
Sacramento Marriott Rancho Cordova
Rancho Cordova, CA
May 3 - 5, 2005

General Chair:
Greg Caswell, VirTex Assembly Services, Inc.
P: 512-835-6772
gregc@virtexassembly.com

Technical Program Chair:
Carolynn Drudik, Defense Microelectronics Activity (DMEA)
P: 916-231-1559
drudik@dmea.osd.mil

Sponsored by:
The International Microelectronics And Packaging Society (IMAPS)
“Everything in electronics between the chip and the system”

Endorsed by:
The Office of the Secretary of Defense

Early Registration and Hotel Deadline: April 11, 2005
Message from the General Chair

In our current environment, where the focus continues to be on military activities and homeland security, extensive work is being done to advance the state-of-the-art in high reliability electronics packaging. This year’s technical program consists of over 20 presentations on the latest military, aerospace, space and homeland security electronic devices, systems, and applications, with particular emphasis on design, fabrication, assembly, testing, and materials selection. We are also having a special session on marketing this year which will focus on parts obsolescence issues and US-based resources. In addition to this powerful program, we have a leadoff Keynote Presentation from Mr. Ted Glum of the Office of the Secretary of Defense, Defense Microelectronics Activity. He will be discussing key DoD Microelectronics Technology Initiatives.

See you in Sacramento,

Greg Caswell

Tour of the Defense Microelectronics Activity
May 5, 2005
4234 54th Street (Bldg. 620), McClellan, CA 95652

3 Tours (Limited to 20 attendees each) - 1 hour each
Tour Start Times: 13:00, 14:00, 15:00 (1 pm, 2 pm, 3 pm)
First come - first served basis.
Register Early!

The Defense Microelectronics Activity (DMEA) was founded because technological superiority is the essential underpinning of US military strategy. In recognition of the critical importance of technology, the Department of Defense (DoD) took the extraordinary step of creating an organization whose sole mission is to provide leadership and guidance in microelectronics to the warfighter. DMEA has one-of-a-kind technological capability and highly specialized engineering expertise to design, prototype and fabricate new microelectronic components and systems. The tour will encompass DMEA’s microelectronics engineering, design, prototyping, testing, processing and foundry capabilities.

The foundry at DMEA is a true flexible foundry capable of producing any quantity, small or large, of microelectronic devices in a variety of semiconductor processes. Foundry process runs are a result of intellectual property licensing agreements with industry to transfer commercial technology to the DoD (DMEA) with multiple semiconductor manufacturers like IMP, Raytheon, Peregrine, and Intersil. DMEA currently supports the Army, Navy, Air Force, Marines, Department of Homeland Security, Department of Energy, Department of Transportation, Department of Justice, as well as many defense contractors and international programs from the United Kingdom and other allies.

The Secretary of Defense declared the highly specialized group of engineers and facilities at DMEA to be a unique national resource.

To sign up, please e-mail Ms. Carolynn Drudik at DMEA, drudik@dmea.osd.mil

For Nationals: Please include your name and company.

For Foreign Nationals: Please include your name, company, birth date, city, and country information. Also, please bring your passport for identification.
Tuesday, May 3

Registration: 7 am - 5 pm
Continental Breakfast: 7:30 am - 8:30 am
Exhibit Hours: 3 pm - 7 pm
Refreshment Breaks & Reception in the Exhibit Area

Opening Remarks: 8:50 am
General Chair - Greg Caswell, VirTex Assembly Services
Technical Chair – Carolynn Drudik, DMEA

Keynote Presentation
9 am
Title: DoD Microelectronics Technology Initiatives
Speaker: Mr. Ted Glum, Director
Defense Microelectronics Activity

Break: 10 am - 10:30 am

Session I: Military, Space, Spaceborne and Homeland Security Marketing Issues
Session Chair: Greg Caswell, VirTex Assembly Services
10:30 am - Noon

Obsolescence and Reliability Relationships
Walter J. Tomczykowski, ARINC

A University-Based Resource for Miniature Electronics
Karen White, North Dakota State University

