EPE'25

40 years of EPE conferences
1985 > 2025

cnrs GDR Groupement de recherche
SEEDS Systèmes d'énergie électrique dans leurs dimensions sociétales

Final Programme

26TH EUROPEAN CONFERENCE ON POWER ELECTRONICS AND APPLICATIONS
Paris, France | March 31st > April 4th, 2025

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Li Zou	GE Renewable Energy,

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Roboam Xavier, LAPLACE - University of Toulouse, France
Bocker Joachim, University of Paderborn, Germany
Van Mierlo Joeri, Vrije Universiteit Brussel, Belgium

Topic 2 SMART GRIDS AND RENEWABLE ENERGY
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Dworakowski Piotr, Supergrid Institute, France
Jung Marco, Hochschule Bonn-Rhein-Sieg, Germany
Zobaa Ahmed, Brunel University London

Topic 3 ENERGY STORAGE SYSTEMS
Robyns Benoît, L2EP Junia, France
Dai Jing, Supergrid Institute, France

Topic 4 DIGITALIZATION: THE POWERFUL FUSION OF AI AND IoT FOR SUSTAINABILITY
Allard Bruno, Université de Lyon, INSA Lyon, AMPERE, France
Bacha Seddik, University of Grenoble - G2ELAB, France

Topic 5 SUSTAINABLE AND AFFORDABLE POWER ELECTRONICS
Benbouzid Mohamed, IRDL Université Brest, France
Diallo Demba, GDR SEEDS, GEEPS, Université Paris-Saclay, France

Topic 6 ENERGY TRANSITION AND SOCIETAL CHANGE
Semail Betty, L2EP - Univ. Lille, France
Lefebvre Stéphane, Conservatoire National des Arts et Metiers, France

Topic 7 SEMICONDUCTOR DEVICES AND PACKAGING
Dieckerhoff Sibylle, Technical University of Berlin, Germany
Lutz Josef, Technische Universität Chemnitz, Germany

Topic 8 COMPONENTS LINKED TO POWER ELECTRONICS
Lomonova Elena, Eindhoven University of Technology, The Netherlands
Gaillard Arnaud, FEMTO-ST, France
Van Den Bossche Alex, Ghent University, Belgium

Topic 9 POWER CONVERTER TOPOLOGIES
Hiller Marc, Karlsruhe Institute of Technology (KIT) - Germany
Hegazy Omar, Vrije Universiteit Brussel, Belgium
Gaubert Jean-Paul, University of Poitiers, France

Topic 10 CONVERTER MODELLING, DESIGN AND LOW-LEVEL CONTROL
Siemaszko Daniel, Hitachi Energy, Switzerland
Musumeci Salvatore, Politecnico di Torino, Italy

Topic 11 MEASUREMENT, SUPERVISION AND CONTROL FOR POWER CONVERTERS
Monmasson Eric, University of Cergy-Pontoise, France

Topic 12 ELECTRICAL MACHINES AND DRIVE SYSTEMS
Bosga Sjoerd, ABB Corporate Research, Sweden

Topic 13 POWER SUPPLIES AND INDUSTRY-SPECIFIC POWER ELECTRONICS
Kyyrä Jorma, Aalto University, Finland
Martinez Wilmar, KU Leuven & Energyville, Belgium

EPE'25 List of topics

I – FOCUS TOPICS

TOPIC 1: ELECTROMOBILITY – THE POWERFUL FACTOR IN REDUCING CO2
1.a) Electric Road Vehicles (Light- and Heavy-Duty and their Drivetrain Components)
1.b) Electric Rail Vehicles (incl. Battery and Hydrogen Green Traction)
1.c) Electric Aircraft, Aerospace and Drones (incl. Drivetrain Components)
1.d) Electric Ships (Inland, Sea, Ferries)
1.e) Electric Off-Road and Non-Conventional Vehicles
1.f) Power-Electronic Devices and Integration for Electromobility

TOPIC 2: SMART GRIDS AND RENEWABLE ENERGY
2.a) Smart Grids, DC Networks and Components, Hybrid AC/DC Networks
2.b) Renewable and New Energy Sources
2.c) Power Electronics and Devices for Grid Applications
2.d) Railway Network Systems
2.e) Green Hydrogen and "X": Electrolyzers and Plants
2.f) Multi-Vector Power Grids: Electricity, Gas, Heat, etc.

TOPIC 3: ENERGY STORAGE SYSTEMS
3.a) Energy Storage and Management Systems
3.b) Battery Aging, Reliability, and Safety
3.c) Smart Charging, V2G, V2H, Charging Infrastructure and Grid Integration for Electromobility
3.d) Energy Storage for Grid Applications including Industrial Solutions
3.e) Fuel Cells and Stacks, Electrolyzer Cells and Stacks and Associated Power Electronics
3.f) Hybridization of Energy-Storage Units for Energy-Transition Applications

TOPIC 4: DIGITALIZATION: THE POWERFUL FUSION OF AI AND IoT FOR SUSTAINABILITY
4.a) Digital Twins and Real-Time Simulation
4.b) Use of AI in Power-Electronics Applications
4.c) Cyber-Physical Security
4.d) Data-Driven and Physics-Based Techniques
4.e) Machine Learning
4.f) Evolution of Power Electronics with the Introduction of AI

TOPIC 5: SUSTAINABLE AND AFFORDABLE POWER ELECTRONICS

5.a) Design of Sustainable and/or Frugal Power Converters
5.b) Dynamic Life Cycle Analysis and Assessment
5.c) Recycling: Challenges and Methodologies
5.d) Circular Economy
5.e) State of Health: Online Monitoring, Failure Diagnosis and Prognosis, Remaining Useful Life Prediction

TOPIC 6: ENERGY TRANSITION AND SOCIETAL CHANGE

6.a) Smart Electromobility and Sustainable Development (Government Policies and Incentives related to E-Mobility Adoption)
6.b) Energy Efficiency, Environmental Impact and Acceptability of Energy Sobriety
6.c) Policy Instruments and Institutional Regimes for the Complete Decarbonization of Energy Systems
6.d) Energy Transition Economy and Social Sustainability of the Energy Transition
6.e) New Paradigms in the Use of Electrical Energy (New Consumers)
6.f) Sustainable Power Electronics Engineering Education

II - POWER ELECTRONICS COMPONENTS AND CONVERTERS

TOPIC 7: SEMICONDUCTOR DEVICES AND PACKAGING

7.a) Active Devices and Components
7.b) Integration and Packaging
7.c) Cooling Circuits and Thermal Management
7.d) Reliability and Life-Cycle Assessment

TOPIC 8: COMPONENTS LINKED TO POWER ELECTRONICS

8.a) Magnetic Components – Inductors and Transformers
8.b) Dielectric and Interconnecting Components – Capacitors, Insulators, Cables, PCBs, Bus Bars
8.c) Electrochemical Components – Batteries
8.d) To- and from X Components – Fuel Cells/Stacks, Electrolyzer Cells/Stacks and Solar Cells
8.e) Shielding Components
8.f) Other Components – Resistors, Fuses, Contactors

TOPIC 9: POWER CONVERTER TOPOLOGIES

9.a) AC/DC and DC/AC Converter Topologies
9.b) AC/AC Converter Topologies
9.c) DC/DC Converter Topologies
9.d) AC-Grid Connected Converter Topologies

TOPIC 10: CONVERTER MODELLING, DESIGN AND LOW-LEVEL CONTROL

10.a) Converter Design and Optimisation
10.b) Converter Modelling and Low-level Control, including Gate-Drives
10.c) EMI/EMC in Power Electronics including HF Phenomena
10.d) Thermal Optimization and Reliability Considerations

TOPIC 11: MEASUREMENT, SUPERVISION AND CONTROL FOR POWER CONVERTERS

11.a) Modulation and Control Methods
11.b) Estimation, Identification and Optimisation Methods
11.c) Measurement Techniques, Sensors and State Observers
11.d) Algorithms and Methods for Condition Monitoring and Life-Time Prediction

III - POWER ELECTRONICS APPLICATIONS

TOPIC 12: ELECTRICAL MACHINES AND DRIVE SYSTEMS

12.a) Electrical Machines and Actuators
12.b) System Design and Optimization of Adjustable-Speed Drives
12.c) Control of Electric Drives
12.d) Algorithms and Methods for Condition Monitoring and Life-Time Prediction

TOPIC 13: POWER SUPPLIES AND INDUSTRY-SPECIFIC POWER ELECTRONICS

13.a) Power Supplies and UPS
13.b) Lighting: Solid-State Lighting and Electronic Ballasts
13.c) Contactless (Wireless) Power Supply
13.d) Industry-Specific Applications (Cement, Steel, Paper, Textile, Mining, etc.)
13.e) Applications in Physics Research and Related Areas

General information

The City of Paris

Paris, undoubtably one of the most beautiful cities of Europe, if not of the world…

Paris is the capital of France, located in the Ile-de-France region. It has more than 2,000,000 inhabitants, suburbs not included. In the entire region, the Métropôle du Grand Paris, there are over 10 million inhabitants. Since the 17th century, Paris has been one of the world's major centres of diplomacy, finance, commerce, culture, fashion and gastronomy. For its leading role in the arts and sciences, as well as its extensive and early system of street lighting (in the 19th century), it became known as the "City of Light".

Things to do in Paris

There are many tourist attractions in Paris, too many to name them all.
The most important ones are:

- The Eiffel Tower
- Les Invalides
- The Élysée, the official residence of the president of the French republic
- The Conciergerie
- The Panthéon

- The Arc de Triomphe
- Hôtel de Ville (City Hall of Paris)
- The Grande Arche in the business district of La Défense
- The Sacre-Coeur
- The Notre-Dame de Paris

Practical information

Conference Venue:

The EPE'25 conference will take place at La Villette Congress Center, which is a part of the Cité des sciences et de l'industrie. The conference venue is located about 5 km north-east of the city centre. The nearest railway stations are Gare du Nord and Paris Est, both at about 3 km from the Cité des sciences et de l'industrie. Public transportation in Paris is excellent, and there is a **métro station in front of the Cité des sciences et de l'industrie (Porte de la Villette, line 7 direction La Courneuve–8 mai 1945).** The conference venue offers facilities and services of international quality meeting standards. Wi-Fi access will be free for attendees, everywhere in the congress centre.

Address:

Cité des sciences et de l'industrie
30 Avenue Corentin Cariou
75019 Paris

Internet access:

Network: EPE2025
Password: epe@2025

Badges

All conference delegates are required to wear badges, which they will receive when they register. These badges will indicate the type of registration each delegate has.

On the top left corner of each badge, the following symbol indicates the **type of conference access**:

- L = Lunches included
- R = Welcome Reception included
- G = Gala Dinner included

On the top right corner, the following symbols indicate the **day(s) of access**:

- TUE 1
- WED 2
- THU 3
- None --> all the 3 days of the conference (Tue 1, Wed 2 & Thu 3)

Specific points to be aware of:

- **Badges** with a specific date on the top right corner give access to the conference and/or exhibition at the specified date(s) only
- **Visitor badges** give access to the exhibition only on the day specified on the top right corner of the badge. People wearing these badges are not allowed to attend the conference's sessions.
- **Guest badges** give access to the lunches (if L is indicated) and/or to the welcome reception (if R is indicated) on the specified date(s). When lunch time is over, people wearing these badge must leave the conference hall and are not allowed to attend the conference's sessions.

Example of the badges

Normal participant's badge

Specific day badge

Organiser's badge

Guest badge

Badge for Press delegates

Visitor's badge

Exhibitor's badge

Social events

Welcome reception - Tuesday

On Tuesday, April 1, the welcome reception takes place at La Villette Congress Center in the exhibition area, starting at 18:40. This is a great opportunity to meet all the participants of the conference

EPE'25 gala dinner: Wednesday 2 April 2025

Paris by night

For this year's gala evening, you'll have the opportunity to discover Paris by night on board the Bateaux Mouche Parisiens, for a musical cruise to the capital's most beautiful monuments !
During the cruise, while enjoying your dinner, you will be able to admire the world famous monuments in Paris: the Eiffel Tower, the restored Notre Dame cathedral, the Louvre museum.
This gala dinner is not to be missed as it is a great opportunity to enjoy the enchanting illuminations and admiring the monuments from a unique angle.

Practical information:

Where?	Port de la conférence, pont de l'Alma 75008 PARIS
How to go?	Metro line 9 – leave at Alma marceau
Boarding	**Boarding starts at 19:30**, please be there in time!

Two boats are reserved for the EPE'25 gala dinner:

- La patache – quay 4
- Le Zouave – quay 6

If you indicated vegetarian, porc free or vegan as meal preference, you will have to board La patache (quay 4)

Tutorials

Monday 31 March 2025

All tutorials on Monday will take place in La Villette Congress Center, Cité des sciences et de l'industrie, 30 avenue Corentin Cariou, 75019 Paris.

How to reach the congress center by metro:
line 7 direction La Courneuve–8 mai 1945 – leave at Porte de la Villette,

Morning sessions start at 9:30, the registration opens at 8:30
Afternoon sessions start at 14:00, the registration for afternoon tutorials opens at 13:00

Tutorial #4 – Morning *Location: Louis Armand West (level –3)*
EV Charging Technologies: Power Electronics and Quality
Zian Qin, Lu Wang (Delft University of Technology, The Netherlands)

Tutorial #5 – Morning *Location: Room 3 (level –3)*
DC Transformers for DC Distribution and Transmission
Binbin Li, Yingzong Jiao, Ning Wang (Harbin Institute of Technology, China)

Tutorial #8 – Afternoon *Location: Louis Armand West (level –3)*
Model Predictive Control of Power Converters and Drives
Marco Riveira, Patrick Wheeler (University of Nottingham, United Kingdom
Javier Munoz (Universidad da Talca, Chile)

Tutorial #10 – Morning *Location: Room 4 (level –3)*
Power Quality and Operability of Distributed Power Generation Systems: Advanced and Intelligent Control
Nick Papanikolaou (Democritus University of Thrace, Greece)
Yongheng Yang (Zhejiang University, China)
Chi-Seng Lam (University of Macau, China)

Tutorial #13 – Full day *Location: Louis Armand East (level –3)*
Characterising GaN HEMTs & SiC MOSFETs – Device Characteristics and Characterisation
Benedikt Kohlhepp (TU Berlin, Germany)
Marco Jung, Christian Lottis (Bonn-Rhein-Sieg University of Applied Sciences & Fraunhofer IEE, Germany)
Hauke Lutzen (University of Bremen / IALB, Germany)

Tutorial #14 – Afternoon *Location: Room 4 (level –3)*
Pushing Boundaries in Power Conversion for Renewable Energy Systems
Varaha Satya Bharath Kurukuru (Silicon Austria Lab GmbH, Austria)
Mohammed Ali Khan (University of Southern Denmark, Denmark)

Tutorial #15 – Full day *Location: Room 1 (level –3)*
Reliability and Qualification of Wide Bandgap Automotive Power Semiconductors
Layi Alatise, Jose Ortiz Gonzalez (University of Warwick, United Kingdom)

Tutorial #19 – Full day *Location: Room 2 (level –3)*

EMC simulation for Power Electronics

Jan Hansen (Silicon Austria Labs & Graz University of Technology, Austria)
Christian Riener (Silicon Austria Labs, Austria)
Patrick Gsoels (Silicon Austria Labs & Christian Doppler Laboratory for EMC Aware Robust Electronic Systems, Austria

Friday 4 April 2025

All tutorials on Monday will take place in the UTC Paris, 62 Boulevard de Sébastopol, 75003 Paris. Google maps

Public transport
The nearest metro stations (https://www.ratp.fr/en/itineraires)

- Metro line 3, station Arts et Métiers
- Metro line 4, station Étienne Marcel or Réaumur – Sébastopol
- Metro line 9, Strasbourg - Saint-Denis

Morning sessions start at 9:30, the registration opens at 8:30

Tutorial #6 – Morning

Multi-objective and highly precise optimization of high performance SiC and GaN multilevel power inverters with severe constraints

Bernardo Cougo (IRT Saint-Exupery, France)

Tutorial #9 – Morning

Industrial medium-voltage converters and drives: from components to systems and applications

Tobias Geyer (ABB Motion System Drives, Switzerland)

Tuesday 1 April 2025

Opening session and keynote

09:00 **Opening session** ***Location: Gaston Berger Amphitheatre***
Chair(s): DOPPELBAUER Martin, Karlsruhe Institute of Technology (KIT), Germany
SECHILARIU Manuela, University of Technology of Compiegne, France

09:10 **Keynote 1 - CIGRE and the Energy transition** ***Location: Gaston Berger Amphitheatre***
LOKEN Rannveig - CIGRE - France

Chair(s): SECHILARIU Manuela, University of Technology of Compiegne, France
DOPPELBAUER Martin, Karlsruhe Institute of Technology (KIT), Germany

CIGRE is a global not-for-profit community fostering technically neutral power system expertise. Over 100 years of history, CIGRE has grown its scope of work based on the needs of power systems professionals across the world. This has led to CIGRE being the go-to organisation for knowledge sharing and publications for the worldwide, end to end, electric power system. Today, the challenge of accelerated energy transition with its key drivers of digitalisation, decentralisation and decarbonisation, is rapidly increasing the role of electric power systems in the daily life of societies, businesses and regulators worldwide.
New and existing organisations across the globe are seeking out expertise around the interactions between Energy transition technologies and the electric power system. CIGRE is helping these organisations find the knowledge they need to optimise those processes across all voltage levels.
Our work is ongoing in this crucial space as part of our commitment to help integrate renewables and energy consumer trends to deliver reliable, sustainable electricity for all.
The energy transition traverses many areas of CIGRE's sixteen Study Committees and their domains of work. The relationship is bi-directional with the inputs from these key topics as well as outputs from the Study Committees in the form of working groups, publications and papers.

