

PROGRAM AND REGISTRATION ON-LINE AT WWW.IMAPS.ORG/RF
IMAPS ADVANCED TECHNOLOGY WORKSHOP ON
RF AND MICROWAVE PACKAGING

CROWNE PLAZA SAN DIEGO
2270 HOTEL CIRCLE NORTH
SAN DIEGO, CA 92108-2810

SEPTEMBER 22 - 24, 2009



General Chair:

Ken Kuang, Torrey Hills Technologies, LLC
kkuang@torreyhillstech.com

General Co-Chair:

Susan Trulli, Raytheon RD Components
susan_c_trulli@raytheon.com

Technical Program Co-Chairs:

Franklin Kim, Kyocera America, Inc.
franklin.kim@kyocera.com

Sean Cahill, BridgeWave Communications
SeanC@Bridgewave.com

Presented by:



International Microelectronics And Packaging Society (**IMAPS**)
Bringing Together the Entire Microelectronics Supply Chain!

Early Registration Discount Ends: August 24, 2009
Hotel Cut-off: August 24, 2009

RF and Microwave Packaging Workshop Focus:

The objective of the RF and Microwave Packaging Workshop is to provide a unique forum that brings together scientists, engineers, manufacturing, academia, and business people from around the world who work in the area of RF and Microwave packaging technologies. This workshop enables discussion and presentation of the latest RF and Microwave technologies.

Advisory Committee:

Steve Adamson, Asymtek, Inc.
Ron Barnett, National Instruments
Mumtaz Bora, Peregrine Semiconductors
Kai Cheng, Nanjing Guosheng Electronics
Mark Eblen, Kyocera America, Inc.
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Mark Tomei, Kyocera America, Inc.
David Virissimo, SPM
Ziliang Wang, Nanjing Electronics Device Institute
Danny Zhu, Jiangsu Dingqi Science & Technology
Co., Ltd.

THANK YOU

A SPECIAL *THANK YOU*

TO ALL THE MEMBERS OF THE ADVISORY COMMITTEE,
THE CHAIRS AND SPEAKERS.

YOUR PARTICIPATION IS GREATLY APPRECIATED!

SPEAKER/PRESENTATION INFORMATION

Extended Abstract or Presentation Material due: **August 21, 2009.**

Send your extended abstract or presentation material via email to jmorris@imaps.org, in PDF format only.

Powerpoint/Presentation file used during session: ***Speaker's responsibility to bring to session on USB and/or CD*** (recommended to have back-up on personal laptop, CD-ROM, or memory stick). Laptops will be provided by IMAPS in the session room. **Presentation time is 30 minutes (25 to present and 5 for Q&A).**

Powerpoint/Presentation file for CD-ROM due not later than: **September 24, 2009**

Speakers must register for the workshop at the reduced speaker rate. Advance registration deadline is August 24, 2009. Visit www.imaps.org/rf for more information.

Tuesday, September 22

Registration: 1:00 pm – 8:00 pm

Opening Remarks/Welcome: 2:00 pm – 2:15 pm

SESSION 1: NOVEL MMW PACKAGING & MATERIALS CHARACTERIZATION

Chair: Sean Cahill, BridgeWave Communications
2:15 pm – 5:15 pm

Quilt Packaging of RF Systems with Ultrawide Bandwidths

Patrick Fay, David Kopp, Cai Liang, Jason Kulick, Mohammad Khan, Gary H. Bernstein, University of Notre Dame

Characterization of Barium Strontium Titanate at G-Band

Nurul Osman, Charles Free, University of Surrey

Flip Chip for Millimeter Wave Applications

James Bardeen, Mike Pettus, VubIQ Inc.

