3D-PEIM

International 3D Power Electronics Integration and Manufacturing Symposium

February 1 – 3, 2023 At Florida International University

IEEE and PSMA invite you to attend the **Fourth Biennial International Symposium on 3D Power Electronics Integration and Manufacturing (3D-PEIM-2023)**. This Symposium provides the opportunity to drive future power electronics solutions for increased density and performance. Discover advances in the design, package integration and manufacturing of 3D power sources. Technical Sessions include modeling, active and passive components, substrates, packaging and how to integrate them with 3D manufacturing technologies to create state of the art power sources.The Symposium will be held February 1-3, 2023, at Florida International University, Miami, FL, USA., offering an opportunity to get a "winter warm-up" on Florida's enticing beaches.

Registration is NOW OPEN at Registration - 3D PEIM (3d-peim.org)
For additional information visit http://www.3d-peim.org

Registration Open - Early Cost-Saving Fees Expire December 1st
Complete Program Now Available

Created and supported by the PSMA's Packaging & Manufacturing Committee, 3D-PEIM will feature invited papers highlighted by plenary and keynote addresses and contributed presentations by Industry and Academia experts. Speakers will address design, thermal, materials, reliability, and manufacturability issues. There will be Exhibits and an Exhibit Sponsor's Session. Ample opportunities will be provided to network with attendees, speakers and exhibitors.

The Symposium is headlined with an excellent list of Plenary Speakers comprised of International Power Technology leaders from Industry and Academia.

Program at a Glance

Session	Chair	Affiliation
S2: IVR for Computers and Servers	Siddarth Ravichandran	Chipletz
S3: Multiphysics Design & Tools	Rajen Murugan	Texas Instruments
S4: Additive Manufacturing	Peter Friedrichs	Infineon
S5: Manufacturing Technologies	Jason Rouse	Corning
S7: Interconnects & Lead Attachments	Andy Mackie	Indium Corporation
S8: Substrates & Encapsulants	Ninad Shahane	Texas Instruments
S9: High Power Module Integration	Cyril Buttay	Laboratoire Ampère, Lyon
S11: Thermal Management and Reliability	Patrick McCluskey	University of Maryland
S12: Passive Component Integration	John Bultitude	KEMET Corporation
S13: Low Power & Telemetry	Girish Wable	Jabil Circuits
S14: Tour of FIU Labs	P M Raj	FIU

Plenary Speakers

Dr. Brandon Passmore, Wolfspeed, "Finite-Element Predictive Modeling for Power Modules."

Prof. Madhavan Swaminathan, Georgia Tech, "Integrated Power Delivery for AI Computing: Technology Gaps & Opportunities"

Professor Fred C. Lee, Virginia Tech, USA, "PCB based Integrated Magnetics."

Professor Rao Tummala, Georgia Tech, USA, "Future of packaging of role of power integration"

Professor Katsuaki Suganuma, University of Osaka, Japan, "Superior heat dissipation by low-pressure Ag sinter joining and real-time AI lifetime prediction for SiC power module."

Dr. Mahadevan Iyer, **Amkor**, "Emerging Power electronics packaging and system integration for automotive applications"

In addition, the program is comprised of 14 Technical Sessions run in series over a 3 day period. Not a single session needs to be missed. The General Chair is Dr. Markondeyaraj Pulugurtha of the Florida International University (FIU). Technical Program Co-Chairs are Dr. John Bultitude of Kemet, a Yageo Company, and Dr. Vanessa Smet from Georgia Tech. The conference features an exciting series of keynote talks as listed below.

Description/Title	Presenter	Affiliation
Keynote: Practical challenges with advanced IVR solutions for microprocessors	**Dr. Michael J. Hill**	**Intel**
3D Power Delivery for High Performance Processors	**Dr. Noah Sturcken**	**Ferric, Inc**
Keynote: Machine-learning-based optimization: the future of power package design	**Prof. Vanessa Smet**	**Georgia Tech.**
Multiphysics System Co-Design Modeling: State-of-the-Art, Challenges, and Opportunities	**Dr. Rajen Murugan**	**Texas Instruments**
New Challenges in Transportation Electrification, Powertrain Drives & New Power Electronics Architectures	**Dr. Osama Muhammed**	**Florida International University**
Keynote: Unlocking New Design Frontiers for Power Density and Specific Power Using Heterogenous Packaging, Embedded Cooling, and 3D Printed PCBs	**Dr. Thomas Foulkes**	**Pacergy**
Additive deposition technologies: from 2D towards 3D electronic systems	**Dr. M. Wiemer**	**Fraunhofer Institute**
Additive manufacturing of high performance pure copper components with PureForm™ for thermal and electrical applications	**Dr. Arian Aghababaie**	**Holo, Inc.**
Keynote; Insights from Microelectronic Packaging for Power Packaging Advancement	**Dr. Matt Kelly**	**IPC**
Enabling Increased Aluminum Utilization within Power Electronic Packaging	**Divyakant P Kadiwala**	**Averatek**
Keynote: Cu Sintering/Interconnect Analysis	**Prof. Gordon Elger**	**Fraunhofer Application Center**
Keynote: Die Top System: Advanced interconnect for Power Electronics Module Packaging	**Dr. Habib Mustain**	**Heraeus**
Keynote: A Polymer-Nanoparticle Composite for Nonlinear Resistive Field-Grading in Medium-Voltage Power Modules	**Prof. G. Q. Lu**	**Virginia Tech.**
New Substrate Technology for Power Applications	**Neda Ameli**	**Rogers Corporation**
US Navy Power Electronics needs	**Dr. L. J. Petersen**	**US Navy**

Towards next generation power module package technology blooming	Dr. S. Idaka	Mitsubishi
Keynote: integrated thermal management in power electronics and motors	*Satish Kumar*	Georgia Tech.
Power Electronics Thermal Design with Carbice Nanotubes for Reliability and Cost Saving	Craig Green	Carbice Corporation
Keynote: Enabling Sustainable Power Electronics Through Miniaturization and Integration of Power Magnetics	Dr. Matt Wilkowski	Enachip
Application of Circuit Board Technology for Passives Packaging	B. K. Summey	KEMET
High-density nanoporous silicon decoupling capacitors	Dr. Mohamed Jatlaoui	Murata
Keynote: eSiP (energy source in package) - 3D packaging considerations for self-powered IoT edge devices	Dr. Mike Hayes	Tyndall
Magnetoelectric Nanoparticles As a Wireless Brain-Machine Interface	Prof. Sakhrat Khizroev	University of Miami

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You are invited to sign up for Partnership Tabletop Exhibit Opportunities

Each Exhibit Partner has the opportunity to present products at the Symposium with an Exhibit Table, Presentation at the Symposium (Diamond and Platinum Level) and on a 3D-PEIM Virtual Tabletop Website page. To learn more and be an Exhibit Partner, go to **http://www.3d-peim.org/sponsors-exhibitors//**.

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