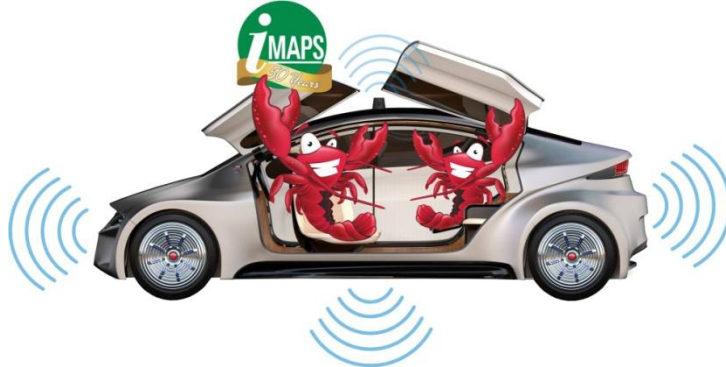


iMAPS New England

45th Symposium & Expo - Tuesday May 1st, 2018
Boxboro Regency Hotel & Conference Center
Boxborough, Massachusetts

“Into the Future Autonomously”

FINAL Program



Jon Medernach, Chapter President
Lee Levine & Dave Saums, Symposium Technical Chairs

KEYNOTE ADDRESS

Speaker: Chris Jacobs, Vice President, Analog Devices

“Sensing Technologies for an Autonomous Tomorrow”

INFORMATION & REGISTRATION

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iMAPS New England 45th Symposium & Expo

Technical Program

Morning Sessions

Session: MEMS

Chairs: Stephen Bart - Consultant & Richard Morrison - Draper

- Resonant MEMS Acoustic Switch Package with Integral Tuning Helmholtz Cavity
Jonathan Bernstein et al. - Draper
- Nanoscale Si₃N₄ Tuning Fork Cavity Optomechanical Transducers
Rui Zhang et al. - Worcester Polytechnic Institute
- Electrical Yield and Reliability Issues of Ultra High Density Interposers
and Update on Advanced Integration Program at BRIDG
John Allgair, Amit Kumar & Ankineedu Velaga - BRIDG
- Development of Nanomaterial-based Smart Patches and Low-cost MEMS Devices
Cihan Yilmaz, PhD - Flex Boston Innovation Center
- Co-fabrication of Micro-Coaxial Interconnects and Substrate Junctions
for Multi-Chip Microelectronic Systems
Daniela Torres - Draper
- Ion Beam Milling for MEMs Applications
James Barrett - Ion Beam Milling

Session: Printed Electronics

Chairs: Dr. Greg Fritz - Draper & Dr. Craig Armiento - UMass Lowell

- Application of Metal Additive Manufacturing to Defense Electronics Systems
William Villers - Ten Tech LLC
- Printed Electronics Using Magnetohydrodynamic Droplet Jetting
of Molten Aluminum and Copper
Denis R. Cormier, Bruce E. Kahn et al. - Rochester Institute of Technology
- Printed Electronics for Aerospace and Building
Slade R. Culp - United Technologies Research Center (UTRC)
- Microplasma Sputtering for 3D Printing of Metallic Microstructures
Lalitha Parameswaran et al. - MIT Lincoln Laboratory
- Printed Conductive Traces for High Power Applications
by Reaction-Assisted Sintering
Sara C. Barron - Draper
- Advanced Packaging for Wearables
Venkatadri Vikram - Analog Devices

Session: RF & Microwave - Innovations and Emerging Technologies

Chairs: Tom Terlizzi - GM Systems & Dr. Chandra Gupta - RF & Microwave Solutions

- High Temperature RF Multi-layer Ceramic Capacitors (MLCC)
Brian Ward - Vishay
- 5G - The Road Ahead
Dr. Thomas Caneron - Analog Devices
- Automotive Example of RF Immunity Testing Shows why
Full-Wave Solvers Compliment Challenging Measurements
Dr. Tracey Vincent - Computer Simulation Technology-Dassault Systems
- Phase Noise Origins and Measurements
Aaron Potosky, Joe Koebel & Jason Breitbarth - Holzworth Instrumentation
- A Heterogeneous SIP Solution for RF Applications
Justin Borski - i3 Microsystems & Benjamin McMahon - BAE Systems
- Packaging's Role in RF and Micro-Electronics
Keith Donaldson - Intercept Technology & Joe Spitz - Liberty Packaging Company

