

Session	Day	time	paper No	title	speaker	Authors	affiliation
Opening	3/15/2006	8:00 - 8:15 am		Welcome/logistics	Wong/Qu		
Keynote	3/15/2006	8:15 - 9:15 am	1	System Integration Technologies for Ultra Small Systems	Herb Reichl	Herbert Reichl, M. J. Wolf	Fraunhofer IZM Technical University Berlin Gustav Meyer Allee 25, 13355 Berlin, Germany
Solder	3/15/2006	9:15 - 9:45 am	2	Lifetime prediction for advanced packaging based on physics of failure approaches on a micro and nano-scale	B. Wunderle	B. Wunderle, R. Dudek, D. Vogel and B. Michel	Fraunhofer-Institut für Zuverlässigkeit und Mikrointegration (IZM) Dept. Mechanical Reliability and Micro Materials  E-Mail: dudek@che.izm.fhg.de
Solder	3/15/2006	9:45 - 10:15 am	3	7. Development of Constitutive Equations and Novel Methodology for Failure Prediction Models for SAC Lead-free Alloys	Dereje Agonafer	Dereje Agonafer	Mechanical and Aerospace Engineering Department, University of Texas at Arlington
	3/15/2006	10:15 - 10:30 am		Break			
Solder	3/15/2006	10:30 - 11:00 am	4	A Novel Technique for Modeling Solder Joint Failure During System Level Drop Simulations	W. Kinzy Jones	W. Kinzy Jones and Doug Carroll	Advanced Simulation Group, Motorola
Solder	3/15/2006	11:00 - 11:30 am	5	Durability of Pb-Free Solder Connection between Copper Interconnect Wire and Crystalline Silicon Solar Cells - Experimental Approach	Abhijit Dasgupta	Gayatri Cuddalorepatta <sup>1</sup> , Abhijit Dasgupta <sup>1</sup> Scott Sealing <sup>2</sup> , Jerome Moyer <sup>3</sup> , Todd Tolliver <sup>2</sup> , and James Loman <sup>3</sup>	ICALCE Electronic Products and Systems Center Mechanical Engineering Department University of Maryland, College Park, MD 20742 USA  2GE Global Research Center One Research Circle Niskayuna, NY 12309 USA  3GE Energy 231 Lake Drive Newark, Delaware 19702 USA
Solder	3/15/2006	11:30 - 11:50 pm	6	Advanced Thermal Interface Materials	Y.Zhang	Y.Zhang, J.McVey, A.Xiao	National Starch and Chemical Company
	3/15/2006	12:00 - 1:30 pm		Lunch			

Adhesive, Encapsulant and Coating	3/15/2006	1:30 - 2:00 pm	7	Rigid-flex electronics with printed passives	LAM	CK LIU, PK TIU and DCC LAM	Microsystems Packaging Institute and Department of Mechanical Engineering, The Hong Kong University of Science and Technology Clear Water Bay, Kowloon, HONG KONG(SAR) CHINA
Adhesive, Encapsulant and Coating	3/15/2006	2:00 - 2:30 pm	8	Fully Cure-Dependent Modelling and Characterization of EMC's with Application to Package Warpage Simulation	L.J.Ernst	L.J.Ernst, K.M.B. Jansen, M.Saraswat, G.Q.Zhang, D.G.Yang, C.van'tHof, H.J.L.Bressers	Delft Univ, Philips Semiconductors, Netherland
Adhesive, Encapsulant and Coating	3/15/2006	2:30 - 2:50 pm	9	A New Vapor Phase Polymer Coating with Exceptional Thermal, electrical and Weatherable Properties for Electronic Packaging, Protection and Speciality Applications	Rakesh Kumar	Rakesh Kumar	Specialty Coating Systems, Indianapolis, IN
Adhesive, Encapsulant and Coating	3/15/2006	2:50 - 3:10 pm	10	Adhesive Bonding Process Development for Planar Lightwave Circuit in Optical Transceiver Assembly	Cai L iang	Cai L iang, Xiaofeng Zhou, Fajian Zhang	Auburn University
Adhesive, Encapsulant and Coating	3/15/2006	3:10 - 3:30 pm	11	Semiconductor Packaging Materials Outlook	Jan Vardaman	Jan Vardaman	TechSearch International, Inc.
