PSMA's Power Magnetics Workshop Explores Measurements And Data Processing Trends To Improve Models

The PSMA Magnetics Committee and IEEE PELS are currently planning to conduct the eleventh Power Magnetics at High Frequency Workshop on Saturday, March 21, 2026, which is the day before and at the same venue as APEC 2026—the Henry B. Gonzales Convention Center in San Antonio, TX. The 2026 workshop will build on the ongoing dialogue generated throughout the first ten workshops.

Power Magnetics @ High Frequency Workshop

PSMA Magnetics Committee - 21 March 2026, San Antonio, TX USA

The purpose of this workshop is to explore recent improvements in magnetic materials, coil (winding) design, construction, and fabrication, as well as evaluation techniques, characterization methods, and modeling and simulation tools. The workshop targets the advancements deemed necessary by the participants for power magnetics to meet the technical expectations and requirements of new market applications where higher operating frequencies and emerging topologies are driven by continuous advances in circuits topologies and semiconductor devices.

The target audiences for the 2026 Power Magnetics @ High Frequency workshop include the designers of power magnetic components for use in electronic power converters, those who are responsible to implement the most technologically advanced power magnetic components necessary to achieve higher power densities, specific physical aspect ratios such as low profile, higher power efficiencies and improved thermal performance. The target audience also includes people involved in the supply chain for the power magnetics industry ranging from manufacturers of magnetic materials and magnetic structures, fabricators of magnetic components, providers of modeling and simulation software as well as manufacturers of test and characterization equipment.

The theme of the 2026 Power Magnetics @ High Frequency is measurements and data processing trends to improve analytic models and simulation models towards developing better design tools, enabling magnetics optimization for existing and emerging applications. The workshop will address various aspects of measurement methods and creation of analytical models employing equations re-enforced with empirical data.

The workshop will open with a keynote presentation by Peter Zacharius of the University of Kassel, reviewing the basic principles of analytical models for magnetic components. During the morning session Lukas Pniak of Safron Research and Technology Center will present models for capacitive coupling of planar transformers, Miroslav Vasic of the Universidad Politécnica de Madrid will discuss Artificial Neural Networks and Digital Twin to optimize the design of dual active bridge transformers, and Alfonso Martinez of Würth Elektronik will address modeling of stray capacitance and leakage inductance. Additionally, there will be a presentation outlining qualifying measurement data for use in models.

During lunch, breakfast, and the networking hour at the end of the workshop there will be an interactive session of tabletop technology demonstrations, each addressing specific technical disciplines and capabilities consistent with the workshop agenda. Workshop attendees typically spend ten to fifteen minutes at each technology demonstration station viewing informal interactive presentations. The technology demonstration format facilitates interaction between the attendees and the presenters as a segue from the morning technical presentation sessions to the afternoon lecture presentation session.

The following technology demonstrations are confirmed:

- Mike Arasim of Fair Rite covering magnetic core geometries for modern power applications

- Ihsan Dalgic of Hioki addressing measurement equipment for magnetic components

- Tobias Trupp of Magnetec collaborating with JC Sun of Bs&T covering the topic of apparent permeability and quality factor

- Lukas Mueller of Micrometals collaborating with Jacob Lamphere of the University of Nebraska addressing current-driven methods for characterization of core loss

- Kevin Hermanns of PE Systems covering testing and modeling of magnetic components

- Sebastian Bachman of Tridelta collaborating with Fritz Wohlrath of STS and Lucas Riebenweber of Coburg University introducing a new generation of magnetic cores

- Joaquim Tristan of University of Pittsburgh addressing automated methods for characterization of magnetic core loss

- Marcin Kacki of Hitachi Energy collaborating with Lufan Zhou of Universidad Politécnica de Madrid, Jun Wang of the University of Bristol covering triple pulse testing of magnetic cores and components

- David Ruiz Gomez of Würth Elektronik introducing test methods to validate the voltage rating of magnetic components

- Alfonso Martinez of Würth Elektronik introducing the CoreDataX database

There is room for additional technology demonstrations. If anyone is interested in presenting a technology demonstration, they are encouraged to contact the workshop organizing committee via e-mail to power@psma.com.

The afternoon session will begin with a keynote presentation by Asier Arruti Romero of Mondragon University focusing on the development of unified magnetic loss model bridging empirical equations and physical insight. The keynote presentation will be followed by lecture presentations by Reddy Andapally Bharawaj of CBMM addressing data collection and analysis to create accurate models for FEA simulations, Andrija Stupar of SIMPLIS Technologies speaking to the development of magnetic models for power electronics simulation and Chema Molina of Frenetic providing insights to artificial intelligence-driven approaches for the design of magnetic components.

The workshop is still identifying students for student poster presentations. If you are a student and interested in presenting a poster, please contact the organizing committee through PSMA via e-mail.

Registration for the workshop is limited and is open at the workshop registration page.

Any company interested in financially supporting the workshop as a partner can find more information regarding partner opportunities and benefits on the partnerships page. Or contact the organizing committee through PSMA via page.