IEEE POWER ELECTRONICS SOCIETY

Products Newsletter

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IEEE Advancing Technology for Humanity

Post Journal Presentations: ECCE Initiative

This new initiative will provide an opportunity to the authors of published journal papers to present their work live to the ECCE audience. This will help journal authors advocate their published ideas, while at the same time, draw attention to both the participating journals and the ECCE conference. This is "presentation only" as the published journal paper will not be included into the ECCE proceedings. Eligible papers must be published during the period of January 1, 2022 and May 31, 2023.

Here is the list of journals from PELS and IAS:
IEEE Transactions on Power Electronics
IEEE Power Electronics Letters
IEEE Journal of Emerging and Selected Topics in Power Electronics
IEEE Power Electronics Magazine
IEEE Transactions on Industry Applications
IEEE Industry Applications Magazine
IEEE Open Journal of Power Electronics
IEEE Open Journal of Industry Applications

For more information, including the presentation session structure, application, and registration, please visit **https://www.ieee-ecce.org/2023/**.

New Editorial Members for TPEL

The editorial team of TPEL is pleased to announce new members to the board. (Please note the order from top to bottom.)

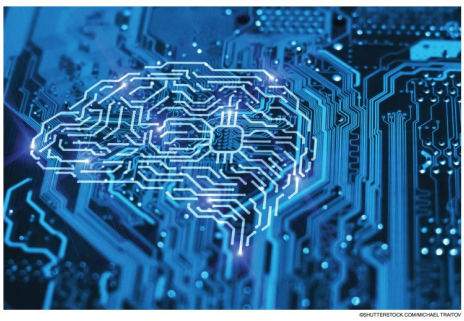
Xiongfei Wang
Executive Editor, *TPEL Letters*
KTH Royal Institute of Technology, Sweden

Giovanna Oriti
Co-EIC, *TPEL*
Naval Postgraduate School, USA

Brendan McGrath
Co-EIC, *TPEL Letters*
RMIT University, Australia

Xinke Wu
Co-EIC, *TPEL Letters*
Zhejian University, China

IEEE Power Electronics Magazine



The recent technological advances in digitalization have revolutionized the industrial sector. Leveraging data analytics has now enabled the collection of deep insights into the performance and, as a result, the optimization of assets. Industrial drives, for example, already accumulate all the required information to control electric machines. These signals include, but are not limited to, phase currents, their magnitude, phase shift and frequency, and temperature. Integrating ML models responsible for predicting the evolution of those directly collected or implicitly derived parameters enhances the smartness of industrial systems even further. In the March 2023 issue of *IEEE Power Electronics Magazine* article "**Machine-Learning-Based Condition Monitoring of Power Electronics Modules in Modern Electric Drives**," authors Dinan Li, Panagiotis Kakosimos, and Luca Peretti show that data already residing in most modern electric drives can be used to develop a data-driven thermal model of a power electronics module.

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IEEE Transactions on Power Electronics (TPEL)

The **June 2023 issue** of TPEL is now available online. Be sure to check out these highlighted articles selected by TPEL editors.

"**A 2.7 W AC-Coupled Hybrid Supply Modulator Achieving 200 MHz Envelope-Tracking Bandwidth for 5G New Radio Power Amplifier**" by Peng Xu, Xueli Zhang, Peng Cao, Tingting Wei, Zhiguo Tong, Xiaoyang Zeng, Jiawei Xu, and Zhiliang Hong. This paper examines low-power high-frequency PMIC design for envelope tracking.

"**Compact Design of 40 kV 100 A High-Voltage Pulsed-Power Modulator for Driving X-Band Magnetrons**" by Hyun-Bin Jo, Jae-Beom Ahn, Woo-Cheol Jeong, Joo-Young Lee, Min-Kyu Choi, and Hong-Je Ryoo. The authors discuss high-voltage narrow-pulse power electronics systems for driving x-band magnetrons.

IEEE Power Electronics Letters

In the **May 2023 issue**, we have 20 Letters covering a wide range of advancements in power

electronics technologies, such as cryogenic power electronics, energy harvesting, wireless power transfer, MHz power converters, new design and optimization of passive components and converter circuits, stability and control of power electronic systems, and electrical drives. Two interesting letters from the issue are highlighted below.

"**An Automatic Circuit Partitioning Strategy for Accelerated Simulation of Power Electronic Systems**," by Zhujun Yu, Zhengming Zhao, Bochen Shi, and Han Xu. This work introduces a general method for automatically partitioning large-scale power electronic circuits in computer simulations, which efficiently reduces the computational costs. The method is tested with a two-port solid-state transformer with 396 switches.

"**Dead Time Optimization for Synchronous Switching of SiC MOSFETS Considering Nonlinear Gate Capacitance**," by Yimin Zhou, Zhiqiang Wang, Guoqing Xin, Jun Yuan, and Xiaojie Shi. This work introduces an analytical approach to integrating nonlinear gate capacitance into the design of dead time. An accurate estimation of the optimal deadtime is demonstrated, which is critical for switching silicon carbide devices in synchronous rectification modes.

IEEE Open Journal of Power Electronics (OJPEL)

For its next compendium of papers, **OJPEL** is focusing on machines and magnetics. Here are a few of the papers presented.

"**Open Phase Fault Tolerant Control of Multi Three Phase Machines** " by Jayakrishnan Harikumaran, Giampaolo Buticchi, Michael Galea, and Patrick Wheeler.

"**Collaborative Mid-Point Voltage Regulation in Low-Switching-Frequency MPC for Three-Level NPC Inverters Fed Dual Three-Phase PMSM Drives**" by Minrui Gu, Zheng Wang, Congjian Wen, and Zhixiang Zou.

"**Core Loss Calculation of Symmetric Trapezoidal Magnetic Flux Density Waveform**" by Sobhi Barg and Kent Bertilsson.

IEEE Transactions on Transportation Electrification (TTE)

IEEE Transactions on Transportation Electrification (TTE) is focused on components, grid-interfaced technologies, standards, sub-systems, and systems related to power and energy conversion, propulsion, and actuation for all types of electrified vehicles, including on-road, off-road, off-highway, and rail vehicles, airplanes, and ships. Interested in submitting a manuscript? Click **here**.

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

This year marks 10 years since the inception of **JESTPE**! To commemorate this milestone, we are publishing a special editorial written by the current EIC, Dr. Tsorng-Juu (Peter) Liang), and a special issue on the future of power electronics. Be sure to take a look when the next issue comes out in June!