

Next EPE ECCE Europe Conference:



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# EPE '22 ECCE EUROPE

September 5-9, 2022  
Hannover, Germany

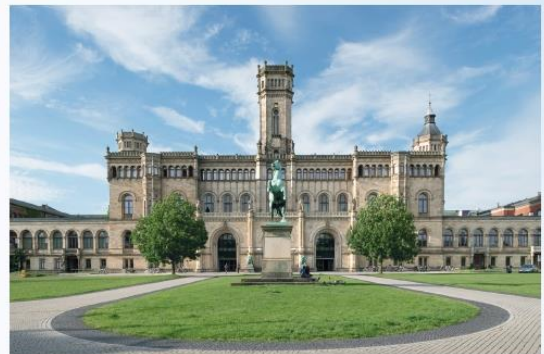


## Call for Papers

24th European Conference on Power  
Electronics and Applications

EPE - Energy Conversion Congress & Expo

September 5-9, 2022  
Hannover, Germany



Leibniz University Hannover • © LUH/Daniel Vogl



Old Town Hannover • © HMTG

### Highlighted Technical Topics

- Integration and Adverse Effects of WBG Devices
- Electricity and Hydrogen based Energy Systems
- Electrification of On- and Off-Road Vehicles
- New Power Electronic Devices
- Batteries in Power Electronics
- Electrification of Aircraft

**FINAL CALL**  
22 December 2021

### Deadlines

- |                     |   |
|---------------------|---|
| <del>17.11.21</del> | Receipt of synopses                         |
| 02.03.22            | Notification of provisional acceptance      |
| 01.06.22            | Receipt of full typescript for final review |



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[epe2022.com](http://epe2022.com)





## Organisation and Venue

The Power Electronics community will gather in Hannover, Germany, from 5 to 9 September 2022, to exchange views on research progress and technological developments in the various topics described hereunder. Tutorials will be organised on Monday and on Friday, 5/9 September. Several technical visits are planned for Friday, 9 September.

The 24th European Conference on Power Electronics and Applications EPE'22 ECCE Europe (Energy Conversion Congress and Expo) is co-sponsored by the EPE Association and IEEE PELS. It will take place at the Hannover Congress Centrum (HCC), Germany.

## Aims of the Conference

EPE ECCE Europe is the largest scientific conference in its field in Europe, attracting experts from numerous countries every year to join in the discussions. With the objective to exchange and meet with fellow professionals and academics, EPE ECCE Europe brings together researchers, engineers, etc. working at the forefront of power electronics technologies.

## Highlighted Technical Topics

In addition to the topics for paper submission, EPE'22 ECCE Europe at Hannover will highlight the following Focus Topics, not only in dedicated lecture and dialogue sessions of the conference but also in keynotes, the exhibition, panel discussions, tutorials and technical visits. Paper submissions in line with these Focus Topics are highly encouraged.

Technology Focus Topics:

- New Power Electronic Devices
- Integration and Adverse Effects of WBG Devices
- Batteries in Power Electronics

Application Focus Topics:

- Electrification of On- and Off-Road Vehicles
- Electrification of Aircraft
- Electricity and Hydrogen based Energy Systems

## Topics for Paper Submission

### *I POWER ELECTRONICS COMPONENTS AND CONVERTERS*

Topic 1: DEVICES, COMPONENTS, PACKAGING AND SYSTEM INTEGRATION

- 1.a. Passive Components
- 1.b. Active Devices and Components (Si)
- 1.c. Active Devices and Components (Wide Bandgap and other new materials)
- 1.d. Components and Devices for Specific Applications, including for Pulsed Power

- 1.e. System Integration, Packaging & Thermal Management
- 1.f. Reliability & Life-Time

Topic 2: POWER CONVERTERS TOPOLOGIES

- 2.a. Modular Multilevel Converters
- 2.b. Solid State Transformers
- 2.c. Grid Connected Converters
- 2.d. Resonant Converters
- 2.e. HF Power Converters
- 2.f. Wide Band Gap Power Electronics

Topic 3: CONVERTER MODELLING, DESIGN AND LOW-LEVEL CONTROL

- 3.a. Converter Design and Optimisation
- 3.b. Converter Modelling and Low-level Control, including Gate-Drives
- 3.c. EMI/EMC in Power Electronics including HF Phenomena

