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pcim

9 – 11.06.2026
NUREMBERG, GERMANY

CONFERENCE GUIDE

Messe Frankfurt Group

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FOR THE FIRST TIME

the PCIM Conference will take place at the NCC Ost of NürnbergMesse this year.

PLEASE NOTE

that the program is subject to changes. The program will be updated daily. Please refer to pcim.mesago.com/program for possible changes.

All at a glance

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Nando Kaminski, University of Bremen, Germany
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Peter Wallmeier, AEG Power Solutions, Germany
Huai Wang, Aalborg University, Denmark
Sang Won Yoon, Seoul National University, South Korea
Peter Zacharias, University of Kassel, Germany

Seminars

Sunday, 7 June 2026 — 2:00 p.m. – 5:30 p.m.

Advanced Technologies for Medium and Low Power AC-DC Converters
Ionel »Dan« Jitaru, Rompower, US

Basics for Electromagnetic Compatibility (EMC) of Power Electronics
Jacques Laeuffer, Dtalents, FR

Accurate Optimization of High Performance SiC and GaN Multilevel Inverters with Severe Constraints
Bernardo Cougo, IRT Saint Exupery, FR

Advanced Power Factor Control Techniques, from Analog to Digital Control: Theory and Practice
Francesco Gennaro, Claudio Adragna, Marco Torrisi, STMicroelectronics, IT

Designing Robust Industrial Interfaces: Advanced Strategies for Transient Protection
Heinz Zenkner, Würth Elektronik eiSos, DE

DC Grid:Topology, Converters, Control and Protection, a Hands-On Experience
Peter van Duijsen, Diego Zuidervliet, The Hague University of Applied Sciences, NL

Efficient GaN Power Electronics: Improved Static and Dynamic Performances, and Optimal Cooling
Hongkeng Zhu, EPFL, CH

Physics-Based Modeling, Control, and Observer Design in Electric Vehicles
Michael Schütt, Rostock Competence Center for Power Electronics, DE;
Marc Petit, Miller Electric Manufacturing, US; Michael Saur, Merceds-Benz, DE

AI-Enhanced Condition Monitoring and Control in Modern Power Electronics
Maher Al-Greer, Teesside University, GB

Monday, 8 June 2026 — 9:00 a.m. – 12:30 p.m.

Magnetics for High Power in Artificial Intelligence and Modern Automotive Applications
Ionel »Dan« Jitaru, Rompower, US

Power Design for Nanoseconds Commutations (Part 1): Propagation & Converters
Jacques Laeuffer, Dtalents, FR

Device Design and Driving of Power Semiconductor Devices
Thomas Basler, Chemnitz University of Technology, DE
Jan Fuhrmann, University of Rostock, DE

Controlling Power Converters at the Limits of Physics (Part 1): Modelling and Design
Christian Dick, Cologne University of Applied Sciences, DE
Christoph van der Broeck, Infineon Technologies, DE
Sebastian Richter, AixControl, DE

Modern Automotive Power Trains (Part 1): Design, Testing, and Reliability
Francesco Iannuzzo, Radu Bojoi, Gianmario Pellegrino,
Polytechnic University of Turin, IT

From Theory to Practice (Part 1): Fundamentals of WBG Power Semiconductors
Sebastian Sprunck, Fraunhofer IEE, DE
Christian Lottis, Marco Jung, Bonn-Rhein-Sieg University of Applied Sciences, DE
Benedikt Kohlhepp, Technical University of Berlin, DE

Next Generation Magnetic Components: From Ferrite Complexity to AI Design Empowerment
Miroslav Vasic, Lufan Zhou, Polytechnic University of Madrid, ES;
Marcin Kacki, Hitachi Energy, PL

Designing Next-Generation Power Electronics to Pass EMC the First Time
Min Zhang, Mach One Design, GB

Isolation-Coordination Design Steps for Power Electronics Applications
Ilknur Colak, Schneider Electric, DE

Monday, 8 June 2026 — 1:30 p.m. – 5:00 p.m.

High Power and Very High-Density Technologies for Modern Automotive and Artificial Intelligence
Ionel »Dan« Jitaru, Rompower, US

Power Design for Nanoseconds Commutations (Part 2): Magnetics, Flybacks & Drives
Jacques Laeuffer, Dtalents, FR

Power Cycling and Lifetime Estimation of Power Semiconductor Devices
Thomas Basler, Chemnitz University of Technology, DE
Jan Fuhrmann, University of Rostock, DE

Controlling Power Converters at the Limits of Physics (Part 2): Digital Design and Implementation
Christian Dick, Cologne University of Applied Sciences, DE
Christoph van der Broeck, Infineon Technologies, DE
Sebastian Richter, AixControl, DE

Modern Automotive Power Trains (Part 2): Case Studies
Francesco Iannuzzo, Radu Bojoi, Gianmario Pellegrino, Polytechnic University of Turin, IT

From Theory to Practice (Part 2): Switching Losses in Power Semiconductors
Sebastian Sprunck, Fraunhofer IEE, DE
Hauke Lutzen, University of Bremen, DE
Christian Lottis, Bonn-Rhein-Sieg University of Applied Sciences, DE

Advancements in Wireless Charging Systems for EVs - Design Challenges and Practical Solutions
Miroslav Vasic, Polytechnic University of Madrid, ES;
Nikola Mirkovic, Institute Nikola Tesla, RS

Power Converters for Energy Storage Systems, Classics to Cutting-Edge
Alireza Ghanbari, Petar Grbovic, University of Innsbruck, AT

Solid State Transformers: Topologies, Use Cases, Design Considerations, and Challenges
Ilknur Colak, Schneider Electric, DE;
Rafael Medeiros, Ahmed Meligy, Schneider Electric, FR

Conference Program at a Glance

Tuesday, 9 June 2026

8:15 a.m.	NCC Ost, Level 2 + 3 **Community Coffee**					
9:00 a.m.	Stage Tokio, Level 3 **Conference Opening and Award Ceremony**					
9:45 a.m.	Stage Tokio, Level 3 **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 a.m.	NCC Ost, Level 2 + 3 **Coffee Break**					
11:00 a.m.	Stage Tokio, Level 3 **GaN Devices**	Stage St. Petersburg, Level 2 **Advanced Cooling**	Stage Shanghai, Level 3 **Advanced Control Methods for Power Converters**	Stage Kyjiw, Level 2 **Measurement Techniques and Methods I**	Stage Seoul, Level 3 **Charging Technologies**	Stage Istanbul, Level 2 **Advanced Modeling and Design Technologies for Electrical Drives**
12:00 p.m. – 1:30 p.m.	Stage Sydney **Lunch Break**					
12:45 p.m.	Hall 4A **Poster / Dialogue Sessions**					
2:30 p.m.	Stage Tokio, Level 3 **Power Electronics in Transportation**	Stage St. Petersburg, Level 2 **Condition and Health Monitoring**	Stage Shanghai, Level 3 **Thermal Monitoring and Modeling**	Stage Kyjiw, Level 2 **Intelligent Gate Drivers II**	Stage Seoul, Level 3 **Bipolar Power Devices**	Stage Istanbul, Level 2 **Cutting-Edge Developments in High-Performance Drives**
3:30 p.m.	Hall 4A **Poster / Dialogue Sessions & Coffee Time**					
5:15 p.m.	NCC Ost **Welcome Night**					

Wednesday, 10 June 2026

8:15 a.m.	NCC Ost, Level 2 + 3 **Community Coffee**					
8:45 a.m.	Stage Tokio, Level 3 **Keynote** **AI Meets Power Electronics: Are We There Yet?** Uwe Drofenik, Vienna University of Technology, AT | Chairperson: Drazen Dujic, EPFL, CH					
9:30 a.m.	NCC Ost, Level 2 + 3 **Coffee Break**					
9:50 a.m.	Stage Tokio, Level 3 **Special Session: Artificial Intelligence in Power Electronics**	Stage St. Petersburg, Level 2 **WGB Reliability**	Stage Shanghai, Level 3 **Advanced Packaging**	Stage Kyjiw, Level 2 **High Power Converters I**	Stage Seoul, Level 3 **Active Filters and Electromagnetics Compatibility**	Stage Istanbul, Level 2 **Inductors and Transformers**
12:00 p.m. – 1:30 p.m.	Stage Sydney **Lunch Break**					
12:45 p.m.	Hall 4A **Poster / Dialogue Sessions**					
2:30 p.m.	Stage Tokio, Level 3 **Components Reliability**	Stage St. Petersburg, Level 2 **High Power Density Designs I**	Stage Shanghai, Level 3 **Design for Environmental Compatibility**	Stage Kyjiw, Level 2 **Design Optimization**	Stage Seoul, Level 3 **Multi-Domain Modeling**	Stage Istanbul, Level 2 **AC-AC Converters**
3:30 p.m.	Hall 4A **Poster / Dialogue Sessions & Coffee Time**					
5:00 p.m. – 7:00 p.m.	Messepark **After Work Beer**					
6:30 p.m.	Le Meridien Grand Hotel Nuremberg **Night of Excellence** (Participation only possible for Advisory Board members and speakers with pre-registration | Conference Attendees with Full Conference-Plus Ticket)					

Thursday, 11 June 2026

8:15 a.m.	NCC Ost, Level 2 + 3 **Community Coffee**					
8:45 a.m.	Stage Tokio, Level 3 **Keynote** **TransformerLess Partial Power Converters. Disruptive Solutions for Reduction of Losses, Cost, Volume** Thierry Meynard, Laplace – CNRS, FR | Chairperson: Philippe Ladoux, University of Toulouse, FR					
9:30 a.m.	NCC Ost, Level 2 + 3 **Coffee Break**					
9:50 a.m.	Stage Tokio, Level 3 **Special Session: Power Continuity vs. Power Quality – AI Data Center**	Stage St. Petersburg, Level 2 **Special Session: Energy Efficient Power Electronics – GaNius**	Stage Shanghai, Level 3 **Power Electronics for E-Mobility II**	Stage Kyjiw, Level 2 **WBG Application and Package**	Stage Seoul, Level 3 **Advanced DC-DC Converters**	Stage Istanbul, Level 2 **IGBT Technologies**
11:15 a.m. – 12:45 p.m.	Hall 4A **Poster / Dialogue Sessions**					
12:30 p.m.	Stage Sydney **Lunch Break**					
12:30 p.m.	Stage HongKong **Feedback Lunch** (only for members of the Board of Directors and the Advisory Board)					
2:00 p.m.	Stage Tokio, Level 3 **Power Electronics for E-Mobility III**	Stage St. Petersburg, Level 2 **SiC MOSFETs II**	Stage Shanghai, Level 3 **Data Center DC-DC Converters**	Stage Kyjiw, Level 2 **Novel AC-DC Converters**	Stage Seoul, Level 3 **Die Attach Materials**	Stage Istanbul, Level 2 **Capacitors and Current Sensors**

