

PROGRAM AND REGISTRATION ON-LINE AT WWW.IMAPS.ORG/PRINTED
**IMAPS ADVANCED TECHNOLOGY WORKSHOP AND TABLETOP EXHIBITION ON
PRINTED DEVICES AND APPLICATIONS**

INTERNATIONAL PLAZA RESORT
10100 INTERNATIONAL DRIVE
ORLANDO, FLORIDA 32821

FEBRUARY 25 - 27, 2009



General Chair:

C. Mike Newton, Harris Corporation
mnewton@imaps.org

Technical Program Chair:

Dr. Kenneth Church, nScript, Inc.
kchurch@nscriptinc.com

Organized by:



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

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IMAPS Florida Chapter

Hotel Cut-off: January 22, 2009
Early Registration Discount Ends: February 11, 2009

Printed Devices & Applications Workshop Focus:

The objective of the Printed Devices 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 printed electronics as an emerging packaging technology. This workshop enables discussion and presentations on the latest materials, process, design & emerging applications of printed electronics technology.

Organizing Committee:

Carol Gamlen, Harris Corporation
Tim Davis, JDM Associates
Mike Hudgens, Corwil
Mike McEntee, Sypris Test & Measurement

Student Activities:

Outreach Co-Chairs:

University: **Dr. Kinzy Jones Sr.** - Florida International University
High School: **Dr. Janet Lumpp** - University of Kentucky

Florida Student Chapters:

Florida International University

Chapter Advisor: Dr. Kinzy Jones | Student President: Gao Yong

University of Central Florida

Chapter Advisor: Dr. Xun Gong | Student President: Justin Luther

University of South Florida

Chapter Advisor: Dr. Jing Wang | Student President: Kosol Son

High School Technology Student Association

TSA Teacher Advisor: Carrie Robertson
Bayside High School Palm Bay Bayside High STEAM TEAM

CCHS Advisor:

Kelly Stone, Circle Christian High School Team Noncontact

SPEAKER/PRESENTATION INFORMATION

Extended Abstract or Presentation Material due: **January 30, 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.

Speakers must register for the workshop at the reduced speaker rate. Advance registration deadline is February 11, 2009. Visit www.imaps.org/printed for more information.

Wednesday, February 25

Registration: 7:30 am - 7:00 pm

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

Exhibit Hours: 10:00 am - 7:00 pm

High School Student Printed Electronics Posters: 10:00 am - 1:30 pm

University Student Posters: 10:00 am - 7:00 pm
Poster Judging at 5:45 pm

Opening Remarks: 8:15 am - 8:30 am
Technical Chair: Ken Church, nScrypt, Inc.

SESSION I: INDUSTRY CONVERGENCE AND TECHNOLOGY TRANSFORMATION

Session Chair: Robert M. Taylor, Sciperio, Inc.
8:30 am - 12:00 pm

Session Overview

Robert M. Taylor, Sciperio, Inc.

Printed Electronics: Three Emergent Market Applications

Kevin M. Closson, Nerac, Inc.

Pad-Printed Curved-Surface EL DISPLAY

Taik-Min Lee, Hyun-Cheol Choi, Jae-Ho Noh, Dong-Soo Kim, Korea Institute of Machinery & Materials

Break: 10:00 am - 10:30 am

NanoChromics™ Display Enabled Design

Alain C. Briancon, NTERA

Challenges in Manufacturing Printed Electronic Systems

Gordon C. Smith, GSI Technologies

Energy Harvesting Power Solutions for Printed Electronics

Roger Roisen, Steve Grady, Applications Engineer, Cymbet Corporation

Buffet Lunch: 12:00 pm - 1:00 pm

WELCOME FROM THE GENERAL CHAIR: 12:30 PM - 12:45 PM

C. Mike Newton, Harris Corporation

THANK YOU

A SPECIAL *THANK YOU*

TO ALL THE MEMBERS OF THE ORGANIZING COMMITTEE, STUDENT ACTIVITIES,
THE SESSION CHAIRS AND SPEAKERS.

