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

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Register before **13 February 2008**

Participation fee:

·· **€530,-** (plus 19 % VAT)
·· **€395,-** (plus 19 % VAT) for university members
The fee includes dinner, lunch, coffee/soft drinks and seminar handouts.
·· **€120,-** (plus 19 % VAT)
for students (shortened seminar package)

With the confirmation of the registration you will receive the invoice.
In case of cancellation after 13 February 2008 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

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

Chair of seminar: Prof. José A. Cobos,
Universidad Politécnica de Madrid
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: Maritim Hotel Munich
Goethestrasse 7
80336 Munich, Germany

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

ECPE European Center for Power Electronics e.V.

Seminar
Digital Power Conversion

**20 – 21 February 2008
Maritim Hotel
Munich, Germany**

in cooperation with

Introduction

ECPE Seminar
Digital Power Conversion

20 – 21 February 2008
Munich, Germany

Digital power is no longer a promise, but a commercial fact with many available products. The reasons for the market irruption are competitive cost compared to analog solutions and additional functionality at almost no extra cost. Additionally, international policies for energy saving, like Energy Star or European Codes of Conduct, can be more easily met using digital power. This may become a driving force for digital power adoption.

Digital power refers not only to the digital implementation of the control loop of a power converter, but also to the power management in its broader sense, including monitoring and fault detection, programming of the loop filter and control algorithm, tracking of output voltages, sequencing of different voltage rails, margining of power converters or remote maintenance.

Two main approaches can be distinguished: Fully digital controlled converters including closed loop control (driven by ICs or Microcontrollers) and digital managed analog or semi-digital contolled converters (complete modules which use digital techniques for control and/or power management). Attention needs also to be paid to the communication bus. Among the available alternatives, PMBus is becoming most popular, already adopted by the main players.

An increasing market transition from analog to digital power is foreseen in the near future, and this seminar brings some insight in the key digital control techniques.

Prof. José A. Cobos (Universidad Politécnica de Madrid) will chair the seminar together with Dr. Ulrich Kirchenberger (STMicroelectronics) and Thomas Harder (ECPE). All presentations and discussions will be in English.

Programme

Wednesday, 20 February 2008

10:00   **Start of Registration**
10:30   **Opening, Welcome Address**
       UPM, ST, ECPE

Trends in Digital Power

11:00   **Market evolution and digital power products**
       D. Dewan, EPSMA, U.K.
11:30   **Regulations and codes of conduct made easy with digital control**
       N.N., European Commission

12:00   Lunch

Basics of Digital Control

13:00   **Basics of digitally controlled converters**
       J. Böcker, University of Paderborn (D)
13:30   **Formalizing the process of digital control design: autocoding options and solutions**
       A. Monti, University of South Carolina (US)
14:00   **On-chip implementation of digital controllers for Low-Power SMPS**
       A. Prodic, University of Toronto (CAN)

14:30   Coffee Break

Digital Control Techniques for ICs

15:00   **Designing a digital control loop for PFC circuits**
       M. Fahlenkamp, Infineon (D)
15:30   **Optimizing efficiency by phase Management**
       J. Schneider, Texas Instruments (D)
16:00   **Mixed signal controller architecture**
       P. Mattavelli, University of Padova (I)
16:30   **Autotuning system for a digitally controlled DC-DC-converter**
       A. Bianco, DORA SpA (I)
17:00   End of 1st day's programme

19:30   **Dinner** at Restaurant „Augustiner am Dom",
       Frauenplatz 2, 80331 München

Programme

Thursday, 21 February 2008

Application of DP in Power Converters

09:00   **Semi digital power factor correction**
       F. Schafmeister, Delta Energy Systems (D)
09:30   **Digital current control for high switching frequency 3-phase converters**
       M. Hartmann, ETH Zurich (CH)
10:00   **Digital control applied to multi-phase converters**
       O. Garcia, Universidad Politécnica de Madrid (E)

10:30   Coffee Break

11:00   **Digital control power – the new way to optimize lamp ballasts**
       M. Herfurth, Infineon (D)
11:30   **Digital control for HID and fluorescent ballasts using an 8bit microcontroller**
       A. Loidl, STMicroelectronics (D)

Tutorial

12:00   **Digital modelling with discrete time representation**
       P. Mattavelli, University of Padova (I)

13:00   **Lunch**

14:00   **Round Table Discusssion on Digital Power Conversion**

       Challenges for Europe & Research Needs

15:00   End of the seminar