09:40 **Keynote 2 - Electrical system trends for future aerospace platforms**
NIERLICH Florent - Safran Electrical and Power - France ***Location: Gaston Berger Amphitheatre***
Chair(s): ROBOAM Xavier, LAPLACE - University of Toulouse, France

Safran keynote will tackle propulsive and non-propulsive electrical system trend for future aircraft. A comprehensive Safran R&T road map will be given, focusing on propulsion electrical motors and associated motor controllers using SIC inverter. Certification aspects of propulsion electrical motor will be introduced. Non-propulsive electrical generation, distribution and conversion systems will also be depicted.

Lecture sessions (morning)

10:30 **LS1a - Topic 9 - AC/DC and DC/AC Converter Topologies (I)** ***Location: Gaston Berger Amphitheatre***
Chair(s): HEGAZY Omar, Vrije Universiteit Brussel, Belgium
EL BAGHDADI Mohamed, Vrije Universiteit Brussel, Belgium

10:30 **5 - Advanced DC Voltage Control Technique for Converters: Achieving Superior Speed and Stability with Model Predictive Control**
ZEB Farrukh, POURESMAEIL Mobina, POURESMAEIL Edris, KYYRA Jorma - Aalto University - Finland

10:50 **25 - Multiple generatorís stator windings as voltage sources for a multilevel converter**
TAYAR Tal, SHMILOVITZ Doron - Tel-Aviv University - Israel

11:10 **174 - An AC fault ride-through control of modular multilevel converters for HVDC systems**
OUOBA Sidlawendé, MOREL Florent - Supergrid Institute - France

10:30 **LS1b - Topic 1 - Electromobility (I)** ***Location: Louis Armand East***

Chair(s): VAN MIERLO Joeri, Vrije Universiteit Brussel, Belgium
ROBOAM Xavier, LAPLACE - University of Toulouse, France

10:30 **52 - Analysis of Energy Storage Solutions for Ship Maneuvering in Ports**
LAFOZ Marcos, NAVARRO Gustavo, BLANCO Marcos, NAJERA Jorge, RAUSELL Eduardo, MUNILLA Javier - Centro de Inv. Energéticas, Medioambientales Y Tecnológicas - Spain

10:50 **131 - Impedance measurement methods for assessing the performance of Fuel Cells and Li batteries in on-board applications**
MILLET Jules, DEPERNET Daniel - FEMTO-ST - France
SARI Ali - Laboratoire AMPERE - CNRS – France
GUSTIN Frédéric - FEMTO-ST - France
HELBLING Hugo - Laboratoire AMPERE - CNRS - France

11:10 **140 - Analysis of Aged Power Modules considering the Loss Calculation of a Heavy-Duty Fuel Cell Truck**
GÜRLEK Yavuz - Daimler Truck AG - Germany
HEIMLER Patrick, ABUOGO James, GESELL Sören - Technische Universität Chemnitz - Germany,
ACKERL Martin, DOLD Roland - Daimler Truck AG - Germany
BASLER Thomas - Technische Universität Chemnitz - Germany

10:30 **LS1c - Topic 2 - Smart grids and renewable energy (I)** ***Location: Louis Armand West***

Chair(s): DWORAKOWSKI Piotr, Supergrid Institute, France
BENCHAIB Abdelkrim, Supergrid Institute, France

10:30 **146 - High-Power 4500 V 5000 A Press Pack IGBTs for HVDC Solid-State Circuit Breaker Application**
SASMAL Koushik, SCHMIDT Josef - Infineon Technologies Bipolar GmbH&CO.KG - Germany
FELSL Hans-Peter, HENNIG Martin - Infineon Technologies Germany - Germany
DROLDNER Markus, DRILLING Christof, PRZYBILLA Jens - Infineon Technologies Bipolar GmbH&CO.KG - Germany

10:50 **41 - New Multilevel Converter System for Electric Arc Furnace Power Supply**
BASIC Duro, BAVIERE Cyrille, CLAVIER Philippe, GARMIER Pieee-Louis, LAPASSAT Nicolas, SIHLER Christof, TERRIEN Franck - General Electric Power Conversion - France

11:10 **322 - Containerized AC/DC Converter Station as a Building Block for Medium-Voltage DC Grids**
BRÜCKNER Thomas, SHARAF ADDIN Ali, MARQUARDT Sven, CÖMERT Arif, ZIMMERT Florian - Universität der Bundeswehr München - Germany

10:30 **LS1d - Topic 7 - Active devices** ***Location: Room 1***

Chair(s): SIEMIENIEC Ralf, Infineon Technologies Austria AG, Austria
LUTZ Josef, Technische Universität Chemnitz, Germany

10:30 **154 - 400 V SiC MOSFET empowering three-level topologies for highly efficient applications from motor-drives to AI**
SIEMIENIEC Ralf, WATTENBERG Martin, KOCAAGA Ertugrul, JAGANNATH Sriram, KAHRIMANOVIC Elvir, BHANDARI Jyotshna, SHIM Heejae, PIGNATELLI Alberto - Infineon Technologies Austria AG - Austria

10:50 **323 - Investigation on the Short-Circuit Behavior of HV-SiC-MOSFETs in Quasi Series Connection**
GESELE Felix - Universität der Bundeswehr München - Germany
BÄUMLER Christian, BASLER Thomas - Technische Universität Chemnitz - Germany
BRÜCKNER Thomas - Universität der Bundeswehr München - Germany

11:10 **53 - Silicon IGBT modules with voltage slopes higher than SiC modules**
ZOELS Thomas, MARI Jorge CARASTRO Fabio - Semikron Danfoss - Germany

10:30 **LS1e - Topic 8 - Magnetic Components ñ Inductors and Transformers (I)** ***Location: Room 2***
Chair(s): VAN DEN BOSSCHE Alex, Ghent University, Belgium

10:30 **56 - Design Optimization of Integrated CM/DM Inductors for Power Drive Input Filter**
DRUMMOND Rodrigo, COUGO Bernardo, TRAN Duc-Hoan, ALMEIDA Gregory, SERPAUD SÈbastien - IRT Saint Exupery - France
DOS SANTOS Victor - Safran Tech - France
M F MORAIS Lenin - Federal University of Minas Gerais - Brazil

10:50 **170 - Current Transformer-Based Power Supply for Pulse Encoders on Motor Power Lines in Adjustable Speed Drive Systems**
NAKAGAKI Takumi, YAMAGUCHI Masamichi, WATANABE Hiroki, NAKATA Yuki, ITOH Jun-ichi - Nagaoka University of Technology - Japan
KIRIBUCHI Takeshi - Omron Corporation - Japan
MORIMOTO Shigeo - Osaka Metropolitan University - Japan

11:10 **182 - Investigating the Impact of Alignment Angle Between Copper Turns and Magnetic Core on Magnetic Field Coupling in PCB Integrated Inductors**
ALKURDI Mohamed – Université Paris-Saclay - France
PETIT Mickael - Conservatoire National des Arts et Metiers - France
BOUARROUDJ Mounira - Université Paris-Saclay - France
MARTIN Christian - Université Lyon 1 / AMPERE - France

Dialogue sessions

11:40 **DS1a - Topic 1: Electric Road Vehicles** ***Location: Exhibition area – level -1***
Chair(s): ROBOAM Xavier, LAPLACE - University of Toulouse, France

138 - Development of Integrated Functions in GaN **Panel A1**
MARCELINO Yovan Andyka, ESCOFFIER Rene - CEA - Commissariat à l'Energie Atomique (Grenoble) - France
ALLARD Bruno - INSA de Lyon - France

142 - Energetic properties of the fast charging and driving of an electric vehicle - A Ragone analysis **Panel A2**
RUFER Alfred - Ecole Polytechnique Federale de Lausanne - Switzerland

180 - TRACKSIM: A Multi-Level Simulation Framework for Near-Life Battery Data Generation **Panel A3**
WEINREICH Nicolai, SUI Xin, TEODORESCU Remus, LARSEN Kim - Aalborg University - Denmark

189 - Cost and Efficiency Optimization for a Reconfigurable E-Bike Battery System **Panel A4**
ESTALLER Julian, GRUPP Wolfgang, SOROKINA Nina, WIEDENMANN Andreas, HÖGERL Tobias, BUBERGER Johannes, POHLMANN Sebastian, KUDER Manuel, WEYH Thomas - Universität der Bundeswehr München - Germany

212 - New design methodology for the calculation of the feed sections into which the acceleration track of a hyperloop vehicle is divided **Panel B1**
NAVARRO Gustavo, BLANCO Marcos, NAJERA Jorge, RAUSELL Eduardo, URDA Valentin, LAFOZ Marcos - CIEMAT - Spain

245 - Comparative Evaluation of Two-Level Inverters and a Disruptive Multi-Level Solution: Impact of Switch Technology **Panel B2**
JARDOT Rémi - GEEPS - France
LAHLOU Anas - SAFT - France
KREBS Guillaume - GEEPS - France
ROY Francis - Stellantis - France
MARCHAND Claude - GEEPS - France

253 - Control of Battery-Integrated MMCs with NLM using Distributed Control Architecture **Panel B3**
BALACHANDRAN Arvind, JONSSON Tomas, ERIKSSON Lars - Linköping University - Sweden

312 - A Feedback-Enhanced Approach to Modeling Semiconductor Ageing in Electric Vehicle Inverters **Panel B4**
RODE Sebastian - Technische Universität Dresden - Germany
LIANG Hulin - Technical University of Berlin - Germany
BERNET Steffen - Technische Universität Dresden - Germany

335 - Power Hardware and Driver-in-the-Loop for Battery Testing applied to Electrified Vehicles **Panel C1**
TOURNEZ Florian, LHOMME Walter, BOUSCAYROL Alain, GERMAN Ronan, LEMAIRE-SEMAIL Betty - Univ. Lille, Arts et Metiers, Centrale Lille, Junia, ULR 2697-L2EP - France
LIEVRE Aurélien, SANCHEZ-TORRES Mariam - Valeo Equipements Electriques Moteur - France

11:40 **DS1b - Topic 1: Electric Aircraft, Aerospace and Drones** ***Location: Exhibition area – level -1***
Chair(s): ROBOAM Xavier, LAPLACE - University of Toulouse, France

123 - Transition Control from Dual to Single Motor to Prevent Speed Reduction during an Open-Circuit Fault in a DC Power System **Panel C2**
OBITSU Ayumi, KONDO Keiichiro - Waseda University - Japan
YOSHIMOTO Kantaro - Tokyo Denki University - Japan
YAZAKI Satoshi, KANMOTO Osamu, SUGAWARA Hirotaka, SHIMOTSU Takuya - IHI - Japan

136 - Analysis, Modulation and Control of a Ground Power Unit for Aircraft Applications **Panel C3**
DUAN Beichen, RIVERA Marco, WHEELER Patrick - University of Nottingham - United Kingdom
MUNOZ Javier - Chile - Chile

222 - Comprehensive Analysis of High Bandwidth Converters Based on SiC Technology for Automotive and Aircraft Applications **Panel C4**
DA COSTA Israel, COGO Bernardo - IRT Saint Exupery - France
MORAIS Lenin - Federal University of Minas Gerais - Brazil

11:40 **DS1c - Topic 1: Electric Ships** ***Location: Exhibition area – level -1***
Chair(s): ROBOAM Xavier, LAPLACE - University of Toulouse, France

232 - Battery Swapping implementation on electric sea taxes; the case of Ionian islands **Panel D1**
KOTARELA Faidra - Democritus University of Thrace - Greece
KYRITSIS Anastasios - Ionian University - Greece
RIGOGIANNIS Nick, PAPANIKOLAOU Nick - Democritus University of Thrace - Greece

11:40 **DS1d - Topic 1: Electric Off-Road and Non-Conventional Vehicles** ***Location: Exhibition area – level -1***
Chair(s): ROBOAM Xavier, LAPLACE - University of Toulouse, France

47 - Fuel Cell Design Considerations and Component Optimisation for Isolated Electric Energy Systems with Periodic Load Patterns **Panel D2**
HOFF Bjarte - UIT The Arctic University of Norway - Norway

11:40 **DS1e - Topic 1: Power-Electronic Devices and Integration for Electromobility**
Chair(s): ROBOAM Xavier, LAPLACE - University of Toulouse, France ***Location: Exhibition area – level -1***

156 - Modeling of the steady-state ac current fluctuation in two-stage electric car fast chargers based on solid-state transformers **Panel D3**
ELIZONDO-MARTINEZ David, BARRIOS Ernesto L., SANCHIS Pablo - Public University of Navarre - Spain

11:40 **DS1f - Topic 2: Smart Grids, DC Networks and Components, Hybrid AC/DC Networks**
Chair(s): DWORAKOWSKI Piotr, Supergrid Institute, France ***Location: Exhibition area – level -1***

77 - SiC Solid-state Power Contactors SSPC`s in comparison to E-Fuses and Solid-state Circuit breakers **Panel F1**
HOHMANN Maik - Temes Engineering GmbH - Germany

93 - Handling Ground Faults in Meshed MVDC Grids by Fast Redistribution of Power Flow **Panel F2**
NGUYEN Tuan Minh, MARQUÉS-LOPEZ José-Luis, HILLERMEIER Claus - Universität der Bundeswehr München - Germany

120 - A Multi-Agent Reinforcement Learning-based Secondary Control for Voltage Restoration and Current Sharing in DC Microgrids **Panel F3**
SHAHNOOSHI Shima, EBRAHIMI Javad, BAKHSHAI Alireza - Queen's University - Canada

152 - Protection design for pole-to-pole faults in DC networks **Panel F4**
WITT Fabian Benedikt, HOFFMANN Melanie, KURRAT Michael - Technische Universität Braunschweig - Germany

167 - Enhanced Current-Limiting Strategy of Grid-Forming Converter Considering Grid-forming Capability **Panel G1**
MAENG Junyeol, CUI Shenghui - Seoul National University - Korea (Republic of)

188 - An overview of grid code possible requirements for an interoperability MVAC/MVDC systems ñ Focus on fault detection for a future PV power plant **Panel G2**
LIM Nicolas, NGUYEN Van-Sang - CEA-INES - France
BACHA Seddik - G2ELAB CNRS/G-INP/UGA - France
TRAN Quoc Tuan - CEA-INES - France

194 - Comprehensive model of a synchronous generator for single-node studies **Panel G3**
BAUTISTA Guillermo, GARCÕA Miguel, MARCOS Javier, DE LA PARRA Íñigo, MARROYO Luis - Public University of Navarre - Spain

240 - Modular Clamping Circuit for High Speed Solid State Circuit Breakers **Panel G4**
KAPAUN Florian, DAHMEN Christopher, STEINER Gerhard, WITTI Michael - Airbus Defence & Space GmbH - Germany

241 - Ultra-Fast Bidirectional SiC Solid-State Circuit Breaker for 800V / 400A Aircraft Applications **Panel H1**
DAHMEN Christopher, KAPAUN Florian, STEINER Gerhard - Airbus Defence & Space GmbH - Germany
RAUH Hubert, BAYER Florian - Fraunhofer Institute for Integrated Systems and Device Technology IISB - Germany

268 - Three port converter control with automatic mode transition for interconnected and standalone DC microgrids **Panel H2**
VASDARIS Athanasios, SALAGIANNIS Georgios, TATAKIS Emmanuel - University of Patras - Greece

273 - Enhancing Optimal Power Flow Feasibility: A Novel Comparative Study of Approximation Techniques **Panel H3**
ALIBHAI Sarah, CIOBANU Maxim - University of Lethbridge - Canada
WIEJAK Wiktor - University of Exeter - United Kingdom
PETERS David, FATHI HAFSHEJANI Sajad, GAUR Daya, BENKOCZI Robert - University of Lethbridge - Canada

316 - Development of an Integrated Transmission-Distribution Simulation Model for Coordinated TSO-DSO Interface Management **Panel H4**
BOUHADDA Mohamed Nadir, BELHAOUANE Mohamed Moez, DAVIGNY Arnaud - L2EP Junia - France
QASIMI Abdelhadi - GEREDIS DEUX-SÈVRES - France
BARBESANT Vincent - Réseau de Transport d'Électricité (RTE) - France
HAYE Sebastien - GEREDIS DEUX-SÈVRES - France
ROBYNS Benoit - L2EP Junia - France

317 - Distribution Network Reconfiguration Including OLTC Limits and Variable Shunt Reactors **Panel L1**
GRAINE Aghyles, GAUBERT Jean-Paul - University of Poitiers - France
LARRAILLET Didier – SRD - France

11:40 **DS1g - Topic 2: Renewable and New Energy Sources** ***Location: Exhibition area – level -1***
Chair(s): DWORAKOWSKI Piotr, Supergrid Institute, France

328 - Integration of Small Hydropower Plants Integration to Microgrids: Overview, Control and Modelling Challenges **Panel K1**
BERAL Gérard, EL MOUBAREK BOUZID Allal - Laboratoire d'Analyse et d'Architecture des Systèmes du CNRS - France
TSAFACK Pierre - University of Buea, Buea, Cameroon – Cameroon
TSUANYO David - National Center for Development of Technologies-Ministry of Scientific Research - Cameroon
ESTIBALS Bruno, ALONSO Corinne - Laboratoire d'Analyse et d'Architecture des Systèmes du CNRS - France