	3/15/2006	3:30 - 3:50 pm		Break			
Adhesive, Encapsulant and Coating	3/15/2006	3:50 - 4:10 pm	12	Nanoscale Silver Paste and Its Sintering for Attaching Semiconductor Devices	G-Q Lu	J.N.Calata, G.Bai, G.Lei, and G-Q Lu	MSE/GT,ECE/GT, Virginia Tech
Adhesive, Encapsulant and Coating	3/15/2006	4:10 - 4:30 pm	13	Formation of Conducting Columns in Adhesive Epoxy	Michael F. McInerney	Michael F. McInerney, Tim Bruemmer	Rose-Hulman Institute
Adhesive, Encapsulant and Coating	3/15/2006	4:30 - 4:50 pm	14	Materials and Processing Impacts on Flip Chip Assembly using Pre-Applied Underfill	David Esler	David Esler	GE Global Research
Adhesive, Encapsulant and Coating	3/15/2006	4:50 - 5:10 pm	15	Effect of Conductive Particle Properties on the Reliability of Anisotropic Conductive Film for Chip-On-Glass (COG) Applications	Myung Jin Yim	Myung Jin Yim*, Chang-Kyu Chung and Kyung Wook Paik	Dept. of Materials Science and Engineering, KAIST

Adhesive, Encapsulant and Coating	3/15/2006	5:10 - 5:30 pm	16	Effects of Barrier Layer on Copper-to Silicon Diffusion and Intermetallic Compound Formation in Copper Wire Bonding	Angie K. M. Lau	Shawn Zhang, Catherine Chen, Ricky Lee, Angie K. M. Lau, Paul P.H.Tsang Lebbai Mohamed, C.Y.Chan M. Dirkwager	Electronic Packaing Lab., Hong Kong Univ
Keynote	3/16/2006	8:00 - 9:00 am	17	Packaging Trends and New Materials Challenges	Ho-Ming Tong	Ho-Ming Tong	Corporate R&D, ASE Group, Taiwan.
Simulation and Tests	3/16/2006	9:00 - 9:30 am	18	Tin Whisker Formation Kinetics on Sn-Pb Hasl Coating Layer Inside Plated Through Holes with Press-Fit Compliant Pins	D.Shangguan	J. Liang G. Morand, N. Dariavach, D.Shangguan	EMC Corp., Hopkinton, MA
Simulation and Tests	3/16/2006	9:30 - 10:00 am	19	Correlating Circuit Board Deflection/Strain Measurements to BGA Solder Joint Dynamic Performance	Frank Z. Liang	Frank Z. Liang	Intel
	3/16/2006	10:00 - 10:20 am		Break			
Simulation and Tests	3/16/2006	10:20 - 10:50 am	20	Experimental Evidence of Underfill Voiding and Delamination during Board Level Assembly of Pb-free Solders	SB Park	SB Park, S. Chung, and Z. Tang	Department of Mechanical Engineering, State University of New York at Binghamton
Simulation and Tests	3/16/2006	10:50 - 11:20 am	21	Measurement of Effective Chemical Shrinkage of Polymeric Materials Using Fiber Bragg Grating	B. Han	Y. Wang and B. Han	University of Maryland
Simulation and Tests	3/16/2006	11:20 - 11:40 am	22	A Practical Electrolyte for THE Electrodeposition of Eutectic Gold/Tin Alloy	George Hradil	George Hradil	Technic Inc., Cranston, RI
Simulation and Tests	3/16/2006	11:40 - 12:00 pm	23	Modeling and Simulations of the Underfill Settling Effect on the Interfacial Stresses of Flip Chip Packaging	Cheng-fu Chen	Cheng-fu Chen, Navin Thammadi	ME/Univ of Alaska Fairbanks
	3/16/2006	12:00 - 1:30 pm		Lunch			
Keynote	3/16/2006	1:30 - 2:30 pm	24	Future of Packaging and packaging Materials	Rao Tummala	Rao Tummala	Microsystems Packaging and Director NSF ERC in SOP Technology, Georgia Institute of Technology, USA.

