Registration (Fax Reply)

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

Fax: +49 (0)911 / 81 02 88 – 28

Register before **2 November 2007**

Participation fee:

☐ **€ 480,-**

☐ **€ 380,-** for university members
The fee includes dinner, lunch, coffee/soft drinks and seminar handouts.

☐ **€ 120,-** for students (shortened seminar package)

With the confirmation of the registration you will receive the invoice.
In case of cancellation after 2 November 2007 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

Organisational information

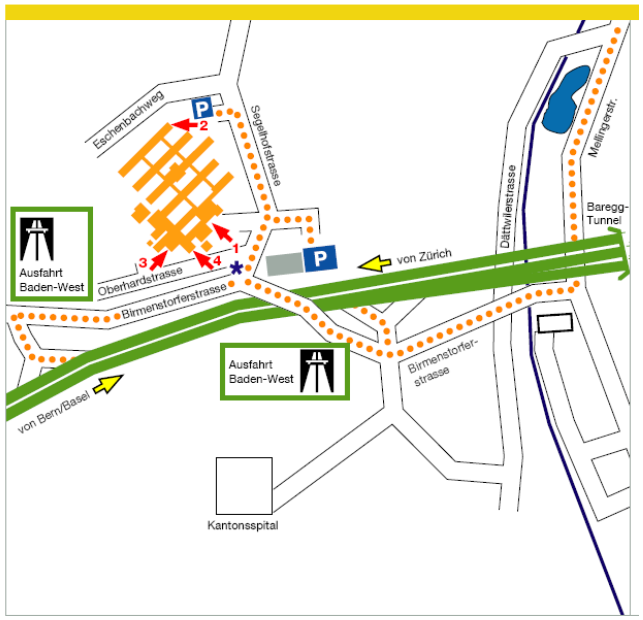
Organiser: ECPE e.V.
90443 Nürnberg, Germany
www.ecpe.org

Chair of seminar: Prof. Johann W. Kolar, ETH Zurich
Thomas Harder, ECPE e.V.

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

Place of seminar: ABB Switzerland Ltd.
Corporate Research Centre
Segelhof
CH-5405 Baden-Dättwil

Baden-Dättwil



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

ECPE European Center for Power Electronics e.V.

Seminar

Virtual Prototyping in Power Electronics

8 – 9 November 2007
ABB Switzerland
Corporate Research Centre
Baden-Dättwil, Switzerland

in cooperation with

EUROPEAN POWER ELECTRONICS AND DRIVES

ETH Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

ABB

Introduction

ECPE Seminar

Virtual Prototyping in Power Electronics

8 – 9 November 2007
Baden-Dättwil, Switzerland

With the increasing requirements towards higher power density, efficiency and reliability, multi-domain modelling, analysis and design of power electronic systems will be of paramount importance to the industry in the future. Today, research and development teams are mostly reliant on single-discipline software that does not allow for the simultaneously study of, e.g., electro-thermal or thermo-mechanical properties of a system. Furthermore, the electromagnetic effects and the high frequency losses in magnetic components and parasitics of interconnections can only be derived using FEM simulation that requires high computational effort. This is also true for the study of conducted electromagnetic emissions and electromagnetic couplings, which can impair the performance of EMI filters at high frequencies. Experimental analysis of such effects is involved and time consuming, and often does not allow the designer to arrive at an optimized solution and/or to ensure best in class performance, in a short design cycle time. Accordingly, the focus now is on the development of user-friendly, multi-discipline simulation packages and design platforms that provide virtual prototyping capability, including also, e.g., the ability to estimate reliability.

In order to provide orientation at an early stage of this possible revolution in power electronic systems design, leading experts from academia, research institutions and software companies will present the state-of-the art in modelling of active and passive power components cooling systems and EMI, provide information on their first user-friendly, multi-disciplinary simulation platforms and will predict the expected future innovations in the field.

Prof. Johann W. Kolar (ETH Zurich) will chair the seminar together with Mr. Thomas Harder (ECPE). All presentations and discussions will be in English.

Programme

Thursday, 8 November 2007

10:00	**Start of Registration**
10:30	**Opening, Welcome Address** ETH, ABB, ECPE
11:00	**Design Tools for Power Electronics: Trends and Innovations** U. Drofenik, ETH Zurich, D. Cottet, ABB (CH)
11:30	**Virtual Prototyping and its Application to Power Modules Design** D. Cottet, ABB Switzerland (CH)
12:00	**Multi domain Simulation Platform for Virtual Prototyping of Integrated Power Systems** M. Mermet-Guyennet, P. Solomalala, Alstom Transport (F)
12:30	Lunch
13:30	**The Virtual Test Bed: A Tool for Multi-Physics Virtual Prototyping** A. Monti, University of South Carolina (US
14:00	**Synthesis of EMC Measures in Electrical Drive Systems to Enable Virtual Prototyping** F. Leferink, University of Twente (NL)
14:30	**Optimizing EMI Filter Performance by Electrical and Mechanical Co-Design** A. Lissner, Fraunhofer Institute IZM (D)
15:00	Coffee Break

Case studies:

15:30	**PLECS - The Tool for Combined Electrical and Thermal Simulations of Power Electronic Systems** J. Allmeling, Plexim (CH)
15:50	**Integrated Simulation in Power Electronics from Multiphysics to Circuits.** S. Friedel, Femlab (CH)
16:10	**System Level EMC Analyses of Partial-Ground / No-Ground PCB Layout Systems with Connected Cables** M. Tröscher, Simlab (D)
16:30	**Improving conducted EMI forecasting with accurate layout modelling** M. Lionet, CEDRAT Groupe (F)
16:50	**A multi level approach to drive system simulation linking analytic, circuit and FEM techniques** O. Hädrich, Ansoft (D)

Table top exhibition: Design and Simulation Tools

19:30	**Dinner at Pavillion Trinkhalle, Kurplatz 2, CH-5400 Baden**

Programme

Friday, 9 November 2007

8:30	**Silicon Power Device Models - Physical Base, Focus and Limits for Applications** D. Silber, University Bremen (D)
9:00	**Virtual Prototyping of Power Devices** P. Türkes, Infineon (D)
9:30	**Virtual Prototyping Tool for Reliability, Prognostics and Risk Assessment of Power Modules** C. Bailey, University of Greenwich (UK)
10:00	Coffee Break
10:30	**InCa 3D, a CAD Tool for Stray Elements Computation in Electrical Engineering** J. Roudet, CNRS – LEG (F)
11:00	**VHDL-AMS Based Design of an Integrated Power Switch: Coupling Compact, Distributed and Logic Level Description** A. Castellazzi, ETH Zurich (CH)
11:30	**Filling the Gap between FE Approach and Equivalent Circuit Representation** B. Allard, ISP3D, INSA Lyon (F)
12:00	**SMPS Design, from System to Component: Shortening the Design Cycle** J.A. Cobos, Universidad Politécnica Madrid (E)
12:30	**Lunch**
13:30	**EM Simulations using the PEEC Method – Case Studies and a Perspective Roadmap** A. Müsing, ETH Zurich (CH)
14:00	**Real Time Simulation for Tractions Systems** A. Eisele, Bombardier Transportation (CH)
14:30	**Reliability & Lifetime Prediction** B. Wunderle, Fraunhofer IZM (D)
15:00	**Partial Element Analysis applied to the Semiconductors and Power Layouts - Through Virtual Prototyping towards Converter Optimisation** R. Pasterczyk, MGE UPS Systems (F)
15:30	Lab tour at ABB Corporate Research (optional)
16:30	End of the seminar