

ADVANCE PROGRAM AND REGISTRATION ON-LINE AT WWW.IMAPS.ORG/MEDICAL

IMAPS Advanced Technology Workshop and Tabletop Exhibits on **Microelectronic Packaging and Materials for Medical Devices**

Crowne Plaza Northstar Hotel
Minneapolis, Minnesota - USA

June 9 - 10, 2010

General Chairs:

Jay Ellingboe
Smiths Medical
jay.ellingboe@smiths-medical.com

Tom Green
TJ Green Associates, LLC
tgreen1@ptd.net

Technical Chairs:

Sean Ferrian
Ferrian Sales
sean@ferrian.com

Thomas Jacobs
DYCONEX
thomas.jacob@dyconex.com

Corporate Sponsors:



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Organized by: The International Microelectronics And Packaging Society (IMAPS)
Bringing Together the Entire Microelectronics Supply Chain!

Early Registration, Exhibit Reservation and Hotel Deadlines: May 21, 2010

Workshop Overview

The combination of advancing demographics (an aging world population) and an explosion of new microelectronics technology set the stage for significant improvement and miniaturization in the area of medical electronics.

Wednesday, June 9, 2010

Registration: 12:00 pm - 5:00 pm

PROFESSIONAL DEVELOPMENT COURSE (PDC):

HERMETIC AND "NEAR HERMETIC" TESTING OF CLASS III MEDICAL IMPLANTS

1:00 pm - 5:00 pm

Course Instructor: Thomas Green, TJ Green Associates, LLC

This PDC is intended as an intermediate level course for process engineers, designers, quality engineers, and managers responsible for hermetic sealing, leak testing and RGA results and for those responsible for evaluating new polymeric cavity style packages.

Historically, hermeticity requirements for Class III Medical Implants have mirrored that for military and telecom applications. This course will briefly review the traditional hermeticity test methods (helium leak test and bubble method) and some of the pitfalls and lessons learned over the years. Recent changes to the hermeticity spec will be discussed along with the difficulties in testing to leak rates that are two orders of magnitude tighter than what exists today.

Packages made from polymeric materials (e.g., LCP and others) as opposed to traditional hermetic seals (i.e., metals, glasses, ceramic, etc.) require a different approach from a hermeticity design and testing standpoint. The problem is now one of moisture diffusion through the bulk and package interfaces, which is different than water vapor permeating a crack in a glass to metal seal. A brief review of the techniques and methods to evaluate a "near-hermetic" approach is presented along with a discussion of the pitfalls and issues with TM 1014 (Seal) and TM 1018 (Internal Water Vapor) as applied to a "near hermetic package." Fick's law of moisture diffusion is the dominant theory guiding "near hermetic" package styles and testing such as WVTR, TGA and moisture diffusion coefficients are used in lieu of traditional helium-based hermeticity techniques to evaluate and understand the integrity of the seal. Applications of moisture sensing inside a package and a discussion on how to qualify a "near hermetic" package will also be presented.

Mr. Thomas Green is an independent consultant and respected teacher. He has over twenty-eight years of experience in the microelectronics industry and has worked at Lockheed Martin Astro Space and USAF Rome Laboratories. At Lockheed he was a staff engineer responsible for the materials and manufacturing processes used in building custom high reliability space qualified hybrid microcircuits for military satellites. Tom has demonstrated expertise in seam sealing and hermeticity leak testing processes. He has conducted numerous hermeticity experiments and presented technical papers at NIST (National Institute of Standards and Technology) and IMAPS on leak testing techniques, including CHLD (cumulative helium leak detection) and OLT (optical leak test). At USAF Rome Labs he worked as a senior reliability engineer and analyzed hermeticity component failures from AF avionic equipment along with providing technical support for a variety of Mil specs including MIL-STD-883 TM 1014 (Seal). Tom is an active IMAPS member and Society Fellow and has worked as a hermeticity consultant for a variety of military and medical companies. He has a B.S. in Materials Engineering from Lehigh University and a Masters from the University of Utah. Tom is the principal at TJ Green Associates LLC (www.tjgreenllc.com).

