reiner, Fraunhofer IAF, DE

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Stage: St. Petersburg
Advanced Cooling
Chairperson: Shiori Idaka, Mitsubishi Electric, DE

11:00	**Multi Layered Mo Effects on the Spacer for Double Sided Cooling Power Module** Byeongchan Kim, Korea Institute of Industrial Technology, KR
11:20	**Validated Electro-Thermal Methodology for Transient Current Capability in IGBT Power Modules** Ludovica Longo, Nexperia, IT
11:40	**Loop Heat Pipe Technology for Enhanced Cooling in Power Electronics** Hülya Geçim, Calyos, BE

Stage: Shanghai
Advanced Control Methods for Power Converters
Chairperson: Francisco Javier Azcondo, University of Cantabria, ES

11:00	**Stability of Inner-loop Only Control of Single Stage AC-link Converter For OBC Applications** Rami Troudi, Valeo, FR
11:20	**Hybrid Optimal Trajectory Control for LLC Converters to Achieve Fast Response Under Dynamic Loading** Yassine El khourassani, STMicroelectronics, FR
11:40	**A Closed-loop Dead Time Control Method Based on di/dt Peak Detection** Hongming Zhao, Robert Bosch, DE

Stage: Kyjiw
Measurement Techniques and Methods I
Chairperson: Sang Won Yoon, Seoul National University, KR

11:00	**Automated Deskew of Double-Pulse Measurements for Precise Switching Loss Calculation** Philipp Rehlaender, onsemi, DE
11:20	**Investigation of Die-Level Current Phenomena in SiC Modules Using an Electrically Representative PCB** Matt Appleby, University of Bristol, UK
11:40	**500 MHz Magnetic-Field-Gradient-Based Sensing of Die Currents in SiC Power Modules** Jiaqi Yan, University of Bristol, UK

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Stage: Seoul
Charging Technologies
Chairperson: Jens Schmenger, Siemens, DE

11:00	**Techno-Economic Sizing of a Renewable Hybrid Energy System for an EV Charging Station** Maria Nunez, University of Sheffield, UK
11:20	**Implementation of a Power Gyrator for Electric Vehicle Chargers** Luis Ruiz Chamorro, Polytechnic University of Madrid, ES
11:40	**Multiport Single-Transformer Power Converter Enabling Onboard Charging and DC-DC Conversion in EVs** Oscar Lucia, University of Zaragoza, ES

Stage: Istanbul
Advanced Modelling and Design Technologies for Electrical Drives
Chairperson: Manfred Schrödl, Vienna University of Technology, AT

11:00	**Determination of Parasitic Capacitances in a Motor Using Ansys Maxwell** Muhammad Ahmad Masood Gill, University of Southern Denmark, DK
11:20	**Evaluation of PWM Techniques for Reduced Powertrain Losses and NVH** Giorgio Valente, Hexagon, UK
11:40	**Stator Flux Linkage Observation of a Synchronous Machine using a Flux Density Sensor Array** Martin Silva, Mercedes-Benz, DE
12:00	**Lunch Break**
12:45	**Poster/Dialogue Session & Coffee Time (Hall 4A)**

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IGBT Devices

Chairperson: Chiara Corvasce, Hitachi Energy, CH

PP001	**New 2.3 kV IGBT8 and EmCon8 in XHP 2 for Demanding High-Power Applications** Marcel Morisse, Infineon Technologies, DE
PP002	**2.5kV IGBT Module with High Withstand Voltage and High Reliability** Tomokazu Kanna, Mitsubishi Electric, JP
PP003	**Current Mismatch during Turn-On of Parallel IGBTs due to Uneven Mutual Inductances** Tim Scheel, University of Rostock, DE
PP004	**1.2 kV Narrow-Mesa Trench IGBT Platform for Optimized Losses and Ruggedness performance** Indrajeet Bajarang Jadhav, Littelfuse, DE
PP005	**Stability of Paralleled IGBTs Driven by a Common Gate Drive Unit During Turn-off** Lukas Tomforde, University of Rostock, DE
PP006	**New 6.5 kV IGBT7 in IHV module for demanding HVDC systems** Martin Hennig, Infineon Technologies, DE
PP007	**Design and Performance Study of 750V RC-IGBT for High Power EV Application** Liheng Zhu, Zhuzhou CRRC Times Electric, CN
PP008	**Turn-off Delay Time Reduction in Modern IGBTs with a Two-Step Turn-off Method** Vishwas Acharya Nayampalli, University of Rostock, DE
PP009	**New 6.5 kV HVIGBT Module with Low Loss and High Switching Robustness** Yuta Nishimura, Mitsubishi Electric, JP
PP010	**Miniaturization of 3-level Topology Utilizing 8th Generation New NX Module** Nobuchika Aoki, Mitsubishi Electric Corporation, JP

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Device Robustness

Chairperson: Stéphane Lefebvre, CNAM - SATIE, FR

PP011 **Comparison Between Two Short-Circuit Protection Techniques for SiC Power Module**
Quyen Nguyen, Nidec Leroy-Somer, FR

PP012 **Device and Bias Influence on Short-Circuit Performance in 3.3 kV SiC MOSFETs**
Ehab Tarmoom, Microchip Technology, US

PP013 **Investigation of Dynamic On-Resistance in GaN HEMTs under Single- Pulse Short-Circuit Operation**
Nikhil Bhardwaj, IIT Bombay, IN

PP014 **Short-circuit Faults for 3.3 kV SiC-MOSFET Power Modules**
Muhammad Nawaz, Hitachi Energy, SW

Novel Materials and Thermal Management

Chairperson: Geraldo Nojima, Eaton, US

PP015 **Novel Thermal Interface Material for PCBs: High Insulation Reliability, Validated by Cooling Tests**
Takenori Kakutani, Taiyo, JP

PP016 **Experimental Evaluation of Direct-Mounted Flat Heat Pipes for Thermal Management on a PSFB Converter**
Georg Woywod, Munich University of Applied Sciences, DE

PP017 **Characterization of Pulsed Current Capability of SiC Trench MOSFET in third Quadrant Operation**
Shashank Mathur, Infineon Technologies, US

PP018 **Determination of Loss of Coolant Flow in Traction Inverters**
Vishwas Shashidhar, BorgWarner, IN

PP019 **Optimizing Wide Bandgap Device Performance via Thermal Interface Material and Mounting Choices**
Rony Thomas, Nexperia, DE

PP020 **Comparative Evaluation of Top-Side Cooled SMD SiC Packages: Efficiency, Thermal Constraints, and Pow**
Fatih Cetindag, Nexperia, DE

PP021 **Comparison of Measurement Methods for Determining Thermal Impedance (Zth) in Power Semiconductors**
Tobias Heise, University of Rostock, DE

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PP022 **Determination of Parameters Influencing Phase Change Cooling Close to the Chip**
Moritz Naumann, University of Bayreuth, DE

PP023 **Direct Insulative Cooling Power Module Development and Thermal Evaluation**
Hallen Liu, Nexperia, CN

Stress Monitoring and Lifetime Prediction
Chairperson: Ulrike Grossner, ETH Zurich, CH

PP024 **Democratized Multi-Domain Workflow for Thermomechanical Reliability Assessment in Power Electronics**
Lisa Stencel, Siemens, DE

PP025 **Mission Profile Based Lifetime Prediction for IGBT Power Modules with Coupled Failure Mode**
Min-Ki Kim, Hyundai MOBIS, KR

PP026 **Gate Switching Instability in SiC MOSFETs at Extended Lifetimes Using a Stress-Frequency of 40 MHz**
Ruben Schnitzler, University of Stuttgart, DE

PP027 **SiC MOSFET Bondfoot Degradation Model with Assumption for Elastic Deformation**
Holger Heinisch, Robert Bosch, DE

PP028 **Advanced Reliability Assessment of Life of Power Modules Through Redefined 3D J-Integral**
Jaejin Jeon, Seoul National University, KR

Pulse Width Modulation Methods
Chairperson: Marija Jankovic, ROHM Semiconductor, DE

PP029 **Flux-Track-Curve-Based Optimisation Constraint for OPP in PWM for Automotive Applications**
Christian Vorobev, Ruhr-University Bochum, DE

PP030 **Fast Processing Modulation for Parallel Interleaved Inverters with Zero-Sequence Circulating Current**
Jose Lozano, Huawei, DE

PP031 **Modulation Techniques and Experimental Validation of High-Voltage GaN-Based 3-Level ANPC Inverters**
Matthieu Gaychet, STMicroelectronics, FR

PP032 **Novel Reduced-Transition Discontinuous PWM for Full ZVS Range Pulsed DC-Link Three-Phase Inverter**
Mohamed Atef Tawfik, University of Southern Denmark, DK

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PP033 **Frequency Correction Method for iTCM Modulation with Powder Core Inductors**
Gang Zhang, University of Twente, NL

PP034 **OPP Policy Design Using Differentiable Programming**
Mohammad Abu-Ali, Robert Bosch, DE

Intelligent Gate Drivers I
Chairperson: Marc Hiller, Karlsruhe Institute of Technology, DE

PP035 **High-Voltage Double-Gate IGBT Driver with Floating Island Architecture for 6.5 kV Isolation**
Faiq Siddiqui, University of Rostock, DE

PP036 **Approach for overcoming bootstrap-circuit limitations in high-side gate-driver supplies**
Matthias Gorski, Trane Technologies, DE

PP037 **In-Situ Dead-Time Control Based on Gate-Charge Information Derived from Gate-Current**
Lukas Knappstein, TU Dortmund University, DE

PP038 **Three-Level Gate Driver for Slew Rate Control in Reliability-Oriented Voltage Switching Tests**
Sarthak Swaroop Dash, Chemnitz University of Technology, DE

PP039 **Hardware-in-the-Loop Optimization of AGD Patterns for SiC MOSFETs Comparing Model-Free Algorithms**
Lukas Kappel, TU Dortmund University, DE

PP040 **SPI Programmable Current-Mode Isolated Gate Driver for High-Performance Traction Inverters**
Ion Tesu, Skyworks Solutions, US

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Transportation Infrasturcture
Chairperson: Pavol Bauer, Delft University of Technology, NL

PP041 **Estimating Energy Use and Waste to Consider EV Charging Potential for an Urban Tram Network**
Fiona McBride, University of Sheffield, UK

PP042 **Efficiency Maximization Strategy for a Dual-stage High-voltage Charging Infrastructure**
Francesco Porpora, University of Cassino and Southern Lazio, IT

PP043 **Unlocking Transformer Secrets: A Revolutionary Approach to High-Frequency Parasitic Modeling**
Hasan Mousavi Somarin, Valeo, FR

PP044 **Design and Experimental Validation of a 200kW/L PCB Based 50kW DC-DC Converter for E-Mobility**
Guillaume Lefevre, Mitsubishi Electric, FR

Charging Strategies and Battery Characterization
Chairperson: Marco Jung, University of Applied Sciences Bonn-Rhein-Sieg, DE

PP045 **Degradation Modes Analysis for Fast Charging Design of Lithium-Ion Cells**
Xabier Dorronsoro Martinez, Mondragon University, ES

PP047 **Mutual Transferability of the Results From HPPC and EIS for Internal Battery Resistance Estimation**
Lars Leister, Karlsruhe Institute of Technology, DE

PP048 **Parameter Identification of Aerospace LiB Using Optimization Algorithm and the Thevenin Model**
Jan Leuchter, Brno University of Technology, CZ

PP049 **Enhancing LFP State-Estimation through Self-Diagnostic Tests in Modular Battery Systems**
Manex Aizpurua, University of Mondragon, ES

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Electromagnetic Compatibility: Emission and Immunity
Chairperson: Francesco Gennaro, STMicroelectronics, IT

PP050 **Evaluating Additive Effects in Soft Magnetic Ferrites Through Combined Experimental Techniques for I**
Antonio Alcarria Moraga, Würth Electronics, DE

PP051 **Frequency-Independent Mechanisms Limiting Common-Mode Filter Scaling in Power Electronics**
Torbjorn Sorsdahl, Inovance Automotive, NO

PP052 **Impedance Modeling in Cabling Scenarios**
Rafael Suárez, IKERLAN, ES

PP053 **An Integrated Active EMI Filter to Attenuate Both DM and CM Noise in Single-Phase AC Systems**
Timothy Hegarty, Texas Instruments, US

