



The Multinational Power Electronics Association

PSMA Magnetics Committee Meeting

November 5TH 2025

Ed Herbert, George Slama, Matt Wilkowski
Committee Chairs

PSMA is a not-for-profit organization and a CO-SPONSOR OF APEC



PSMA Magnetics Committee Meeting Agenda

- Introductions
- 2026 Workshop Planning
- 2026 Industry Session Planning
- Special Projects
 - Core Loss Database
 - Current Driven Core Loss
 - Open Source BH Analyzer
 - Core Loss for Frequency Range 1 MHz F 100 MHz
- Magnetics Forum on PSMA Website
- Open Magnetics
- Power Technology Roadmap
- Next Meeting



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PSMA Magnetics Committee Meeting Agenda – 2026 Workshop Banner



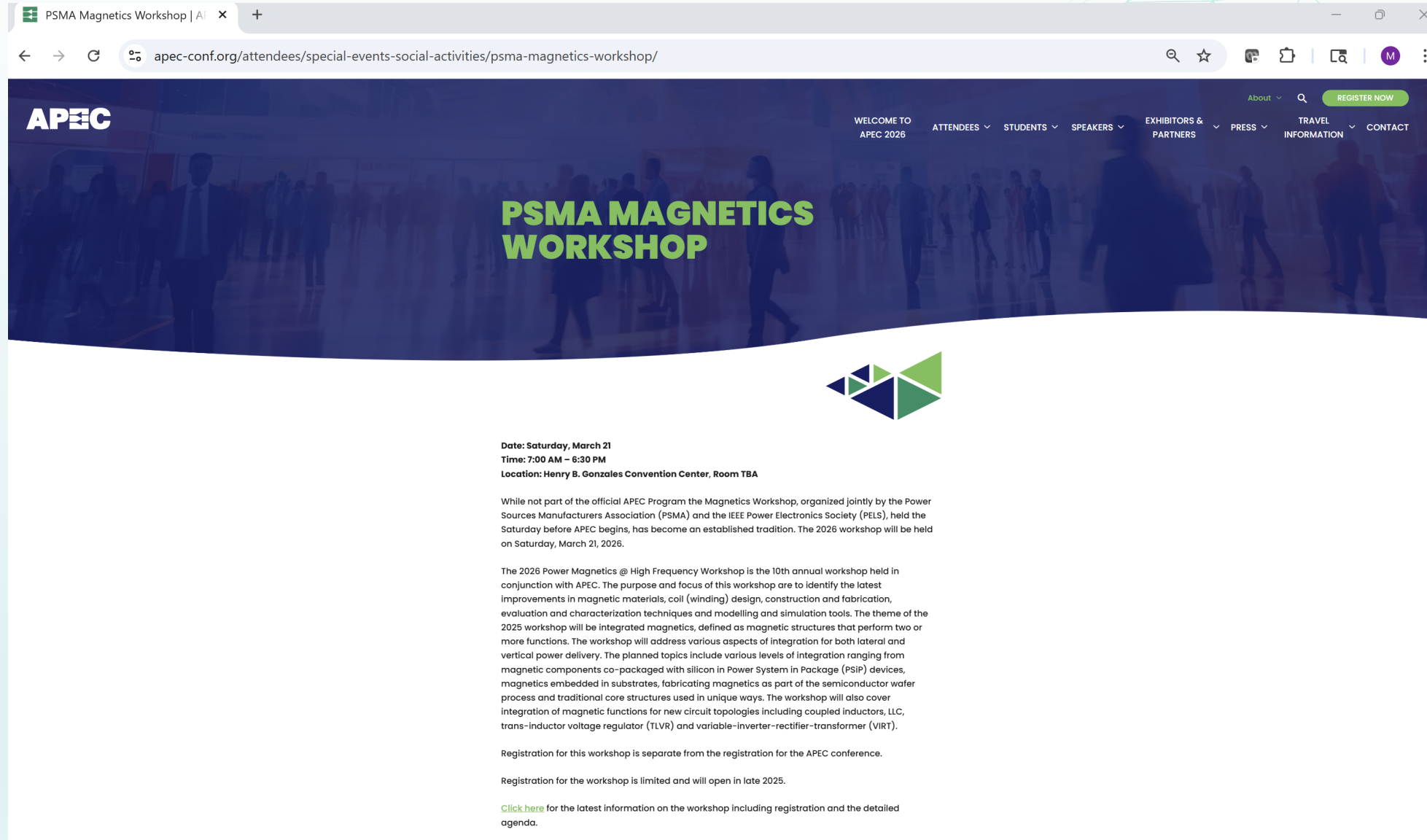
Power Magnetics @ High Frequency Workshop

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

PSMA



PSMA Magnetics Committee Meeting Agenda – 2026 APEC Website




APEC

WELCOME TO APEC 2026

ATTENDEES ▾ STUDENTS ▾ SPEAKERS ▾ EXHIBITORS & PARTNERS ▾ PRESS ▾ TRAVEL INFORMATION ▾ CONTACT

About ▾ REGISTER NOW

PSMA MAGNETICS WORKSHOP



Date: Saturday, March 21
Time: 7:00 AM – 6:30 PM
Location: Henry B. Gonzales Convention Center, Room TBA

While not part of the official APEC Program the Magnetics Workshop, organized jointly by the Power Sources Manufacturers Association (PSMA) and the IEEE Power Electronics Society (PELS), held the Saturday before APEC begins, has become an established tradition. The 2026 workshop will be held on Saturday, March 21, 2026.

The 2026 Power Magnetics @ High Frequency Workshop is the 10th annual workshop held in conjunction with APEC. The purpose and focus of this workshop are to identify the latest improvements in magnetic materials, coil (winding) design, construction and fabrication, evaluation and characterization techniques and modelling and simulation tools. The theme of the 2025 workshop will be integrated magnetics, defined as magnetic structures that perform two or more functions. The workshop will address various aspects of integration for both lateral and vertical power delivery. The planned topics include various levels of integration ranging from magnetic components co-packaged with silicon in Power System in Package (PSIP) devices, magnetics embedded in substrates, fabricating magnetics as part of the semiconductor wafer process and traditional core structures used in unique ways. The workshop will also cover integration of magnetic functions for new circuit topologies including coupled inductors, LLC, trans-inductor voltage regulator (TLVR) and variable-inverter-rectifier-transformer (VIRT).

Registration for this workshop is separate from the registration for the APEC conference.