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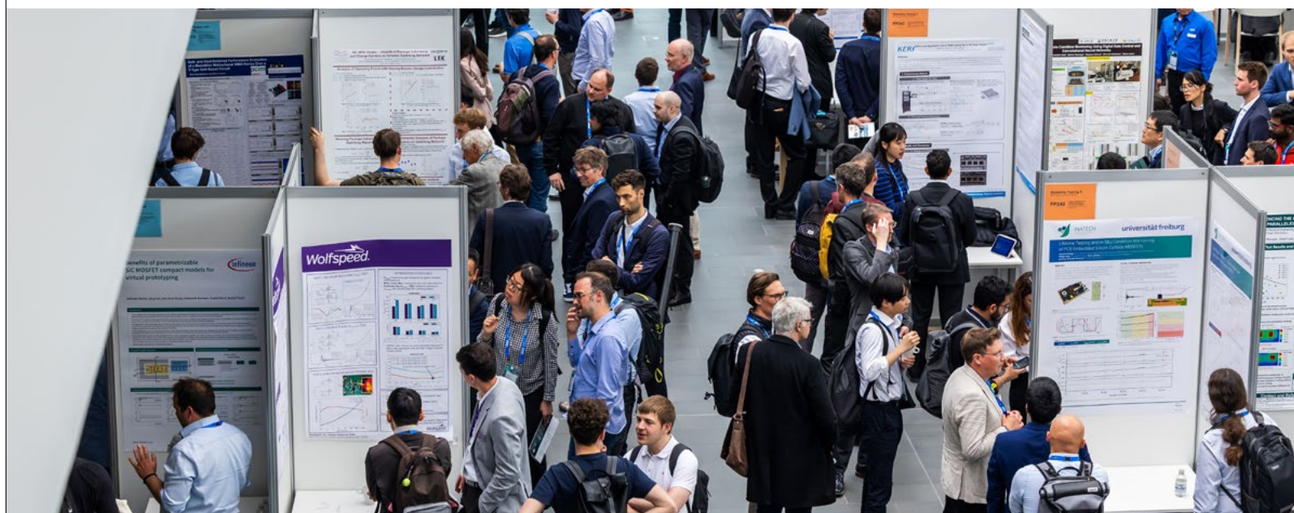


Keynotes

Speaker:
Michael Basler,
Fraunhofer IAF, DE
Chairperson:
Johann W. Kolar,
ETH Zurich, CH

Tuesday, 9 June 2026, 9:45 a.m., Stage Tokio, Level 3

The GaN Evolution: Lateral, Vertical, and Bidirectional — What's Next?

The transition to an all-electric society relies on innovations in power electronics, with GaN technology emerging as a key enabler for efficient and sustainable energy systems. The first part focuses on lateral GaN devices, covering innovations in voltage and current scaling, and functional integration through bidirectional switches, advanced topologies, and system peripherals. The second part introduces vertical device concepts and co-integration technologies toward vertical GaN power ICs.

Speaker:
Uwe Drofenik,
Vienna University of Technology, AT
Chairperson:
Drazen Dujic, EPFL, CH

Wednesday, 10 June 2026, 8:45 a.m., Stage Tokio, Level 3

AI Meets Power Electronics: Are We There Yet?

AI is reshaping engineering, but its role in power electronics is still emerging. We show how ML, LLMs, and RL can enhance design and control — from pattern recognition and optimization to AI-driven discovery of new converter control structures.

Speaker:
Thierry Meynard,
Laplace – CNRS, FR
Chairperson:
Philippe Ladoux,
University of Toulouse, FR

Thursday, 11 June 2026, 8:45 a.m., Stage Tokio, Level 3

TransformerLess Partial Power Converters. Disruptive Solutions for Reduction of Losses, Cost, Volume

In the context of energy transition electrochemical sources such as batteries, fuel cells and electrolyzers become present in more and more energetic systems. These sources share a common feature: their voltage varies in a limited range which opens the way to Partial Power Conversion and the promise of huge gains in terms of cost and losses. However, these promises are generally not held or limited by the need of a transformer adding cost and losses, requiring double DC/AC/DC conversion and adding unwanted complexity. There are however several cases where Partial Power Conversion is possible without any transformer, with only DC-DC conversion and a simple topology. When this is possible, reductions of 50% and more of cost, volume and losses can be obtained. Compatible with all electrochemical sources (and with PV if only MPP operation is targeted) these topologies can play an important role in the energy transition we are facing. A review of these topologies will be presented and some of the possible applications will be described. But this field seems so wide and rich we can hope and bet this will stimulate new ideas of application.

Conference Tuesday, 9 June 2026

Morning Oral Sessions

8:15 a.m.	NCC Ost, Level 2 + 3	**Community Coffee**
9:00 a.m.	Stage Tokio, Level 3	**Opening / Award Ceremony**
9:45 a.m.	Stage Tokio, Level 3	**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 a.m.	NCC Ost, Level 2 + 3	**Coffee Break**

Find the matching manuscript in your proceedings via the presentation numbers listed here.

Stage Tokio, Level 3
GaN Devices

Chairperson:
Thomas Neyer,
Infineon Technologies, DE

11:00 a.m. OP001
1.2 kV Integrated Power Switch with PSJ GaN, Si IGBT and SiC Diode
Alireza Sheikhan, The University of Sheffield, UK

11:20 a.m. OP002
SmartGaN: First Smart Cut-Based Engineered Substrate for High-Performance GaN Power Devices
Youssef Hamdaoui, University of Lille, FR

11:40 a.m. OP003
GaN-HEMTs vs. GaN-»Bricks« – A Device Concept Comparison
Richard Reiner, Fraunhofer IAF, DE

Stage St. Petersburg, Level 2
Advanced Cooling

Chairperson:
Shiori Idaka,
Mitsubishi Electric, DE

11:00 a.m. OP004
Multi Layered Mo Effects on the Spacer for Double Sided Cooling Power Module
Byeongchan Kim, Korea Institute of Industrial Technology, KR

11:20 a.m. OP005
Validated Electro-Thermal Methodology for Transient Current Capability in IGBT Power Modules
Ludovica Longo, Nexperia, IT

11:40 a.m. OP006
Loop Heat Pipe Technology for Enhanced Cooling in Power Electronics
Olivier de Laet, Calyos, BE

Stage Shanghai, Level 3
Advanced Control Methods for Power Converters

Chairperson:
Francisco Javier Azcondo,
University of Cantabria, ES

11:00 a.m. OP007
Stability of Inner-loop Only Control of Single Stage AC-link Converter For OBC Applications
Rami Troudi, Valeo, FR

11:20 a.m. OP008
Hybrid Optimal Trajectory Control for LLC Converters to Achieve Fast Response Under Dynamic Loading
Ayoub Ziraoui, STMicroelectronics, FR

11:40 a.m. OP009
A Closed-loop Dead Time Control Method Based on di/dt Peak Detection
Hongming Zhao, Robert Bosch, DE

Stage Kyjiw, Level 2
Measurement Techniques and Methods I

Chairperson:
Sang Won Yoon,
Seoul National University, KR

11:00 a.m. OP010
Automated Deskew of Double-Pulse Measurements for Precise Switching Loss Calculation
Philipp Rehlaender, onsemi, DE

11:20 a.m. OP011
Emulating SiC Modules Using Electrically Representative PCBs to Investigate Die-Level Current Phenomena
Matt Appleby, University of Bristol, UK

11:40 a.m. OP012
500 MHz Magnetic-Field-Gradient-Based Sensing of Die Currents in SiC Power Modules
Jiaqi Yan, University of Bristol, UK

Stage Seoul, Level 3
Charging Technologies

Chairperson:
Jens Schmenger,
Siemens, DE

11:00 a.m. OP013
Techno-Economic Sizing of a Renewable Hybrid Energy System for an EV Charging Station
Maria Nunez, University of Sheffield, UK

11:20 a.m. OP014
Implementation of a Power Gyrator for Electric Vehicle Chargers
Luis Ruiz Chamorro, Polytechnic University of Madrid, ES

11:40 a.m. OP015
Multiport Single-Transformer Power Converter Enabling Onboard Charging and DC-DC Conversion in EVs
Oscar Lucia, University of Zaragoza, ES

Stage Istanbul, Level 2
Advanced Modeling and Design Technologies for Electrical Drives

Chairperson:
Manfred Schrödl,
Vienna University of Technology, AT

11:00 a.m. OP016
Determination of Parasitic Capacitances in a Motor Using Ansys Maxwell
Muhammad Ahmad Masood Gill, University of Southern Denmark, DK

11:20 a.m. OP017
Evaluation of PWM Techniques for Reduced Powertrain Losses and NVH
Giorgio Valente, Cadence Design Systems, IT

11:40 a.m. OP018
Model Reference Adaptive Control of Permanent Magnet Synchronous Machines using Exact Discretization
Kristof Bandy, Budapest University of Technology and Economics, HU

12:00 p.m. – 1:30 p.m.	Stage Sydney	**Lunch Break**
12:45 p.m. – 2:15 p.m.	Hall 4A	**Poster / Dialogue Sessions**

Conference Tuesday, 9 June 2026 Poster / Dialogue Sessions

12:45 p.m. – 2:15 p.m., Hall 4A

IGBT Devices

Chairperson:
Peter Kanschat, Infineon Technologies, DE

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, JP

Device Robustness

Chairperson:
Pierre-Laurent Doumergue, Microchip, 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, SE

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 Method for Pulsed Current Capability of SiC Trench MOSFET in Third Quadrant Operation**
Rene Mente Infineon Technologies, AT

PP018 **Real-Time Detection of Loss of Coolant and Thermal Management using Model-Sensor Junction Temperature Divergence 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 and Power Capability**
Fatih Cetindag, Nexperia, DE

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

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**
Emanuela Privitera, Nexperia, IT

Stress Monitoring and Lifetime Prediction

Chairperson:
Ulrike Grossner, ETH Zurich, CH

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 Power Modules Under Low Cycle Thermal Fatigue Through Redefined 3-D 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**
Lucia Clavero, 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

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

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

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 Automotive Traction Inverters**
Ion Tesu, Skyworks Solutions, US

Transportation Infrastructure

Chairperson:
Thiago Batista Soeiro, University of Twente, 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, University of Mondragon, 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**
Ngoc Nam Pham, Brno University of Technology, CZ

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

Electromagnetic Compatibility: Emission and Immunity

Chairperson:
Francesco Gennaro, STMicroelectronics, IT

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

PP052 **Impedance Modeling in Cabling Scenarios**
Aimar Telletexea, 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 Electromagnetic Interference**
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

Conference Tuesday, 9 June 2026 Poster / Dialogue Sessions

12:45 p.m. – 2:15 p.m., Hall 4A

Modeling and Simulation of Power Electronic Systems

Chairperson:
Jacques Laeuffer, Dtalents, FR

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 PCB 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

