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| Technical Sessions Tuesday March 20, 2018 | | |
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| 8:10AM - 8:20AM | Welcome Message | |
| 8:20AM - 9:20AM | Keynote<br>Thermal Challenges and Industry Trends of Consumer Electronic Devices<br>Dr. Andre Ali, Google | |
| Tuesday 9:20AM to 9:40AM Networking Break | | |
| | **Parallel Sessions** | |
| | **Session: 2.5D and 3D Electronics**<br>**Chair: Jesse Galloway**<br>Jesse.Galloway@amkor.com | **Session: Two Phase Cooling/Liquid Cooling**<br>**Chair: Pablo Hidalgo**<br>Pablo.Hidalgo@aavid.com |
| 9:40AM – 10:00AM | Application of Thermal Network Approach to Electrical-Thermal Co-simulation and Chip-Package-Board Extraction<br>Author: Fengyun Zhao, Huawei Technologies | Eulerian Multiphase Conjugate Model for Embedded Two-Phase Liquid Cooled Microprocessor<br>Author: Pritish Ranjan Parida, IBM Research |
| 10:00AM – 10:20AM | Investigations of Low Temperature Co-Fired Ceramic Heat Spreading Interposer for the Thermal Management of 3D Packages<br>Author: Si Huang, University of Arkansas | Recent Advances in Oscillating Heat Pipes for Passive Electronics Thermal Management<br>Authors: Joe Boswell and Dr. Bruce Drolen, ThermAvant Technologies, LLC |
| 10:20AM – 10:40AM | Delphi-like Compact Thermal Models using Model Order Reduction<br>Author: Eric Monier-Vinard, Thales Global Services | Experimental Investigation of Direct Liquid Cooling of a Two-Die Package<br>Author: Bharath Ramakrishnan |
| 10:40AM – 11:00AM | Multi-Die Packaging and Thermal Super-Position Modeling<br>Author: Jesse Galloway, Amkor Technology, Qualcomm Datacenter Technologies, Inc. | Evaluation of Pulsating Heat Pipes for Outdoor Telecom Equipment<br>Author: Chien-Hung Sun, Celsia Inc |
| Tuesday 11:00AM to 11:20AM Networking Break | | |
| | **Session: Concurrent Design/LED**<br>**Chair: Ross Wilcoxon**<br>ross.wilcoxon@rockwellcollins.com | **Session: Consumer Electronics**<br>**Chair: Bill Maltz**<br>wmaltz@ecooling.com |
| 11:20AM – 11:40PM | Promising Potential of Natural Graphite Sheet Heat Sinks: Thermal, EMI/EMC, Reliability, Cost, Manufacturing and Sustainability Perspectives<br>Author: Martin Cermak, Simon Fraser University | Use of High Conductivity Spreaders on the Back of Single-Sided PCB to Enhance Heat Transfer and Thermal Capacitance in Electronics Systems<br>Author: Dr. Sankarananda Basak, Intel Corporation |

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| 11:40AM – 12:00PM | Different Questions of Today's LED Thermal Testing Procedures<br>Author: András Poppe, Mentor, a Siemens Business | Performance and Reliability of a 5G Smartphone RF-Antenna System: Influence of Temperature Field<br>Author: Mehdi Abarham, Ansys |
| 12:00PM – 12:20PM | Numerical and Experimental Feasibility Study of Vapor Chambers for LED Applications<br>Author: Martin Genevieve, Philips Lighting | An Early System-level Thermal Analysis Methodology for Advanced Electronic Subsystems<br>Author: Karthik Srinivasan, ANSYS |
| 12:20PM – 12:40PM | | Package Thermal Challenges Due to Changing Mobile System Form Factors<br>Author: Cameron Nelson, Amkor Technology |
| 12:40PM – 1:45PM | Luncheon Speaker<br>Mission Critical Facilities, Data Centers, Technology Spaces and Electronic Equipment<br>Presenter: Dustin W. Demetriou | |

| **Technical Sessions Wednesday March 21, 2018** | |
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| 8:10AM – 8:20AM | Welcome Message |
| | **Session: Simulation**<br>**Chair: Robin Bornoff**<br>Robin_Bornoff@mentor.com |
| 8:20AM – 8:40AM | Developing an Empirical Correlation for the Thermal Spreading Resistance of a Heat Sink<br>Author: Nicole Okamoto, San Jose State University |
| 8:40AM – 9:00AM | Automated Structure Function Object Mapping<br>Author: Byron Blackmore, Mentor Graphics |
| 9:00AM – 9:20AM | Comparison of Junction Temperature Prediction Methods through Analysis of Isolated 1-D Thermal Resistance Model Variables of an Application Utilizing Forced Convection of Heat Sinks<br>Author: Nicholas Adam Klitzke, Mayo Clinic - SPPDG |
| 9:20AM – 9:40AM | Power Map Modeling in Integrated Circuits and Power Devices using ESI Presto<br>Author: Swati Saxena, ESI Group |
| Wednesday 9:40AM to 10:00AM Networking Break | |
| 10:00AM – 11:00AM | Embedded Tutorial<br>Selecting Adhesives and Thermally-Conductive Adhesives for Electronics Systems<br>Tom Rogers of Polyonics and Dave Saums of DS&A |
| Wednesday 11:00AM to 11:20AM Networking Break | |