Key Note Address: Chris Jacobs, Vice President, Analog Devices
"Sensing Technologies for an Autonomous Tomorrow"

iMAPS New England 45th Symposium & Expo

Technical Program

Afternoon Sessions

Session: Novel Packaging Applications

Chairs: Caroline Bjune - Draper & Dr Mohammed Wasef - MFR SemiTech

Sensor Technology Integration and Hermetic Module Fabrication
Using Liquid Crystal Polymer

Susan Bagan - Micro Systems Technologies & Eckardt Bihler, Marc Hauer - DYCONEX
Hybrid Electronic Construction for Wireless ECG Monitoring

Jon Knotts & Vito Licata - Creative Materials

Gemstone – A Networkable Implantable Wireless Neurostimulator

Carlos Segura et al. - Draper

Thermal Resistance and Effective Thermal Conductivity Measurements
of Thermal Grease Using the Flash Diffusivity Method

Robert Campbell – Netzsch Instruments North America

The Evolution of a Clinical Grade Wearable Vital Signs Monitor and the Role of
Advanced Microelectronic Packaging Techniques to increase functionality

James Ohneck – AEMtec/exceet North America

Session: Interconnects

Chairs: Mike McKeown - Hesse Mechatronics & William Boyce - SMART Microsystems

Characterization of Epoxy Cure by Dielectric Analysis (DEA)

Yanxi Zhang, PhD - Netzsch Instruments North America

Nano Die Attach Material used in High Power Electronic Device Package

BeNazir Khan – UMass Lowell

Wire Bonding Process: Understanding Ultrasonic Welding

Lee Levine - Process Solutions Consulting

Multi-Dimensional Ultrasonic Copper Bonding – New Challenges for Tool Design

Paul Eichwald - Paderborn University

Optimizing the Plasma Treatment Process Prior to Conformal Coating
to Eliminate ESD Induced Failures Without Impact on Coating Performance

Trevor Zitek - NanoBio Systems

Session: Photonics & Optoelectronics Packaging

Chairs: Yi Qian - MRSI Systems & Jin Li - Cambridge Technology

Towards an Integrated On-chip Mid-infrared Chemical Sensor

Anuradha Agarwal - Massachusetts Institute of Technology

Integration of III-V Quantum Dot Lasers and Their Advanced Applications

Wei Guo - UMass Lowell

Lasers in Advanced Packaging

Xiangyang Song et al. - IPG Photonics

Prototype Photonic Integrated Circuits (ProtoPICs):

A Flexible Platform for Hybrid Integration

Dave Kharas - MIT Lincoln Laboratory

The Challenges in High Volume Manufacturing of Photonic Devices

Yi Qian - MRSI Systems

GREEN

eLearning Solutions

Special Hands-On Microelectronics Courses

In Conjunction with the New England Symposium

April 30 - Pre Cap Visual Inspection per Mil-Std-883

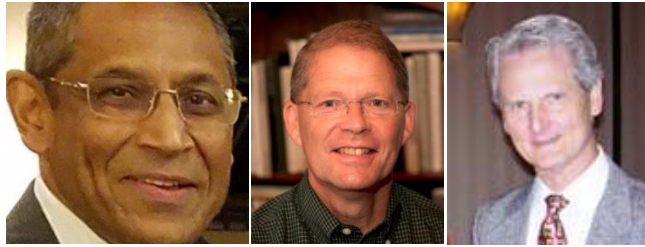
May 2 - Copper and Gold Wire Bonding

Immediately Before and After The iNE Symposium

iMAPS New England 45th Symposium & Expo

Technical Program

All Day Interactive Poster Session



Chairs: Dipak Sengupta - Analog Devices (ret), Dave Saums – DS&A & Harvey Smith – EMA