291 - Energy-Based Model Representation for Design and Optimization of Piezoelectric Energy Harvesting Systems **Panel L2**
TORRES GUZMAN Diana Angelica, LEMAIRE-SEMAIL Betty - L2EP - Univ. Lille - France

11:40 **DS1h - Topic 2: Power Electronics and Devices for Grid Applications**
Chair(s): DWORAKOWSKI Piotr, Supergrid Institute, France ***Location: Exhibition area – level -1***

250 - A Current Source Buck ñ Boost Inverter for Active and Reactive Power Injection to the Low Voltage Grid **Panel L3**
TSOUNIS Christoforos, TATAKIS Emmanuel, VOVOS Panagis - University of Patras - Greece

11:40 DS1j - Topic 2: Green Hydrogen and ìXî: Electrolyzers and Plants
Chair(s): DWORAKOWSKI Piotr, Supergrid Institute, France *Location: Exhibition area – level -1*

78 - Impact of Operating Load Limits on the Control Strategy and Performance of Alkaline Electrolyzer Arrays in Renewable Energy Systems **Panel L4**
WANG Xiongzheng, MENG Xin, NIE Gongzhe, YANG Haoran - Sichuan University - China

11:40 DS1k - Topic 7: Active Devices and Components *Location: Exhibition area – level -2*
Chair(s): LUTZ Josef, Technische Universität Chemnitz, Germany

258 - Measurement Techniques of Threshold Voltage Shift and Recovery in GaN e-HEMTs **Panel Q4**
ETOZ Burhan, DEB Arkadeep, ORTIZ-GONZALEZ Jose, ALATISE Layi - University of Warwick - United Kingdom

259 - Modelling of SiC and GaN Transistors Based on Pulsed S-Parameter Measurements **Panel S1**
HERGT Martin - Siemens AG - Germany
HAMMER Bernhard - ABB AG - Germany
SACK Martin - Karlsruhe Institute of Technology (KIT) - Germany
MAYER Lukas W. - Siemens AG - Austria
NIELEBOCK Sebastian - Siemens AG - Germany
HILLER Marc - Karlsruhe Institute of Technology (KIT) - Germany

34 - Test Setup for Measuring the Impact of Gate Stress on a GaN-HEMT's Output Characteristic **Panel P1**
BREIDENSTEIN Daniel, ROESEL Sophia - Friedrich-Alexander-University Erlangen-Nuremberg - Germany
KOHLHEPP Benedikt - Technical University of Berlin - Germany
DUERBAUM Thomas - Friedrich-Alexander-University Erlangen-Nuremberg - Germany

40 - Characterization of an Integrated GaN Driver for Power Switching Applications **Panel P2**
KOHLHEPP Benedikt - Technical University of Berlin - Germany
HALHOUL Houssam - Ferdinand-Braun-Institut - Germany
WIECZOREK Nick, GENG Xiaomeng - Technical University of Berlin - Germany
SCHELLHASE Lars, HILT Oliver - Ferdinand-Braun-Institut - Germany
DIECKERHOFF Sibylle - Technical University of Berlin - Germany

122 - Losses Evaluation on Parallel Diodes Using a Double Pulse Test Circuit **Panel P3**
HENN Gustavo - UNILAB - Universidade da Integracao Internacional da Lusofonia Afro-Brasileira - Brazil
RAYMOND-LARUINA Frédéric - EDF R&D - France
DE OLIVEIRA FILHO Herminio - UNILAB - Universidade da Integracao Internacional da Lusofonia Afro-Brasileira - Brazil
PHULPIN Tanguy - GEEPS - France

126 - Parasitic Capacitances Effect on Transient Current Sharing in Parallel Connection of GaN FETs **Panel P4**
MUSUMECI Salvatore, BARBA Vincenzo, PASTORELLI Michele - Politecnico di Torino - Italy
PALMA Marco - Efficient Power Conversion - Italy

169 - Using SiC JBS diode as voltage clamping in SSCB application: performances and limitations **Panel Q1**
TOURNIER Dominique - Mersen - France
BROSSELARD Pierre, BEVILACQUA Pascal - Université de Lyon, INSA Lyon, AMPERE - France
DEPALMA Jean-François - Mersen - France

176 - Maximize advantages in hard and soft-switching applications with optimal use of a modern SiC MOSFET with low output capacitance **Panel Q2**
YEON Jaeeul, AKBAR Syeda Qurat ul ain - Infineon Technologies Austria AG - Austria
WU Qibin - Infineon Technologies Center of Competence (Shanghai) CO. Ltd. - China

183 - High temperature characterizations of a monolithic 900 V GaN power device for current source inverter applications **Panel Q3**
NGUYEN Van-Sang - CEA-INES - France
ESCOFFIER Rene - CEA - Commissariat à l'Energie Atomique (Grenoble) - France
CATELLANI Stephane, BIER Anthony - CEA-INES - France

261 - SiC MOSFET turn-off overvoltage measurement **Panel R1**
GALDEANO Mikel, BARRIOS Ernesto Luis, ELIZONDO David, SANCHIS Pablo - Public University of Navarre - Spain

309 - Static vs. Dynamic Characterization of p-GaN HEMTs: Discrepancies in Electrical Characteristics and their Dependence on Bias History **Panel R2**
ROCHE Ludovic, TRÉMOUILLES David - Laboratoire d'Analyse et d'Architecture des Systèmes du CNRS - France
MARCAULT Emmanuel - CEA Occitanie - France
ALONSO Corinne - Laboratoire d'Analyse et d'Architecture des Systèmes du CNRS - France

11:40 **DS1l - Topic 7: Integration and Packaging** ***Location: Exhibition area – level -2***
Chair(s): LUTZ Josef, Technische Universität Chemnitz, Germany

109 - A method for detecting the start of delamination at the corners of solder joint in a 3D PCB Integration Assembly of MOSFET SiC **Panel R3**
BOUZERD Souhila, DUPONT Laurent - SATIE Laboratory - France

190 - Effects of Removing Bottom-side Copper in Baseplate-less Power Modules **Panel R4**
KRISTENSEN Nikolaj, IVERSEN DEICHGRAEBER Jakob, BRACKOVIC Kerim, BECZKOWSKI Szymon, MUNK-NIELSEN Stig, BJØRN JØRGENSEN Asger - Aalborg University - Denmark

11:40 **DS1m - Topic 7: Cooling Circuits and Thermal Management** ***Location: Exhibition area – level -2***
Chair(s): LUTZ Josef, Technische Universität Chemnitz, Germany

121 - Improving thermal management of SiC MOSFET through cold plates and/or power modules optimization **Panel S2**
CHERIEF Wahid - Mersen - France
CASADO RAMONEDA Aitor - Safran Tech - France
GIOLAT Jérôme - Mersen - France
AVENAS Yvan - University of Grenoble - G2ELAB - France
KHAZAKA Rabih - Safran Tech - France
DEBEZE Mickael - Mersen - France

11:40 **DS1n - Topic 7: Reliability and Life-Cycle Assessment** ***Location: Exhibition area – level -2***
Chair(s): LUTZ Josef, Technische Universität Chemnitz, Germany

251 - A Real-time Condition Monitoring Technique for SiC MOSFET Gate Oxide Degradation Based on Turn-Off Delay Time Interval **Panel S3**
JAZAYERI Seyed Mojtaba, NAGHIBI Javad - Queen Mary University of London - United Kingdom
MOHSENZADE Sadegh - K.N. Toosi University of Technology - Iran
MEHRAN Kamyar - Queen Mary University of London - United Kingdom

11:40 **DS1o - Topic 8: Magnetic Components ñ Inductors and Transformers** ***Location: Exhibition area – level -2***
Chair(s): DOPPELBAUER Martin, Karlsruhe Institute of Technology (KIT), Germany

12 - Reconfigurable single-layer air coil inductor with bistable compliant windings **Panel S4**
SELIGER Norbert, LEIRICH Nico - Technical University of Applied Sciences Rosenheim - Germany

18 - Integrating PV Systems with Non-Standard Grid Voltages: The Need for Low-Induction Transformers **Panel T1**
BADRI José Antonio, RIBA Jordi-Roger, GARCIA Antoni - Universitat Politécnica de Catalunya - Spain
TRUJILLO Santi, MARZÀBAL Albert - Salicru - Spain

95 - Mission-Profile Based Reliability Framework for Medium-Frequency Transformers **Panel T2**
MELIGY Ahmed, COELHO-MEDEIROS Rafael COLAK Ilknur - Schneider Electric - France
SEDDIK Bacha - Univ Grenoble Alpes - G2ELAB - France

159 - Development of High-Frequency Molded Transformer for SST with Simultaneous Insulation and Forced Air-Cooling capabilities **Panel T3**
YONETOMI Ritsuki, KUSAKA Keisuke - Nagaoka University of Technology - Japan

162 - Overview, Comparison and Extension of Concepts for Current-Controlled, Adjustable Inductances **Panel T4**
SCHIERLE Guido - Helmut Schmidt University - Germany
PFEIFFER Jonas - Sumida Components & Modules GmbH - Germany
HOFFMANN Klaus F. - Helmut Schmidt University - Germany

173 - 2D FEM Modeling Comparison of Multi-Winding Magnetic Couplers for Power Electronics Applications **Panel U1**
CASSIN Floran, MERCIER Adrien, LABOURE Eric - GDR SEEDS, GEEPS, Université Paris-Saclay - France
DALBAVIE Jeanne-Marie, GOMEZ Patrice - IKOS LAB - France

256 - Innovative Flyback Transformer Design : Enhancing Efficiency and Reducing Harmonic Current **Panel U2**
MO Wai Keung, PAASCH Kasper M, EBEL Thomas - The University of Southern Denmark - Denmark

11:40 **DS1p - Topic 8:Dielectric and Interconnecting Components ñ Capacitors, Insulators, Cables, PCBs, Bus Bars**
Location: Exhibition area – level -2

Chair(s):

8 - New DC-Link bus bar and capacitors integration for 800V inverter **Panel U3**
BERNARDINO Kévin, FOUET Thomas - Mersen - France

333 - A high voltage, high current transmission-line-pulse testbench for the reliability investigation of deep depletion, metal-insulator-semiconductor trench capacitors **Panel U4**
GILLOT Camille - Laboratoire AMPERE - CNRS - France
ESCOFFIER René - CEA - Commissariat à l'Energie Atomique (Grenoble) - France
ALLARD Bruno - Laboratoire AMPERE - CNRS - France
BUFFLE Larry, VOIRON Frédéric - Murata Integrated Passive Solutions - France

Vendor sessions

12:00 – 12:15 Mersen

Solutions for Power Management
Jérome Michoux - Business Development & Marketing Manager

The megatrends around the new era of electrification are pushing back the boundaries of power distribution, and this fast-changing world is creating new constraints for passive components. Let's go through them by analysing different applications and see how MERSEN is able to support customers in meeting these new technical and industrial requirements and how the collaboration with partners helps.

13:50 – 14:05 Typhoon HIL

Typhoon HIL Fully-Integrated Toolchain: Streamlining the Development Cycle from Offline to HIL Simulation
Dr. Caio Osório

Typhoon HIL Fully-Integrated Toolchain - Learn how Typhoon HIL solutions simplify the adoption of model-based engineering, enabling you to accelerate development, reduce costs, and enhance the reliability of your projects. With Typhoon HIL's fully integrated toolchain, engineers can design, test, and optimize controllers while seamlessly transitioning from offline simulations with TyphoonSim to high-fidelity HIL testing using flagship real-time simulators—enabling simulation, validation, and continuous testing from the very beginning.

14:35 – 14:50 Hitachi Energy

Advanced Semiconductor Solutions for High-Demand Applications: Progress and Future Trends by Hitachi energy
Virgiliu Botan, Global Product Manager

Keynote (afternoon)

15:00 **Keynote 3 - The role of HVDC in reducing carbon emissions** ***Location: Gaston Berger Amphitheatre***
DAVIDSON Colin - GE Grid Solutions - United Kingdom

Chair(s): DWORAKOWSKI Piotr, Supergrid Institute, France

High-Voltage Direct Current (HVDC) is the most high-power application of power electronics. HVDC has been commercially available as a niche technology in power grids for 70 years, first using Line-Commutated Converters and, in the last 25 years, using Voltage-Sourced Converters. However, in the last five years the growth of HVDC has been spectacular, much of it associated with the large-scale integration of renewable energy sources. HVDC has been used for decades to connect remote hydro generating stations to load centres. More recently, HVDC allows offshore wind farms to be built far from shore, where the wind is stronger and steadier, beyond the maximum distance over which the power can be efficiently transmitted using AC cables. HVDC is now starting to be used for connecting large-scale solar parks to the grid. HVDC also allows long-distance interconnectors to be built between neighbouring power grids so that local fluctuations of renewable energy output can be smoothed out by aggregating power generation over a wider geographical area.
With this growth comes new challenges. Two in particular will be discussed in the talk. The first concerns the transition from point-to-point HVDC links (the established practice)) to multi-terminal HVDC networks. The second concerns how the HVDC converters are controlled, especially in view of the fact that the growth of renewable energy sources means that power grids now contain far less rotating inertia in the form of synchronous machines than was the case 20 years ago. The first challenge involves new protection methods and new types of HVDC equipment, while the second involves new control algorithms for the HVDC converters. Both challenges make HVDC a fascinating and important topic for the industry.

Lecture sessions (afternoon)

15:40 **LS2a - Topic 9 - AC/DC and DC/AC Converter Topologies (II)** ***Location: Gaston Berger Amphitheatre***
Chair(s): HEGAZY Omar, Vrije Universiteit Brussel, Belgium
EL BAGHDADI Mohamed, Vrije Universiteit Brussel, Belgium

15:40 **185 - Investigations on Phase-Modular PFC with Integrated DC-link Energy Buffer for Single-Phase Operation**
IURICH Mattia, VOLLMAIER Franz, LANGBAUER Thomas, HUANG Zhen, PETRELLA Roberto - Silicon Austria Labs GmbH - Austria

16:00 **214 - Construction and Application of a Five-Level Inverter for Maximum Power Point Tracking (MPPT) of the Photovoltaic (PV)**
SIADATAN Alireza - York University - Canada
SEPEHRINOUR Maryam - Algoma University - Canada
KARIMI Hamed - Khatam University - Iran

16:20 **277 - Model Predictive Current Control for G2V/V2G Bidirectional Operation of Onboard Charger**
KOH Hyun-Gyu, KANG Tae-Seok - Jeju National Univesity - Korea (Republic of)
IRFAN Sami - Chung-Ang University - Korea (Republic of)
CHOI Yeong-Jun - Jeju National Univesity - Korea (Republic of)

15:40 **LS2b - Topic 1 - Electromobility (II)** ***Location: Louis Armand East***
Chair(s): BOUSCAYROL Alain, Université Lille 1 - L2EP, France
VAN MIERLO Joeri, Vrije Universiteit Brussel, Belgium

15:40 **6 - Vehicle-Driven Operation of an Adaptive IPT System with Tolerance to Large Magnetic Coupling Coefficient Variations**
LÓPEZ-ALCOLEA Francisco Javier, MOLINA-MARTÕNEZ Emilio José, PARREÑO-TORRES Alfonso, GARCÕA-JIMÉNEZ Jaime, VAZQUEZ Javier, RONCERO-SÁNCHEZ Pedro - University of Castilla-La Mancha - Spain

16:00 **166 - Design Considerations and Validation of a GaN e-HEMT-Based Cryogenic Power Converter**
HAM Jisun, MAENG Junyeol, IM Chaemin, SEO Dongsu, KOO Jaheum, HAHN Seungyong, CUI Shenghui - Seoul National University - Korea (Republic of)

16:20 **175 - Comparative Stability Study of a Dual Active Bridge-Based Battery Charger with Advanced Modulation Schemes**
SCOHIER Martin, DEBLECKER Olivier, BAKHSHIDEH ZAD Bashir - University of Mons - Belgium

15:40 **LS2c - Topic 2 - Smart grids and renewable energy (II)** ***Location: Louis Armand West***

Chair(s): BENCHAIB Abdelkrim, Supergrid Institute, France
DWORAKOWSKI Piotr, Supergrid Institute, France

15:40 **27 - Real-Time Power Loss Optimized Operationof a Solid State Transformer by Utilizing the Common-Mode Voltage**
MERZ Tobias, MENGER Nikolas, SIEGEMUND Max-Emanuel, SCHWENDEMANN Rüdiger, HILLER Marc - Karlsruhe Institute of Technology (KIT) - Germany

16:00 **168 - Off-Grid Wind Energy Conversion System with Supercapacitor-Assisted Control for Optimal Green Hydrogen Production**
RAUSELL Eduardo, NAVARRO Gustavo - Centro de Inv. Energéticas, Medioambientales y Tecnológicas - Spain
ARNALTES Santiago - University Carlos III of Madrid - Spain
BLANCO Marcos, LAFOZ Marcos, NÁJERA Jorge, URDA Valentín - Centro de Inv. Energéticas, Medioambientales y Tecnológicas - Spain

16:20 **332 - Application of Jellyfish Search Algorithm? for Reactive Power Planning-based Power Losses Minimization in Electrical Power Networks**
HAKMI Sultan - Jazan University - Saudi Arabia

15:40 **LS2d - Topic 7 - Reliability & Systems & Packaging** ***Location: Room 1***

Chair(s): LUTZ Josef, Technische Universität Chemnitz, Germany
KOHLHEPP Benedikt, Technical University of Berlin, Germany