YOUR PARTICIPATION IS GREATLY APPRECIATED!

SESSION II: MATERIALS: SUBSTRATES, INKS & EPOXIES

Session Co-Chairs: Michael Mastropietro, PChem Associates, Inc.; Peter Nam-Soo Kim, SeoKyeong University
1:30 pm - 5:00 pm

Session Overview

Michael Mastropietro, PChem Associates, Inc.

Innovative Material Processing for Printed Electronics Manufacturing

Stan Farnsworth, Kurt Schroder, David Pope, NovaCentrix

Low Temperature Sintering Nanoparticle Inks for Printed and Flexible Electronic Devices on Plastics

Zhihao Yang, NanoMas Technologies, Inc.

Break: 3:00 pm - 3:30 pm

Polymer Nanocomposites, Printable and Flexible Technology for Electronic Packaging

Rabindra Das, Frank D. Egitto, Mark D. Poliks, How Lin, Voya R. Markovich, Endicott Interconnect Technologies, Inc.

Evaluation of Carbon Nanotube Filled Electrically Conductive Adhesives on Sn, Ag and Au Surface Finishes

Janet K. Lumpp, Keerthivarma Mantena, Poojitha Sirigiri, Midhun Jasti, Naveen Velicheti, Ashwanth Vangala, University of Kentucky

2-D Packaging Graphical Simulation for High Conductive Nano Paste

Peter Nam-Soo Kim, Dong Hoon Oh, SeoKyeong University

Reception: 5:15 pm - 7:00 pm

University Student Poster Judging: 5:45 pm - 6:30 pm

Dinner: On your own

Thursday, February 26

Registration: 7:30 am - 5:00 pm

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

Exhibit Hours: 10:00 am - 5:00 pm

University Student Posters: 10:00 am - 1:30 pm

SESSION III: DIGITAL PRINTING & DEPOSITION TECHNOLOGY

Session Chair: Eric MacDonald, University of Texas at El Paso
8:30 am - 12:00 pm

Session Overview

Eric MacDonald, University of Texas at El Paso

Additive Flexible Circuit Production using UV Curable Catalytic Inks

Joel Yocom, Conductive Inkjet Technology

Aerosol Jet Deposition for Direct Write Electronics

Richard Plourde, Mike O'Reilly, Optomec, Inc.

Break: 10:00 am - 10:30 am

High-Density PTF-Inlaid Traces on Flexible Substrates

Valery Marinov, Sourin Bhattacharya, North Dakota State University

Utilization of Selective Patterning for Inkjet Printing in the Electronics Manufacturing

Jian Lin, Jussi Pekkanen, Matti Mäntysalo, T. Mäkelä, Ronald Österbacka, Åbo Akademi University

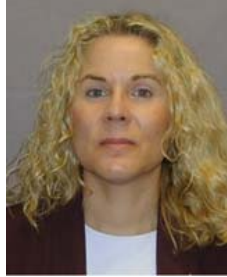
Micro Dispensing Viscous Materials for Printed Devices

Patrick A. Clark, nScrypt, Inc.

KEYNOTE SPEAKER: 12:00 PM - 12:30 PM

Dr. Jennifer Ricklin

DARPA Strategic Technology Office



Dr. Ricklin joined DARPA in 2005 as a Program Manager for the Strategic Technology Office. For twenty-two years prior to this Dr. Ricklin held various management and bench scientist positions at the Army Research Laboratory. Her current interests are in the development of technologies for tactical military applications. Dr. Ricklin received her PhD in electrical engineering from Johns Hopkins University, MS in electrical engineering from New Mexico State University, and BS in physics from Sam Houston State University. She has two patents and has authored over sixty papers and one book on the topics of laser beam propagation and imaging in random media, optical diffraction and coherence theory, optical communications, and simulation and adaptive correction of random phase distortions. Dr. Ricklin has chaired or co-chaired a number of international conferences, and has served as Associate Editor for Optical Engineering since 1998. She is a Fellow of SPIE- International Society for Optical Engineering and served on its Board of Directors.