Lunch: Noon - 1 pm

Session II: Solder and Lead Free Issues for Military and Spaceborne Electronics
Session Chair: Carolynn Drudik, DMEA
1:15 pm - 4:45 pm

Lead Free Solder for Low Cost, High Speed, High Bandwidth Packages for Military, Space and Homeland Security Applications
Rathindra Pal, Kingsley Berlin, Shapna Pal, Department of Defense

Electrochemical Corrosion Study of Pb-Free Solders
B.Y. Wu, Y. C. Chan, M. O. Alam, J. K.L. Lai, W. Jillek, City University of Hong Kong

Active Solder Materials: A Solution for Systems using High Performance Materials
Randall Redd, Ronald W. Smith, S-Bond Technologies LLC

Lead Free Impacts on DoD Microelectronics
Vance Anderson, DMEA

Break: 3:15 pm - 3:45 pm

High Reliability Lead Free Manufacturing from a Contract Manufacturer’s Perspective
Greg Caswell, VirTex Assembly Services
Failure Mechanisms of Ball Grid Array (BGA) Solder Joints Under High Current Stress
Y. C. Chan, M. O. Alam, Boyi Wu, City University of Hong Kong

Reception/Dinner: 5 pm - 7 pm

Wednesday, May 4

Registration: 7 am - 5 pm
Continental Breakfast: 7 am - 8 am
Exhibit Hours: 10 am - 4 pm
Refreshment Breaks & Lunch will be held in the Exhibit Area

SESSION III: PACKAGING ISSUES AND APPLICATIONS FOR HIGH RELIABILITY MILITARY AND SPACEBORNE SYSTEMS
Chair: Phil Zulueta, Jet Propulsion Laboratory
8 am - Noon

Extending High Performance Chip Packaging Technology to Multi Chip Modules, System on a Chip and High Performance Multi-Layer Printed Circuit Boards
John R. Gardner, Steve Neu, 3M

Parallel Optical Transceivers for Aerospace Applications Using Flip Chip Bonding Technology
Charlie Kuznia, Chuck Tabbert, Dick Pommer, Joe Ahadian, Rich Hagan, Peregrine Semiconductor

Thin Film Technology on Diamond Substrate & Flip Chip: A Route for using Wide Band Gap Transistors in Space Applications
Claude Drevon, Alcatel Space; C. Schaffauser, O. Vendier, D. Geoffroy, S. Delage, TRT; J. L. Roux, CNES

Laser Ultrasonic Inspection of Subsurface Defects in Flip Chips
Marvin B. Klein, Lasson Technologies, Inc.; T. L. Steen, T. W. Murray, Boston University

Break: 10 am - 10:30 am

Increasing Memory Density for High Performance Systems
Charles White, Philip Damberg, Tessera Inc.

The Development of Packaging for Narrow and Broad-Band Applications
Arne Knudsen, Jerry Aguirre, Mark Eblen, Paul Garland, Chris Gordon, Andrew Piloto, Heather Tallo, Joseph Tallo, Rei Yamada, Kyocera America, Inc.

High Density Packaging for Military and Aerospace Electronics using Fine Pitch BGA and Bare Die Stacking
Keith Sturken, Bill Davis, BAE Systems

Lunch: Noon - 1 pm

SESSION IV-A: RELIABILITY ISSUES
Session Chair: Greg Caswell, VirTex Assembly Services
1:15 pm - 3:15 pm

Design Guidelines to Implementing Six Sigma Flip Chip Assembly Yields
Daniel Baldwin, Engent, Inc.; Chunho Kim, Intel Corp.

