

Organisational Information

Sign up at: www.ecpe.org/events

Registration Deadline:

- 19 March 2019

Participation Fee:

- € 595,- * for industry
- € 445,- * for universities/institutes
- € 150,- * for students/PhD students
(limited spaces; copy of students ID required; dinner € 50,-* extra)
* plus VAT

- The regular participation fee includes dinner, lunches, coffee/soft drinks and a flash drive with presentations. The reduced (PhD) students fee includes all the above except for dinner (can be booked for an extra fee of € 50,-*).
- A printed version of the workshop handout is available on request (€ 50,-*).
- Upon receipt of registration confirmation via email you are signed-up for the event. The invoice will be sent via letter post.
- Three participants from each ECPE member company free of charge. Allocation in sequence of registration.
- Further information (hotel list and maps) will be provided after registration and can be found on the ECPE web page.
- Cancellation policy: Full amount will be refunded in case of cancellation upon to 2 weeks prior to the event. After this date and in case of no-show 50 % of the fee is non-refundable (replacement is possible).

8-Mar-19

Organisational Information

Organiser ECPE e.V.
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Chairmen Prof. Andreas Lindemann
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Venue Stadthalle Erding
Alois-Schiessl-Platz 1
85435 Erding/Munich, Germany



Source: Stadthalle Erding

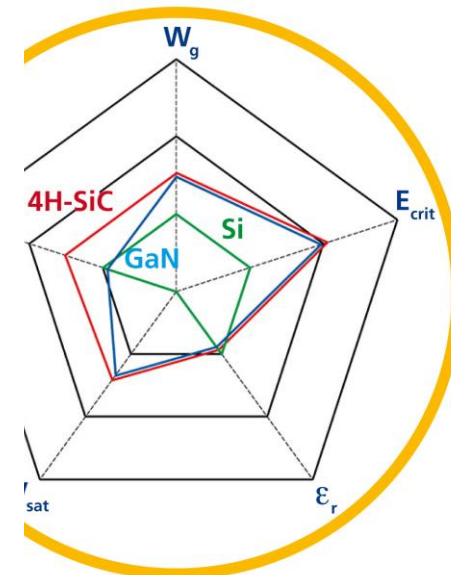


European Center for
Power Electronics e.V.

ECPE SiC & GaN User Forum

Potential of Wide Bandgap Semiconductors in Power Electronic Applications

26 – 27 March 2019
Erding/Munich,
Germany



in cooperation with

Cluster
Leistungselektronik



ECPE User Forum

ECPE SiC & GaN User Forum - Potential of Wide Bandgap Semiconductors in Power Electronic Applications

26 - 27 March 2019
Erding/Munich, Germany

Since more than 12 years the biannual ECPE Wide Bandgap User Forum has given advice and support to the introduction and the usage of SiC and GaN devices in power electronic systems. Major progress has been achieved, with today a multitude of SiC diodes and transistors being available and used in series products. For those, special aspects gain importance, such as robustness or qualification when exposed to demanding mission profiles. On the other hand still some more basic research and development work is dedicated to high voltage SiC and also GaN devices and their applications. These actual topics will be addressed during the upcoming 8th ECPE Wide Bandgap User Forum:

Besides an exemplary volume application of SiC devices, robustness and qualification of reliability – e. g. by power cycling with dedicated test methods – will be dealt with. This will be complemented by an outlook on research carried out with respect to new applications – e. g. with high operating voltage – and related new devices. Regarding GaN, several exemplary systems and the appropriate devices will be discussed. As both – SiC and GaN – devices are fast switching, there are common issues to be considered in circuit design: They refer to the device side including dedicated driving methods and circuits, to the supply side with related EMC aspects – in particular conducted and radiated emissions – and also to the load side where e. g. the behaviour of capacitive cables or motors may be concerned. In this context, a suitable design usually with low parasitics and an appropriate choice of passive components plays an important role.

International renowned experts are being invited to give an overview and to in depth explain their research and development work in technical presentations. Besides, the ECPE Wide Bandgap User Forum offers a platform for all participants to share experience and ideas.

The ECPE SiC & GaN User Forum 2019 is chaired by Prof. Andreas Lindemann (University Magdeburg), Dr. Peter Friedrichs (Infineon Technologies), Prof. Leo Lorenz (ECPE)

All presentations and discussions will be in English.

There will be a table top exhibition in the frame of the workshop.