15:40 **59 - Good practices to sort 650 V GaN die inside a PCB**
GUTIERREZ GALEANO Alonso - CEA - Commissariat à l'Energie Atomique (Grenoble) - France
GUILLOT Laurent - STMicroelectronics - Italy
HAMELIN Pierre-Yves - Elvia Electronics - France
MARCAULT Emmanuel, ORSATELLI Marc, IZOULET Antoine, GAVELLE Mathieu - CEA - Commissariat à l'Energie Atomique (Grenoble) - France
LAGADEC Aymeric - Elvia Electronics - France

16:00 **29 - Low inductance power module optimized for Flying Capacitor Topology**
LASSERRE Philippe, DUCHESNE Cyrille, GOPISHETTI Anusha - DEEP Concept - France

16:20 **63 - Power Cycling Reliability of Paralleled IGBT Chips Heated with Conduction and Switching Losses**
ABUOGO James, LUTZ Josef, BASLER Thomas - Chemnitz University of Technology - Germany

15:40 **LS2e - Topic 8 - Magnetic Components ñ Inductors and Transformers (II)** ***Location: Room 2***

Chair(s): VAN DEN BOSSCHE Alex, Ghent University, Belgium

15:40 **196 - A Novel Optimization Method for Accurate AC resistance prediction of High Frequency Transformer**
BARG Sobhi - Mid Sweden University - Sweden
BARG SOUHAIB - Central University of Tunis - Tunisia
BERTILSSON KENT - Mid Sweden University - Sweden

16:00 **199 - Inductive, Capacitive and Resistive Aspects Modeling of Planar Windings Applied to a 1MHz LLC Converter**
DIHANE Oussama - AMPERE S.A.S.-Renault Group - France
SADARNAC Daniel, PHULPIN Tanguy, LABOURÉ Eric - GEEPS - France
GASCHER Alain - AMPERE S.A.S.-Renault Group - France
SOBRAYEN Lingeshwaren - Enersys - France

16:20 **201 - Modelling of Nanocrystalline Common-Mode Chokes with Custom Shape by Simulation-Based Extraction of Effective Permeability**
HACKL Herbert, KONRAD Werner, STOIBER Martin, RIENER Christian, AUINGER Bernhard – Silicon Austria Labs GmbH - Austria
HEINISCH Martin - BMW Motoren GmbH - Austria

Panel discussion

16:45 **Panel Discussion - Focus Topic 2 - Smart grids & renewable energy** ***Location: Louis Armand East***

Chair(s): HEYBERGER Jean-Baptiste, Supergrid Institute, France
DWORAKOWSKI Piotr, Supergrid Institute, France

Confirmed panelists:

- Benjamin Graff, CNR: “Linear Photovoltaic Powerplant: potential development in France and use cases at CNR”
- Olivier Grellier, SNCF: “Linear Photovoltaïc: use cases at SNCF”
- Thomas Lagier, ITER: “Power Converters for nuclear fusion applications at ITER”
- Sébastien Silvant, SuperGrid Institute: “InterOPERA at Crossroads: Advancing Multi-Vendor HVDC Interoperability”
- Mohamed Rashwan, Transgrid Solution, keynote summary “HVDC and Power Electronics enabling the energy transition”
- Colin Davidson, GE Vernova Grid Systems Integration: keynote summary “The role of HVDC in reducing carbon emissions”

Wednesday 2 April 2025

Opening session and keynote

08:30 **Keynote 4 - HVDC and Power Electronics enabling the energy transition**
RASHWAN Mohamed - Transgridsolutions – Canada *Location: Gaston Berger Amphitheatre*

Chair(s): THOMAS Jean-Luc, Conservatoire National des Arts et Metiers, France

09:00 **Keynote 5 - Management and valorization of storage in electrical networks**
ABBES Dhaker - L2EP Junia – France *Location: Gaston Berger Amphitheatre*

Chair(s): ROBYNS Benoït, L2EP Junia, France

Lecture sessions (morning)

10:00 **LS3a - Topic 9 - DC/DC Converter Topologies (I)** *Location: Gaston Berger Amphitheatre*
Chair(s): GAUBERT Jean-Paul, University of Poitiers, France

10:00 **89 - Comparative Soft Switching Analysis of Star-Star and Star-Delta Connected Transformer Three-Phase Dual Active Bridge DC-DC Converter**
BIRSIN Cevher Sami, AKBOY Erdem - Yildiz Technical University - Turkey

10:20 **65 - Dual Coupled Inductor-Based Current-Fed Dual Active Bridge Converter**
MIREMAD Armin, EREN Suzan - Queen's University - Canada

10:40 **286 - Analysis of Leg-Open Fault of Three Phase Delta-Delta LLC Resonant Converter**
JIN HyunJin, SO Jihun, KIM Yoo-Seop, CHOI Yeong-Jun - Jeju National Univesity - Korea (Republic Of)

10:00 **LS3b - Topic 3 - Energy Storage and Management Systems** *Location: Louis Armand East*
Chair(s): DAI Jing, Supergrid Institute, France
ALMAKSOUR Khaled, L2EP Junia, France

10:00 **3 - Embedded Spectroscopy: Potentialities and Constraints for Onboard Battery Diagnostics**
BECHARA Charles, FRIEDRICH Guy, FORGEZ Christophe - Université de Technologie de Compiegne - France
CREGUT Samuel - AMPERE S.A.S.-Renault Group - France

10:20 **178 - A Versatile Prognostics Approach for Batteries and Hydrogen Storage Systems Health Management**
LENOIR Théo, CHRENKO Daniela, ROCHE Robin, JEMEI Samir - FEMTO-ST - France
HILAIRET Mickaël - LS2N - France

10:40 **209 - A K-nearest Neighbours Inspired Direct MPC for SOC Balancing in Smart Batteries**
SIMONETTI Francesco, DI FONSO Roberta, TEODORESCU Remus - Aalborg University - Denmark

10:00 **LS3c - Topic 4 - Digitalization: The powerful fusion of AI and IoT for sustainability**
Location: Louis Armand West
Chair(s): ALLARD Bruno, Universite de Lyon, INSA Lyon, AMPERE, France
BACHA Seddik, University of Grenoble - G2ELAB, France

10:00 **70 - Developing a Model-in-the-Loop Testbench for Battery Management Systems: Advancing Test Methodologies for State-of-X Estimation**
SANZ-GORRACHATEGUI Iván, BARRUTIA Aitor, MARTÍN Ana, ARRAZTOA-LAZKANOTEGI Xabier, MARCOS David, ONAINDIA Peio - Ikerlan - Spain

10:20 **307 - A Virtual Platform for Modular Smart Battery Testing and Prototyping**
SIMONETTI Francesco, DI FONSO Roberta, WEINREICH Nicolai, ZHENG Yusheng, OSHNOEI Arman, SUI Xin,

TEODORESCU Remus - Aalborg University - Denmark

10:40 **144 - Ultrasound-based Condition Monitoring of Power Converters with Physics-Informed Compression**
FASSI Youssof, HEIRIES Vincent, BOUTET Jérôme - CEA - Commissariat à l'Energie Atomique (Grenoble) - France
MARIANNE Julien - Serma Ingenierie - France
MARTIN Sébastien, CHAREYRON Mathilde, CHAMBON Clément, BOISSEAU SÈbastien - CEA - Commissariat à l'Energie Atomique (Grenoble) – France

10:00 **LS3d - Topic 10 - Design and optimisation** ***Location: Room 1***
Chair(s): MUSUMECI Salvatore, Politecnico Di Torino, Italy

10:00 **221 - Analysis of optimization techniques applied to the DAB converter**
MUSSA Samir, SOTORIVA Rossano, ORIGE Mateus, BENDER Leonardo, WALTRICH Gierri - Universidade Federal de Santa Catarina - Brazil

10:20 **235 - Limitations of Current-Optimal Dual Active Bridge Modulation Strategies**
SCOGGIN Guy L. - Safran Tech - France
VOLDOIRE Adrien - Université Paris-Saclay - France
PNIAK Lucas - Safran Tech - France
BÉTHOUX Olivier - GEEPS - France

10:40 **254 - Influence of the Mission Profile on the Selection of the Leakage Inductance for DAB Converter**
CAMPOS Adriana, DWORAKOWSKI Piotr, ASLLANI Besar, VERSHININ Konstantin - Supergrid Institute - France

Dialogue sessions

11:10 **DS2a - Topic 3: Energy Storage and Management Systems** ***Location: Exhibition area – level -2***
Chair(s): DAI Jing, Supergrid Institute, France

164 - Voltage-Controlled SoC Estimation in Lithium-Ion Batteries: A Comparative Analysis of Equivalent Circuit Models **Panel S3**
SOROURI Hoda - Aalborg University - Denmark
SAFARI Ashkan - University Of Windsor - Canada
OSHNOEI Arman, TEODORESCU Remus - Aalborg University - Denmark

249 - A Comparative Study of Genetic Algorithm and Particle Swarm Optimization for Hybrid Renewable Systems with Battery and Hydrogen System **Panel S4**
KHAN Aqib, BRESSEL Mathieu - CRISTAL - Université de Lille - France
ABBES Dhaker, DAVIGNY Arnaud - L2EP Junia - France
OULD BOUAMAMA Belkacem - CRISTAL - Université de Lille - France

255 - Improved Energy Management Strategy for Minimizing Capacitors Storage in Power Converters for Particle Accelerators **Panel T1**
XYSTRAS Dimitris, JOSIFOVIC Ivan, MICHELS Olivier, LE GODEC Gilles - CERN - European Organization for Nuclear Research - Switzerland

285 - Modeling and Evaluating GaN HEMTs for Efficient Multicell Battery Balancing with Dual-Active Bridge Converters **Panel T2**
PEÑA Robert Alfie, VERBRUGGE Boud, HEGAZY Omar - Vrije Universiteit Brussel - Belgium

298 - Development of Energy Management Strategies for a MG with Distributed Energy Generation and Storage **Panel T3**
DAVAL Pierrick, KABALAN Bilal - Université Gustave Eiffel - France
GAETANI-LISEO Margot, HELBLING Hugo - Laboratoire AMPERE - CNRS - France
VINOT Emmanuel - Université Gustave Eiffel - France

342 - Energy Management in Hybrid Energy Storage Systems for Electric Vehicles: A Reinforcement Learning Approach with Python-Simulink Integration **Panel T4**
RANJBARAN Parisa, BAKHSHAI Alireza, JAIN Praveen - Queen's University - Canada

11:10 **DS2b - Topic 3: Battery Aging, Reliability, and Safety** ***Location: Exhibition area – level -2***
Chair(s): DAI Jing, Supergrid Institute, France

330 - Optimized Estimation of Battery ParametersCapacity, Resistances and SOC for ElectricVehicles: A Hybrid Approach Based onGenetic Algorithm and Artificial Intelligence **Panel U3**
HEMDANI Jamila , DEGAA Laid, RIZOUG Nassim - ESTACA - France
SOLTANI Moez, TELMOUDI Achraf, CHAARI Abdelkader - Ecole Nationale d'Ingénieurs de Tunis - Tunisia

69 - A high-performance AC excitation and measuring system for on-line estimation of Lithium-ion battery cells' internal impedance **Panel U1**
BOTAS Ioannis, SOKOLAKI Olga, TATAKIS Emmanuel - University of Patras - Greece

248 - A comparison of lithium diffusion between Graphite/LFP 18650 power and energy cells with low and high current pulses **Panel U2**
WHEELER William , VOYER Damien - EIGSI La Rochelle - France

331 - Battery pack thermal management using phase change materials for small electric vehicles **Panel U4**
MASHAQI Mohammed - Université Paris-Saclay - France
RIZOUG Nassim, LAROUCI Cherif - ESTACA - France
KARKRI Mustapha, TANKARI Mahamadou Abdou - Université Paris-Saclay -Est Créteil (UPEC) - France

11:10 **DS2c - Topic 3: Smart Charging, V2G, V2H, Charging Infrastructure and Grid Integration for Electromobility**
Chair(s): DAI Jing, Supergrid Institute, France ***Location: Exhibition area – level -2***

267 - Single-phase single-stage bidirectional PFC converter utilizing monolithic GaN bidirectional switches **Panel W4**
SITNIK Jan - Warsaw University of Technology - Poland
KASPER Matthias - Infineon Technologies Austria AG - Austria

38 - Study of 3-Phase Embedded Charger for Vehicle-to-Home (V2H) Under Unbalanced Load Conditions **Panel V1**
FAYAD Elie - L2EP- ENSAM - France
BRUYERE Antoine - L2EP - Centrale Lille - France
GRUSON FranÁois - L2EP- ENSAM - France

111 - Compact Interoperable DC Charging Station Enabling Smart Charging Features for e-Bike Charging Park **Panel V2**
JAMAN Shahid, SAKIB Md. Iftadul Islam, GEURY Thomas, HEGAZY Omar - Vrije Universiteit Brussel - Belgium

160 - Design and Evaluation of Single-Active Bridge Configurations for Optimal Megawatt Charging Systems **Panel V3**
WALAWALKAR Narendra, GUPTA Shubham, NARENDRA Tanmay, KJΔR Martin, IOV Florin, MUNK-NIELSEN Stig - Aalborg University - Denmark

281 - Design and Analysis of a Three-Phase Single-Stage AC-DC Converter with Series Resonant Tank for Electric Vehicle Charging Stations **Panel V4**
RAMEZANI Mohammad, PAHLEVANI Majid, JAIN Praveen - Queen's University - Canada

11:10 **DS2d - Topic 3: Energy Storage for Grid Applications including Industrial Solutions**
Chair(s): DAI Jing, Supergrid Institute, France ***Location: Exhibition area – level -2***

130 - Development of a 1MW Multi-Channel Fast Charging Station based on Solid State Transformer **Panel W1**
BYENG JOO BYEN, BYUNGHWAN JEONG, HAEWON SEO - Hyosung - Korea (Republic f)

139 - Information System Architecture for Supervision and Control of Railway Smart Grids **Panel W2**
ALMAKSOUR Khaled - Univ. Lille, Arts et Metiers, Centrale Lille, Junia, ULR 2697-L2EP - France
GOSSELIN Flovic - Université Catholique de Lille - France
SHMAYSANI Mhamad, DUCROCQ Adrien, SAUDEMONT Christophe - Univ. Lille, Arts et Metiers, Centrale Lille, Junia, ULR 2697-L2EP - France
CARON Herve - SNCF Réseau - France
ROBYNS Benoit - Univ. Lille, Arts et Metiers, Centrale Lille, Junia, ULR 2697-L2EP - France

11:10 **DS2e - Topic 3: Fuel Cells and Stacks, Electrolyzer Cells and Stacks and Associated Power Electronics**
Chair(s): DAI Jing, Supergrid Institute, France *Location: Exhibition area – level -2*

128 - Predictive maintenance and control tool for hydrogen-energy systems in anindustrial framework **Panel W3**
GIBEY Gaultier, PAHON Elodie, ZERHOUNI Noureddine, HISSEL Daniel - FEMTO-ST - France

11:10 **DS2f - Topic 4: Digital Twins and Real-Time Simulation** *Location: Exhibition area – level -2*
Chair(s): BACHA Seddik, University of Grenoble - G2ELAB, France

16 - Enhanced Optimization of Power Modules Considering Static and Dynamic Losses Using Fully Coupled RLCG Matrices for Superior Thermal and Electrical Performance **Panel P1**
WESSEL Wilfried - TU Dublin - Ireland
JUHÁSZ Gergo - Vincotech HungíRia KFT. - Hungary
BAUER Florian - Siemens AG - Germany
SCHWARZBACHER Andreas - TU Dublin - Ireland
JAKOB Christian - University f Applied Sciences Darmstadt - Germany

11:10 **DS2g - Topic 4: Use of AI in Power-Electronics Applications** *Location: Exhibition area – level -2*
Chair(s): BACHA Seddik, University of Grenoble - G2ELAB, France

105 - Harmony SearchñAssisted Perturb-and-Observe MPPT Algorithm for PV Systems **Panel P2**
LEE Geon Hee, CHOI Seungho, GEEM Zong Woo - Gachon University - Korea (Republic of)
WON Jehyuk - Kangwon National University - Korea (Republic of)

264 - LTO BATTERY USEFUL LIFE PREDICTION FOR ALWAYS ON EDGE AIoT BASED STRUCTURAL HEALTH MONITORING **Panel P3**
ARAKISTAIN Ivan, ZAMORA Diego, GARCIA-SANCHEZ David, ARMIJO Alberto - Tecnalia - Spain

11:10 **DS2h - Topic 4: Data-Driven and Physics-Based Techniques** *Location: Exhibition area – level -2*
Chair(s): BACHA Seddik, University of Grenoble - G2ELAB, France

81 - Grey Box Identification of SiC MOSFET Modules in Short Circuit **Panel P4**
MARI Jorge, KIRNER Michael - Semikron Danfoss - Germany

11:10 **DS2i - Topic 4: Machine Learning** *Location: Exhibition area – level -2*
Chair(s): BACHA Seddik, University of Grenoble - G2ELAB, France

137 - Laboratory Measurements for Machine Learning-based Modelling of LV Harmonic Sources **Panel Q1**
ZANOUN Meriem - EDF R&D - France
LABOURE Eric, TRUNG DUNG LE, BENSETTI Mohamed - GEEPS - France
YANG Xavier Xianjun, GOURAUD Sébastien - EDF R&D - France

