

## Registration (Fax Reply)

To: ECPE e.V.  
Att.: Ingrid Bollens, [ingrid.bollens@ecpe.org](mailto:ingrid.bollens@ecpe.org)  
Please **e-mail** a scanned copy of the completed form or  
send a fax to: +49 (0)911 / 81 02 88 – 28

Register before **13 April 2015**

### Participation fee:

- ☐ € 530,- \* for industry
- ☐ € 395,- \* for universities/institutes
- ☐ € 120,- \* for students (shortened workshop package)

The fee includes dinner, lunch, coffee/soft drinks and a CD with the workshop presentations. A printed version of the workshop handout is available on request (€ 50-\*).

With the confirmation of registration you will receive the invoice (\* plus 20 % UK VAT). In case of cancellation after 6 April 2015 or non-attendance 50 % of the participation fee are payable.

Three participants from each ECPE member company free of charge. Allocation in sequence of registration.

### Sender:

Title, given name, name

Company, department

Full address

Phone, fax

E-mail

Date, signature

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## Organisational information

<b>Organiser</b>	ECPE e.V. 90443 Nuremberg, Germany <a href="http://www.ecpe.org">www.ecpe.org</a>
<b>Chairmen</b>	Prof. Andreas Lindemann O.-von-Guericke-Univ., Magdeburg Prof. Phil Mawby University of Warwick Prof. Leo Lorenz, ECPE e.V. in coop. with the ECPE SiC & GaN Technical Committee
<b>Organisation</b>	Ingrid Bollens, ECPE e.V. +49 (0)911 / 81 02 88 – 10 <a href="mailto:ingrid.bollens@ecpe.org">ingrid.bollens@ecpe.org</a>
<b>Venue</b>	University of Warwick Warwick Conference Scarman House Gibbet Hill Road, Coventry CV4 7AL, UK



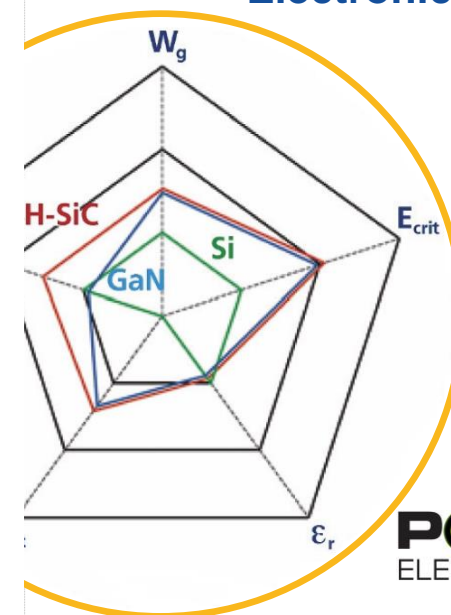
Further information (hotel list and maps) will be provided after registration.



## Programme Flyer

### ECPE SiC & GaN User Forum

### Potential of Wide Bandgap Semiconductors in Power Electronic Applications



20 – 21 April 2015  
University of Warwick  
Coventry, UK

in cooperation with



THE UNIVERSITY OF  
WARWICK



## ECPE User Forum

### SiC and GaN User Forum - Potential of Wide Bandgap Semiconductors in Power Electronic Applications

20 – 21 April 2015

University of Warwick, Coventry, UK

After the previous Silicon Carbide (SiC) or Wide Bandgap Semiconductor User Forums organised by ECPE, new power electronic systems with wide bandgap components and new devices have been reported in research and also commercially on the rapidly moving international market. They use SiC which in the meantime has reached a high level of maturity or, more recently, also GaN (Gallium Nitride) material. Time has thus come to seize on this recent development and to continue the exchange between experts involved in converter and device development.

The 6<sup>th</sup> ECPE User Forum will focus on typical power electronic systems, the use of wide bandgap semiconductors is highly promising for. Application examples will come from the areas of power supplies including inverters for renewable energy and of electric drives. Additionally, insights in recent SiC and GaN material and device technology - which is the base for future system development - will be given for a deeper understanding. International renowned experts have been invited to give an overview in keynotes, to in depth explain their research and development work in technical presentations and to share their knowledge in discussion forums as an indispensable part of the event.

The SiC & GaN User Forum is intended as a platform to share experience and ideas, to discuss and find out which power electronic systems are predestinated for usage of wide bandgap devices and how to appropriately design-in those novel, almost ideal but also challenging components.

The ECPE SiC & GaN User Forum 2015 is chaired by Prof. Phil Mawby (Univ. of Warwick), Prof. Andreas Lindemann (Magdeburg University), Prof. Leo Lorenz (ECPE) and prepared in cooperation with the ECPE SiC & GaN Technical Committee.