PP063 **Real-Time-Capable Oversampling Model for different Three-Level-Three-Phase Converter Topologies**
Martin Klassen, 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**
Deekshith Venkatesha Prabhu, 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

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

Reliability and Condition Monitoring

Chairperson:
Peter Wallmeier,
AEG Power Solutions, DE

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

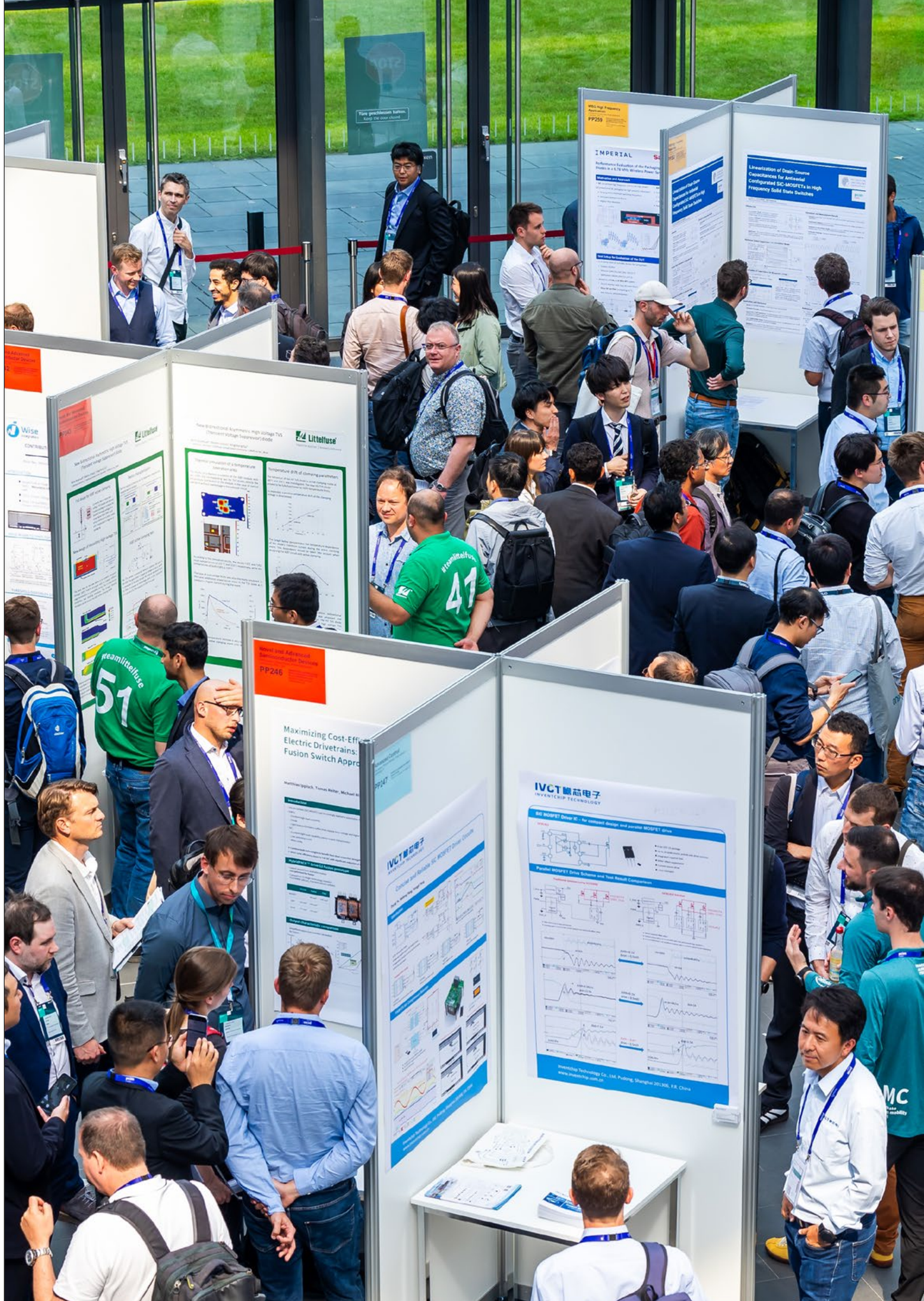
PP075 **Flexible Test Platform for Mission-Profile-Based Validation of Active Thermal Control Techniques**
Eneko Agirrezabala, Mondragon University, ES

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



Conference Tuesday, 9 June 2026

Afternoon Oral Sessions

Stage Tokio, Level 3
Power Electronics in Transportation

Chairperson:
Philippe Ladoux,
University of Toulouse, FR

2.30 p.m. OP019
Battery Integration in Railways: Review of Power Converter Topologies and their Industrial Readiness
Saad Ahmad, University of Oviedo, ES

2.50 p.m. OP020
Shared DC-Link Optimization for Paralleled Inverters Using Phase-Shifted PWM
Axel Wagret, Airbus, FR

3:10 p.m. OP021
Towards Reliability-Oriented Mission Profiles for Electric Aircraft Propulsion Converters
Jeff Kugener, German Aerospace Center (DLR), DE

Stage St. Petersburg, Level 2
Condition and Health Monitoring

Chairperson:
Jürgen Schuderer,
Hitachi Energy, CH

2.30 p.m. OP022
Motor and Inverter Fault Detection using Current Signature Analysis for GaN-based Motor Drives
Holger Kapels, Hamburg University of Technology, DE

2:50 p.m. OP023
Optimized High Frequency Cable–Motor Impedance Parameter Design for Voltage Stress Mitigation
Muhamad Usman Sardar, Tallinn University of Technology, EE

3:10 p.m. OP024
Microclimate Inside of Power Semiconductor Modules and Their Surrounding Cabinet During Operation
Wilfried Holzke, University of Bremen, DE

Stage Shanghai, Level 3
Thermal Monitoring and Modeling

Chairperson:
Christina DiMarino,
Virginia Tech, US

2.30 p.m. OP025
Sensor Virtualization to Leverage Cost Savings in Realtime Electric Machine Temperature Monitoring
Christian Hahn, Robert Bosch, DE

2:50 p.m. OP026
Temperature Estimation Model for EV Drive Unit
Andreas Sidorow, Isuzu Motors, DE

3:10 p.m. OP027
Is Transient Thermal Network Model Applicable Under Short-Circuit Conditions?
Chengmin Li, Eindhoven University of Technology, NL

Stage Kyjiw, Level 2
Intelligent Gate Drivers II

Chairperson:
Michael Hartmann,
Graz University of Technology, AT

2.30 p.m. OP028
Low-Complexity Sub-nanosecond Active Gate Driver for SiC Modules with IV-Trajectory Optimisation
Matt Appleby, University of Bristol, UK

2:50 p.m. OP029
A Novel, Adaptive Closed-Loop Dead-Time Control for High Voltage SiC-MOSFET based Power Converters
Michael Rauh, University of Bayreuth, DE

3:10 p.m. OP030
Three-Channel Gate Monitoring Driver for SiC MOSFET Power Modules with Redundant Fault Detection
Mathis Picot-Digoix, Laplace Laboratory, FR

Stage Seoul, Level 3
Bipolar Power Devices

Chairperson:
Katsuaki Saito,
Nexperia, JP

2.30 p.m. OP031
New 6.5 kV IGCT and Fast Recovery Diode Product Set with Outstanding Safe Operation Area Performance
Umamaheswara Reddy Vemulapati, Hitachi Energy, CH

2:50 p.m. OP032
1.2 kV Fast Recovery Diode with Stable Turn-Off Under Harsh Voltage and Temperature Stress
Hadi Hematian, Littelfuse, DE

3:10 p.m. OP033
On Coupled Gate Drive Units for Paralleled IGBTs and Their Effect on Dynamic Current Mismatches
Lukas Tomforde, University of Rostock, DE

Stage Istanbul, Level 2
Cutting-Edge Developments in High-Performance Drives

Chairperson:
Robert Plikat,
Volkswagen, DE

2.30 p.m. OP034
Integrated Interphase Transformer and dv/dt Filter Analysis for Interleaved SiC Motor Drives
Tiago Jappe, Vincotech, DE

2:50 p.m. OP035
Artificial Intelligence Based Redundancy for Safety Critical Automotive Motor Control Applications
Mihail Jefremow, Infineon Technologies, DE

3:10 p.m. OP036
Safety-Compliant DC-Link Surge Suppression with Integrated Diagnostic in 48 V Automotive Drives
Kaveh Haghverdi, SEG Automotive, DE

3:30 p.m. – 5:00 p.m. Hall 4A **Poster / Dialogue Sessions & Coffee Time**

Detailed program with descriptions and all co-authors can be found online at
pcim.mesago.com/program

Conference Tuesday, 9 June 2026 Poster / Dialogue Sessions

3:30 p.m. – 5:00 p.m., Hall 4A

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**
Rony Thomas, 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 **10-kV SiC MOSFET Module Characterization for Two-Level 4.16-kV High-Speed Motor Drives in Gas and Pumping Applications**
Ashish Kumar, Wolfspeed, US

Device Packaging

Chairperson:
Stéphane Lefebvre, CNAM - SATIE, FR

PP089 **Orthogonal Two-Chip-Per-Ribbon Layout Enabling Stable Low-Rg Switching in 800-V SiC 2-in-1 Power Modules**
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

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

Advanced Thermal Modeling, Estimation and Management

Chairperson:
Huai Wang, Aalborg University, DK

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

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**
Uwe Schuffenhauer, University of Applied Sciences Dresden, 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

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**
Helmut Votzi, University of Applied Sciences Vienna, AT

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

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

PP113 **Coupled-inductor Series Capacitor Buck Converter for Higher Step-down Voltage Conversion Ratios**
Inigo Martinez de Alegria Mancisidor, University of the Basque Country, ES

PP114 **A Resonant-Inductor-Integrated H-Transformer for 48V–12V LLC Bus Converters**
Jiayu Ying, Huawei Technologies, DE

Low Power AC-DC and DC-AC Converters I

Chairperson:
Klaus F. Hoffmann, Helmut Schmidt University, 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

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**
Federico Levati, ST Microelectronics, IT

PP120 **Bidirectional GaN based Single stage Microinverter**
Marco Ruggeri, Renesas, DE

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:
Michael Hartmann, Graz University of Technology, AT

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**
Marco Torrisi, STMicroelectronics, IT

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

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

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**
Alain Calmels, Microchip Technology, FR

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 100kW SiC Interleaved DC-DC Converter for Aviation Application**
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

Renewable Energy Systems

Chairperson:
Hans-Günter Eckel, University of Rostock, 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, ST Microelectronics, 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

Conference Tuesday, 9 June 2026 Poster / Dialogue Sessions

3:30 p.m. – 5:00 p.m., Hall 4A

Modeling 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

PP154 **Feasibility Study on Via-Based Shielding for Reducing Fringing Losses in Planar Magnetics**
Othman Abujazar, University of Paderborn, DE

