

Powering Innovation and Sustainability in the World of Power Electronics.

About the Conference

ECCE Europe is Europe's leading power electronics conference, bringing together up to 1,000 experts globally to address climate and sustainability challenges. **ECCE Europe 2025 in Birmingham** will feature lectures, forums, exhibitions, and technical tours for exchanging insights across academia and industry.

Conference to Journal

IEEE PELS is offering a Conference-to-Journal opportunity for papers accepted to the ECCE Europe conference.

PELS welcomes post-conference papers to be submitted to their journals, including...

- IEEE Transactions on Power Electronics
- IEEE Open Journal of Power Electronics
- IEEE Journal of Emerging and Selected Topics in Power Electronics
- IEEE Transactions on Transportation Electrification



According to IEEE policy, the submitted journal manuscript should include the conference paper as a reference and clarify the new developments and contributions in the journal version.

Organization and Venue

Starting in 2024, IEEE PELS has launched a new partnership with the European Center for Power Electronics (ECPE) for its flagship European conference, **IEEE ECCE Europe**.

The 2025 conference will be held at the International Convention Centre in Birmingham, UK (<https://www.theicc.co.uk>).

All presentations, discussions, and materials will be in English.

For the latest information, visit www.ecce-europe.org.

Paper Digest

Prepare extended digests using the IEEE conference template, with a maximum length of 5 pages. (<https://www.ieee.org/conferences/publishing/templates.html>)

During submission, select up to three topics/sub-topics and indicate a preference for dialogue or lecture format. Final presentation format will be decided by the organizing committee. The final paper may consist of up to 6 pages.

**EXTENDED DEADLINE
18 MARCH 2025**



Paper Submission

<https://www.conftool.org/ecce-europe-2025/>

Important Dates

18 March 2025

Extended Deadline: Digest

9 May 2025

Notification of acceptance

22 June 2025

Deadline: full paper

General Chairs

Prof. Volker Pickert, Newcastle University
Prof. Pat Wheeler, University of Nottingham



Technical papers are solicited on any subject pertaining to the scope of the conference including, but not limited to, the following major topics:

I Converter Components

1. Power Devices, Components and Packaging

- a) Passive Components
- b) Active Devices and Components (Si)
- c) Active Devices and Components (Wide Bandgap and other)
- d) New Materials)
- e) Components and Devices for Specific Applications
- f) System Integration, Packaging & Thermal Management
- g) Gate Drives

2. Power Converters Topologies

- a) Modular Multilevel Converters
- b) Solid State Transformers
- c) Grid-Tie Converters
- d) Resonant Converters
- e) HF Power Converters
- f) Wide-Band Gap Power Electronics
- g) EMI/EMC including HF Phenomena

3. Converter Modelling, Simulation and Design

- a) Converter Design and Optimization
- b) Converter Modelling
- c) Standardized Data Model for Components / Electronic Data Sheets

4. Measurement, Supervision and Control for Power Converters

- a) Advanced Modulation Techniques
- b) Advanced Current / Voltage / Synchronization and Control Techniques
- c) Estimation, Identification and Optimization Methods
- d) Measurement Techniques, Sensors, and State Observers

5. Data Analysis, Artificial Intelligence and Communication

- a) Data Analysis Applied to Power Electronics and Drive Systems
- b) Application of Artificial Intelligence to Power Electronics and Drive Systems
- c) Communication for Power Electronics and Drive Systems
- d) Wireless Control of Power Electronics Systems
- e) Diagnostics of Power Electronics Systems
- f) Digital Twin of Power Electronic Converters and Systems
- g) Big Data and Artificial Intelligence in Energy Conversion

6. Sustainability of Power Converters

- a) Energy and Carbon Footprint Estimation of Converter Manufacturing and Life Cycle Analysis (LCA)
- b) Estimation of Efficiency and Power Losses during Operation
- c) Recycling Capability and Methods
- d) Efficient of Use of Material, esp. Rare Materials
- e) Circular Economy
- f) Condition Monitoring, Reliability & Life-Time Prediction

7. Manufacturing

- a) Internet of Things and Cloud Computing Applied to Power Electronics Manufacturing
- b) Additive Manufacturing and the use of Advanced Assembly Robots
- c) Cyber-Physical Systems
- d) More Intelligent Automation and Process Control
- e) Automated Disassembly Techniques for End-of-Life Systems

II Converter Applications

8. Electrical Machines and Drive Systems

- a) Electrical Machines and Actuators
- b) Adjustable-Speed Drives and Converter-Machine Interactions (dv/dt, Bearing Currents)
- c) Design, Optimization and Control of Electrical Drives
- d) Condition Monitoring and Life-Time Prediction of Drives

9. Renewable Energy Power Systems

- a) Wind Energy Systems
- b) Solar Energy Systems
- c) Energy Storage Systems for Renewable Energy
- d) Energy Management Systems
- e) Energy Harvesting
- f) Power-to-X
- g) Other Renewable Energy Systems

10. Power Electronics in Transmission and Distribution Systems

- a) HVDC, FACTS, Solid State Transformers and Hybrid Circuit Breakers
- b) Grid Supporting and Grid Forming Converters
- c) Smart Grids
- d) AC and DC Distribution and Micro Grids, including Fault Coordination and Protection
- e) Power Quality Issues and Power Factor Correction
- f) Stationary Charging Power Stations and Stationary (Ultra) Fast Chargers, Bidirectional V2G
- g) Smart and Energy Efficient Buildings
- h) Real-Time Simulation and Hardware in the Loop

11. E-Mobility and Propulsion Systems

- a) Electric Drive Trains for Passenger and Light Duty Vehicles
- b) Electric Drive Trains for Heavy Duty Vehicles and Buses
- c) Electric Drive Trains for Rail Vehicles
- d) Electric Drive Trains for Aerospace Applications (Aircrafts, Drones)
- e) Electric Drive Trains for Marine Applications (Offshore, Subsea and Ships)
- f) On-Board Chargers (wired)
- g) Wireless Power Transfer Systems
- h) On-Board DC-Voltage Networks
- i) Smart Charging and Vehicle to X (Home, Load) Interaction
- j) Batteries: Management Systems (BMS), Monitoring and Lifetime Prediction (SOC, SOH)
- k) Fuel Cells: Converters, Control, Diagnostics and System Integration
- l) Power Electronics for Vehicle-Integrated PV (VIPV)

12. Power Supplies and Industry-Specific Applications

- a) Stationary Battery Systems, Electrolyzer and Fuel Cells
- b) DC Power Supplies
- c) Distributed Power Supplies
- d) Data Centers
- e) Uninterruptible Power Supplies (UPS)
- f) Solid-State Lighting and Electronic Ballasts
- g) Industry-Specific Applications (Cement, Steel, Paper, Textile, Mining, etc.)
- h) Applications in Physics Research and Related Areas
- i) Home Appliances (Inductive Heating, HVAC and Heat Pumps)
- j) Biomedical Applications
- k) DC-Grids in Industrial Applications
- l) Pulsed Power for Manufacturing

Further information on scientific/program and the organizing committees as well as latest updates on tutorials, program, etc. can be accessed on the conference website.