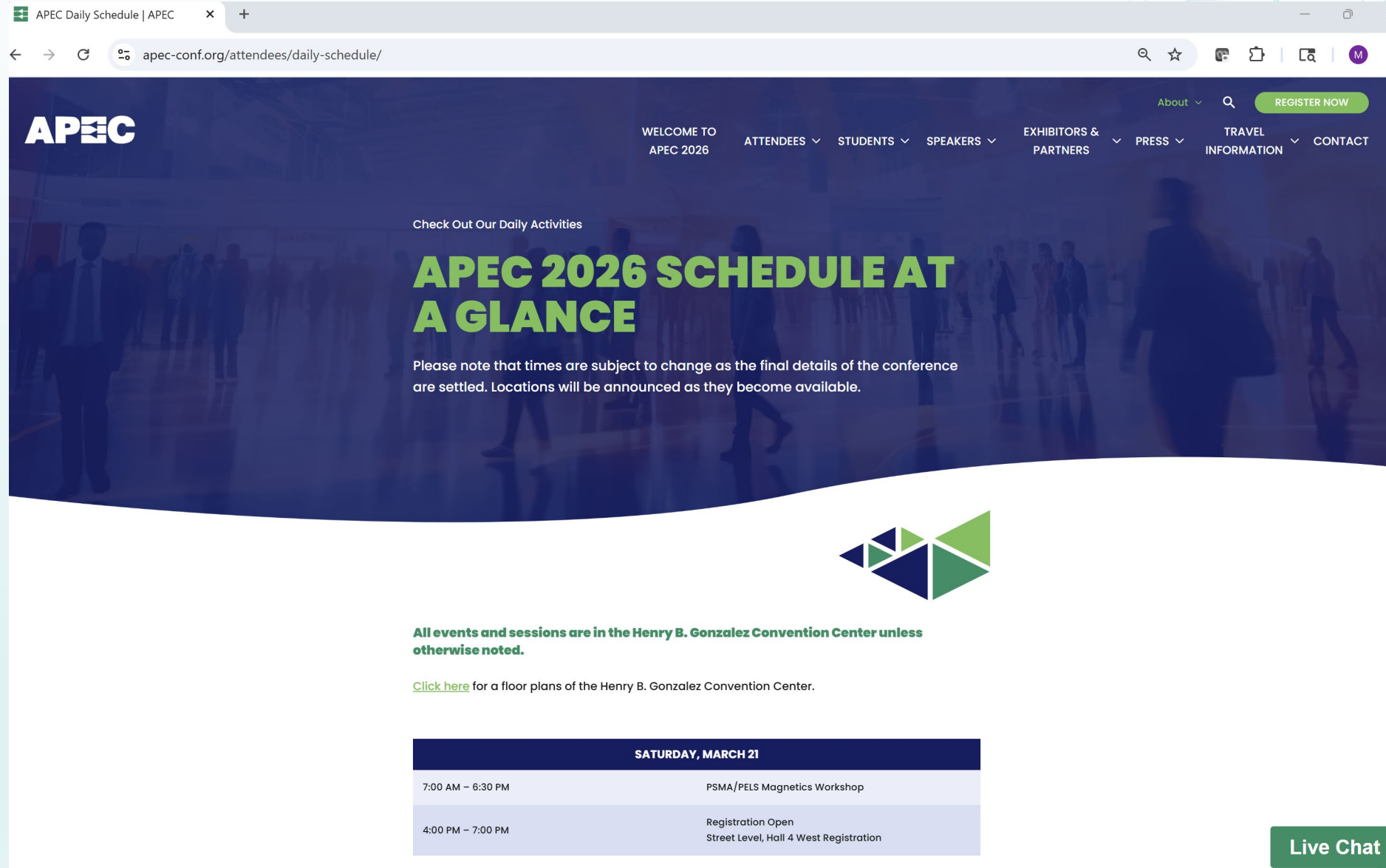
Registration for the workshop is limited and will open in late 2025.

[Click here](#) for the latest information on the workshop including registration and the detailed agenda.

<https://apec-conf.org/attendees/special-events-social-activities/psma-magnetics-workshop/>



PSMA Magnetics Committee Meeting Agenda – 2026 APEC Website



The screenshot shows a web browser window with the URL apec-conf.org/attendees/daily-schedule/. The page features the APEC logo in the top left and a navigation menu in the top right with items: WELCOME TO APEC 2026, ATTENDEES, STUDENTS, SPEAKERS, EXHIBITORS & PARTNERS, PRESS, TRAVEL INFORMATION, and CONTACT. A 'REGISTER NOW' button is also present. The main content area has a dark blue background with the text 'Check Out Our Daily Activities' and a large green heading 'APEC 2026 SCHEDULE AT A GLANCE'. Below this, a note states: 'Please note that times are subject to change as the final details of the conference are settled. Locations will be announced as they become available.' A green geometric logo is centered below the text. A note reads: 'All events and sessions are in the Henry B. Gonzalez Convention Center unless otherwise noted.' A link says: 'Click here for a floor plans of the Henry B. Gonzalez Convention Center.' A table lists the schedule for Saturday, March 21. A 'Live Chat' button is in the bottom right corner.

APEC

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Check Out Our Daily Activities

APEC 2026 SCHEDULE AT A GLANCE

Please note that times are subject to change as the final details of the conference are settled. Locations will be announced as they become available.



All events and sessions are in the Henry B. Gonzalez Convention Center unless otherwise noted.

[Click here](#) for a floor plans of the Henry B. Gonzalez Convention Center.

SATURDAY, MARCH 21	
7:00 AM – 6:30 PM	PSMA/PELS Magnetics Workshop
4:00 PM – 7:00 PM	Registration Open Street Level, Hall 4 West Registration

Live Chat

<https://apec-conf.org/attendees/daily-schedule/>



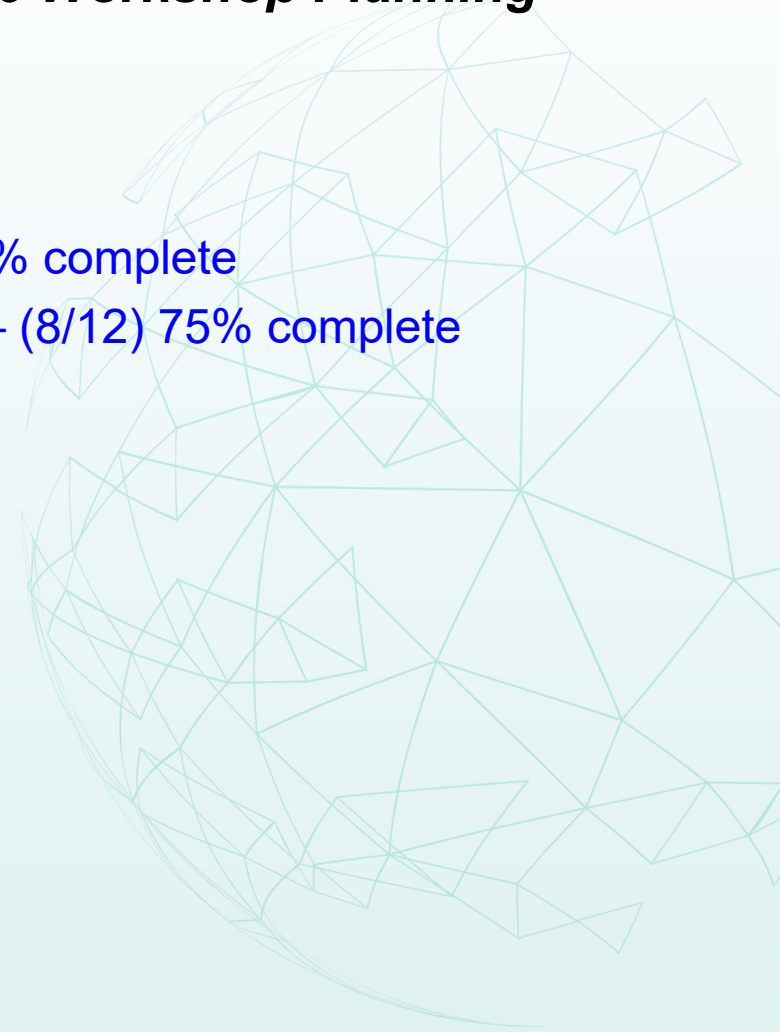
PSMA Magnetics Committee Meeting Agenda – 2026 Workshop Planning

- ✓ Identify Themes
 - Overall Theme: Measurements and Data Trends to Achieve Better Analytic Models and Simulation Models Towards Improved Design Tools
 - AM Theme: Developing Analytic and Simulation Models from Measurement Data
 - PM Theme: Starting with Design Basics to Achieve Design Automation
- ✓ PSMA Special Projects Request
 - Approved by PSMA BOD on May 16, 2025
- ✓ 2026 Magnetics Workshop Banner
 - Draft available – May 20, 2025
 - Use for PSMA 2025 Q2 Newsletter article
- ✓ 2025 PSMA 3 Quarter Newsletter
 - Article published – September 9, 2025



PSMA Magnetics Committee Meeting Agenda – 2026 Workshop Planning

- Next Steps (June 2025 thru October 2025)
 - ✓ Identify – Invite – Confirm Keynote presenters
 - Identify – Invite – Confirm Lecture presenters – (8/9) 89% complete
 - Identify – Invite – Confirm Technology Demonstrations – (8/12) 75% complete
- Open Registration by November 14
 - Maintain Same Registration Fees as 2025 Workshop
- Partners
 - Maintain Same Rates as 2025 Workshop
- Visa Letters
- Release 2025 workshop presentation from firewall
- Advertisements
 - PELS Website
 - How2Power
 - Bodo Power Systems
 - Other
- Presenter (Speaker, Demo, Poster) Instructions – set up drop box
- Attendee Instructions



PSMA Magnetics Committee Meeting Agenda – 2026 Workshop Planning

[Home](#)

2025 Workshop Partnership

Saturday March 15, 2025

Georgia World Congress Center, Atlanta, Georgia

Please complete the information below to sign up as a partner for the Power Magnetics @ High Frequency Workshop.

