EPE´22 ECCE EUROPE
September 5-9, 2022
Hannover, Germany

Newsletter EPE'22 ECCE Europe

Hannover, Germany,
September 5th - 9th 2022

Leibniz University Hannover © LUH/Daniel Vogl

Content

Find the schedule for the vendor sessions on page 5 and 6!

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Chairman's Message

Axel Mertens,
Conference Chairman

Dear Power Electronics Community,

As the organising team for EPE'22 ECCE Europe, we are really excited and looking forward to this conference. It will be the first major European scientific event in the field of power electronics and its applications to finally take place in person!

We have already received numerous registrations and we are sure that you will find interesting topics to make your stay worthwhile, regardless of whether you are from industry or academia. Conference focus topics range from the latest technological achievements in components and battery technology, which are pushing the boundaries of what is technically possible, to highly up-to-date application trends, such as the electrification of mobility on land and in the air, and the growing importance of hydrogen interfaced with electricity through power electronics. Most importantly, you will have the opportunity to talk directly to the authors and to meet and network with your peers at the conference and our social events. See you in Hannover next week!

Axel Mertens, General Chairman of the Conference

Conference Registration

The registration for the conference is still possible. Most importantly you can still update your registration if you would like to take part in additional **tutorials, technical visits and social events**.

The registration desk at the conference center is open:
Monday: 17:00 – 19:00
Tuesday: 07:30 – 17:30
Wednesday: 07:30 – 17:30
Thursday: 08:00 – 14:30

Register here

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Institute for Drive Systems and Power Electronics
pels IEEE POWER ELECTRONICS SOCIETY Powering a Sustainable Future
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Conference Programme

We are happy to announce the detailed technical programme of the conference. Follow the link to access and download the papers and prepare yourself for the conference! You can get an overview of the whole schedule under programme-at-a-glance. Also, the final programme booklet is now available online! Don't miss out the diverse program in the afternoons and evenings of the conference week:

PELS Young Professional Reception	Monday 5 September 2022 (18:00 – 21:30)	Lichthof at the Leibniz University of Hannover Welfengarten 1 30167 Hannover
Diverse Future Leadership	Tuesday 6 September 2022 (19:30 – 22:00)	Hannover Congress Centrum (HCC) Vendor Session Area Eilenriedehalle Theodor-Heuss-Platz 1-3, 30175 Hannover
Energy Access and Power Electronics – Technology Needs and Market Opportunities	Wednesday 7 September 2022 (15:40 – 16:40)	
European Training network in collaboration with Ukraine for electrical Transport	Thursday 8 September 2022 (15:10 – 16:10)	
IEEE International Future Energy Challenge - IFEC 2023	Thursday 8 September 2022 (16:30 – 17:40)	
Brauhaus-Event: Enjoy Hanoverian food and locally brewed beer **Still places left!**	Thursday 8 September 2022 (19:00 – ca. 21:00)	Meiers Lebenslust Osterstraße 64 30159 Hannover

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Vendor Sessions

The vendor sessions take place in the exhibition hall of the conference center. Join to hear interesting presentations from our exhibitors!

Tuesday:

11:40 – 11:55	**BLOCK Transformatoren Elektronik GmbH** Solutions for Power Electronics and Electrical Drives Systems - *Frank Puschmann*
12:00 – 12:15	**SMA Solar Technology AG** Your Power for a better world – working in the very center of energy transition @ SMA Solar Technology AG - *Prof. Dr.-Ing. Mike Meinhardt*
12:20 – 12:35	**Yokogawa Europe B.V.**
12:40 – 12:55	**MathWorks** From Desktop to real-time simulation with Simulink Real-Time - *Janosch Marquart*
13:00 – 13:15	**Volkswagen AG** Inverter development @VW GC– a consequent path towards in-house development of power electronics
13:20 – 13:35	**dSPACE GmbH**
13:40 – 13:55	**Lenze SE** Lenze – engineered to win - *Prof. Dr. Holger Borcherding /Urs Obernolte*
14:00 – 14:15	**CARIAD SE** Software development for power electronics @CARIAD – a new approach for the Volkswagen Group

Vendor Sessions

Wednesday:

11:20 - 11:35	**ZES Zimmer** Paving the way to type-examination certification with automated, precise and reliable energy measurement - *Patrick Fuchs*
11:40 – 11:55	**Plexim GmbH** Code Generation for Microcontrollers - *Jeroen Buitendijk*
12:00 – 12:15	**Hioki** Effect of Phase Error in Power Measurement - *Mr. Jaysheel Dave*
12:20 – 12:35	**ROHM Semiconductor** ROHM's New 4th Generation SiC MOSFETs
12:40 – 12:55	**Fraunhofer IWES** Modern methods for the validation of grid-connected power generation units in the multi-megawatt power range - *Torben Jersch*
13:00 – 13:15	**Nexperia** Nexperia SiC – Part of something bigger - *Katrin Glashauser Senior Director & Head of Product Group SiC diodes + FETs at Nexperia*
13:20 – 13:35	**Opal-RT** Overcoming challenges of HIL-Simulation of fast-switching Power Electronics - *Timo Rösch*
13:40 – 13:55	**Typhoon HIL**