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

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

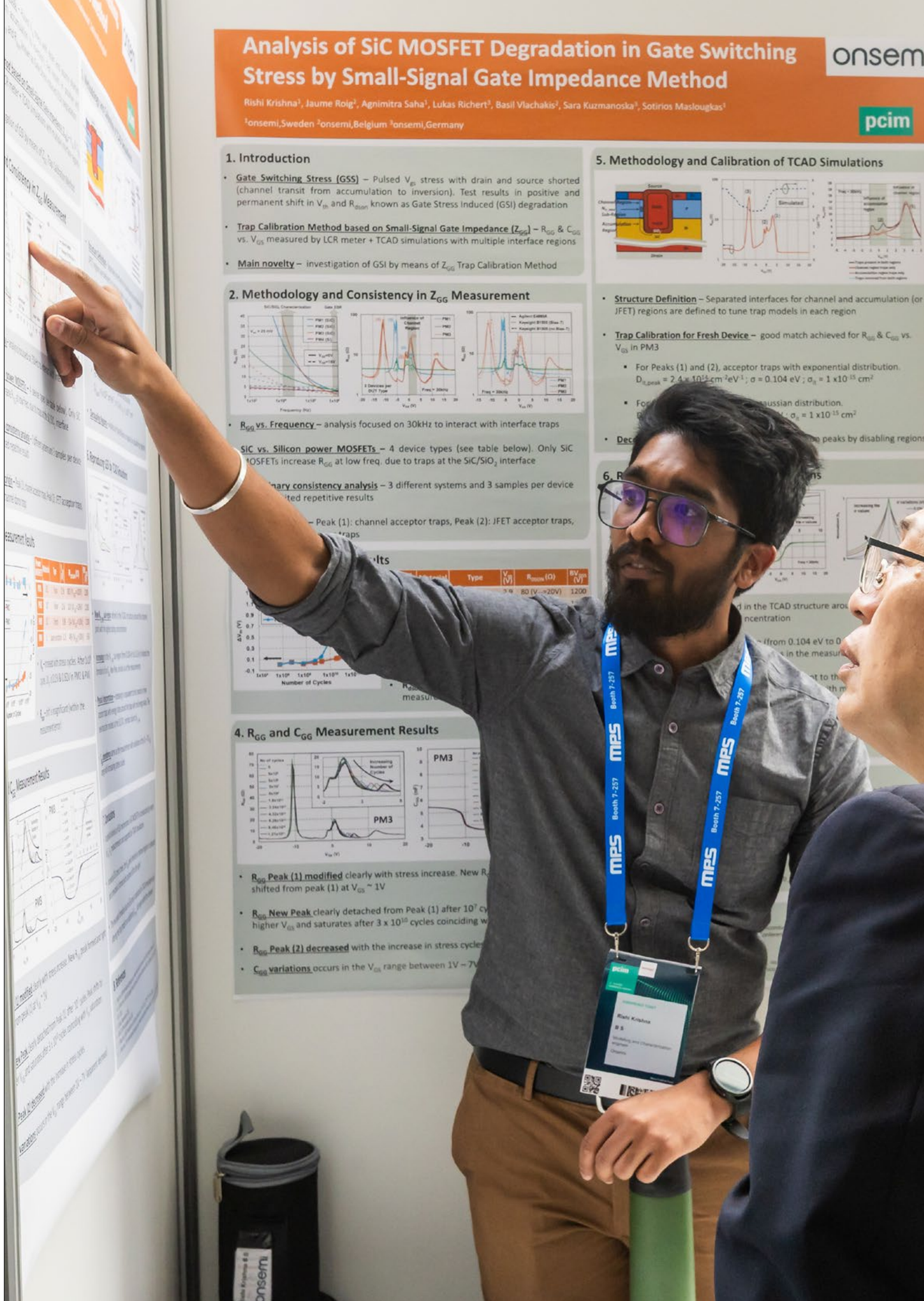
Resources Availability and Sustainability

Chairperson:
Anton Z. Miric, Heraeus, DE

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

PP163 **Selective Repair of Power Modules: A Process Solution Approach for Circular Power Electronics**
Lars Rebenklau, Fraunhofer IKTS, DE

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



Conference Wednesday, 10 June 2026

Morning Oral Sessions

8:15 a.m. NCC Ost, Level 2 + 3 **Community Coffee**

8:45 a.m. Stage Tokio, Level 3 **Keynote**

AI Meets Power Electronics: Are We There Yet?

Uwe Drofenik, Vienna University of Technology, AT | Chairperson: Drazen Dujic, EPFL, CH

9:30 a.m. NCC Ost, Level 2 + 3 **Coffee Break**

Stage Tokio, Level 3
Special Session: Artificial Intelligence in Power Electronics

Chairperson:
Ole Gerkensmeyer,
Nexperia, DE

9:50 a.m. OP037
Environment-oriented Predictive Maintenance for Distribution Transformers
Alper Çoban, Empa Electronics, TR

10:10 a.m. OP038
AI-enhanced Energy Networks: Enabling Smart Power Management for Software-Defined Vehicles
Hardy Stoelben, NXP Semiconductors, DE

10:30 a.m. OP039
Accelerating SiC Power Module Design via AI Enabled Web Based Virtual Prototyping
Yanfeng Shen, Semikron Danfoss, DE

11:10 a.m. OP040
The Silent Enabler: WBG Power Technology & Packages for the AI-HPC Revolution
Giuliano Cassataro, Nexperia, DE

11:30 a.m. OP041
AI and Electronics – Trends, Challenges, and Urgent Opportunities
Alexander Gerfer,
Würth Elektronik, DE

Stage St. Petersburg, Level 2
WBG Reliability

Chairperson:
Peter Kanschat,
Infineon Technologies, DE

9:50 a.m. OP042
Silicon Carbide Reliability During 960V DC Link Capacitor Active Discharge
Daniel Norwood, Texas Instruments, US

10:10 a.m. OP043
Comparative Study of Dynamic Gate Stress Effects on SiC MOSFETs
Akihiro Koyama, Mitsubishi Electric Corporation, JP

10:30 a.m. OP044
Novel Test Concept for Active Short-Circuit Characterization
Mohamed Alaluss, Chemnitz University of Technology, DE

11:10 a.m. OP045
Reliability Assessment of AlGaN/GaN MISHEMTs Under Self-Heating and Current Collapse Effects
Nilesh Kumar Jaiswal, University of Southern Denmark, DK

11:30 a.m. OP046
Methodology for Temperature Calibration and Power Cycling Testing of Schottky p-GaN HEMTs
Gengqi Li, Chemnitz University of Technology, DE

Stage Shanghai, Level 3
Advanced Packaging

Chairperson:
Aylin Bicakci,
University of Applied Sciences Kiel, DE

9:50 a.m. OP047
Long-Term High-Tempersature Operation of Liquid-Metal Interconnects on SiC MOSFETs
Nick Baker, University of Alabama, US

10:10 a.m. OP048
Novel 3D SiC Power Module with Epoxy-resin Insulated Substrate and Pressure-less Ag Sintering TIM
Shoichiro Otani, Tohoku University, JP

10:30 a.m. OP049
Next Generation 3.3kV LV LinPak Si Power Module with 3AC Design for Traction Applications
Slavo Kicin, Hitachi Energy, CH

11:10 a.m. OP050
3 level TNPC in a SEMITRANS 20 Package for LV Power Drives
Jürgen Engstler, Semikron-Danfoss, DE

11:30 a.m. OP051
Fabrication Technology for Hybrid Ceramic/PCB Embedded SiC MOSFET Halfbridge Pre-packages
Niko Haag, University of Applied Sciences Kempten, DE

Stage Kyjiw, Level 2
High Power Converters I

Chairperson:
Ki-Bum Park,
KAIST, KR

9:50 a.m. OP052
Hybrid Symmetrizing Voltage-Clamp for Voltage Balancing of Two-Level Operated 3L-NPC Topology
Amin Darvishzadeh, EPFL, CH

10:10 a.m. OP053
A Novel Compact High-Power PCB-Based Transformer Geometry for Electric Aircraft Applications
Lufan Zhou, Polytechnic University of Madrid, ES

10:30 a.m. OP054
Rogowski Coil with Passive Optical Output for Short-Circuit Protection of MMC Submodules
Ali Sharaf Addin, Universität der Bundeswehr München, DE

11:10 a.m. OP055
Reduction of Passive Components in Quasi-2-Level Operated MMC for MVDC DAB Converter
Jose Andres Aguilar Croston, SuperGrid Institute, FR

11:30 a.m. OP056
B-TRAN MMC HVDC: An Efficient and Low-Cost MMC HVDC with Half-Bridge Submodule and DC Fault Blocking
Bhuwenesh Gupta, Ideal Power, US

Stage Seoul, Level 3
Active Filters and Electromagnetic Compatibility

Chairperson:
Christof Sihler,
GE Vernova, FR

9:50 a.m. OP057
Investigation of Conducted EMI in a 3-Phase Induction Motor Drive Under Different Predictive Control Methods
Gregory Almeida, French Institute of Technology (IRT Saint-Exupery), FR

10:10 a.m. OP058
Improving Transient Performance on Server and AI Applications
Jose Luis Silva Perales, Monolithic Power Systems, ES

10:30 a.m. OP059
Advanced Power Quality Control in Industrial Power Grids: AI-Integrated Active Filtering
Philipp Wissmann, Siemens, DE

11:10 a.m. OP060
A Novel Active dv/dt Filter for Common-Mode Current Reduction in SiC-Based Motor Drives
Felix Schulte, TU Dortmund University, DE

11:30 a.m. OP061
Sensorless Active EMI Filtering via Real-Time Estimation of Common-Mode Dynamics
Mohammadreza Bagheribavaryani, Braunschweig University of Technology, DE

Stage Istanbul, Level 2
Inductors and Transformers

Chairperson:
Bernhard Strzalkowski,
Consultant, DE

9:50 a.m. OP062
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 a.m. OP063
Design of an Integrated Three-Port Fractional-Turn Planar Transformer for a Redundant LLC Converter
Arya Venugopal, Silicon Austria Labs, AT

10:30 a.m. OP064
Copper Foil-Based Air Core Transformer Equivalent Model and Feasibility Study for MHz Switching Freq
Oleksandr Husev, Warsaw University of Technology, PL

11:10 a.m. OP065
Very High Frequency Characterization of a Foil Air Inductance using Transmission Lines
Jacques Laeuffer, Dtalents, FR

11:30 a.m. OP066
Integration of CMDM Choke Using Ellipsoidal Core for High Power Density and Volume Reduction
David Prados, Prax, ES

10:50 a.m. NCC Ost, Level 2 + 3 **Coffee Break**

Conference Wednesday, 10 June 2026 Poster / Dialogue Sessions

12:45 p.m. – 2:15 p.m., Hall 4A

SiC Reliability

Chairperson:
Masahito Otsuki, Fuji Electric, JP

PP165 **Static and Dynamic Reliability Asessment of Bipolar Degradation in 1.2 kV SiC MOSFET**
Michele Fiore, STMicroelectronics, IT