Platinum Partner

\$2,500

- Company logo in web page linked to URL of choice
- Company recognition at entrance
- Company logo on daily introduction and break slides
- Company recognition in 'blast e-mail' announcing registration
- Company logo on social media promotion
- **One free registration**
- Additional registrations at preferred PSMA rate
- **Company supplied logo can be displayed within workshop**
- **Company exhibit table by registration desk onsite**
- **Company may provide branded lanyards for participants (~150 pcs)**

Gold Partner

\$1,500

- Company logo in web page linked to URL of choice
- Company recognition at entrance
- Company logo on daily introduction and break slides
- Company recognition in 'blast e-mail' announcing registration
- Company logo on social media promotion
- Register at preferred PSMA rate

Sorry... This form is closed to new submissions.



PSMA Magnetics Committee Meeting Agenda – 2026 Workshop Planning Registration Fees

- Early registration
 - PSMA Member/IEEE Member: \$295
 - Non PSMA Member/Non-IEEE Member: \$395
- Normal Registration
 - PSMA Member/IEEE Member: \$345
 - Non PSMA Member/Non-IEEE Member: \$445
- Walk-In On site registration:
 - PSMA Member/IEEE Member: \$445
 - Non PSMA Member/Non-IEEE Member: \$545

PSMA Magnetics Committee Meeting Agenda – Magnetics Workshop - AM Session Presenters

□ AM Theme: Developing Analytic and Simulation Models from Measurement Data

➤ Keynote:

- Peter Zacharius (University of Kassel)
 - Analytic Models

➤ Lecture presenter 2:

- Lucas Pniak – SAFRAN Research and Technology Center – Industry – verbal confirmation
 - Semi Analytical Broadband Electromagnetic Modeling of Planar Transformers Considering Capacitive Couplings

▪ Lecture presenter 3:

- Miroslav Vasic/Danile Rios Linares – University of Madrid – Academia
 - Artificial Neural networks (ANN) and Digital Twin to optimize DAB transformer design

➤ Lecture presenter 4:

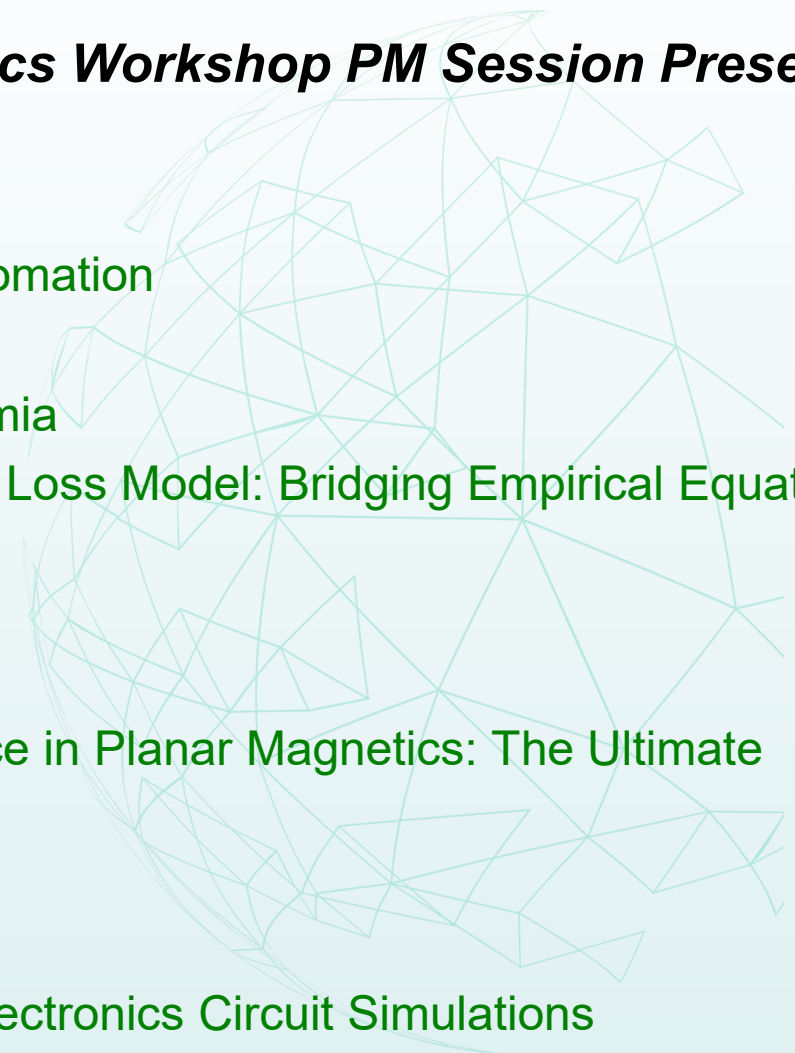
- Reddy Andapally Bharadwaj – CBMM – Industry
 - Data Collection and Analysis to Create Accurate Material Models for FEA Simulation

➤ Lecture presenter 5:

- Alex Hanson – UT – Austin – Research
 - Qualifying measurement data, eliminating bias
- Thomas Guillod – Dartmouth – Research – Not available for APEC 2026

PSMA Magnetics Committee Meeting Agenda – Magnetics Workshop PM Session Presenters

- ❑ **PM Theme: Applying Design Basics to Achieve Design Automation**
- ✓ **Keynote:**
 - **Asier Arruti Romero – University of Mondragon – Academia**
 - **From the Steinmetz Equation to an Unified Magnetic Loss Model: Bridging Empirical Equations and Physical Insight**
- ✓ **Lecture presenter 7:**
 - **Alfonso Martinez – Würth Elektronik**
 - **Modelling Stray Capacitance and Leakage Inductance in Planar Magnetics: The Ultimate Parasitics Analytical Model**
- ✓ **Lecture presenter 8:**
 - **Andrija Stupar – SIMPLIS Technologies – Industry –**
 - **Developing Effective Magnetics Models for Power Electronics Circuit Simulations**
- ✓ **Lecture presenter 9:**
 - **Chema Molina – Frenetic – Industry**
 - **Magnetics Design Automation from Excel spreadsheets to AI**



PSMA Magnetics Committee Meeting Agenda – Magnetics Workshop – Tech Demo Presenters

❑ Technology Demonstration Presenters

➤ Presenter 1:

- Who – Rohde & Schwarz – Industry
 - VNA – S-Parameters

✓ Presenter 2:

- Who - Hioki – Industry
 - Power analyzer, LCR meter, Impedance Analyzer

➤ Presenter 3:

- Who - Affiliation – Industry
 - Dielectric Withstanding Voltage/Insulation resistance

➤ Presenter 4:

- Who – PE Systems – Industry
 - Double Pulse Set

✓ Presenter 5:

