IEEE POWER ELECTRONICS SOCIETY

Products Newsletter

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IEEE Advancing Technology for Humanity

IEEE Power Electronics Magazine

To support continued advances in wide bandgap (WBG) power semiconductors, passive component manufacturers have begun developing advanced product solutions that are optimized to improve overall circuit performance in systems equipped with WBG semiconductors. Two of the most prolific such passive components are power film capacitors and ceramic capacitors. In the September 2023 issue of *IEEE Power Electronics Magazine*, the article "**Recent Advances in Capacitors Used in Wide Bandgap Power Circuitry**" by Ron Demcko, reveals recent advances in power film capacitors as well as ceramic MLCC capacitors that are optimized to improve overall circuit performance in systems equipped with WBG semiconductors.

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IEEE Transactions on Power Electronics (TPEL)

❶ **Three New Special Sections** for Publication in October 2024
(Submission Deadline: March 31, 2024)
- Special Section on Advanced MV Power Electronics for Grid Interactive Applications
- Special Section on Advancing Power Electronics Reliability: Components, Systems, and Intelligent Operation
- Special Section on Ultrawide/Wide Bandgap Device, Packaging, Control, EMI, and Applications for Power Electronics

❷ The **December 2023 issue** of TPEL is now available online. It features three Special Sections, complete with editorials.
- Special Section on Advanced WPT Systems With High Efficiency and Misalignment Tolerance Characteristics
- Special Section on Multilevel Converters as an Enabler for Grid Modernization
- Special Section on Switched Capacitor Converters (SCCs)

Here are two highlighted papers from the December issue.
- "**A Three-Phase Synergetically Controlled Buck-Boost Current DC-Link EV Charger**" by Daifei Zhang, Jonas Huber, and Johann W. Kolar. A synergetic control concept for efficient EV charger modules with buck-boost functionality, achieving over 98 percent efficiency in a wide range of operation.

- "**How MagNet: Machine Learning Framework for Modeling Power Magnetic Material Characteristics**" by Haoran Li, Diego Serrano, Thomas Guillod, Shukai Wang, Evan Dogariu, Andrew Nadler, Min Luo, Vineet Bansal, Niraj K. Jha, Yuxin Chen, Charles R. Sullivan, and Minjie Chen. Neural network tools for modeling magnetic characteristics, emphasizing accuracy, data compression, and the potential of "neural networks as datasheets."

❸ As of September 1, 2023, all TPEL submissions must have a primary email address that is institutional. This measure is to protect our authors. Examples of institutional emails include those from an academic institution, a government agency, a company, or IEEE. Papers that do not meet this requirement will not be entered into the review process. We thank you for your assistance with this submission update.

IEEE Power Electronics Letters

❶ The editorial team of TPEL Letters announces a Call for Letters: Special Section on Power Electronics Technologies for Transforming Electrical Grids. Manuscripts can be submitted through **ScholarOne**. January 31, 2024 is the Manuscript Submissions Deadline. To access the Call PDF, click **here**.

❷ In the **November 2023 issue**, nine Letters are presented on the advancements in power electronics technologies, covering modulation and control of power converters, energy harvesting, gate drivers and soft switching, magnetic core integration, and GHz isolated current sensors. From this issue, one intriguing Letter is highlighted below.

"**Origin of Soft-Switching Output Capacitance Loss in Cascode GaN HEMTs at High Frequencies**" by Qihao Song, Ruizhe Zhang, Qiang Li, and Yuhao Zhang. This work presents an experimental analysis on the output capacitance loss of cascode GaN high electron mobility transistors (HEMTs). The device is tested in the multi-MHz soft-switching mode. The results provide novel insights into reducing the switching loss of cascode GaN HEMTs in high-frequency applications.

IEEE Open Journal of Power Electronics (OJPEL)

Below are some papers that focus on inverters. More articles from OJPEL can be found on **Xplore**.

- "**Multiport Converter With Enhanced Port Utilization Using Multitasking Dual Inverters**" by Chatumal Perera, John Salmon, and Gregory J. Kish
- "**Analysis and Design of a Zero-Current Switching Non-Isolated High Gain Inverter**" by Mandeep Singh Rana, Divya Yogi, Anil Gambhir, and Santanu K. Mishra
- "**A Per-Phase Power Controller for Smooth Transitions to Islanded Operation**" by Tommaso Caldognetto, Hossein Abedini, and Paolo Mattavelli

IEEE Transactions on Transportation Electrification (TTE)

❶ The TTE journal team welcomed their new Editorial Assistant, Maeva Berghmans, on October 23. Maeva replaced Jessica Petrunti, who was the TTE Editorial Assistant since 2016. The team would like to thank Jessica for a job well done.

❷ There is still time to submit a manuscript to the**TTE Special Issue on Electrified Ship Technologies**. The submission deadline is January 31, 2024. The expected publication date is September 2024. All manuscripts can be submitted through **Manuscript Central**.

IEEE Journal of Emerging and Selected Topics in Power Electronics (JESTPE)

❶ PELS Technical Committees (TCs) are welcome to propose special issues to JESTPE. More information about organizing a special issue can be found **here**. Proposals can be **emailed** to Deputy EIC Fernando Briz for consideration.

❷ JESTPE is recruiting new Editors and AEs for 2024. Those who are interested in joining JESTPE's Editorial Board can **email** EIC Tsorng-Juu (Peter) Liang. Please include your name, Curriculum Vitae, keywords, and previous experience serving on an editorial board.

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