PP166 **Demonstrating Intrinsic Gate-Oxide Reliability in 1200 V SiC MOSFETs via Inline Defect Screening**
Nicolo Oliva, 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

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

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 **SuperQ Technology: A Game-Changer in Power Device Innovation. Analysis of SuperQ 200V MOSFET Industry Leading Design, Manufacture and Performance**
Christopher Kocon, Ideal Semiconductor, US

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**
Dinesh Palaniappan, Infineon Technologies, SG

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, Middle East Technical University, 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

PP188 **Investigation of Large Area Soldering Using High Stress Assembly and Challenging Surface Coatings**
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

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

PP192 **Reactive-Current Transient–Based Dual-Signal Gain Scheduling for Energy Balancing in Cascaded H-Bridge STATCOMs**
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 Power Stage at 1MHz Switching Frequency with Asynchronous 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

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

PP202 **EMI Diagnosis for Power Converter PCB Layouts based on a Reasoning Aligned Vision Language Model**
Martin Kuo, ITG Electronics, US

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

High Power Converters II

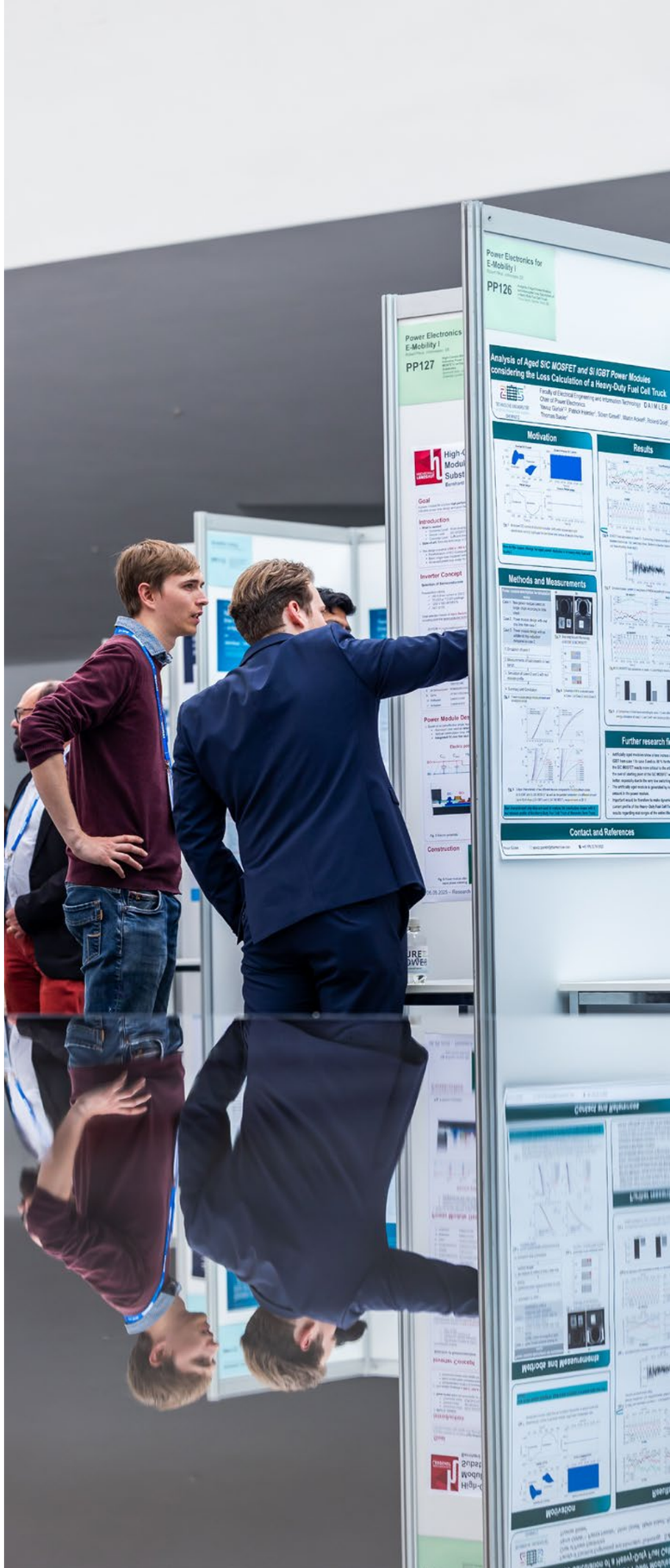
Chairperson:
Ilknur Colak, Schneider Electric, DE

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**
Yan Zhou, Friedrich-Alexander University of Erlangen-Nuremberg, DE

PP208 **Experimental Analysis of Parasitic Turn-On in Different 650V SiC MOSFET Cell Designs**
Bela Truschenski, Forschungs- und Transferzentrum Leipzig, DE

PP209 **Design Considerations to Meet Future Datacenter Power Supply Needs**
Jeevan Thomas, onsemi, IN



Conference Wednesday, 10 June 2026 Poster / Dialogue Sessions

12:45 p.m. – 2:15 p.m., Hall 4A

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

PP212 **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:
Eckart Hoene, Fraunhofer IZM, DE

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

PP217 **Hybrid Two-Cell Flying Capacitor Inverter for 1200V On-Board Chargers**
Arda Kasim, Middle East Technical University, 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: Part 2 - 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

Motors and Actuators

Chairperson:
Spasoje Miric, University of Innsbruck, AT

PP223 **Electromagnetic Design of a Synchronous Reluctance Motor 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 and Experimental Validation of a Hybrid EMI Filter for Compact EMI Filter Design in On-Board Chargers**
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

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**
Robin Luca Abraham, Physikalisch-Technische Bundesanstalt, DE

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

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

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

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**
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

Magnetic Materials

Chairperson:
Eric Favre, Consultant, CH

PP241 **Characterization and Feasibility Study of Nanocrystalline Core based EMI Filters for On-board Chargers in Electric Vehicles**
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

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**
Jon Anzola Garcia, 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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Conference Wednesday, 10 June 2026

Afternoon Oral Sessions

12:00 p.m. – 1:30 p.m. Stage Sydney **Lunch Break**

12:45 p.m. – 2:15 p.m. Hall 4A **Poster / Dialogue Sessions**

Stage Tokio, Level 3
Components Reliability

Chairperson:
Frank Osterwald, Gesellschaft für Energie und Klimaschutz Schleswig-Holstein, DE

2:30 p.m. OP067
Improved Rth-Calculation for SiC MOSFETs in Power Cycling Tests
Lukas Farnbacher, Fraunhofer IISB, DE

2:50 p.m. OP068
Lifetime of IGBTs Under Mixed Sequential Power Cycling: A Matched-Lifetime Sequencing Experiment
Diego Velazco, SuperGrid Institute, FR

3:10 p.m. OP069
Component-Based Acceleration of Lifetime Tests for Automotive Inverters
Jelto Oltmanns, Volkswagen, DE

Stage St. Petersburg, Level 2
High Power Density Designs I

Chairperson:
Daniel Chatroux,
CEA-LITEN, FR

2:30 p.m. OP070
Integrated High-Power-Density 48 V Power Converter with 3D-Printed Heatsink Busbars
Zhaobo Zhang, University of Bristol, UK

2:50 p.m. OP071
A GaN-Enabled Low-EMI Three-Phase/Single-Phase PFC Family for EV Chargers and Data Center Applications
Reza Asgarnia, Paderborn University, DE

3:10 p.m. OP072
500kVA/L High Density 3-Phase Traction Inverter Based on PCB Embedded Power Modules
Wiljan Vermeer, Fraunhofer IZM, DE

Stage Shanghai, Level 3
Design for Environmental Compatibility

Chairperson:
Regine Mallwitz,
Technical University of Braunschweig, DE

2:30 p.m. OP073
Material Composition of Power Semiconductors for Life Cycle Assessment
Ariya Sangwongwanich, Aalborg University, DK

2:50 p.m. OP074
Eco-design of Magnetic Components in Power Electronics A Life Cycle Assessment Perspective
Ning Wang, Aalborg University, DK

3:10 p.m. OP075
Is SiC the Key to Achieving Sustainable CO2 Reduction in Inverters?
Disha Sharma, Siemens, DE

Stage Kyjiw, Level 2
Design Optimization

Chairperson:
Uwe Drofenik,
Vienna University of Technology, AT

2:30 p.m. OP076
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

2:50 p.m. OP077
Inductance-Controlled PCB Design of an Instrumented Si/SiC Hybrid Switch with Module-Level Parasitics
Yuyang Wang, University of Bristol, UK

3:10 p.m. OP078
Data-Driven Physics-Informed Modeling of Stripline Inductors for High-Density Power Converters
Raúl Henares Vargas, Tyndall National Institute, IE

Stage Seoul, Level 3
Multi-Domain Modeling

Chairperson:
Nicolas Rouger,
University of Toulouse, FR

2:30 p.m. OP079
Improved Electrothermal SPICE Model for ASFETs Enabling Dynamic Current Sharing and Enhanced SOA
Sabrina Chowdhury, Nexperia, UK

2:50 p.m. OP080
Accurate Modeling and Analysis of Dissipation Losses in Output Capacitance of Power Semiconductors
Kaushik Mirdoddi, Silicon Austria Labs, AT

3:10 p.m. OP081
Dynamic Reverse Transfer Capacitance Modeling for New IGBT Generations
Patrick Popp, Infineon Technologies, DE

Stage Istanbul, Level 2
AC-AC Converters

Chairperson:
Ulrich Kirchenberger,
STMicroelectronics, DE

2:30 p.m. OP082
Design and Performances of Thyristor-Based Electronics On-Load Tap Changer
Jiasheng Huang, EPFL, CH

2:50 p.m. OP083
Three-Leg Operation of Back-to-Back Voltage Source Converters with Zero Voltage Switching
Lou Scholtissek, Technical University of Munich, DE

3:10 p.m. OP084
Enabling Direct AC-AC Power conversion in Induction Cooking with GaN BDS
Veit Hellwig, Infineon Technologies, DE

3:30 p.m. – 5:00 p.m. Hall 4A **Poster / Dialogue Sessions & Coffee Time**

Detailed program with descriptions and all co-authors can be found online at
pcim.mesago.com/program

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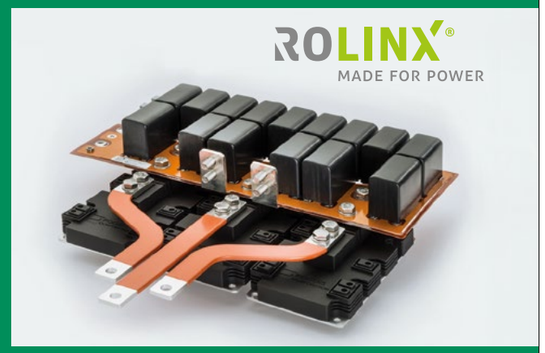