PP054 **Impact of Galvanic Isolation in Automotive DC-DC Converters on their Conducted and Radiated EMI**
Shounak Shashishekhar Kulkarni, Helmut Schmidt University, DE

PP055 **Negative Effect of Common Mode Chokes and Remedies for this Effect**
Christoph Fritsch, Siemens, DE

PP056 **Multi-Objective Optimization of EMI Filters with Messy Genetic Algorithm**
Róbert Orvai, Budapest University of Technology and Economics, HU

Modelling and Simulation of Power Electronic Systems
Chairperson: Jürgen Biela, ETH Zurich, CH

PP058 **Novel Design Algorithm for LCL Grid Filters Under Consideration of Arbitrary Grid Codes**
Simon Johannliemke-Appelbaum, Ruhr-University Bochum, DE

PP059 **Gerber File-based Electrical-Thermal Co-Simulation for Printed Circuit Board Design**
Xianghao Mo, Polytechnic University of Madrid, ES

PP060 **Evaluation and Optimization of Loop Inductance for Three-phase Inverter with Low Common Mode Voltage**
Soumyabrata Patra, University of Southern Denmark, DK

PP061 **Enhancing performance of Megawatt scale SiC-Power Stacks through novel parallelization method**
Fabio Carastro, Semikron Danfoss, DE

PP062 **Pulse Width Modulation Analysis and Optimization for Fast Simulation and Automatic Code Generation**
Thomas Effenberger, Rosenheim University of Applied Sciences, DE

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PP63 **Real-Time-Capable Oversampling Model for different Three-Level-Three-Phase Converter Topologies**
Axel Kiffe, dSPACE, DE

Measurement Techniques and Methods II
Chairperson: Wolfram Teppan, LEM INTERNATIONAL, CH

PP064 **Impact of Kelvin-Source vs. Power-Source Sensing in Si/SiC Power Switch Characterizations**
Aditya Shantaram Sawant, onsemi, DE

PP065 **A Measurement-Based Methodology for Determining the Minimum Dead-Time**
Philipp Rehlaender, onsemi, DE

PP066 **Single-Chamber Air-Cooled Heat-Balance Calorimeter with High Accuracy across a Wide Power Range**
Sascha Langfermann, BLOCK Transformatoren-Elektronik, DE

PP067 **Surface Potential Measurements of Power Semiconductor Chip using Electro-static Force Microscopy**
Hirotaka Muto, Mitsubishi Electric, JP

PP068 **Compensated Fluxgate Current Sensor for DC and AC Measurements**
Slavko Veinovic, University of Belgrade, RS

PP069 **Comparison of Different Methods for Extracting Parasitic Inductances in Inverter Designs**
Tim Scheel, University of Rostock, DE

PP070 **A Modified DPT Platform Enabling Faster Inductor Discharge and Extended Current Range**
Mohammad Vedadi, onsemi, DE

PP071 **Efficiency Measurements Require High Precision - Consistency Enables Comparability**
Jörg Bornwasser, Fraunhofer ISE, DE

PP072 **Comparative Analysis of Results from Disparate Double-Pulse-Test Environments**
Arthur Boutry, University of Alabama, US

PP073 **Electroluminescence-based Junction Temperature Sensing in Silicon Fast Recovery Diode**
Antonis Stathatos, Eindhoven University of Technology, NL

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Reliability and Condition Monitoring

Chairperson Mark M. Bakran, University of Bayreuth, DE

PP074 **Comprehensive Short-Circuit Comparison of Low Voltage Schottky-Gate GaN HEMTs and Silicon MOSFETs**
Marco Cannone, Infineon Technologies, AT

PP075 **Flexible Test Platform for Mission-Profile-Based Validation of Active Thermal Control Techniques**
Eneko Agirrezabala, Mondragon University, ES

PP076 **Overcurrent Detection for GaN HEMTs with 20 ns Detection Time**
Nick Van Houtven, MinDCet, BE

PP077 **Fault-Tolerant Control of Dual Three-Phase PMSM for Light Electric Vehicle under Open-Phase Faults**
Mathana Venkatesh Sivanantham, SEG Automotive, DE

PP078 **Electro-Thermal Health Monitoring for GaN-Based Power Converters: A Hybrid Prognostics Approach**
Manex Gondat, Ikerlan, ES

PP079 **Data-driven Remaining Useful Life Prediction for Si-IGBT in a Digital Twin Architecture**
Lena Köhler, Fraunhofer, DE

PP080 **IGBT Turn-off Delay Time for Condition Monitoring in Industrial Applications**
Karthik Debbadi, Fraunhofer ISIT, DE

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Stage: Tokio
Power Electronics in Transportation
Chairperson: Philippe Ladoux, University of Toulouse, FR

14:30	**Battery Integration in Railways: Review of Power Converter Topologies and their Industrial Readiness** Saad Ahmad, University of Oviedo, ES
14:50	**Shared DC-Link Optimization for Paralleled Inverters Using Phase-Shifted PWM** Axel Wagret, Airbus, FR
15:10	**Towards Reliability-Oriented Mission Profiles for Electric Aircraft Propulsion Converters** Jeff Kugener, German Aerospace Center (DLR), DE

Stage: St. Petersburg
Condition and Health Monitoring
Chairperson: Jürgen Schuderer, Hitachi Energy, CH

14:30	**Motor and Inverter Fault Detection using Current Signature Analysis for GaN-based Motor Drives** Holger Kapels, Hamburg University of Technology, DE
14:50	**Optimized High Frequency Cable–Motor Impedance Parameter Design for Voltage Stress Mitigation** Muhamad Usman Sardar, Tallinn University of Technology, EE
15:10	**Microclimate Inside of Power Semiconductor Modules and Their Surrounding Cabinet During Operation** Wilfried Holzke, University of Bremen, DE

Stage: Shanghai
Thermal Monitoring and Modeling
Chairperson: Christina DiMarino, Virginia Tech, US

14:30	**Sensor Virtualization to Leverage Cost Savings in Realtime Electric Machine Temperature Monitoring** Christian Hahn, Robert Bosch, DE
14:50	**Temperature Estimation Model for EV Drive Unit** Andreas Sidorow, Isuzu Motors, DE
15:10	**Is Transient Thermal Network Model Applicable Under Short-Circuit Conditions?** Enyao Xiang, Eindhoven University of Technology, NL

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Stage: Kyjiw
Intelligent Gate Drivers II
Chairperson: Yasuhiro Okuma, Fuji Electric, JP

14:30	**Low-Complexity Sub-nanosecond Active Gate Driver for SiC Modules with IV-Trajectory Optimisation** Matt Appleby, University of Bristol, UK
14:50	**A Novel, Adaptive Closed-Loop Dead-Time Control for High Voltage SiC-MOSFET based Power Converters** Michael Rauh, University of Bayreuth, DE
15:10	**Three-Channel Gate Monitoring Driver for SiC MOSFET Power Modules with Redundant Fault Detection** Mathis Picot-Digoix, Laplace Laboratory, FR

Stage: Seoul
Bipolar Power Devices
Chairperson: Katsuaki Saito, Nexperia, JP

14:30	**New 6.5 kV IGCT and Fast Recovery Diode Product Set with Outstanding Safe Operation Area Performance** Umamaheswara Reddy Vemulapati, Hitachi Energy, CH
14:50	**1.2 kV Fast Recovery Diode with Stable Turn-Off Under Harsh Voltage and Temperature Stress** Hadi Hematian, Littelfuse, DE
15:10	**On Coupled Gate Drive Units for Paralleled IGBTs and Their Effect on Dynamic Current Mismatches** Lukas Tomforde, University of Rostock, DE

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Stage: Istanbul
Cutting-Edge Developments in High-Performance Drives
Chairperson: Robert Plikat, Volkswagen, DE

14:30	**Integrated Interphase Transformer and dv/dt Filter Analysis for Interleaved SiC Motor Drives** Tiago Jappe, Vincotech, DE
14:50	**Artificial Intelligence Based Redundancy for Safety Critical Automotive Motor Control Applications** Mihail Jefremow, Infineon Technologies, DE
15:10	**Safety-Compliant DC-Link Surge Suppression with Integrated Diagnostic in 48 V Automotive Drives** Nima Saadat, SEG Automotive, DE
15:30 – 17:00	**Poster/Dialogue Session & Coffee Time (Hall 4A)**

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SiC MOSFETs I

Chairperson: Bernd Eckardt, Fraunhofer IISB, DE

PP081 **New Generation 3300V/1000A Full-SiC Power Module for Railway Traction Application**
Hui Wang, Zhuzhou CRRC Times Electric, CN

PP082 **Features and Benefits Expected of Future Trench and Planar SiC MOSFETs**
Naoki Kaji, ROHM, JP

PP083 **Experimental Analysis of Parasitic Turn-On in Different 650V SiC MOSFET Cell Designs**
Anshul Tyagi, Infineon Technologies, AT

PP084 **Unlocking the Potential of 750V CoolSiC MOSFET M2 in Power Modules**
Ainhoa Puyadena, Infineon Technologies, DE

PP085 **Intrinsic Robustness of Planar and Trench SiC MOSFETs Against PTO Regarding Short Channel Effects**
Reinhold Elferich, Nexperia, DE

PP086 **New 1200 V, 6 mOhm SiC MOSFET with Integrated Temperature Sense Enabling Significant System Benefits**
Amy Romero, Wolfspeed, US

PP087 **Dynamic Switching Analysis of 1.2kV 4H-SiC MOSFETs with Tightened Vth Distribution on 200mm Wafers**
Jeff Joohyung Kim, Wolfspeed, US

PP088 **Characterization of 10kV SiC MOSFET Module for 4.16kV Motor Drives in Gas and Pumping Applications**
Ahmed Ismail, University of Arkansas, US

Device Packaging

Chairperson: Pierre-Laurent Doumergue, Microchip, FR

PP089 **Novel SiC 2-in-1 Module Design for Enhanced Performance and Safety in Electric Vehicle Inverters**
Yudai Yatsu, Renesas Electronics, JP

PP090 **A New Surface-Mount Power Module for Wide Bandgap Power Devices**
Robin Simpson, Nexperia, UK

PP091 **Smart Paralleling of SiC-MOSFET in Power Modules**
Michael Frisch, Vincotech, DE

PP092 **SiC High Voltage LinPak: 3.3 kV Power Module for Medium- and High-Voltage Converter Applications**
Jeremy Jones, Hitachi Energy, CH

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PP093 **Low Inductance, High Power Density: Compact EasyPACK S Unlocks CoolSiC M2 Performance**
Koray Yilmaz, Infineon Technologies, DE

PP094 **The Application of Snubber Chips in Three-level Topology Modules**
Shuai Cao, MACMIC Science & Technology, CN

PP095 **Characterization of the Magnetic Couplings of Parasitic Elements of GaN Devices with a Kelvin Source**
Maxime Boulan, University of Lille, FR

PP096 **Estimation of Commutation Loop Inductance in a 90 kW IMS-Based Discrete IGBT Traction Inverter**
Avinash Maguluri, Zhuzhou CRRC Times Electric, UK

Thermal Modelling and Simulations
Chairperson: Uwe Scheuermann, Friedrich-Alexander-University Erlangen-Nuremberg, DE

PP097 **Advanced Cooling Solutions for High Frequency Medium Voltage Planar Transformers**
Zayed Ahmed, Advanced Cooling Technologies, US

PP098 **Advanced Air-Cooled Solutions for Industrial Power Electronics**
Thomas Pfeifer, Miba Cooling, AT

PP099 **Design of and Analytical Thermal Model for a pair of Coaxial 3.3 kV SiC MOSFET Packages**
Jack Knoll, Viriginia Polytechnic and State University, US

PP100 **Thermal Conductivity Characterization of a Vapor Chamber under Varying Heat Flux Conditions**
Ahmet Çömez, ASELSAN, TR

PP101 **A Superposition Method for Electrothermal Analysis of an Onboard SiC MOSFET Power Assembly**
Jianfeng Li, Zhuzhou CRRC Times Electric, UK

PP102 **Thermal Model for Heat Sink Optimization for High-Performance Semiconductor Modules in Electrolysers**
Eric Hartmann, krecotec, DE

