

Ford Motor Company Conference and Event Center Dearborn, Michigan May 22–23, 2013

Except where noted, all meetings will take place in the Grand Hall Suites 1 and 2

Wednesday, May 22, 2013

7:30 AM	Breakfast and Registration (Gallery)
8:15 AM	Opening Remarks Yogesh B. Gianchandani, General Chair
8:25 AM	Plenary I "Revitalizing American Manufacturing – Challenges and Opportunities" Sridhar Kota, University of Michigan
8:55 AM	Discussion
9:05 AM	Plenary II "Commercializing MEMS: A View From the Trenches"Kurt Petersen, Profusa, Inc.
9:35 AM	Discussion
9:45 AM	Break (Gallery)
10:00 AM	Industry Needs Session – A. John Hart, Chair
	"Micro and Nano Technologies for Enhanced Thermal Management of Electronic Components"
	Avram Bar-Cohen, Kaiser Matin, DARPA-MTO
	"Nanosensor Technologies for the Oil and Gas Industry"David T. Chapman, AEC
	"Micro and Nanotechnology for the Treatment of Cancer"John J. Janik, Stryker IMT
	"To Integrate or Not to Integrate: A Case Study on System-in-Package Integration for MEMS-Based Products" David J. Monk, Freescale Semiconductor
	"Nanotechnology on the Farm"Scott D. Piggott, Michigan Farm Bureau
11:40 AM	One-Minute Poster Presentations

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12:10 AM	Lunch and Poster Session I (Gallery)
1:30 PM	Manufacturing Processes Session – Katsuo Kurabayashi, Chair
	"Roll-to-Roll Nanofabrication Technologies With Applications in Display and Organic Photovoltaics" L. Jay Guo, University of Michigan
	"Roll-To-Roll Manufacturing of Carbon Nanotube Forests and Graphene Films" A. John Hart, University of Michigan
	"Heterogeneous Functional Integration and Manufacturing at the Micro and Nanoscales" Placid M. Ferreira, University of Illinois, Urbana-Champaign
	"High Throughput Nanopatterning With Enabling Applications in Electronics, Energy, and Biomedicine"S.V. Sreenivasan, University of Texas – Austin
2:50 PM	Break (Gallery)
3:10 PM	Manufacturing Processes Session (continued)
	"Prototyping and Manufacturing Below 10-nm: Approaching Atomic-Scale Nanofabrication"
	Karl K. Berggren, Massachusetts Institute of Technology
	"Advanced Nanomaterials-Based Manufacturing Platform for Printed Sensors, Electronics, Energy, and Material Applications" Ahmed A. Busnaina, Northeastern University
	"Multi-Scale Integration of Soft Polymers in Silicon Microsystems"Katsuo Kurabayashi, University of Michigan
	"High Throughput Atmospheric Pressure Atomic Layer Deposition on Polymers and Fibers"
	Gregory N. Parsons, North Carolina State University
	"3D Stacking via Transfer Printing and Wafer Bonding: Interface and Process Mechanics" Kevin T. Turner, University of Pennsylvania
4:50 PM	Adjourn
	The Henry Ford Museum
6:30 PM	Hors D'aeuvres Recention

7:15 PM Dinner and Guest Speaker

"Microelectronics in the "More Than Moore" Age: Becoming a Truly
Pervasive Technology"Kensall D. Wise, University of Michigan

8:15 PM Museum Free Time

11:00 PM Museum Closes

Thursday, May 23, 2013

7:30 AM Breakfast (Gallery)

8:10 AM Opening Remarks

"Envisioning the Engineering Advertures That Lie Ahead"

...Lynn Conway, University of Michigan

8:20 AM Manufacturing Processes Session (continued)

"Nanomanufacturing as a Route to Enhanced MRI Agents"

...Gary Zabow, NIH, NINDS

"Stochastic Manufacturing Processes: Massively Parallel Micro-Scale Self-Assembly"Karl F. Böhringer, University of Washington

9:00 AM Infra-Technologies and Policy Session – A. John Hart, Chair

"Standards Ecosystem for Nano- and Micro-Manufacturing: Key Components in the Bridge to Commercialization"

...Herbert S. Bennett, NIST

"NSF NNIN: From Invention to Innovation"

...Khalil Najafi, University of Michigan

"Maskless Photolithography: Changing the Game in Nano and Micro Manufacturing" ...Henry I. Smith, Massachusetts Institute of Technology

10:00 AM Break (Gallery)

10:20 AM Infra-Technologies and Policy Session (continued)

"The Nanometrology Bottleneck: Challenges and Recent Advances"

...J. Alexander Liddle, NIST

"Nano-Doom?: The Myths, Facts, and Uncertainties Surrounding the Environmental and Public Health Implications of Nanotechnology"
...Desiree L. Plata, Duke University

11:00 AM One-Minute Poster Presentations

11:30 AM Lunch and Poster Session II (Gallery)

1:00 PM Parallel Panel Sessions

<u>Panel I – Discussion on Future Manufacturing</u> Grand Hall 1 ...Andrew D. Oliver, Moderator

Opening Talk

"Continuous Nanomanufacturing From Bench to Commercialization"
...Jessica Winter, Core Quantum Technologies and Ohio State University

Panelists: Flávia Cassiola, Kalyan Handique, Sandrine Martin, Khalil Najafi, Henry Smith

<u>Panel II – Discussion on Barriers to Commercialization</u> Grand Hall 2 ...Joseph M. Giachino, Moderator

Opening Talk

"Technology Clusters and Their Role in Commercialization"

...Roger Grace, Roger Grace Associates

Panelists: Patricia Glaza, Roger Grace, Karen Lightman, John Palmer, Raymond Roop

2:10 PM Wrap-up and Adjourn

...A. John Hart and Katsuo Kurabayashi

OPTIONAL: Tour of Lurie Nanofabrication Facility at the University of Michigan

2:30 pm - Leave Ford Event Center 5:00 pm - Return to Ford Event Center

To Sign Up Contact: Khaled Mnaymneh, kmnay@umich.edu