iMAPS New England

39th Symposium & Expo

Tuesday May 8th, 2012

Holiday Inn Boxborough Woods Conference Center

Final Program

MISSION: POSSIBLE

Problems Self-Destruct in 5 Seconds

Dr. Wei Han, Chapter President

Roger Benson, Technical Program Chair

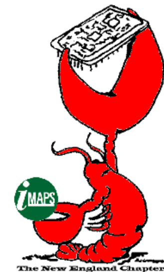
Keynote Address "MISSION: POSSIBLE"
by Dr. Samuel Kounaves, Professor & Research Director
Planetary Chemical Analysis Group - Tufts University
Research Affiliate, NASA-Jet Propulsion Laboratory

Featuring

41 Papers 8 Sessions

Microwave Packaging Technology Course May 9-11 Conducted by TJ Green

Full Poster Session Open to All Attendees
Cash Prizes for Best Student Paper & Poster
Exhibit Hall with 60 Booths
Minute-to-Win It Games
Raffles & Prizes
Buffet Luncheon
On-Site Employment Center



On-Site Registration Opens at 8:00 a.m.	Exhibit Hall Open 9:00 a.m. to 5:00 p.m.
Keynote Address Begins at 8:30 a.m.	Technical Sessions Open 9:00 a.m. to 3:30 p.m.

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Problems Self-Destruct in 5 Seconds

iMAPS New England Chapter
39th Symposium & Expo
Technical Program Chair – Roger Benson
Final Technical Program

The New England Chapter

Session A: Surface Mount Technology – 9:00 - 12:00 Noon
Chairs: Leo Lambert and Tom Healy

"Void Free Soldering in Vapor Phase Reflow"
J. Bashe, Rehm Thermal Systems LLC

"Overcoming the Challenges of the QFN Package"
K. Seelig & T. O'Neil, AIM

"The Power & Performance of Smart Heat Technology: Performance Verification"
M. Connolly, REStronics

"Stencil Technology and the Role of Nanocoating"
J. Wynn, Stentech

"Using SPI to Improve Print Yields"
C. Shea, Shea Engineering Services

"RoHS Recast"
K. Stanvick, Design Chair Associates

Session B: Packaging A – 9:00 – 12:00 Noon
Chairs: Jim McLenaghan and Bill Boyce

"Critical Plating Configuration for Reliable Aluminum-to-Gold Wire Bonds"
R. Share, Share Consulting, LLC

"Satisfying Advanced Plating Requirements through Collaboration and Process Improvement"
M. Medeiros, Ametek Electronic Packaging

"Aluminum Inlay Lead-frame Design Considerations for Large Diameter Wire and Power-Clad Ribbon Bonding"
M. McKeown & B. Njoes, Materion - Technical Materials

"A Comparison of Eutectic AuSn Alloy Delivery Options and Assembly Processes for LED Die-Attachment"
A. Hartnett and S. Homer, Indium Corporation; D. Beck & D. Evans, Jr., Palomar Technologies

"Flux Free Die Attach Utilizing Pressure Variation to Achieve Void Free Results"
B. Wilson, SST International

"Moisture Sensing in Microelectronic Packages"
T. Green, TJ Green Associates LLC

Session C: Thermal/Power Management – 9:00 - 11:30
Chairs: David Saums and Don Lockard

"Thermal Challenges for Wind Turbines"
P. Hansen, Vestas North America & D. Saums, DS&A LLC

"Applications for Soft Metal Alloy TIMs for Flangeless RF Power Amplifier Package Mounting"
A. Hartnett, Indium Corporation & R. Frey, Microsemi

"Low Temperature Direct Aluminum Soldering Paste"
W. Avery, Superior Flux and Mfg

"Performance of Thermal Management Materials to End-of-Life"
R. Jewram, The Bergquist Company

"Thermal Bottleneck LED Testing"
A. Francois-Saint-Cyr, and J. He, Mentor Graphics

Session D: Technology & Implementation – 9:00 - 11:05
Chair: John Roman

"High Power Semiconductor Fiber Laser Module Evolution"
T.-J. Hou, Worcester Polytechnic Institute & IPG Photonics

"LCP & PTFE Substrate Technologies for RF Applications"
G. Thomas and S. Bagen, Endicott Interconnect Technologies

"Cost and Impact of Skills and Knowledge Base Training"
L. Lambert, EPTAC

“RoHS2, Re-visiting your Compliance System and Process Controls”
S. Mazur, Benchmark Electronics

Session E: Advanced Materials & Applications – 1:00 - 3:30
Chairs: Dr. Dan Blazej and Joe McCabe

"Silver, Gold, Platinum, and Palladium Conductive Traces Printed using Nanoparticle Inks and Pastes"
D.V. Heerden, H. Yoon and D. Williams, NanoMas Technologies, Inc

"Aerosol Jet Printing of A Silver-Epoxy Conductive Adhesive for High Density Applications"
Kurt K. Christenson and Michael J. Renn, Optomec
Donald J. Giroux, Resin Designs and Daniel C. Blazej, Assembly Answers

"New Developments in ENIG and ENEPIG for Today's Electronic Products"
G. Milad, UYEMURA Company

"Materials for Thin & Advanced Packaging Technology"
K. Araujo, NAMICS Technologies, Inc.

