

2017 Electronics Packaging Symposium and Workshop

September 19 - 20, 2017
GE Global Research - Niskayuna, New York

Tuesday, September 19, 2017

7:30 am - 8:00 am	Registration and Continental Breakfast		
8:00 am - 8:20 am	Opening Ceremonies & Keynote Sessions Bahgat Sammakia, VP of Research, Binghamton University and James LeBlanc, Technology Leader, GE Global Research		
8:20 am - 9:00 am	Keynote 1 - Joseph Kolly, NHTSA - An Introduction to the Federal Automated Vehicle Policy		
9:00 am - 9:40 am	Keynote 2 - John Knickerbocker, IBM - Packaging Technology for Next Generation Computing Systems		
9:40 am - 10:00 am	Break		
10:00 am - 10:40 am	Keynote 3 - Klaus-Dieter Lang, Fraunhofer IZM - Panel Level Packaging - Just a Mayfly or a Future Mainstream		
10:40 am - 11:20 am	Keynote 4 - Michael Tonnes, Danfoss Silicon Power GmbH - E-mobility Shapes Power Electronics Packaging Trends		
11:20 am - 11:40 am	Break		
	Concurrent Morning Sessions		
	Flexible & Additive Electronics	Thermal Challenges	Sensors & Embedded Electronics
11:40 am - 12:10 pm	Ahyeon Koh, Binghamton University - A Soft, Wearable Epidermal Microfluidic Systems Capable of Sweat Monitoring	Leila Choobineah, SUNY Poly - Numerical and Experimental Thermal Investigation of 2.5D and 3D Stacked Power Devices	Paul Takhistov, Rutgers - Intelligent Packaging: Materials, Sensors and Supply Chain Integration
12:10 pm - 12:40 pm	Simon Fried, Nano Dimensions - 3D Printing Multilayer Circuits	Scott Schiffres, Binghamton University - <i>In situ</i> Thermal Measurements of Intermetallic Compounds in Electronic Packaging	Aoife Celoria, NovaCentrix - Biosensors with Printed Technologies: Hybridizing Traditional Biochem Detection Mechanisms with Printed Conductors and Photonic Curing
12:40 pm - 1:40 pm	Lunch & Keynote Presentation - Bill Bottoms, 3MTS - Heterogeneous Integration - A Key To Our Future		
1:40 pm - 2:10 pm	D. R. Hines, University of Maryland, LASSP - Additive Manufacturing Methods for the Fabrication of Printed Hybrid Electronic Circuits	Timothy Chainer, IBM - Thermal Challenges in Computer Systems	Lei Shan, IBM - Experiment and Observations on Embedded Capacitors in Organic Substrates
2:10 pm - 2:40 pm	Wouter Brok, Meyer Burger - Industrial Inkjet Technology Enabling New Advanced Packaging Approaches	Mohammed Ababneh, Advanced Cooling Technologies, Inc. - Thermal Management Solutions for High Heat Flux Electronics in Terrestrial and Space Applications	Alan Rae, IncubatorWorks - The iNEMI Roadmap 2017 and Research Priorities

Exhibits Open

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| Steinmetz Auditorium | Conference Room 4/5 |
| Galley | Lyceum |

		Concurrent Afternoon Sessions	
	Exhibits Open	2.5/ 3D Packaging	Photonics & MEMS
2 : 40 p m - 3 : 10 p m		Eric Cotts, Binghamton University - Examination of Electromigration Effects in Pb Free Solders	Anis Rahman, Applied Research - Breaking the Wavelength Barrier for Sub-nanometer Resolution Imaging of Semiconductors and 2D Materials
3 : 10 p m - 3 : 40 p m		Brian Swiggett, Prismark - Status and Outlook for 2.5/3D Packaging	Sergey Zotov, GE Global Research - Investigation of Energy Dissipation in Vibratory Micromachined (MEMS) Resonators
3 : 40 p m - 4 : 00 p m		Break	
4 : 00 p m - 4 : 30 p m		Dan Smith, GlobalFoundries - 3D TSV Integration Readiness in Advanced Nodes	Ed White, AIM Photonics - AIM Photonics - Standing-up the AIM Test, Assembly and Optical Packaging Facility
4 : 30 p m - 5 : 00 p m		Daniel Green, DARPA - Frontiers of Integration: Pushing the Granularity of Integration	Shafi Saiyed, Analog Devices - MEMS and Sensor Packaging: Challenges in High Performance Applications
5 : 00 p m - 7 : 00 p m		Poster Session & Cocktail Reception	
7 : 00 p m - 8 : 30 p m		Dinner & Keynote Presentation - Janett Martinez, LOOMIA - Smart Textiles and IoT- Bringing Blockchain to the Masses	