Break: 3:45 pm – 4:15 pm

A Novel Packaging Technology for Millimeter Wave Subsystems and Components

Dana E. Wheeler, John McNicol, HXI LLC

A Low Power CMOS 60GHz Transceiver with LTCC On-Package Patch Antenna

Maryam Tabesh, Cristian Marcu, Jungdong Park, Lingkai Kong, Debopriyo Chowdhury, Chintan Thakkar, Antti Lamminen, Jussi Säily, Kari Kautio, Elad Alon, Ali Niknejad, UC Berkeley & Technical Research Centre of Finland (VTT)

Wednesday, September 23

Registration: 7:00 am – 4:30 pm

Continental Breakfast: 7:00 am – 8:00 am

KEYNOTE PRESENTATION: 8:00 AM – 8:45 AM

Title: How to Start a Microelectronics and Packaging Business in Canada

Speaker: Chantal Ramsay, Canadian Consulate LA & Dr. Jayna Sheats, CTO, Terepac Corporation



Ms. Ramsay is Consul (Economic Affairs - Ontario) at the Ontario International Marketing Centre (OIMC) in the Canadian Consulate General in Los Angeles. The International Marketing Centre's territory includes California, Arizona, New Mexico, Nevada and Hawaii. The role of the OIMC is to work with Ontario-based companies wishing to do business in the territory, to attract investment from US and multinational companies into Ontario and to raise awareness of the Province in the region.

Prior to this posting, Ms. Ramsay was Senior Manager with the Investment Branch of the Ministry of Economic Development and Trade of Ontario in Toronto, Ontario.

Ms. Ramsay is a graduate of the Laurentian University, Sudbury, Ontario - Honors Bachelor of Science in Language with a minor in Economics. She speaks Spanish, French and Italian.

SESSION 2: ADVANCED RF & MICROWAVE PACKAGING MATERIALS

Chair: Ken Kuang, Torrey Hills Technologies, LLC

8:45 am – 11:45 am

Advanced Getter Materials for GaAs, RF/MW, MEMS and Other Microelectronic Packages
Richard Kullberg, Bradley L. Phillip, Vacuum Energy Inc.; Timothy J. Shepodd, Sandia National Laboratories

Characterization of DuPont 9K7 LTCC Material System for RF/Microwave Packaging Applications
Deepukumar Nair, K. E. Souders, K. M. Nair, M. F. McCombs, J. M. Parisi, Brad Thrasher, DuPont

Modifiable Silicones for Harsh Environments
Michelle Velderrain, Nusil Technology LLC

Break: 10:15 am – 10:45 am

Development of Low Cost Heat Spreaders
Irwin Kim, ISQTECH

Materials Declaration for Semiconductor Packages
Mumtaz Yusuf Bora, Peregrine Semiconductors

Lunch: 11:45 am – 12:45 pm

SESSION 3: ADVANCED THERMAL MANAGEMENT MATERIALS

Chair: Bill Ishii, Torrey Hills Technologies, LLC

1:00 pm – 4:30 pm

Advanced Materials Solutions for Thermal Management Design: Metallized Pyrolytic Graphite Structures
Robert Moskaitis, Richard J. Lemak, MINTEQ International Inc./PYROGENICS Group; David Pickrell, OMEGAPIEZO

Advanced TPG Material for the Thermal Management of Electronics
Xiang "Shawn" Liu, Momentive Performance Materials

New Aluminum-Silicon Carbide Composites for Air Cavity Package Applications
Dan White, Thermal Transfer Composites LLC; Craig Rotay, ST Microelectronics

Break: 2:30 pm – 3:00 pm

Transient Liquid Phase Sintering Adhesives for Radar T/R Module Thermal Management
Matthew Wrosch, Arsenia Soriano, Creative Electron, Inc.

Performance and Cost Benefits of Si-Al Substrates in the Manufacture of RF and Microwave III-V Semiconductor Devices
Andrew J. W. Ogilvy, Sandvik Osprey Ltd.; Stuart Weinshanker, Advanced Packaging Associates, Inc.

Development of Super Copper Tungsten
Ken Kuang, Torrey Hills Technologies, LLC; Danny Zhu, Jiangsu Dingqi Science & Technology Co., Ltd.; Junkun Ma, Southeastern Louisiana University

Hotel Information

CROWNE PLAZA SAN DIEGO
2270 HOTEL CIRCLE NORTH
SAN DIEGO, CA 92108
PHONE: 800-882-0858
www.cp-sandiego.com

Hotel Cut-off: August 24, 2009

Single/Double: \$137/night

Please reference International Microelectronics And Packaging Society when making reservations by phone.