PP103 **Comparing 1D and 3D Temperature Estimations of a 2kV SiC MOSFET under Short Circuit Conditions**
Jorge Mari, Semikron Danfoss, DE

PP104 **Thermodynamic-Based Model Suitable for Real-Time Junction Temperature Estimation of Power Devices**
Maurizio Tranchero, Ideas & Motion, IT

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PP105 **Real-Time Temperature Estimation of Passive Components in Traction Inverters**
Raja Sekhar Kammala, BorgWarner, DE

DC-DC Converter and Switched Mode Power Supply
Chairperson: Christopher Kocon, iDEAL Semiconductor Devices, US

PP106 **Hybrid-Flyback Unlocking High Performance Battery Charging**
Tobias Riedel, Infineon Technologies, DE

PP107 **Control of Bidirectional Power Flow in a Dual Active Half Bridge**
Peter van Duijsen, The Hague University of Applied Sciences, NL

PP108 **Tristate Super Buck Converter**
Felix Himmelstoss, University of Applied Sciences Vienna, AT

PP109 **A Soft-Switching, High Step-Up, Non-Isolated LLC Resonant Converter**
Ozturk Sahin Alemdar, TOGG, TR

PP110 **Design and Implementation of a Photovoltaic DC/DC Converter with MPP Tracker and Droop Control**
Raphael Otte, University of Applied Sciences and Arts Ostwestfalen-Lippe, DE

PP111 **Experimentally Validated Pareto-Optimization for a Dual-Active-Bridge Converter**
Nikolas Förster, Paderborn University, DE

PP112 **High Power Density CLLC-DCX Converter with >250 kW Reaching >99 % Efficiency at 200 kHz**
Jörg Bornwasser, Fraunhofer ISE, DE

PP113 **Coupled-inductor Series Capacitor Buck Converter for Higher Step-down Voltage Conversion Ratios**
Alberto Otero Olavarrieta, University of La Rioja, ES

PP114 **High-Efficiency, High-Power-Density 48V–12V Bus Converter with a Resonant-Inductor-Integrated H-Tran**
Jiayu Ying, Huawei Technologies, DE

PP115 **Transformer-Centered Design of an Asymmetrical Half-Bridge Converter for an ISOP-System**
Daniel Breidenstein, Friedrich-Alexander University of Erlangen-Nuremberg, DE

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Low Power AC-DC and DC-AC Converters I

Chairperson: Johannes Konert, Texas Instruments, DE

PP116 **Design and Thermal Analysis of a Modular Power Converter for Axial-Flux Motors in Electric Vehicles**
Oriol Subirats Rillo, Polytechnical University of Catalonia, ES

PP117 **SiC-Based Three-Phase PFC Infeed Converter for Industrial DC Grids with Symmetrical Common Mode Volt**
Jan-Niklas Koch, University of Applied Sciences and Arts Ostwestfalen-Lippe, DE

PP118 **Coupled Chokes Configurations for Power Combining Class E Converter Topologies**
Prateek Wagle, Imperial College, UK

PP119 **Implementation of a Synchronous-CCM-Power Factor Corrector Using a Half-Bridge GaN-power Module**
Francesco Ferrazza, STMicroelectronics, IT

PP120 **Bidirectional GaN based Single stage Microinverter**
Nagesha Chitpasdi, Renesas, IN

PP121 **Where to Innovate in Power Electronics with Discrete MOSFETs: Advanced Packaging or Next-Generation**
Josef Wildauer, Infineon Technologies, AT

Solid-State Transformer and DC-DC Converter

Chairperson: Marco Liserre, Kiel University (CAU), DE

PP122 **8 MW 24.5 kV AC to 800 V DC SST: Design of Phase Shifted Dual-LLC Interleaved Architecture**
Younghun Lee, Infineon Technologies, DE

PP123 **Comparison of 1.2 to 3.3 kV Silicon Carbide Power Modules for Solid-State Transformer Applications**
Chris New, Wolfspeed, US

PP124 **Decentralized control for a Cascaded H-Bridge Converter**
Eduardo García-Martínez, CIRCE, ES

PP125 **A Simplified Analytical Method for Accurate ZVS Estimation in Dual Active Bridge Converter**
Priya Priya, Indian Institute of Technology, IN

PP126 **Design of 8kW Three-Phase Interleaved LLC for AI Server**
Angelo Giordano, STMicroelectronics, IT

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PP127 **Design of a highly integrated 250 kW Partial Power Converter for Next-Gen Energy Systems**
Iosu Aizpuru, Mondragon University, ES

PP128 **DC-DC Converter with Voltage Balancing Capability**
Lorenzo Giuntini, ABB, CH

PP129 **Design Considerations for a 7 kW SiC-Based Bidirectional CLLC Converter for Battery Charging**
Ivan Clemente Massimiani, STMicroelectronics, IT

PP130 **A Modulation Strategy of SR-DAB with Minimum Reactive Power and Turn-off Current**
Guangzhi Cui, Texas Instruments, CN

Railway, Aerospace and Marine Applications
Chairperson: Eckart Hoene, Fraunhofer IZM, DE

PP131 **A Rail Traction Converter Chopper Control Algorithm for Dynamic Braking in EMUs**
Osman Senturk, OSSEN Software and Energy, TR

PP132 **Smart Detection of Motor Suspension Breakdown in Railway Traction Drives Using HF Motor Current**
Markus Vogelsberger, Alstom, AT

PP133 **Highly Integrated, Robust Power Solution for Aerospace Motor Drive Applications up to 80 kVA**
Vincent Walsh, Microchip Technology, IE

PP134 **Development and Parameter Identification of an Advanced Thermal–Thevenin Model for Aircraft LiB**
Jan Leuchter, Brno University of Technology, CZ

PP135 **Design of a 100 kW SiC Interleaved DC-DC Converter for Fuel Cell Application in Electric Aircraft**
Dennis Wöhrle, Fraunhofer Institute ISE, DE

PP136 **Integrated Motor Drive Inverter with Active Fault Handling for Aerospace Applications**
Leonard Kuhn, Fraunhofer IISB, DE

PP137 **Automated EMI Simulation Workflow for Frequency-Variable High Power DC/DC Converter for Aviation**
Anne Sacher, Fraunhofer Institute IISB, DE

PP138 **Efficiency Analysis of a Multilevel CHB Converter for Battery-to-Grid Waterborne Applications**
Eneko Otaola, TECNALIA, ES

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Renewable Energy Systems
Chairperson: Steffan Hansen, SMA, DE

PP139	**Enhanced Cascaded Voltage Control of Interleaved Boost Converter for PV MPPT** Kaspars Kroics, Riga Technical University, LV
PP140	**Comparative Analysis of SiC- and IGBT-based NPC Inverters in Photovoltaic Applications** Jaspera Dominique Rohner, University of Applied Sciences and Arts Northwestern Switzerland, CH
PP141	**A Three-level Energy Management System using the Battery as Power Pulsation Buffer** Pelle Weiler, University of Tokyo, JP
PP142	**Adjustable Hybrid Switch for Enhanced Efficiency and Reliability in PV Systems** Tanya Thekemuriyil, University of Applied Sciences and Arts Northwestern Switzerland, CH
PP143	**Design of a SiC-based Synchronous Floating Interleaved Boost Converter for PV Applications** Anita Mijajlovic, University of Belgrade, RS
PP144	**Performance Assessment of a Split-Phase String Inverter Based on Integrated Gate Driver GaN FET** Riccardo Ruffo, Texas Instruments, DE
PP145	**Practical Analysis of an 800V Output Boost in Three Topologies for Energy-Storage Systems** Akshat Jain, STMicroelectronics, IN
PP146	**Critical Review of DC-DC Converter Topologies for Hydrogen Fuel Cell and Battery-Based Hybrid System** Jose Vicente Rocamonde, Technological Institute of Energy, ES
PP147	**Evaluation of a Battery Charging System Using MPPT Powered by a Thermoelectric Generator** Juliane Farret, University of Alabama, US

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Modelling and Simulation of Components
Chairperson: Klaus Rigbers, SMA Solar Technology, DE

PP148 **Advanced Evaluation of Internal Switching Oscillations in SiC Multichip Power Modules based on 3-D V**
Alessandro Ilardi Garofalo, APS - ETH Zurich, CH

PP149 **Validation of a Vendor Independent Electro-Thermal Power Loss Simulator**
Maurizio Tranchero, Ideas & Motion, IT

PP150 **Design and Validation of a 60 kW LLC Transformer with Electromagnetic and Thermal Simulation**
Caner Demir, Aselsan, TR

PP151 **Development of 6500V Press-pack Trench IGBT Devices for Power Grids**
HaoWen Shi, Zhuzhou CRRC Times Electric, CN

PP152 **Modeling of Space Charge Behavior in Mold Epoxy Resin at Power Semiconductor Chip Termination**
Koki Kishimoto, Mitsubishi Electric, JP

Inductor Design
Chairperson: Thomas Ebel, University of Southern Denmark, DK

PP153 **Inductor Optimization with Elliptical Center Leg Cross-Section for Reduced Eddy Current Losses**
Till Piepenbrock, Paderborn University, DE

PP154 **Reducing Fringing Losses in Planar Magnetics Using PCB Vias**
Othman Abujazar, University of Paderborn, DE

PP155 **Nanocrystalline EMI/Common Mode Filters :Powering Compact & Efficient EMI Solutions in Data Centres**
Bharadwaj Reddy Andapally, CBMM, BR

PP156 **Improvement of Transformerless DC/DC Converters Using Controllable Inductors**
Jonas Pfeiffer, Helmut Schmidt University, DE

PP157 **Simple Ferromagnetic Shielding for Loss Reduction in Gapped Inductors**
Andres Garzon, Würth Elektronik, DE

PP158 **Temperature Rise of Iron Core Inductor in DC-DC Converter operated in Discontinuous Conduction Mode**
Lorenzo Giuntini, ABB, CH

PP159 **Modeling of Powder Core inductors for assessing the accuracy of Finite Element simulation**
Masoumeh Amirbandeh, Bourns Electronics, IE

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PP160 **Scaling Ferrite Core Manufacturing for Next-Generation HighPower Converters**
Christian Blaum, SUMIDA Components & Modules, DE

PP161 **Redefining EMI Filter Design by Ferrites for High-Frequency Automotive Applications**
Philemon Wrensch, SUMIDA Components & Modules, DE

Resources Availability and Sustainability
Chairperson: Anton Z. Miric, Heraeus, DE

PP162 **GANZ – Sustainability of Power Electronics**
Paul Gierth, Fraunhofer IKTS, DE

PP163 **Repair Techniques for Ceramic-Based Sustainable Power Electronic Modules**
Lars Rebenklau, Fraunhofer IKTS, DE

PP164 **Automotive Power Electronics in the Context of Recyclability**
Daiyi Hu, Technical University of Braunschweig, DE

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Wednesday, 10 June 2026

08:15 **Community Coffee**

Stage: Tokio

08:45 **Keynote**
AI and ML in Power Electronics – Status and Future Prospects
Uwe Drofenik, Vienna University of Technology, AT
Chairperson: Drazen Dujic, EPFL, CH

09:30 **Coffee Break**

Stage: Tokio
Special Session: Artificial Intelligence in Power Electronics
Chairperson: Ole Gerkensmeyer, Nexperia, DE

09:50 **AI in Power Electronics - Environment-oriented Predictive Maintenance for Distribution Transformers**
Alper Çoban, Empa Electronics, TR

10:10 **AI-enhanced Energy Networks: Enabling Smart Power Management for Software-Defined Vehicles**
Hardy Stoelben, NXP Semiconductors, DE

10:30 **Transforming SiC Power Module Design with WebApp-Driven Virtual Prototyping and Automated Simulation**
Yanfeng Shen, Semikron Danfoss, DE

10:50 Coffee Break

11:10 **The Silent Enabler: WBG Power Technology & Packages for the AI-HPC Revolution**
Giuliano Cassataro, Nexperia, DE

11:30 **AI and Electronics – Trends, Challenges, and Urgent Opportunities**
Alexander Gerfer, Würth Elektronik, DE

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Stage: St. Petersburg
WBG Reliability
Chairperson: Peter Kanschat, Infineon Technologies, DE