- Joaquim Tristan - UPITT – Academic
 - Automated Test Systems

✓ Presenter 6:

- Bachman/Wohlrath/Reibenweber - Tridelta/STS/Colburg Industry/Academic Collaboration
 - Next generation of ferrite cores

✓ Presenter 7:

- Marcin Kacki/Student - Hitachi Energy/University of Madrid – Industry/Academia collaboration
 - Impact of unequal flux distribution on power loss (potential poster)

✓ Presenter 8:

- Jun Wang - Bristol – Academic
 - TPT

✓ Presenter 9:

- Alfonso Martinez – Würth – Industry
 - CoreDataX

✓ Presenter 10:

- Lukas Mueller - Micrometals – Industry/Academic
 - Current Driven Core Loss

➤ Presenter 11:

- Michael Freitag - Yageo – Industry
 - TBD

➤ Presenter 12:

- JC Sun/Tobias Trupp – BsT/Magnetec – Industry
 - Insertion Loss Nanocrystalline cores

PSMA Magnetism Committee Meeting Agenda – Magnetism Workshop – Student Posters

- **Presenter 1:**
 - Nick Kirkby – ASU
 - NIST Standards – Error Analysis
- **Presenter 2:**
 - Who - Affiliation
 - TBD
- **Presenter 3:**
 - Who - Affiliation
 - TBD
- **Presenter 4:**
 - Who – Affiliation
 - TBD



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PSMA Magnetics Committee Meeting Agenda – 2026 Industry Session Planning

❑ Previous Industry Sessions

- Presentations from industry sessions of 2023, 2024 and 2025 are not indicated on Presentations” tab of the Magnetics Technical Forum
- Action Item: John Horzepa to check with APEC Industry Session chairs if we can restart the practice of making the APEC industry session presentations available on the “Presentation” tab of the Magnetics Technical Forum of the PSMA website if we wait one year after each APEC to place the presentations of the technical forum.
 - This proposal has been accepted
 - Ed (APEC 2023 and 2024) and Matt (2025) to provide John with IS session presentations from indicated years

PSMA Magnetics Committee Meeting Agenda – 2026 Industry Session Planning

✓ Identify Themes

- Manufacturing Challenges and Directions
- Magnetic Materials for Existing and Emerging Applications
- Pairing Capacitors with Inductors to Create Better Solutions

✓ Steps prior to Opening of APEC 2026 Registration on October 21

- Confirm presenters
- Submission of industry session details – October 21, 2025

☐ Next steps

- Presenter instructions – compliment ePapers process with our own instructions
- Draft presentation reviews
- Milestones and schedules

PSMA Magnetics Committee Meeting Agenda – 2026 Industry Session Planning (Official Approved Industry Sessions)



APEC 2026 Industry Session Schedule							
Day	Session 1	Session 2	Session 3	Session 4	Session 5	Session 6	Size
Tues AM	What is the next killer application for wide bandgap semiconductors?	AI and Digital Twins Transforming Power Device Innovation	Capacitor circuit design essentials for modern challenges	3D-Power Packaging for AI and its Application in Power Systems Optimization			7
Wed AM	Beyond Silicon: Integrated Wide Bandgap Power Solutions for Next-Generation Systems	AI Tools for More Efficient Power Electronics Design			Overcoming Technical and Manufacturing Challenges to Meet Market Demands		7
Wed PM	New era of Power technologies, Devices, Topologies and applications						7
Thu AM1	Improving Energy Efficiency and Availability Part 1	Magnetic Materials for Existing and Emerging Applications Part 1			Reliability: From Stress to Strength: Physics-Based Reliability for Next-Generation GaN Power Systems	Pairing Capacitors with Inductors to Create Better Solutions	4
Thu AM2	Improving Energy Efficiency and Availability Part 2	Magnetic Materials for Existing and Emerging Applications Part 2					4
Legend	PSMA	Curated	Organic				

PSMA Magnetics Committee Meeting Agenda – Industry Session Planning

Addressing Technical Manufacturing Challenges and Directions to Meet Emerging Market Demands

Presentation Start Time	Presentation End Time	Presentation Title	Presenter First Name	Presenter Last Name	Email Address	Organization
IS Committee		IS11: "Overcoming Technical and Manufacturing Challenges to Meet Market Demands"				
REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED
8:30 AM	8:55 AM	Designing Bidirectional Power Stages: Topology & Control Impacts on Planar Magnetic Construction and Manufacturing	Nicola	Rosano	nrosano@standelectronic.com	Standex
8:55 AM	9:20 AM	3D Printing to Fabricate Bobbins and Other Passive Components	Peter	Weiner	peter.weiner@norwe.com	NORWE
9:20 AM	9:45 AM	The Hidden Challenges of Design Transformers for Dual Active Bridge Systems	Marcin	Kacki	marcin.kacki@hitachienergy.com	Hitachi Energy
9:45 AM	10:10 AM	Low-Power and High-Power Transformer Solutions to Support the Power Delivery Network for AI in Data Centers	Claudio	Canete-Cabeza	Claudio.Cabeza@we-online.com	Würth Elektronik
10:40 AM	11:05 AM	Challenge in Implementing Automation & Robotics in Magnetics Manufacturing.	Martin	Kuo	martink@ITG-electronics.com	ITG Electronics
11:05 AM	11:30 AM	Voltage Rating of Metal Alloy Molded Inductors	David	Ruiz Gomez	David.Ruiz@we-online.de	Würth Elektronik
11:30 AM	11:55 AM	Customizable Magnetic Components for Next-Generation Power Electronics Using Nanocrystalline Flake Ribbon	Xinru	Li	xinru.li@g-ame.com	CBMM

PSMA Magnetics Committee Meeting Agenda – Industry Session Planning

Magnetic Materials for Existing and Emerging Applications

Presentation Start Time	Presentation End Time	Presentation Title	Presenter First Name	Presenter Last Name	Email Address	Organization
IS Committee		IS20: "Magnetic Materials for Existing and Emerging Applications Part 1"				
REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED
8:20 AM	8:45 AM	Relevant Magnetic Material Properties for Existing and Emerging Applications	Lukas	Reißenweber	Lukas.Reissenweber@hs-coburg.de	Coburg University
8:45 AM	9:10 AM	Metal Chip Power Inductor for IVR Applications: High Performance with Customizable Flexibility	Toshio	Hiraoka	thiraoka@jty.yuden.co.jp	TAITO YUDEN CO
9:10 AM	9:35 AM	Magnetic/Resin Composite Sheets for High-Frequency Power Electronics: From Fundamental Properties to Packaging Integration Challenges	Hideki	Ooyama	hideki.ooyama.62h@asv.ajinomoto.com	Ajinomoto Fine-Techno Co
9:35 AM	10:00 AM	Superparamagnetic Nanocomposites for Power Electronic Applications	Dale	Huber	dlhuber@sandia.gov	Sandia National Laboratories

PSMA Magnetics Committee Meeting Agenda – Industry Session Planning

Magnetic Materials for Existing and Emerging Applications

Presentation Start Time	Presentation End Time	Presentation Title	Presenter First Name	Presenter Last Name	Email Address	Organization
IS Committee		IS26: "Magnetic Materials for Existing and Emerging Applications Part 2"				
REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED
10:20 AM	10:45 AM	Multi-Cut Nanocrystalline Cores Through Classical Modeling	Abrahan	Solis	asolis@mkmagnetics.com	MK Magnetics
10:45 AM	11:10 AM	Nanocrystalline Cores for EMI Applications	Tobias	Trupp	Tobias.Trupp@magnetec.de	Magnetec
11:10 AM	11:35 AM	Role of Nb in Nanocrystalline Ribbon and Core Manufacturing	Naoki	Ito	naoki.ito@cbmm.com	CBMM
11:35 AM	12:00 PM	Fe-based Nanocrystalline Alloys for Power Choke Applications	Michael	Freitag	Michael.Freitag@yageo.com	Yageo