11:10 **DS2j - Topic 9: AC/DC and DC/AC Converter Topologies** *Location: Exhibition area – level -1*
Chair(s): GAUBERT Jean-Paul, University of Poitiers, France

17 - Operation modes and design consideration for MMC with unipolar current full-bridge submodules **Panel C1**
GESKE Martin - GE Energy Power Conversion GMBH - Germany
ABBI Hatim, BASIC Duro - GE Power Conversion - France

33 - A novel Hybrid Inverter Drive for AC motors capable of bypassing the voltage source inverter when operating at grid frequency **Panel C2**
LENDI Daniel, RAUTE Reiko, CARUANA Cedric - University of Malta - Malta

37 - Modular multilevel converter based on unipolar-current full-bridge submodules for medium voltage variable speed drive applications **Panel C3**
BASIC Duro, ABBI Hatim, GESKE Martin - General Electric Power Conversion - France

46 - A performance comparison between different PWM techniques for the Hybrid Inverter Drive **Panel C4**
LENDI Daniel, RAUTE Reiko, CARUANA Cedric - University of Malta - Malta

83 - Data-Driven RUL Estimation for DC-Link Capacitor in Ultra-Fast EV Charging Systems **Panel D1**
MATEEN Suwaiba, HAQUE Ahteshamul - Jamia Millia Islamia - India
KHAN Mohammed Ali, EBEL Thomas - The University of Southern Denmark - Denmark
MEHFUZ Shabana - Jamia Millia Islamia - India

103 - Model Predictive Current Control(MPCC) Using Multi Virtual Voltage Vectors for a Two-Level Inverter in Electric Propulsion Ships **Panel D2**
ROH Chan, CHAE HYEON-GYO, SHIN EUI-CHEOL - Korea Maritime and Ocean University - Korea (Republic of)

114 - A Cost-Effective Three Level Shared Leg Flying Capacitor Converter for Switched Reluctance Motors **Panel D3**
YOUSEFI DARANI Ali, ALI NASIR, NARIMANI MEHDI - Mcmaster University - Canada

125 - Multi-line input network for class EF inverter with enhanced design flexibility **Panel D4**
DAIRE Baptiste, MARTIN Christian, SIXDENIER Fabien, JOUBERT Charles, PACE Loris - Laboratoire AMPERE - CNRS - France

127 - Methodology for pre-sizing an MMC by optimization for an aeronautical application **Panel E1**
NGO BUI HUNG Stéphane, GAUTIER Cyrille, PNIAK Lucas - Safran Tech - France
QUÉVAL Loïc - GDR SEEDS, GEEPS, Université Paris-Saclay - France
REVOL Bertrand - Safran Tech - France
LABOURÉ Éric - GDR SEEDS, GEEPS, Université Paris-Saclay - France

132 - Simple nine-level inverter with 10 switches and a floating capacitor **Panel E2**
KIM Dohyeon, KWON Jungmin - Hanbat National University - Korea (Republic of)

165 - Three-phase Active-Split source inverter with step-up/step-down DC bus voltage capabilities for traction application **Panel E4**
SABRIÉ Antoine, BATTISTON Alexandre - IFP Energies Nouvelles - France
GAUTHIER Jean-Yves, LIN-SHI Xuefang - Universite de Lyon, INSA Lyon, AMPERE - France

171 - Efficiency and Cost Comparison of GaN/Siand SiC/Si Hybrid ANPC Three-phase Inverter **Panel F1**
GONDAT Manex, AVILA Ander, GARCIA Asier, RUJAS Alejandro - Ikerlan - Spain

208 - Steady-State Analysis and Control of Active Current Injection Based Three-Phase PFC Rectifier **Panel F2**
MAHESHWARI Ramkrishan, SRIVASTAVA Ankur - The University of Southern Denmark - Denmark
SURANA Prashant - Indian Institute of Technology Roorkee - India
EBEL Thomas - The University of Southern Denmark - Denmark
LARSEN LASSE CHR., HANSEN EGON - OJ Electronics - Denmark

218 - T-type Inverter as a Power-Pulsation Buffer for a PMSM with Large Load Variation **Panel F3**
WEILER Pelle, FUJITA Toshiyuki, FUJIMOTO Hiroshi - The University Of Tokyo - Japan
MIYAJIMA Takayuki, YASUDA Yoshiki, YAMAGIWA Akio - Daikin Industries, Ltd. - Japan

11:10 **DS2k - Topic 9: DC/DC Converter Topologies** ***Location: Exhibition area – level -1***
Chair(s): GAUBERT Jean-Paul, University of Poitiers, France

55 - Isolated step-down DC-DC converter based-on push-pull topology with reduced voltage stress of the primary side transformer windings **Panel F4**
STALA Robert - AGH University of Krakow - Poland

64 - Advancement of the SI-SIDO Boost-Buck-Boost Converter with Continuous Switching Method for Bipolar LVDC Applications **Panel G1**
ROOHOLAHI Babak, ECKEL Hans-Guenter - University of Rostock - Germany

129 - Analysis of a high gain step-up converter 48V/1kV for piezoelectric driving application **Panel G2**
BENNACER Nassim Rayane, MARTIN Christian, PACE Loris - Laboratoire AMPERE - CNRS - France

133 - Study of a 6-Leg Floating Interleaved Boost Converter with Coupled Inductors for Fuel Cell Heavy-Duty Electric Vehicles **Panel G3**
EL HADDAJI Niema, DJERDIR Abdesslem - FEMTO-ST - France
PIERFEDERICI Serge - LEMTA, CNRS, Université de Lorraine - France
HISSEL Daniel - FEMTO-ST - France

172 - Design analysis of MMC-Autotransformer forHVDC interconnection **Panel H1**
BOUKHENFOUF Johan, GRUSON FranÁois - L2EP- ENSAM - FRANCE
SAMIMI Shabab - ESME Research Lab - France
MERLIN Michael - University of Edinburgh - United Kingdom
DELARUE Philippe, LEMOIGNE Philippe - L2EP - Centrale Lille - France
COLAS Frédéric - L2EP- ENSAM - France
GUILLAUD Xavier - L2EP - Centrale Lille - France

186 - Design Guidelines for a DAB Converter Incorporating a Multilevel Bridge with Quasi-2-Level Operation **Panel H2**
AGUILAR CROSTON José Andrés - Supergrid Institute - France
GAUTHIER Jean-Yves, BUTTAY Cyril - Laboratoire AMPERE - CNRS - France
SAEEDIFARD Maryam - Georgia Institute of Technology - United States of America
ASLLANI Besar, DWORAKOWSKI Piotr - Supergrid Institute - France

242 - Single Active Bridge DC/DC Converter as Auxiliary Power Supply for Medium-Voltage Multilevel Converters **Panel H3**
LENZEN Patrick, PFOST Martin - Technische Universität Dortmund - Germany

257 - From Space to Industrial Applications: the Latching Current Limiter as Active Current Protection **Panel H4**
MUSETTI Alex, SOLDATI Alessandro - University of Parma - Italy
FERNANDEZ MIAJA Pablo, ARIAS PEREZ DE AZPEITIA Manuel - University of Oviedo - Spain

11:10 **DS2l - Topic 9: AC-Grid Connected Converter Topologies** ***Location: Exhibition area – level -1***
Chair(s): GAUBERT Jean-Paul, University of Poitiers, France

270 - Design, Control and Loss Analysis of PV-based Shunt Active Filter for Improved power Quality with maximum PV power injection **Panel L3**
FAZAL Muhammad, ALALI MOHAMED ALAA EDDIN - Quartz Laboratory, ENSEA - France
PHULPIN Tanguy - GEEPS - France
LEFORESTIER Romain, GOASGUEN Christophe - IMEON Energy - France

192 - Generalized algorithm for determining the control functions of an AC voltage compensator with a bipolar AC/AC converter **Panel L2**
SZCZESNIAK Pawel - Uniwersity of Zielona Gora - Poland
SZTAJMEC Elzbieta - Poland

11:10 **DS2m - Topic 10: Converter Design and Optimisation** ***Location: Exhibition area – level -2***
Chair(s):

1 - Two copper layer Insulated Metal Substrate PCB potential using Wide-Bandgap semiconductors **Panel Q2**
CAPO-LLITERAS Macia, MORENO-RUBIO Pau, HEREDERO-PERIS Daniel, MONTESINOS-MIRACLE Daniel - Universitat Politécnica de Catalunya - Spain

157 - Multi-objective Optimization based Design of 3-L Inverters Considering an Extensive WBG Semiconductors Library **Panel Q3**
OUZOUIGH Meriem - Schneider Electric - France
DELAFORGE Timothé - Bern University of Applied Sciences - Switzerland
LACARNOY Alain, KREMER Vinicius - Schneider Electric - France
SCHANEN Jean-Luc - G2ELAB CNRS/G-INP/UGA - France

206 - Multi-Objective PSO for the Sizing of a 12-Pulse Diode Rectifier : A Comparative Analysis at Room and Cryogenic Temperatures **Panel Q4**
BAAZIZI Yasmine, HAAS BEZERRA Ana Luiza, FERREIRA Lauro, MEUNIER Simon, PHULPIN Tanguy, QUÉVAL Loïc - GEEPS - France

11:10 **DS2n - Topic 10: Converter Modelling and Low-level Control, including Gate-Drives**
Chair(s): ***Location: Exhibition area – level -2***

262 - Zero Current Modulation Control Strategy for Dual Active Bridge Dynamic Operation **Panel R1**
VELLINGER Jakob, SCHRAMM Simon - University of Applied Sciences Munich - Germany

11:10 **DS2o - Topic 10: EMI/EMC in Power Electronics including HF Phenomena** ***Location: Exhibition area – level -2***
Chair(s):

31 - Assessment of Supraharmonic Emissions of Parallel Grid Connected Inverters Using Symmetric Carrier Phase Shift Concept **Panel R2**
ABOUTALEB Abdellatif, OSHEBA Marwa, DESMET Jan, KNOCKAERT Jos - Ghent University - Belgium

181 - An Improved Balanced Cascaded Buck-Boost Converter Topology for a Wide Input Voltage Range and Reduced Conducted Interference **Panel R3**
FRITZE Eric, MEISSNER Michael, KRAKOW Kevin, DICKMANN Stefan, HOFFMANN Klaus F. - Helmut Schmidt University - Germany

269 - Impact of PWM Modulation Strategies on Bearing Currents in Electric Excited Synchronous Motors **Panel R4**
LI Yuyang, PATIN Nicolas, LANFRANCHI Vincent, BUIRON Nicolas - Universite de Technologie de Compiegne (UTC) - France
MISSOUM Rachid, HUET Clémence, MERCAY Patrice - Renault - France

293 - Interference propagation in two stage PV inverters **Panel S1**
GHOLIZAD Amin, DESMET Jan, KNOCKAERT Jos - Ghent University - Belgium

11:10 **DS2p - Topic 10: Thermal Optimization and Reliability Considerations** ***Location: Exhibition area – level -2***
Chair(s):

311 - Optimizing Thermal Design of 75kW LLC Resonant Converters: Leveraging Variable Inductance for Electric Vehicle Converter Applications by Finite Element Analysis **Panel S2**
MO Wai Keung, PAASCH Kasper M, EBEL Thomas - The University f Southern Denmark – Denmark

Vendor sessions

11:40 – 11:55 Tektronix

Test & Measurement solutions for WBG Technologies: Tektronix Approach & Strategy
Andy Getzman

13:30 – 13:45 Volkswagen

The future of Automotive Power Electronics: Possibilities of High-Level Integration
Cornelius Rettner

Automotive power electronics started with singular components for each function and have evolved into integrated entities combining multiple functions and components. This presentation provides insights into the challenges and opportunities of high-level integration for future automotive power electronics in modern battery electric vehicles.

13:50 – 14:05 Opal RT Technologies

The fast and the furious: latest FPGA-based Hardware-in-the-Loop Testing Solver - now on NI
Timo Roesch

In today's rapidly evolving power electronics landscape, development timelines are becoming increasingly compressed. Hardware-in-the-Loop (HIL) simulation has become a well-established method for enabling development-parallel testing, hence accelerating innovation. In this presentation we will live-demonstrate our latest FPGA-based solver innovation, which provides a very flexible and easy-to-use workflow – recently available also with NI-based HIL Systems. It's made to achieve high accuracy with demanding topologies like DAB's, LLC's and for high switching frequencies of even 500kHz.

14:35 – 14:50 Speedgoat

Developing and Testing Grid-forming Inverters Using High-Fidelity Power Electronics Models

Carlos Villegas, Electrification Industry Manager

This session explores the development of grid-forming inverters using Model-Based Design and Speedgoat test systems. Beginning with desktop simulation in Simulink and Simscape Electrical, detailed models of grids, generators, power converters, and renewable energy sources are integrated with advanced control algorithms. Rapid control prototyping follows, leveraging Speedgoat test systems as controllers to validate designs through high-fidelity I/O and communication protocols.
The final validation stages include hardware-in-the-loop (HIL) and power HIL testing to ensure robust performance of the embedded controller and inverter under realistic operating conditions. This includes high-fidelity power electronics simulations with closed-loop sample times as low as 10 nanoseconds. Speedgoat test systems enable real-time grid simulation and interface with power amplifiers to emulate grids, batteries, and generators, validating grid-connected inverters and electrical equipment. Attendees will gain insights into a complete workflow for developing reliable grid-forming inverters through FPGA-based high-fidelity modeling and real-time testing.

Lecture sessions (afternoon)

15:10 **LS4a - Topic 9 - DC/DC Converter Topologies (II)** ***Location: Gaston Berger Amphitheatre***

Chair(s): GAUBERT Jean-Paul, University of Poitiers, France
SIADATAN Alireza, York University, Canada

15:10 **104 - Analysis of Imbalance in Input-Series Output-Parallel Configuration of Series Resonant Converters**
KWON Minho, JEON Yojung, LEE Jong-Pil - Korea Electrotechnology Research Institute - Korea (Republic of)

15:30 **325 - Bidirectional Single Input Multiple OutputPower Converters: Model and PerformanceAnalysis**
BERNAL COBALEDA Diego, WOUTERS Hans, TIAN Fanghao, ZUO Yu, MARTINEZ Wilmar - KU Leuven - Belgium

15:50 **278 - Reconfigurable Interleaved LLC Resonant Converter Using Hybrid Modulation for Ultrawide Output Voltage Range**
KANG Tae-Seok, KOH Hyun-Gyu, KIM Yoo-Seop, CHOI Yeong-Jun - Jeju National Univesity - Korea (Republic of)

15:10 **LS4b - Topic 3 - Smart Charging, V2G, V2H, Charging Infrastructure and Grid Integration for Electromobility**
Location: Louis Armand East

Chair(s): DAI Jing, Supergrid Institute, France
ALMAKSOUR Khaled, L2EP Junia, France

15:10 **42 - Optimal techno-economic and environmental design of a renewable energy based charging station including second life batteries**
ANTUNES Evelise, SARENI Bruno, ROBOAM Xavier - LAPLACE - University of Toulouse - France

15:30 **75 - Control of a Modular Multiport Solid State Transformer for Flexible High Power Charging Infrastructure**
MENGER Nikolas, MERZ Tobias, GRAUTE Hannah, SCHWENDEMANN Rüdiger, HILLER Marc - Karlsruhe Institute of Technology (KIT) - Germany

15:50 **320 - A framework for smart charging strategies to further the adoption of electric buses in cities**
SEHIMI Yacine, CELIK Berk, LOCMENT Fabrice, SECHILARIU Manuela - Université de Technologie de Compiegne (Utc) - France

15:10 **LS4c - Topic 8 - Magnetic Components ñ Inductors and Transformers (III)** ***Location: Louis Armand West***

Chair(s): PHULPIN Tanguy, GEEPS, France

15:10 **20 - Volume reduction of magnetic components in DC/DC converters for fuel cell vehicles**
PFEIFFER Jonas, WOHLSTREICHER Manfred, WRENSCH Philemon, SCHMIDHUBER Michael - Sumida Components & Modules GmbH - Germany

15:30 **35 - Correlation of measured and simulated inductances in laminated bus bars**
GOULMANE Abdelilah, DARIO Simon, FOUET Thomas - Mersen - France

15:50 **86 - Enhanced SPICE Simulation of InductiveComponent Behavior: Integrating Impedance Measurement and Core Loss Models for Transient Simulations**
FIESSER Sven, SCHWALBE Ulf - Hochschule Fulda - University of Applied Sciences - Germany

15:10 **LS4d - Topic 10 – EMI** ***Location: Room 1***

Chair(s): MUSUMECI Salvatore, Politecnico di Torino, Italy

15:10 **11 - Geometry-Based Modeling of EMI of an LCL Filter in an AC-DC-AC Converter with WBG Power Semiconductors**
JUENEMANN Lennart, SCHANO Anja, BEN ROMDHANE Mohamed Aziz, MERTENS Axel - Leibniz Universität Hannover - Germany

15:30 **60 - ZVS Analysis and Design of Four-Port CLLC Converters for Automotive Battery Chargers**
HUANG Zhen, IURICH Mattia, LANGBAUER Thomas, VOLLMAIER Franz, PETRELLA Roberto - Silicon Austria Labs GmbH - Austria
HARTMANN Michael - Graz University of Technology - Austria

15:50 **68 - Conducted Emission Mitigation for Solid-State Transformer using Modulation and Multiple Configuration Techniques**
ADHENA Hafte, WATSON Alan, GREEDY Steve - University of Nottingham - United Kingdom
MOONEN Niek - University of Twente – Netherlands