09:50	**Silicon Carbide Reliability During 960V DC Link Capacitor Active Discharge** Daniel Norwood, Texas Instruments, US
10:10	**Deriving the Critical Local BPD Defect Density from Automotive Inverter Load Profiles** Klaus Heyers, Robert Bosch, DE
10:30	**Novel Test Concept for Active Short-Circuit Characterization** Mohamed Alaluss, Chemnitz University of Technology, DE
10:50	**Coffee Break**
11:10	**Reliability Assessment of AlGaN/GaN MISHEMTs Under Self-Heating and Current Collapse Effects** Nilesh Kumar Jaiswal, University of Southern Denmark, DK
11:30	**Methodology for Temperature Calibration and Power Cycling Testing of Schottky p-GaN HEMTs** Gengqi Li, Chemnitz University of Technology, DE

Stage: Shanghai
Advanced Packaging
Chairperson: Aylin Bicakci, University of Applied Sciences Kiel, DE

09:50	**Long-Term High-Temperature Operation of Liquid-Metal Interconnects on SiC MOSFETs** Nick Baker, University of Alabama, US
10:10	**Novel 3D SiC Power Module with Epoxy-resin Insulated Substrate and Pressure-less Ag Sintering TIM** Shoichiro Otani, Tohoku University, JP
10:30	**Next Generation 3.3kV LV LinPak Si Power Module with 3AC Design for Traction Applications** Slavo Kicin, Hitachi Energy, CH
10:50	**Coffee Break**
11:10	**3 level TNPC in a SEMITRANS 20 Package for LV Power Drives** Jürgen Engstler, Semikron-Danfoss, DE
11:30	**Fabrication Technology for Hybrid Ceramic/PCB Embedded SiC MOSFET Halfbridge Pre-packages** Niko Haag, University of Applied Sciences Kempten, DE

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Stage: Kyjiw
High Power Converters I
Chairperson: Ki-Bum Park, KAIST, RK

09:50	**Hybrid Symmetrizing Voltage-Clamp for Voltage Balancing of Two-Level Operated 3L-NPC Topology** Amin Darvishzadeh, EPFL, CH
10:10	**A Novel Compact High-Power PCB-Based Transformer Geometry for Electric Aircraft Applications** Lufan Zhou, Polytechnic University of Madrid, ES
10:30	**Low-Cost Short-Circuit Protection for MMC Submodules Using PCB-Based Rogowski Coils** Ali Sharaf Addin, Universität der Bundeswehr München, DE
10:50	**Coffee Break**
11:10	**Reduction of Passive Components in Quasi-2-Level Operated MMC for MVDC DAB Converter** Jose Andres Aguilar Croston, SuperGrid Institute, FR
11:30	**B-TRAN MMC HVDC: An Efficient and Low-Cost MMC HVDC with Half-Bridge SM and DC Fault Blocking** Felice Makain, University of Missouri, US

Stage: Seoul
Active Filters and Electromagnetic Compatibility
Chairperson: Christof Sihler, GE Vernova, FR

09:50	**Investigation of Conducted EMI in a 3-Phase Induction Motor Drive Under Different Predictive Control Methods** Gregory Almeida, University of Toulouse, FR
10:10	**Improving Transient Performance on Server and AI Applications** Jose Luis Silva Perales, Monolithic Power Systems, ES
10:30	**Advanced Power Quality Control in Industrial Power Grids: AI-Integrated Active Filtering** Philipp Wissmann, Siemens, DE
10:50	**Coffee Break**
11:10	**A Novel Active dv/dt Filter for Common-Mode Current Reduction in SiC-Based Motor Drives** Felix Schulte, TU Dortmund University, DE
11:30	**Sensorless Active EMI Filtering via Real-Time Estimation of Common-Mode Dynamics** Mohammadreza Bagheribavaryani, Braunschweig University of Technology, DE

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Stage: Istanbul
Inductors and Transformers
Chairperson: Bernhard Strzalkowski, Consultant, DE

09:50	**Optimal Design of High Leakage Inductance Integrated Planar Transformer with Interleaved Windings** Hamza Ahmad, Korea Advanced Institute of Science and Technology (KAIST), KR
10:10	**Design of an Integrated Three-Port Fractional-Turn Planar Transformer for a Redundant LLC Converter** Arya Venugopal, Silicon Austria Labs, AT
10:30	**Copper Foil-Based Air Core Transformer Equivalent Model and Feasibility Study for MHz Switching Freq** Oleksandr Husev, Warsaw University of Technology, PL
10:50	**Coffee Break**
11:10	**Very High Frequency Characterization of a Foil Air Inductance using Transmission Lines** Jacques Laeuffer, Dtalents, FR
11:30	**Integration of CMDM Choke Using Ellipsoidal Core for High Power Density and Volume Reduction** David Prados, Prax, ES
11:50	**Lunch Break**
12:45	**Poster/Dialogue Session & Coffee Time (Hall 4A)**

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SiC Reliability

Chairperson: Masahito Otsuki, Fuji Electric, JP

PP165 **Experimental Evaluation of Bipolar degradation in a 1.2 kV SiCMOSFET with static and pulsed current**
Michele Fiore, STMicroelectronics, IT

PP166 **Demonstrating Intrinsic Gate-Oxide Reliability in 1200 V SiC MOSFETs via Inline Defect Screening**
Paula Diaz Reigosa, SwissSEM Technologies, CH

PP167 **Repetitive Switching Stability of SiC MOSFETs under Overload Conditions for Hybrid Power Modules**
Nick Schneider, SwissSEM Technologies, CH

PP168 **Temperature Effects on SiC MOSFET Reliability: Separating Artifacts from True Degradation**
Sara Kuzmanoska, onsemi, DE

PP169 **A Comparative Study of the Effects of Dynamic Gate Stress on SiC-MOSFETs**
Akihiro Koyama, Mitsubishi Electric Corporation, JP

PP170 **Enhanced Performance and Reliability of 1200V SiC MOSFETs for Automotive Drive Applications**
Chen Liu, Zhuzhou CRRC Times Electric, CN

PP171 **SiC Engineered Semiconductor Substrates: Enabling Increased Power Cycling Lifetime in Power Modules**
Eric Guiot, SOITEC, FR

PP172 **Sensitivity Analysis of Parasitic Turn-On (pTO) in a SiC-Power Module**
Muhammad Muneeb Alam, Robert Bosch, DE

PP173 **Impact of RDS(on) Stability on Power Density for Power Electronics Application**
Fatih Cetindag, Nexperia, DE

Advanced Power Devices

Chairperson: Prasad Venkatraman, onsemi, US

PP174 **Experimental Analysis of Gallium Doping Process in GTO Thyristors: Impact of SiO2 and Si3N4 Layers**
Muhammad Awais, Dynex Semiconductor, UK

PP175 **Reports of Silicon's Death are Greatly Exaggerated SuperQ Technology New Class of Power Devices**
Christopher Kocon, Ideal Semiconductor, US

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PP176 **Paralleling of normally-on SiC JFETs for the usage in Solid State Circuit Breakers**
Rene Mente, Infineon Technologies, AT

PP177 **Impact of Edge Termination on the Dynamic Performance of SiC MPS Diodes in Bipolar Mode**
Simon Ginzel, Helmut-Schmidt-University, DE

PP178 **Characterization and Performance Evaluation of New 1200 V Silicon Carbide JFET Technology**
Elisa Navari, Infineon Technologies, AT

PP179 **A Simple Zero-Voltage Turn-On Scheme for Solid-State Relays**
Wolfgang Frank, Infineon Technologies, DE

PP180 **A 600 V three-phase inverter as GaN power converter IC on substrate biasing-free isolating substrate**
Stefan Mönch, University of Stuttgart, DE

PP181 **A Practical Test Bench for 650V WBG Switch Comparison by Transient Calorimetric Loss Analysis**
Göktuğ Tonay, ODTÜ GÜNAM, TR

PP182 **MOSFET With Lossless, High Precision Current Sensing in Motor Drive Applications**
Jens Sorensen, Infineon, US

Encapsulation and Die Attach: Materials and Techniques
Chairperson: Chengmin Li, Eindhoven University of Technology, NL

PP183 **Impact of Soft Encapsulation on Power Module Lifetime**
Rowan Aldridge, University of Alabama, US

PP184 **Development of High-Reliability LMC for Power Module Encapsulation as a Replacement for Silicone Gel**
Daejin Kim, KCC, KR

PP185 **A double enhanced novel SAC composites solder preform**
Lung-Chuan Tsao, National Pingtung University of Science and Technology, TW

PP186 **Development of Pressureless Short-Time Sintering Material for Next-Generation Power Semiconductors**
Naoto Karakida, artience, JP

PP187 **New “Paste in Cavity” Concept for Embedded Power Electronics Using Copper Sinter Paste**
Aline Jarofski, Heraeus Electronics, DE

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PP188 **Investigation of Large Area Soldering Using High Stress Assembly and Challenging Surface Coating**
Andres Socarras, MacDermid Alpha Electronics Solutions, DE

PP189 **Investigation of Solder Joint Strength of Pb-free Solder Alloys Using Head Wire Interconnects**
Mani Krishna Swami Puppala, Littelfuse, DE

Control and Digital Techniques for Power Converters and Drives
Chairperson: Marcelo Lobo Heldwein, Technical University of Munich, DE

PP190 **Experimental Validation of Flux-Based Control in an e-Motor with Integrated Sensing Array**
Maurizio Tranchero, Ideas & Motion, IT

PP191 **Timing Analysis and Comparison of EtherCAT and RS485 Communication in a Modular Multilevel Converter**
Stefan Orterer, Fraunhofer Institute IISB, DE

PP192 **Transient Detector-Based Dual-Signal Gain Scheduling for Energy Balancing in CHB STATCOM**
Debdeep Samajdar, Delta Electronics, IN

PP193 **FPGA-Based Voltage-Mode Regulation of Boost PFC Converter with Interpretable Neural Network Control**
Zhi Li, Infineon Technologies, DE

PP194 **Minimizing DC-Link Capacitance in Variable-Frequency Critical-Mode Soft-Switching Bidirectional PFCs**
Julian Hartmann, Hella, DE

PP195 **Design and Performance evaluation of a DCM/CCM Boundary Boost PFC with Enhanced Current Mode Control**
Claudio Adragna, STMicroelectronics, IT

PP196 **Zero Voltage Switching Multilevel Inverter at 1MHz Switching Frequency with Delta-Sigma Modulation**
Jannik Maier, Reutlingen University, DE

PP197 **Control-to-Output Transfer Function of an ISOP-System Based on an Asymmetrical Half-Bridge**
Sophia Roesel, Friedrich-Alexander University of Erlangen-Nuremberg, DE

PP198 **Improved Virtual Synchronous Machine with Grid Impedance Estimator for Islanding Detection**
Alessandro Roveri, Prima Electro, IT

PP199 **A Finite Control Set Modulated Model Predictive Control for SiC Inverter with Sinusoidal Filter**
Mattia Pecile, Technical University of Denmark, DK

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EMI and Wireless Power Transfer

Chairperson: Junichi Itoh, Nagaoka University of Technology, JP

PP200 **Modulation Effects on Common-Mode Currents in Hybrid-Electric Aircraft**
Abbas Mehraban, Technical University of Braunschweig, DE

PP201 **EMI Optimization of Gate Driver Supply using Scalable Low-Cost Multi-Load Capacitive Power Transfer**
Adrian Amler, Friedrich-Alexander-University Erlangen-Nuremberg, DE

PP202 **EMI Diagnosis for Power Converter PCB Layouts based on a Reasoning Aligned Vision Language Model**
Siqi Dai, University of Florida, US-

PP203 **Comparative Design of Output Filter Topologies for 4kW and 15kW SiC-MOSFET-Based Converters**
Mohammad Ali, BLOCK Transformatoren-Elektronik, DE

PP204 **Dynamic Wireless Power Transfer for Multiple AGVs using Capacitive Coupling Method**
Fujiyuki Iwamoto, MIRISE Technonologies, JP

High Power Converters II

Chairperson: Ilknur Colak, Schneider Electric, DE

PP205 **Design of 8kW SiC/GaN-based PFC for AI Server**
Marco Torrisi, STMicroelectronics, IT

PP206 **PHiL Testbench for MMC Submodules under Realistic Operating Conditions**
Sophie Knierim, Karlsruhe Institute of Technology, DE

PP207 **Impact of Auxiliary Inductor Placement in Three-Phase ARCP Inverters**
Thomas Lehmeier, Friedrich-Alexander University of Erlangen-Nuremberg, DE

