

Organisational Information

Sign up at: www.ecpe.org/events

Registration Deadline:

26 August 2024

Participation Fee:

	Regular fee	Reduced fee in combination with ECCE Europe ticket
Industry	250,- €*	180,- €*
University	220,- €*	160,- €*

* plus VAT

- The participation includes dinner, lunch, coffee/soft drinks and digital proceedings.
- Digital proceedings will be provided by download link.
- 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).

Organisational Information

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Schlossgraben 1
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ECPE
European Center for
Power Electronics e.V.

ECPE Workshop Announcement

Sustainable Energy Supply to Reach Net-Zero CO₂ Emissions by 2050

2 September 2024
Darmstadt, Germany

in cooperation with



in conjunction with



2024
2-6 September, Darmstadt



ECPE Workshop

Sustainable Energy Supply to Reach Net-Zero CO₂ Emissions by 2050

2 September 2024
Darmstadt, Germany

Programme of the 3rd Three Corners Power Electronics Extended Collaboration (3C-PEEC) Workshop of NPERC-J (JP), CPES (US) and ECPE (EU).
The ECPE Workshop is held in conjunction with ECCE Europe 2024 Conference (see www.ecce-europe.org).

In 2021, leaders of the world agreed in the United Nations Climate Change Conference to reduce human emissions of greenhouse gases to net-zero by 2050.

Sustainable energy supply which does not rely on burning fossil fuels is one of the key demands of our times leading to the vision of an All-Electric Society. It is commonly accepted that power electronics helps to convert our world into a greener version of itself, be it in renewable energy utilisation, in electric vehicles or in more efficient variable speed drives. In the 1st session, concepts for energy supply in Europe, Japan, US and China will be presented, with the status quo and solution paths for CO₂ reduction. The 2nd session will highlight the key role of power semiconductors presenting results from the IEC White Paper 'Power Semiconductors for an Energy Wise Society'. The Sustainability Session will go one step further, considering not only the realised energy or CO₂ emission savings during its useful life, but also the environmental burden accrued during manufacturing of a converter, e.g. the climate impact by CO_{2eq} emissions up to the disposal at the converter's end-of-life.

The Future Grids Session will address key topics where power electronics can support or enable a sustainable power supply, incl. the control and stability of future grids which will mainly rely on fluctuating renewables and grid-connected energy storage. Finally, the role of digitalisation will be discussed with the Digital Twin concept, Condition & Health Monitoring and Demand-Side-Management.

All presentations and discussions will be in English language.

Programme

Monday, 2 September 2024

09:00 Start of Registration / Welcome Coffee

09:30 Welcome and Workshop Opening
Leo Lorenz, ECPE (EU)
Hiromichi Ohashi, NPERC-J (JP)
Rolando Burgos, CPES (US)
Brad Lehman, IEEE PELS

Energy Supply Today – Status Quo and Solution Paths for CO₂ Reduction

10:00 Status Quo & Solution Paths in Europe

10:25 Status Quo & Solution Paths in Japan

10:50 Coffee break

11:15 Status Quo and Solution Paths in US

11:40 Status Quo and Solution Paths in China

12:05 Lunch

Power Semiconductors for an Energy-Wise Society

13:10 Introduction of the IEC White Paper 'Power Semiconductors for an Energy-Wise Society'

13:40 Outlook on Power Semiconductors – Ultra-Wide Bandgap (UWG) and Ultra-High Voltage (UHV)

Sustainability Session (Carbon Footprint and LCA)

14:00 Circular Economy

14:30 Coffee Break

Programme

Future Grids Session (draft titles)

15:00 Control and Stability of the Future Grid:
- PE-dominated grid
- relying on fluctuating renewables
(CN)

15:30 Sector Coupling and Grid-Connected Energy Storage - the Role of Power Electronic at the Interfaces
(EU)

16:00 Future Grid Concepts with Smart PEBB & Component Standardization to support "Design for Sustainability and Economic Solutions"
(US)

16:30 What can Digitalisation do? (Digital Twin, Online Monitoring, Smart Grids, Demand-Side-Management)
(JP)

17:00 Panel Discussion on Future Grids

18:00 End of Workshop

19:30 Workshop Dinner