Registration (Fax Reply)

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

Fax: +49 (0)911 / 81 02 88 – 28

Register before **21 September 2010**

Participation fee:

☐ **€ 530,- *** for industry
☐ **€ 395,- *** for universities/institutes
☐ **€ 120,- *** for students (shortened seminar 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 (€ 42,- ***).

With the confirmation of seminar registration you will receive the invoice. (* plus VAT)
In case of cancellation after 21 September 2010 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

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phone, fax

_____
e-mail

_____
date, signature

FP14-16.09.2010

Organizational information

Organiser:	ECPE e.V. 90443 Nuremberg, Germany www.ecpe.org
Chairman:	Dr. Thierry Meynard University Toulouse - ENSEEIHT - LAPLACE
Industrial Co-Chairman:	Dr. Georgios Demetriades ABB Corporate Research
Organisation:	Ingrid Bollens, ECPE e.V. +49 (0)911 / 81 02 88 – 10 ingrid.bollens@ecpe.org
Venue:	Aros Congress Center Munkgatan 7 72109 Västeras; Sweden

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

ECPE European Center for Power Electronics e.V.

ECPE Workshop

Advanced Multilevel Converter Systems

28 - 29 September 2010

Västerås, Sweden

in cooperation with

Introduction

ECPE Workshop

Advanced Multilevel Converter Systems

28 - 29 September 2010
Västerås, Sweden

In recent years, multilevel converters have become standard practice in the field of HVDC grids and Medium Voltage Drives. But lower voltage applications seem to take benefit from the usage of new multilevel solutions and topologies, as well. The increasing number of levels even allows using low voltage MOSFET devices to reach the goals of energy efficiency and improved performance. The Neutral Point Clamped topology which started this revolution is now one of several solutions, but there are also improvements.

With this mature technology, switching higher voltages and delivering higher power are not the only benefits, which allow other fields of application. Improved efficiency is a key feature for photovoltaic systems and uninterruptible power supplies, reduced harmonic distortion helps making lighter and more compact onboard systems, increased apparent switching frequency and bandwidth allows suppressing electrolytic capacitors in voltage regulator modules feeding microprocessors.

Multilevel topologies have changed the world of Power Electronics, and this affects every part of the design of power converters: control and modulation techniques, technological requirements, system-oriented design and reliability issues.

The workshop is chaired by Dr. Thierry. Meynard (University of Toulouse, ENSEEIHT – LAPLACE), Dr. Georgios Demetriades and Pierluigi Tenca (ABB Corporate Research Sweden), and Jochen Koszescha (ECPE).

All presentations and discussions will be in English.

Programme

Tuesday, 28 September 2010

9:30 **Start of Registration**

10:00 **Welcome, Opening**
T. Harder, ECPE e.V.
T. Meynard, University Toulouse / ENSEEIHT - LAPLACE

Introduction

10:15 **Overview Multilevel Topologies and Applications**
T. Meynard, University Toulouse / ENSEEIHT - LAPLACE

Session on Advanced Multilevel Topologies

10:45 **Multi-Level Converters for Industrial Applications**
S. Bernet, Technical University Dresden
R. Sommer, Siemens Large Drives

11:15 **Advanced Modular Multilevel Topologies Enable Integrated Low loss/Ultra light Converters**
R. Marquardt, University of Bundeswehr Munich

11:45 Discussion

12:00 Lunch

13:00 **Possibilities and Challenges with Modular Multilevel Converters for High Power Applications**
H.-P. Nee, KTH Stockholm

13:30 **A new highly Modular Medium Voltage Converter Topology for Industrial Drive Applications**
M. Hiller, Siemens Large Drives

14:00 **Can Flying Capacitor Multilevel Converter with Natural Voltage Balancing be Good for Practical Applications?**
S. Thielemans, Ghent Univ. / A. Rudermann, Elmo Motion Control

14:30 **New Voltage Source Converter Topologies for HVDC Application**
J. Clare, University of Nottingham

15:00 Discussion

15:15 Coffee Break

Control and Modulation

15:45 **Modulation and Control of Multilevel Converters**
G. Gateau, University Toulouse / ENSEEIHT – LAPLACE

16:15 **New Modulation Strategies for EMC Improvement of Multilevel Converters**
A. Videt, Schneider Toshiba Inverter

System Reliability and Fault Tolerance Performance

16:45 **Explosion Proof Housings for Wire Bonded IGBT Modules in HVDC Application**
M. Billmann, Fraunhofer IISB

17:15 **Fault-Tolerant Multilevel Converters**
J. Pou, Technical University of Catalonia (UPC)

17:45 Discussion

18:00 End of 1st Day

19:30 Dinner at Elite Stadshotellet Västeras,
Stora Torget 1, 721 15 Västerås, Sweden

Programme

Wednesday, 29 September 2010

Applications

8:30 **Evaluation of Converter Topologies for FACTS Application**
J.-P. Hasler, ABB Sweden

9:00 **ANPC-5L a new Topology for Transformerless Medium Voltage Drive Solution**
U. Schlapbach, ABB Switzerland

9:30 **HVDC - Offshore Windfarm Application**
H. Gambach, Siemens Energy

10:00 Discussion

10:15 Coffee Break

10:45 **Medium Power (200-500KW) UPS Systems**
C. Rizet , G2ELab / APC by Schneider Electric

11:15 **Theoretical and Practical Aspects Characterizing the Research on Multilevel Converters**
Pierlugi Tenca, ABB Sweden

11:45 Case Study: **The UNI-FLEX Project**
J. Clare, University of Nottingham

12:05 Discussion

12:20 Lunch

System Integration and Components

13:15 **Can Multilevel Technology Help to Reduce Passive Components?"**
A. Mertens, University of Hannover

13:45 **Comparative Evaluation of Advanced 3-Level Inverter/Converter Topologies against 2-Level Systems**
M. Schweizer, T. Friedli, J.W. Kolar, ETH Zurich

14:15 **Multilevel Topologies – Changing the Game for Power Semiconductors?**
N. Kaminski, University of Bremen

14:45 **Power Modules for High Efficient 3-Level Topologies**
M. Frisch, Vincotech

15:15 **Multicell Interleaved Flyback Converter Using an Intercell Transformers**
E. Labouré, LGEP/SPEE Labs – SUPELEC

15:45 Wrap up, Final Discussion

16:00 End of Workshop

16:30 Optional: Lab-Tour ABB Research Lab
(Limited Number of Partcipants)