Thursday:

12:00 – 12:15	**Teledyne GmbH** In-Depth Analysis of Power Conversion Circuits – A Comparison of Measuring Tools - *Dirk Weber*
12:20 – 12:35	**Baker-Hughes**
12:40 – 12:55	**Chesco Center for Hybrid Electric Systems Cottbus**
13:00 – 13:15	**Mitsubishi Electric Europe B.V.** You CAN build on it - *Eugen Wiesner*

Technology Focus Topic: NEW POWER ELECTRONIC DEVICES

Tuesday

Keynote Session:

Shaping the Transition from Si-based Power Devices to SiC MOSFETs and GaN HEMTs
Dr. Gerald DEBOY (Infineon Technologies Austria AG)

Invited Lectures:

Hybrid Silicon-SiC Inverter – Combining the Best of Both Worlds
Hans-Günter ECKEL (University of Rostock)

Robustness of SiC Trench MOSFETs
Christian FELGEMACHER (ROHM Semiconductor GmbH)

3D Predictive Fatigue Modeling of Power Modules
Ben SAMPLES (Wolfspeed)
Brandon PASSMORE (Wolfspeed)

Industrial Forum:

Squeezing out more – fine-tuning of devices and processes
Moderator: Nando KAMINSKI

Related Tutorials:

Introduction to Si IGBTs and Fast Diodes: Design Principles, Performance Requirements and Development Trends
Munaf T. A. RAHIMO (MTAL GmbH)

Wide Band-Gap Semiconductor Devices: State-of-the-Art and their Application Basics
Eckart HOENE (Fraunhofer IZM)
Nando KAMINSKI (University of Bremen)

Testing and Monitoring of Power Electronic Components for ReliabilityIntroduction to Si IGBTs and Fast Diodes: Design Principles, Performance Requirements and Development Trends
Francesco IANNUZZO (Aalborg University)
Amir Sajjad BAHMAN (Aalborg University)

Technology Focus Topic: BATTERIES IN POWER ELECTRONICS

Tuesday

Keynote Session:

Reinventing Batteries Through Nanotechnology
Prof. Yi CUI, Ph.D. (Stanford University)

Invited Lectures:

Impact of power electronics on battery operation
Dirk Uwe SAUER (RWTH Aachen University)

Impact of high frequency current pulses on battery ageing
Julia KOWAL (TU Berlin)

Trends in Power Electronics and Batteries for Electrified Vehicle Infrastructure
Torsten LEIFERT
Volkswagen Group Charging (Elli) Hardware Platform

Industrial Forum:

Batteries in Power Electronics
Moderator: Marco LISERRE

Related Tutorials:



Machine Learning Techniques for Reliable Battery State of Health Estimation
Daniel-Ioan STROE (Aalborg University)
Søren B. VILSEN (Aalborg University)
Xin SUI (Aalborg University)


Understanding Lithium-Ion Batteries as a partner of Power Electronics
Dirk-Uwe SAUER (RWTH Aachen University)
Alexander BLÖMEKE (RWTH Aachen University)

Related Technical Visit:

Volkswagen Battery System Factory

Fully booked

Technology Focus Topic: INTEGRATION AND ADVERSE EFFECTS OF WBG DEVICES

Wednesday

Keynote Session:

Advancing GaN Power ICs: Efficiency, Reliability & Autonomy
Dan Kinzer (NAVITAS SEMICONDUCTOR)

Invited Lectures:

Heterogeneous Integration of Power Conversion using Power Supply on Chip and Power Supply in Package
Cian Ó MATHÚNA (Tyndall)

Driving Innovations for Power Electronics with Integratable and Sustainable Magnetics
Matt WILKOWSKI (EnaChip)

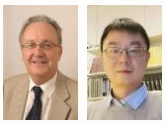
Impact of package technology on the switching behavior of high-voltage GaN FETs
Sebastian KLÖTZER (Nexperia)

Industrial Forum:

There is more to GaN than just the lateral HEMT single switch
Moderator: Nando KAMINSKI

Related Tutorials:

Switching Loss Measurements in Power Semiconductors
Sebastian SPRUNCK (Fraunhofer Institute)
Marco JUNG, Christian LOTTIS (Bonn-Rhein-Sieg University of Applied Science)



Passives in Power Electronics: Magnetic Components
William Gerard HURLEY (National University of Ireland)
Ziwei OUYANG (Technical University of Denmark)