Reliability Construction Analysis
Gary Gaugler, Microtechnics, Inc.
Converting Ball Grid Array Components to Column Grid Array
Russell Winslow, Six Sigma

Reliability Assessment of COB Technology for Extreme Low Temperature Environment
Sharon Ling, Johns Hopkins University, APL

Break: 3:15 pm - 4 pm

**SESSION IV-B: EMERGING TECHNOLOGIES**
Session Chair: Greg Caswell, VirTex Assembly Services
4 pm - 5:30 pm

ESD Protection of a RF Integrated Circuit by Embedding Protection in the IC Printed Circuit Board
Karen Shrier, Electronic Polymers

Generic, Direct-Chip-Attach MEMS and Sensor Packaging Design with High Density and Aspect Ratio through-Wafer Electrical Interconnect
Daniel Baldwin, Engent, Inc.; Seong Joon Ok, Georgia Institute of Technology

Multilithic Microsystem Flip Chip Solution for Defense Applications
Mark Faulkner, Ed Stoneham, Anthony Sweeney, Endwave Defense Systems

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**Thursday, May 5**

Registration: 7:30 am - Noon

Continental Breakfast: 7:30 am - 8:30 am

**SESSION V: SYSTEM LEVEL PACKAGING ISSUES**
Session Chair: Jim Cook, Consultant
8:30 am - Noon

Tamper Resistant Packaging for Securing Secret Information
Richard Martin, W. L. Gore

Python Next Generation TeraFLOPS Computer Module
Harold L. Snyder, Physical Solutions

System-Level Integration and Miniaturization: The Next Step beyond High Density Packaging
Nicholas J. Colella, Jeffrey Demmin, Tessera Inc.

Break: 10 am - 10:30 am

High Temperature & High Power Intelligent Motor/Actuator Controller for Military and Commercial Avionics Systems
Harold L. Snyder, Physical Solutions

Epsilon Low-Cost Compact Microwave and Millimeter-Wave Subsystem Packaging for Defense Applications
Mark Faulkner, Ed Stoneham, Anthony Sweeney, Endwave Defense Systems

Wrap up: General Chair
Tabletop Exhibition
“An opportunity to talk to industry leaders”
May 3 - 4, 2005

Tuesday - May 3        3 pm - 7 pm (Exhibit Hours)
Refreshment Breaks & Reception will be held in the Exhibit Area.

Wednesday - May 4      10 am - 4 pm (Exhibit Hours)
Refreshment Breaks & Lunch will be held in the Exhibit Area.

Tabletop Registration Fees

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<tr>
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<th>On or before 4/11/05</th>
<th>After 4/11/05</th>
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<tbody>
<tr>
<td>IMAPS Corporate/Organizational Member</td>
<td>$450 per booth</td>
<td>$550 per booth</td>
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<tr>
<td>IMAPS Non-Corporate/Organizational Member</td>
<td>$650 per booth</td>
<td>$750 per booth</td>
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Included With Your Registration

• one (1) six foot draped table
• two (2) chairs
• carpeting
• one (1) Technical Presentations CD-ROM - post workshop
  • one (1) List of Attendees - post workshop
  • Exhibit Hall admission for two (2) booth personnel

Additional booth personnel are welcome at an extra cost of $50 per person. Registrations for the full workshop are available at an additional cost.

Shipments are made to the hotel directly. You save money because no service contractor is involved!
Sacramento Marriott Rancho Cordova
11211 Point East Drive
Rancho Cordova, CA 95742
Ph: 916-638-1100; Fax: 916-638-5803
On-line at www.marriott.com/sacmc
Promotional codes:
1 King Bed - micmica; 2 Queen Beds - micmicb

Cancellation Policy
Booth cancellations made before 4/11/05 will receive a refund minus $100 handling fee. Booths cancelled after 4/11/05 will not be refunded.

For more information, visit www.imaps.org/mash or contact:
Ann Bell, abell@imaps.org; 202-548-8717

Marketing Feature Available for Exhibitors

IMAPS will provide all exhibitors an opportunity to provide an unlimited amount of pages of company products, services and contact information to be included on the post-event Technical Presentations CD-ROM. These CD-ROMs are provided to all technical workshop attendees and are for sale through IMAPS to all industry professionals.

This new and unique feature will promote the Exhibitor’s products and abilities much longer than just the workshop.

There is a charge of $50 for this optional feature. This equates to unlimited pages of advertising for just $50.

These submissions must be sent electronically, in Word or PDF format, to abell@imaps.org no later than April 11, 2005.
Upcoming Events...