PP208 **Addressing 1200 V SiC MOSFET Trends with a Full-Range ZVS PFC Using the Parallel Capacitor Technique**
Bela Truschenski, Forschungs- und Transferzentrum Leipzig, DE

PP209 **Design Considerations to Meet Future Datacenter Power Supply Needs**
Daniel Goldmann, onsemi, DE

PP210 **New Isolated Three-Phase Push-Pull Rectifier Topology with Freewheeling Paths**
Sandro Benjamin Meyer, University of Applied Sciences Bielefeld, DE

PP211 **3kW Compact GaN-based PFC for AI Server with 99.2% Efficiency**
Marco Torrisi, STMicroelectronics, IT

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PP212 **One stage 200 kVA Rectifier with Grid-Supporting Functions for Hydrogen Applications**
Maximilian Döring, Fraunhofer Institute IEE, DE

PP213 **Analysis of a Series VSC Converter Topology for MVDC Applications**
Damiano Lanzarotto, Supergrid Institute, FR

PP214 **High current Solid-State Circuit Breaker of 2kV DC based on 3.3kV SiC MOSFETs modules**
Victor Lopez, Ikerlan, ES

Charging in E-Mobility
Chairperson: Shenghui Cui, Seoul National University, KR

PP215 **Design and Evaluation of 3.5 kW Planar Transformers for DAB Converters in EV Chargers**
Hend Ben Dhaou, Valeo, FR

PP216 **Direct Pulsed-Like Charging for Internal Heating of Large-Format Automotive Li-Ion Cells: Heating Dy**
Markus Fuchs, BMW, DE

PP217 **Hybrid Two-Cell Flying Capacitor Inverter for 1200V On-Board Charger Applications**
Arda Kasim, ODTÜ GÜNAM, TR

PP218 **Comparison of Common mode noise in a 3-Phase Six-Switch PFC Type Rectifier using Different Neutral**
Kelly Ribeiro, Valeo, FR

PP219 **Three-Phase Integrated Onboard Charger for Electric Vehicles with Induction Motors**
Endalkachew Degarege Almawu, Kiel University, DE

PP220 **Tiny Power Box - System Design for a High Density Isolated Bidirectional OBC with Integrated DCDC**
Ismail Recepi, Silicon Austria Labs, AT

PP221 **Highly Integrated On-Board Charger and DC/DC Converter for Electric Vehicles**
David Rokusek, Ricardo, CZ

PP222 **From Concept to Vehicle Demo: 11 kW - 85 kHz Wireless EV Charger with Active Load Impedance Matching**
Nicolas Allali, Valeo, FR

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Motors and Actuators
Chairperson: Spasoje Miric, University of Innsbruck, AT

PP223 **Magnetic Design of a Synchronous Reluctance Machine Based on Natural Flux-Line Propagation**
Christian Rachoi, Bern University of Applied Sciences, CH

PP224 **Co-Optimization of Traction Inverter and Electrical Machine for Electric Vehicle Applications**
Timothé Delaforge, Bern University of Applied Sciences, CH

PP225 **Analysis of Current Third Harmonic Injection Control Enabling Iron Loss Reduction in PMSMs**
Kaiki Akizuki, University of Tokyo, JP

Measurement Techniques
Chairperson: Christof Sihler, GE Vernova, FR

PP226 **Addressing EMI Noise in In-Situ Motor drives via Time-Domain Waveform Analysis**
Hans Hoffmann Sathler, TE Connectivity, CH

PP227 **Design Challenges and Consideration for EMC Test setup and Hybrid EMI Filter**
Moritz Mondre, University of Applied Sciences Bonn-Rhein-Sieg, DE

PP228 **Development of a Simple Double Pulse Test Bench for Cryogenic Applications**
Maximilian Kleemann, University of Applied Sciences Munich, DE

PP229 **Self-Powered Medium Voltage Sensors with Digital Transmission over Fiber Optic**
Enrique Ojeda, Saker Tech, ES

PP230 **Design-For-Test Considerations In WBG Converter Designs**
Marcus Sonst, Rohde&Schwarz, DE

PP231 **Laboratory Setup for Accuracy Investigation of Current Sensors Under Real Operating Conditions**
Xiaofei Guo, Physikalisch-Technische Bundesanstalt, DE

PP232 **DC-Loop Stray Inductance Characterization in Printed Circuit Board Using Vector Network Analyzer**
Maurizio Tranchero, Ideas & Motion, IT

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Advanced Design and Simulation

Chairperson: Peter Wallmeier, AEG Power Solutions, DE

PP233 **Efficient Evaluation of Power Modules for Multi-Objective Optimization Using PEEC Method**
Rando Raßmann, University of Applied Sciences Kiel, DE

PP234 **Analysis of Gate Voltage Perturbations in SiC MOSFET Half-Bridge Topologies based on SPICE Modeling**
Debora Crimi, Nexperia, IT

PP235 **Validation of a SPICE Based Approach for 650V IGBT Sixpack Power Module for Industrial Applications**
Andrea Cusumano, Nexperia, IT

PP236 **AI-Based Two-Stage Learning for Rapid Thermal Map Reconstruction in EV Power Semiconductors**
Chi Zhang, Volvo Cars, SW

PP237 **Estimating Semiconductor State of Health and Remaining Life Using Statistics and Digital Twin Model**
Emmanuel Batista, Alstom, FR

PP238 **Electrical and Thermal Real-Time Model of an ANPC Photvoltaic Inverter for Digital Twin Application**
Derk Gonschor, Bonn-Rhein-Sieg University of Applied Sciences, DE

PP239 **Modular Open-Source Toolchain for Multi-Objective Power Converter Design up to 1 MHz**
Andreas Sack, University of Siegen, DE

PP240 **Circuit-AI: An AI-Agent for Bill of Materials Optimization and Circuit Simulations**
Vishwam Raval, Texas A & M University, US

Magnetic Materials

Chairperson: Eric Favre, Consultant, CH

PP241 **Characterization and Feasibility Study of Nanocrystalline Core based EMI Filters for On-board Charge**
Karnpreet Singh, KU Leuven, BE

PP242 **Modeling Derating Curves of PCB Ferrites Impact of Core Composition**
Andres Garzon, Würth Electronics, DE

PP243 **Effects of Inter-laminar Conduction on Losses and Permeability in Laminated Cores**
Miguel Astudillo, ETH Zurich, CH

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PP244 **Magnetic Core and Component Testing Automation for Industrial Benchmarking, Databases, Design Tools**
Paul Ohodnicki, University of Pittsburgh, US

PP245 **Fabrication Guidelines for Amorphous and Nanocrystalline Soft Magnetic Components**
Inge Lindemann, Fraunhofer IFAM, DE

PP246 **Improved DC Bias Core Loss Model by Using the Loss Separation Technique**
Asier Arruti, Mondragon University, ES

PP247 **Nanocrystalline Tape-Wound Cores of High-B alloys – Fabrication and Properties**
Merlin Thamm, Fraunhofer Institute IFAM, DE

PP248 **A Novel Phase Shift Virtual Correction for Magnetic Core Losses Measurement**
Anartz Agote, Mondragon University, ES

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Stage: Tokio
Packaging Reliability
Chairperson: Frank Osterwald, Gesellschaft für Energie und Klimaschutz Schleswig-Holstein, DE

14:30 **Component-Based Acceleration of Lifetime Tests for Automotive Inverters**
Jelto Oltmanns, Volkswagen, DE

14:50 **Challenges in Rth-Measurement of SiC MOSFETs in Power Cycling Tests**
Lukas Farnbacher, Fraunhofer IISB, DE

15:10 **Lifetime of IGBTs Under Mixed Sequential Power Cycling: A Matched-Lifetime Sequencing Experiment**
Diego Velazco, SuperGrid Institute, FR

Stage: St. Petersburg
High Power Density Designs I
Chairperson: Daniel Chatroux, CEA-LITEN, FR

14:30 **Integrated High-Power-Density 48 V Power Converter with 3D-Printed Heatsink Busbars**
Zhaobo Zhang, University of Bristol, UK

14:50 **A GaN-Enabled Low-EMI Three-Phase PFC Family for EV Chargers and Other Highly Compact Applications**
Reza Asgarnia, Paderborn University, DE

15:10 **480kVA/L High Density 3-Phase Traction Inverter Based on PCB Embedded Power Modules**
Wiljan Vermeer, Fraunhofer IZM, DE

Stage: Shanghai
Design for Environmental Compatibility
Chairperson: Regine Mallwitz, Technical University of Braunschweig, DE

14:30 **Material Composition of Power Semiconductors for Life Cycle Assessment**
Ariya Sangwongwanich, Aalborg University, DK

14:50 **Eco-design of Magnetic Components in Power Electronics A Life Cycle Assessment Perspective**
Ning Wang, Aalborg University, DK

15:10 **Is SiC the Key to Achieving Sustainable CO2 Reduction in Inverters?**
Disha Sharma, Siemens, DE

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Stage: Kyjiw
Design Optimization
Chairperson: Uwe Drofenik, Vienna University of Technology, AT

14:30 **4D Design Space based Unified Magnetic and Circuit Design Optimization framework for CLLC Converter**
Hamza Ahmad, Korea Advanced Institute of Science and Technology (KAIST), KR

14:50 **Impedance-Controlled PCB Design of an Instrumented Si/SiC Hybrid Switch with Module-Level Parasitics**
Yuyang Wang, University of Bristol, UK

15:10 **Data-Driven Physics-Informed Modeling of Stripline Inductors for High-Density Power Converters**
Raúl Henares Vargas, Tyndall National Institute, IE

Stage: Seoul
Multi-Domain Modeling
Chairperson: Nicolas Rouger, University of Toulouse, FR

14:30 **Improved Electrothermal SPICE Model for ASFETs Enabling Dynamic Current Sharing and Enhanced SOA**
Sabrina Chowdhury, Nexperia, UK

14:50 **Accurate Modelling and Analysis of Dissipation Losses in Output Capacitance of Power Semiconductors**
Kaushik Mirdoddi, Silicon Austria Labs, AT

15:10 **Dynamic Reverse Transfer Capacitance Modeling for New IGBT Generations**
Arnab Biswas, Infineon Technologies, DE

Stage: Istanbul
AC-AC Converters
Chairperson: Ulrich Kirchenberger, STMicroelectronics, DE

14:30 **Design and Performances of Thyristor-Based Electronics On-Load Tap Changer**
Jiasheng Huang, EPFL, CH

14:50 **Three-Leg Operation of Back-to-Back Voltage Source Converters with Zero Voltage Switching**
Lou Scholtissek, Technical University of Munich, DE

15:10 **Enabling Direct AC-AC Power conversion in Induction Cooking with GaN BDS**
Veit Hellwig, Infineon Technologies, DE

15:30 – 17:00 **Poster/Dialogue Session & Coffee Time (Hall 4A)**

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GaN Devices and Driving

Chairperson: Elison Matioli, POWERlab, EPFL, CH

PP249	**Comparative Switching Characterization of 650-V GaN Devices Using a Flexible HB Architecture** Francesco Porpora, University of Cassino and Southern Lazio, IT
PP250	**The Influence of Field Plates on the Dynamic RON in GaN-Based Monolithic Bidirectional Switches** Daniel Fugmann, Fraunhofer IAF, DE
PP251	**Reliability and Robustness for 3 Phase GaN IPMs in Motor Driver Applications** Anthony Lodi, Texas Instruments, US
PP252	**Impact of Charge Carrier Trapping on GaN-HEMT Characteristics at Cryogenic Temperatures** Martin Fein, Karlsruhe Institute of Technology, DE
PP253	**Gate Driver with Vgs Clamping and DESAT for Fast Short-Circuit Protection of SiC MOSFET Modules** Hao Wang, Unversity of Rostock, DE
PP254	**Multi-Stage Short-Circuit Protection for GaN Devices** Haitz Gezala, Mondragon University, ES
PP255	**An Advanced Driver IC with IGSS Detection and Constant Current Driving for Inverter Applications** Zhong Ye, Inventchip Technology, CN
PP256	**A Single-Input Dual-Output GDPS in MV Application Based on Peer-to-Peer Isolated PCB Coupler** Wenjie Xu, Hong Kong Polytechnic University, HK
PP257	**A Simple AC Bootstrap Circuit for Topologies using Bidirectional Switches** Kennith Leong, Infineon Technologies, AT
PP258	**A Monolithic Dual-Output High-Voltage Linear Regulator for Self-Supplying GaN Power Stages** Niklas Deneke, Leibniz University Hanover, DE