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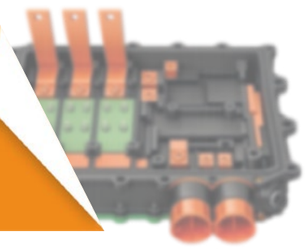

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Conference Wednesday, 10 June 2026 Poster / Dialogue Sessions

3:30 p.m. – 5:00 p.m., Hall 4A

GaN Devices and Driving

Chairperson:
Thomas Neyer, Infineon Technologies, DE

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 **Advanced Driver IC with IGSS Detection and Constant Current Driving for Inverter Applications**
Zhong Ye, Inventchip Technology, CN

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

Device Application

Chairperson:
Katsuaki Saito, Nexperia, JP

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**
Nicholas Oborny, Texas Instruments, 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 Gate-Injection Transistors Using Double-Pulse Testing**
Arunkumar Jayaraman, Bonn-Rhein-Sieg University of Applied Sciences, DE

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

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

PP275 **Dielectric Breakdown Characteristics of Alumina-based Ceramic Thin Films Deposited 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

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

PP282 **Calibration of a 3D Thermo-Mechanical Simulation Model of a PCB-Mounted Power MOSFET Using Power Cycling Tests**
Patrik Suhaj, FEI STU, SK

Conference Wednesday, 10 June 2026 Poster / Dialogue Sessions

3:30 p.m. – 5:00 p.m., Hall 4A

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 Accelerated Power Cycling Tests at Increased Temperature Swings**
Vivien Grau, Robert Bosch, DE

PP286 **Reliability and Lifetime Power Cycling Study of GaN HEMTs under Temperature Swings from 70°C to 100°C**
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:
Mark M. Bakran, University of Bayreuth, DE

PP288 **Multilayer Power Module 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 **Embedded Implementation of a Thermal Coupling Matrix Using AURIX TC4x Parallel Processing Unit for xEV Applications**
Renke Han, Infineon Technologies, DE

PP293 **Mixed Signal Compact Controller Device for Type-C EPR Battery Charger and Power Supply Solutions**
Venkata Appanabhotla, Infineon Technologies, DE

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 in EVs**
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 Seminconductor 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, SE

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 Monolithic 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 the Field-Weakening Range**
Ellen Bünte, dSPACE, DE

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

Smart DC-Grid Control and Protection

Chairperson:
Bernhard Strzalkowski, Consultant, DE

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 **Coordinated Converter-Side and Feeder-Side Active ImpedanceControl for DC-Grid Stability**
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

Power Quality

Chairperson:
Francesco Gennaro, STMicroelectronics, IT

PP316 **Improvement of a Single-Phase UPQC Performance by Using DE Metaheuristic for Tuning PI and SF-MR Controllers Gains**
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:
Thomas Ebel, University of Southern Denmark, DK

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

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**
Lars Leister, 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

Conference Thursday, 11 June 2026

Morning Oral Sessions

8:15 a.m.	NCC Ost, Level 2 + 3	**Community Coffee**
8:45 a.m.	Stage Tokio, Level 3	**Keynote** **TransformerLess Partial Power Converters. Disruptive Solutions for Reduction of Losses, Cost, Volume** Thierry Meynard, Laplace – CNRS, FR | Chairperson: Philippe Ladoux, University of Toulouse, FR
9:30 a.m.	NCC Ost, Level 2 + 3	**Coffee Break**

Stage Tokio, Level 3
Special Session: Power Continuity vs. Power Quality – AI Data Center

Chairperson:
Lorenzo Giuntini, ABB, CH

Stage St. Petersburg, Level 2
Special Session: DFG Priority Program »Energy Efficient Power Electronics – GaNius«

Chairpersons:
Andreas Lindemann, Otto von Guericke University Magdeburg,
Sibylle Dieckerhoff, Technical University of Berlin, DE

Stage Shanghai, Level 3
Power Electronics for E-Mobility II

Chairperson:
Marc Cousineau, University of Toulouse, FR

Stage Kyjiw, Level 2
WBG Application and Package

Chairperson:
Bernd Eckardt, Fraunhofer IISB, DE

Stage Seoul, Level 3
Advanced DC-DC Converters

Chairperson:
Christopher Kocon, iDEAL Semiconductor Devices, US

Stage Istanbul, Level 2
IGBT Technologies

Chairperson:
Thomas Basler, Chemnitz University of Technology, DE

9:50 a.m. OP085
8 kW SiC/GaN-Based PFC Design with MCM Operation Achieving >99% Flat Efficiency for AI Servers
Marco Torrisi, STMicroelectronics, IT

9:50 a.m. OP089
A Novel Multistage Gate Driver for GaN GITs
Céline Lawniczak, TU Dortmund, DE

9:50 a.m. OP093
Tiny Power Box 2: Part 1 - Topology Design for a High Power Density Bidirectional OBC with Integrated DC-DC
Franz Vollmaier, Silicon Austria Labs, AT

9:50 a.m. OP097
Inductance-optimized Power Module Concept: Balance di/dt Symmetry and Losses by Leadframe Overlap
Michael Fügl, Infineon Technologies, DE

9:50 a.m. OP101
Innovative Bidirectional DCDC Partial Power Converter for the Battery Backup Units in AI Datacenters
Rafael Antonio Garcia Mora, Infineon Technologies, AT

9:50 a.m. OP105
200 A 1200 V IGBT with Optimized Carrier Confinement and Trench Design for Automotive Applications
Tommaso Stecconi, SwissSEM Technologies, CH

10:10 a.m. OP086
12 kW Single Phase AC/DC Power Supply for Highly Dynamic AI Loads
Martin Wattenberg, Infineon Technologies, AT

10:10 a.m. OP090
Analysis of the Temperature- and Voltage-Dependencies of Gate Impedance in Different GaN Devices
Andreas Bäumler, University of Bayreuth, DE

10:10 a.m. OP094
Optimised PWM Schemes and Voltage Distribution in Four-Level Flying Capacitor Inverters for EVs
Bharadwaj Raghuraman, ETH Zurich, CH

10:10 a.m. OP098
All-SiC Power Modules with 3rd-Generation Trench-Gate SiC-MOSFET
Taku Takaku, Fuji Electric, JP

10:10 a.m. OP102
Steady-State Model and Operating Analysis of an MMC-Based Multiport DC–DC Converter
Martin Votava, Christian-Albrechts-University of Kiel, DE

10:10 a.m. OP106
6500 V-Class PPI Using 2nd Generation Trench-IEGTs
Ryohei Gejo, Toshiba, JP

10:30 a.m. OP087
UPS Front-end Converter as Shunt Active Filter for Power Quality Improvement in Data Centers
Rocco Luciano Grimaldi, ABB, CH

10:30 a.m. OP091
Measurement-Based Parameter Extraction for ASM-HEMT Compact Modeling of Power GaN-HEMTs
Philipp Swoboda, Karlsruhe Institute of Technology, DE

10:30 a.m. OP095
Optimized Gate Control Strategy of Si/SiC Hybrid Switches for Electric Drive Inverters
Niklas Seltner, Chemnitz University of Technology, DE

10:30 a.m. OP099
Off-State Gate Voltage Modulated Reverse Recovery of SiC Trench Power MOSFETs
Michael Schlüter, Infineon Technologies, DE

10:30 a.m. OP103
Transformer-Centered Design of an Asymmetrical Half-Bridge Converter for an ISOP-System
Daniel Breidenstein, Friedrich-Alexander University of Erlangen-Nuremberg, DE

10:30 a.m. OP107
Development of the 8th Generation 1200V NX Series Featuring 1000A Current Rating
Kota Ohara, Mitsubishi Electric, JP

10:50 a.m. OP088
Comparison of 1.2 to 3.3 kV Silicon Carbide Power Modules for Solid-State Transformer Applications
Christopher D. New, Wolfspeed, US

10:50 a.m. OP092
Design and Practical Verification of a Highly Efficient Resonant LLC-Converter
Jonas Schlindwein, Technical University of Berlin, DE

10:50 a.m. OP096
Next Generation SiC Inverter with Low Power Loop Inductance and Variable Gate Drive Strength
Andreas Apelsmeier, BorgWarner Systems Engineering, DE

10:50 a.m. OP100
Advanced Three-Phase GaN-Based Power Micro-Module for Motor Drives in Robotic Hands
Marco Palma, Efficient Power Conversion, IT

10:50 a.m. OP104
High Power Density CLLC-DCX Converter with >250 kW Reaching >99 % Efficiency at 200 kHz
Jörg Bornwasser, Fraunhofer ISE, DE

10:50 a.m. OP108
Newly developed 1,200V 8th Generation IGBT Module for Industrial Applications
Junya Kawabata, Fuji Electric, JP

11:15 a.m. – 12:45 p.m.	Hall 4A	**Poster / Dialogue Sessions**
12:30 p.m. – 2:00 p.m.	Stage Sydney	**Lunch Break**

Conference Thursday, 11 June 2026 Poster / Dialogue Sessions

11:15 a.m. – 12:45 p.m., Hall 4A

SiC and GaN Device Modeling

Chairperson:
Ulrich Kirchenberger,
STMicroelectronics, DE

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

PP334 **Applicability of the CoolSiC 1200 V G2 Compact Models Across a Wide Range of Applications and Operation Conditions**
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**
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:
Shiori Idaka, Mitsubishi Electric, DE

PP341 **SiC MOSFETs in Parallel Switching for MW Inverter Applications**
Christian Bender, 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

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

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**
Sebastian Klötzer, Nexperia, UK

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**
Xinyu Sun, 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

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 Parameter Identification 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:
Daniel Chatroux, CEA-LITEN, FR

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**
Giorgio Valente, Cadence Design Systems, IT

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

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

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

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

Traction in E-Mobility

Chairperson:
Mark M. Bakran, University of Bayreuth, DE

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

PP371 **Compact and Efficient Integrated Bias Supply Enabling Active Gate Drive Voltage Control**
Fabrizio Dicone, Allegro Microsystem, IT

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 Motor, 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**
Alberto Espinar, TDK Electronics, DE

PP378 **Impact of Soft Reverse-Recovery in 1200 V SiC MOSFETs on xEV Traction Inverter Efficiency and Performance**
Hansol Seo, onsemi, KR

Digital Drives and Motion Control

Chairperson:
Jens Schmenger,
Siemens, DE

PP379 **Digital Controller Implementation for a Multiphase Electric Drive Testing Platform using RCP tools**
Ane Gelbentzu-Arriaga, University of the Basque Country, ES

PP380 **Sensorless High Frequency Injection (HFI) Field-Oriented Control (FOC) for Maximum Torque at Zero Speed in Power Tools and Other Industrial Motor Applications**
Christoph Stangl, Allegro MicroSystems, DE

