

Day 1 - Wednesday February 1, 2023

Time	Description/Title	Presenter	Affiliation
8:15 - 8:30 a.m.	Opening Remarks	Markondeyaraj Pulugurtha	Florida International University
8:30 - 9:50 a.m.	S1: Plenary I : Design for Power		
8:30 - 9:10 a.m.	<i>Finite-Element Predictive Modeling for Power Modules</i>	Dr. Brandon Passmore	Wolfspeed
9:10 - 9:50 a.m.	<i>Integrated Power Delivery for AI Computing: Technology Gaps & Opportunities</i>	Prof. Madhavan Swaminathan	Georgia Tech.
9:50 - 10:05 a.m.	Break		
10:05 - 11:50 a.m.	S2: IVR for Computers and Servers		
	Session Chair	Siddharth Ravichandran	Chiptetz
10:05 - 10:35 a.m.	Keynote: Practical challenges with advanced IVR solutions for microprocessors	Michael J. Hill	Intel
10:35 - 11:00 a.m.	3D Power Delivery for High Performance Processors	Noah Sturcken	Ferric, Inc
11:00 - 11:25 a.m.	Topology and Magnetics Co-Investigation for 48V-1V Point-of-Load VRM	Minjie Chen, Shuai Jiang, Jose A. Cobos, & Brad Lehman	Princeton University
11:25 - 11:50 a.m.	<i>Inductor-Linked Multi-Output Chiplet Power Delivery Architecture</i>	<i>Daniel H. Zhou, Mian Liao, Ping Wang, & Minjie Chen</i>	<i>Princeton University</i>
11:50a.m.-12:50p.m.	Lunch		
12:50 - 3:05 p.m.	S3: Multiphysics Design & Tools		
	Session Chair	Rajen Murugan	Texas Instruments
12:50 - 1:20 p.m.	Keynote: Machine-learning-based optimization: the future of power package design	Vanessa Smet	Georgia Tech.
1:20 - 1:50 p.m.	Keynote: New Challenges in Transportation Electrification, Powertrain Drives & New Power Electronics Architectures	Osama Mohammed	Florida International University
1:50 - 2:15 p.m.	Multiphysics System Co-Design Modeling: State-of-the-Art, Challenges, and Opportunities	Rajen Murugan	Texas Instruments
2:15 - 2:40 p.m.	EMI Shielding Performance of Thin and Thick Graphene Films Placed Within Integrated Power Modules	Ghaleb Al Duhni, John Volakis, & Markondeyaraj Pulugurtha	Florida International University
2:40 - 3:05 p.m.	<i>Reliability Analysis of Wireless Power Transfer for Electric Vehicle Charging Based on Continuous Markov Process</i>	<i>Arif Sarwat, Milad Behnamfar, Md Abu Taher, Alexis Polowsky, Mohd Tariq, & Sukanta Roy</i>	<i>Florida International University</i>
3:05 - 3:20 p.m.	Break		
3:20 - 4:40 p.m.	S11: Thermal Management and Reliability		
	Session Chair	Patrick McCluskey	University of Maryland
3:20 - 3:50 p.m.	Keynote: Integrated thermal management in power electronics and motors	Satish Kumar	Georgia Tech.
3:50 - 4:15 p.m.	Power Electronics Thermal Design with Carbice Nanotubes for Reliability and Cost Saving	Craig Green	Carbice Corporation
4:15 - 4:40 p.m.	Inverter/converter power density and flexibility improvements through modularity and novel thermal management architecture	Ian Byers & Stuart Wooters	Marel Power solutions Inc.
4:40 - 6:00 p.m.	S5: Manufacturing Technologies		
	Session Chair	Jason Rouse	Taiyo America
4:40 - 5:10 p.m.	Keynote; Insights from Microelectronic Packaging for Power Packaging Advancement	Matt Kelly	IPC
5:10 - 5:35 p.m.	Vertically Integrated High Density Power Packaging Technology	C.P. Hung, Mark Li & Vikas Gupta	ASE
5:35 - 6:00 p.m.	Reticular Graphene Reinforced Copper for Low-Stress Thermal Management Application	Ambreem Nisar, Cheng Zhang, Markondeyaraj Pulugurtha, Arvind Agarwal, & Al Danni Ghaleb	Florida International University
6:00 - 9:00 p.m.	WELCOME RECEPTION		

