

Organisational Information

Sign up at: www.ecpe.org/events

Registration Deadline:

31 August 2022

Participation Fee: (* plus VAT)

- € 470,-* for industry
- € 350,-* for universities/institutes
- € 130,-* for students/PhD students (limited seats; copy of students ID required; dinner € 50,-* extra)

optional & in combination with ECPE WS available:

€ 400,-* one-day EPE Conference ticket (8 Sept.).

- The regular participation fee includes dinner, lunches, coffee/soft drinks and digital presentations. The reduced (PhD) students fee includes all the above except for dinner (can be booked for an extra fee of € 50,-*)
- A printed version of the workshop 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.
- Three participants from each ECPE member company free of charge. Allocation in sequence of registration.
- 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).

06/09/22

Organisational Information

Organiser ECPE e.V.
90443 Nuremberg, Germany
www.ecpe.org

Technical Contact Dr. Chris Gould

Technical Chairs Dr. Soenke Rogalla, Andreas Hensel, Fraunhofer ISE (DE)
Dr. Peter Steimer, Hitachi Energy (CH)
Prof. Leo Lorenz, Dr. Chris Gould
ECPE

Organisation Marietta Di Dio, ECPE e.V.
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Venue HCC - Hannover Congress Center
Theodor-Heuss-Platz 1-3
30175 Hannover
Germany



www.epe2022.com

The EPE '22 ECCE Europe conference will take place in Hannover, Germany, from 5 to 9 September 2022, where participants will gain detailed insights into the state of the art of power electronics and its applications, and enjoy the exchange with other enthusiasts from all over the world who are interested in this highly relevant and constantly growing area.

The 24th European Conference on Power Electronics and Applications will be organized in cooperation with Leibniz University Hannover.



European Center for
Power Electronics e.V.

Final Programme

ECPE Workshop

High Power Electronics for a Successful Energy Transition Towards 100% Renewable Energy

8 - 9 September 2022
Hannover
Germany



in conjunction with



ECPE Workshop

High Power Electronics for a Successful Energy Transition Towards 100% Renewable Energy

8 - 9 September 2022
Hannover, Germany

With the international commitment to a gradual coal phase-out, the transition towards a sustainable energy supply based on Renewable Energies will gain momentum. This workshop addresses the High-Power Electronics challenges in the MegaWatt and multi-MW range related to this transition including large-scale renewable generation, energy storage solutions and grid integration issues. Development of hybrid power plants utilising combinations of renewable energy in-feed and energy storage by means of batteries and hydrogen will gain importance in the local Medium Voltage range and DC distribution networks. A weak grid situation with a high penetration of inverter-based resources requires new control approaches to ensure stable grid operation. Power transmission over long distances, active and reactive power control at all times, and sufficient grid forming capabilities are the key challenges of the energy transition. Power electronics play a major role in solving these challenges.

The workshop is chaired by:

Dr. Soenke Rogalla, Andreas Hensel, Fraunhofer ISE
Dr. Peter Steimer, Hitachi Energy
Prof. Leo Lorenz, Dr. Chris Gould, ECPE

The Workshop will be held in conjunction with the EPE'22 ECCE Europe Conference in Hannover www.epe2022.com and is linked to the focus topic of the 3rd conference day on 'Electricity and Hydrogen based Energy Systems'.

All presentations and discussions will be in English.

List of Topics

- Power Electronics for MW PV and Wind Power
- Large Scale Energy Storage
- Hydrogen in the Energy System: Large Scale Electrolysers in the Multi-MW Range
- DC Distribution Grids in the Medium Voltage Range
- Grid Integration of High Power (MW) EV Charging
- Regulation and Control
- Components and Converters

Final Programme

1st Workshop Day

17:30 Registration & Welcome Coffee

18:00 Welcome, Opening
Leo Lorenz, ECPE e.V. (DE)

Transition Towards 100% Renewable Energy

18:15 Terawatts of Power Electronics - Where the energy transition is taking us!
Soenke Rogalla, Fraunhofer ISE (DE)

18:45 Model Predictive Control-enabled fault ride Through Operation Strategy for High Power Wind Turbines
Pedro Catalan, Ingeteam (ES)
(Moved due to travel commitments)

19:15 End of 1st Day

20:00 Dinner at "Restaurant Brunnenhof"

2nd Workshop Day

09:00 Start of 2nd Day

Transition Towards 100% Renewable Energy

09:00 An Electronized Future Power System for Sustainable Energy Abundance
Dushan Boroyevich, CPES - Virginia Tech (USA)

Transmission Grid Applications and DC Distribution

09:45 From Planning to Operation of the First HVDC/HVAC Meshed Offshore Grid: The Kriegers Flak Combined Grid Solution
Reinhard Stornowski, 50Hertz Transmission (DE)

10:15 MVDC Grids
Rik De Doncker, ISEA RWTH Aachen (DE)

10:45 Multi-Terminal HVDC
Ashkan Nami, Adil Abdalrahman, Hitachi Energy (CH)

11:15 Coffee break

Large-Scale Energy Storage

11:45 High-Power Semiconductor Solutions for Green Hydrogen Electrolysis Applications
Varun Raghunath, Infineon Technologies AG (DE)

12:15 Grid-forming Inverters in Grid-parallel Operation
Stefan Laudahn, Freqcon (DE)

Implications and Implementation of WBG Technologies

12:45 Megawatt-Chargers in Electric Commercial Vehicle Infrastructure: Why Thyristors Outperform Wide Band Gap Solutions in Certain Applications
Ralf Keggenhoff, Littelfuse (DE)

13:15 Lunch break

14:15 Evolution of Capacitor Technologies to Enable High Power WBG Applications Achieve Higher Efficiency
Pranjal Srivastava, Kemet – A Yageo company (DE)

Power Electronics for MW PV and Wind Power

14:45 Next Generation PV Power Plants
Andreas Hensel, Fraunhofer ISE (DE)

15:15 Solar and Battery Converter Concepts for Today's Utility-Scale Systems
Owen Schelenz, GE Renewable Energy (DE)

15:45 Final Discussion

16:15 End of Workshop