PSMA Magnetics Committee Meeting Agenda – Industry Session Planning



Presentation Start Time	Presentation End Time	Presentation Title	Presenter First Name	Presenter Last Name	Email Address	Organization
IS Committee		IS24: "Pairing Capacitors with Inductors to Create Better Solutions"				
REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED
8:20 AM	8:45 AM	A Practical Design Guide for resonant Power Conversion	Simon	Reuning	Simon.Reuning@yageo.com	YAGEO
8:45 AM	9:10 AM	The Importance of Magnetic Components in EMC Filter	Symon	Pasko	Szymon.Pasko@te.com	TE Connectivity - Schaffner
9:10 AM	9:35 AM	EMI Filter Success - Smart Inductor Selection	Jared	Quenzer	Jared.Quenzer@we-online.com	Würth Elektronik
9:35 AM	10:00 AM	Title: Performance of Common-Mode Chokes with Enhanced Differential-Mode Inductance in EMI Filters Including Capacitive Interactions	Bryce	Hesterman	bryce.hesterman@usu.edu	Utah State University

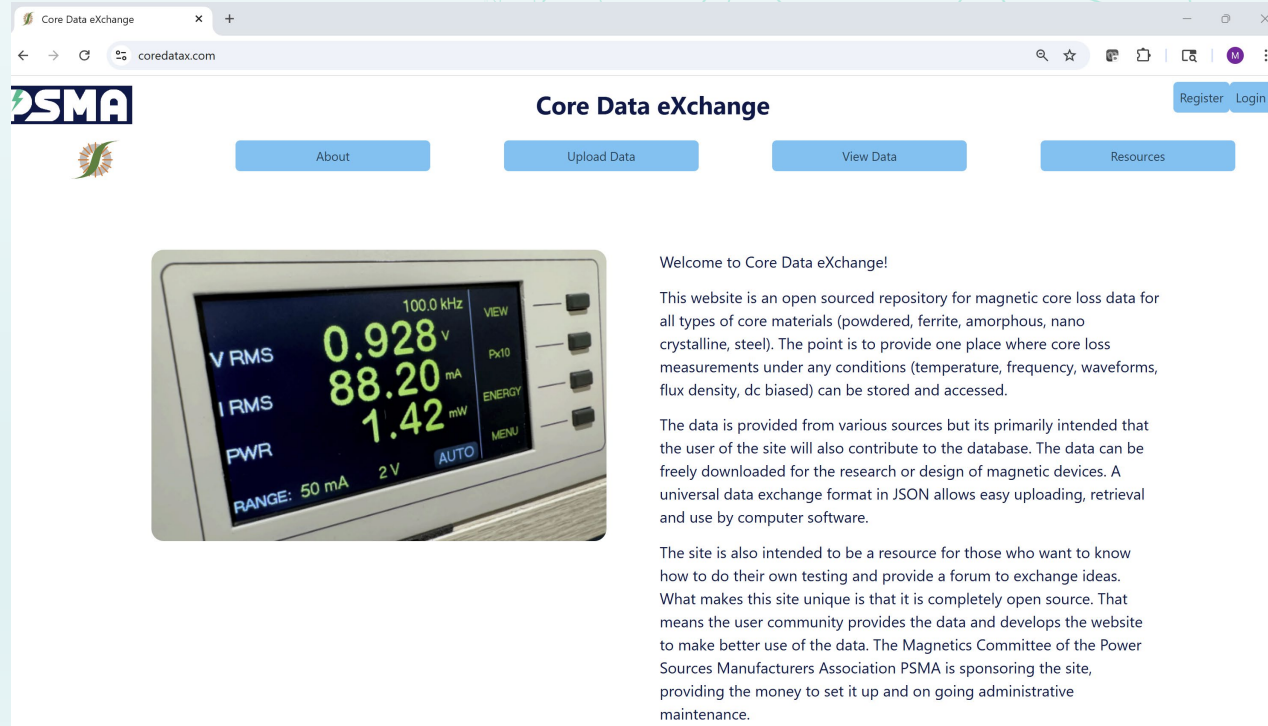
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PSMA Magnetics Committee Meeting Agenda – Special Projects – In Process

- Core Loss Database
 - on-line needs formatting/styling
 - URL: coredataX.com
 - URL: <https://www.pσμα.com/magddb-test>



Welcome to Core Data eXchange!

This website is an open sourced repository for magnetic core loss data for all types of core materials (powdered, ferrite, amorphous, nano crystalline, steel). The point is to provide one place where core loss measurements under any conditions (temperature, frequency, waveforms, flux density, dc biased) can be stored and accessed.

The data is provided from various sources but its primarily intended that the user of the site will also contribute to the database. The data can be freely downloaded for the research or design of magnetic devices. A universal data exchange format in JSON allows easy uploading, retrieval and use by computer software.

The site is also intended to be a resource for those who want to know how to do their own testing and provide a forum to exchange ideas. What makes this site unique is that it is completely open source. That means the user community provides the data and develops the website to make better use of the data. The Magnetics Committee of the Power Sources Manufacturers Association PSMA is sponsoring the site, providing the money to set it up and on going administrative maintenance.

PSMA Magnetics Committee Meeting Agenda – Special Projects – In Process

The screenshot shows a web browser displaying the PSMA CoreDataX website. The browser's address bar shows 'coredatax_page3.html'. The website header includes the PSMA logo and the text 'Power Sources Manufacturers Association', along with 'Sign In' and 'Join' buttons. Below the header, the breadcrumb trail reads 'PSMA / Technical Forums / Magnetics / CoreDataX'. The main content area features a sidebar on the left with a 'SECTIONS' menu where 'Overview' is selected. The main content area has an 'About CoreDataX' section with a description and a list of topics: Core Loss, Q-Factor, Permeability, Ferrites, Powdered Cores, Amorphous-NanoCrystalline, and Laminations. Below this is a 'Latest News & Updates' section with a post titled 'Call for data: Temperature-dependent loss sweeps' dated Sep 18, 2025, and buttons for 'Read more' and 'Contribute data'.

PSMA Magnetics Committee Meeting Agenda – Special Projects – In Process

This screenshot shows the PSMA CoreDataX website. The top navigation bar includes the PSMA logo and the text 'Power Sources Manufacturers Association'. Below this, the breadcrumb trail reads 'PSMA / Technical Forums / Magnetics / CoreDataX'. The main heading is 'CDX CoreDataX', followed by a description: 'A PSMA sponsored cross-disciplinary technical forum focused on magnetic core characterization, core losses, magnetic materials, modeling, and real-world design applications.' A sidebar on the left contains a menu with items: 'Upload Data', 'View Data', 'Working Groups', 'Technical Resources', 'Events & Webinars', 'Get Involved', and 'About'. A 'Members Area' button is also present. The main content area features a post titled 'Workshop recap: Practical Q-factor pitfalls' with a 'View slides' button.

This screenshot shows the PSMA CoreDataX website with a different view. The sidebar menu is visible on the left. The main content area is titled 'Working Groups' and lists three items: 'Current driven core loss measurement' (meets monthly), 'Core loss 1 MHz to 100 MHz' (meets monthly), and 'Triple Pulse Testing method' (meets weekly). Each item has a 'Join' button and a 'Notes' button.



