

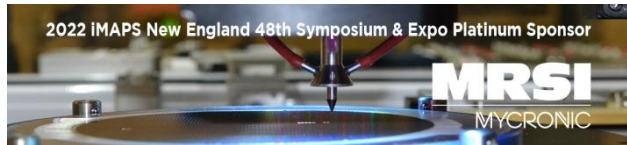
iMAPS New England

48th Symposium & Expo - Tuesday May 3, 2022

Boxboro Regency Hotel & Conference Center

Boxborough, Massachusetts

2022 Platinum Sponsors



“Delta Blues”



Matt Bracy, Chapter President

Symposium Technical Program Co-Chairs

Michael Johnson - Dave Saums - Richard Hollman

University Session, Interactive Dialog & Student Awards Co-Chairs

Dipak Sengupta - James Eakin - Michael Johnson - Dave Saums

Final Technical Program

MORNING SESSIONS

Cotillion Room

8:30 AM - Session A: Advanced Packaging

Session Chair - Richard Hollman, ASM Pacific Technology

“Printed Flexible and Stretchable Electronics for Human-Robot Interfaces”

Pratap Rao, WPI

“Through Glass Via (TGV) for MEMs”

Aric Shorey, MENLO Micro

“Photo-Imageable Dielectric Dry Film for Advanced Panel-Level Packaging”

Yaming Jiang, DuPont

“Current Trends and Challenges in Vertical Optical Interconnects”

Drew Weninger, MIT

Seminar Room

8:30 AM - Session B: RF & Microwave - 5G Innovations and Microwave Emerging Technology

Session Chairs - Tom Terlizzi, GM Systems LLC & Dr. Chandra Gupta

**“Managing the Risks of Pb-free Materials in Aerospace & Defense Products –
SAE GEIA-STD-0005-1 Revision B Update “**

Anthony J. Rafanelli, Raytheon Technologies

“Multi-physics Analysis of Frequency Filters”

Roy Arsenault, Agile Microwave

“Dielectric Materials and Additive Manufacturing Techniques for RF Components”

Trevor Polidore & Al Horn, Rogers Corp

“RadioThorium: A 24 - 44GHz Frequency Converter Design Accelerator”

Larry Hawkins, Richardson

“Connectorized Millimeter Wave Components & Performances”

Chandra Gupta, Mini Circuits

“Construction of Kilovolt Capacitors”

Tim Boles, MACOM

Colonial Room

8:30 AM - Session C: “University Innovations in Technology”

Session Chairs - Dipak Sengupta, Dr. James Eakin, Dave Saums, Michael Johnson

**“Education and Workforce Development for
Microelectronics Programs in Binghamton University”**

S.B. Park, Binghamton University

“Printed Microwave Electronics at UMass Lowell”

Craig Armiento, University of Massachusetts Lowell (UML)

“MIT as a Hub for Innovation”

Anuradha Murthy Agarwal, MIT

**“Scalable High-rate Printing of Heterogeneous Integrated
Micro and Nanoscale Advanced Electronics Packaging”**

Dr. Ahmed Busnaina, Northeastern University

“SparkAlpha: Making Tomorrow’s Makers”

Kevin McComber, SparkAlpha

Cotillion Room

10:30 AM - Session D: MEMs

Session Chair - Stephen Bart, Invensense

"Is Nanotechnology The Future of Commercial Radiofrequency Front Ends?"