Topic 4: MEASUREMENT, SUPERVISION AND CONTROL FOR POWER CONVERTERS

- 4.a. Standard and Advanced Modulation Techniques
- 4.b. Standard and Advanced Current / Voltage / Synchronisation Control Techniques
- 4.c. Estimation, Identification and Optimisation Methods
- 4.d. Measurement Techniques, Sensors and State Observers
- 4.e. Condition Monitoring and Life-Time Prediction

### *II POWER ELECTRONICS APPLICATIONS*

Topic 5: ELECTRICAL MACHINES AND DRIVE SYSTEMS

- 5.a. Electrical Machines and Actuators
- 5.b. Adjustable-Speed Drives and Converter-Machine Interactions
- 5.c. Design, Optimisation and Control of Electric Drives
- 5.d. Condition Monitoring and Life-Time Prediction

Topic 6: RENEWABLE ENERGY POWER SYSTEMS AND POWER-TO-X

- 6.a. Wind-Energy Systems
- 6.b. Solar-Energy Systems
- 6.c. Energy Storage Systems for Renewable Energy incl. Power-to-Gas
- 6.d. Energy Management Systems
- 6.e. Energy Harvesting
- 6.f. Other Renewable-Energy Systems

#### Topic 7: GRIDS, SMART GRIDS, AC & DC

- 7.a. Power Electronics in Transmission and Distribution Systems
- 7.b. HVDC & FACTS
- 7.c. Micro Grids
- 7.d. Smart Grids
- 7.e. Mobile Power Stations
- 7.f. Power Quality Issues and Power Factor Correction Techniques
- 7.g. DC Grids including Fault Coordination and Protection
- 7.h. Hybrid Circuit Breakers
- 7.i. Real-Time Simulation and Hardware in the Loop

#### Topic 8: E-MOBILITY

- 8.a. Electric Drive Trains for On-and Off-Road Vehicles
- 8.b. Electric Drive Trains for Rail Vehicles
- 8.c. Electric Drive Trains for Aerospace and Space Applications
- 8.d. Electric Drive Trains for Marine Applications (Offshore, Subsea and Ships)
- 8.e. On-Board Power Converters
- 8.f. Batteries: Management Systems (BMS), Monitoring and Life-Time Prediction
- 8.g. Vehicle Battery Chargers: Contact and Contactless
- 8.h. Fuel Cells: Converters, Control, Diagnostics and System Integration
- 8.i. Smart Charging and Vehicle to Grid Interaction

#### Topic 9: POWER SUPPLIES AND INDUSTRY-SPECIFIC APPLICATIONS

- 9.a. Low Voltage DC Power Supplies
- 9.b. High Voltage DC Power Supplies
- 9.c. Distributed Power Supplies
- 9.d. Uninterruptible Power Supplies (UPS)
- 9.e. Lighting: Solid-State Lighting and Electronic ballasts
- 9.f. Contactless (Wireless) Power Supply
- 9.g. Industry-Specific Applications (Cement, Steel, Paper, Textile, Mining, etc...)
- 9.h. Applications in Physics Research and Related Areas

#### Topic 10: DATA ANALYSIS, ARTIFICIAL INTELLIGENCE AND COMMUNICATION

- 10.a. Data Analysis applied to Power Electronics and Drive Systems
- 10.b. Application of Artificial Intelligence to Power Electronics and Drive Systems

- 10.c. Communication for Power Electronics and Drive Systems
- 10.d. Wireless Control
- 10.e. Diagnostics

## Presentation of Papers

Contributions to EPE'22 ECCE Europe must be presented either as a lecture presentation or as a dialogue presentation. A manuscript must be submitted in English in both cases for inclusion in the Conference Proceedings (electronic version only). The number of papers presented in lecture sessions is limited by the amount of available time slots. They are selected on the basis of wide audience appeal and suitability for lecture presentation. Papers presented in dialogue sessions are selected for their suitability to provoke in-depth discussions between authors and other conference participants. Dialogue and lecture sessions will be organised in separate time slots, both during mornings and afternoons

## Content of Synopses

The synopses should consist of a three to five page anonymous summary, including an abstract with no more than 50 words; topic number and indication of the preference for dialogue or lecture presentation (to be clearly mentioned), key diagrams and a list of references.

