

Workshop Program

NSF Workshop on Sensing and Prognostics for Scalability of Nanomanufacturing
Nov 2-4, 2009, Northeastern University, Boston, MA

Workshop Reception: November 2, 2009 (Curry Student Center – First Floor)	
5:30 – 8:00 PM	Registration
6:00 – 8:00 PM	Workshop reception and poster session
6:30 – 8:00 PM	Group tours of the NSEC for High-Rate Nanomanufacturing at Northeastern University

Day 1: November 3, 2009, Pre-Lunch Session (333 Curry Student Center)	
7:00 – 8:00 AM	Registration and breakfast (340 Curry Student Center)
8:00 – 8:15 AM	Welcome by workshop organizers
8:15 – 8:25 AM	Welcome by David Luzzi, Dean of Engineering, Northeastern University
8:25 – 8:40 AM	<i>Nano-manufacturing at the National Science Foundation</i> Cerry Klein, Program Director, Manufacturing Enterprise Systems Program, NSF
8:40 – 8:55 AM	<i>Interdisciplinary research (IDR) in Nanomanufacturing</i> Bruce Kramer, Senior Advisor, Division of Civil, Mechanical and Manufacturing Innovation, NSF
8:55 – 9:25 AM	Keynote Talk: <i>The New Frontiers in Nanomanufacturing: Are we ready?</i> Keynote Speaker: Anita Goel, Chairman, Scientific Director, and CEO, Nanobiosym, Inc.
9:25 – 9:45 AM	Plenary Talk 1: <i>Nanomanufacturing yield, scalability, repeatability and reliability</i> Ahmed Busnaina, Director, NSEC CHN, Northeastern University
9:45 – 10:05 AM	Plenary Talk 2: <i>Issues and Some Solutions for Scalable Nanomanufacturing</i> Placid Ferreira, Director, NSEC Nano-CEMMS, UIUC
10:05 – 10:25 AM	Plenary Talk 3: <i>Can Polymer Self-Assembly Transition from Si-Wafer Based Technology to a Reliable, High Volume Roll-Roll Manufacturing Platform for Low Cost Devices?</i> James Watkins, Director, NSEC CHM, UMass Amherst
10:25 – 10:45AM	Coffee break
10:45 – 11:15 AM	<i>Topic 1: Process yield & repeatability issues in nanomanufacturing</i> Group Leader: Julie Chen Speaker A: JC Lu Speaker B: Roshan Venagzhiiyl
11:15 – 11:45 AM	<i>Topic 2: Quality & reliability issues in nanomanufacturing</i> Group Leader: Elsayed Speaker A: Kermit Stearns Speaker B: David Coit
11:45 – 12:15 PM	<i>Topic 3: Sensing & prognostics issues in nanomanufacturing</i> Group Leader: Soundar Kumara Speaker A: Rod Rouff Speaker B: Robert Gao
12:15 – 12:20 PM	Charge to the Workshop participants
12:20 – 1:15 PM	Lunch Break