Day 2 - Thursday February 2, 2023

Time	Description/Title	Presenter	Affiliation
8:30 - 9:50 a.m.	S6: Plenary II: Improved Electrical Performance for Power		
8:30 - 9:10 a.m.	<i>PCB based Integrated Magnetics</i>	Prof. Fred C. Lee	Virginia Tech.
9:10 - 9:50 a.m.	<i>Future of Packaging and the Role of Power Integration</i>	Prof. Rao R. Tummala	3D Electronic Systems Packaging Research Center(PRC), Georgia Tech.
9:50 - 10:05 a.m.	Break		

Day 2 - Thursday February 2, 2023 cont'd

Time	Description/Title	Presenter	Affiliation
10:05 - 11:30 a.m.	S7: Materials I Interconnects & Lead Attachments		
	<i>Session Chair</i>	Andy Mackie	Indium Corporation
10:05 - 10:35 a.m.	Keynote: Roadmap for Copper Sintering - Next Interconnect for Power Electronic Module Packaging	Gordon Elger	Technische Hochschule Ingolstadt
10:35 - 11:05 a.m.	Keynote: Die Top System: Advanced interconnect for Power Electronics Module Packaging	Habib Mustain	Heraeus
11:05 - 11:30 a.m.	Rapid Development of Electrically Conductive Materials for Additive Manufacturing Feasibility and Applications	Gilad Nave, Patrick McCluskey	University of Maryland
11:30a.m.-12:25 p.m.	S8: Materials II Substrates & Encapsulants		
	<i>Session Chair</i>	Ninad Shahane	Texas Instruments
11:30 - 12:00 p.m.	Keynote: A Polymer-Nanoparticle Composite for Nonlinear Resistive Field-Grading in Medium-Voltage Power Modules	G. Q. Lu	Virginia Tech.
12:00 - 12:30 p.m.	Keynote: Substrate Technologies for Medium-voltage SiC Power Modules	Christina DiMarino	Virginia Tech.
12:30 - 1:30 p.m.	Lunch with Posters		
	<i>Laser-Induced graphene supercapacitors on flex substrates for package-Integrated Power Supply in Wearable and IoT Devices</i>	<i>Reshmi Banerjee, Azmal Chowdhury, Pavar Sai Kumar, Chunlei Wang, Sanket Goel, Pulugurtha Markondeya Raj</i>	<i>Florida International University</i>
	<i>New Design Concepts for PCB-Integration Technology in Power Electronics Reducing Circuit Parasitics to a Minimum</i>	<i>Rando Raßmann, Jasper Schnack, Ulf Schümann</i>	<i>University of Applied Science Kiel</i>
	<i>Low Frequency Power Telemetry Using Multiferroic Laminate Heterostructures</i>	<i>Veeru Jaiswal, Pawan Gaire, Maria Thuy Do, Ravi Mullanpudi, Shubhendu Bhardwaj, John Volakis, Markondeyaraj Pulugurtha</i>	<i>University of Nebraska-Lincoln</i>
	<i>Overview of Power Electronic Converters in Electric Vehicle Applications</i>	<i>S M Sajjad Hossain Rafin, Rejaul Islam, Osama Mohammed</i>	<i>Florida International University</i>
	<i>Wide Band Gap Semiconductor Devices for Power Electronic Converters</i>	<i>S M Sajjad Hossain Rafin, Rony Ahmed, Osama Mohammed</i>	<i>Florida International University</i>
	<i>A Review of Power Electronics Converters for Electronic Aircrafts</i>	<i>S M Sajjad Hossain Rafin, Md Ashikul Haque, Osama Mohammed</i>	<i>Florida International University</i>
	<i>Power Electronic Converters for Wind Power Generation</i>	<i>S M Sajjad Hossain Rafin, Rejaul Islam, Osama Mohammed</i>	<i>Florida International University</i>
1:30 - 3:45 p.m.	S9: Module Integration		
	<i>Session Chair</i>	Vanessa Smet	Georgia Tech.
1:30 - 2:00 p.m.	Keynote: Power Electronic Materials and Devices: Silicon to Diamond	Travis Anderson	US Navy
2:00 - 2:30 p.m.	Keynote: Heterogeneous Roadmap Update	Patrick McCluskey	University of Maryland
2:30 - 2:55 p.m.	Towards next generation power module package technology blooming	S. Idaka	Mitsubishi Electric R&D Center Europe
2:55 - 3:20 p.m.	WAVELET-Based Parameter Estimation of High Voltage Impulse Signals	Emel Onal	Istanbul Technical University
3:20 - 3:45 p.m.	NMOS/NLDMOS LSS dead-Time Minority Carrier Isolation Optimization	Gang Liu, Olivier Causse	OnSemi
3:45 - 4:00 p.m.	Break		
4:00 - 4:55 p.m.	S4: Additive Manufacturing		
	<i>Session Chair</i>	Peter Friedrichs	Infineon
4:00 - 4:30 p.m.	Keynote Nano Additive Manufacturing of Challenging Materials	Wendy Gu	Stanford University
4:30 - 4:55 p.m.	Additive deposition technologies: from 2D towards 3D electronic systems	Frank Roscher	Fraunhofer Institute
4:55 - 5:45 p.m.	S10: Partners Session		
	Amkor Technology		
	KEMET-Smoltek		
	FIU Biomedical Engineering		
	Wolfspeed		
	Indium Corporation		
5:45 - 7:00pm	POSTERS & BENCHTOP PARTNERS		

