

3D-PEIM 2018 Program

Monday June 25, 2018 8:00 -12:15	Tutorials <ul style="list-style-type: none"> • "Additive Manufacturing" Dr. Christopher Williams, Virginia Tech (DREAMS Lab) • "System Integration" Prof. Douglas Hopkins, NCSU (NSF FREEDOM LAB) • "Integrated Thermal Packaging" Dr. Michael Ohadi, U. of MD
12:15 - 1:15	Lunch – Tutorial Attendees Only & Networking
1:15 – 1:25	Opening Remarks by Symposium General Chair Prof. Patrick McCluskey (U. of MD)
1:25 – 2:45	SK Symposium Keynote – Chair: Prof. Guo-Quan Lu, Virginia Tech <ul style="list-style-type: none"> • "Small Quiet Robust and Affordable: Delivering the Integration Promise" Prof. Mark Johnson, U. of Nottingham, UK • "Embedding Technologies for Planar Power Electronics Modules" Dr. Rolf Aschenbrenner, Fraunhofer Institute, Berlin, Germany
2:45 – 3:15	Break & Network (Photo)
3:15 – 5:00	S1 Additive Manufacturing – Chairs: Dimeji Ibitayo (ARL) and Ryan Sochol (U. of MD) <ul style="list-style-type: none"> • Keynote: "TBD" Dr. Arun Muley, Boeing • Invited: "Additive Manufacturing Methods and Materials Requirements for the Fabrication of 3D Printed Hybrid Electronic Circuits" Daniel Hines, U. of MD (LPS) • Invited: "Additive Manufacturing in Power Module Development" Lauren Boteler, ARL • Invited: "Additive Manufacturing of Power Magnetics" Prof. Guo-Quan Lu, Virginia Tech,
5:00 – 7:00	Welcome Reception & Vendor Exhibits
Tuesday June 26, 2018 8:00 – 9:45	S2 Systems Integration & Thermal Management - Chairs: Lauren Boteler (ARL) and Mike Ohadi (U. of MD) <ul style="list-style-type: none"> • Keynote: "Heterogeneous Integration Roadmap Update- Integrated Power Electronics" by Prof. Douglas Hopkins, NCSU (NSF FREEDOM LAB) • Invited: "Package Configuration and Thermal Analysis of Enhanced Durability Power Electronic Packages" Dr. Darshan Pahinkar, Georgia Tech • Invited: "Thermal Management and Packaging of High Temperature Automotive Power Electronics" Gilbert Moreno, NREL • "Design of SiC Power Modules Integrated with Metal Foam and Phase Change Material for Pulsed Load Applications" W. Shao, L. Ran, Z. Zeng, and P. Mawby, Chongqing University, China
9:45 – 10:15	Break & Networking
10:15 – 12:00	S3 Multiphysics Design and Tools - Chairs: Abhijit Dasgupta (U. of MD) and Steven Miner (Naval Academy) <ul style="list-style-type: none"> • Keynote: "Reduced Order CoDesign Analysis for Design Space Evaluation of Power Electronic Modules" Lauren Boteler, ARL • Invited: "Thermal Models of Multilayer Ceramic Capacitors for 3-D Power Electronics" Allen Templeton, KEMET • Invited: "Applications of COOLCAD to Power Electronics" Neil Goldsman, U. of MD; • Invited: "Reliability Modeling Software for Electronic Systems" Mike Osterman, U. of MD (CALCE)
12:00 – 1:00	Lunch & Networking
1:00 – 2:45	S4 Materials – Chairs: John Bultitude (Kemet) and Yunhui (Joe) Mei (Tianjin University) <ul style="list-style-type: none"> • Keynote: "New bonding Cu ink by using low temperature sinterable Cu particles" Dr. Jung-Lae Jo, Mitsui Mining & Smelting Co, Ltd • Invited: "One-Step Fabrication of 3D Nanohierarchical Nickel Nanomace Array To Sinter with Silver NPs and the Interfacial" Prof. Wang Chunqing, Harbin Institute of Technology, China, • Invited: "Soft magnetic Metal-flake Composite Material Suitable for Highly Integrated Power Modules" Kenichi Chatani, Tokin a KEMET company • Invited: "The Development of Materials for 3D Packaging of Power Products" Mr. Ken Araujo, Namics USA
2:45 – 3:15	Break & Networking
3:15 – 5:00	S5 Manufacturing Technologies - Chairs: William Chen (ASE) and Brian Narveson (Narveson Innovative Consulting) <ul style="list-style-type: none"> • Keynote: "TBD", Dr. William Chen, ASE • Invited: "Advanced PCB Solutions Supporting Next Generation Power Applications" David Warner, AT&S • Invited: "High Reliability Silver Sintering for Power Modules" Gyan Dutt, Alpha Assembly Solutions • "Improvement of Ag Sintering Quality on Cu Surface at Formic Acid Atmosphere" Testu Takemasa, Minoru Ueshima, Jinting Jiu, Seino Junko, Katsuaki Suganuma, Osaka Univ.
