Products Newsletter

January 2025 | Issue 54

Products Leadership Updates

Please welcome these PELS leaders in their latest roles.
- Yunwei (Ryan) Li, University of Alberta, Canada, PELS Vice President of Products (second term)
- Yaow-Ming Chen, National Taiwan University, TPEL Editor-at Large
- Xiongfei Wang, KTH Royal Institute of Technology, Sweden, TPEL Editor-in-Chief
- Maryam Saeedifard, Georgia Institute of Technology, USA, TPEL Letters Executive Editor

Please welcome these Co-EICs to the TPEL team.
- Xinbo Ruan, Nanjing, University of Aeronautics and Astronautics, China
- Antonio J. Marques Cardoso, Universidade da Beira Interior, Portugal
- Brendan McGrath, RMIT University, Australia (move from Letters)
- Xiaonan Lu, Purdue University, USA (Letters)

Thank you to these TPEL Co-EICs that concluded three-year terms in 2024.
- Paolo Mattavelli, University of Padova, Italy
- Chun-Taek Rim, GIST, South Korea

Please welcome these new editors to the JESTPE team.
- Fernando Briz, Universidad de Oviedo, JESTPE EIC
- Sudip Mazumder, University of Illinois Chicago, USA, JESTPE Deputy Editor-in-Chief

Thank you to Tsorng-Juu (Peter) Liang, National Cheng-Kung University, Taiwan, for his service as EIC to JESTPE, from the years 2022-2024.

IEEE Power Electronics Magazine

Changing of the Guard
With the end of the old year and the advent of the new, we here at PELS are seeing a change of editorial leadership in our publication. We bid a fond farewell to Ashok Bindra, recognizing and appreciating his years of service as Editor-in-Chief (EIC) of the *IEEE Power Electronics Magazine*. Stepping down at the end of 2024, Bindra has been EIC since the magazine's founding in 2014. Taking his place at the helm is Alix Paultre, an Electronic Warfare Cold-War veteran with decades of experience in the electronics industry and a known advocate of the power engineering community. Paultre looks forward to continuing his service to our industry in the years to come, and appreciates the magnitude of the responsibility being given him.

Easy Access to Previous Issues
For more editorial from previous issues of the magazine, you can now visit the redesigned **website**. You will discover a variety of Open Access columns, along with Society News stories. Stay tuned for the December 2024 issue!

IEEE Transactions on Power Electronics (TPEL)

Forty Years of TPEL
The first issue of TPEL was published in 1986, and we will celebrate its 40th anniversary next year in 2025. The TPEL editorial team is organizing a series of events and activities to honor this milestone and envision the future of TPEL. If you would like to participate in the planning and

brainstorming sessions for these celebratory activities, please **email** the TPEL Publications Administrator.

The editorial team of TPEL is pleased to announce three new Special Sections for publication in 2025.

1. Special Section on Advanced Wide Bandgap Single-Stage Grid-Connected Power Interface
2. Special Section on Drives and Controls of Electric Machines in Electric and Hybrid Aircraft Applications
3. Special Section on Very High Frequency Resonant Converters for Efficient and Miniaturized Power Conversion

The submission deadline for these is March 31, 2025. For more info, please click **here**.

TPEL editors have selected a few papers to highlight from the **January 2025** issue.

"**Extended Physics-Informed Neural Networks for Parameter Identification of Switched Mode Power Converters with Undetermined Topological Durations**" by Yangxiao Xiang, Hongjian Lin, and Henry Shu-Hung Chung. This article presents an enhanced physics-informed neural network method for parameter identification of power converters at topology transitions. The effectiveness of the method is tested and validated on a buck converter operating in the discontinuous conduction mode.

"**Machine-Learned Models for Power Magnetic Material Characteristics**" by Pawel Leszczynski, Kamil Kutorasinski, Marcin Szewczyk, and Jaroslaw Pawlowski. This paper presents the use of autoencoder neural network (NN) for estimating parameters of lumped element models of power magnetic materials. The performance of Siamese NN model is compared against basic NN model and further improved based on the measurement data.

IEEE Power Electronics Letters

The editors of TPEL Letters present three new Special Sections for publication in 2025.

1. Special Section on Highly Robust Power Electronics in the Era DC Grid
2. Special Section on Fabrication and Design of High-Power-Density and High-Frequency Passive Components
3. Special Section on AI-Enhanced Power Electronic Systems: Design, Control, and Maintenance

For specific deadlines on these sections, please click **here**.

The **January 2025** issue features 25 Letters exploring a broad spectrum of innovations in power electronics and related fields. Key topics include dynamic wireless power transfer systems, model predictive control techniques for EV chargers and electrical drives, advanced methods for magnetic core loss measurement, torque control strategies for switched reluctance machines, and optimization in power module design. The issue also covers the development of fault-tolerant systems for electric machines, high-efficiency power supplies, enhanced frequency support for wind turbines, and novel demodulation techniques for encoderless control. Additionally, it delves into resonant conditions for wireless power transfer, temperature estimation methods for IGBTs, and strategies for improving the efficiency and stability of power converters in various applications. Among these, two intriguing Letters are highlighted below.

"**Accurate Magnetic Core Losses Measurement Under Arbitrary Excitation Waveforms**" by Stefano Cabizza and Giorgio Spiazzi. This work introduces a novel approach, leveraging the fast Fourier transform, to couple with the already demonstrated partial cancellation concept adopted for transformer core loss measurements.

"**Novel Vertical Shunt Resistor: Integration and Optimization in Power Modules**" by Sihoon Choi, Thiyu Warnakulasooriya, Jiyoon Choi, Yu Yonezawa, Jun Imaoka, and Masayoshi Yamamoto. This work proposes a novel vertical shunt resistor and its packaging methods. The proposed resistor is composed of three layers: a top copper electrode, a resistor alloy, and a bottom copper electrode. This configuration enables vertical current flow and offers several advantages over lateral counterparts.

IEEE Transactions on Transportation Electrification (TTE)

Exciting News: TTE Goes Bi-Monthly Starting 2025!
We are happy to announce that beginning in 2025, the*IEEE Transactions on Transportation Electrification* will transition from a quarterly to a bi-monthly publication schedule. This change reflects the growing interest and number of articles in the journal, also allowing us to shorten the time from article acceptance to final publication.

The first bi-monthly issue is set to be released in February 2025. Stay tuned for a more dynamic publishing experience, packed with the latest insights into transportation electrification. The journal's editorial board would like to thanks PELS for the continued support as we grow and evolve to better serve our readers and contributors.

To read the latest issue of TTE, please visit**Xplore**.

IEEE Open Journal of Power Electronics (OJPEL)

A special thank you to those authors who participated in the Transparent Peer Review Pilot. Papers in Volume 6 of OJPEL are now available online through Xplore. For more information on submitting an Open Access paper, please visit **online**.

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

The JESTPE editorial team announces that the submission deadline for the JESTPESpecial Issue on Modular Power Electronics and Reconfigurable Circuits in Energy Storage, Energy Conversion, and Power Management has been extended to January 31, 2025. For more information on JESTPE, please visit the **website**.

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