Material Overviews	3/16/2006	2:30 - 3:00 pm	25	WLCSP Materials: Science and Alchemy	John R. Hunt	John R. Hunt and William T. Chen	John R. Hunt Director of Engineering ASE (US) Inc 7855 South River Parkway Suite 212 Tempe, AZ 85284 (480) 752-2233 X258 (Office) (602) 326-7493 (Mobile) john.hunt@aseus.com William T. Chen, Ph. D. Senior Technical Advisor ASE (US) Inc. 3590 Peterson Way Santa Clara, CA 95054 (408) 986-6505 (Office) (408) 250-4290 (Mobile) william.chen@aseus.com
Material Overviews	3/16/2006	3:00 - 3:30 pm	26	Materials Challenges and Solutions for the Packaging of High Power LEDs	Frank Shi	Frank Shi	University of California at Irvin
Material Overviews	3/16/2006	3:30 - 4:00 pm	27	Memory Packaging Material and Assembly Trends	Wayne Koh	Wayne Koh	Kingston Technology Company
	3/16/2006	4:00 - 4:20		Break			
Posters	3/16/2006	4:20 - 6:20 pm	28	Thermomechanical behavior of isotropic conductive adhesives		Su Bin and Jianmin Qu	Georgia Tech
Posters	3/16/2006	4:20 - 6:20 pm	29	Electrochemical Migration Control of Silver-Paste Conductive Adhesives		Yi Li, Kyoung-sik Moon, C.P.Wong	Georgia Tech,MSE
Posters	3/16/2006	4:20 - 6:20 pm	30	Ultra Highly Conductive Polymer Composites for Lead-Free Interconnect		Hongjin Jiang, Kyoung-Sik Moon, Yi Li, C..P.Wong	Georgia Tech,MSE
Posters	3/16/2006	4:20 - 6:20 pm	31	Deposition and Surface Treatment of Microparticles to Produce Lotus-Effect Surface		Brian C. Englert, Yonghao Xiu and C.P.Wong	Georgia Tech,MSE
Posters	3/16/2006	4:20 - 6:20 pm	32	Microstructured and Plasma Etched PDMS Materials as Hydrophobic Materials		Brian C. Englert, Jianwen Xu and C.P.Wong	Georgia Tech,MSE
Posters	3/16/2006	4:20 - 6:20 pm	33	In-situ Photochemical Synthesis of Novel Silver Nanoparticles/Polymer Composites as High K Polymer Matrix for Embedded Passives Applications		Jiongxin Lu, Kyoung-Sik Moon, C.P.Wong	Georgia Tech,MSE
Posters	3/16/2006	4:20 - 6:20 pm	34	Novel All Organic High Dielectric Constant Polyaniline/epoxy Composites for Embedded Capacitor Applications		Jiongxin Lu, Kyoung-Sik Moon, C.P.Wong	Georgia Tech,MSE

Posters	3/16/2006	4:20 - 6:20 pm	35	Formation of Tunable Zinc Oxide Structures via Solution Method for use in Self Cleaning Applications	Jesseca Berger, Brian Englert, Lingbo Zhu, C.P.Wong	GT/MSE
Posters	3/16/2006	4:20 - 6:20 pm	36	Superhydrophobicity and UV Stability of polydimethylsiloxane/polytetrafluoroethylene (PDMS/PTFE) Coatings	Y.Xiu, L.Zhu, D.Hess, C.P.Wong	GT/MSE
Posters	3/16/2006	4:20 - 6:20 pm	37	Zno Nanobelts/wire for Electronic Detection of Enzymatic Hydrolysis of Starch	J.Liu, J.Goud, I.Mahadevan, R.Tummala, Wang, Z.L.	GT/ECE
Posters	3/16/2006	4:20 - 6:20 pm	38	Simulation Study of Nanoparticle Melting Behavior for Lead Free Nano Solder Application	Hai Dong, Kyoung-sik Moon, Hongjin Jiang, C.P.Wong	GT/MSE
Posters	3/16/2006	4:20 - 6:20 pm	39	Modeling and Characterization of The Mechanical Behavior of Nano-Sized Structural Elements	Remi Dingreville and Jianmin Qu	Georiga Tech