- Micro-coaxial Cable Stripping with Electronic Flame-off Process
Christian Wells, et al. - Draper, CMU, Northeastern University
- Novel Photonic Vibration Sensor for In-situ Data Acquisition
Atul Pradhan - MICATU
- Dye-Pull Inexpensive Fast Failure Analysis Technique for Solder Joints
Neeta Agarwal - Benchmark Electronics
- Routing Algorithm for Complex Microelectronic Systems
with Micro-Coaxial Interconnects
Austin Herrling, et al - Draper, MIT
- Techniques to Reduce Solder Voiding Under BTC Components
Michael Johnson - MACOM
- Design of Experiment Analysis of the lid of an electronics package
using Finite Element Analysis
Nupur Bajad - Analog Devices
- On the Reliability of Highly Stretchable Electronic Interconnects
A.V. Zachariah, et al. - Binghamton University
- On the Behavior of Ink-Jet Printed Nano Silver Traces
on Porous PET Substrates in Cyclic Loading
Gurvinder Khinda, et al. - Binghamton University
- Flexible Hybrid Electronic Circuits for Microwave Frequency Applications
Jack Lombardi, et al. - Binghamton University
- Soldering of Commercial BGAs and CSPs
to Low Cost Flexible Substrates for Wearable Medical Monitors
MANU YADAV, et al. - Binghamton University/Universal
- Fatigue of Aerosol Jet Printed Interconnections on Flexible Substrates
R. S. Sivasubramony, et al. - Binghamton University
- In Situ Functional Monitoring of Aerosol Jet-Printed Electronics
Roosbeh (Ross) Salary, et al. Binghamton University, University of Nebraska
- Reliability Analysis and Finite Element Modeling of a Flexible Hybrid Electronic Device
VARUN SOMANY, et al. - Binghamton University/i3 Electronics
- A Solder Joint Behavior Study of Extra Tall Packages
by Digital Image Correlation (DIC) Method
Van-Lai Pham, et al. - Binghamton University
- Quantification of Underfill Influence to Chip Packaging Interactions of WLCSP
Huayan Wang, et al. - Binghamton University/Huawei Technology
- Comprehensive Study on 2.5D Package Design for Board-Level Reliability
in Thermal Cycling and Power Cycling
Shuai Shao, et al. - Binghamton University

INFORMATION & REGISTRATION

[Boxboro Regency Hotel Reservation Link](#) (use group code IMAP)

iMAPS New England 45th Symposium & Expo

EXHIBITORS AS OF April 1, 2018

Laser Services
Micro Systems Technologies
Finetech
AMETEK Coining
INDIUM CORPORATION
AdTech Ceramics
Epoxy Technology
PHOTO ETCH TECHNOLOGY
NTK Technologies
LFG Micro
K&S
MPP
Midas
Omron
Mini-Systems
Geib Refining
CWI Technical Sales
Innovative Fabrication
UTZ
Materion
EMSL Analytical

Neu Dynamics
Riv Inc ~ Precision Printing
Screens
P/M Industries
Metallix Refining
AI Technology
iMAPS New England
Remtec
Hesse Mechatronics
Creyr Innovation
MRSI Systems
Kyocera International
Palomar Technnologies
SETNA
Thin-Films research
Advance Reproductions
Micro Technology Group
EMA Sales & Marketing
GM Systems
Boston Micro-Components
Mini-Systems

Polaris CM-Lockheed Martin
TEN TECH LLC
STELLAR Industries
Heidelberg Instruments
Nel Hydrogen
HSIO Technologies
M&K Recovery Group
NPOS Technologies
Heraeus Electronics
Photofabrication Engineering
ASM Pacific Technology
KemLab
MMS Technical Sales
Nordson EFD
DS&A
Cicor Group
Ion Beam Milling
Hesse Mechatronics
Circuit Connect
Cirexx International

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