## Programme: Monday, 20 April 2015

9:00 GMT	Start of Registration / Welcome Coffee
9:45	<b>Welcome, Opening</b> P. Mawby, University of Warwick (UK), L. Lorenz, T. Harder, ECPE
<b>Introduction</b>	
10:00	<b>6<sup>th</sup> Wide Bandgap User Forum: Motivation &amp; Overview</b> A. Lindemann, University of Magdeburg
10:15	<b>Comparison and Benchmark: SiC vs. GaN vs. Si in Different Applications</b> T.P. Chow, Rensselaer Polytechnic Institute (US)
<b>WBG Power Electronic Systems</b>	
10:45	<b>Challenges of Applying SiC Power Semiconductors to Environmentally Friendly Vehicles</b> K. Hamada, Toyota Motor Co. (JP)
11:10	<b>Future Trends for WBG Devices in Automotive – A Resumé from the APE 2015 Conference</b> J.-M. Morelle, Valeo Systèmes Electriques (F), T. Harder, ECPE
<b>SiC Power Electronic Systems</b>	
11:20	<b>SiC for Industrial Applications</b> D. Hinchley, GE Energy Management (UK)
11:50	<b>Case Study: Bidirectional Isolated DC/DC Converter with Wide Input Voltage Range for Residential Energy Management Appl.</b> R. Burkart, J.W. Kolar, ETH Zurich (CH)
12:10	<b>Case Study: High Frequency, High Power, Full SiC Resonant Inverter for Induction Heating Applications</b> E. Dede, University of Valencia (ES)
12:30	Lunch
<b>GaN Power Electronic Systems</b>	
13:40	<b>GaN-Potentials for High-Frequency DC/DC Converters in Low-Voltage Automotive Applications</b> M. Werkstetter, BMW Group (D)
14:10	<b>Case Study: Impact of 600V GaN Transistors in Residential PV Power Systems</b> A. Castellazzi, University of Nottingham (UK)
<b>General Application Aspects of WBG Devices I</b>	
14:30	<b>Reliability of SiC Devices</b> J. Lutz, Technical University Chemnitz (D)
15:00	<b>Status and Trends of SiC Power MOSFET Technology Development</b> A. Castellazzi, University of Nottingham (UK)
15:30	Coffee & Tea Break
16:00	<b>Case Study: The PowerGaN Project: Materials and Devices</b> I. Thayne, University of Glasgow (UK)
16:20	<b>Case Study: Ultra-Low Inductance Module Packaging Ideas and Technologies</b> M. Roebnitz, Semikron (D)
16:40	<b>Packaging/System Integration for Ultra-Fast Switching</b> E. Hoene, Fraunhofer IZM (D)
17:20	<b>Forum I: SiC Applications: Multilevel vs. Blocking Voltage - Target Applications for High Voltage SiC Devices</b> Forum experts: speakers and invited experts
18:20	Video Presentation: Lab/Cleanroom Tour, End of 1 <sup>st</sup> day
19:30	Dinner at the Restaurant of Scarman House

## Programme: Tuesday, 21 April 2015

9:00 GMT	Start of 2 <sup>nd</sup> day
<b>Application Aspects of SiC Devices</b>	
9:00	<b>SiC Cost Benefits in PV, UPS and Drive Systems</b> S. Buschhorn, Infineon Technologies (D)
9:30	<b>High Frequency and HV Applications using Advanced SiC Power Devices</b> T. Nakamura, ROHM Semiconductor (JP/D)
10:00	<b>Recent Developments in High Power SiC MOSFETs and Modules</b> M. Furuhashi, Mitsubishi Electric Corporation (JP)
10:30	Coffee & Tea break
<b>Application Aspects of GaN Devices</b>	
11:00	<b>GaN Power Devices and Applications</b> T. Morita, Panasonic (JP/D)
11:30	<b>GaN on SiC Power Devices for High Frequency Applications</b> Ch. Harris, Cree (SE)
12:00	Lunch
<b>General Application Aspects of WBG Devices II</b>	
13:10	<b>High Temperature / High Voltage Packaging Using Wide Bandgap Power Devices</b> B. Passmore, APEI (US)
13:40	<b>Drivers for WBG Devices – Current Status and Upcoming Challenges</b> S. Araujo, University of Kassel (D)
14:10	<b>Case Study: SiC Power Transistors Gate Drivers for High Temperature &amp; High Reliability Applications</b> T. Francois, CISSOID (B)
14:30	<b>Forum II: From the Lab to the Real World – What are the Ingredients in Order to Drive WBG Components and WBG Power Device Based System Solutions to Commercial Success?</b> Forum experts: speakers and invited experts
15:30	End of ECPE Workshop
15:30	<b>Special Session: European FP7 Project SPEED</b> Details see under <a href="http://www.SPEED-FP7.org">www.SPEED-FP7.org</a>
16:30	<b>Optional: Lab/cleanroom tour at Univ. of Warwick</b> (also in parallel to the SPEED session but in small groups only)
Poster exhibition during the coffee breaks: <b>Project Posters related to SiC &amp; GaN in Power Electronics</b>	