

## 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 October 2014**

### 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 VAT). In case of cancellation after 2 October 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\_07\_31\_V06

## 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. Bruno Allard, INSA de Lyon Dr. Olivier Latry (GPM University of Normandy) Dipl.-Phys. Thomas Harder, ECPE e.V.
<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>Workshop venue</b>	University of Rouen Avenue de l'université 76800 St Etienne du Rouvray / Rouen



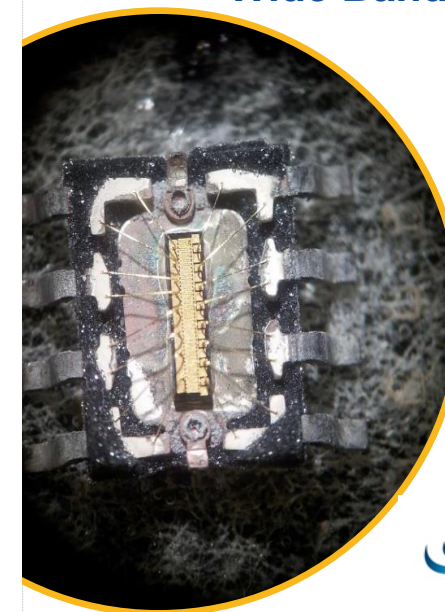
Further information (hotel list and maps) will be provided after registration.



## Programme

### ECPE Workshop

### Failure Analysis Tools for Wide Band-Gap Devices



16 – 17 October 2014  
University of Rouen  
Rouen, France

in cooperation with



## ECPE Workshop

### Failure Analysis Tools for Wide Band-Gap Devices

16 – 17 October 2014  
Rouen, France

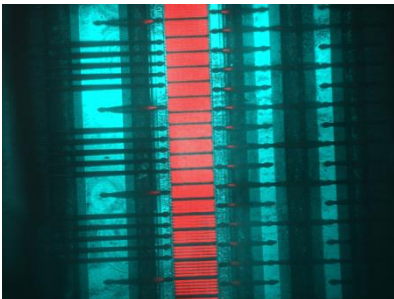
This workshop is dedicated to failure analysis tools and methods in power electronics. The main purpose is to give practical cases with non-destructive methods and destructive methods. During the two days, some equipment will be presented like de-packaging process, photo-emission microscopy (PEM), laser stimulation (OBIRCH), ...as non-destructive method and Scanning Electron Microscopy (SEM), Focused Ion Beam (FIB) and Transmission Electron Microscopy (TEM) analysis as destructive methods.

These are key know-hows for reliability study of wide bang gap devices in power electronic applications. Some live demonstrations on equipment are scheduled depending on the number of participants (remote video-based demonstrations as back-up).

Examples concern but not exclusively the electrostatic discharge in Schottky diode, presented in order to illustrate the entire methodology. Other cases should be discussed in front of Posters.

The workshop is chaired by Prof. Bruno Allard (Ampere Insa Lyon), Dr. Olivier Latry (GPM University of Normandy) and Thomas Harder (ECPE)

**All presentations and discussions will be in English.**



## Programme

### Thursday, 16 October 2014

9:30 Start of Registration / Welcome Coffee

10:30 **Welcome, Opening**  
O. Latry, University Rouen (F)  
B. Allard, INSA Lyon (F)  
I. Bollens, ECPE e.V. (D)

#### Technical Session Tools

10:45 **Physical Failure Diagnostics of GaN HEMT devices**  
F. Altmann, Fraunhofer IWMH (D)

11:30 **Tools Dedicated to Chip Access**  
F. Kerisit, Digit Concept (F)

12:15 **Discussion**

12:30 Lunch

#### Technical Session

14:30 **Simulation for Life Prediction Weibull Application to Power Electronics Reliability**  
A. el Hami, LOFIMS, INSA Rouen (F)

15:00 **4H-SiC Schottky Diodes under ESD and Thermal Stresses: A Failure Analysis Method**  
P. Dherbécourt, GPM Rouen (F)

15:30 **Discussion / Poster Panel on Specific Study**

15:30 Coffee break

#### Visit of GPM UMR CNRS 6634

16:00 **Depackaging, PEM Microscopy / Focused Ion Beam / High Resolution Transmission Electronic Microscopy**

16:20 **Focused Ion Beam / High Resolution Transmission Electronic Microscopy / Depackaging, PEM Microscopy**

16:40 **High Resolution Transmission Electronic Microscopy / Depackaging, PEM Microscopy / Focused Ion Beam**

17:00 **Discussion**

17:30 **End of 1<sup>st</sup> workshop day**

19:30 Dinner at Restaurant "La Couronne,  
31 Place du Vieux Marché, 76000 Rouen, France

## Programme

### Friday, 17 October 2014

9:00 Start of 2<sup>nd</sup> Day

#### Technical Session

9:15 **Aging Test and Electrical Characterisation for Power Electronics**  
S. Lefebvre, SATIE (F)  
Z. Khatir, IFSTTAR (F)

9:45 **Electro Thermal Behaviour in Power Transistors for Failure Analysis Diagnostic**  
A. Irace, University of Naples Federico II (I)

10:15 **Accelerated Degradation Data of SiC MOSFETs for Reliability Assessment**  
T. Santini, EADS (F)

10:45 **Discussion / Poster Panel on Specific Study**

10:45 Coffee break

11:15 **Depackaging Video of Back Side Processing and Discussion**

11:30 **Optical Beam Induced Resistance Change (OBIRCH) Video on Power Component**

11:45 **EDX Analysis of Solder Joint on a Power MOSFET Transistor. Lamela Analysis of a Degraded Component**

12:00 **Discussion**

12:15 Lunch

#### Session

13:45 **Tool Dedicated to Failure Analysis: Non-Destructive Method**  
J. Roux, Hamamatsu (F)

14:30 **Industry Oriented Platform Dedicated to Reliability Case CECOVIM: An Application to HEMT GaN Reliability**  
J.B. Fonder, CEVAA (F)

15:30 **End of Workshop**