Registration (Fax Reply)

To: ECPE e.V.
Att.: Ingrid Bollens

Fax: +49 (0)911 / 81 02 88 – 28

Register before **27 Februay 2009**

Participation fee:

- **€480,-*** for industry
- **€380,-*** for universities

The fee includes the tutorial dinner, lunch, coffee/soft drinks and handouts.

With the confirmation of tutorial registration you will receive the invoice. (* plus 19 % VAT); In case of cancellation after 27 February 2009 or non-attendance 50 % of the participation fee are payable.
50 % discount for ECPE Member Companies

Number of participants is limited to 35 attendees.

Sender:

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title, given name, name

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company, department

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full address

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phone, fax

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e-mail

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date, signature

Organisational information

Organiser: ECPE e.V.
90443 Nuremberg, Germany
www.ecpe.org

Course instructor: Dr. Jelena Popovic-Gerber
(ECPE/TU Delft)
Dr. Uwe Scheuermann
(Semikron)

Organisation: Ingrid Bollens, ECPE e.V.
+49 (0)911 / 81 02 88 – 10
ingrid.bollens@ecpe.org

Place of tutorial: ECPE e.V. (in etz-building)
Landgrabenstrasse 94
90443 Nuremberg, Germany

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

ECPE European Center for Power Electronics e.V.

ECPE Tutorial

Power Electronics Packaging

5 – 6 March 2009
at ECPE (etz-building)
Nuremberg, Germany

Introduction

ECPE Tutorial
"Power Electronics Packaging"

5 – 6 March 2009
Nuremberg, Germany

In addition to the conventional electronics packaging functions, in Power Electronics one has to deal with further requirements such as handling high voltages and currents and removing the dissipated heat.

The tutorial starts with the presentation of the basic features of power electronics packaging including functions, materials and thermal management as one of the key issues.

The packaging of components and modules as well as the converter level packaging is covered starting from low power discrete and monolithic solutions up to hundreds of kW converters.

Since there is a dominant impact of packaging on the reliability of components and systems, one session is devoted to failure mechanisms and reliability testing.

The current drivers in power electronic systems are power density, manufacturability, reliability and costs. The shortcomings and bottlenecks of state-of-the-art packaging will be discussed and the emerging interconnection and integration technologies that aim to address these challenges will be reviewed.

This tutorial is aimed at engineers who are engaged in power electronics and want to improve their knowledge and understanding of power electronics packaging including ongoing developments and future trends.

The course instructors are Dr. Jelena Popovic-Gerber (ECPE/TU Delft) and Dr. Uwe Scheuermann (Semikron, Nuremberg).
All presentations and discussions will be in English.

Programme

Thursday, 5 March 2009

9:30 Start of registration

10:00 Welcome, Opening
T. Harder, ECPE e.V.

Introduction and Basics

10:15 **Basic Packaging Parts and Functions, Power Electronics vs. Microelectronics Packaging**
J. Popovic-Gerber

11:00 **Basics of Thermal Management**
U. Scheuermann

11:45 **Packaging Materials: Electrically Insulating and Conductive Materials**
J. Popovic-Gerber

12:30 Lunch

13:30 **Basic Interconnection Technologies (wire bonding, soldering, pressure contact)**
U. Scheuermann

Components and Modules

14:15 **Low Power Packaging and Discrete Power Semiconductors**
T. Harder

15:00 Coffee Break

15:30 **Power Modules**
U. Scheuermann

16:30 **Passive Components Packaging**
J. Popovic-Gerber

17:15 **End of 1st Day**

19:30 Dinner

Programme

Friday, 6 March 2009

08:30 Wrap up 1st Day, Discussions

Converter Level Packaging:

09:00 **Low and Medium Power Systems (Monolithic, PCB, IMS)**
J. Popovic-Gerber

09:45 **High Power Systems**
U. Scheuermann

10:30 Coffee Break

Reliability

11:00 **Failure Mechanisms**
J. Popovic-Gerber

11:30 **Lifetime and Reliability Testing**
U. Scheuermann

12:30 Lunch

Advanced Technologies and System Integration

13:30 **System Integration (chip level, PCB level, passives and system level)**
J. Popovic-Gerber

14:15 **Advanced Interconnection Technologies**
U. Scheuermann

14:45 Wrap up, Final discussions

15:30 End of Tutorial