Posters	3/16/2006	4:20 - 6:20 pm	40	Scaleable Board Level High Performance Optical Polymer Waveguide Technologies	Fuhan Liu, Fengtao Wang, Daniel Guidotti, Ali Adibi, Gee-Kung Chang, Rao Tummala	Microsystems Packaging Research Center, Georgia Tech, and Rohm & Haas Electronic Materials, LLC
Posters	3/16/2006	4:20 - 6:20 pm	41	Neural Network Modeling of Acid-Catalyzed Degradation of Photosensitive Polycarbonates	Cleon Davis, Jason Harry, Mark Gupta, Paul Joseph, Paul Kohl, Gary May	GT/ECE/ChemBioEng
Posters	3/16/2006	4:20 - 6:20 pm	42	Embedded Thin Film Resistors on BCB by Low-cost PWB Compatible Electroless Plating and by Direct Foil Lamination Transfer Processes	Swapam Bhattacharya, Mahesh Varadarajan, Seth Johnston, K J Lee, Rao R. Tummala, Suresh Sitaraman, Manos M. Tentzeris, J. Papapolymerou	GT/Package Research Center
Posters	3/16/2006	4:20 - 6:20 pm	43	On-Chip Air-Gap Fabrication Using a New Sacrificial Polymer for ultra Low-k Dielectrics	Seongho Park, Jeff Krotine, Sue Ann Bidstrup Allen, Paul Kohl	Georgia Tech, Chemical & Biomolecular Eng.
Posters	3/16/2006	4:20 - 6:20 pm	44	Effects of moisture on metal/polymer interfaces	T. Ferguson and J. Qu	Southwest Reseach Institute
Posters	3/16/2006	4:20 - 6:20 pm	45	Biofunctionalization of Multi-walled Carbon Nanotubes(MWNT's) for Fabrication of Highly Sensitive Electrochemical Biosensors	J.Goud, P.M.Raj, I.Mahadevan, R.Tummala	GT/Package Research Center

Posters	3/16/2006	4:20 - 6:20 pm	46	Integrating Solution-Derived 3D PZT Structures on Si Membranes Platform for RF and Biomedical Applications		P. Markondeya Raj, Iabothu, R.Abdolvand, F.Ayazi R.Tummala	GT/Packaging Research Center
Posters	3/16/2006	4:20 - 6:20 pm	47	Controlled Growth of Well-Aligned Carbon Nanotubes and Their Assembly		L.Zhu, J.Xu, Y.Xiu, D.Hess, C.P.Wong	GT/MSE/Chem & Biomolecular Engineering
Posters	3/16/2006	4:20 - 6:20 pm	48	Effect of ferritic density and zinc on magnetic properties of cobalt ferrite nanocomposites		Hai Dong, Adam Meininger, Kyoung-Sik Moon, Lara Martin, C. P. Wong	GT
Posters	3/16/2006	4:20 - 6:20 pm	49	Effect of Reducing Agents on the electrical Properties of Electrically Conductive Adhesives		Y.Li, K.Moon, C.P.Wong	GT/MSE/NSF Packaging Research Center
Posters	3/16/2006	4:20 - 6:20 pm	50	Photodefinable High-k Su8 Nanocomposite for Embedded Capacitors		Jianwen Xu, C.P.Wong	GT/MSE/Packaging Center
Posters	3/16/2006	4:20 - 6:20 pm	51	Characterization of a Polymer-Based MEMS Packaging Technique		Pejman Monajemi, Paul Joseph, Paul Kohl, Farrokh Ayazi	GT/ECE, ChemBioEng
Posters	3/16/2006	4:20 - 6:20 pm	52	Post Buckling Analysis of Thin Membrane for the Flexible Electronics Application		SB Park, J. Gao, J. Pitarresi, and D. Homentcovschi	Department of Mechanical Engineering, State University of New York at Binghamton
Posters	3/16/2006	4:20 - 6:20pm	53	Carbon Nanotube (CNT) Fins for Forced Convection Cooling of High Power Microprocessors		P.Bhattacharya, Y. Joshi, A.Fedorov, N.Bajwa, P.Ajayan	GT/ME, RPI
Keynote	3/17/2006	8:00 - 9:00am	54	Packaging Materials Usher in a New Era - Material & Packaging Solution Correspondent with Semiconductor Trend	Masuo Mizuno	Masuo Mizuno	Sumitomo Bakelite Co., LTD., Japan.
