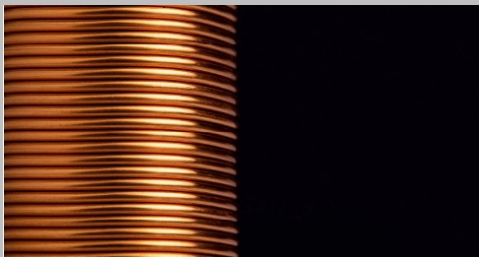




**IEEE POWER  
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Powering a Sustainable Future

## Products Newsletter

### IEEE Power Electronics Magazine



Magnetics continue to intrigue power engineers. For many even today, it is a black art process. However, in the March 2023 issue of *IEEE Power Electronics Magazine*, Ira J. Pitel simplifies the task of selecting the best core geometry for a given application in the article “**Selecting the Best Magnetic Core Geometry**.” Through this article, the author simplifies the task of improving the performance of transformers

and inductors using non-standard cores. In essence, the article shows that magnetic core geometries have significant effects on the performance of transformers and inductors. Reducing turns and increasing the cross-sectional core area,  $A_e$ , can be accomplished without increasing the size of the magnetic component. As illustrated in this article, skin and proximity effects, nonlinear core excitation, and sensitivity to frequency are just some effects to consider for good designs. Whether designs are intended for 50 Hz or 100 kHz, the basic design equations are the same.

#### Free for All

Visit the magazine [website](#) for open access columns and society news stories.

### IEEE Transactions on Power Electronics (TPEL)

❶ The May 2023 [issue](#) of TPEL is now available online. Be sure to check out these highlighted articles selected by TPEL editors.

“**ESR Modeling of Class II MLCC Large-Signal-Excitation Losses**” by David Menzi, Shmuel Ben-Yaakov, Grayson Zulauf, and Johann W. Kolar. This paper introduces an effective series resistance (ESR) model for multilayer ceramic capacitors (MLCCs) based on Steinmetz parameters, which accurately predicts large-signal losses in MLCCs.

“**Modeling and Construction of Single-Wire Power Transmission Based on Multilayer Tesla Coil**” by Xin Jin, Xiyu Chen, Chen Qi, and Xianmin Mu. This paper explores a multilayer Tesla coil-based single-wire power transmission system, achieving up to 90% efficiency over 70 meters and 87% efficiency over 5 km.

#### ❷ TPEL Special Sections Manuscript Submissions Extended to April 15, 2023

TPEL will have three special sections published in October of 2023.

1. Advanced WPT Systems with High Efficiency and Misalignment Tolerance Characteristics
2. Multilevel Converters as an Enabler for Grid Modernization

## IEEE Power Electronics Letters

In the April 2023 [issue](#), 13 Letters are featured that explore the latest advancements in power electronics technologies, covering novel converter topologies for battery equalizer and charges of electric vehicles, advanced control methods for AC-DC converters, DC-DC converters and motor drives, modelling of inductors and GaN devices, reset-less current sensors, and wireless power transfer. Two interesting Letters from the issue are highlighted below.

**“A Simple DC-Offset Eliminating Method of the Series-Inductance Current for the DAB DC–DC Converter”** by Nie Hou, Jingxin Hu, Di Mou, Yue Zhang, Yun Wei Li, and Rik W. De Doncker. The method is independent from phase-shift modulation methods of dual active bridge DC-DC converters. It is easy to implement in digital signal processors.

**“Three-Phase Synergetically Controlled Current DC-Link AC/DC Buck–Boost Converter With Two Independently Regulated DC Outputs”** by Daifei Zhang, Dangqing Cao, Jonas Huber, and Johann W. Kolar. This work provides a control method for AC-DC converters with two independently regulated DC outputs. The method allows loss-optimum power conversion with two different output voltages and/or two different loads.

## IEEE PELS-Tube: Educational Videos on Power Electronics



### IEEE Educational Videos on Power Electronics

## Call for Videos

The IEEE Power Electronics Society (PELS) Educational Videos Committee invites video submissions for the IEEE Educational Videos on Power Electronics (PELS-Tube). PELS-Tube serves as a repository of peer-reviewed knowledge on power electronics concepts for anyone interested in learning.

PELS-Tube videos are fully peer reviewed by experts in the field, giving assurance of high quality and technical accuracy that might not be achieved on other video hosting platforms.

Submission Options: (i) Complete Video (ii) Storyboards

FOR WHOM?  
ANYONE

HOW LONG?  
5 TO 25 MINS

WHO PUBLISHES?  
IEEE PELS

ARE THEY PEER-REVIEWED?  
YES

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### Topics (but not limited to):

- \* Discrete and integrated semiconductors
- \* Passive and active components and materials
- \* Power quality, and utility applications
- \* Power electronics in drives
- \* Reliability and diagnostics
- \* High power converters
- \* Magnetics
- \* EMI/EMC
- \* Lighting applications
- \* Low power converters
- \* Renewable Energy
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## IEEE Open Journal of Power Electronics (OJPEL)



For its next compendium of papers, **OJPEL** is focusing on power electronics converters.

- **“Design Oriented Analysis of Switched Capacitor DC-DC Converters”** by Timothy McRae and Aleksandar Prodić.
- **“Power Converters Topological Transformation Using Dual and Isomorphic Principles”** by Yuzhuo Li and Yun Wei Li.
- **“Single-Phase Five-Level Flying-Capacitor Rectifier Using Three Switches”** by Michel Andrey Freitas de Souza Kohler and Daniel Flores Cortez.
- **“Conceptual Design and Demonstration of an Automatic System for Extracting Switching Loss and Creating Data Library of Power Semiconductors”** by Avishek Ghosh, Carl Ngai Man Ho, Jared Prendergast, and Yanming Xu.

Be sure to take a look at more published papers on *IEEE Xplore*!

## IEEE Transactions on Transportation Electrification (TTE)



Starting from April 1st, the *IEEE Transactions on Transportation Electrification* (TTE) welcomes the following new leaderships.

- Editor-in-Chief: Prof. Alireza Khaligh, University of Maryland, College Park, USA (**left**)
- Deputy Editor-in-Chief: Prof. Fei Gao, University of Technology of Belfort-Montbéliard, France (**middle**)
- Steering Committee Chair: Prof. Mahesh Krishnamurthy, Illinois Institute of Technology, Chicago, USA (**right**)

The PELS Products Committee and entire TTE Editorial Board would like to express their sincere gratitude and congratulations for the past Editor-in-Chief, Prof. Mahesh Krishnamurthy, and the past Steering Committee Chair, Prof. Ali Emadi, for their great work and dedications resulting in significant growth of TTE in the past 3 years!

Be sure to check out the March 2023 **issue** of TTE online.

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

Have you ever wanted to oversee and publish a special issue for JESTPE? If you do, take a look at our guidelines found on our **webpage** to see how to create a special issue. We are always looking for new special issues to feature emerging topics in the field of power electronics. We hope to receive a proposal from you!

IEEE Power Electronics Society | <https://www.ieeepeels.org/publications>

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