Gabriel Giribaldi, Northeastern University

"Ultra Low Power Wake Up Radios"

Giuseppe Michetti, Northeastern University

AFTERNOON SESSIONS

Seminar Room

1:00 PM - Session E: Interconnect Technology

Session Chair - Lee Levine, Process Solutions Consulting

"Testing Wire Bonds"

Lee Levine, Process Solutions Consulting

**"Wirebond Challenges in Microwave RF MMIC Modules
for Military and Space"**

Tom Green, TJ Green Associates

"Automated Bonding of High-power Laser Diodes onto Submounts"

Neil O'Brien, Finetech

Cotillion Room

1:00 PM - Session F: Thermal Management

Session Chair - Dave Saums, DS&A

**"Electrically Isolated, CTE Matched, Hybrid
Two-Phase Cold Plate for RF Modules"**

Elizabeth Seber & Michael Ellis, Advanced Cooling Technologies

**"Shape Optimization of Hotspot Targeted Micro Pin Fins
for Heterogeneous Integration Modules"**

Diana Fallahtafi, Binghamton University

"Thermal Conductivity vs. Thermal Resistance: What's Important?"

Dave Saums, DS&A & Herman Chu, Celestica

"Thermal Characterization Methodologies"

Claire Wemp, DuPont

Colonial Room

1:00 PM - Session G: Photonics & Optoelectronics Packaging

Session Chairs - Yi Qian, MRSI Systems & Juejun Hu, MIT

**"Challenges and Solutions in the Automated Assembly
of Photonics and RF Devices for 5G Wireless Network"**

Peter Cronin, MRSI

"Silicon Photonics for LiDAR, Augmented Reality, and Beyond"

Jelena Notaros, MIT

"Integrated Microwave Photonics for Radar Frontend"

Yifei Li, UMASS Dartmouth

**"Desktop VR Simulations for Workforce Training
in Microelectronics Manufacturing and Packaging"**

Erik Verlage, MIT



Session H: “Interactive Dialogue Poster Session”

Session Chairs - Dipak Sengupta, Dr. James Eakin, Dave Saums, Michael Johnson

9:00 AM - 5:00 PM in Exhibit Hall

“Characterization of Constitutive Equations of Sn-Bi Solder Joints by Creep Behavior Study”

Chongyang Cai, Binghamton University

“A Comparative Study of the Thermomechanical Reliability of Fully-Filled and Conformal Through-Glass Via”

Ke Pan, Binghamton University

“A Deep Learning Approach for Reflow Profile Prediction”

Yangyang Lai, Binghamton University

“A Study of Thermo-Mechanical Reliability of 2.5D Lidless Package”

Junbo Yang, Binghamton University

“Impact of Design Parameters and Material Properties in Thermal Fatigue Life Test Failures”

Karthik Deo, Binghamton University

“Package Design Through Reliable Predictive Modeling and Its Validation”

Pengcheng Yin, Binghamton University

“Shape Dependency of Fatigue Life in Solder Joints of Chip Resistors”

Jong Hwan Ha, Binghamton University

“Z Scan Measurement of Non Linear Materials”

Samuel Alexander Bechtold, Bridgewater State University

“A Prototype Towards a Miniaturized Transcutaneous Carbon Dioxide Monitoring Wearable Device”

Tuna Tufan, WPI

“Improving the Resolution and Reliability of Inkjet-Printed Traces”

Nicholas Pratt, WPI

“Pick-and-Place Feeder Density within SMT and Electronics Assembly”

Terry York, Kulicke & Soffa

“Resonator-Based Matching Networks for High Sensitivity Ultrasound Receivers Based on Aluminum Scandium Nitride PMUT Arrays”

Bernard Herrera Soukup, Northeastern University

“A Study of Trace Profile and Surface Roughness for Screen-Printed Silver Ink on Kapton Substrate”

Mohamed. Y. Abdelatty, Binghamton University

“Understanding Photoresist - Electroplating Bath Interactions Using HPLC Methodology”

Gerry Gomes, KemLabs

“Printing of Flexible Electronic Components Using Directed Fluidic Assembly”

Yash Sahoo & Charles Schetter, Northeastern University

“Packaging Stress Effects in Semiconducting Metal-oxide (SMOx) based MEMS Gas Sensors”

Nishit Goel & Stephen Bart, TDK-InvenSense & Vedant Sumaria, Northeastern University