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Device Application

Chairperson: Klaus Marahrens, SEW-EURODRIVE, DE

PP259 **Robust Thermal Balancing Technology for Parallel Power Modules Applications**
Antoine Laspeyres, Mitsubishi, FR

PP260 **Concept Proposal for HV Hotswap Using Novel SiC-JFET for HVDC Power Distribution in AI Datacenters**
Maximilian Huber, Infineon Technologies, AT

PP261 **Super-Cascode Topologies Optimized for HF Insulation Diagnostics: A Multi-Stage Pulse Generator**
Christian Hüther, CRW Engineering, DE

PP262 **Research on Multi-Mode Control Strategy for High-Efficiency Four-Switch Buck-Boost Converter**
Jiahua Zhuang, Huazhong University of Science and Technology, CN

PP263 **Neglected Effects of Multicommutation in 2-Level SiC Inverters: Insights into Switching Behavior**
Marius Wegner, University of Rostock, DE

PP264 **Enabling Compact and Efficient Motor Drives for Robotics through GaN Half-bridge Power Stage**
Vishnu Balaraj, Texas Instruments, US

PP265 **Using an Integrated GaN Half-Bridge Device in Driving High-Speed Hair Dryer Motors**
Behzad Poorali Riabi, Infineon Technologies, US

PP266 **The Impact of Time Related Effective Output Capacitance of Power Device on ZVS Condition of DAB**
Cheng-Ming Shih, Infineon Technologies, TW

PP267 **Parallel Connection of GaN FET Switching Legs for Modular High-Current Device Applications**
Marco Palma, Efficient Power Conversion, IT

PP268 **Experimental Corner Case Analysis for Paralleling GaN in Megahertz Switching Frequency Applications**
Arunkumar Jayaraman, Bonn-Rhein-Sieg University of Applied Sciences, DE

PP269 **Reliability Testing of 1.2 kV SiC MOSFETs: Impact of VDS Bias and Load Current on Long-term Switchin**
Sara Kuzmanoska, onsemi, DE

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Packaging Materials and Technology

Chairperson: Uwe Schilling, Semikron Danfoss, DE

PP270 **Optimized Top-Side-Contacts for Minimizing Parasitic Inductances in GaN Based Power Module Designs**
Jesco Beyer, University of Applied Sciences Kiel, DE

PP271 **Design and Evaluation of Directly Attached SiC Bare Die Power Modules on Various Substrates**
Mario Wasner, University of Applied Sciences Munich, DE

PP272 **Investigation of Electrical Insulation Properties of Metal Insulation Substrate with High Thermal Co**
Kazuya Kitagawa, Sumitomo Bakelite, JP

PP273 **Inside the Vacuum Chamber: The future of PCB Manufacturing**
Timm Ohnweiler, MASS, DE

PP274 **Effect of IMS Dielectric Thickness on Power Loss and Heat Dissipation in VHF Power Conversion**
Prateek Wagle, Imperial College London, UK

PP275 **Dielectric Breakdown Characterization of Alumina Thin Films by Aerosol Deposition Method**
Ichiro Ota, Daicel, JP

PP276 **Creepage Distances for High Voltages on PCBs revisited?**
Michael Schleicher, SEMIKRON Danfoss Elektronik, DE

PP277 **Are Conformal Coatings fit for 400 V and 800 V applications ?**
Alexander Beer, ELANTAS, DE

PP278 **Partial Discharge Measurements on PET Films under High dv/dt in a Sphere-Plate Arrangement**
Lukas Reißenweber, Coburg University of Applied Sciences and Arts, DE

PP279 **Innovative Laser Welding Process of Cables for Power Electronics**
Woo-Sik Chung, Trumpf Laser- und Systemtechnik, DE

Power Cycling Reliability

Chairperson: Anton Z. Miric, Heraeus, DE

PP280 **Dependency of Large Area Substrate Solder Lifetime on Different Stress Parameters in Power Cycling**
Nils Zöllner, Infineon Technologies, DE

PP281 **Investigation of Aging Effects and Current Sharing in a SiC MOSFET Module with Baseplate**
Elena Mengotti, ABB Switzerland, CH

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PP282 **Energy-Based Thermo-Mechanical Fatigue Simulation of Power MOSFET Solder**
Patrik Suhaj, FEI STU, SK

PP283 **Refined Power Cycling Results for Reliability Studies of SiC-Inverters**
Robert Keilmann, Technical University Braunschweig, DE

PP284 **Test Bench for In-Situ Evaluation of SiC MOSFET Ageing in Automotive Applications**
Camille Leurquin, CEA, FR

PP285 **Challenges of Power Cycling Tests at Increased Temperature Swings**
Vivien Grau, Robert Bosch, DE

PP286 **Reliability and Lifetime Power Cycling Study of GaN HEMTs under 60°C versus 100°C Temperature Swings**
Xiangyu Wang, University of Bristol, UK

PP287 **Sample Size Determination for Power Cycling of Discrete IGBTs**
Patrick Heimler, Chemnitz University of Technology, DE

Intelligent Power Modules and Control

Chairperson: Michael Hartmann, Graz University of Technology, AT

PP288 **Multilayer Power Modules Design Using the Die on Lead Frame Technology and Integrated Driver PCB**
Christian Hennig, University of Applied Sciences Kiel, DE

PP289 **A 650-V SiC Intelligent Power Module for High-Efficiency Motor-Drive Systems**
Jaewook Lee, Infineon Technologies, KR

PP290 **Estimation of Switching Losses in Discrete and IPM MOSFETs for Inverter Design**
JongMu Lee, Alpha and Omega Semiconductors, US

PP291 **Integrated Drain-Capacitor-Self-Supply in a 350V PMIC for Fast Switching GaN-Based Half-Bridges**
Christoph Hillmer, Leibniz University Hanover, DE

PP292 **Thermal Coupling Matrix Embedded Implementation using Parallel Processing Concept in xEV Application**
Renke Han, Infineon Technologies, DE

PP293 **Mixed Signal Compact Controller Device for Type-C EPR Battery Charger and Power Supply Solutions**
Robert Vartanian, Infineon Technologies, US

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Power Electronics for E-Mobility I

Chairperson: Thiago Batista Soeiro, University of Twente, NL

PP294 **Multiport Planar Transformer Design and Optimization for Combined OBC and DC-DC Power Conversion**
Oscar Lucia, University of Zaragoza, ES

PP295 **Enabling More Power Dense and Durable 500 V Battery Systems with 750 V Compact, Overmolded Modules**
Brett Sparkman, Wolfspeed, US

PP296 **Ultra-Compact Discrete Package for Use in Automotive Power Electronics**
Lathom Louco, BorgWarner, US

PP297 **Hybrid Physics–AI Framework for Real-Time Junction Temperature Estimation in EV Power Semiconductor**
Chi Zhang, Volvo Cars, SW

PP298 **Minimizing Thermal Imbalances in Paralleled SiC MOSFETs: The Impact of High Switching Speeds on Tvj**
Tomas Reiter, Infineon Technologies, DE

PP299 **Development of the new 1200V SiC MOSFET-based transfer molded module for automotive applications**
Tony Kwon, Infineon Technologies, KR

PP300 **Commercialization of a Cost-Optimized Hybrid Si/SiC EV Inverter With Minimum Die Area**
Hao Chen, Guangzhou Chengxingzhidong Motor Technology, CN

Control Techniques in Electrical Drives

Chairperson: Spasoje Miric, University of Innsbruck, AT

PP301 **Modeling of Bidirectional GaN HEMTs Using the Physics-Based ASM-HEMT Compact Model**
Aline Reck, University of Stuttgart, DE

PP302 **Simulation-Based Evaluation of Structural Switching Methods for AC Machines in Field Weakening Range**
Ellen Bünte, dSPACE, DE

PP303 **Model Reference Adaptive Control of Permanent Magnet Synchronous Machines using Exact Discretization**
Kristof Bandy, Budapest University of Technology and Economics, HU

PP304 **Enhanced Thermal Model of a PMSM Using Saliency-Based Position Estimation**
Andreas Lang, Technical University of Vienna, AT

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PP305 **Energy-aware Stator-flux-oriented Induction Generator Control for Trailer-based Refrigeration Units**
Volker Staudt, Ruhr-University Bochum, DE

PP306 **Synchronous Optimal Pulse Patterns (SOPP) for PMSM electrical drives based on AURIX TC4x**
Marko Gecic, Infineon Technologies, DE

PP307 **Enhancing Traditional Controllers with Reinforcement Learning Agents in Electric Drives**
Nandor Szecsenyi, Budapest University of Technology and Economics, HU

PP308 **Current Control in Asymmetrical Segmented Multiphase Machines Using Vector Space Decomposition**
Ann-Sophie Schmitt, Karlsruhe Institute of Technology, DE

PP309 **Space-Vector PWM with optimized dwell times for Asymmetric Dual Three-Phase Machines**
Josef Knoblach, Nuremberg Institute of Technology, DE

DC Grids
Chairperson: Paolo Mattavelli, University of Padova, IT

PP310 **Smart Circuit Breaker for Smart Low Voltage DC Power Grids**
Kenan Askan, Eaton Industries, AT

PP311 **Adaptive Control of Multi-Source Low Voltage DC Traction Systems**
Mohammad Rajabi Nasab, Polytechnic University of Bari, IT

PP312 **Active Impedance Control in LVDC Grids with Partially Power Process Series Modules**
Ehsan Asadi, Technical University of Kaiserslautern-Landau, DE

PP313 **Stability Considerations in DC Grids**
Peter van Duijsen, The Hague University of Applied Sciences, NL

PP314 **Harmonic Magnetic Field Energy Harvesting for Self-Powered Sensors in DC Grid**
Antonio Miguel Munoz Gomez, CIRCE Research Centre, ES

PP315 **Practical Implementation and Evaluation of Two Detection Algorithms for Series DC Arcs**
Emmeline Danckaert, KU Leuven, BE

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Power Quality

Chairperson: Michael Hartmann, Graz University of Technology, AT

PP316 **Improvement of a Single-Phase UPQC Performance Using DE Metaheuristic for Tuning PI Controllers Gain**
Sergio Da Silva, Federal University of Technology - UTFPR, BR

PP317 **A Comparative Analysis of PFC Architectures in On-Board Chargers: Pursuing Zero Harmonics**
Sara Bourouga, STMicroelectronics, FR

PP318 **Introduction of a CHB-Inverter/SSBC MMCC in a Four-Leg Converter Configuration**
Alexander Bode, Technical University of Darmstadt, DE

PP319 **UIS Test Setups for Characterization of Power MOSFETs**
Sabrina Ulmer, Robert Bosch, DE

Capacitors and Resistors

Chairperson: Peter Zacharias, University of Kassel, DE

PP320 **High Temperature Capacitors for eMobility - Technology Overview**
Adel Bastawros, SABIC, US

PP321 **Application Oriented Aging for AC- and DC-Capacitors in Photovoltaic Inverters**
Christian Lottis, University of Applied Sciences Bonn-Rhein-Sieg, DE

PP322 **High Temperature Metallized Film Capacitors Utilizing Low Dissipation Factor (LDF) Nanolayered Film**
Mason Wolak, Peak Nano, US

PP323 **Integrated High Voltage Resistors for Voltage Monitoring in Isolated and Non-Isolated Systems**
Esteban Garcia, Texas Instruments, US

PP324 **Enabling Precision Current Measurements for Control in Modern Grid Systems**
Shreyankh Krishnamurthy, Bourns, DE

PP325 **Low-Profile, High-Current Vertical Shunt Resistor: Development and Packaging for Power Modules**
Thiyu Warnakulasooriya, Nagoya University, JP

PP326 **A comparative study of SteloraTM EPN vs. isotactic polypropylene used in film capacitors**
Thomas Pichler, Borealis, AT

