

Registration (Fax Reply)

To: ECPE e.V.
Att.: Ingrid Bollens, 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 **22 April 2015**

Participation fee:

- €480,-* for industry
- €380,-* for universities/institutes
- €150,-* for students/Ph.D.

The fee includes dinner, lunch, coffee/soft drinks and hand-outs.

With the confirmation of registration you will receive the invoice (*plus VAT). 50 % discount for ECPE Member Companies.

In case of cancellation after 15 April 2015 or non-attendance 50 % of the participation fee are payable.

The number of participants is limited to 35 attendees.

Sender:

Title, given name, name

Company, department

Full address

Phone, fax

E-mail

Date, signature

Organisational information

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

Chairman: Prof. Dieter Silber
University of Bremen

Organisation Ingrid Bollens, ECPE e.V.
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Venue Graz University of Technology
Electric Drives and Machines Institute
Inffeldgasse 18/1,
8010 Graz, Austria

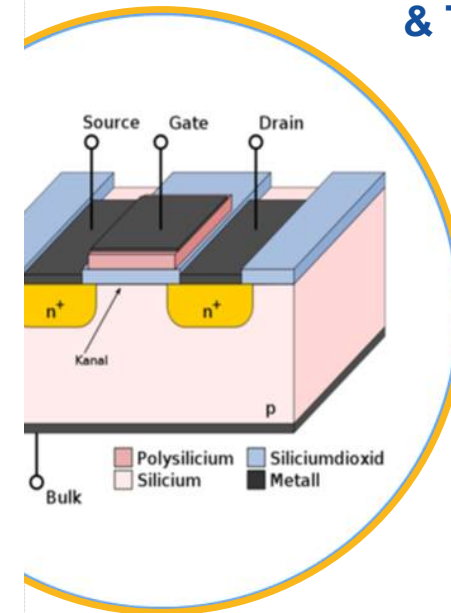


Further information (hotel list and maps) will be provided after registration.



ECPE Tutorial

Power Semiconductor Devices & Technologies



29 - 30 April 2015
Graz University
of Technology
Graz, Austria

Power Semiconductor Devices & Technologies

29 - 30 April 2015
Graz, Austria

The tutorial is aimed at engineers who are engaged in power electronics and want to improve their knowledge and understanding of power devices including the developments expected in near future.

The course starts with a general overview on required power device properties and a very basic treatment of semiconductor material and device physics.

Blocking capability of the devices, unipolar and bipolar current transport and gate control will be discussed. Diodes, MOS transistors (including compensated super-junction MOS) and Insulated Gate Bipolar Transistors will be treated in detail including their dynamical properties, safe operation and temperature limits. The benefits expected from wide band gap semiconductors (SiC, GaN) will be discussed (on the 2nd day).

This introductory part is also the base for the next part devoted to power device models and the increasing role of virtual prototyping in power electronics.

The following chapters demonstrate basic principles of power electronic systems and the basics of intelligent IGBT/MOSFET control circuits. MOS transistor and IGBT gate drivers for various fields of application are discussed in detail.

Finally a short overview of hybrid power electronic integration and the most relevant aspects (cooling, reliability and EMC problems) will be presented.

The course instructors are
Prof. Dieter Silber, University of Bremen
Dr. Reinhard Herzer, Semikron Elektronik
Dr. Anton Mauder, Infineon Technologies
Dr. Peter Türkes, Infineon Technologies

All presentations and discussions will be in English.

Programme

Wednesday, 29 April 2015

- 9:30 **Start of Registration**
- 10:00 **Welcome, Introduction**
T. Harder, ECPE e.V.

- 10:15 **Introduction:
What is required from Power Devices?**
D. Silber
- 10:35 **Summary of Basic Semiconductor and Device Physics**
D. Silber
- 11:45 **Basic Power Device Physics**
D. Silber

12:15 Lunch

- 13:15 **Power Diodes, Thyristors**
A. Mauder
- 13:45 **Si Power MOSFETs and Super Junction Devices**
A. Mauder
- 14:30 **Insulated Gate Bipolar Transistor (IGBT)**
A. Mauder

15:15 Coffee Break

- 15:45 **Modelling and Virtual Prototyping I - III**
 - Power Devices
 - Influence of Parasitic Elements
 - SystemsP. Türkes

17:30 **End of 1st Day**

19:30 Dinner

Programme

Thursday, 30 April 2015

- 8:30 **Wide Bandgap Devices (SiC and GaN)**
D. Silber

 - 9:30 **Integrated Power:
Basics of Gate Drivers**
R. Herzer
- 10:30 Coffee Break
- 11:00 **Gate Drivers with Galvanic Isolation (Medium and High Power), Integration in Smart Power Technologies**
R. Herzer

 - 11:30 **Gate Drivers Integration (Low Power)**
R. Herzer

 - 12:15 **Multi Chip Gate Drivers and Technologies; IPM and Single Chip Inverter; Gate Drivers for SiC- and GaN Devices**
R. Herzer

12:45 Lunch

- 13:45 **Power Modules:
Parasitics, Thermal Problems, Future Trends**
D. Silber

- 15:00 **Questions and Discussion**

- 15:30 **End of Tutorial**