Monday June 25, 2018 8:00 – 12:15

Tutorials
- "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

13:15 – 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
- "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 & Networking (Photo)

3:15 – 5:00 S1 Additive Manufacturing - Chairs: Dimeji Ibitayo (ARL) and Ryan Sochol (U. of MD)
- Keynote: "TBD" Dimeji Ibitayo, ARL
- 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

Tuesday June 26, 2018 8:00 – 9:45

S2 Systems Integration & Thermal Management - Chairs: Lauren Boteler (ARL) and Mike Ohadi (U. of MD)
- Keynote: "Holographic 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. Dinesh Pahinakar, 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

S3 Multiphysics Design and Tools - Chairs: Abhijit Dasgupta (U. of MD) and Steven Miner (Naval Academy)
- 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

12:00 – 1:00 Lunch & Networking

S4 Materials – Chairs: John Bullittle (Kemet) and Yunhui (Joe) Mei (Tianjin University)
- Keynote: "New bonding Cu link by using low temperature sinterable Cu particles" Dr. Jung-Lae Jo, Mitsu Mining & Smelting Co, Ltd
- Invited: "Soft magnetic Metal-flake Composite Material Suitable for Highly Integrated Power Modules" Kenichi Chatani, Token a KEMET company
- Invited: "The Development of Materials for 3D Packaging of Power Products" Mr. Ken Araujo, Namics USA
- "Improvement of Ag Sintering Quality on Cu Surface at Hydrogen Atmosphere" Testu Takemasa, Minoru Ueshima, Jinting Jiu, Seino Junko, Katsuaki Suganuma, Osaka Univ.

2:45 – 3:15 Break & Networking

S5 Manufacturing Technologies - Chairs: William Chen (ASE) and Brian Narveson (Naversen Innovative Consulting)
- Keynote: "Challenges of Heterogeneous Integration for Power Electronics" Dr. William Chen, ASE
- Invited: "Advanced PCB Solutions Supporting Next Generation Power Applications" David Warner, ATLA
- Invited: "High Reliability Silver Sintering for Power Modules" Gyun Dutt, Alpha Assembly Solutions
- Invited: "Vacuum-assisted Sintering in Mass Production: Challenges and Solutions" Aaron Hutzel, PINK GmbH

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)
- 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 Electronic scape of the Art and Proposed Development" Dr. Cyril Buttay, Centre National de la Recherche Scientifique (Ampere Lab)
- Invited: "Thick-film Embeded Passives for Power Modules" John Fraley, Wolfspeed
- Invited: "130 MHz 6A Embedded Voltage Regulator in Cubic Millimeter" Dr. Taner Doslugolu, Endura

9:45 – 10:15 Break & Networking

S7: Heterogeneous Integration of Components - Chairs: Matt Romig (Texas Instruments) and Pulugurtha Markondey Raj (GA Tech)
- 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 Dough DeVoto (NREL)
- Keynote: "From Fit for Standard to Fit for Application" Eckard Wolfgang, ECPE
- Invited: "Quality and Reliability Issue in Integrated Power Electronics" Mike Azarian, U. MD
- Invited: "Live Condition Monitoring of High-power Switching Devices using Smart Modification" Faisal Khan, U. of Missouri
- "Impact of Accelerated Stress-Tests on SiC MOSFET Precursor Parameters" Joseph Kozak, Douglas DeVoto, Joshua Major, Kha Ng, NREL

2:45 – 3:15 Break & Networking

3:15 – 5:00 Networking & Laboratory Tour – Chair: Prof. Patrick McCluskey (U. of MD)
- Invited: Dr. Daniel Shen, U. of MD
- Assisting: Mr. Subramani Manoharan, U. of MD