The synopses will be submitted using the host of the conference on the Internet. A link to the site will be available at [www.epe2022.com](http://www.epe2022.com), as well as from [www.epe-association.org](http://www.epe-association.org). Detailed information and guidelines can be downloaded from the conference website to help you prepare the needed material for submitting a synopsis. The site will soon be open for upload.

Authors of papers provisionally selected for presentation will receive a notification and can download the instructions for preparing the final papers from the website. Final selection will be based on the full paper. The paper will only be included in the Conference Proceedings after receipt of one full registration fee per paper in due terms. Student registration fee is only valid for student participants, not for authors. One single author may not present more than two papers. The publication date of the accepted conference papers will be two weeks before the conference.

Instructions for preparing and submitting the lecture presentation as well as for preparing the poster will also be made available to the authors. A selection of outstanding conference papers will be published afterwards in the EPE Journal, which is an ISI registered journal.



The conference proceedings will be submitted to the IEEE Xplore® digital library.

All presented papers will be listed in the Web of Science (formerly Web of Knowledge), INSPEC database for Engineering. Selected papers published in the EPE Journal will be automatically included in the Web of Science – Core Collection and get a WOS-Accession number. The Organising Committee works toward ensuring that all conference papers are listed in the Core Collection as well. It is already the case since the 2014 edition.

## Tutorials – Call for Proposals

Several tutorials will be held as part of the conference. Authors willing to propose a tutorial at EPE'22 ECCE Europe are invited to send a proposal to the EPE Secretariat (see below) before 11 January, 2022. The proposal shall consist of a three-page summary including tutorial title, name and affiliation of the lecturer(s), tutorial objectives and audience, topical outline and provisional schedule of the tutorial as well as relevant references. The tutorials will be organized on Monday 5 September and Friday 9 September 2022. Tutorial proposals related to all conference topics are welcome.

## Working Language

The working language of the conference is English, which will be used for all printed material, presentations and discussions.

## Programme and Registration

The provisional programme and registration form will be available from the website early summer 2022.

Additional information will be available on:  
[www.epe2022.com](http://www.epe2022.com)

## Venue

The conference will take place at the Hannover Congress Centrum (HCC), Germany. The conference venue is located 2 km from the city centre and from the main railway station, which is reached in about 20 minutes by rapid transit from the Hannover Airport. Public transportation in Hannover is excellent, and there is a tram station in front of the HCC. The conference venue offers facilities and services of international quality meeting standards. Wi-Fi access will be free for attendees, everywhere in the congress center.

## Exhibition

As with previous editions, an industrial (and scientific) exhibition will be part of the event.

Detailed information will be available on:  
[www.epe2022.com](http://www.epe2022.com)

You can also contact us via e-mail to:  
[Carol.Appelmans@vub.be](mailto:Carol.Appelmans@vub.be)

## Conference Organisation

### General Chairman

Axel Mertens, Leibniz University Hannover

### Co-Chair

Bernd Ponick, Leibniz University Hannover

### Local Scientific Committee

Martin Doppelbauer, Amir Ebrahimi, Hans-Günter Eckel, Jens Friebe, Klaus Hoffmann, Nando Kaminski, Andreas Lindemann, Marco Liserre, Regine Mallwitz, Bernhard Wicht

### Local Secretariat

Leibniz University Hannover  
Institute for Drive Systems and Power Electronics  
E-mail: [EPE2022@ial.uni-hannover.de](mailto:EPE2022@ial.uni-hannover.de)

The overall management of the Congress is conducted by the Coordination, Organising and International Scientific Committees to ensure consistency in strategy, scope and content of the Conferences from year to year.