"Material Selection for Improving System Reliability"
T. Barcley, TAS Consulting

Session F: Packaging B – 1:00 - 3:30
Session Chairs: Jim McLenaghan and Bill Boyce

"Understanding the Influences of the Drop-Shock Test Vehicle in Ultra-portable WLCSP"
M. Ring, Fairchild Semiconductor

“Microstructure and Failure Modes of Pb-Free TSOP, QFN and LGA Solder Joints”
M. Anselm, Universal Instruments

"Through-Molded Via Package-on-Package (TMV PoP)"
D. Barbini, B. Roggeman and D. Vicari, Universal Instruments Corp
& L.Smith and A. Syed, Amkor Technology

"Pre-Stacking of Package on Packages Mitigating the Effects of Warpage"
R. Farrell, P. Bodmer & D. Sommer, Benchmark Electronics, Inc.

"Conformal Medical Electronics"
C. Rafferty, D. Davis, B. Elolampi, C. Hobart,
Y.Y. Hsu, S. Lee, and H. Wei, MC10 Inc.

Session G: MEMS & Nano Packaging – 1:00 - 3:30
Chairs: Dr. Jianyu Liang and Sarah McLenaghan

"Li2MSiO4/Graphene Cathode Materials for Lithium Ion Batteries"
Y. Cen, C. Wang, R.D. Sisson, Jr.
& Dr. J. Liang, Worcester Polytechnic Institute

"Galvanic Synthesis of Novel Porous Metal Nanostructures and their Application as Electrochemical Biosensors"
M. Clay, Q. Cui, J. Chen, & Z. Gu
University of Massachusetts Lowell

"Ferromagnetic Nanowires and Nanorings for Magnetic Random Access Memory (MRAM) and storage Devices"
N.R. Pradhan, X. Hu, S. Dickert, H. Ke, M. T. Tuominen, and K.E. Aidala, Mount Holyoke College/UMass Amherst

"Lead-free Nanosolders and their Application for Nanowire Assembly and Joining"
F. Gao, & Z. Gu, University of Massachusetts Lowell

"Solution Processed Functional Oxide Nanostructures for Field Emission and Fire Safety Applications"
G. Wrobel, P.-X. Gao, University of Connecticut

Session H: Solar/PV – 1:00 - 3:30
Chair: Dr. Alan Rae

"Searching for a Game Changer: Sorting New Materials Technologies for High Efficiency Solar Cells"
Dr. F. Toor, Lux Research

"Photovoltaic Module Technology"
Dr. P. Heinz, Prismark Partners, LLC

"Use of Ink Jet Precision Deposition for Printed Microelectronics, Solar and Fuel Cell Manufacturing"
S. Liker, Trident Industrial Ink Jet

"String-Central-Inverter"
I. Kraus, Wind & Sun USA, Inc

"Novel Adhesion Methods for Solar Cell Assemblies using Pressure Sensitive Adhesives and Films"
J. Caruso, R. Thomaier and N. Lipps, NuSil Technology

Session I: Posters – 2:30 - 4:00 Author Review
Chairs: Jun Wang, and Michael Anello

"Synthesis and Characterization of Tin Oxide-Supported Platinum for Cathode Catalysts of Direct Methanol Fuel Cells"
M. Chawla, T. Chou, K, McCarthy, X. Geng, R, Datta
& J. Liang, Worcester Polytechnic Institute

"Adhesion Strength Ag Nanoparticles"
R. Cakoune, M. Judelso, N. Burnham & J. Liang, Worcester Polytechnic Institute

"Developing Lead-free Nanosolders for Nanoelectronics Assembly and Packaging"
F. Gao, & Z. Gu, University of Massachusetts Lowell

"Novel Porous Metal Nanostructures for Electrochemical Biosensor Applications"
M. Clay, Q. Cui, J. Chen & Z. Gu, University of Massachusetts Lowell

"Low Melting Point Tin/Indium (Sn/In) Nanosolder Particles: Synthesis and Applications"
Y. Shu, K. Rajathurai, F. Gao, Qingzhou Cui
& Zhiyong Gu, University of Massachusetts Lowell