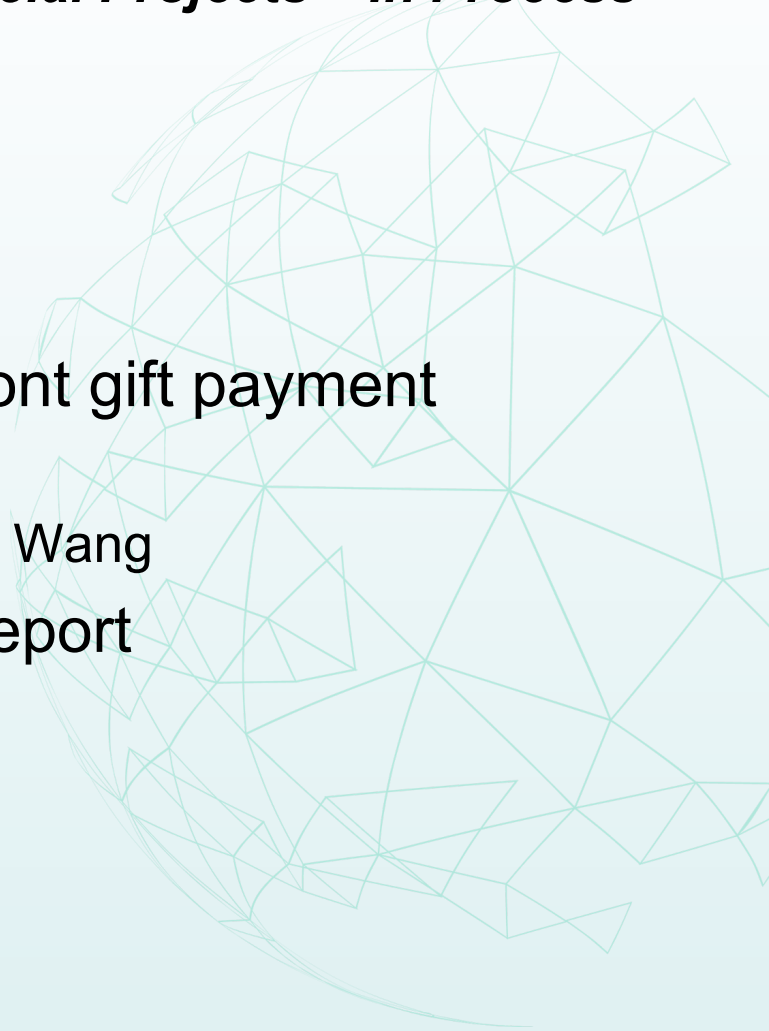
PSMA Magnetics Committee Meeting Agenda – Special Projects – In Process

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PSMA Magnetics Committee Meeting Agenda – Special Projects – In Process

– Current driven core loss testing –

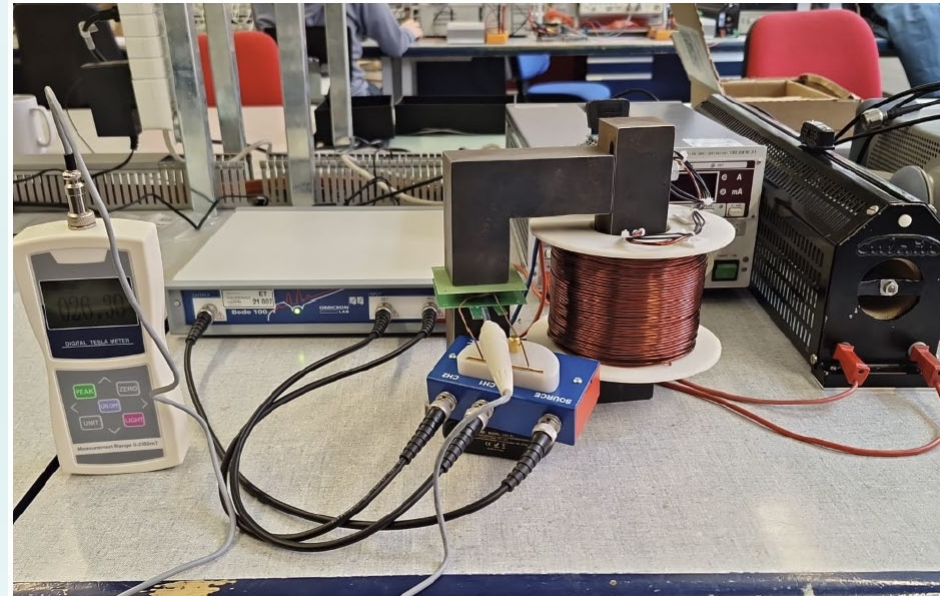
- Approved by PSMA BOD June 20, 2025
- Project can start upon receipt of 50% upfront gift payment
 - PSMA to submit gift form
 - Payment to University of Nebraska care of Jun Wang
- 50% final payment after approval of final report



PSMA Magnetics Committee Meeting Agenda – Special Projects – In Process

- Electrical parameters of magnetic materials – phase 2
 - Final report available
 - Approved payment with additional contingency expenses
 - Need invoice from HSLU
 - Place accepted report on special projects tab of Magnetics technical forum
 - Add link to IEEE Xplore for associated APEC 2025 paper
 - KPIs
 - Data
 - Methodology

Final report on website



PSMA Magnetics Committee Meeting Agenda – Special Projects Pending

– Pending

- Steinmetz like approximation
- Spice model
- Propagation in magnetic materials

Address after APEC 2026 planning meeting in October

Potential special project

European - Scholarship grant to 15 PhD connected with electronic components

- Magnetic materials
- Modelling
- Holistic design

Hitachi 3 students

Identify some preliminary ideas

Link students with specific magnetic committee members

More info may be available after October 22

Students ready to start in January 2026

PSMA should make proposals by December 1

For consideration during PSMA BOD December meeting

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PSMA Magnetics Committee –Magnetics Committee Forum on PSMA Website

- Completed in 2024
 - Section 1.3 Powdered metal
 - Proposal by Lukas Mueller has been accepted
 - Need to add to HF task force tab under magnetics Technical Forum on PSMA website
- Proposed additions/updates
 - Section 1 Core Materials
 - Sputtered (addition)
 - Electroplated (addition)
 - Section 1.4 Nanocrystalline and amorphous metals (populate)
 - Section 4 Inductors
 - TLVR inductors (addition)
 - Section 8 “Solid state” transformers (populate)
 - Section 12 Fabrication Technology
 - Section 12.3.2 Substrate embedded (populate)
 - Section 12.6 PSiP (populate)
 - Section 12.7 PwrSoc (populate)