### Programme Chairman

Sjoerd Bosga, ABB Corporate Research, Sweden

### EPE/IEEE-PELS Coordination Committee

Martin Doppelbauer, Philip Carne Kjaer, Elena Lomonova, Leo Lorenz, Yves Perriard, Jean-Luc Thomas, Rik De Doncker, Ralph Kennel, Mario Pacas, Jian Sun, Pat Wheeler  
For more information visit: [www.ieee-pels.org](http://www.ieee-pels.org)

### EPE Secretariat

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All contributors and committees, like the Coordination Committee and the International Scientific Committee (ISC), are listed on the EPE association website: [www.epe-association.org](http://www.epe-association.org)

## EPE'22 ECCE Europe: Guidelines to submit a synopsis

- The guidelines to write and submit a synopsis can be found [HERE](#).
- For the submission website, please click [HERE](#).
- **ULTIMATE Deadline for Submission: [Wednesday 22 December 2021](#)**

## EPE'22 ECCE Europe - Highlighted Topics

In addition to the topics for paper submission, EPE'22 ECCE Europe at Hannover will highlight the following Focus Topics, not only in dedicated lecture and dialogue sessions of the conference but also in keynotes, the exhibition, panel discussions, tutorials and technical visits.

Paper submissions in line with these Focus Topics are highly encouraged.

### Highlighted Technical Topics:

- |  |  |
|--|--|
| <ul style="list-style-type: none"><li>• New Power Electronic Devices</li><li>• Integration and Adverse Effects of WBG Devices</li><li>• Batteries in Power Electronics</li></ul> | <ul style="list-style-type: none"><li>• Electrification of On- and Off-Road Vehicles</li><li>• Electrification of Aircraft</li><li>• Electricity and Hydrogen based Energy Systems</li></ul> |
|--|--|

The conference topics are available via this link: <https://epe-ecce-conferences.com/epe2022/topics/>

## EPE'22 ECCE Europe - Exhibition Map

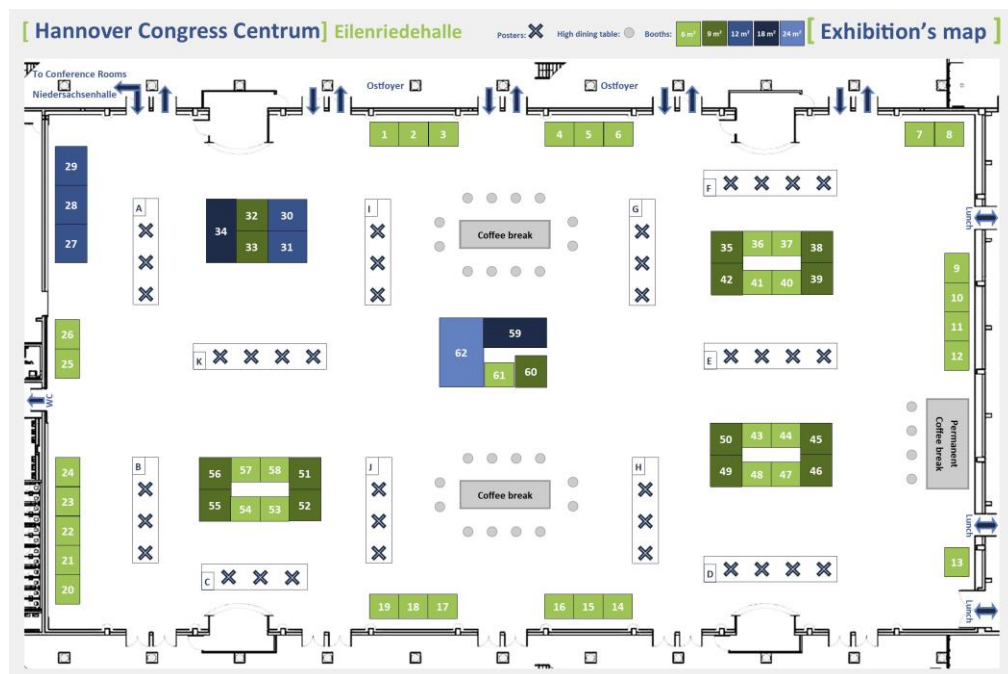
### Become an Exhibitor at EPE'22 ECCE Europe!

After two EPE events in virtual format, we are all looking forward to an in-presence conference in 2022. We are confident that EPE'22 will be the first large scientific European event in Power Electronics and Applications where we can meet face-to-face after three years. And we are working enthusiastically to make it an interesting, successful and memorable event!

The EPE 2022 ECCE Europe conference will take place in Hannover, Germany, from 5 to 9 September 2022.