Simulation and Tests	3/17/2006	9:00 - 9:30 am	55	Prognostics and Health Management of Electronics	Pradeep Lall	Pradeep Lall <sup>2</sup> , Madhura Hande <sup>2</sup> , Chandan Bhat <sup>2</sup> , Jeff Suhling <sup>2</sup> , Nokibul Islam <sup>1</sup>	Auburn University Department of Mechanical Engineering and Center for Advanced Vehicle Electronics (CAVE) Auburn, AL 36849
Simulation and Tests	3/17/2006	9:30 - 10:00 am	56	There's more to Pb-free production than just a Pb-free product	Hugh Roberts	Hugh Roberts	OEM/EMS Technology Exchange, Atotech USA Inc.
Simulation and Tests	3/17/2006	10:00 - 10:30 am	57	Effects of Physical Aging on the Stress-Strain and Creep Behaviors of Lead Free Solders	Jeffrey C. Suhling	Hongtao Ma, Jeffrey C. Suhling, Pradeep Lall, Michael J. Bozack	Center for Advanced Vehicle Electronics Auburn University Auburn, AL 36849
	3/17/2006	10:30 - 10:50 am		Break			

Simulation and Tests	3/17/2006	10:50 - 11:10 am	58	Surface Profiling Using a Modified Shadow Moiré Technique	Rui Zhao	Rui Zhao, Hua Lu, Ming Zhou Cuiru Sun	Ryerson Univ., Toronto, Canada
Simulation and Tests	3/17/2006	11:10 - 11:30 am	59	Optimisation of the Digital Image Correlation Technique and Measurement of Strain in First Level C4 Interconnect	L.Kehoe, P.Kelly, V.Guenebaut	L.Kehoe, P.Kelly, V.Guenebaut	Optical Metrology Innovations
Simulation and Tests	3/17/2006	11:30 - 11:50 am	60	Thermal Interface Materials Resistance Measurement Apparatus	Stuti Shekher Badoni	Stuti Shekher Badoni, Dr. Jinny Rhee	San Jose State University
Simulation and Tests	3/17/2006	11:50 - 12:10pm	61	AuAg Alloy Wire Bonding Process Capability and Reliability Assessment	Lim Chee Chian	Lim Chee Chian, Goh Koh Hoo	Infineon
	3/17/2006	12:10 - 1:30 pm		Lunch			
Thermal Solutions	3/17/2006	1:30 - 2:00 pm	62	Hierarchical Synthesis of Particulate Thermal Interface Material	Ganesh Subbarayan-Shastri	Ganesh Subbarayan-Shastri	Department of Mechanical Engineering, Purdue University
Thermal Solutions	3/17/2006	2:00 - 2:20 pm	63	Application Specific Thermal Interface Materials	Matthew Yao	Mathew Yao	Advanced Technology Center Rockwell Collins
Thermal Solutions	3/17/2006	2:20 - 2:40 pm	64	Well-Aligned Carbon Nanotubes for Device and Assembly Applications	C.P. Wong	L.Zhou, D. Hess, C.P.Wong	GT/MSE
	3/17/2006	2:40 - 3:00 pm		Break			
Thermal Solutions	3/17/2006	3:00 - 3:30 pm	65	A Thermal Fluid Convection Model for the Fluid Cell Subject to the Transient Thermal Field	Xiaoling He	Xiaoling He	University of Wisconsin–Milwaukee.
Thermal Solutions	3/17/2006	3:30 - 4:00 pm	66	The Role of Superposition Techniques in Thermal Management	Jinny Rhee	Jinny Rhee	Mechanical and Aerospace Engineering Dept., San Jose State University
Thermal Solutions	3/17/2006	4:00 - 4:20 pm	65	An Optimal Parametric Design to Improve Chip Cooling	Yung-Shin Tseng	Yung-Shin Tseng, Hwai-Hui Fu, Tzu-Chen Hung, Bau-Shei Pei	Shu-Te University, Taiwan
Thermal Solutions	3/17/2006	4:20 - 5:00 pm	66	Thermal Spreading Resistance for Square and Rectangular Entities	Alok Bhatt	Alok Bhatt and Jinny Rhee	San Jose State University