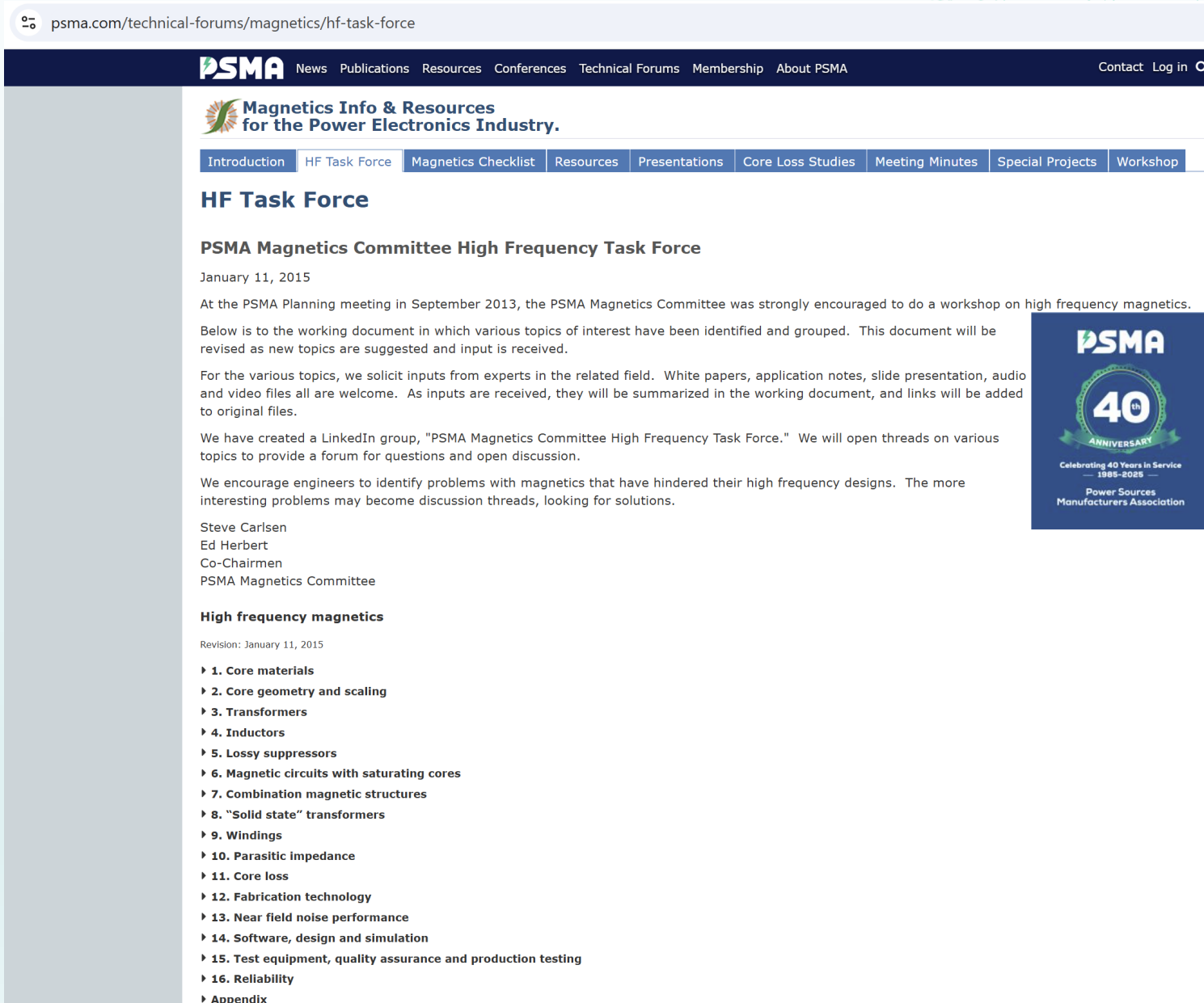
Address
sections 1, 4, 8 and 12
after 2026 workshop
and industry sessions
are finalized

High frequency magnetics

Add paragraph regarding definition of high
frequency dependent on applications

PSMA Magnetism Committee –Magnetism Committee Forum on PSMA Website

<https://psma.com/technical-forums/magnetism/hf-task-force>



The screenshot shows a web browser window with the URL psma.com/technical-forums/magnetism/hf-task-force. The page features a dark blue navigation bar with the PSMA logo and menu items: News, Publications, Resources, Conferences, Technical Forums, Membership, and About PSMA. On the right side of the navigation bar are links for Contact and Log in. Below the navigation bar is a white header area with the PSMA logo and the text "Magnetism Info & Resources for the Power Electronics Industry." A horizontal menu contains tabs for Introduction, HF Task Force (which is active), Magnetism Checklist, Resources, Presentations, Core Loss Studies, Meeting Minutes, Special Projects, and Workshop. The main content area is titled "HF Task Force" and "PSMA Magnetism Committee High Frequency Task Force". It includes a date of January 11, 2015, and several paragraphs of text explaining the task force's purpose and goals. A list of co-chairmen (Steve Carlsen and Ed Herbert) is provided. A section titled "High frequency magnetism" lists 16 topics, each preceded by a right-pointing arrow. A revision date of January 11, 2015, is also noted. On the right side of the page, there is a blue square graphic celebrating PSMA's 40th anniversary (1985-2025).

psma.com/technical-forums/magnetism/hf-task-force

PSMA News Publications Resources Conferences Technical Forums Membership About PSMA Contact Log in

Magnetism Info & Resources
for the Power Electronics Industry.

Introduction **HF Task Force** Magnetism Checklist Resources Presentations Core Loss Studies Meeting Minutes Special Projects Workshop

HF Task Force

PSMA Magnetism Committee High Frequency Task Force

January 11, 2015

At the PSMA Planning meeting in September 2013, the PSMA Magnetism Committee was strongly encouraged to do a workshop on high frequency magnetism.

Below is to the working document in which various topics of interest have been identified and grouped. This document will be revised as new topics are suggested and input is received.

For the various topics, we solicit inputs from experts in the related field. White papers, application notes, slide presentation, audio and video files all are welcome. As inputs are received, they will be summarized in the working document, and links will be added to original files.

We have created a LinkedIn group, "PSMA Magnetism Committee High Frequency Task Force." We will open threads on various topics to provide a forum for questions and open discussion.

We encourage engineers to identify problems with magnetism that have hindered their high frequency designs. The more interesting problems may become discussion threads, looking for solutions.


Steve Carlsen
Ed Herbert
Co-Chairmen
PSMA Magnetism Committee

High frequency magnetism

Revision: January 11, 2015

- ▶ 1. Core materials
- ▶ 2. Core geometry and scaling
- ▶ 3. Transformers
- ▶ 4. Inductors
- ▶ 5. Lossy suppressors
- ▶ 6. Magnetic circuits with saturating cores
- ▶ 7. Combination magnetic structures
- ▶ 8. "Solid state" transformers
- ▶ 9. Windings
- ▶ 10. Parasitic impedance
- ▶ 11. Core loss
- ▶ 12. Fabrication technology
- ▶ 13. Near field noise performance
- ▶ 14. Software, design and simulation
- ▶ 15. Test equipment, quality assurance and production testing
- ▶ 16. Reliability

▶ Appendix



PSMA
40th
ANNIVERSARY
Celebrating 40 Years in Service
1985-2025
Power Sources
Manufacturers Association

PSMA Magnetics Committee Meeting Agenda

- Introductions
- 2026 Workshop Planning
- 2026 Industry Session Planning
- Special Projects
 - Core Loss Database
 - Current Driven Core Loss
 - Open Source BH Analyzer
 - Core Loss for Frequency Range 1 MHz F 100 MHz
- Magnetics Forum on PSMA Website
- **Open Magnetics**
- Power Technology Roadmap
- Next Meeting

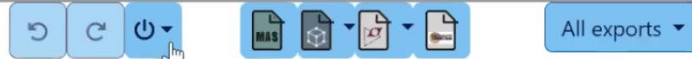


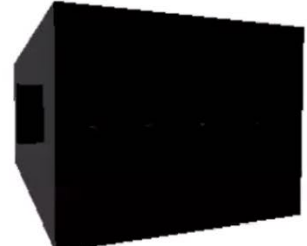
PSMA Magnetics Committee Meeting Agenda – Open Magnetics

 **Magnetics Info & Resources**
for the Power Electronics Industry.


[Introduction](#) | [HF Task Force](#) | [Magnetic Builder](#) | [Resources](#) | [Presentations](#) | [Core Loss Studies](#) | [Meeting Minutes](#) | [Special Projects](#) | [Workshop](#)