5:00 – 7:00	Networking Reception, poster session, vendor exhibits, with dinner buffet at 6:00
Wednesday June 27, 2018 8:00 – 9:45	S6 Embedding Technologies-Chairs: Khai Ngo (Virginia Tech) and Brandon Passmore (Wolfspeed) <ul style="list-style-type: none"> • Keynote: "SiC Power Electronics Systems With High Level of Mechatronic Integration for Automotive and Aircraft Application" Dr. Maximilian Hofmann, Fraunhofer IISB • Invited: "Application of the PCB-Embedding Technology in Power Electronics - State of the Art and Proposed Development" Dr. Cyril Buttay, Centre National de la Recherche Scientifique (Ampere Lab) • Invited: "Thick-film Embedded Passives for Power Modules" John Fraley, Wolfspeed • Invited: "130 MHz 6A Embedded Voltage Regulator in Cubic Millimeter" Dr. Taner Dosluoglu, Endura
9:45 – 10:15	Break & Networking
10:15 – 12:00	S7: Heterogeneous Integration of Components - Chairs: Matt Romiq (Texas Instruments) and Puluqurtha Markondey Raj (GA Tech) <ul style="list-style-type: none"> • Keynote: "Heterogeneous Integration Progress and Trends in Miniature Integrated Power Supplies" Arnold Alderman, Anagenesis • Invited: "Integration of Energy Storage into Power Module by Magnetic Molding" Khai Ngo, Virginia Tech • Invited: "High-density Power Package with Improved Reliability, Electrical and Thermal Performances for Automotive Drivetrain" Vanessa Smet GA Tech • "A High Density and High Voltage Power Module with 3D Through Ceramic Via Providing Integration Solutions for Pulsed System" Long Zhang, Gang Dai, Juntao Li, Yingkun Yang, Tingrui Gong, Kun Zhou, Feng Qin, Lei Gao, Chinese Academy of Engineering Physics, PR China
12:00 – 1:00	Lunch & Networking
1:00 – 2:45	S8: Quality & Reliability – Chairs: Mike Azarian (U. of MD) and Doug DeVoto (NREL) <ul style="list-style-type: none"> • Keynote: "From Fit for Standard to Fit for Application" Eckard Wolfgang, ECPE • Invited: "Embedded Planar Capacitors: A Reliability Review" Mike Azarian, U. MD • Invited: "Live Condition Monitoring of High-Power Switching Devices using Smart Modulation" Faisal Khan, U. of Missouri • "Impact of Accelerated Stress-Tests on SiC MOSFET Precursor Parameters" Joseph Kozak, Douglas DeVoto, Joshua Major, Khai Ng, NREL
2:45 – 3:15	Break & Networking
3:15 – 5:00	Networking & Laboratory Tour – Chair: Prof. Patrick McCluskey (U. of MD) <ul style="list-style-type: none"> • Assisting: Dr. Daniel Shen, U. of MD • Assisting: Mr. Subramani Manoharan, U. of MD