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| Parallel Sessions | | |
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| | **Session: Data Center and Heat Sinks**<br>**Chair: Marcelo del Valle**<br>marcelo.del.valle@intel.com | **Session: Measurement Techniques**<br>**Chair: Kazuaki Yazawa**<br>kyazawa@purdue.edu |
| 11:20AM – 11:40AM | Dynamic Rack Power Provision to Optimize Rack Power Performance<br>Author: Song Chuan, Intel Asia-Pacific Research & Development Ltd. | Using SMT Chip Resistors Beyond Their Rated Thermal Specification<br>Author: Jeevan Kanesalingam, Motorola Solutions |
| 11:40AM – 12:00PM | Quantifying Data Center Performance<br>Author: Kourosh Nemati, Future Facilities | Temperature Dependence of the Thermoreflectance Coefficient of Gold using a Phase-Locked Single- Point Measurement Approach<br>Author: Assaad El Helou, Southern Methodist University |
| 12:00PM – 12:20PM | Comparison of the Steady-state Thermocouple and Transient Thermal Methods for Heat Sink Characterization<br>Author: Martin Cermak, Simon Fraser University | Submicron Local and Time-dependent Thermal Resistance Characterization of GaN HEMTs<br>Author: Kazuaki Yazawa, Microsanj |
| 12:20PM – 12:40PM | | Developing A Steady-State Theta jc Testing Standard for Electronic Packages<br>Author: Jesse Galloway Amkor Technology, Qualcomm Datacenter Technologies, Inc. |
| 12:40PM – 1:45PM | Luncheon Speaker<br>Tales from the Mars Science Laboratory Thermal Protection System Development (or, Try Not to Panic When Your Heatshield Material Disappears)<br>Presenter: Helen H. Hwang | |

| Technical Sessions Thursday March 22, 2018 | |
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| 8:10AM – 8:20AM | Welcome Message |
| 8:20AM – 9:20AM | THERMI Presentation – Bruno Michel, IBM Zurich Research Laboratory |
| Thursday 9:20AM to 9:40AM Networking Break | |
| | **Session Thermal Interfaces**<br>**Chair: Gene Pruss**<br>Gene.Pruss@lairdtech.com |
| 9:40AM – 10:00AM | Thermal Resistance of Electrical Insulation for Bolted and Clamped Discrete Power Devices<br>Author: Mikel Garcia-Poulin (Presenter), Simon Fraser University |

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| 10:00AM – 10:20AM | Using Electrical Capacitance and Mechanically Representative Hardware to Evaluate the Thermal Mechanical Stability of Thermal Interface Materials<br>Author: Michael A. Gaynes, Universal Instruments, Inc | |
| 10:20AM – 10:40AM | Investigation of Pressure Dependence of Interface Thermal Resistance in Thermal Greases by Transient Thermoreflectance<br>Author: Mihai G. Burzo, University of Michigan-Flint | |
| 10:40AM – 11:00AM | In-Plane Thermal Diffusivity Measurement of Highly Thermal Conductive Thin Films by the Flash Method<br>Author: Heng Wang, TA Instruments-Waters LLC | |
| Thursday 11:20AM to 12:20PM Networking Break | | |
| **Parallel Sessions** | | |
| | **Session: Air Mover Technologies with Low Acoustics**<br>**Chair: David Nelson**<br>david@nelsonacoustical.com | **Session: Automotive / Aerospace / Outdoor**<br>**Chair: Dr. Shailesh Joshi**<br>shailesh.joshi@toyota.com |
| 11:20AM – 11:40AM | In Search of a Quiet Fan<br>Author: David Nelson, Nelson Acoustics | An Electro-Thermal Performance Analysis of SiC MOSFET vs Si IGBT Automotive Traction Inverters Under Various Drive Cycles<br>Author: Asantha E Kempitiya, Infineon Technologies Americas Corp. |
| 11:40AM – 12:00PM | NASA ISS Portable Fan Assembly Acoustics<br>Author: Andrew J. Boone, MEI Technologies, Inc. | Design for an Automotive Audio Amplifier<br>Author: Robin Bornoff, Mentor - A Siemens Business |
| 12:00PM – 12:20PM | Design and Optimization of Contra-Rotating Fans<br>Author: Ralph-Peter Mueller, CFturbo Inc | Light-Weight and High-Performance Air-Cooled Heat Sinks<br>Author: Mohammad Reza Shaeri, Advanced Cooling Technologies, Inc. |
| | **Thursday Afternoon Session** | |
| 2:00PM – 4:00PM | Panel Discussion: Challenges in Consumer Electronics Cooling<br>Moderator: Mark Carbone, Intel<br>Panelists:<br>Andy Delano, Microsoft<br>Jie Yang, Huawei<br>Emil Rahim, Google<br>Guy Wagner, ECS<br>Gabriel Khuri, Intel | |