Day 1: November 3, 2009, Post-Lunch Session (333 Curry Student Center)	
1:15 – 1:45 PM	<p><i>Topic 4: Planning & control issues in nanomanufacturing</i> Group Leader: Rich Wysk Speaker A: Mark Tuominen Speaker B: Sang Kim</p>
1:45 – 2:15 PM	<p><i>Topic 5: Cost & scale-up issues in nanomanufacturing</i> Group Leader: John Maguire Speaker A: Ajay Malshe Speaker B: Kamlakar Rajurkar</p>
2:15 – 2:45PM	<p>Group 1: Process yield & repeatability (334 Curry Student Center) Group Leader: Julie Chen Group Members: Q. Huang, P. Kvam, JC Lu, N. Sun, K. Varanasi, R. Venagzhiyil, M. Chandross Presentation: Julie Chen, Qiang Huang, Paul Kvam, M. Chandross</p> <p>Group 2: Quality & reliability (335 Curry Student Center) Group Leader: Elsayed Group Members: J. Benneyan , D. Coit, T. Dasgupta, J. Klemic, K. Stearns, T. Yuan, S. Zhou, M. Feng, M. Herndon, H. Liao Presentation: Thirtankar Dasgupta, James Klemic, Elsayed, Tao Yuan, Shiyu Zhou, May Feng</p> <p>Group 3: Sensing & prognostics (336 Curry Student Center) Group leader: Soundar Kumara Group Members: J. Kong, D. He, R. Gao, Y. Lin, T. Mooney, R. Rouff, P. Sundar Presentation: P. Sundar, D. He, S. Kumara, T. Mooney</p> <p>Group 4: Planning & control (340 Curry Student Center) Group Leader: Rich Wysk Group Members: K. Brommer, J. Cecil, S. Kim, Y. Kuo, J. Morse, M. Tuominen, E. melachrinoudis Presentation: Karl Brommer, Yue Kuo, Jeff Morse, Rich Wysk</p> <p>Group 5: Cost & scale-up (344 Curry Student Center) Group Leader: John Maguire Group Members: R. Boll, M. Chen, J. Isaacs, S. Leary, A. Malshe, K. Rajurkar, H. Richter Presentation: Rebecca Boll, Michelle Chen, John Maguire, Henning Richter</p>
2:45 – 3:00 PM	Coffee break
3:00 – 4:00 PM	<p>Group 1: Process yield & repeatability (334 Curry Student Center) Group Leader: Julie Chen Group Members: Q. Huang, P. Kvam, JC Lu, N. Sun, K. Varanasi, R. Venagzhiyil, M. Chandross Scribe/Report: Qiang Huang, Paul Kvam, M. Chandross</p> <p>Group 2: Quality & reliability (335 Curry Student Center) Group Leader: Elsayed Group Members: J. Benneyan , D. Coit, T. Dasgupta, J. Klemic, K. Stearns, T. Yuan, S. Zhou, M. Feng, M. Herndon, H. Liao Scribe/Report: Thirtankar Dasgupta, James Klemic, Tao Yuan, Shiyu Zhou, May Feng</p> <p>Group 3: Sensing & prognostics (336 Curry Student Center) Group Leader: Soundar Kumara Group Members: J. Kong, D. He, R. Gao, Y. Lin, T. Mooney, R. Rouff, P. Sundar Scribe/Report: P. Sundar, David He, Tom Mooney</p> <p>Group 4: Planning & control (340 Curry Student Center) Group Leader: Rich Wysk Group Members: K. Brommer, J. Cecil, S. Kim, Y. Kuo, J. Morse, M. Tuominen, E. melachrinoudis Scribe/Report: Karl Brommer, Yue Kuo, Jeff Morse</p> <p>Group 5: Cost & scale-up (344 Curry Student Center) Group Leader: John Maguire Group Members: R. Boll, M. Chen, J. Isaacs, S. Leary, A. Malshe, K. Rajurkar, H. Richter Scribe/Report: Rebecca Boll, Michelle Chen, Henning Richter</p>
4:00 – 5:00 PM	Group presentations (10 minutes each group)
6:00 – 9:00 PM	Dinner reception

Day 2: November 4, 2009 (333 Curry Student Center)	
7:00 – 8:00 AM	Breakfast (340 Curry Student Center)
8:00 – 8:15 AM	Comments by organizing committee
8:15 – 8:30 AM	Welcome, Hameed Metgalchi, Chair, Dept. of Mechanical & Industrial Eng., Northeastern University
8:30 – 10:30 AM	<p style="text-align: center;">Breakout Group Report Writing</p> <p>Group 1: Process yield & repeatability (334 Curry Student Center) Group Leader: Julie Chen Group Members: Q. Huang, P. Kvam, JC Lu, N. Sun, K. Varanasi, R. Venagzhiyil, M. Chandross Scribe/Report: Qiang Huang, Paul Kvam, M. Chandross</p> <p>Group 2: Quality & reliability (335 Curry Student Center) Group Leader: Elsayed Group Members: J. Benneyan, D. Coit, T. Dasgupta, J. Klemic, K. Stearns, T. Yuan, S. Zhou, M. Feng, M. Herndon, H. Liao Scribe/Report: Thirtankar Dasgupta, James Klemic, Tao Yuan, Shiyu Zhou, May Feng</p> <p>Group 3: Sensing & prognostics (336 Curry Student Center) Group Leader: Soundar Kumara Group Members: J. Kong, D. He, R. Gao, Y. Lin, T. Mooney, R. Rouff, P. Sundar Scribe/Report: P. Sundar, David He, Tom Mooney</p> <p>Group 4: Planning & control (340 Curry Student Center) Group Leader: Rich Wysk Group Members: K. Brommer, J. Cecil, S. Kim, Y. Kuo, J. Morse, M. Tuominen, E. melachrinoudis Scribe/Report: Karl Brommer, Yue Kuo, Jeff Morse</p> <p>Group 5: Cost & scale-up (344 Curry Student Center) Group Leader: John Maguire Group Members: R. Boll, M. Chen, J. Isaacs, S. Leary, A. Malshe, K. Rajurkar, H. Richter Scribe/Report: Rebecca Boll, Michelle Chen, Henning Richter</p>
10:30 – 10:45 AM	Coffee break
10:45 – 11:45 AM	Group recommendations (10 minutes each group)
11:45 – Noon	Workshop evaluation
Noon – 1:30 PM	Lunch and close