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Advanced Sensors

Chairperson: Wolfram Teppan, LEM INTERNATIONAL, CH

PP327	**Inductive Long-Range Position Sensor Integrated on Flexible Substrates** Jay Khazaai, Bourns Electronics, DE
PP328	**LED Powered Rotor Telemetry System with Simultaneous Data and Energy Transmission** Raphael Beyerle, Technical University of Vienna, AT
PP329	**Advanced Current Source for Thermal Impedance Measurement with Intergrated Filters and Data Recorder** Jan Fuhrmann, University of Rostock, DE
PP330	**Smart Compliance Validation of IEEE 1547.1 and EN 50549 for Grid-Tied Inverters using Oscilloscopes** Vivek Shivaram, Tektronix, IN
PP331	**In-Depth Analysis of Multilevel Battery Systems with Multi-Channel High-Performance Data Acquisition** Niklas Katzenburg, Karlsruhe Institute of Technology, DE
PP332	**Low-Cost 2-Wire Interface for Condition Monitoring of Sensorless Controlled Motors** Jens Onno Krah, Cologne University of Applied Sciences, DE

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Thursday, 11 June 2026

08:15 **Community Coffee**

Stage: Tokio

08:45 **Keynote**
Transformer Less Partial Power Converters. Disruptive Solutions for Reduction of Losses, Cost, Volume
Thierry Meynard, Laplace – CNRS, FR
Chairperson: Philippe Ladoux, University of Toulouse, FR

09:30 **Coffee Break**

Stage: Tokio
Special Session: Power Continuity vs. Power Quality – AI Data Center
Chairperson: Lorenzo Giuntini, ABB, CH

09:50 **12 kW Single Phase AC/DC Power Supply for Highly Dynamic AI Loads**
Martin Wattenberg, Infineon Technologies, AT

10:10 **Programmable AI Load Ramping and Stability Challenges in Low-Inertia Power Systems**
Dlzar Al Kez, University of Manchester, UK

10:30 **Data Centres and New Grid Regulation for Large Electronic Loads – Impact to Data Centre Design**
Janne Paananen, Eaton, FI

10:50 **UPS Front-end Converter as Shunt Active Filter for Power Quality Improvement in Data Centers**
Rocco Luciano, ABB, CH

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Stage: St. Petersburg
Session: GaNius
Chairpersons:
Andreas Lindemann, Otto von Guericke University Magdeburg, DE
Sibylle Dieckerhoff, Technical University of Berlin, DE

09:50 **A Novel Multistage Gate Driver for GaN GITs**
Céline Lawniczak, TU Dortmund, DE

10:10 **Analysis of the Temperature- and Voltage-Dependencies of Gate Impedance in Different GaN Devices**
Andreas Bäumler, University of Bayreuth, DE

10:30 **Measurement-Based Parameter Extraction for a Simplified ASM-HEMT Model**
Philipp Swoboda, Karlsruhe Institute of Technology, DE

10:50 **Design and Practical Verification of a Highly Efficient Resonant LLC-Converter**
Jonas Schlindwein, Technical University of Berlin, DE

Stage: Shanghai
Power Electronics for E-Mobility II
Chairperson: Marc Cousineau, University of Toulouse, FR

09:50 **Tiny Power Box 2: Topology Design for a High Power Density Bidirectional OBC with Integrated DC-DC**
Franz Vollmaier, Silicon Austria Labs, AT

10:10 **Optimised PWM Schemes and Voltage Distribution in Four-Level Flying Capacitor Inverters for EVs**
Bharadwaj Raghuraman, ETH Zurich, CH

10:30 **Optimized Gate Control Strategy of Si/SiC Hybrid Switches for Electric Drive Inverters**
Niklas Seltner, Chemnitz University of Technology, DE

10:50 **Next Generation SiC Inverter with Low Power Loop Inductance and Variable Gate Drive Strength**
Andreas Apelsmeier, BorgWarner Systems Engineering, DE

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Stage: Kyjiw

WBG Application and Package

Chairperson: Bernd Eckardt, Fraunhofer IISB, DE

09:50 **Inductance-optimized Power Module Concept: Balance di/dt Symmetry and Losses by Leadframe Overlap**
Michael Fügl, Infineon Technologies, DE

10:10 **All-SiC Power Modules with 3rd-Generation Trench-Gate SiC-MOSFET**
Taku Takaku, Fuji Electric, JP

10:30 **Effect of Off-State Gate Voltage on Body-Diode Reverse Recovery in SiC-MOSFET Power Modules**
Michael Schlüter, Infineon Technologies, DE

10:50 **Advanced Three-Phase GaN-Based Power Micro-Module for Motor Drives in Robotic Hands**
Marco Palma, Efficient Power Conversion, IT

Stage: Seoul

Advanced DC-DC Converters

Chairperson: Philip C. Kjaer, Vestas Wind Systems, DK

09:50 **Innovative Differential Power-Current Fed-StepUp-StepDown Converter for the Next Generation of BBUs**
Rafael Antonio Garcia Mora, Infineon Technologies, AT

10:10 **Steady-State Model and Operating Analysis of an MMC-Based Multiport DC–DC Converter**
Martin Votava, Christian-Albrechts-University of Kiel, DE

10:30 **Single-Stage Voltage Regulator with Vertical Transformer for High-Performance Microprocessors**
Zhenshuai Rong, University of Cambridge, UK

10:50 **A Novel Single-Stage 48V-to-1V DC-DC Converter with Fully Soft-Switched Operation for Data Center Po**
Gaoxiang Chen, Hong Kong Polytechnic University, CN

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Stage: Istanbul

IGBT Technologies

Chairperson: Thomas Basler, Chemnitz University of Technology, DE

09:50	**200 A 1200 V IGBT with Optimized Carrier Confinement and Trench Design for Automotive Applications** Tommaso Stecconi, SwissSEM Technologies, CH
10:10	**6500 V-Class PPI Using 2nd Generation Trench-IEGTs** Ryohei Gejo, Toshiba, JP
10:30	**Development of the 8th Generation 1200V NX Series Featuring 1000A Current Rating** Kota Ohara, Mitsubishi Electric, JP
10:50	**Newly developed 1,200V 8th Generation IGBT Module for Industrial Applications** Tomoya Kishi, Fuji Electric, JP
11:15 – 12:45	**Poster/Dialogue Session & Coffee Time (Hall 4A)**

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SiC and GaN Device Modelling

Chairperson: Martin März, Fraunhofer IISB, DE

PP333 **SiC SPICE Model Refinement via Uncertainty Analysis and Data Fusion for Aircraft Applications**
Jan Leuchter, Brno University of Technology, CZ

PP334 **Applicability of the CoolSiC 1200 V G2 Compact Models Across a Wide Range of Applications**
Andreas Huerner, Infineon Technologies, DE

PP335 **Simulating Active Short Circuit Characteristics of SiC MOSFETs Using Compact Models**
Qing Sun, Infineon Technologies, DE

PP336 **Calibration of Electrical Models for SiC MOSFET and Diode Using Neural Network**
Mohammed Amira, University of Technology of Bratislava, SK

PP337 **A Method for Modeling the Switching Process of GaN Devices Considering Crosstalk**
Renhe Shao, Huazhong University of Science and Technology, CN

PP338 **Simulation-Based Sensitivity Analysis of Switching Losses in a GaN-Half-Bridge**
Benedikt Kohlhepp, Technical University of Berlin, DE

PP339 **A Novel Physics-Based SPICE Model for 1.2kV Vertical GaN Fin-JFETs**
Kan Jia, onsemi, CN

PP340 **Performance Evaluation of AlN/AlGaN/AlN HEMTs for High-Voltage Power Switching Applications**
Aadil Anam, University of Southern Denmark, DK

High Power Density Designs II

Chairperson: Stefan Linder, CH

PP341 **SiC MOSFETs in Parallel Switching for MW Inverter Applications**
Yijun Ye, Siemens, DE

PP342 **Warpage Relaxation of Pre-Bent Cu Baseplates with Grooves During Reflow in Power Modules**
Seunghyun Won, Seoul National University, KR

PP343 **Power Semiconductor Assembly to Boost Power-Density in Commercial Vehicle Drivetrain Designs**
Martin Schulz, Littelfuse, DE

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PP344 **DBC-Integrated PCB-Embedded GaN Power Module with Double-Sided Cooling for Improved Performance**
A Yeong Choi, Seoul National University, KR

PP345 **Effect of Resin-Insulated Substrate Application on the Cooler Joint in Automotive Power Modules**
Tsubasa Watakabe, Fuji Electric, JP

Power Electronic Components Reliability
Chairperson: Hans-Günter Eckel, University of Rostock, DE

PP346 **Corrosion-Induced Failure In IGBT Power Modules: Mechanisms, Impact, and Protective Technologies**
Nick Liu, Nexperia, NL

PP347 **Benchmarking Press-Fit Zones in Power Electronics: Linking Geometry and Reliability**
Akshata Ankush Sangle, Technical University of Kaiserlautern-Landau, DE

PP348 **Influence of DC-Link Voltage and Case Temperature on Short-Circuit Robustness of SiC MOSFETs**
Krisztián Kovács, Slovak University of Technology, SK

PP349 **DC AC Operating Life Test for 650V GaN FETs Method and Results**
Barry Wynne, Nexperia, UK

PP350 **Improved Thermomechanical Performance of Power Modules Using Aluminium Graphite Baseplates**
Klaus Höll, Schunk Carbon Technology, AT

PP351 **HV-H3TRB Test on SiC Power Modules: Boosting Reliability & Understanding Failure Mechanisms**
Felix Fraas, Li Auto, DE

PP352 **Influence of Substrate and Coating Variations on Crack Propagation in Silver-Sintered Wide Band Gap**
Benjamin Fabian, Heraeus Electronics, DE

PP353 **A Hybrid Chemical–Mechanical Reinforcement for EMC–AMB Interfacial Reliability in SiC Power Modules**
Han Cai, Li Auto, CN

PP354 **SiC MOSFET Gate Switching Stress with In-Situ Threshold Voltage Monitoring and Self-Heating Analysis**
Diane Bonkoungou, CEA, FR

PP355 **Online Condition Monitoring of SiC Power Modules using Turn-Off Delay Time and Neural Networks**
Victor Golev, University of Applied Sciences Kiel, DE

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PP356 **Experimental Validation of Thermal Degradation Detection in Solder Joints of Passive Components**
Christoph Schmickler, TU Dortmund University, DE

Intelligent Gate Drive Units
Chairperson: Klaus F. Hoffmann, Helmut Schmidt University, DE

PP357 **A Comprehensive Comparison of Resonant Gate Drive Concepts**
Muhammad Umair Munir, Graz University of Technology, AT

PP358 **Counteraction of Inductance-Based Passive Current Balancing Methods for Paralleled GaN Devices**
Tianyu Li, Otto von Guericke University Magdeburg, DE

PP359 **Design and Integration of a Compact Half-Bridge Gate Driver for 3.3 kV SiC MOSFET Modules**
Priyanka Ghosh, Helmut Schmidt University, DE

PP360 **Adaptive Gate Shaping using Gate Driver PI and Drain Current Sensing for 3-Phase Inverters**
Pushkar Kulkarni, Robert Bosch, DE

PP361 **Intermediate Impedance Step Active Gate Driving Feature Analysis and Optimization**
Lorenzo Leijnen, NXP Semiconductors, FR

PP362 **Single-Profile Active Gate Driving of SiC Modules Across the Full AC Current Range**
Pramit Nandi, University of Bristol, UK

Low Power AC-DC and DC-AC Converters II
Chairperson: Frede Blaabjerg, Aalborg University, DK

PP363 **Experimental Characterization of Saturable Ferrite Filter Inductors for Three-Phase Inverters**
Marius Kaufmann-Bühler, Technical University of Berlin, DE

PP364 **A Unidirectional Single-phase PFC with Active Power Decoupling**
Davide Gottardo, Hexagon MI, UK

PP365 **High-Efficiency 22 kW Bidirectional Battery Charger Based on ACEPACK SMIT 1200 V SiC Power Modules**
Giuseppe Aiello, STMicroelectronics, IT

PP366 **Energy Buffer Circuit for Hold-up Extension and Grid Current Shaping Purposes in AI Data Centers**
Theodoros Mouselinos, Infineon Technologies, AT

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PP367 **Novel Cost-Efficient Three-Phase PFC-Rectifier Topology on a Commercial Scale**
Cem Karci, University of Applied Sciences Bielefeld, DE