Day 3 - Friday February 3, 2023

Time	Description/Title	Presenter	Affiliation
8:30 - 9:50 a.m.	S14: Plenary III: Improved Electrical Performance for Power		
8:30 - 9:10 a.m.	<i>Superior heat dissipation by low pressure Ag sinter joining and real time AI lifetime prediction for SiC power module</i>	Prof. Katsuaki Suganuma	University of Osaka
9:10 - 9:50 a.m.	<i>Emerging Power electronics packaging and system integration for automotive applications</i>	Dr. Mahadevan Iyer	Amkor
9:50 - 10:05 a.m.	Break		
10:05a.m.-12:15 p.m.	S12: Passive Component Integration		
	Session Chair	John Bultitude	KEMET Electronics Corporation
10:05 - 10:35 a.m.	Keynote: Enabling Sustainable Power Electronics Through Miniaturization and Integration of Power Magnetics	Matt Wilkowski	Enachip
10:35 - 11:00 a.m.	Application of Circuit Board Technology for Passives Packaging	B. K. Summey	KEMET Electronics Corporation
11:00 - 11:25 a.m.	High-density nanoporous silicon decoupling capacitors	Mohamed Jatlaoui	Murata
11:25 - 11:50 a.m.	<i>Cold-sprayed aluminum capacitors for 3D power packaging</i>	<i>Reshmi Banerjee, Denny John, Cheng Zhang, Arvind Agarwal, & Markondeyaraj Pulugurtha</i>	<i>Florida International University</i>
11:50 - 12:15 p.m.	Class I Multi-Layer Ceramic Capacitors (MLCCs) Performance As Wide Band Gap (WBG) Snubbers for Hard Switching Applications	Allen Templeton, Nathan Reed, Hunter Hayes, James Davis, John Bultitude	KEMET Electronics Corporation
12:15 - 1:15 p.m.	Lunch		
	Lunch Plenary: Magnetolectric Nanoparticles As a Wireless Brain-Machine Interface	Sakhrat Khizoev	University of Miami
	S13: Low Power & Telemetry		
1:15 - 3:00 p.m.	Session Chair	Girish Wable	Jabil
1:15 - 1:45 p.m.	Keynote: Energy Harvesting at the Edge: When the Package IS the System	Brian Zahnstecher	PowerRox
1:45 - 2:10 p.m.	Manufacturing Challenges and Qualification of 3D Packaging	Chuck Woychik	Skywater Technology
2:10 - 2:35 p.m.	Metamaterial beam steering for wireless power	Hae-In Kim, Y.K. Yoon	University of Florida
2:35 - 3:00 p.m.	<i>Laminate-Embedded Multimodal Energy Harvester for Multilevel Power Supply</i>	<i>Jorge A. Caripidis Troccola, Sweta Gupta, Maxence Carvalho, Satheesh Bojja Venkatakrishnan, Markondeyaraj Pulugurtha, & John L. Volakis</i>	<i>Florida International University</i>
3:00 - 3:15 p.m.	Closing Remarks	Markondeyaraj Pulugurtha	Florida International University
	S15: LABORATORY TOUR - Florida International University		