Registration Deadlines

**Early Registration Discount Ends
August 24, 2009**

**Session Chair, Speaker/Presenter
must register for the workshop
at the reduced speaker rate.**

Thursday, September 24

Registration: 7:00 am – 4:00 pm

Continental Breakfast: 7:00 am – 8:00 am

KEYNOTE PRESENTATION: 8:00 AM – 8:45 AM

Title: RF & Microwave Packaging Development in China
Speaker: Danny Zhu, Jiangsu Dingqi Science & Technology Co., Ltd.

Mr. Danny Zhu is co-founder of Jiangsu Sci. & Tech Co Ltd and has been its General Manager since January 2008. Before that, Danny was sales engineer for Brush Wellman (China) and engineering manager for a major electronics component manufacturing company. Danny has a BS Degree in Materials Sci & Engineer from China University of Electronics.

SESSION 4: NOVEL RF & MICROWAVE PACKAGING MANUFACTURING PROCESS

Chair: Franklin Kim, Kyocera America, Inc.
8:45 am – 12:15 pm

Bridging the Manufacturing Gap between Macro and Micro to Build Packaging for Miniature RF Devices with Complex Geometries and Multiple Materials
Arthur L. Chait, EoPlex Technologies, Inc.

Near Hermetic Wafer Level Packaging using LCP Adhesive Layer
Cody Moody, Brandon Pillans, Andrew Malczewski, Francis J. Morris, Raytheon Advanced Products Center

Wide Band Gap RF/Microwave Power Transistors Require Package Updates
Mike Mallinger, Mar Caballero, Microsemi Corp RFIS

Break: 10:15 am – 10:45 am

Z-Axis Interconnection for Organic Laminate Electronic Packages
Voya R. Markovich, Frank Egitto, Subahu Desai, Endicott Interconnect Technologies, Inc.

Low Cost Test Technique for RF Interconnects in MCM Substrate
Sukeshwar Kannan, Bruce Kim, University of Alabama

Packaging Technology Development for Silicon on Sapphire-based Commercial RF IC Products
John Yang, Peregrine Semiconductor

