

Conference Call for Papers

Important Dates:

Digest Submission: July 1, 2024
Author Notification: August 3, 2024
Final Manuscripts Submission: September 15, 2024



The beautiful city of Grenoble, capital of the French Alps, will host the 4th IEEE Design Methodologies Conference, DMC 2024, on November 18-20, 2024. DMC is the flagship conference of the IEEE PELS Technical Committee 10, and its main goal is to promote new techniques and design methodologies in power electronics. It will give us a possibility to identify the challenges that are awaiting us and to discuss the potential of these new design and analysis paradigms in Power Electronics. The IEEE DMC will bring together the professionals from industry and research institutions with experience in Power Electronics, Design Automation, Artificial Intelligence, Machine Learning, Data-Driven Techniques, Measurement, Test & Verification, and Cyber Security to present and discuss their opinion, experience, needs and vision of future, with emphasis across the fields of Research, Education & Applications.

The Conference topics of interest include, but are not limited to:

1. DESIGN AUTOMATION

- Automated Design of power electronics devices and systems
- Automated Circuit and Layout Synthesis
- Optimization Techniques
- Design Space Exploration
- Digital Twin and Virtual Prototyping
- Magnetics design optimization
- Device Models and Characterization
- Model Order Reduction
- Thermal & Packaging Design Techniques

3. AI / ML and DATA-DRIVEN TECHNIQUES

- Artificial Intelligence in power electronics control
- Estimation and maintenance of power electronics systems
- Condition monitoring
- Fault Diagnostics and Prediction
- Classification and Characterization Methods

2. CYBERSECURITY TECHNIQUES

- Firmware compromise detection and integrity verification
- Cyber-physical attacks and approaches for hardware hardening
- Integration of hardware- and software-based hardening solutions
- Device-level and system-level cybersecurity challenges and solutions
- Resilient power electronic control
- Investigation of cyber-security incidents and mitigation schemes

4. MEASUREMENT, VERIFICATION & TEST METHODS

- Automated testing & verification Techniques
- Considerations of lifetime prediction
- Advanced Measurements & Techniques
- Multi-Physical Systems Analysis – including Thermal and Mechanical Methods
- Hardware and Power in the Loop
- EMC and EMI

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Digest Submission: Prospective authors are requested to submit a single column, single spaced digest no longer than five (5) pages summarizing the proposed paper. The digest will address the problem, the major results and its contribution in comparison with previous research works. It should include key equations, figures, tables, and references as appropriate, but no author names or affiliations. Digests not conforming to these requirements will be rejected without review. All digests will go through a double-blind peer review process to ensure a confidential and fair review. The papers presented at the conference will be included in the IEEE Xplore Digital Library. Please refer to the conference website for a detailed list of technical topics and the digest submission method.