Thursday, June 10, 2010

Registration: 7:00 am - 5:00 pm

Continental Breakfast: 7:00 am - 8:00 am

Exhibit Hours: 8:00 am - 5:00 pm

Sessions, Tabletop Exhibits and Food/Beverage all in the same room.

Opening Remarks: 8:00 am - 8:15 am

General Chairs: Jay Ellingboe, Smiths Medical; Thomas Green, TJ Green Associates, LLC

Keynote Presentation: 8:15 am - 9:00 am



Emerging Markets for Microfluidics Applications

Jeff Perkins, General Manager, Yole, Inc.

Yole Développement is a market research and business development consulting firm facilitating market access for advanced technologies. Yole has been tracking the MEMS industry for over 10 years and maintains a focus on industries using wafer-based manufacturing processes.

Jeff has over 20 years of experience working in emerging technologies. Jeff leads Yole's business development activities in North America. His experience in emerging technology covers energy, medical, aerospace and consumer markets.

SESSION I: 3D PACKAGING AND TECHNOLOGIES

9:00 am - 12:00 pm

Session Chair: AJ Ries, Medtronic

Printing Silicon Integrated Circuits for Wireless Sensors

Jayna Sheats, Hamidreza Alemohammad, Ehsan Foroosmehr, Ara Kim, Tony Mantell, Amir Zadeh, David Biesty, Terepac Corporation

Stacking of Known Good Rebuilt Wafers Without TSV Applications to Memories and SiP

Christian Val, Pascal Couderc, Nadia Boulay, 3D Plus

Break: 10:00 am - 10:30 am

Laser Direct Structuring Method of Integrating Circuitry with Three-Dimensional Components

James Liddle, SelectConnect Technologies

3D Packaging Technique for a Flexible and Biocompatible Antenna Using Z-axis for Wireless Monitoring of Intraocular Pressure (IOP)

Tse-Yu Lin, Byung Guk Kim, Dohyuk Ha, Sungwook Moon, Eric Hoppenjans, William Chappell, Purdue University

High Performance and High Reliability Passives for Miniature Medical Devices Based Upon Silicon Technologies

Franck Murray, IPDIA

Lunch: 12:00 pm - 1:30 pm

SESSION II: MICROELECTRONICS AND APPLICATIONS

1:30 pm - 5:00 pm

Session Chair: TBA

Advances in Solid-State Magnetic Sensors for Medical Devices

Daniel Baker, Jay Brown, NVE Corporation

Hermetic, Radio-transparent Micropackaging for Implantable Neural Prosthetics

Charles Byers, Guangqiang Jiang, Alfred Mann Foundation

High Voltage, High Impedance Resistors Small Sized for Medical Applications

Wolfgang Tschannun, Hansperter Good, Dieter Kaegi, Reinhardt Microtech AG

Break: 3:00 pm - 3:30 pm

Leveraging the Insatiable Need for Smaller Microelectronic Packages: Opportunities for Medical Devices

Frank Stepniak, Texas Instruments

Ceramic Packaging in Medical Applications

Arne Knudsen, Iris Labadie, Ross Linker, Kyocera America

Advanced Technologies for High Reliability Medical Electronics Manufacturing

Thomas Jacob, Ravi Subrahmanyam, Dyconex Inc.

Closing Remarks: 5:00 pm - 5:15 pm

Technical Chairs: Sean Ferrian, Ferrian Sales; Thomas Jacobs, Dyconex, Inc.

Tabletop Exhibit Information

Sessions, Tabletop Exhibits and Food/Beverage all in the same room.