Buffet Lunch: 12:30 pm - 1:30 pm

SESSION IV: PRINTED DEVICES - ACTIVE & PASSIVE

Session Chair: Bruce Gnade, University of Texas at Dallas

1:30 pm - 5:00 pm

Session Overview

Bruce Gnade, University of Texas at Dallas

Three Dimensional Direct Writing of MnO₂ Battery Cathodes

Christopher A. Applett, Krista Hawthorne, Kyle Fenton, Adam Cook, Eric Branson, Paul Clem, Sandia National Laboratories

A 3D Sensor Fabricated by Layer-Based Additive Manufacturing and Printed Interconnect

Eric MacDonald, Dan Muse, Misael Navarrete, Ken Church, Ryan Wicker, University of Texas at El Paso

Break: 3:00 pm - 3:30 pm

Printing Flexible High-Performance Thin-Film Transistors Using Single Walled Carbon Nanotubes

Wu-Sheng Shih, Carissa S. Jones, Xuejun Lu, Mike Renn, Mike Stroder, Brewer Science, Inc.

Direct-Write Fabrication of Solid Oxide Fuel Cells

Matthew Camaratta, Bryan M. Blackburn, Eric D. Wachsman, University of Florida

Printing Silicon Integrated Circuits

J. R. Sheats, G. N. Taylor, D. Biesty, Terepac Corp.

Dinner: On your own

Friday, February 27

Registration: 7:30 am - 12:00 pm

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

SESSION V: THE NEW DESIGN AND APPLICATION PARADIGM

Session Chair: Leslie D. Kramer, Lockheed Martin Missiles and Fire Control

8:00 am - 12:00 pm

Session Overview

Leslie D. Kramer, Lockheed Martin Missiles and Fire Control

Additive Inkjet Fabrication of 2.4Ghz Radio Tags used in Local Positioning

Jani Miettinen, Ville Pekkanen, Tampere University of Technology; Antti Kainulainen, Kimmo Kalliola, Nokia Research Center - Helsinki

HF RFID Transponder Antenna Design

Joshua Wyatt, Texas Instruments Inc.

Break: 9:30 am - 10:00 am

Developments of Organic Sensors and Electronics in Medicine and for Point-of-Care Patient Health Monitoring in Real Time

Vijay K. Varadan, University of Arkansas - HiDEC

Microwave Characterization of Flow Coated SU-8 Thick Film for Printed Circuit Applications

Jing Wang, Julio M. Dewdney, University of South Florida

Inkjetted 3D Interconnections for Electronic Applications

Matti Mäntysalo, Kimmo Kaija, Santtu Koskinen, Juha Niittynen, Tampere University of Technology

In Line Process Control and Yield Improvement for Printed Electronics

Robert Bishop, Beltronics

Hotel Information

Hotel Cut-off: January 22, 2009

INTERNATIONAL PLAZA RESORT

10100 INTERNATIONAL DRIVE

ORLANDO, FLORIDA 32821

PHONE: 1-407-352-1100

<http://www.intlplazaresort.com/>

Single/Double: \$149/night

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

Registration Deadlines

Early Registration Discount Ends

February 11, 2009

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

Extended Abstract Due:

January 30, 2009

*Email extended abstract in PDF format only to
jmorris@imaps.org.*

Tabletop Exhibition

“An opportunity to talk to industry leaders”

February 25 - 26, 2009

Wednesday - February 25th 10:00 am - 7:00 pm (Exhibit Hours)

Refreshment Breaks, Lunch, and Reception in Exhibit Area.

Thursday - February 26th 10:00 am - 5:00 pm (Exhibit Hours)

Refreshment Breaks and Lunch in Exhibit Area.