PP382 **Quantifying the Efficiency Advantage of Cascode GaN FETs in Variable-Speed Drives**
Marco Ruggeri, Renesas, DE

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**
Jens Onno Krah, 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 Multiwinding Planar Transformer Design**
Francesco Porpora, University of Cassino and Southern Lazio, IT

PP390 **Isolated Reconfigurable Battery for Integrated Cell Balancing and Conversion in Residential Storage**
Martin Votava, 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

Conference Thursday, 11 June 2026 Poster / Dialogue Sessions

11:15 a.m. – 12:45 p.m., Hall 4A

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 **Transient Coordination in Weak Multi-Feeder AC Networks WithLow-Voltage Series Modules**
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 Machine Learning for Fault Protection in LVDC Microgrids**
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**
Sudhir Nagaraj, Allegro MicroSystems, US

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 for Price-Sensitive Markets**
Gerhard Wessels, Bourns Electronics, DE

Coupled Inductors and Transformers

Chairperson:
Stéphane Lefebvre, CNAM - SATIE, FR

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

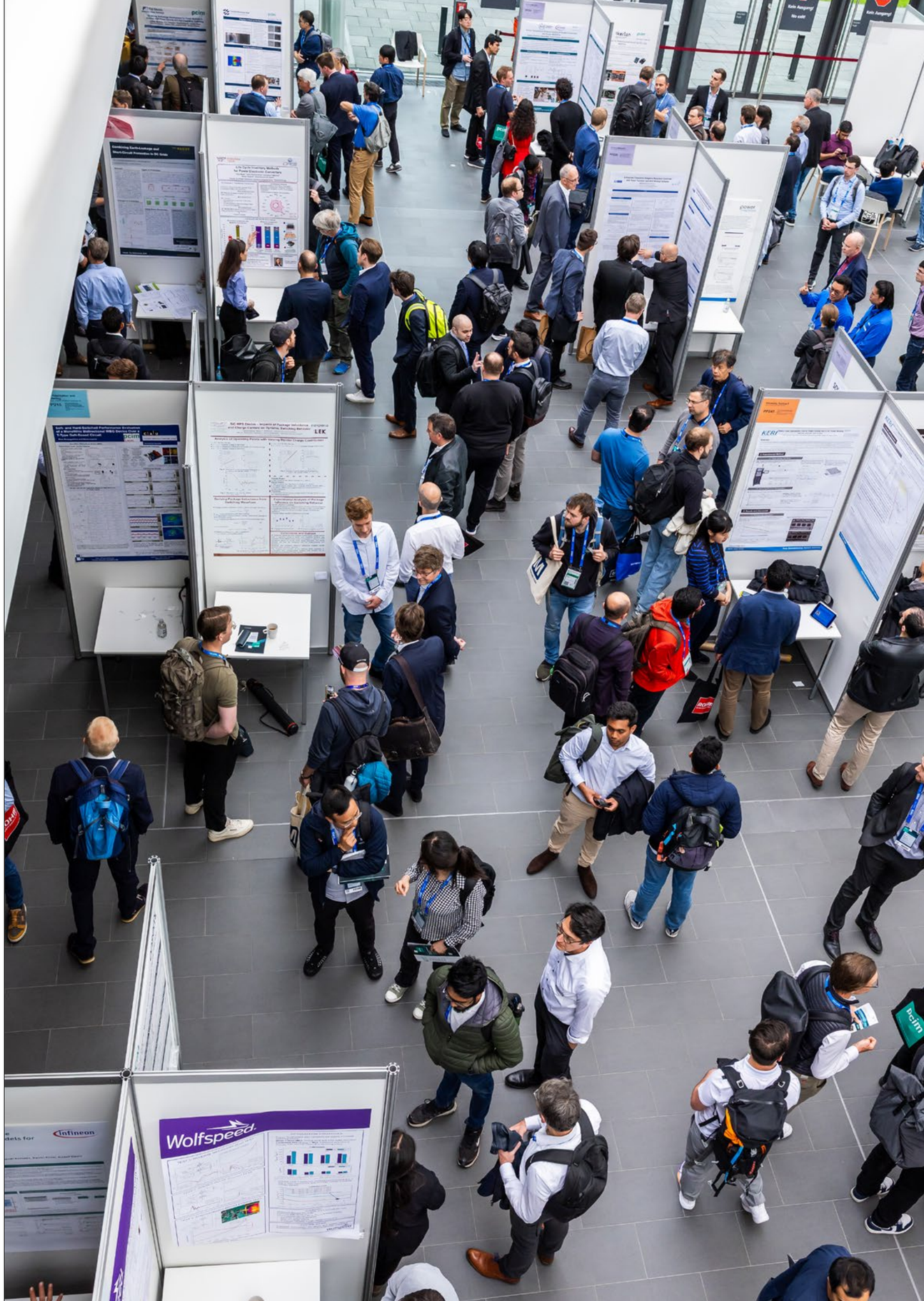
PP406 **A Fast Analytical Method for Calculating Leakage Inductance in Interleaved Toroidal Transformers**
William Bourne, University of Oxford, UK

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, YAGEO Group, DE



Conference Thursday, 11 June 2026

Afternoon Oral Sessions

Stage Tokio, Level 3
Power Electronics for E-Mobility III

Chairperson:
Silvio Colombi, ABB, CH

2:00 p.m. OP109
Quantifying the Impact of a Reduced Stray Inductance to the SiC MOSFET Module-/Inverter Current
Christian Schweikert, Infineon Technologies, FR

2:20 p.m. OP110
Efficiency and Cost Evaluation of 300 kW SiC Inverter Topologies for Battery Electric Vehicles
Christoph Sachs, University of Stuttgart, DE

2:40 p.m. OP111
Si/SiC Fusion Switch for Automotive Traction Inverters with 1200 V Blocking Capability
Tomas Reiter, Infineon Technologies, DE

3:00 p.m. OP112
Distributed and Fault-Tolerant State-of-Charge (SoC) Balancing applied to CMCs
Daniel Galvis, LAPLACE Laboratory, FR

Stage St. Petersburg, Level 2
SiC MOSFETs II

Chairperson:
Nando Kaminski, University of Bremen, DE

2:00 p.m. OP113
Next-Generation High-Performance and Robust 1200V SiC Trench MOSFETs
Karl Oberdieck, Robert Bosch, DE

2:20 p.m. OP114
SiC Trench-gate Superjunction MOSFET in Low Inductive Discrete Package for EV Inverter Applications
Nico Fontana, Infineon Technologies, AT

2:40 p.m. OP115
Mitigating Snap-Off during Reverse Recovery of SiC MOSFET Body-Diode
Abhishek Maitra, Chemnitz University of Technology, DE

3:00 p.m. OP116
Efficient High-Frequency Inverter Operation of Power Module with Advanced SBD-Embedded SiC MOSFET
Shunsuke Asaba, Toshiba, JP

Stage Shanghai, Level 3
Data Center DC-DC Converters

Chairperson:
Johannes Konert, Texas Instruments, DE

2:00 p.m. OP117
Eliminating Magnetic Components in a 48-to-12V Switched Tank Converter for Data Center Applications
Filippas Sotirios, University of Patras, GR

2:20 p.m. OP118
Distributed Current-Mode Control of a Multiphase DC-DC Converter for Space µP PoL Applications
Marc Cousineau, University of Toulouse, FR

2:40 p.m. OP119
Energy Buffer to Meet the Peak Power Demands in AI server PSUs without Disturbing the Grid
Sam Abdel-Rahman, Infineon Technologies, US

3:00 p.m. OP120
12 kW PSU for AI Servers featuring 113W/in3 with integrated Peak Shaving and Hold-up Functionalities
Sam Abdel-Rahman, Infineon Technologies, US

Stage Kyjiw, Level 2
Novel AC-DC Converters

Chairperson:
Jacques Laeuffer, Dtalents, FR

2:00 p.m. OP121
Single-Stage and Single-Phase Isolated Resonant AC-DC-Converter Using Integral Cycle Mode Control
David Bohne, Cologne University of Applied Sciences, DE

2:20 p.m. OP122
Variable-Inductor-Controlled Integrated LLC–PFC Converter for Wide Output Regulation
Alireza R. Ghanbari, V-Research, AT

2:40 p.m. OP123
Highly Efficient 34.5 kVA SiC-Based Power Amplifier with 20 kHz Large-Signal Bandwidth
Anton Gorodnichev, Fraunhofer IEE, DE

3:00 p.m. OP124
High Power Density 18kW Three-Phase PSU for AI Server and Data Center with Hold-up and Current Shaping
Alex Rossi, Infineon Technologies, AT

Stage Seoul, Level 3
Die Attach Materials

Chairperson:
Jacek Rudzki, Semikron Danfoss, DE

2:00 p.m. OP125
Pressure-Less Sintering Copper Paste
Hideo Nakako, Resonac, JP

2:20 p.m. OP126
Innovative Approach for Transient Liquid Phase Soldering (TLPS) with Solder Preforms for Power Module Packaging
Ryan Mayberry, Indium, US

2:40 p.m. OP127
Thermal Characterization of SLID Bonding Die-Attach in IGBT Module Packaging Application
Shenyi Liu, Aalto University, FI

3:00 p.m. OP128
Bonding Properties and Reliability Evaluation of Cu Sinter Paste for Heatsink Attach
Yuki Shirakawa, Mitsui Kinzoku, JP

Stage Istanbul, Level 2
Capacitors and Current Sensors

Chairperson:
Petar Ljushev, Danisense, DK

2:00 p.m. OP129
Investigation of Retrofittable GHz Bandwidth Current Sensors for Evaluation of GaN and SiC Devices
Sebastian Klötzer, Nexperia, DE

