

## Registration (Fax Reply)

To: ECPE e.V.  
Att.: Sabrina Haberl, [sabrina.haberl@ecpe.org](mailto:sabrina.haberl@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 **2 October 2014**

### Participation fee:

- ☐ € 530,- \* for industry
- ☐ € 395,- \* for universities/institutes
- ☐ € 120,- \* for students/PhD's  
(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 VAT). In case of cancellation after 25 September 2014 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

2014\_10\_7

## 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. Gerard Hurley, National University of Ireland Galway Dr. Stefan Weber, EPCOS
<b>Organisation</b>	Sabrina Haberl, ECPE e.V. +49 (0)911 / 81 02 88 – 13 <a href="mailto:Sabrina.haberl@ecpe.org">Sabrina.haberl@ecpe.org</a>
<b>Venue</b>	ABION Spreebogen Waterside Hotel Alt-Moabit 99 10559 Berlin Germany



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



## Programme

### ECPE Workshop

## Innovations in Passive Components for Power Electronics Applications



9 – 10 October 2014  
ABION Spreebogen  
Waterside Hotel  
Berlin, Germany

in cooperation with



NUI Galway  
OÉ Gaillimh



## ECPE Workshop

### Innovations in Passive Components for Power Electronics Applications

9 – 10 October 2014  
Berlin, Germany

Power electronics is the key technology for effective power processing and distribution. In the past the main focus in the research areas in power electronics has been on active devices, both on power semiconductors and on the integration of control, protection and driving circuits with the main switches. Due to the already achieved progress in this field a further miniaturisation and increase in power conversion efficiency is more and more expected from the passive components and subassemblies.

The main goal of this workshop is to bring together experts from industry and university to present and discuss the current trends and the new developments related to the field of passive components. Improvements in the design of inductive and capacitive components can be expected from new materials and technologies, from innovative cooling concepts, but also from better understanding and improved analysis of the underlying loss mechanisms. Another challenging research area is the possibility of passive integration, e.g. by utilising parasitic components as part of the needed functionality or by integration of the components in substrate materials. The final part of this workshop deals with subassemblies like filters.

The workshop is chaired by Prof. Ger Hurley (National University of Ireland), Dr. Stefan Weber (EPCOS) and Thomas Harder (ECPE).

All presentations and discussions will be in English.

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

## Programme

### Thursday, 9 October 2014

10:00 Start of Registration / Welcome Coffee

10:20 **Welcome, Opening**  
T. Harder, ECPE (D)

#### Session 1: Magnetics (Inductors and Transformers)

10:30 **Introduction, Challenges and Trends in Magnetics**  
W.G. Hurley, National University of Ireland (IE)

11:00 **Next Generation High Frequency Materials for Integrated Magnetics**  
S. Roy, Tyndall National Institute (IE)

11:30 **Loss Modelling of Magnetic Components**  
J. Muehlethaler, Gecko-Simulations (CH)

12:00 **Discussion**

12:15 **Lunch**

13:15 **Acoustic Noise Modelling**  
J. Biela, ETH Zurich (CH)

13:45 **Distributed and Coupled Inductor Modelling and Design**  
M. Duffy, National University of Ireland (IE)

14:15 **Simulating Saturation Behaviour in Inductive Components**  
J. Schlieve, EPCOS (D)

14:45 **Improvements in Nano-Crystalline Materials for High Frequency Applications**  
H.-J. Poess, Magnetec (D)

15:15 **Discussion**

15:30 **Coffee break**

16:00 **Output Inductor Design for Ultra-fast Switching Device**  
S. Hoffmann, E. Hoene, Fraunhofer IZM (D)

16:30 **Actual and Future Developments of Nanocrystalline Magnetic Materials for Common Mode Chokes, Power Inductors and Transformers**  
H. Schwenk J. Beichler, Vacuumschmelze (D)

17:10 **Integrated Magnetics for Power Conversion**  
Z. Ouyang, Technical University of Denmark (DK)

17:40 **Discussion**

17:50 **End of 1<sup>st</sup> workshop day**

20:00 **Dinner**

## Programme

### Friday, 10 October 2014

#### Session 2: Capacitors (and Resistors)

8:45 **Introduction, Challenges and Trends in Power Electronics Capacitors**  
G. Engel, CeraCap (AU)

9:15 **New Dielectric Materials for High Power / High Storage Density Capacitors**  
N. Tham, A. Schletz, Fraunhofer IISB (D)

9:45 **Next Generation of Power Capacitors for High Temperatures (CeraLink)**  
J. Konrad, EPCOS (A)

10:15 **Discussion**

10:30 **Coffee break**

11:00 **Glass Ceramics as Dielectric for High Power Capacitors**  
M. Letz, SCHOTT (D)

11:30 **Supercapacitors - Basics and Applications**  
K. Vuorilehto, Skeleton-Aalto University (FIN)

12:00 **Reliability of Film Capacitors**  
W. Grimm, EPCOS (D)

12:30 **Discussion**

12:45 **Lunch**

14:00 **Sinterable and Bondable NTC For Integration in Power Modules Through Common Die Attach Process**  
T. Taubert, TDK-EPC (D)

#### Session 3: Applications

14:30 **Planar Coils for Induction Heating and Contactless Energy Transference Applications**  
J. Acero, Univ. of Zaragoza (ES)

15:00 **Passive Components for a 3D Environment**  
J.A. Ferreira, TU Delft (NL)

15:30 **Final Discussion**

16:00 **End of Workshop**