Lunch: 12:15 pm - 1:15 pm

SESSION 5: DESIGN / SIMULATION FOR CERAMIC-BASED RF & MICROWAVE PACKAGING

Chair: Susan Trulli, Raytheon RD Components
1:20 pm – 3:50 pm

Fundamentals of Highly Integrated Co-Fired Packaging
Dan Harris, Lockheed Martin

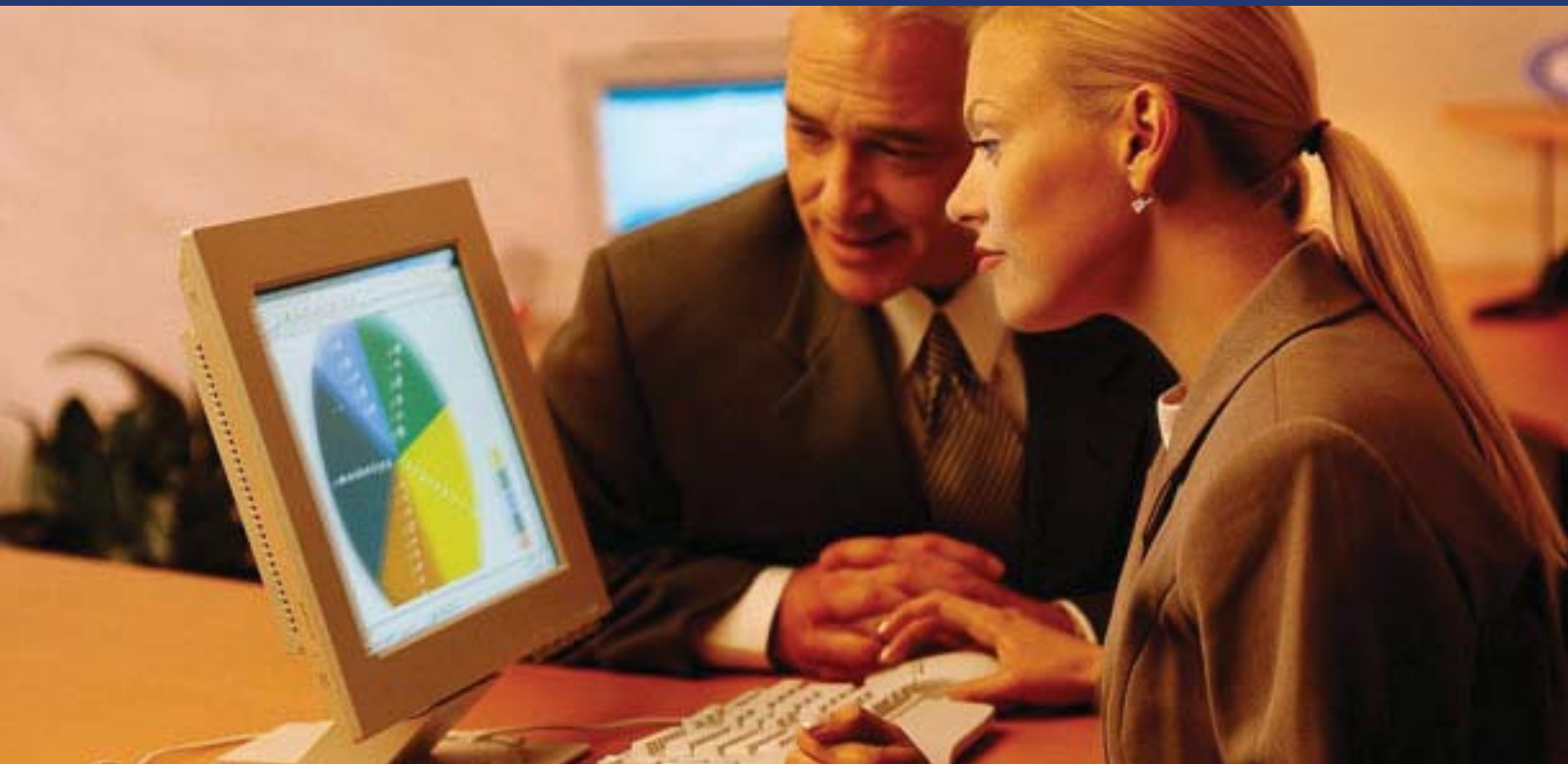
Numerical Study of the Performance of a Super CuW / BeO Package
Junkun Ma, Xialu Wei, Southeastern Louisiana University

Design of Transmit/Receive Modules
Rick Sturdivant, Microwave Packaging Technology, Inc.

Extraction of Dielectric Constant and Loss Tangent of Microwave Substrates using Full Sheet Resonance Method
A. Ege Engin, San Diego State University

Microwave Filters for RF/Microwave Circuits
Edward Liang, MCV Technologies, Inc.

Closing Remarks: 3:50 pm



Benefits of Webinars...

- **Convenient** — education brought to YOU at YOUR desktop/phone - no travel, traffic or time away.
- **Inexpensive** — avoid travel costs, hotel fees and other costs for traditional in-person meetings.
- **Real-time** — featuring current and up-to-date information.

Our **Professional Development Course (PDC) Webinar Series** is a true on-line meeting - a *Webinar*. Upon registering, IMAPS provides the log-in details for the web software as well as the audio dial-in through your phone. You are able to view the presentation materials over your computer and listen to the live lecture through your phone. You will receive a copy of the slides for each session, have direct interaction with the instructor, and also be sent an attendee list following your webinar(s).

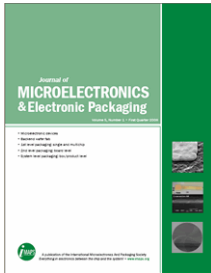
Upcoming Webinars...