"Individual Domain Wall Manipulation Along Ferromagnetic Nanowires
in a Local Oersted Circular Field for Memory Storage Devices"
N.R. Pradhan, X. Hu, H. Ke, S. Dickert, M.T. Tuominen, and K.E. Aidala, Mount Holyoke College/UMass Amherst

"ACES Characterization of Damping in Micro-Beam Resonators"
X. Chen, V. D. Nguyen, J. C. Parker, & Dr. R.J. Pryputniewicz, Worcester Polytechnic Institute

"A Quantitative Analysis of Adhesion of Silver Nanoparticles to Carbon Substrates"
M. Judelson, Worcester Polytechnic Institute

"Effect of CNT and Induced Chirality on Isotactic-Namatic and Namatic-Smectic Liquid Crystal Phase Transitions"
P. Kalakonda, G.S. Iannac-Chione, WPI, R. Basu, C. Rosenblatt, CWRU, R.P. Lemieux, Queen's University, Canada

"Development of Through Glass Via (TGV) Substrates for 3D-IC Integration"
A.Shorey, W. Thomas, Corning, Inc.

"Glass Wafers as support Carriers for Wafer Thinning Processes"
J. Canale, A.Shorey, W. Thomas, Corning, Inc

"Strategies to Enhance the Surface Area of Microcantilevers for Novel Applications"
A. Kumar and J. Kumar, Center for Advanced Materials, University of Massachusetts Lowell
& O. Ozsun and K. Ekinci, Photonics Center, Boston University

*i*MAPS New England
Employment Center

Potential Applicants - Please bring your résumés
(*5-10 copies*) with you to the Symposium

Potential Employers - Please provide job postings as follows

- In Microsoft Office or .pdf compatible format
- 1 posting per page
- Try to limit the posting to a single page
- Provide contact info on each posting to which the applicants may respond directly
- Provide a regular mailing address for forwarding the résumés we receive for your position
- Submit postings ***by May 3rd*** via E-mail to: **jbblum1@gmail.com**

If you have any questions, please contact:
John Blum - ***jbblum1@gmail.com*** (802) 289-2986

PLUS… Microwave Packaging Technology

A Professional Course Offered by **TJ Green Associates**
May 9-11, 2012 at The Holiday Inn Boxborough Woods
An introductory/intermediate level course for process engineers, designers, quality engineers, and managers responsible for design and manufacture of microwave microelectronic circuits. **Contact TJ Green: Phone: 610-625-2158**

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39th Symposium & Expo Exhibitors [as of 20 April 2012]

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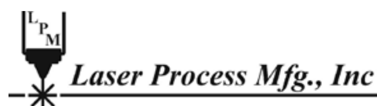

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Attendee Pre-Registration Form (Type or Print Clearly)

√	Please register me for:	Pre-Registration	Fee At-Door
	Full Symposium – Member [includes Luncheon and Proceedings]	$35.00	$50.00
	Full Symposium - Non-Member [includes Luncheon and Proceedings]	$45.00	$60.00
	Full Symposium - New Member [also includes iMAPS Membership dues $75]	$105.00	$120.00
	Full Symposium - Student	$15.00	$20.00
	Proceedings Only (limited availability)	$20.00	$20.00
	Exhibits Only with Lunch	$25.00	$25.00
	Exhibits Only	**Free**	**Free**

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Name on Card	Billing Address		Security Code

Completed form with check payable to *i*MAPS New England or credit card payment must be received by May 2, 2012
mail to: Jennifer Bailey, *i*NE Registration Chair, 305 Wellman Ave., North Chelmsford, MA 01863
or e-mail form to: bailey_ jj@yahoo.com **Pre-Registrations must be received by May 2, 2012, after that register At-Door.**

EXHIBITOR REGISTRATION FORM

2012 Booth Rental Fee is $625 Until May 2, 2012

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Phone ______________________ FAX ______________________ E-Mail ______________________
Business or Product[s] ______________________________ Check if Manufacturer's Rep ☐
Person registering with booth [One Only] ______________________________
iMAPS Individual Member Yes ☐ No ☐ [A separate form will be provided later for registering additional personnel]
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City ______________________________ State ______________ Zip ______________
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Communications, Flyers, Exhibits Passes and Raffle information will be e-mailed to both persons listed above.
Comments or requests: ______________________________

Completed form with check payable to *i*MAPS New England or credit card payment must be received by May 2, 2012
Mail to: Harvey Smith, 19 Red Coat Lane, Plainville, MA 02762-2207 or FAX to 508-695-6447
or e-mail completed form to harveys@imapsne.org
For more information E-Mail: harveys@imapsne.org - or - Phone: 508-699-4767 [Harvey Smith or Judi Eicher]
and make frequent visits to our website: www.IMAPSNE.ORG