**Exhibits will be on Thursday, June 10th
8:00 AM until 5:00 PM**

Tabletop Fee

Member (IMAPS)	\$375
Non-member*	\$450

**Reserve your space on-line at www.imaps.org/medical
Questions?**

Please contact Ann Bell, 202-548-8717 or abell@imaps.org

**Minnesota Twins vs. Kansas City Royals
Major League Baseball Game**



**Hosted by the IMAPS Viking Chapter
Thursday, June 10th; 7:00 PM Start
Club Level Seating**

***You must pre-register by June 1st to reserve your ticket.
Reserve Tickets On-line when Registering for Sessions.***

Member (IMAPS)	\$20
Non-member*	\$26

REGISTRATION FORM

REGISTER ON-LINE AT WWW.IMAPS.ORG/MEDICAL

MEDICAL DEVICES WORKSHOP: JUNE 9 - 10, 2010

Dr. Mr. Ms. Member ID# _____
 First Name _____ M.I. _____ Last Name _____
 Company/Affiliation _____ Job Position _____
 Address _____
 City _____ State _____ Zip _____ Country _____
 Phone _____ Fax _____ Email _____

PAYMENT

MEDICAL10PROG
 Workshop Fee: \$ _____
 Professional Development Course: \$ _____
 Tabletop Fee: \$ _____
 Baseball Game Fee: \$ _____
 Additional Purchases: \$ _____
 Total Payment Due: \$ _____

For Wire Transfer information call 202-548-4001

Enclosed is a check payable in US funds to IMAPS
 Charge my fees to:
 Visa MasterCard Discover Amex
 Card # _____ Exp. _____
 Signature _____

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

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>. Workshop Cancellations will be refunded (less a \$50 processing fee) only if written notice is postmarked on or before **Friday, May 28, 2010**. No refunds will be issued after that date.

REGISTRATION FEES: EARLY REGISTRATION ENDS 5/21/10

WORKSHOP FEES	(On or before 5/21)	(After 5/21)
<input type="checkbox"/> Member (IMAPS)	\$200	\$250
<input type="checkbox"/> Non-Member*	\$300	\$350
<input type="checkbox"/> Speaker <input type="checkbox"/> Chair		FREE
<input type="checkbox"/> Student	\$25	\$50
<input type="checkbox"/> Exhibits Only (does not include lunch)		FREE
<input type="checkbox"/> Lunch Ticket		\$30

**Includes one-year IMAPS individual membership/renewal. Does not apply to corporate or affiliate memberships. Workshop Fee includes: abstract book, meals listed and a CD of Presentations. CD of Presentations will be mailed 15 business days after the event.*

PROFESSIONAL DEVELOPMENT COURSE: (1/2 DAY)

JUNE 9TH: 1:00 PM - 5:00 PM

<input type="checkbox"/> Member (IMAPS)	\$300	\$300
<input type="checkbox"/> Non-Member	\$400	\$400

TABLETOP EXHIBIT BOOTH

<input type="checkbox"/> Member (IMAPS)	\$375	\$375
<input type="checkbox"/> Non-member*	\$450	\$450

Exhibits will be on June 10th.

MINNESOTA TWINS VS. KANSAS CITY ROYALS MAJOR LEAGUE BASEBALL GAME: JUNE 10TH: (MUST REGISTER BY JUNE 1ST)

<input type="checkbox"/> Member (IMAPS)	\$20	\$20
<input type="checkbox"/> Non-Member	\$26	\$26

ADDITIONAL PURCHASES

<input type="checkbox"/> CD of Presentations (Member Rate)	\$200	\$200
<input type="checkbox"/> CD of Presentations (Non-Member Rate)	\$300	\$300
<input type="checkbox"/> Add to Ship in the US	\$7	\$7
<input type="checkbox"/> Add to Ship Overseas	\$25	\$25

HOTEL RESERVATION (Hotel Cut-off is May 21, 2010)

Reservation must be made directly with:

Crowne Plaza Northstar Hotel

618 Second Ave.

Minneapolis, Minnesota 55402

P: 800-556-7827 or 612-338-2288

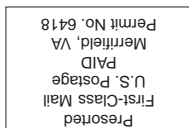
On-line reservations through the link below:

<http://www.ihg.com/h/d/CP/1/en/rates/>

[MSPCP?groupBookingCode=IMP&_IATano=99801505](http://www.ihg.com/h/d/CP/1/en/rates/MSPCP?groupBookingCode=IMP&_IATano=99801505)

Single/Double: \$119

Please reference IMAPS when making reservations by phone.



IMAPS Registration
 611 2nd Street, NE
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 "Return Service Requested"