**IMAPS/ACerS 1st International Conference and Exhibition on Ceramic Interconnect and Ceramic Microsystems Technologies (CICMT)**
co-located with the 107th Annual Meeting of The American Ceramic Society
www.ceramics.org/meetings/am2005

**Baltimore Marriott Waterfront Hotel**
Baltimore, MD
**April 10 - 13, 2005**
Visit [www.cicmt.org](http://www.cicmt.org) for more information

**Topical Workshop and Tabletop Exhibition on Flip Chip Technologies**
Marriott Austin at the Capitol
Austin, TX
**June 20 - 23, 2005**
Visit [www.imaps.org/flipchip](http://www.imaps.org/flipchip) for more information

**IMAPS 2005**
38th International Symposium on Microelectronics
Philadelphia Convention Center
Philadelphia, PA
**September 25 - 29, 2005**
Visit [www.imaps2005.org](http://www.imaps2005.org) for more information

Mark Your Calendar Today!!
Two Workshops are being planned - One Location - Palo Alto, California

**October 24 - 26, 2005**
Advanced Technology Workshop on **Thermal Management**

**October 26 - 28, 2005**
Advanced Technology Workshop on **LED Packaging**

More information available soon at [www.imaps.org](http://www.imaps.org)
REGISTRATION FORM
REGISTRATION FEE:

REGISTRATION FEES: EARLY REGISTRATION ENDS 4/11/05
Workshop Fees: $550 $650
Member (IMAPS)
Non-member* $650 $750
Speaker/Chair/Student $325 $425
Workshop Fees include Abstract Book; all meals listed and a CD of Presentations. CD of Presentations will be mailed 10 business days after the event.
Exhibit Only Per Day (meals included) $50 $50

ADDITIONAL PURCHASES
Spouse/Guest (meals only) $150 $150
CD of Presentations (Member Rate) $150 $150
CD of Presentations (Non-Member Rate) $275 $275
Add to Ship in the US $7 $7
Add to Ship Overseas $25 $25

Tabletop Exhibit: MAY 3 - 4, 2005
IMAPS Corporate Member $450 $550
Non-IMAPS Corporate Members $650 $750
Yes, we will participate in the CD-ROM $50
Tabletop registration fee includes 1-six foot draped table, 2 chairs, carpeting and an Exhibit Hall admission for 2 booth personnel. A CD-ROM and 1 list of attendees will be sent to you after the event. Full Technical Workshop registrations are available at an extra cost, fees are above.

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How did you hear about this event?
Direct Mail □ Website □ E-Mail
Advancing Microelectronics □ Colleague
IMAPS Weekly E-mail Bulletin □ Personal Phone Call
Industry/Trade Magazine □ Other □

Payment
Workshop Fees: $___________________________
Additional Purchases: $___________________________
Tabletop Exhibit: $___________________________
Total Payment Due: $___________________________
A $25 fee must be added to all Wire Transfers.
Enclosed is a check payable in US funds to IMAPS
Charge my fees to:
Visa □ MasterCard □ Discover □ Amex □ Diners Club
Card#________________________________Exp.__________
Signature________________________________________

Hotel Reservation (Hotel Cut-off is April 11, 2005)
Reservation must be made directly with the:
Sacramento Marriott Rancho Cordova
11211 Point East Drive
Rancho Cordova, CA 95742
P: 916-638-1100; F: 916-638-5803
On-line: www.marriott.com/sacmc
Promotional codes:
1 King Bed - micmica; 2 Queen Beds - micmicb
Single/Double: $139
Please reference IMAPS when making reservations.
Sacramento Marriott Rancho Cordova requires a deposit for the first night’s room and tax to hold your room. Deposit refunded if reservation is cancelled fourteen (14) days prior to arrival.

Early Registration ends 4/11/05

Additional information? E-mail: IMAPS@imaps.org, or visit our web site: http://www.imaps.org. Workshop Cancellations will be refunded (less a $50 processing fee) only if written notice is postmarked on or before Friday, April 15, 2005. No refunds will be issued after that date.

IMAPS Registration
611 2nd Street, NE
Washington, DC 20002-4909
"Address Service Requested"