

Program

PWR SOC 23

Sponsors



Platinum Industry Partners



Gold Industry Partners



Hannover, Germany
September 27-29, 2023

Plenary Session

<u>Time</u>	<u>Topic</u>
8:00 AM	Welcome Coffee
9:30 AM	Opening Announcement
9:50 AM	Welcoming <i>Holger Blume, Vice President for Research and Transfer, Leibniz University Hannover, Germany</i>
10:00 AM	Powering an Intelligent World <i>Soh Yun Siah, Technology Vice President, Global Foundries, Singapore</i>
10:45 AM	Break

Granular Power Supply

Session Chair:	<i>Xun Liu, The Chinese University of Hong Kong, China</i>
Co-Chair:	<i>Yasser Nour, Lotus Microsystems, Denmark</i>

<u>Time</u>	<u>Topic</u>
11:20 AM	Current-Shared Multi-Phase FIVRs with Phase-Shedding-Optimized AC Dynamics <i>Hyun-sik Kim, School of Electrical Engineering KAIST, South Korea</i>
11:45 AM	Integrated Power Electronics for Heterogenous Integration <i>Hanh-Phuc Le, University of California San Diego, U.S.</i>
12:15 PM	Lunch
1:30 PM	New Architecture for Fully Integrated Granular Power Supplies <i>Santosh Kulkarni, Renesas Electronics, U.K.</i>
1:55 PM	Modular LDO and EDA Technology for Agile Design <i>Xiaosen Liu, Tsinghua University, China</i>

Topology & Control

Session Chair: Yogesh Ramadass, *Texas Instruments, U.S.*

Co-Chair: Yan Lu, *University of Macau, China*

<u>Time</u>	<u>Topic</u>
2:20 PM	Finding the Best Topology for the Job: Quantitative Methods for Evaluating Performance of Hybrid Switched-Capacitor DC-DC Converter Topologies <i>Robert Pilawa-Podgurski, University of California Berkeley, U.S.</i>
2:45 PM	Hybrid DC-DC Converters and the Applications for Processor Power Delivery <i>Wanyuan Qu, Zhejiang University, China</i>
3:10 PM	Coffee Break and Group Photo
3:40 PM	Miniaturizing Galvanically Isolated Power Supplies for Integration in Semiconductor Products <i>Tim Merkin, Texas Instruments, U.S.</i>
4:05 PM	Hybrid Switched Capacitor Converters for 48 V Data-Center Applications <i>Roberto Rizzolatti, Infineon, Austria</i>
4:30 PM	End of Talks
5:00 PM	Poster Session
6:30 PM	Welcome Reception

Integrated Magnetics

Session Chair: Cian O'Mathuna, *Tyndall National Institute, University College Cork, Ireland*

Co-Chairs: Maeve Duffy, *University of Galway, Ireland*
Marc Wurz, *Leibniz University Hannover, Germany*

<u>Time</u>	<u>Topic</u>
9:00 AM	High Performance Metal Chip Power Inductor for IVR <i>Toshio Hiraoka, Taiyo Yuden, Japan</i>
9:25 AM	Manufacturing of Plastic-Based Inductors – A New Approach <i>Sebastian Bengsch, Ensinger, Germany</i>
9:50 AM	Scalable Integrated Magnetics: A Cost-Effective and Efficient Solution for Vertical Power <i>Trifon Liakopoulos, EnaChip, U.S.</i>
10:15 AM	Magnetic Material on Silicon for Future Power Inductor Technology <i>Ranjit Sai, Tyndall National Institute, Ireland</i>
10:40 AM	Break

Wide Band Gap Integration

Session Chair: Rinkle Jain, *Intel, U.S.*

Co-Chair: Ke-Horng Chen, *National Yang Ming Chiao Tung University, Taiwan*

<u>Time</u>	<u>Topic</u>
11:20 AM	GaN Discrete Devices for Portable and Computing Applications <i>Jan Sonsky, Innoscience, Belgium</i>
11:45 AM	Non-Isolated High Voltage Point-of-Load DC-DC Converters for High Performance Computing <i>Arijit Raychowdhury, Georgia Institute of Technology, U.S.</i>
12:15 PM	Lunch
1:30 PM	GaN Chip Implementation Platform <i>Hann-Huei Tsai, NARLabs, Taiwan Semiconductor Research Institute, Taiwan</i>
1:55 PM	GaN-on-Si Process Featuring GaN MOSHEMT Transistor Technology and Integrated Silicon CMOS on 300mm Wafers <i>Han Wui Then, Intel, U.S.</i>

Integrated Capacitors and Energy Storage

Session Chair: Kousuke Miyaji, *Shinshu University, Japan*

Co-Chair: Dina Reda Eldamak, *German University in
Cairo, Egypt*

<u>Time</u>	<u>Topic</u>
2:20 PM	Improving High Voltage Power Modules with New Silicon Snubber Capacitor Technology <i>Rémy Cannaya, Murata, France</i>
2:45 PM	CeraCharge™ – World’s First Rechargeable Solid-State SMD Battery <i>Hiroshi Sato, TDK, Japan</i>
3:15 PM	Poster Session
4:45 PM	3D Silicon Capacitor Technology – Versatile Integration Capability for both High Voltage and High Frequency Applications <i>Norman Böttcher, Fraunhofer IISB, Germany</i>
5:10 PM	Next-Generation Switched-Capacitor Converters using High-Density On-Die MIM Capacitors <i>Nicolas Butzen, Intel, U.S.</i>
5:35 PM	End of Talks
7:00 PM	Gala Dinner with Poster Award

System Integrated Packaging & Manufacturing

Session Chair: Min Chen, *Innoscence, U.S.*

Co-Chair: Tina Thomas, *Fraunhofer IZM, Germany*

<u>Time</u>	<u>Topic</u>
8:30 AM	Buck PwrSoc on Magnetic Substrate Laminate <i>Jerry Zhai, SG Micro Corp, China,</i>
8:55 AM	Novel In-Situ Button Shear Methodology for Assessment of the Adhesion Strength of Epoxy Mold Compound in E-mobility Power Module <i>David Guillon, Hitachi Energy, Switzerland</i>
9:20 AM	Novel and Lightweight 1200V SiC Power Module with Direct-Cooled Substrate <i>Fabio Bernardi, Magneti Marelli, Italy</i>
9:45 AM	High Frequency Power Conversion for mW and kW <i>Eckart Hoene, Fraunhofer IZM, Germany</i>
10:10 AM	Break

Systems & Applications

Session Chair: José Cobos, *Technical University of Madrid, Spain*

Co-Chair: Francesco Carobolante, *IoTissimo, U.S.*

<u>Time</u>	<u>Topic</u>
10:40 AM	Miniature High Frequency Auxiliary DC-DC Converter Based on an Improved Thin-Film Microinductor <i>Martin Sittner, Würth Elektronik, Germany</i>
11:05 AM	Unlocking the Full Potential of Switched-Capacitor Power Conversion: Advanced Switched-Capacitor Integrated Circuits for Next-Generation Applications <i>Pere Llimós Muntal, Skycore, Denmark</i>
11:30 AM	Embedded Power Management Solutions on STM32 μ Controllers <i>David Chesneau, STMicroelectronics, France</i>
11:55 AM	Chip Scale High-Voltage Power Supplies <i>Bernhard Wicht, Leibniz University Hannover, Germany</i>
12:20 PM	End of Talks and Lunch
1:30 PM	Technical Tour <i>Baker Hughes</i>
5:30 PM-6:00 PM	End of Technical Tour (Back at Leibniz University)