PP368 **SiC-Based DC-AC Power Conversion Systems: A Path to Modular, Compact, and Efficient Designs**
Suresh Thangavel, Infineon Technologies, DE

PP369 **Experimental Prototype of a Transformer-Less Partial Voltage Converter Using Opposition Method**
Pier Paolo Bembich, CEA, FR

PP046 **Dying Gasp Power Design for Communication Networks: Evaluation of Existing Topologies**
Willy Stephen Tounsi Fokui, Teleconnect, DE

Traction in E-Mobility
Chairperson: Giuseppe Tomasso, University of Cassino and South Lazio, IT

PP370 **Scalable Power Module for Automotive Traction Inverter with High Power Density using Power Chip Embe**
Achim Endruschat, Vitesco Technologies, DE

PP371 **Compact and Efficient Integrated Bias Supply Enabling Active Gate Drive Voltage Control**
Trong Tue Vu, Allegro Microsystem, IE

PP372 **A Virtual Prototype eTRUCK Inverter Investigation with HybridPACK HD**
Olcay Korkmaz, AVL Software and Functions, DE

PP373 **A Cost-Optimized Approach to xEV Traction Inverter Design Using Discrete SiC-MOSFETs**
Dongsoo Kim, Infineon Technologies, KR

PP374 **Development of A Power Control Unit Built Into e-Axle For the 6th.Generation Plug-in Hybrid System**
Satoshi Yasuda, Toyota, JP

PP375 **Comprehensive Comparison of Si IGBTs and SiC MOSFETs in Automotive Exciter Module Applications**
Saad Khalid, Robert Bosch, DE

PP376 **Active Short Circuit Strategies Considering Hybrid Converter Topologies with Normally-On Devices**
Tim Ringelmann, University of Bayreuth, DE

PP377 **xEVCap Next Level: Capacitor Bank and Thermo-Mechanical Evaluation of a Powertrain Inverter**
David Olalla, TDK Electronics, DE

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PP378 **Next Generation 1200V SiC MOSFET with Soft Body Diode for EV Traction Inverter**
Hansol Seo, onsemi, KR

Digital Drives and Motion Control
Chairperson: Gianmario Pellegrino, Polytechnic University of Turin, IT

PP379 **Digital Controller Implementation for a Multiphase Electric Drive Testing Platform using RCP tools**
Edorta Ibarra, University of the Basque Country, ES

PP380 **Flexible 48V SoC Motor Driver for Scalable Automotive Architectures**
Kamyar Khosravi, Allegro MicroSystems, US

PP381 **Improved Gopinath-style Hybrid Flux Observers for Linear Model Transition**
Martin Silva, Mercedes-Benz, DE

PP382 **Quantifying the Efficiency Advantage of Cascode GaN FETs in Variable-Speed Drives**
Porthi Rajan, Renesas, IN

PP383 **Miniaturization in Low Voltage Motor Drives Through Integration and Flip Chip Power Packaging**
Nicholas Oborny, Texas Instruments, US

PP384 **Automation Drives built using Intellectual Property Provided by Microprocessor Vendors**
Joschka Laufs-Randerath, Cologne University of Applied Sciences, DE

PP385 **Multi-Axis Safe Motion based on Standard Hardware with Diverse Algorithm Processing**
Christian Faust, Cologne University of Applied Sciences, DE

Battery Management and Storage
Chairperson: Petar J. Grbovic, University of Innsbruck, AT

PP386 **Viability of Modular Battery Systems: Cost-Of-Storage Analysis**
Manex Aizpurua, Mondragon University, ES

PP387 **Initial Scaled Demonstrator of an Off-Grid Electric Vehicle Charging Station**
Yazan Al-Wreikat, University of Southampton, UK

PP388 **Residual Magnetizing Current Elimination in MAB-based Active Balancing by MWPT Design**
Francesco Porpora, University of Cassino and Southern Lazio, IT

PP389 **Reduced-Sensor Monitoring for AC Reconfigurable Battery Packs via Event-Based Decoupling**
Amin Hashemi-Zadeh, Technical University of Kaiserlautern-Landau, DE

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PP390 **Isolated Reconfigurable Battery for Integrated Cell Balancing and Conversion in Residential Storage**
Hamzeh Beiranvand, Christian-Albrechts-University of Kiel, DE

PP391 **Cell-Level 1s-MMC Topology for Intelligent Battery Management and Enhanced Active Balancing**
Rakshith Satheesh, Robert Bosch, DE

PP392 **Lithium-Ion Battery Degradation Diagnostics: Influence of Cell Balancing Method**
Sergio Fernandez Gonzalez, Mondragon University, ES

PP393 **A Thermal Zone Based Hybrid Balancing Strategy for Battery Storage Systems**
Rita Chen, Hong Kong Applied Science and Technology Research Institute, HK

Micro Grids and Grid Stability
Chairperson: Thomas Brückner, University of the Bundeswehr Munich, DE

PP394 **Conductive AC-Charging of a Moving Platoon Utilizing State-of-Charge Dependent Droop Control**
Jan Wiegard, University of Paderborn, DE

PP395 **The Cost of Simplified Battery Degradation Models in Microgrid Sizing**
June Urkizu, Mondragon University, ES

PP396 **Series-Injection Modules for Grid-Forming Support PLL-Based Virtual Inertia for Weak AC Grids**
Ehsan Asadi, Technical University of Kaiserslautern-Landau, DE

PP397 **High-Dynamics Measurement System for Impedance Characterization of Grid-Forming Converters**
Lucas Ehrlich, Karlsruhe Institute of Technology, DE

PP398 **Physics-Guided ML for LVDC Microgrid Fault Protection**
Neeraj Sanjay Mogal, Technical University of Kaiserlautern-Landau, DE

Current Sensors and Current Measurement
Chairperson: Francisco Javier Azcondo, University of Cantabria, ES

PP399 **Pushing Miniaturisation in Current Sensing: Ultra-Compact Mini-M-Shunts for Even Faster Transients**
Hauke Lutzen, University of Bremen, DE

PP400 **High-Bandwidth Magnetic Current Sensors: Fast Protection and Control in Modern Power Conversion**
Matt Hein, Allegro MicroSystems, US

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PP401 **In-Phase Current Sensing: Error and Performance Analysis**
Michael Schmidt, Infineon Technologies, AT

PP402 **Comparison and Calibration of Medium-Voltage Oscilloscope Probes Using Transmission Line Pulses**
Chad Fortin, University of Alabama, US

PP403 **Clip-On Current Sensor – Low Cost Solution for Price Sensitive Markets**
Gerhard Wessels, Bourns Electronics, DE

Coupled Inductors and Transformers
Chairperson: Stéphane Lefebvre, CNAM - SATIE, FR

PP404 **Design Methodology for High Power Coupled Inductors using Tapewound and Powder Cores**
Valentin Wagner, Cologne University of Applied Sciences, DE

PP405 **Comparative Evaluation of Electrical Core Loss Measurement Methods**
Jamshid Kavianpour Sangeno, Graz University of Technology, AT

PP406 **A Fast Analytical Method for Calculating Leakage Inductance in Interleaved Toroidal Transformers**
William Bourne, University of Oxford, UK

PP407 **Evaluation of Magnetic Integration in Context of Halfbridge Paralleling**
Minjia Chen, Technical University of Braunschweig, DE

PP408 **Comparative Study of PCB-Integrated Air-Core Coupled Inductors for Interleaved Converters**
Javier Ballestin Fuertes, CIRCE, ES

PP409 **Volume Optimized Magnetic Components for DC/DC Converters in Fuel Cell Vehicles**
Michael Schmidhuber, SUMIDA Components & Modules, DE

PP410 **Novel All-In-One TLVR Construction for AI and Server Applications**
Jan Zimon, Pulse Electronics, DE

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Stage: Tokio
Power Electronics for E-Mobility III
Chairperson: Silvio Colombi, ABB, CH

14:00	**Quantifying the Impact of a Reduced Stray Inductance to the SiC MOSFET Module-/Inverter Current** Christian Schweikert, Infineon Technologies, FR
14:20	**Efficiency and Cost Evaluation of 300 kW SiC Inverter Topologies for Battery Electric Vehicles** Christoph Sachs, University of Stuttgart, DE
14:40	**Si/SiC Fusion Switch for Automotive Traction Inverters with 1200 V Blocking Capability** Tomas Reiter, Infineon Technologies, DE
15:00	**Distributed and Fault-Tolerant State-of-Charge (SoC) Balancing applied to CMCs** Daniel Galvis, LAPLACE Laboratory, FR

Stage: St. Petersburg
SiC MOSFETs II
Chairperson: Nando Kaminski, University of Bremen, DE

14:00	**SiC Trench-gate Superjunction MOSFET in Low Inductive Discrete Package for EV Inverter Applications** Nico Fontana, Infineon Technologies, AT
14:20	**Mitigating Snap-Off during Reverse Recovery of SiC MOSFET Body-Diode** Abhishek Maitra, Chemnitz University of Technology, DE
14:40	**Next-Generation High-Performance and Robust 1200V SiC Trench MOSFETs** Karl Oberdieck, Robert Bosch, DE
15:00	**Efficient High-Frequency Inverter Operation of Power Module with Advanced SBD-Embedded SiC MOSFET** Shunsuke Asaba, Toshiba, JP

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Stage: Shanghai
Data Center DC-DC Converters
Chairperson: Johannes Konert, Texas Instruments, DE

14:00	**Distributed Current-Mode Control of a Multiphase DC-DC Converter for Space µP PoL Applications** Gregory Almeida, University of Toulouse, FR
14:20	**Power Pulsating Buffer to Meet the Peak Power Demands in AI server PSUs without Disturbing the Grid** Sam Abdel-Rahman, Infineon Technologies, US
14:40	**12 kW PSU for AI Servers featuring 113W/in3 with integrated Peak Shaving and Hold-up Functionalities** Antonello Laneve, Infineon Technologies, AT
15:00	**High Power Density 16kW+ Three-Phase PSU for AI Server, Data Center with Hold-up and Current Shaping** Pablo Elosegui Garcia, Infineon Technologies, AT

Stage: Kyjiw
Novel AC-DC Converters
Chairperson: Jacques Laeuffer, Dtalents, F

14:00	**Single-Stage and Single-Phase Isolated Resonant AC-DC-Converter Using Integral Cycle Mode Control** David Bohne, Cologne University of Applied Sciences, DE
14:20	**Variable-Inductor-Controlled Integrated LLC–PFC Converter for Wide Output Regulation** Alireza R. Ghanbari, V-Research, AT
14:40	**Highly Efficient 34.5 kVA SiC-Based Power Amplifier with 20 kHz Large-Signal Bandwidth** Anton Gorodnichev, Fraunhofer IEE, DE
15:00	**High Power Density 16kW+ Three-Phase PSU for AI Server, Data Center with Hold-up and Current Shaping** Pablo Elosegui Garcia, Infineon Technologies, AT

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Stage: Seoul
Die Attach Materials
Chairperson: Jacek Rudzki, Semikron Danfoss, DE

14:00	**Pressure-Less Sintering Copper Paste** Hideo Nakako, Resonac, JP
14:20	**Innovative Approach for Transient Liquid Phase Soldering (TLPS) with Solder Preforms for Power Modul** Joseph Hertline, Indium, US
14:40	**Thermal Characterization of SLID Bonding Die-Attach in IGBT Module Packaging Application** Shenyi Liu, Aalto University, FI
15:00	**Bonding Properties and Reliability Evaluation of Cu Sinter Paste for Heatsink Attach** Takashi Hattori, Mitsui Kinzoku, JP

Stage: Istanbul
Capacitors and Current Sensors
Chairperson: Petar Ljushev, Danisense, DK

14:00	**Investigation of Retrofittable GHz Bandwidth Current Sensors for Evaluation of GaN and SiC Devices** Sebastian Kloetzer, Nexperia, DE
14:20	**Next Generation 200C Film Capacitors for Optimized Power Conversion Solutions in Harsh Environments** Michael Brubaker, Advanced Conversion, US
14:40	**High-Temperature-Stable Ultra-Thin-Film Capacitors** Bartosz Gackowski, University of Southern Denmark, DK
15:00	**LC-Filter Circuit with Periodic Time-Modulated Capacitance** Norbert Seliger, Rosenheim University of Applied Sciences, DE