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Wednesday, September 20, 2017

7:30 am - 8:00 am	Continental Breakfast			
	Exhibits Open	Concurrent Morning Sessions		
		Flexible Electronics for Medical Applications	Power Electronics	Materials for Packaging & Energy Storage
8:00 am - 8:30 am		Steve Groothuis, Samtec - Biomedical Device Packaging Solutions: Successfully Integrating New Chips, Packages, & Modules	Rick Eddins, GE Aviation	Ken Araujo, NAMICS - Highly Thermal Conductive Adhesive Film for High Performance Power Modules
8:30 am - 9:00 am		Ralf Lenigk, GE Global Research - Hydration Sensor Patch for Human Performance Monitoring	Ole Muhlfield, Danfoss Silicon Power GmbH- Accepting the Lifetime Challenge: Advanced Die Top System and Cooling Technologies	Christine Ho, Imprint Energy - New Materials and Manufacturing Paradigms for Batteries Powering the Internet of Things
9:00 am - 9:30 am		Christine Kallmayer, Fraunhofer IZM - Stretchable and Conformable Electronics	David Saums, DS&A, LLC - Thermosyphon Applications for IGBT Power Semiconductors	Dennis Ang, Heraeus - Silver Sinter Paste for SiC Bonding with Improved Mechanical Properties
9:30 am - 10:00 am		Dave Bolognia, Analog Devices - ADI's Flex Packaging for Human Vital Signs Monitoring	Sreekant Narumanchi, NREL - Thermal Management and Reliability of Automotive Power Electronics and Electric Machines	Shawna Hollen, University of New Hampshire - The Impact of Atomic Vacancies on Electronic Properties of Black Phosphorus: A Scanning Tunneling Microscopy Study
10:00am - 10:20am		Break		
		Automotive & Harsh Environments	Thermal & Power Electronics II	
10:20am - 10:50am		Hongwen Zhang, Indium - High Temperature Lead-Free Die Attach Materials - A Review	Dhruv Singh, GlobalFoundries - Self-Heating in Aggressively Scaled FinFET Technologies: Characterization, Predictive Modeling and Technology Implications	
10:50am - 11:20am		T. Gus McDonald, Valeo - Packaging challenges for MEMS-Photonic Devices in Automotive Applications	Lauren Boteler, US Army Research Laboratory - Utilizing Codesign Methods for Future Power Modules	
11:20am - 11:50am		Hongbin Yu, Arizona State University - The Development of a New In-Plain Strain Measurement Technique for Electronic Package Application	Mark Hoffmeyer, IBM - Novel Graphite-Based Tim for High Performance Computing Applications	
11:50am - 12:20pm		Michael Wollitzer, Rosenberger - IoT Products Derived from the Generic Development Platform	Mahsa Ebrahim, Villanova University - Gas-Assisted Droplet Impingement and its Contributions to Spray Cooling	
12:20pm - 1:20pm		Lunch and Keynote Presentation - Tim Lee, Boeing - IEEE 5G Community Engagement with Industry for Advanced Semiconductors and Packaging Technologies		

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CPMT Workshop - Heterogeneous Integration Roadmap (HIR) Workshop	
1:15 pm - 1:30 pm	Welcome and Opening Remarks
1:30 pm - 2:00 pm	Heterogeneous Integration Roadmap: Global Collaboration - William Chen, ASE
2:00 pm - 2:30 pm	Road Mapping Heterogeneous Integration: A Key to the Future - Bill Bottoms, 3MTS
2:30 pm - 2:45 pm	Session 1 Power Electronics Integration - Doug Hopkins
2:45 pm - 3:00 pm	Session 2 Medical and Health Applications - Mark Poliks and Nancy Stoffel
3:00 pm - 3:15 pm	Session 3 MEMS and Sensor Integration - Shafi Saiyed
3:15 pm - 3:30 pm	Session 4 Aerospace and Defense- Tim Lee and Daniel Green
3:30 pm - 3:45 pm	Session 5 Single & Multichip Packaging - William Chen
3:45 pm - 4:00 pm	Break
4:00 pm - 4:45 pm	High Performance Computing - Data Center Round Table - Moderators: Kanad Ghose and William Chen Round Table: Lei Shan, Luke England, Rockwell Hsu, Gamal Refai- Ahmed, Bill Bottoms
4:45 pm - 5:00 pm	Wrap - Up

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