Panel discussion

16:15 **Panel Discussion - Focus Topic 5 - Sustainable and affordable power electronics**

Location: Louis Armand East

Chair(s): DIALLO Demba, GDR SEEDS, GEEPS, Université Paris-Saclay, France
BENBOUZID Mohamed, IRDL Université Brest, France

Confirmed panelists:

- Christine Minke, Clausthal University of Technology: “From crisis to opportunity: embedding sustainability in technology development”
- Pierre Le Métayer, SuperGrid Institute: “DC Solid State Transformer – enabling CO2 footprint reduction of PV power plants”
- Nouha Gazbour, CEA Liten: “Environmental impacts of power components in a photovoltaic system”
- Karla Lainez Amaya, Hitachi Energy: “Innovative and Sustainable Power Electronics: Pioneering Resilient and Efficient Energy Systems”
- Jonas Huber, ETH Zürich: “Resource Efficient Circular Economy Compatible Power Electronics”
- Jean-Christophe Crébier, CNRS/G2Elab: “Showcasing recent insights from national working group on sustainable power electronics”

Thursday 3 April 2025

Keynote

08:30 **Keynote 6 - Beyond the quest for performance, let's target a sustainable power electronics technology**
CREBIER Jean-Christophe - G2ELAB CNRS/G-INP/UGA – France

Location: Gaston Berger Amphitheatre

Chair(s): DIALLO Demba, GDR SEEDS, GEEPS, Université Paris-Saclay, France

Massive electrification of modern societies is becoming a reality. Meanwhile, electrical and electronic equipment waste (WEEE) will grow faster than expected, from 75 to 82Mt annually in 2030. In between, there is a tiny path to be followed to ensure decarbonisation will not induce a terrible environmental burden while failing to drive us toward a sustainable world. We will review the limits of performance quest in power electronics and search for more desirable R&D perspectives related to eco-design and circularity

09:00 **Keynote 7 - The role of scientific research in the energy transition**
BARBEROUSSE Anouk - Sorbonne Université - France ***Location: Gaston Berger Amphitheatre***

Chair(s): SEMAIL Betty, Université Lille 1 - L2EP, France

On the one hand, science-based policies require to be based on up-to-date sets of knowledge developed by the scientific community. On the other, these sets of knowledge suffer from gaps and uncertainties, scientists are also citizens and defend political and ethical values that may interfere with their expertise, and decision-makers are sometimes unfamiliar with scientific vocabulary. In the case of energy, these difficulties overlap with the needs of democracy, i.e, the necessary public hearing of citizens whose preferences might run counter to scientific recommendations. How should scientists take these various difficulties into account? Should they allow their values overcome their expertise? The talk will address ways to address these questions coming from the social and behavioral sciences

Lecture sessions (morning)

10:00 **LS5a - Topic 9 - DC/DC Converter Topologies (III)** ***Location: Gaston Berger Amphitheatre***
Chair(s): KOHLHEPP Benedikt, Technical University of Berlin, Germany
EL BAGHDADI Mohamed, Vrije Universiteit Brussel, Belgium

10:00 **108 - A High-Efficiency 5.5kW Battery Backup Unit for OCP Open Rack V3 Using Partial Power Conversion**
WATTENBERG Martin - Infineon Technologies Austria AG - Austria
BOHLAENDER Lars - University of Applied Sciences Fulda - Germany
KASPER Matthias J. - Infineon Technologies Austria AG - Austria
SCHWALBE Ulf - University of Applied Sciences Fulda - Germany
DEBOY Gerald - Infineon Technologies Austria AG - Austria

10:20 **149 - Design and Optimization of an Unbalanced-flux Transformer for 1 kW LLC Transformer**
BARG Sobhi, HAILU Adane - Mid Sweden University - Sweden
BARG Souhaib - Central University - Tunisia
BERTILSSON Kent - Mid Sweden University - Sweden

10:40 **134 - Performance Evaluation of Three-Phase, Two-Level Medium Voltage Power Stack Based on 10 kV SiC MOSFETs**
NIELSEN Morten Rahr, KJÆR Martin, LIU Gao, YAN Zhixing, JØRGENSEN Asger Bjørn, ZHAO Hongbo, BECH Michael Møller, MUNK-NEILSEN Stig - Aalborg University - Denmark

10:00 **LS5b - Topic 3 - Battery Aging, Reliability, and Safety** *Location: Louis Armand East*
Chair(s): ROBYNS Benoît, L2EP Junia, France
ABBES Dhaker, L2EP Junia, France

10:00 **51 - Battery Efficiency and Aging Measurements for Multilevel Battery Energy Storage Systems ñ DC vs. 100Hz**
ASPALTER Paul, FRANTA Markus, VOGELSBERGER Markus, ERTL Hans - Technische Universitât Wien - Austria

10:20 **96 - Second life Li-ion batteries: Influence of aging on the techno-economic analysis of a microgrid**
ALBUQUERQUE Lucas , BOENNEC Corentin, LACRESSONNIERE Fabien, ROBOAM Xavier - LAPLACE - University of Toulouse - France
DAMAY Nicolas, FORGEZ Christophe - Université de Technologie de Compiegne (Utc) - France

10:40 **161 - Accelerated SOH Balancing in Lithium-ion Battery Packs Using Finite Set MPC**
OSHNOEI Arman, SOROURI Hoda - Aalborg University - Denmark
SAFARI Ashkan - University of Windsor - Canada
DAVARI Pooya - Aalborg University - Denmark
ZACHO Martin - Schneider Electric - Denmark
DAHL JOHNSEN Anders - Eluminate A/S - Denmark
TEODORESCU Remus - Aalborg University - Denmark

10:00 **LS5c - Topic 5 - Sustainable and affordable power electronics** *Location: Louis Armand West*
Chair(s): DIALLO Demba, GDR SEEDS, GEEPS, Université Paris-Saclay, France
BENBOUZID Mohamed, IRDL Université Brest, France

10:00 **246 - Current Sensor-free Transfer Window Alignment for Current Transformer Energy Harvesting**
MCRAE Tim - The University of Southern Denmark - Denmark

10:20 **287 - Parametric Life Cycle Assessment (LCA) of Power Modules**
FANG Li, RIONDET Lucas, RIO Maud - G-SCOP CNRS/G-INP/UGA - France
LEFRANC Pierre, DIARRASSOUBA Fatimata Fatim, CREBIER Jean-Christophe - Univ Grenoble Alpes - G2ELAB - France

10:40 **113 - Influence of Controller Parameters on Open-Circuit Fault Localization Time in Full-Bridge Modular Multilevel Converter**
AHMADI Miad, SHEKHAR Aditya, BAUER Pavol - Delft University of Technology - Netherlands

10:00 **LS5d - Topic 12 - Control and electric drives** *Location: Room 1*
Chair(s): DOPPELBAUER Martin, Karlsruhe Institute of Technology (KIT), Germany

10:00 **84 - Drivetrain Loss Analysis for Various Switching Frequencies and Modulation Strategies Applied to IPMSMs**
TILLMANN Philipp, RODRIGUEZ PINTO Daniel C. - RWTH Aachen University ISEA - Germany
NELL Martin, LOEWENHERZ Rolf - Engiro GMBH - Germany
DE DONCKER Rik W. - RWTH Aachen University ISEA - Germany

10:20 **135 - Sensorless IPMSM Drive Enhanced with Parameter Identification Using Open-Loop Current Prediction Error and Gradients**
PERERA Aravinda, NILSEN Roy - Norwegian University of Science And Technology - Norway

10:40 **119 - Direct Model-Based Predictive Torque Control with Variable Parameters for Induction Machines**
CHEN Qing, LI Yongdong - Tsinghua University - China
RODRIGUEZ Jose - Universidad San Sebastián - Chile
KENNEL Ralph - Technische Universität München - Germany

10:00 **LS5e - Topic 11 - Measurement, Supervision and Control for Power Converters** *Location: Room 2*
Chair(s): ALLARD Bruno, Universite de Lyon, INSA Lyon, AMPERE, France

10:00 **327 - Grid Impedance Estimation with Large SCR Disturbances based on Grid-Forming Converter**
LIU Wentao, NARULA Anant, BONGIORNO Massimo - Chalmers University of Technology - Sweden
SVENSSON Jan R. - Hitachi Energy - Sweden

10:20 **210 - Magnetic field measurement for contactless current sensing in power electronic converters**
NGUYEN Tien Anh - SATIE Laboratory - France
JOUBERT Pierre-Yves - Université Paris-Saclay - France
DUPONT Laurent, LEFEBVRE Stéphane, LABROUSSE Denis, CHAPLIER Gérard, PETIT Mickael, COSTA François - SATIE Laboratory - France

10:40 **205 - Genetic Algorithm-based Control of a Modular On-Board Charger for Electric Vehicle Applications**
NASR ESFAHANI Fatemeh - Lancaster University - United Kingdom
PARVIZIMOSAED Mohammadreza, EBRAHIMI Javad, BAKHSHAI Alireza - Queen's University - Canada
MA Xiandong, DARWISH Ahmed - Lancaster University - United Kingdom

Dialogue sessions

11:10 **DS3a - Topic 5: Design of Sustainable and/or Frugal Power Converters** *Location: Exhibition area – level -1*
Chair(s): DIALLO Demba, GDR SEEDS, GEEPS, Université Paris-Saclay, France

87 - Three-Phase PFC Rectifier with only two AC-side Transistors P2S6 **Panel C1**
PETER Simon, STILLE Karl Stephan, LOESENBECK Jan Boris – University of Applied Sciences Bielefeld - Germany

237 - CO2 Footprint of DC Solid State Transformer for Linear PV Power Plant **Panel C2**
LE METAYER Pierre, CAMPOS Adriana, DWORAKOWSKI Piotr - Supergrid Institute - France

11:10 **DS3b - Topic 5: Dynamic Life Cycle Analysis and Assessment** *Location: Exhibition area – level -1*
Chair(s): DIALLO Demba, GDR SEEDS, GEEPS, Université Paris-Saclay, France

288 - Parametrized Manufacture Life Cycle Inventory of IGBT Power Module **Panel C3**
DIARRASSOUBA Fatimata-Fatim, AVENAS Yvan, CREBIER Jean-Christophe - G2ELAB CNRS/G-INP/UGA - France

11:10 **DS3c - Topic 5: State of Health: Online Monitoring, Failure Diagnosis and Prognosis, Remaining Useful Life Prediction** *Location: Exhibition area – level -1*
Chair(s): DIALLO Demba, GDR SEEDS, GEEPS, Université Paris-Saclay, France

22 - Practical implementation of a New Temperature-Insensitive Aging Indicator of bond-wire contacts for on-line monitoring of IGBT power modules **Panel C4**
KHATIR Zoubiir, IBRAHIM Ali, LALLEMAND Richard - SATIE Laboratory - France

67 - DC Series Arc Fault Detection with LCL-Type Boost Converter **Panel D1**
PARK Hwa-Pyeong - Kumoh National Institute of Technology - Korea (Republic of)
KIM Mina - Hanbat National University - Korea (Republic of)

177 - State-of-Health (SOH) and State-of-Charge (SOC) Estimation for Lithium-ion Battery under Fast-Charging **Panel D2**
WANG Xuelu, AZIB Toufik, MENG Jianwen, SIDI BRAHIM Khelil - ESTACA - France

193 - Live Monitoring of the Blocking Behaviour of an IGBT Module in the HV-H≥TRB Test **Panel D3**
KOSTKA Benedikt, MERTENS Axel - Leibniz Universiäft Hannover - Germany

11:10 **DS3d - Topic 11: Modulation and Control Methods** ***Location: Exhibition area – level -1***
Chair(s):

62 - Novel Control Methodologies of Back-to-Back B6 Bridges for an Application-Related Stress Test Setup **Panel F1**
WARMUTH Andreas, KAPAJ Kevin, ULBING Alexander - KAI Kompetenzzentrum Automobil- und Industrieelektronik GmbH - Austria

72 - Small-Signal Analysis of Grid-Forming Vector Current Control **Panel F2**
STANOJEV Ognjen, KARACA Orcun, SCHWEIZER Mario - ABB Corporate Research Center - Switzerland

101 - Carrier Synchronization Method using High-Speed Sampling for Parallel Inverters without Communication **Panel F3**
IWAMOTO Takumi, WATANABE HIROKI, NAKATA Yuki, JUN-ICHI Itoh - Nagaoka University of Technology - Japan

143 - Numerically Stable Implementation of Active Power Decoupling Control Strategies **Panel F4**
NTOW Esther, TOOR Harminderjit Singh - University of Windsor - Canada
IYER Lakshmi Varaha - Magna Powertrain / Engineering Center Steyr - Austria
KAR Narayan C, VIANA Caniggia - University of Windsor - Canada

198 - Backstepping Controller Design with Inherent Current Limitation for a Voltage-Controlled Grid-Side Converter **Panel G1**
GNÄRIG Lasse, WEISS Robin, BERNET Steffen - Technische Universität Dresden - Germany

215 - A bounded controller for a class of bidirectional boost DC/DC converters: Application to storage devices **Panel G2**
MAZENC Frederic, IOVINE Alessio - Université Paris-Saclay - France

294 - Active Damping Strategies for Mitigating Resonances in Offshore Wind Farms: A Comparative Study of PWM and SHEPWM **Panel G3**
PASCUAL Iñigo, RAMOS Naroa, GUBÍA Eugenio, LÓPEZ Jesús, SAMANES Javier - Public University of Navarre - Spain

301 - Passivity Analysis in Power Electronic Converters with SHE Modulation **Panel G4**
RAMOS Naroa, PASCUAL Iñigo, GUBÍA Eugenio, LÓPEZ Jesús, SAMANES Javier - Public University of Navarre - Spain

11:10 **DS3e - Topic 11: Estimation, Identification and Optimisation Methods** ***Location: Exhibition area – level -1***
Chair(s): PIETRZAK-DAVID Maria, LAPLACE - University of Toulouse, France

30 - Control-to-Output Transfer Function Measurement of a Boost Converter Using Synchronized Multifrequency Excitation **Panel J1**
ROESEL Sophia, BREIDENSTEIN Daniel, DUERBAUM Thomas - Friedrich-Alexander-University Erlangen-Nuremberg - Germany

299 - Voltage generation for Sawyer-Tower Coss loss measurement based on resonant converters **Panel J2**
KORN Paul, PRAAST Marcus, KOMMA Thomas - FTZ Leipzig E.V., At Leipzig University of Applied Sciences (HTWK) - Germany

11:10 **DS3f - Topic 11: Measurement Techniques, Sensors and State Observers** ***Location: Exhibition area – level -1***
Chair(s):

216 - Gigahertz, Low-Cost Current Shunt with Retrofitting Capability for Characterization of Fast-Switching GaN Devices **Panel L1**
KLÖTZER Sebastian, HONEA Jim, DUCHOW Nils, IASHIN Georgii - NEXPERIA - GERMANY

21 - Comparison of the electrical and thermal method for determining the power losses of a QDPAK-MOSFET **Panel K1**
PRAAST Marcus, ZEIDLER Christopher, KOMMA Thomas - FTZ Leipzig E.V., At Leipzig University of Applied Sciences (HTWK) - Germany

116 - Quantifying Incomplete Zero-Voltage Switching Losses Using Equivalent Hard-Switching Losses **Panel K2**
ZÄCH Mike, BECZKOWSKI Szymon, JØRGENSEN Asger Bjørn, MUNK-NIELSEN Stig - Aalborg University - Denmark

297 - Inductive Current Sensing for Closely Spaced Antiparallel Conductor Pairs **Panel L2**
RUDOLPH Dirk - Technische Universität Dresden - Germany
LINDENMüLLER Lars - F&S Prozessautomation GmbH - Germany
BERNET Steffen - Technische Universität Dresden - Germany

11:10 DS3g - Topic 12: Electrical Machines and Actuators ***Location: Exhibition area – level -2***
Chair(s):

100 - Design of a Hybrid ANPC Three Level Inverter for High Speed Bearingless Permanent Magnet Synchronous Machines **Panel Q1**
WEIGELT Maximilian, LORENZ Fabian, WERNER Ralf - Chemnitz University of Technology - Germany

102 - Common Mode Voltage Behavior of a 3 Level ANPC Inverter on Vehicle Auxiliary Drives **Panel Q2**
WEIGELT Maximilian, LORENZ Fabian, WERNER Ralf - Chemnitz University of Technology - Germany
PAUL Daniel - Thyssenkrupp Dynamic Components - Germany

191 - Loss Investigation of an Axial Flux PMSM controlled by a Modular Multilevel Converter **Panel Q3**
HÖGERL Tobias Manfred, ESTALLER Julian, BUBERGER Johannes, GRUPP Wolfgang, WIEDENMANN Andreas, BLIEMETSRIEDER Wolfgang, ROTHMUND Christian, POHLMANN Sebastian, WEYH Thomas, KUDER Manuel - Universität der Bundeswehr München - Germany

338 - Experimental Evaluation in the Design of MRAS-Based Speed Estimator for Variable Pole Induction Machines: Reference Frame Selection **Panel Q4**
TILAHUNE Mesfin - Addis Ababa University, Addis Ababa Institute of Technology - Ethiopia
VANCINI Luca - Alma Mater Studiorum - University of Bologna - Italy
IKRAM UL HAQ Omer - ABB AB, Corporate Research - Sweden
MENGONI Michele - Alma Mater Studiorum - University of Bologna - Italy
MAMO Mengesha - Addis Ababa University, Addis Ababa Institute of Technology - Ethiopia
PERETTI Luca - KTH Royal Institute Of Technology - Sweden