Programme

Tuesday, 26 March 2019

9:30 Start of Registration / Welcome Coffee

10:00 **Opening and Introduction**
Leo Lorenz, ECPE, Andreas Lindemann, Univ. Magdeburg

WBG Status and R&D Activities

10:15 **Overview on WBG Applications in Automotive and Aircraft**
Bernd Eckardt, Fraunhofer IISB (DE)

10:45 **Compound Semiconductor Applications – The UK CATAPULT Programme**
Alastair McGibbon, UK Catapult programme (UK)

11:15 **WBG Research in China**
Kuang Sheng, Zhejiang University (CN)

SiC Power Electronic Systems

11:45 **SiC in Automotive Drivetrain Application**
Jens Baringhaus, Klaus Heyers, Robert Bosch (DE)

12:15 **A 11 kW, 3-D Printed Forced-Air Cooled SiC Power Module for Automotive**
Friedrich Schultheiss, BMW (DE)

12:45 Lunch

13:45 **SiC in Medium Voltage Applications**
Dirk Kranzer, Fraunhofer ISE (DE)

14:15 **SiC for Induction Heating Applications**
Enrique Dede, Smart Induction Conv. Technol. (ES)

GaN Power Electronic Systems

14:45 **High Power, Low Voltage GaN Converter Design for Hybrid Distribution Transformers**
Johannes Burkard, ETH Zurich (CH)

Challenges Related to Fast Switching

15:15 **High dU/dt and the Challenges on Device and Motor**
Mark Bakran, Univ. of Bayreuth (DE)

15:45 Coffee Break

16:15 **SiC PV Inverter - Benefits and Challenges in Design**
Uwe Stickelmann, SMA Solar Technology (DE)

WBG System Integration I

16:45 **GaN on-Chip Integration (GaN Power ICs)**
Dan Kinzer, Navitas Semiconductor (US)

17:15 **GaN Power System-in-Package (PSiP)**
Tamara Baksh, VisiC Technologies (IL)

17:45 **Advanced Power Module Technology for SiC**
Robert Roesner, Danfoss Silicon Power (DE)

18:15 **End of 1st Workshop Day**

18:20 **Award Ceremony:** Semikron Innovation Award

20:00 Dinner at Restaurant "Erdinger Weißbräu"

Programme

Wednesday, 27 March 2019

Special Session on Highlights from ECSEL-Powerbase

8:15 - **ECSEL PowerBase Introduction and Overview**
Herbert Pairitsch, Infineon Technologies (AT)
- **GaN Devices from PowerBase**
Tim McDonald, Infineon Technologies (US)
- **GaN Application: Telecom Power Converter**
Odd Roar Schmidt, Eltek (NO)

Application Aspects of SiC Devices

9:15 **SiC Power Devices and Modules**
Paul Klausner, On Semiconductor (DE)

9:45 **SiC High Power Devices and Modules**
Harufusa Kondo, Mitsubishi Electric (JP)

10:15 Coffee Break

10:45 **Heterogeneous Integration of Wide Bandgap Power Electronics**
Alan Mantooth, Univ. of Arkansas (US)

Application Aspects of GaN Devices

11:15 **GaN E-HEMTs in MCMs and Power Modules**
Charles Bailley, GaN Systems (CA)

11:45 **GaN-based Power Devices and Related Applications**
Hidekazu Umeda, Panasonic (JP/DE)

WBG System Integration II

12:15 **ECPE Lighthouse Programme msPEBB**
Eckart Hoene, Fraunhofer IZM (DE)

12:45 Lunch

Gate Drivers (How to Drive WBG Devices)

13:45 **Integrated Gate Driver IC for SiC-MOSFET**
Michael Hornkamp, Power Integrations (DE)

14:15 **Challenges and Innovations in GaN Drivers**
Bernhard Zojer, Infineon Technologies (AT)

WBG Robustness and Reliability: Challenges, Testing, Standardization

14:45 **Robustness & Reliability of GaN-based Power Devices**
Matteo Meneghini, G. Meneghesso, E. Zanoni, Univ. of Padova (IT)

15:15 **Robustness & Reliability of SiC Devices & Modules**
Josef Lutz, TU Chemnitz, Thomas Basler, Infineon Technologies (DE)

15:45 **How to qualify WBG devices & power modules and what happens in standardization**
T.McDonald, Infineon Techn. (JEDEC JC-70 Committee)

16:15 **End of Workshop**

16:30 ECPE Member Meeting