

Organisational Information

Sign up at: www.ecpe.org/events

Registration Deadline:

18 April 2023

Participation Fee:

- € 670,- * for industry
- € 520,- * for universities/institutes
- € 180,- * for students/PhD student
(limited spaces; copy of students ID required)

* plus VAT

- The participation includes dinner, lunches, coffee/soft drinks and digital proceedings. The reduced (PhD) students fee includes all except for dinner (can be booked for an extra fee of € 50,-*)
- Digital proceedings will be provided by download link latest one day before start of the event. A printed handout is available on request (€ 50,-*).
- Upon receipt of registration confirmation via email you are signed-up for the event. The invoice will be sent via email.
- 25 % discount for participants from ECPE member companies.
- 10% discount on university/institute fee for participants from ECPE competence centres.
- Further information (hotel list and maps) will be provided after registration and can be found on the ECPE web page.
- Cancellation policy: Full amount will be refunded in case of cancellation upon to 2 weeks prior to the event. After this date 50 % of the fee is non-refundable (replacement is possible).

02/02/23

Organisational Information

Organiser	ECPE e.V. 90443 Nuremberg, Germany www.ecpe.org
Technical Chairs	Prof. Michael A. E. Andersen, Techn. University of DK (DK) Dr. Bas Vermulst, Eindhoven University of Technology (NL) Dr. Jan Schellekens, Applied Micro Electronics (NL) Jeroen van Duivenbode, ASML (NL) Joost van Straalen, Prodrive Technologies (NL) Dr. Mark van Helvoort, Philips Healthcare (NL)
Technical Contact	Dr. Chris Gould, ECPE e.V. +49 911 81 02 88 – 21 chris.gould@ecpe.org
Organisation	Marietta Di Dio, ECPE e.V. +49 911 81 02 88 – 13 marietta.didio@ecpe.org
Venue	Holiday Inn Eindhoven Veldmaarschalk Montgomerylaan 1 5612 BA, Eindhoven Netherlands https://www.ihg.com/holidayinn



Source photo: Holiday Inn Eindhoven
Source graph front page: TU Eindhoven

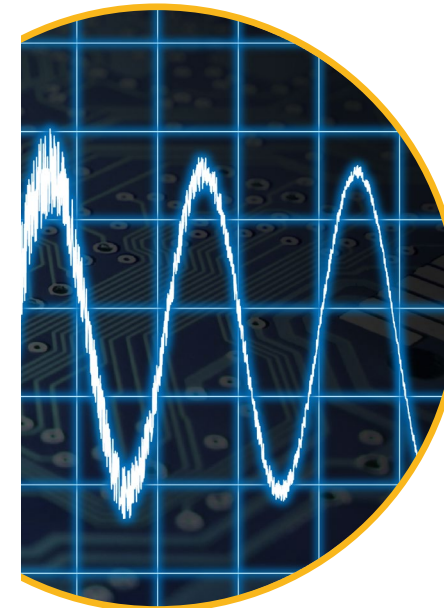


European Center for
Power Electronics e.V.

Draft Programme

ECPE Tutorial

High-Precision Power Electronics



25 – 26 April 2023
Eindhoven
Netherlands

High-Precision Power Electronics

25 – 26 April 2023
Eindhoven, Netherlands

Power amplifiers are used in high-precision applications such as high accuracy positioning systems (e.g. semiconductor lithography), where any error in the current translates to a positioning error; magnetic resonance imaging, where current errors directly relate to image distortion; audio amplifiers; electron microscopy, and so forth. Most of these applications require high voltages and high currents (up to MW levels), while maximum current and voltage errors are in the ppm range. In comparison, inverters for grid applications are found in the same power range, but a THD of a few percent is often deemed quite acceptable. Moreover, high precision applications typically require much larger bandwidths (up to 100s of kHz) with almost zero phase delay, making modelling and control very important topics as well. Such challenges require the engineer to take a vastly different design approach compared to more traditional applications, such as traction inverters.

Target Group

This tutorial is aimed at engineers and researchers who are engaged in power electronics and want to improve their background knowledge and understanding of high precision systems and converters, including recent developments and future trends. Various academic sessions cover a range of fundamental topics such as component modeling, topologies, and compensation techniques. Industry sessions are included to give detailed insight in the challenges and solutions for several state-of-the-art high-tech applications.

Course Instructors:

Prof. Michael A. E. Andersen, Techn. University of DK (DK)
 Dr. Bas Vermulst, Eindhoven University of Technology (NL)
 Dr. Jan Schellekens, Applied Micro Electronics (NL)
 Jeroen van Duivenbode, ASML (NL)
 Joost van Straalen, Prodrive Technologies (NL)
 Dr. Mark van Helvoort, Philips Healthcare (NL)

All presentations and discussions will be in English.

Draft Programme

Tuesday, 25 April 2023

- 08:30 Registration & Welcome Coffee**
- 09:00 Welcome, Opening**
Chris Gould, ECPE e.V.
- 09:10 Introduction to High-Precision Applications**
Bas Vermulst, TU Eindhoven (NL)
- 10:00 Academic Session 1: Non-Linearities in Passive and Active Components**
Bas Vermulst, TU Eindhoven (NL)
- 10:50 Academic Session 2: Topologies & Filtering**
Jan Schellekens, Applied Micro Electronics (NL)

12:00 Lunch

- 13:00 Academic Session 3: Modulation & Compensation**
Bas Vermulst, TU Eindhoven (NL)
- 14:00 Industry Session 1: High-Precision in Semiconductor Lithography (Part I)**
Jeroen van Duivenbode, ASML (NL)
- 14:30 Industry Session 1: High-Precision in Semiconductor Lithography (Part II)**
Jeroen van Duivenbode, ASML (NL)

15:00 Coffee Break

- 15:30 Industry Session 1: High-Precision in Semiconductor Lithography (Part III)**
Jeroen van Duivenbode, ASML (NL)
- 16:00 Industry Session 2: High-Precision Current Sensing using Flux-Gate Technology (Part I)**
TBD
- 16:45 Wrapping up & Discussion**
- 17:15 End of 1st Day**
- 19:30 Dinner**

Draft Programme

Wednesday, 26 April 2023

- 09:00 Start of 2nd Day**
- 09:00 Industry Session 2: High-Precision Current Sensing using Flux-Gate Technology (Part II)**
TBD
- 09:30 Industry Session 3: High-Precision in Medical Imaging (Part I)**
Mark van Helvoort, Philips Healthcare (NL)
- 09:45 Industry Session 3: High-Precision in Medical Imaging (Part II)**
Mark van Helvoort, Philips Healthcare (NL)

10:30 Coffee Break

- 11:00 Industry Session 4: Developing Gradient Amplifiers for MRI (Part I)**
Joost van Straalen, Prodrive Technologies (NL)
- 11:45 Industry Session 4: Developing Gradient Amplifiers for MRI (Part II)**
Joost van Straalen, Prodrive Technologies (NL)

12:30 Lunch

- 13:30 Academic Session 4: High-def Audio Amplifiers (Part I)**
Michael A. E. Andersen, TU of Denmark (DK)
- 14:15 Academic Session 4: High-def Audio Amplifiers (Part II)**
Michael A. E. Andersen, TU of Denmark (DK)
- 15:00 Final Discussion**

15:30 End of Tutorial