11:10 DS3h - Topic 12: System Design and Optimization of Adjustable-Speed Drives
Location: Exhibition area – level -2
Chair(s): PIETRZAK-DAVID Maria, LAPLACE - University of Toulouse, France

229 - Review of Multiport Energy Router in the Specific Context of Wind Power Generation System **Panel R1**
LAI Yiyu - GEEPS - France
CIZERON Antoine - Laboratoire AMPERE - CNRS - France
VOLDOIRE Adrien - GEEPS - France
OJEDA Javier - SATIE Laboratory - France
BÉTHOUX Olivier - GEEPS - France

11:10 DS3i - Topic 12: Control of Electric Drives ***Location: Exhibition area – level -2***
Chair(s): PIETRZAK-DAVID Maria, LAPLACE - University of Toulouse, France

24 - Harmonic Current Injection Method for Torque Ripple Suppression over Wide Speed Range Considering Magnetic Saturation in PMSMs **Panel R2**
TAKEDA Kodai, TANIGUCHI Shun, HARA Takafumi - Hitachi, Ltd - Japan
MATSUO Kentaro - Hitachi Astemo, Ltd. - Japan

92 - Adaptive Bias Current Control of an Active Magnetic Bearing Under Motion-Induced Eddy Currents **Panel R3**
DEWITTE Timon, DE CROO Ruben, DE BELIE Frederik - Ghent University - Belgium

243 - Online Inductance Identification of Permanent Magnet Synchronous Motor Based on Extended Kalman Filter With Dead-Time Compensation **Panel R4**
YANG Kai, QIU Guoyi, LUO Cheng - Huazhong University of Science And Technology - China

306 - Modelling and Post-Fault Current Control Strategy for Multi-Three-Phase Machines **Panel S1**
ABDUL RAHMAN Azlia, WANG Meiqi, CARBONE Lorenzo - University of Nottingham - United Kingdom
BAIA Gioele - IUSS Advanced School of Pavia - Italy
DEGANO Michele - University of Nottingham - United Kingdom

326 - Performance analysis of PMSM servo-drive with state feedback and hybrid position controllers **Panel S2**
TARCZEWSKI Tomasz, LISINSKI Hubert - Nicolaus Copernicus University In Torun - Poland
GRZESIAK Lech - Warsaw University of Technology - Poland

337 - Sensorless Position Control of Synchronous Reluctance Motor with Real Time Path Generation **Panel S3**
CENTI Federico, CREDO Andrea, FABRI Giuseppe, SALLOUM Rama, TURSINI Marco - Italy

348 - MRAS-based sensorless field oriented controlled axial flux permanent magnet synchronous machine with additional parameter adaptation **Panel S4**
BRÜNS Michael, RUDOLPH Christian - University Of Applied Sciences Hamburg - Germany

11:10 **DS3j - Topic 13: Contactless (Wireless) Power Supply** ***Location: Exhibition area – level -2***
Chair(s): KYYRÄ Jorma, Aalto University, Finland *Location:*

150 - A Compact Dual-Band Wireless Power Transfer System based on circular edges with DGS resonators **Panel T1**
SAMADBEIK Mahya - West Tehran Branch, Islamic Azad Univeristy - Iran
SIADATAN Alireza - York University - Canada
SEPEHRINOUR Maryam - Algoma University - Canada

233 - A Superconducting Half-Wave Rectifier: Principle and Experiment **Panel T2**
GONG Tianyong, QUÉVAL Loïc- GEEPS - France

252 - Comparison of Resonant Converters for High-Power Inductive Wireless Power Transfer **Panel T3**
CASTILLO Diego - Chile
BRICEÑO Pablo - University of Nottingham - United Kingdom
SANCHEZ-SQUELLA Antonio - Chile
ADHENA Hafte, WATSON Alan - University of Nottingham - United Kingdom

324 - PWM-Less Utility Frequency Output Capacitive Wireless Power Transfer System **Panel T4**
TOKURIKI Masaya, KUSAKA Keisuke - Nagaoka University of Technology - Japan
FURUHASHI Kazumi - Tokyo Electric Power Company Holdings, Inc. - Japan

11:10 **DS3k - Topic 13: Industry-Specific Applications (Cement, Steel, Paper, Textile, Mining, etc.)**
Location: Exhibition area – level -2
Chair(s): KYYRÄ Jorma, Aalto University, Finland

276 - Development of a Modular High Current DC Power Supply for Plasma Torch **Panel U1**
KHAN Noman, ABBAS Tanveer, HASSAN MUHAMMAD Mubassir, SAEED Nouman, AHMED Naseer - Pakistan Tokamak Plasma Research Institute (PTPRI) - Pakistan
PASQUIER Christophe, EL KHAMLICHI DRISSI Khalil, TEHRANI Kambiz - Université Clermont Auvergne, Clermont Auvergne INP, CNRS, Institute Pascal - France

11:10 **DS3l - Topic 13: Applications in Physics Research and Related Areas** ***Location: Exhibition area – level -***
Chair(s): KYYRÄ Jorma, Aalto University, Finland*:*

260 - Minimization of the circulating currents of an interleaved converter for particle accelerator using inversion-based control **Panel U2**
GODART Gabriel, BOATTINI Fulvio - CERN - European Organization For Nuclear Research - Switzerland
DELARUE Philippe, BOUSCAYROL Alain - L2EP - Univ. Lille - France

280 - Inversion-based Control Simplifications for a Cycling-mode Power Converter in Particle Accelerators **Panel U3**
BAZIZ Amel - L2EP - Univ. Lille - France
XYSTRAS Dimitris, LE GODEC Gilles - CERN - European Organization For Nuclear Research - Switzerland
DELARUE Philippe, BOUSCAYROL Alain - L2EP - Univ. Lille - France

Closing session

14:00 **Closing session** ***Location: Gaston Berger Amphitheatre***
Chair(s): DOPPELBAUER Martin, Karlsruhe Institute of Technology (KIT), Germany
LATAIRE Philippe, Vrije Universiteit Brussel, Belgium

Lecture session

15:10 **LS6a - Topic 9 - DC/DC Converter Topologies (IV)** ***Location: Gaston Berger Amphitheatre***
Chair(s): SIADATAN Alireza, York University, Canada
HEGAZY Omar, Vrije Universiteit Brussel, Belgium

15:10 **263 - Trapezoidal Wave Operation of High-power Non-isolated DC/DC Converter for Current Stress Reduction**
WANG Ning, LI Binbin, JIAO Yingzong, XU Dianguo - Harbin Institute of Technology - China

15:30 **148 - DC-DC converter with low components voltage stress and reduced conduction losses by branches parallel connection**
STALA Robert, ORLOWSKI Filip - AGH University of Krakow - Poland

15:50 **300 - Adaptative Resonant Tank of Bidirectional CLLC Resonant Converters for Electric Vehicle Charging Applications**
PRIETO Borja, ÁVILA Ander - Ikerlan - Spain
GARRIDO David, AIZPURU Iosu - Mondragon Goi Eskola Politeknikoa S. Coop - Spain
RUJAS Alejandro - Ikerlan - Spain

15:10 **LS6b - Topic 3 - Energy Storage and Management Systems** ***Location: Louis Armand East***
Chair(s): ROBYNS Benoît, L2EP Junia, France
ABBES Dhaker, L2EP Junia, France

15:10 **236 - Impact of Model Depth on State of Charge Estimation in Second-Life Batteries**
BÖHNING Lukas, HERGET Mathias, STOCK Patrick, FIESSER Sven, KRESS Raphael, SCHWALBE Ulf - Hochschule Fulda - University of Applied Sciences - Germany

15:30 **341 - Improved estimation of battery equivalent resistance in bidirectional EV chargers**
BAGHAEI NANE KARAN Mohammad Sadegh, KADER Zohra, FADEL Maurice - LAPLACE - University of Toulouse - France
LACHAIZE Jerome - Vitesco Technology France SAS - France

15:50 **197 - Modeling the steady state response of the solid phase diffusion process in Lithium-ion cells**
BAKARAKI Ghada, RABAB Houssam, DAMAY Nicolas, EL KADRI BENKARA Khadija, FORGEZ Christophe - Université de Technologie de Compiegne - France

15:10 **LS6c - Topic 6 - Energy transition and societal change** ***Location: Louis Armand West***
Chair(s): RUFER Alfred, Ecole Polytechnique Federale De Lausanne, Switzerland
LEFEBVRE Stéphane, Conservatoire National des Arts et Metiers, France

15:10 **319 - Allocation of Electric Vehicle Charging Stations in Urban Areas Using GIS**
GU Yiwen, CELIK Berk, HACHETTE Maxime, LOCMENT Fabrice, SECHILARIU Manuela - Université de Technologie de Compiegne - France

15:30 **339 - Cities and Urban areas with Mobility based on Innovation and carbon Neutrality: CUMIN programme extension**
BOUSCAYROL Alain, CASTEX Elodie - Université Lille 1 - L2EP - France

15:50 **346 - Energy transition: an approach from scientific features to societal issues**
LEMAIRE-SEMAIL Betty - L2EP - Univ. Lille - France
ROUSSEL Pascal - UCCS-CNRS-Univ. Lille - France
NANQUETTE Aude, BOUSCAYROL Alain - L2EP - Univ. Lille - France

15:10 **LS6d - Topic 13 - Power Supplies and Industry-specific Power Electronics** ***Location: Room 1***
Chair(s): KYYRÄ Jorma, Aalto University, Finland

15:10 **32 - Design of an Integrated Magnetic Structure for Hybrid IPT Charger to Achieve Misalignment Tolerance and Constant Output Current**
GHEYSARI Armin, YAZDIAN VARJANI Ali - Tarbiat Modares University - Iran
BABAKI Amir, EBEL Thomas - The University of Southern Denmark - Denmark

15:30 **283 - A Grid-Connected Wireless Power Transfer System with LCC-Series Compensation, Interleaved Converters, and CC/CV Charging for Wide Power Range Applications**
RAMEZANI Mohammad, RANJBARAN Parisa, PAHLEVANI Majid - Queen's University - Canada
IMAN-EINI Hossein - University of Tehran - Iran

15:50 **230 - Enhancing Accuracy of a 2MW Power Converter for High-Current Electromagnets**
SAVARY Jérôme, BONNIN Xavier, LE GODEC Gilles - CERN - European Organization for Nuclear Research - Switzerland

Panel discussion

16:15 **Panel Discussion - Focus Topic 1 - Electromobility** ***Location: Louis Armand East***
Chair(s): BOUSCAYROL Alain, Université Lille 1 - L2EP, France

Confirmed panelists:

- Emelie Nilsson, Airbus UpNext: “Cryogenic and Superconducting Powertrain Development for Future Electric Aircraft Propulsion”
- Serge Loudot, AMPERE: “Power-Electronic Devices and Integration for Electromobility”
- Clément Depature Lançon, SNCF: “Decarbonization of Rolling Stock
- Christophe Viguier, SAFRAN TECH: “Electrical Machines in Aeronautic: Stakes & Challenges”

List of exhibitors and sponsors

Our sponsors

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Volkswagen

https://www.volkswagen-group.com/en/volkswagen-group-technology-16016

Volkswagen Group Components with its more than 70.000 employees in over 60 factories worldwide is one of the biggest Tier 1 suppliers in the world – a hidden gem under the roof of the Volkswagen Group. With our dedication to developing the key parts of power electronics in-house – down to the level of semiconductor specification – we will enhance our product portfolio, change supply chains sustainably and disrupt automotive electronics products and processes

CLASSIC

DEEP Concept
Booth 1

https://deepconcept.fr

DEEP Concept is a French SME specialised in the packaging for Power Electronics, with high skills in High Voltage. As Expert in the development of new power packaging technologies with companies from all domains and laboratories around the world, DEEP Concept has a large experience in material, interfaces and interconnections such as selective die metallisation, die-attach, 3D integration, double side cooling, etc. The use of Multiphysics simulation tools permits to create appropriate designs for robust manufacturing. In particular, DEEP Concept engineers have access to PRIMES platform, to be able to design, simulate, manufacture and characterize new power module technologies for High Voltage applications. The manufacturing of micro-series of Power Modules can be based on conventional or innovative solutions, from single chip packaging to complete power modules or full converters.

Hitachi Energy

Booth 20

https://www.hitachienergy.com/uk-ie/en

Hitachi Energy is a global technology leader that is advancing a sustainable energy future for all. We are advancing the world's energy system to be more sustainable, flexible and secure and we collaborate with customers and partners to enable a sustainable energy future – for today's generations and those to come. Hitachi Energy has a proven track record and unparalleled installed base in more than 140 coun-tries, serving customers in utility, industry, transportation, data centers and infrastructure sectors.
With innovative technologies and services including the integration of more than 150 gigawatts of HVDC links into the power system, we help make the energy value chain more efficient, making electricity more accessible to all. Together with stakeholders across sectors and geographies, we enable the digital transformation required to accelerate the energy transition towards a carbon-neutral future.
Headquartered in Switzerland, we employ around 45,000 people in 60 countries and generate business volumes of around $13 billion USD.

Our exhibitors

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DOWA HD Europe

Booth 21

https://hd.dowa.co.jp/en/about.html

DOWA HD Europe GmbH is a member of DOWA HOLDINGS CO., LTD.
The DOWA Group was founded in 1884 as a mining and smelting company. Since its establishment, the DOWA Group has evolved its operations in a number of directions in step with the changing times, to the extent of forging a unique recycling-oriented business structure that consists of five core businesses. The DOWA Group is now providing its services with a commitment to building a sustainable society under its mission of contributing to creating an affluent, recycling-oriented society through our business activities worldwide.

dSPACE
Booth 4-5

www.dspace.com

dSPACE is a leading provider of simulation and validation solutions worldwide for developing connected, autonomous, and electrically powered vehicles. The company's range of end-to-end solutions are used particularly by automotive manufacturers and their suppliers to test the software and hardware components in their new vehicles long before a new model is allowed on the road. Not only is dSPACE a sought-after partner in vehicle development, engineers also rely on our know-how at dSPACE when it comes to aerospace and industrial automation. Our portfolio ranges from end-to-end solutions for simulation and validation to engineering and consulting services as well as training and support. With approximately 2,800 employees worldwide, dSPACE is headquartered in Paderborn, Germany. It has three project centers in Germany and serves customers through its regional companies in the USA, the UK, France, Japan, China, Croatia, South Korea, and India.

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Imperix

Booth 3

https://imperix.com

Imperix is a Swiss company developing high-end control equipment and prototyping hardware for power electronics, drives, smart grids and related topics. Its products are designed to enable cutting-edge innovation in corporate and academic environments. They are especially valued for their ability to accelerate the implementation of laboratory-scale power converters and facilitate the derivation of high quality experimental results.
The company also offers various levels of integration services, intended to assist its customers in their prototyping activities. As such, its offering ranges from the delivery of plug-and-play hardware and software, to that of fully customized systems involving specialized control software algorithms.

Iwatsu

Booth 8

https://www.iwatsu-europe.com

We're bringing our best-in-class test & measurement solutions, designed to help you tackle your most complex measurement challenges. Stop by our booth to learn more about:

- Curve Tracer CS-8000: Best-in-class 2000A, 250fA resolution, 5000V (8mA) high power device characterization, fully adjustable measurement timings, graphical user interface, oscilloscope view I(t) & V(t) for each measurement point, gate pre-charge sequence, hysteresis measurements, ideal for manual and remote measurements of GaN & SiC devices.
- Rogowski coil current probes with no magnetic saturation: >100 models from 0.4Hz to 100MHz, up to 120 kA peak, 10 kV max, high temperature -40°C to +150°C models
- SY-821x B-H analyzers for soft-magnetic material characterization: Core loss measurements, BH/Pc and m/L/Q measurement function, automatic excitation, sinusoidal or pulse excitation, 10 Hz up to 10MHz, ±6A, ±200 V

Opsens Solutions Inc

Booth 9

https://opsens-solutions.com

Opsens Solutions Inc. develops, manufactures, and supplies a wide range of innovative fibre optic sensing solutions and associated signal conditioners based on proprietary technologies.

Integrated temperature measurement during the testing phase and operation phase of the modules has been identified as the solution for increasing the reliability of these devices. The EM immunity, response time and size of fiber optic sensors combined with other technological benefits provide efficient monitoring diagnostics of power electronic components under stress. Especially for applications like:

- Power cycling
- Thermal stress analysis
- High voltage environments
- Junction temperature evaluation of transistor
- Temperature mission profile of power modules
- Quality control of integrated circuit
- Thermal modeling assessment
- Active monitoring of power electronics during service

Mersen

Booth 11-12

https://www.mersen.com/en

Mersen is a global expert in electrical specialties and advanced materials for high-tech industries. With more than 50 industrial sites and 18 R&D centers in 33 countries around the world, Mersen develops customized solutions and delivers key products to its clients in order to meet the new technological challenges shaping tomorrow's world.

Mersen offers a comprehensive range of solutions for power management: advanced over-current protection devices, film and electrolytic capacitors, laminated bus bars and thermal management solutions tailored for critical applications.

With innovative solutions to enhance electrical efficiency and safety, Mersen supports its customers in optimizing their power management systems for markets such as railways and metro, aeronautics, e-mobility and electrical energy storage.

Opal RT

Booth 10

https://www.opal-rt.com

Real-time simulation is enabling the world's visionaries to make innovative ideas a reality. OPAL-RT empowers engineers and researchers with accessible, cutting-edge, real-time simulation technology to accelerate the development of better products and more reliable energy transmission.