Magnetic Builder powered by OpenMagnetics

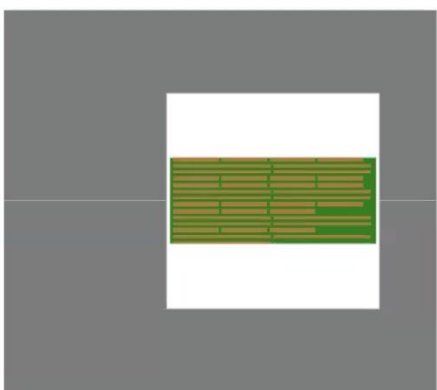




Shape Family:
Shape:
Manufacturer:
Material:
Gap Info: Type

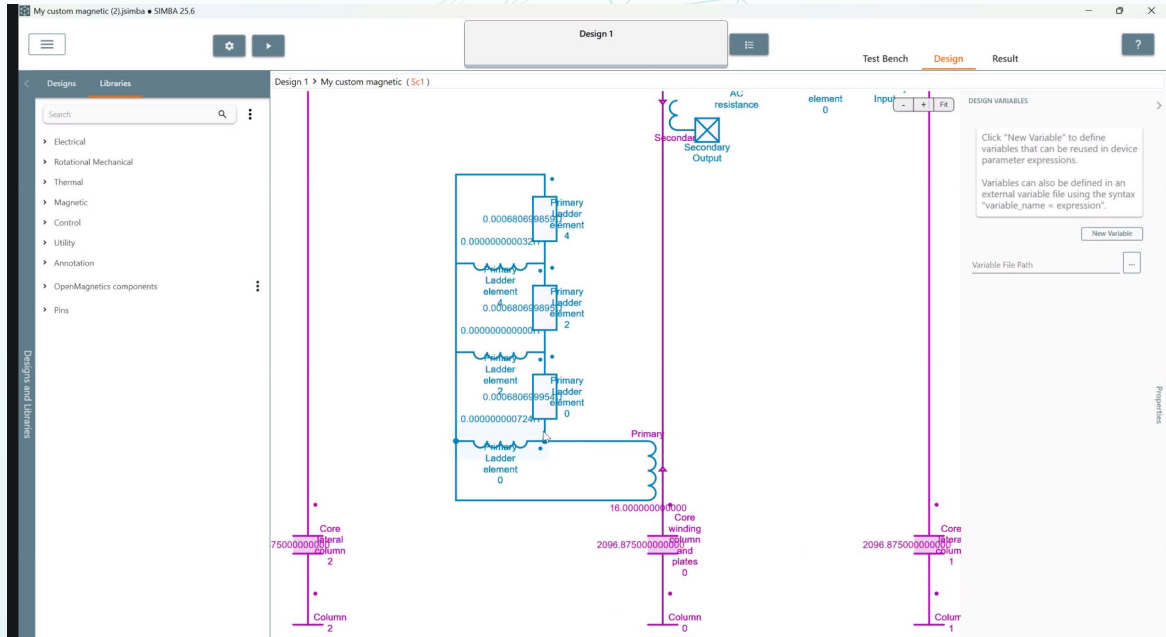
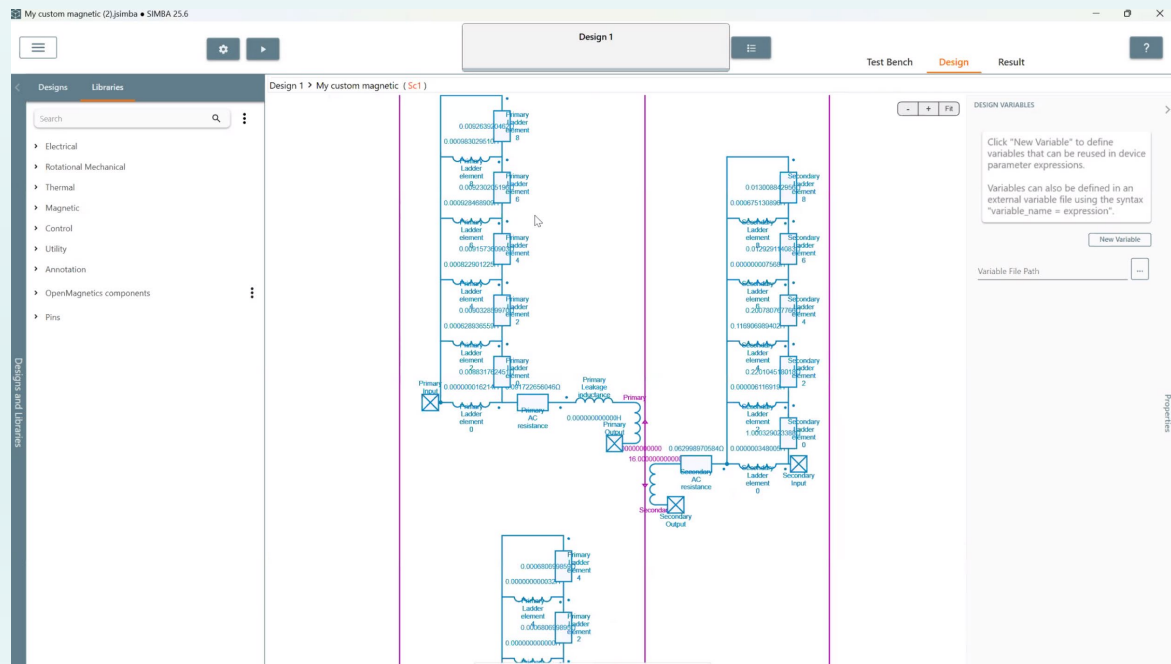


Number Windings:
W1 W2
No. Turns:
No. Parallels:
Cond. diameter:
Cond. Width: mm



Stack Up:
Core To Layer Distan.: um
Border. To Wire Distan.: um
Insulation layer thickness
Ins. 1-2: um
Ins. 2-2: um
Ins. 2-1: um

PSMA Magnetics Committee Meeting Agenda – Open Magnetics



PSMA Magnetics Committee Meeting Agenda

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- **Power Technology Roadmap**
- Next Meeting



2025 Edition PSMA Power Technology Roadmap

Magnetics Section

- 2025 Topics (Submitted)
 - Embedded Magnetics
 - Integrated Voltage Regulators (IVR)
 - Fully Integrated Voltage Regulators (FIVR)
 - Hybrid Integrated Voltage Regulators (HIVR)
 - Isolated Signal and Low Power Transformers
 - PwrSoC (Power Supply on Chip)
 - Power Systems in Package (PSiP)
 - Solid State Transformers (SST)
 - Trans-Inductor Voltage Regulators (TLVR)
 - Mother Board Voltage Regulators (MBVR)
 - Lateral Power Delivery (LPD)
 - Vertical Power Delivery (VPD)
 - Dual Phase Power Block (DPPB)
 - ~~Wireless Power Transfer (WPT)~~
 - ~~EV Charging~~
 - Core Loss Measurement Methods & Databases
 - Magnetic Material Alternatives Opportunities and Limitations
- 2026/2027 Cycle Topics (Need to identify)
 - Net Zero Bias TLVR
 - Solid State Transformers (SST)
 - Magnetic Materials
 - EV Charging
 - FIVR and/or HIVR
 - Wafer Level Magnetics
 - TBD
 - TBD

2025 PSMA PTR Released June 2025

Still in process of identifying chairs for the next cycle of the PSMA PTR?

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- Power Technology Roadmap
- **Next Meeting**



PSMA Magnetics Committee Meeting Agenda

– Next Meeting

- Wednesday December 3 10:00 AM CST – 11:00 AM CST Virtual



PSMA Magnetics Committee Meeting Attendance (16)

John Horzepa
Kamyar Ahmadi
Mike Arasim
Andres Arias
Hasan Ahmadian Baghbaderani
Alan Cooper
Jim Cox
Doug Eaton
Frank Feng
Michael Freitag
Ed Herbert
Bryce Hesterman
Marcin Kacki
Mohammed Khodadadi
Alfonso Martinez
Jonas Multhahaler
Frank Oberlitner
Paul Ohodnicki

Lukas Mueller
Mike Ranjram
Rodney Rogers
Ranjit Sai
George Slama
JC Sun
Tobias Trupp
Jun Wang – Bristol
Jun Wang - Nebraska
Ningning Wang
Matt Wilkowski
Fritz Wohlrath
Sebastian Bachman
Martin Kuo
Rickey Cheang

Thank You