Related Technical Visit:

Inductive components and EMC in power electronics: Excursion to BLOCK Transformatoren-Elektronik GmbH

Fully booked

Wednesday

Application Focus Topic: ELECTRIFICATION OF ON- AND OFF-ROAD VEHICLES

Keynote Session:

Electrification Strategy of Volkswagen Group
Alexander KRICK
(Volkswagen AG – Group Components)

Invited Lectures:

Modulation Strategy Impact of BEV Inverters on the Voltage Ripple and the High-Voltage Traction System Stability
Cornelius RETTNER (Group Components, Volkswagen AG)

Zero Emission Trucks & Bodies
Martin GLASER
(Daimler Truck)

Powertrain trends in electric trucks
Luciana C. AFONSO
(Infineon Technologies AG)

Industrial Forum:

Faster charging and new technologies – the Power Architecture of future electric cars and trucks
Moderator: Martin DOPPELBAUER

Related Technical Visit:

Komatsu

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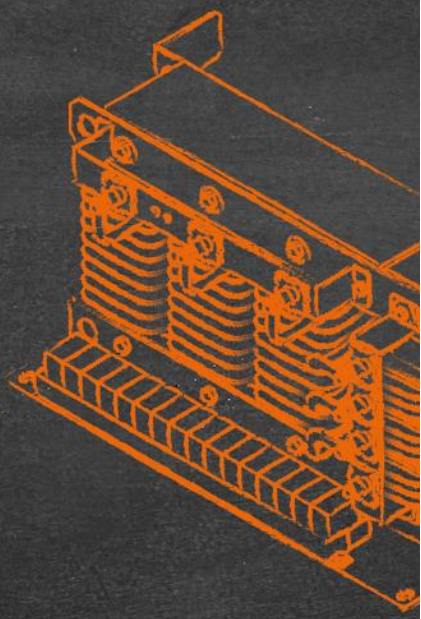

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Our own Advanced Research Department examines products, manufacturing processes and materials to reach new markets and prospects. We take care of the future. Always.

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Application Focus Topic: ELECTRIFICATION OF AIRCRAFT

Thursday

Keynote Session:

[Make it Fly – The Future of Sustainable Aviation]
Tanja NEULAND (AIRBUS OPERATIONS GmbH)

Invited Lectures:

[Aicraft Electrification – System-Level Potentials for Aviation Decarbonization]
Kathrin EBNER (Bauhaus Luftfahrt)

[About Power Electronics Challenges in Aviation]
Marco BOHLLAENDER
(Rolls-Royce Deutschland Ltd & Co KG)

[Development of electric motors for aircraft applications]
Simon WOLFSTÄDTER
(Oswald Elektromotoren GMBH)

Industrial Forum:

[Electrification of Aircraft]
Moderators: Regine MALLWITZ

Related Tutorials:

[Integrated Motor Drives Using SiC and GaN Wide Bandgap Devices]
Bulent SARLIOGLU (University of Wisconsin-Madison)

Related Technical Visit:

[Deutsches Zentrum für Luft- und Raumfahrt (DLR) Research Airport]

Fully booked

Thursday

Application Focus Topic: ELECTRICITY AND HYDROGEN BASED ENERGY SYSTEMS

Keynote Session:

The Instrumental but Extremely Challenging Role of Hydrogen Towards a Decarbonized Society
Dr. Stefan LINDER
(Alpiq AG)

Invited Lectures:

Integrating Offshore Wind & Hydrogen – An operator's View
Florian GREMME
(RWE)

Status quo and future prospects of power electronic solutions for electrolysis plants
Sven SCHUMANN
(Siemens Energy)

Modular power supply system for large scale water electrolyzers
Klaus RIGBERS
(SMA Solar Technology AG)

Industrial Forum:

Hydrogen based energy systems
Moderator: Stefan LINDER

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Laboratory Visit

As the hosts of this year's EPE, we would like to welcome you in our laboratories at the Institute for Drive Systems and Power Electronics (IAL) at the Leibniz University of Hannover during an additional technical visit.

ECPE Workshop

In parallel to the conference, the ECPE Workshop: High Power Electronics for a Successful Energy Transition towards 100% Renewable Energy takes place in Hanover.

GaNius-Meeting

The DFG Priority Program SPP 2312 GaNius organises a status meeting in the context of the conference. The presentations and discussions are open to "GaNius" members and EPE participants from the power electronics community.

Venue

For your journey, we can offer you **reduced ticket fares** if you travel by train (Deutsche Bahn) or by flight (Lufthansa Group), as well as for hotels near the venue.

Conference Childcare

We were able to pre-register the Leibniz University Family Service for the conference week. If you need support to enable the participation despite needed childcare (0-12 years, different languages), please contact Jens Friebe (friebe@ial.uni-hannover.de).

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