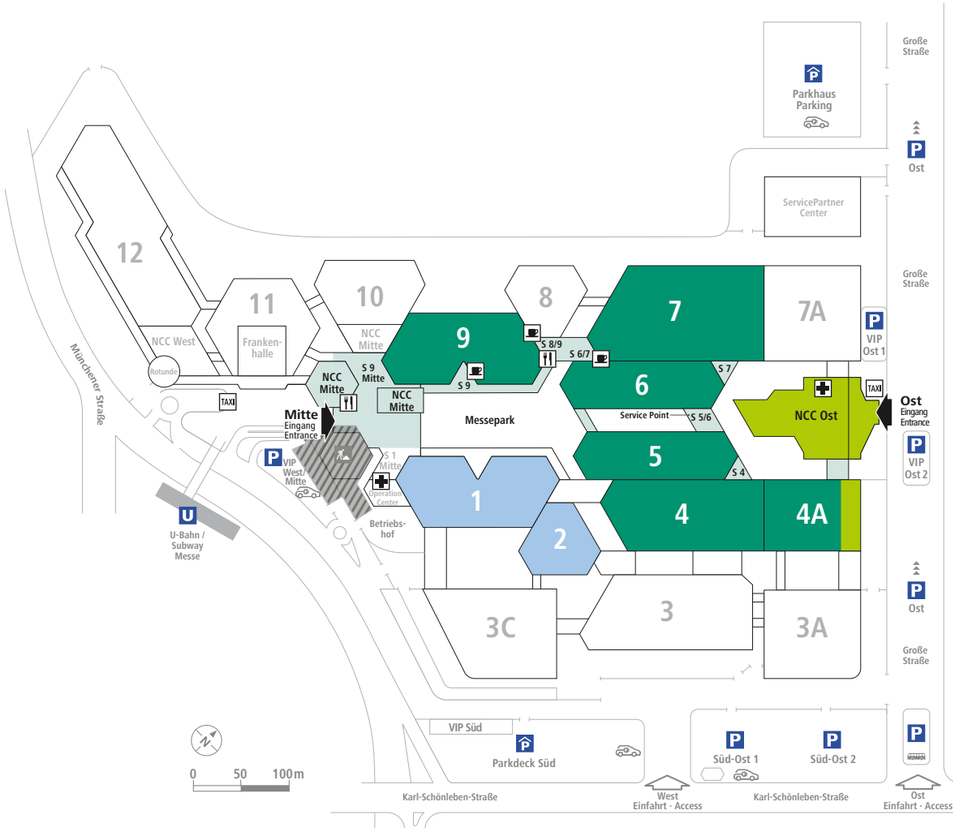
2:20 p.m. OP130
Next Generation 200C Film Capacitors for Optimized Power Conversion Solutions in Harsh Environments
Michael Brubaker, Advanced Conversion, US

2:40 p.m. OP131
High-Temperature-Stable Ultra-Thin-Film Capacitors
Bartosz Gackowski, University of Southern Denmark, DK

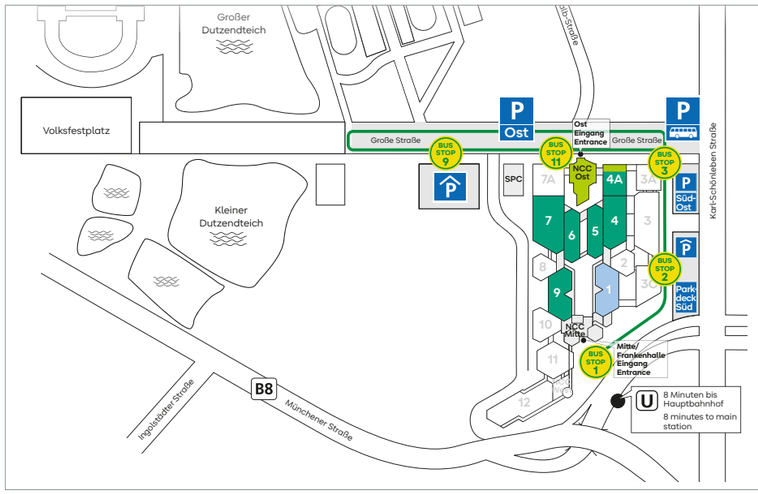
3:00 p.m. OP132
LC-Filter Circuit with Periodic Time-Modulated Capacitance
Norbert Seliger, Rosenheim University of Applied Sciences, DE

Detailed program with descriptions and all co-authors can be found online at
pcim.mesago.com/program

Exhibition grounds plan



Shuttle Service



Fahrzeiten 9. – 11.6.2026

Dienstag	7:00 – 21:30 Uhr
Mittwoch	7:00 – 22:00 Uhr
Donnerstag	7:00 – 18:00 Uhr

Timetable 9 – 11.6.2026

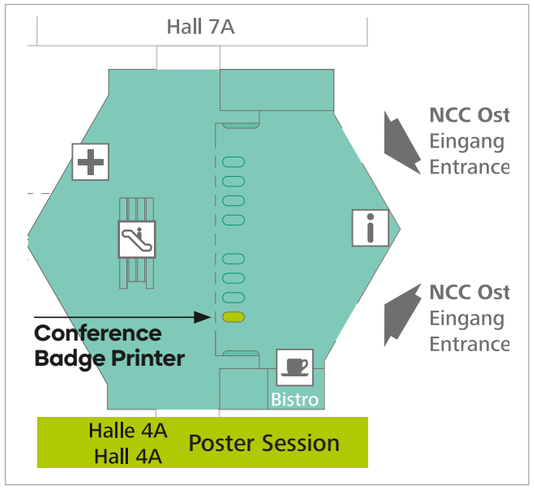
Tuesday	7:00 – 21:30
Wednesday	7:00 – 22:00
Thursday	7:00 – 18:00

Für die Rückfahrt HIER einsteigen:
Board HERE for return journey:

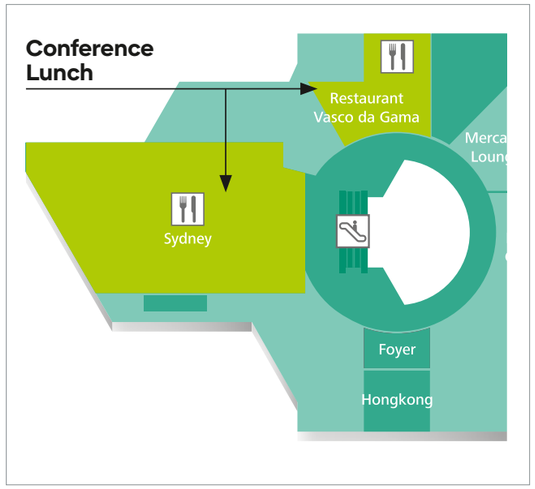
BUS STOP 1 | BUS STOP 11

PCIM Expo 2026
SENSOR + TEST 2026
PCIM Conference 2026

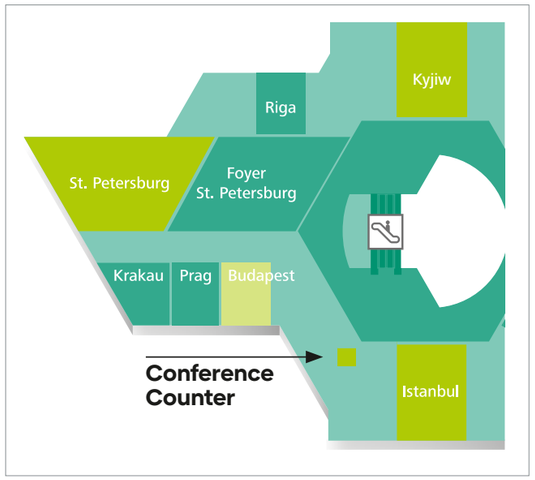
NCC Ost, Level 0



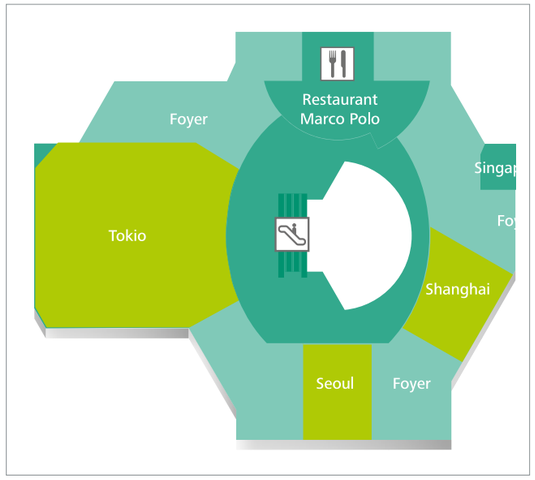
NCC Ost, Level 1



NCC Ost, Level 2



NCC Ost, Level 3



Eingänge und Servicebereiche
Entrance and Service
Konferenz
Conference
Advisory Board/
Speaker's Room

Social Events

Welcome Night

The PCIM Expo & Conference invites exhibitors, speakers and conference participants to the Welcome Night. Look forward to an evening full of networking, culinary catering and entertainment.

Location NCC Ost
Date Tuesday, 9 June 2026, 5:15 p.m.

After Work Beer

The After Work Beer offers you a relaxed atmosphere to end the exhibition and conference day with a lot of networking with colleagues, business partners and new contacts. Grab a beer or water before you head home!

Location Messepark
Date Wednesday, 10 June 2026 from 5:00 p.m. – 7:00 p.m.

Women's Breakfast

In a relaxed atmosphere, you have the chance to discuss with like-minded women from the power electronics industry, exchange views on current topics, make contacts or simply enjoy breakfast. Be inspired by exciting encounters and enjoy a morning dedicated to power electronics for power women. Please note that you must register for this event in advance.

Location NCC Ost, VIP Lounge
Date Wednesday, 10 June 2026, from 8:00 a.m. – 9:00 a.m.

Night of Excellence

The evening for advisory board members and speakers offers all participants an unforgettable experience in an extraordinary atmosphere. The evening awaits you with an exclusive dinner and special entertainment program at the Hotel Le Meridien in Nuremberg. As a conference attendee you can join the evening by booking the »Full Conference – Plus« ticket. Please note that you must register for this event in advance.

Location Hotel Le Meridien, Nuremberg
Date Wednesday, 10 June 2026, 6:30 p.m.

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Can't get enough of power electronics?

Explore the PCIM – Hub for Power Electronics: Connecting industry and academia, the PCIM is the gateway that will inspire you to excel in this exciting field. Gain year-round access to expert knowledge and a dynamic network that drives innovation in power electronics.

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PCIM International

The PCIM unites expertise, innovation, and market opportunities in power electronics. With strategically selected locations in the most important growth markets, we offer you ideal platforms for advancing technologies and making new contacts.

PCIM Asia Shenzhen: 26 – 28.8.2026, Shenzhen, China

The PCIM Asia Shenzhen is the most important communication platform for power electronics and its applications in the Asian region. With a focus on the power electronics markets in East and South China, the annual exhibition and conference gathers experts from all over China, the wider Asian region and the world.

PCIM Asia New Delhi Conference: 10 – 11.12.2026, New Delhi, India

Following the successful debut of the PCIM Asia New Delhi Conference in 2025, we are looking ahead to the second edition in December 2026. The event remains true to its mission of acting as an »agent of change« for the Indian power electronics sector by driving innovation, creating synergies, and providing a platform for networking and knowledge transfer.

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CONFERENCE

Save the date
11 – 13 May 2027

Call for Papers

Are you an expert in the field of power electronics and would you like to present your latest developments and research findings to a high-qualified audience from academia and industry?

Take the chance and become a speaker at the PCIM Conference from 11 – 13 May 2027!

Why be a speaker?

- Present your solution to an international audience
- Have your paper published in the PCIM Conference proceedings and on IEEE Xplore
- Get the chance to win one of the attractive Awards
- Connect and engage with fellow professionals

Call for Paper Deadlines

Submission of your abstract **14 October 2026**
Notification of acceptance **January 2027**
Submission of your full manuscript **9 March 2027**

The Call for Papers for the PCIM Conference 2027 will be online on the website from mid July 2026.

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