The exhibition will take place in the Hannover Congress Center, in de Eilenriedehalle:

**360° view:** <https://www.hcc.de/360-grad-eilenriedehalle/>



Exhibition Map:	<a href="https://epe-ecce-conferences.com/epe2022/exhibitionmap/">https://epe-ecce-conferences.com/epe2022/exhibitionmap/</a>
General information & Tariffs and Packages:	<a href="https://epe-ecce-conferences.com/epe2022/wp-content/uploads/EPE22_Sponsorship_Exhibition_Opportunities_V_2021-11-10-1-20.pdf">https://epe-ecce-conferences.com/epe2022/wp-content/uploads/EPE22_Sponsorship_Exhibition_Opportunities_V_2021-11-10-1-20.pdf</a>
Applications Files:	<a href="https://epe-ecce-conferences.com/epe2022/wp-content/uploads/EPE22_Sponsorship_Exhibition_Opportunities_V_2021-11-10-Application-Forms.pdf">https://epe-ecce-conferences.com/epe2022/wp-content/uploads/EPE22_Sponsorship_Exhibition_Opportunities_V_2021-11-10-Application-Forms.pdf</a>

## 2 ECPE: Calendar of Events 2021-2022

ECPE Calendar of Events			
Date	Location	Event	Topic
9 - 10 Nov. 2021	Digital Event	ECPE Online Tutorial	Power Circuits for Clean Switching and Low Losses Technical Chair: Dr. R. Bayer (Physics of Power Electronics)
11 - 12 Nov. 2021	Berlin, Germany	ECPE Lab Course	EMC Optimised Design (Parasitics in Power Electronics) Course Instructor: Prof. E. Hoene (Fraunhofer IZM)
18 - 19 Nov. 2021	Digital Event	ECPE Online Tutorial	Testing Automotive Power Modules acc. to the ECPE Guideline AGO 324 Technical Chair: Dr. M. Rittner (Robert Bosch)
2 - 3 Dec. 2021	Graz, Austria	ECPE Workshop	Steps towards Design Automation and Artificial Intelligence in Power Electronics Technical Chair: Prof. J.W. Kolar (ETH Zurich), Prof. T. Meynard (Univ. Toulouse), Dr. M.J. Kasper (Infineon)
Postponed to spring 2022			
	h, i	ECPE Tutorial	Testing and Electrical Characterization of Power Semiconductor Devices Course Instructor: Prof. I. Kalfous (University of Stuttgart)
25 - 26 Jan. 2022	Freiburg, Germany	ECPE Tutorial	Digital Control I Modelling and Feedback Design in State-Space Course Instructor: B. Stokan (Fraunhofer ISE)
15 - 16 Feb. 2022	Berlin, Germany	ECPE Workshop	Advanced Drivers for Si, SiC and GaN Power Semiconductor Devices Technical Chair: Prof. J. Raskowski (Warsaw University of Technology), M. Gärner, F. Demaro (STMicroelectronics)
15 - 17 March 2022	Berlin, Germany	Conference & ECPE Annual Event	CIPS 2022 - 12th International Conference on Integrated Power Electronic Systems
5 - 8 April 2022	Vienna, Austria	ECPE Tutorial	Drivers and Control Circuitry for IGBTs and MOSFETs Technical Chair: Prof. M. Rost (TU Dortmund)
6 - 7 April 2022	Berlin, Germany	ECPE Lab Course	EMC Optimised Design (Parasitics in Power Electronics) Course Instructor: Prof. E. Hoene (Fraunhofer IZM)
28 - 29 April 2022	Hamburg, Germany	ECPE (Hybrid) Tutorial	EMC in Power Electronics Technical Chair: Prof. E. Hoene (Fraunhofer IZM), Prof. J.-L. Schanen (3SELab)
10 - 12 May 2022	Nuremberg, Germany	Conference & Exhibition	PCIM Europe 2022 ECPE Joint Stand with Students Day
31 May - 1 June 2022	Digital Event	ECPE Tutorial	Introduction to Power Electronics Technical Chair: H.-P. Fiedler (ECPE), Prof. W.-T. Franke (Univ. of Southern Denmark)
22 - 23 June 2022	Düsseldorf, Germany	ECPE/Cluster Tutorial	Power Semiconductor Devices & Technologies Technical Chair: Dr. A. Mauder (Infineon), Prof. N. Kaminski (Univ. of Bremen)
28 - 29 June 2022	Nuremberg, Germany	ECPE/Cluster Tutorial	Thermal Engineering of Power Electronic Systems - Part I (thermal design and verification) Technical Chair: Prof. U. Scheuermann (Semikron)
5 - 8 Sept. 2022	Hannover, Germany	Conference	EPE'21 ECCE Europe - 23rd European Conference on Power Electronics and Applications
15 Sept. 2022	Nuremberg, Germany	ECPE Tutorial	Use and Assessment of Power Device Models in Power Electronics Simulation Technical Chair: Dr. P. Türke (Consultant Compact Power Devices Models)
20 - 21 Sept. 2022	Digital Event	ECPE Tutorial	Power Electronics Packaging Technical Chair: Prof. U. Scheuermann (Semikron)
22 - 23 Sept. 2022	Toulouse, France	ECPE Workshop	Design, Technology, Simulation and Application Aspects of Magnetic Components in Power Electronics   Technical Chair: W.G. Hurley (National University of Ireland) Prof. Zhen Qian (Technical University of Denmark) Dr. S. Vahedi (TDK Electronics)
6 - 7 Oct. 2022	Digital Event	ECPE Tutorial	Power Circuits for Clean Switching and Low Losses Technical Chair: Dr. R. Bayer (Physics of Power Electronics)
25 - 26 Oct. 2022	Nuremberg, Germany	ECPE/Cluster-Tutorial	Thermal Engineering of Power Electronic Systems - Part II (thermal management and reliability)   Technical Chair: Prof. U. Scheuermann (Semikron)
2nd half 2022	Enschede, Netherlands	ECPE Tutorial	High-Performance Power Electronics Technical Chair: Dr. B. Vemuluri (Enschede University of Technology)
2nd half 2022	TBD	ECPE/Cluster Tutorial	Testing Automotive Power Modules acc. to the ECPE Guideline AGO 324 Technical Chair: Dr. M. Rittner (Robert Bosch)
2nd half 2022	TBD	ECPE Tutorial	Isolation Coordination Technical Chair: Dr. I. Colak (Maschinenfabrik Reinhausen)
Dec. 2022	TBD	ECPE Tutorial	Reliability of Power Electronic Systems Part I: Reliability Fundamentals Technical Chair: O. Witter (Fraunhofer IZM), Prof. F. Blaaberg (Aalborg University)
Q 1/2023	TBD	ECPE Tutorial	Reliability of Power Electronic Systems Part II: Robustness and System Reliability Technical Chair: Prof. F. Blaaberg (Aalborg University), O. Witter (Fraunhofer IZM)
Q 1/2023	Lyon, France	ECPE Tutorial	Passives in Power Electronics: Magnetic Component Design and Simulation Technical Chair: Prof. G. Huet (Nec Univ. of Ireland), Prof. Z. Ouyang (TU Denmark)

