







Karlsruhe, 16th-18th October 2023

8th IEEE Workshop on the Electronic Grid (eGrid) 2023 **Digitalizing the Energy Grid**

Call for Papers

The 8th IEEE Workshop on the Electronic Grid (eGrid 2023) will be held on October 16th-18th, 2023 at the Karlsruhe Institute of Technology (KIT) - one of the leading Technical Universities in Germany. This international Workshop, sponsored by IEEE Power Electronics Society (PELS) and IEEE Power and Energy Society (PES) and organized by the Karlsruhe Institute of Technology will provide an international forum for academics and industry in the field of electronic grid to exchange information on their latest research ideas, progresses, developments, experiences, achievements, state-of-art technical trends, and applications. The workshop invites experts in power electronics and power system to discuss the evolution of the energy system in a more power electronics-based direction.

The eGrid 2023 Workshop is a single-track industrial workshop where experts from industry and international labs will hold plenary speeches, tutorials, and panels on the last insights on theory, modelling, analysis, design and development, testing, and integration of power electronics-based power systems. The participants will have the possibility to show their work in poster format and to interact with the industrial experts on the challenges and solutions for the future energy systems

Accepted papers will be submitted for inclusion into IEEE Xplore subject to meeting IEEE Xplore's scope and quality requirements. Selected papers will be invited for an extended version in a special Compendium of the IEEE Open Journal of Power Electronics.

Please visit https://egrid2023.com/ for further information!

Track 1: Power grid of the future

- All-power electronics grids: potential and challenges
- Solid State Transformers & asynchronously-connected grids
- Artificial intelligence and machine learning-based strategies in electric grids
- Voltage and Frequency control in low inertia grids
- DC grids: control and applications
- HVDC systems and multi-terminal DC grids
- Multi-modal and cellular grids •
- More resilient grids by means of power electronics

Track 2: Power electronics testing in real world

- Power and control hardware in the loop stability and applications
- Real time modelling & Digital twins •
- Solid state circuit breakers: design and testing •
- Real labs: power electronics test in realistic grid conditions
- Standardization and regulatory aspects of electric grids

Track 3: Energy storage systems

- Fast dynamic energy storage (flywheels, supercaps, etc.)
- Hydrogen-based energy storage systems: modelling, control and potential applications
- Hybrid energy storage systems: sizing, control and real applications
- Grid services capability of energy storage systems (black start capability, power quality improvements, etc.)
- Virtual power plants
- (Power-) Hardware In the Loop validation

Track 4: Cyber-physical-grids

- Energy packet concept: electricity like internet
- Visualization and control of large grid data
- Communications and control of microgrids
- Internet of things
- Cyber- and physical security for future grids

Paper Submission

All authors worldwide are invited to submit their extended digests in a single column, single line spacing template with a text font size of 11pt. The digests should be of no more than 5 pages without authors' names, including figures, and should be submitted through the conference website. The submission must clearly state: the purpose of the work; the manner and degree to which it advances the state of the art; and specific new results that have been obtained and their significance. Full papers should use the IEEE conference template with maximum 6 pages. Additional pages will be charged to authors. A maximum of 8 pages will be accepted in the final proceedings. Significant inconsistency between the accepted digests and the final full paper will lead to a removal of the paper from the final proceeding.

Important Dates for paper submission

- Opening Submission System Date 01/02/2023
- Extended Digest Submission Date 01/06/2023
 - Notification of Acceptance Date 01/07/2023

Date 01/08/2023

- **Final Paper Submission**

Important Dates for tutorial submission

- **Tutorial Submission**
- Notification of Acceptance
- Date 01/03/2023 Date 01/04/2023
- Final Material Delivery

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Date 01/09/2023









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Invited Speakers

IEEE eGrid2023 has invited high-profile speakers from industry, system operators and national research labs, in order to provide to the audience the last advancements in power electronics integration in the power systems.

The list of eGrid2023 keynote speakers is the following:

- Zhenyu (Henry) Huang, Laboratory Fellow, Pacific Northwest National Laboratory, Washington, US.
- Michael Jesberger, Member of the Executive Board, TransnetBW GmbH, Stuttgart, Germany
- Barry Mather, Group Research Manager III, National Renewable Energy Laboratory, Colorado, US.
- Don Tan, Northrop Grumman Aerospace Systems, California US.
- Adrian Timbus, Head of Portfolio and Strategic Marketing, Hitachi Energy, Switzerland
- Michael Weinhold, Global Head of Technology & Innovation Smart Infrastructure, Siemens, Germany

Panel 1: Low inertia grids: how to host safely a high integration of renewables?

- Anne-Katrin Marten 50Hertz, Germany
- Hendrik Neumann Amprion, Germany
- Deepak Ramasubramanian EPRI, US

Panel 3: High-Voltage DC applications: enabler for higher wind energy integration

Coming soon

Panel 2: High power testing: what are the possibilities? What are the opportunities?

- Peter Vaessen KEMA laboratories, Netherlands
- Vahan Gevorgian NREL, Colorado, US
- Sönke Rogalla Fraunhofer ISE, Germany

Panel 4: The evolution of distribution grid: from Watt to power electronics-based grids

- Ali Kazerooni SP Energy Networks, Scotland
- Stephan Rupp Maschinenfabrik Reinhausen, Germany
- Ilknur Colak Schneider Electrics, France

eGrid2023 Sponsors