- **PDC Webinar Series on Package on Package Applications, Requirements, Infrastructure and Technologies**
Moody Dreiza, Amkor Technology | Tuesdays, August 18, 25 and September 1, 2009. 12-1 pm EDT
- **PDC Webinar Series on Wire Bonding**
Lee Levine, Process Solutions Consulting | Wednesdays, September 9, 16, 25, 2009. 8-9 pm EDT
- **PDC Webinar Series on Guide to Component Chip Attach - Including Flip Chip**
Phillip Creter, Creter and Associates | Tuesdays, September 22, 29, 2009. 12-1 pm EDT
- **PDC Webinar Series on Electrical Modeling, Analysis and Optimization of Electronic Packaging Structures for Signal and Power Integrity**
Dr. Ivan Ndip, Fraunhofer-Inst. for Reliability and Microintegration; Prof. Ege Engin, San Diego State Univ. | Tuesdays, October 13, 20, 2009. 10-11 am EDT

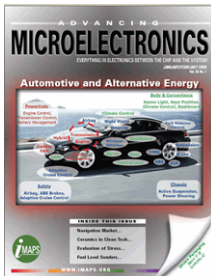


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IMAPS On-line Research Library of Searchable Technical Publications

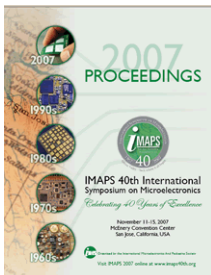


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iKnow Microelectronics currently contains thousands of articles and publications from symposia, conferences, workshops, web meetings and other publications from 2003 through 2009. IMAPS will continue to incrementally load additional historical publications from 1967-2002 throughout the remainder of this year.

iKnow Microelectronics contains the following publications in a Downloadable, CD-rom and/or Printed format:



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- **Advancing Microelectronics**
- **IMAPS Symposium Proceedings**
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RF AND MICROWAVE WORKSHOP - SEPTEMBER 22 - 24, 2009

Dr. Mr. Ms.

IMAPS Member ID# _____

First Name _____ M.I. _____ Last Name _____

Company/Affiliation _____ Job Position _____

Address _____

City _____ State _____ Zip _____ Country _____

Phone _____ Fax _____ Email _____

REGISTRATION FEES: **EARLY DISCOUNT ENDS 8/24/09**

WORKSHOP FEES

(On or before 8/24) (After 8/24)

<input type="checkbox"/> Member (IMAPS)*	\$500	\$600
<input type="checkbox"/> Non-Member*	\$600	\$700
<input type="checkbox"/> Speaker* <input type="checkbox"/> Chair* <input type="checkbox"/> Chapter Officer*	\$375	\$475
<input type="checkbox"/> Student*	\$200	\$300

*Includes one-year IMAPS individual membership or membership renewal at no additional charge. Does not apply to corporate or affiliate memberships. Workshop Fee includes an Abstract book, all meals listed and a CD-ROM of presentations. CD will be mailed 15 business days after the event.

ADDITIONAL PURCHASES

<input type="checkbox"/> Guest/Family Member (meals only)	\$150
<input type="checkbox"/> RF/Microwave CD of Presentations (member)	\$200
<input type="checkbox"/> RF/Microwave CD of Presentations (non-member)	\$300
<input type="checkbox"/> Add to Ship in the US	\$7
<input type="checkbox"/> Add to Ship Overseas	\$25

HOUSING (Hotel Cut-off is August 24, 2009)

Crowne Plaza San Diego
2270 Hotel Circle North
San Diego, California 92108
Phone: 800-882-0858
www.cp-sandiego.com

Single/Double: \$137/night

Please reference International Microelectronics And Packaging Society when making reservations by phone.

PAYMENT

RF 09

Workshop Fee: \$ _____

Additional Purchases: \$ _____

Total Payment Due: \$ _____

Enclosed is a check payable in US funds to IMAPS

Charge my fees to:

AMEX VISA MC Diners Discover

Card# _____ Exp. _____

Signature _____

Card billing address, if different from above: (required)

Email address required to receive confirmation of registration.

For Wire Transfer information, call 202-548-4001.

Mail this form with payment to: IMAPS * 611 2nd Street, NE * Washington, DC 20002-4909. For credit card transactions, register on-line: www.imaps.org; or register by phone with your credit card by calling 202-548-4001; Fax: 202-548-6115. Additional information? E-mail: IMAPS@imaps.org, or visit our web site: <http://www.imaps.org>. Cancellations will be refunded (less a \$50 processing fee) only if written notice is postmarked on or before **Friday, September 4, 2009**. No refunds will be issued after that date.

IMAPS Registration
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