

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 **3 February 2011**

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 3 February 2011 or non-attendance 50 % of the participation fee are payable.

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

Course instructor Prof. Eckhard Wolfgang
ECPE e.V.

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

Venue IMS Bordeaux
University of Bordeaux
351, cours de la Libération
33405 Talence/Bordeaux, France



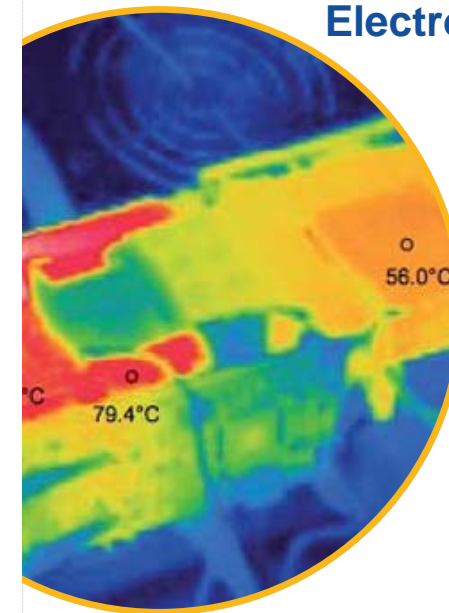
Further information (hotel list and maps) will be provided after registration.



ECPE Tutorial

Reliability of Power Electronic Systems

10 – 11 February 2011
IMS Bordeaux
University of Bordeaux
Bordeaux, France



Reliability of Power Electronics Systems

10 – 11 February 2011
Bordeaux, France

The aim of the tutorial is to teach the basics of modern reliability engineering. This is based on the physics-of-failure-concept and the intended mission profile of the electronic system and its components.

The mission profile determines the combination of stresses versus time to which the electronic system is subjected during its application. Its consideration by the design of a product demands the control of stresses with respect to the planned application period. The application oriented confirmation requires the definition of appropriate accelerating stress tests.

To secure the reliability of power electronics systems the building-in reliability philosophy and the methodology of implementation will be explained and illustrated by examples.

Beside the very successful ECPE Seminar and Workshop series, ECPE offers a tutorial programme focussing more on education of young engineers and engineers from neighbouring disciplines.

The course instructor of the reliability tutorial is
Prof. Dr. Eckhard Wolfgang, ECPE e.V.

Co-instructors are
Dr. Wolfgang Gerling, Consultant
Dr. Michel Mermet-Guyennet, Alstom Transport

All presentations and discussions will be in English

Programme

Thursday, 10 February 2011

- 10:00 Start of Registration
- 10:15 Welcome, Introduction
E. Wolfgang, ECPE e.V.

Introduction, Requirements & Definitions

- 10:30 Requirements
 - Specification
 - Mission ProfileE. Wolfgang
- 11:00 Definitions and Parameters
 - Quality, Reliability
 - Failure
 - Reliability PhasesW. Gerling

12:00 Lunch

Virtual Prototyping

- 13:00 Electric Design
 - Losses
 - EMIM. Mermet-Guyennet

14:00 Coffee Break

- 14:30 Thermal Design
 - Simulation
 - MeasurementsM. Mermet-Guyennet
- 15:30 Cooling
E. Wolfgang
- 16:20 Requirement Engineering
W. Gerling
- 17:00 Summary of 1st day
- 17:35 End of 1st Day

20:00 Dinner at Restaurant „Fernand“, 7 quai de la Douane, 33000 Bordeaux, France

Programme

Friday, 11 February 2011

- 09:00 Open questions from 1st day

Virtual Reliability Assessment

- 09:20 Physics-of-Failure Concept
W. Gerling
- 10:00 Mission Profile for System Components
- Robustness Margin Bond Wire
E. Wolfgang

10:40 Coffee Break

- 11:10 Life Time Prognosis Solder Joint
E. Wolfgang
- 11:50 Risk Assessment
E. Wolfgang

12:30 Lunch

- 13:30 Requirement Engineering Reliability
W. Gerling

Reliability Validation

- 14:10 Concepts for Qualification
W. Gerling

14:40 Coffee Break

- 15:00 Accelerated Tests
E. Wolfgang
- 15:20 Robustness Validation Process
W. Gerling
- 16:00 Wrap up, Final discussion
- 16:20 End of Workshop