

Special Compendium on Digital Design of Power Electronics Device and Equipment

Deadline for Manuscript Submissions: *EXTENDED* – 15 June 2023

Scheduled Publication Time: *September 2023*

Power electronics devices and equipment play a critical role in supporting power conversion in the fields of renewable energy, electrified transportation, and industry drives. As the power conversion scenarios become increasingly diverse, the development of power electronics has shifted from traditional single-program validation to a more elaborate and varied spectrum design. However, the complexity of this design work makes it challenging to meet performance and development requirements through posterior development and hardware testing. To address these challenges, virtual iteration-based digital design offers flexibility, efficiency, and cost-effectiveness in improving the quality of design and development period. Although digital design technology has made significant advances in information electronics, mechanics, and architecture in the past decade, it is still in its early stages for highly customized power electronics with high energy flux. With the above, we propose the special compendium on *Digital Design of Power Electronics Device and Equipment*.

Papers that showcase the digital design technologies for power electronics, address technology limitations, and demonstrate potential breakthroughs are especially welcome. Topics of interest include, but are not limited to:

- Process simulation and design of (Si/SiC/GaN) power devices and materials
- Electro and thermal modeling and simulation of (Si/SiC/GaN) power devices
- Automatic design and multi-objective optimization of multi-chip power modules
- Automatic design and multi-objective optimization of power electronics heat sinks
- Automatic design and multi-objective optimization of power electronics equipment
- Digital design and validation technologies in power electronics software
- Digital twin technology for power electronics equipment

We will be accepting both letter articles and full journal articles. A letter submission is still expected to include a literature review to establish its relationship to prior work, and present sufficient results to prove the validity and viability of proposed concept, but these parts must be written concisely to focus on the new idea and specific contribution. Works dealing with subjects that cannot be presented in this format because of the need for extensive literature review, lengthy analysis and derivation, and/or extensive experimental verification and validation shall be submitted as regular papers to the Transactions.

All manuscripts must be submitted through Manuscript Central: <https://mc.manuscriptcentral.com/oj-pel>. Submissions must be clearly marked *Digital Design of Power Electronics Device and Equipment* on the cover page. When uploading your paper, please select the corresponding manuscript type for the special compendium. Please refer to <https://www.ieee-pels.org/> for general information about submitting through Manuscript Central.

Guest Editors	Guest Associate Editors	Proposed Timeline
Alan Mantooth , Univ. of Arkansas (USA) Huai Wang , Aalborg Univ. (Denmark) Haoze Luo , Zhejiang Univ., (China)	Christina DiMarnio , Virginia Tech, Blacksburg (USA) Jurgen Biela , ETH Zurich (Switzerland) Jun Wang , Hunan Univ. (China) Zhiqiang Wang , Huazhong Univ. Sci. and Tech. (China) Yongheng Yang , Zhejiang Univ. (China)	15 Jun.: Submission Deadline 15 Jul.: First-Round Notification 15 Aug.: Major Revision Deadline 15 Sep.: Second-Round Notification 15 Sep.: Forwarded to IEEE for Publication Sep.: Articles appear in OJ-PEL