Since 1997, industries including automotive, aerospace, power electronics and power generation have increasingly turned to OPAL-RT, transforming the company into a world leader in real-time simulation and Hardware-in-the-Loop (HIL) testing equipment for electrical, electro-mechanical and power electronics systems.

PMK

Booth 7

https://www.pmk.de/en/home

We're bringing our best-in-class probing solutions for universal use with any oscilloscope, designed to help you tackle your most complex measurement challenges. Stop by our booth to learn more about:

- NEW: FireFly® Power-over-Fiber adapter for 24/7 continuous operation of FireFly® >1.5GHz optically isolated high-voltage probes
- NEW: Ultra-Fast >1GHz Current Shunt UFCS for WBG switching loss and pulse current measurements with lowest <200pH insertion inductance
- NEW: PHVX® 4000V high voltage probe series with >600MHz bandwidth and less 3pF capacitive loading
- NEW: ±4000V high voltage differential probe series HORNET® for tester applications with >300MHz bandwidth and four user selectable input attenuator ranges for best signal fidelity
- NEW: ENVI X® World's first 2000V high voltage environmental probe for -55°C to +155°C with outstanding >500MHz bandwidth and less 3.5pF capacitive loading

Regatron AG

Booth 18

www.regatron.com

Regatron AG is an electronics company established in Switzerland in 1969. They specialize in power supplies and products for power electronics and drive technology. Their expertise covers the development, manufacturing, and global distribution of DC and AC power supplies. Their products are widely used across diverse technical applications and industries, including hybrid/electric vehicles, charging technology, renewable energies, smart grids, power conversion, and energy storage. REGATRON offers comprehensive turnkey solutions for power needs ranging from 10 to 2000+ kW, including power supplies, application software, and cabinet integration.

Rohde & Schwarz

Booth 17

www.rohde-schwarz.com

Rohde & Schwarz est un leader mondial dans les technologies de test et de mesure, fondé en 1933. Dans le domaine de l'électronique de puissance, l'entreprise se distingue par ses solutions innovantes qui facilitent la conception, la mise en œuvre et le test de convertisseurs de puissance, d'onduleurs et d'autres systèmes critiques.
Nos instruments de mesure, tels que les oscilloscopes et les analyseurs de puissance, permettent aux entreprises de relever les défis liés à l'efficacité énergétique, à la fiabilité et à la durabilité, tout en s'adaptant aux évolutions rapides du marché. Engagée dans l'innovation continue, Rohde & Schwarz investit massivement dans la recherche et le développement pour anticiper les besoins futurs de ses clients.
Avec une présence mondiale et une équipe d'experts passionnés, Rohde & Schwarz est votre partenaire de confiance pour relever les défis technologiques d'aujourd'hui et de demain dans le domaine de l'électronique de puissance.

Speedgoat

Booth 13

www.speedgoat.com

Speedgoat offers state-of-the-art solutions for customers working in the power electronics domain to fast-track their R&D activities, especially towards innovations in motors, power converters, and battery systems.

Speedgoat's rapid control prototyping and hardware-in-the-loop (HIL) simulators – that can run and test complex controls and electrical HIL simulations with a bandwidth of several MHz – enable our customers to remain in the forefront of technological advancements in electrification.

Teledyne Lecroy

Booth 22

https://fr.teledynelecroy.com

Teledyne LeCroy est l'un des principaux fournisseurs d'oscilloscopes, d'analyseurs de protocole et de solutions de test et de mesure connexes qui permettent aux entreprises d'un large éventail d'industries de concevoir et de tester des appareils électroniques de tous types. Depuis notre création en 1964, nous nous sommes concentrés sur la création de produits qui améliorent la productivité en aidant les ingénieurs à résoudre les problèmes de conception plus rapidement et plus efficacement.

Tektronix

Booth 14

https://www.tek.com/en

For over 75 years, Tektronix has been a pioneering force at the forefront of the digital age. We deliver innovative, precise, and easy-to-operate test, measurement, and monitoring solutions that solve complex problems, unlock critical insights, and drive groundbreaking discoveries across the globe.
While Tektronix is synonymous with oscilloscopes, offering a comprehensive range from entry-level to high-performance models capable of capturing and analyzing even the most intricate signals, our portfolio extends far beyond. We also provide signal generators, spectrum analyzers, and logic analyzers, catering to a wide spectrum of applications. Further expanding our capabilities, Tek's portfolio includes Keithley, the global leader in precision DC sourcing and measurement, renowned for their source meter instruments, and EA-Elektro Automatik, a designer and manufacturer of cutting-edge programmable DC power supplies, electronic loads, and regenerative DC power supplies.

Typhoon HIL

Booth 19

https://www.typhoon-hil.com

Typhoon HIL Inc. is the market and technology leader in the rapidly-growing field of ultra-high-fidelity controller-Hardware-in-the-Loop (C-HIL) simulation for power electronics, microgrids, and distribution networks. We provide industry-proven, vertically integrated test solutions along with the highest-quality customer support. The company was founded in 2008 and since then has been creating products distinguished by the ultimate ease of use, unrivaled performance, leading-edge technology, and affordability.
Designed with love, from the ground up, Typhoon HIL tools offer a unique user experience free of third-party software and hardware complexities. As a result, Typhoon HIL Control Center, with all the libraries installs with a single click, models compile in seconds, digital inputs are sampled as low as at a 3.5 ns resolution, and real-time simulation runs with a time step as low as 200 ns on the latest generation of Typhoon HIL products.
We deeply believe that less is more when it comes to test equipment that our **customers** love.
We stand behind our seamlessly integrated technology stack, from Typhoon HIL's application-specific processors and ultra-robust numerical solver all the way to the Schematic Editor, SCADA system, and TyphoonTest testing automation. The complete technology stack empowers our **customers** to continuously exceed their controller software quality, performance, and time-to-market goals.

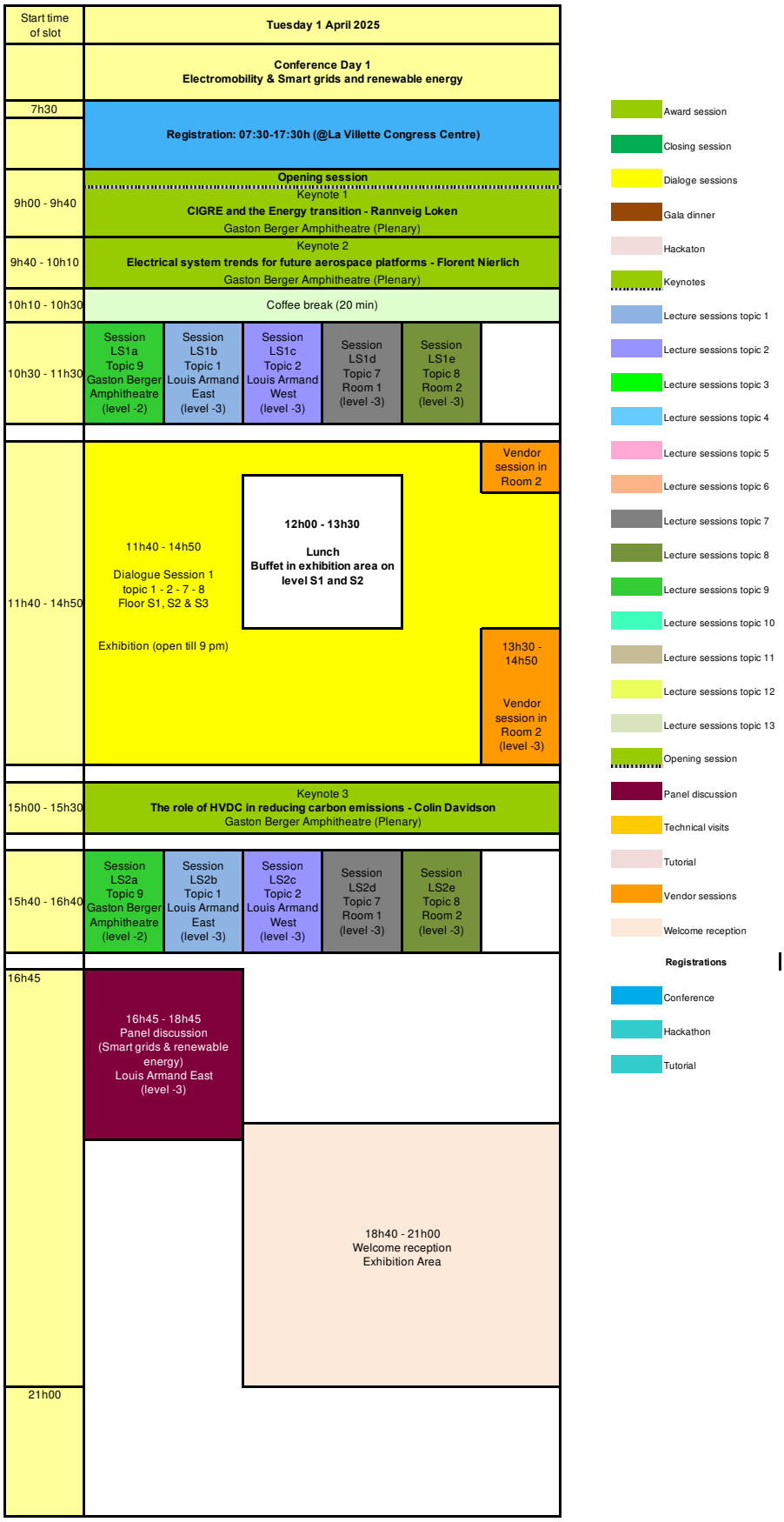
Wolfspeed

Booth 2

https://www.wolfspeed.com

At Wolfspeed, we are the creators of the next-generation semiconductor technology delivering quantum leaps in efficient, sustainable power, enabling the electrification of everything. Through the power of silicon carbide (SiC), we are powering a cleaner, safer, cooler, greener world today, not tomorrow.

Programme at the glance



Start time of slot	Wednesday 2 April 2025					
	Conference Day 2 **Energy storage systems & Digitalization**					
	Registration: 07:30-17:30h (@La Villette Congress Centre)					
8h30 - 9h00	Keynote 4 **HVDC and Power Electronics enabling the energy transition - Mohamed Rashwan** Gaston Berger Amphitheatre (Plenary)					
9h00 - 9h30	Keynote 5 **Management and valorization of storage in electrical networks - Dhaker Abbes** Gaston Berger Amphitheatre (Plenary)					
9h30 - 10h00	Coffee break (30 min)					
10h00 - 11h00	Session LS3a Topic 9 Gaston Berger Amphitheatre (level -2)	Session LS3b Topic 3 Louis Armand East (level -3)	Session LS3c Topic 4 Louis Armand West (level -3)	Session LS3d Topic 10 Room 1 (level -3)		
11h10	11h10 - 15h00 Dialogue Session 2 Topic 3 - 4 - 9 - 10 Floor S1, S2 & S3 Exhibition (open till 6 pm)		**12h00 - 13h30** **Lunch** **Buffet in exhibition area on level S1 and S2**		11h10 - 12h10 Vendor session in Room 2 (level -3)	13h30 - 15h00 Vendor session in Room 2 (level -3)
15h10 - 16h10	Session LS4a Topic 9 Gaston Berger Amphitheatre (level -2)	Session LS4b Topic 3 Louis Armand East (level -3)	Session LS4c Topic 8 Louis Armand West (level -3)	Session LS4d Topic 10 Room 1 (level -3)		
16h15 - 18h15	16h15 - 18h15 Panel discussion (Sustainable and affordable power electronics) Louis Armand East (level -3)					
19h30 - 22h30	Gala Dinner					

- Award session
- Closing session
- Dialoge sessions
- Gala dinner
- Hackaton
- Keynotes
- Lecture sessions topic 1
- Lecture sessions topic 2
- Lecture sessions topic 3
- Lecture sessions topic 4
- Lecture sessions topic 5
- Lecture sessions topic 6
- Lecture sessions topic 7
- Lecture sessions topic 8
- Lecture sessions topic 9
- Lecture sessions topic 10
- Lecture sessions topic 11
- Lecture sessions topic 12
- Lecture sessions topic 13
- Opening session
- Panel discussion
- Technical visits
- Tutorial
- Vendor sessions
- Welcome reception

Registrations

- Conference
- Hackathon
- Tutorial

Start time of slot	Thursday 3 April 2025					
	Conference Day 3 **Sustainable and affordable power electronics & Energy transition and societal change**					
	Registration: 08:00-14:30h (@La Villette Congress Centre)					
8h30 - 9h00	Keynote 6 - **Beyond the quest for performance, let's target a sustainable power electronics technology - Jean-Christophe Crebier** Gaston Berger Amphitheatre (Plenary)					
9h00 - 9h30	Keynote 7 **The role of scientific research in the energy transition - Anouk Barberousse** Gaston Berger Amphitheatre (Plenary)					
9h30 - 10h00	Coffee break (30 min)					
10h00 - 11h00	Session LS5a Topic 9 Gaston Berger Amphitheatre (level -2)	Session LS5b Topic 3 Louis Armand East (level -3)	Session LS5c Topic 5 Louis Armand West (level -3)	Session LS5d Topic 12 Room 1 (level -3)	Session LS5e Topic 11 Room 2 (level -3)	
	11h10 - 12h15 Vendor session in Room 2 (level -3)		**12h00 - 13h30** **Lunch** **Buffet in exhibition area on level S1 and S2**	11h10 - 14h20 Dialogue Session 3 Topic 5 - 11 - 12 - 13 Floor S1, S2 & S3 Exhibition (open till 5.30 pm)		
14:00	**14:00 - 15:00** **Closing Session** Gaston Berger Amphitheatre (Plenary) (level -2)					
15h10 - 16h10	Session LS6a Topic 9 Gaston Berger Amphitheatre (level -2)	Session LS6b Topic 3 Louis Armand East (level -3)	Session LS6c Topic 6 Louis Armand West (level -3)	Session LS6d Topic 13 Room 1 (level -3)		
16h15 - 17h30	Panel discussion (Electromobility) Louis Armand East (level -3)					

- Award session
- Closing session
- Dialoge sessions
- Gala dinner
- Hackaton
- Keynotes
- Lecture sessions topic 1
- Lecture sessions topic 2
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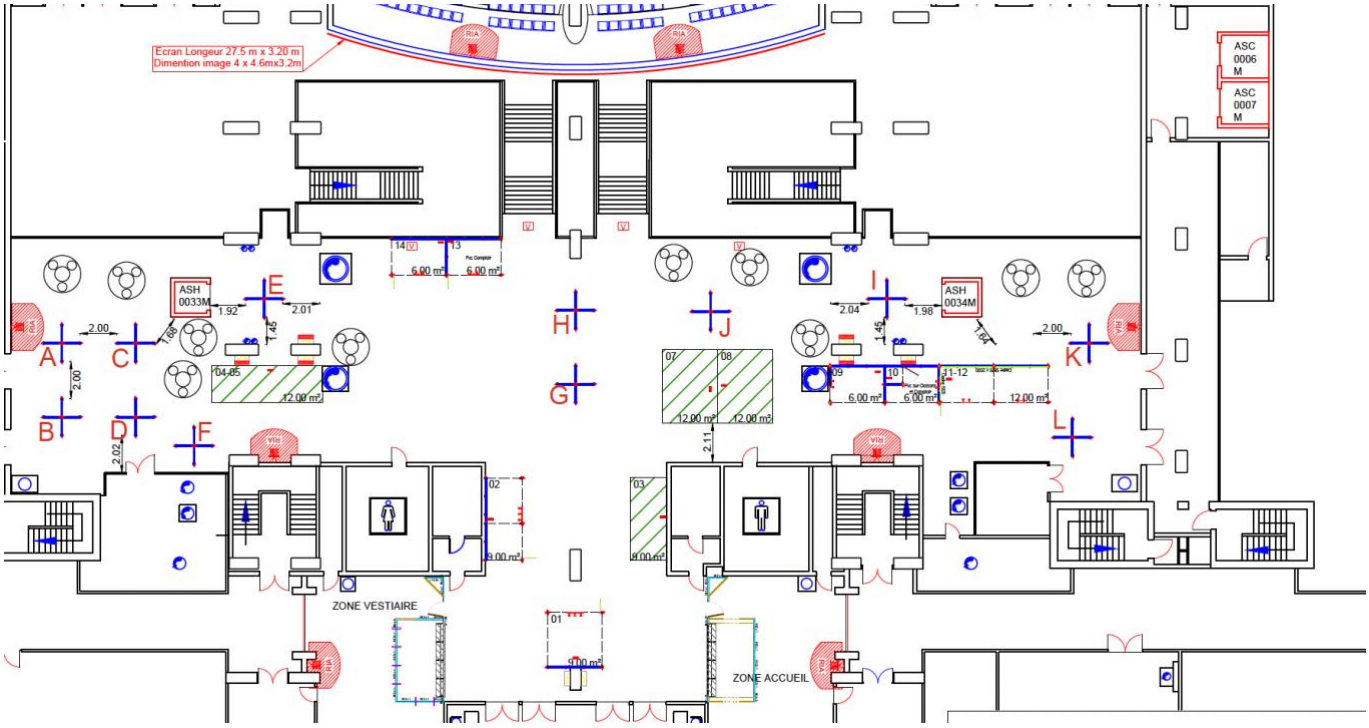
Registrations

- Conference
- Hackathon
- Tutorial

Exhibition plans

Level -1



Level -2