ECPE Member companies enjoy 3 free seats in each Workshop and discounts at Tutorials [www.ecpe.org](http://www.ecpe.org)  
\*short-term changes from face-to-face to online format are possible

The ECPE Calendar of Events is available via this link: <https://www.ecpe.org/events/workshops-tutorials/all/>

## 3 Future EPE ECCE Europe and Technically Sponsored Conferences

### 2022:

- **IPEC 2022 ECCE Asia, May 15 - 19, 2022, Himeji, Japan**  
<https://www.ipec2022.org/>
- **ECCE 2022, October 9 - 13, 2022, Detroit, Michigan, USA**  
<https://www.ieee-ecce.org/2022/>

### 2023:

- **EPE 2023 ECCE EUROPE, 4 - 8 September 2023, Aalborg, Denmark**  
<http://www.epe2023.com/>

# EPE'23 ECCE Europe Aalborg Denmark

September 4<sup>th</sup> to 8<sup>th</sup>  
Aalborg Congress and Culture center





## 4 Social Media

We are on Social Media! Let's get social!



## 5 Advertise in this newsletter?

Do you know how to reach thousands of engineers across the world?  
A simple and easy way is to publish in our monthly EPE Newsletter.

More information: [EPE ECCE Europe Advertisement Opportunities](#)