Tabletop Registration Fees

	On or before 1/23/09	After 1/23/09
IMAPS Corporate/Organizational Member	\$475 per booth	\$575 per booth
IMAPS Non-Corporate/Organizational Member	\$575 per booth	\$675 per booth

Included With Your Registration

- one (1) six foot draped table
- two (2) chairs
- 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 not included, but are available at an additional cost; see the registration page.

Shipments are made to the hotel directly. You save money because no service contractor is involved!

International Plaza Resort
10100 International Drive
Orlando, Florida 32821
Phone: 407-352-1100

Cancellation Policy

Booth cancellations made on or before 1/23/09 will receive a refund minus \$100 handling fee.
Booths cancelled after 1/23/09 will not be refunded.

For more information, visit www.imaps.org/printed or contact:

Ann Bell, abell@imaps.org; 202-548-8717

Marketing Feature Available for Exhibitors

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

This unique feature will allow exhibiting companies an unlimited amount of promotional material for their products and services that will go well beyond their exposure at the Workshop.

There is no charge for this optional feature. **However, the deadline (2/20/09) must be met in order to be included.**

Submissions should be sent electronically in one (1) file, either PDF or Word, that is easy to open, not password-protected and in a logical format. Any materials not sent in the required format or that arrive after the deadline, may not appear on the CD-ROM. Send files to abell@imaps.org on or before February 20, 2009.

REGISTRATION FORM (REGISTER ON-LINE AT WWW.IMAPS.ORG/PRINTED)

PRINTED DEVICES AND APPLICATIONS ATW - FEBRUARY 25 -27, 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 2/11/09**

WORKSHOP FEES

	(On or before 2/11)	(After 2/11)
<input type="checkbox"/> Member (IMAPS)*	\$600	\$700
<input type="checkbox"/> Non-Member*	\$700	\$800
<input type="checkbox"/> Speaker* <input type="checkbox"/> Chair* <input type="checkbox"/> Chapter Officer*	\$400	\$500
<input type="checkbox"/> Student*	\$150	\$200
<input type="checkbox"/> Exhibits Only	\$25	\$25

*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.

TABLETOP EXHIBIT BOOTH

	(On or before 1/23)	(After 2/11)
<input type="checkbox"/> Member	\$475	\$575
<input type="checkbox"/> Non-Member	\$575	\$675
<input type="checkbox"/> Yes, I will participate in the CD-ROM		FREE

Tabletop registration fee includes 1-six foot draped table, 2 chairs, Exhibit Hall admission for 2 booth personnel, list of attendees & CD-ROM participation. A CD-ROM of Technical Presentations and 1-list of attendees will be sent to you after the event.

Exhibits will be on February 25th & 26th.

Exhibit cancellation must be received on January 23, 2009; \$100 cancellation fee applied. No refunds issued after this date.

ADDITIONAL PURCHASES

<input type="checkbox"/> Guest/Family Member (meals only)	\$150
<input type="checkbox"/> Printed Devices CD of Presentations (member)	\$200
<input type="checkbox"/> Printed Devices 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 January 22, 2009)

INTERNATIONAL PLAZA RESORT
10100 INTERNATIONAL DRIVE
ORLANDO, FLORIDA 32821
PHONE: 1-407-352-1100
[HTTP://WWW.INTLPLAZARESORT.COM/](http://WWW.INTLPLAZARESORT.COM/)

Single/Double: \$149/night

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

PAYMENT

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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.

Wire Transfers: IMAPS North America will accommodate requests for payment to IMAPS by wire transfer. The party requesting to pay by wire transfer will be charged an additional fee of \$25 (U.S.) regardless of the amount of the transfer. Contact Rick Mohn, IMAPS HQ at 202-548-4001 or rmohn@imaps.org for more information.

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 Cancellation** will be refunded (less a \$50 processing fee) only if written notice is postmarked on or before **Wednesday, February 11, 2009**. No refunds will be issued after that date.

IMAPS Registration
611 2nd Street, NE
Washington, DC 20002-4909

"Return Service Requested"

Presorted
First-Class Mail
U.S. Postage
PAID
Merrifield, VA
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