



# ADVANCING NANOPARTICLE MANUFACTURING

Wednesday, October 7, 2015

| TIME     | EVENT  | PRESENTATION / SPEAKER, AFFILIATION  | CHAIR               |
|----------|--|--|---------------------|
| 7:30 AM  | <b>Registration and Breakfast</b>  |  |                     |
| 8:30 AM  | <b>Opening Remarks</b>   | <i>Welcome to Advancing Nanoparticle Manufacturing</i><br>Robert Celotta, NIST   | Samuel Stavis       |
| 8:50 AM  | <b>Speaker Session 1:<br/>Scaling Up<br/>Nanoparticle<br/>Manufacturing and<br/>Processing</b>     | <i>Advancing Nanoparticles from the Flask to Applications: Strategies for Functional Synthesis, Scale-up and Precision Integration</i><br>Jennifer Hollingsworth, Los Alamos National Laboratory<br><br><i>Scaling Up the Nanoscale: Addressing Reproducibility in Nanoparticle Fabrication, Processing and Storage</i><br>Aaron Saunders, nanoComposix<br><br><i>Accelerated Development, Optimization and Scale-Up of Nano-Feedstock Materials for Additive Manufacturing</i><br>T. Yong-Jin Han, Lawrence Livermore National Laboratory | Samuel Stavis       |
| 10:20 AM | <b>Break</b>   |  |                     |
| 10:30 AM | <b>Speaker Session 2:<br/>Assembling<br/>Nanoparticles<br/>into Materials and<br/>Devices</b>      | <i>Building with Artificial Atoms: Preparation and Properties of Nanocrystal Superlattices</i><br>Chris Murray, University of Pennsylvania<br><br><i>Towards Designed Nanoscale System via Self-Assembly</i><br>Oleg Gang, Brookhaven National Laboratory<br><br><i>Large-Area Fabrication of Electronic and Optical Devices from Colloidal Nanocrystals</i><br>Cherie Kagan, University of Pennsylvania   | J. Alexander Liddle |
| 12:00 PM | <b>Lunch</b>   |  |                     |
| 12:30 PM | <b>NanoFab Tour (by request)</b>   |  |                     |
| 1:00 PM  | <b>Speaker Session 3:<br/>Manufacturing<br/>Nanoparticles<br/>for Medical<br/>Applications</b>     | <i>Manufacturing Personalized Nanomedicines</i><br>Srinivas Sridhar, Northeastern University, Harvard University<br><br><i>Biomedical Applications with Magnetic Iron Oxide Nanoparticles: Manufacturing and Other Considerations</i><br>Robert Ivkov, Johns Hopkins University<br><br>“...”<br>Scot Shepard, Takeda Vaccines  | Jack Douglas        |
| 2:30 PM  | <b>Break</b>   |  |                     |
| 2:50 PM  | <b>Speaker Session 4:<br/>Manufacturing and<br/>Commercializing<br/>Polymer<br/>Nanocomposites</b> | <i>Manufacturing Zirconia Polymer Nanocomposites</i><br>Dan Russell, Pixelligent Technologies<br><br><i>Commercialization Barriers for Polymer Nanocomposites</i><br>Lee Silverman, DuPont   | Lauren Greenlee     |
| 3:50 PM  | <b>Poster and<br/>Networking Session</b>   | We invite all registered participants to present a poster  | Jeffrey Fagan       |
| 5:30 PM  | <b>Workshop Adjourns</b>   |  |                     |
| 6:30 PM  | <b>Workshop Banquet</b>  |  |                     |

Workshop sessions will take place in Building 215, Room C103-106, with the exception of the poster and networking session, which will take place in Building 101, Hall of Flags. **This agenda is provisional and subject to revision.**



# ADVANCING NANOPARTICLE MANUFACTURING

Thursday, October 8, 2015

| TIME     | EVENT   | PRESENTATION / SPEAKER, AFFILIATION   | CHAIR                          |
|----------|---|---|--------------------------------|
| 7:30 AM  | Registration and Breakfast  |   |                                |
| 8:30 AM  | Opening Remarks   | <i>Challenges and Opportunities Facing the National Nanotechnology Initiative</i><br>Lloyd Whitman, Executive Office of the President     | Samuel Stavis                  |
| 8:50 AM  | Speaker Session 5:<br>Processing<br>Carbon Nanotubes<br>for Electronic<br>Applications                  | <i>Tailored Single-Walled Carbon Nanotubes for Printed Electronics Applications</i><br>Ricardo Prada Silvy, SouthWest NanoTechnologies    | Ming Zeng                      |
|          |   | <i>Advances in Single-Walled Carbon Nanotube Population Refinement via Aqueous Two-Phase Extraction</i><br>Jeffrey Fagan, NIST            |                                |
|          |   | <i>Harnessing Carbon Nanotubes for VLSI Technology</i><br>Wilfried Haensch, IBM TJ Watson Research Center                                 |                                |
| 10:20 AM | Break   |   |                                |
| 10:30 AM | Speaker Session 6:<br>Characterizing<br>Carbon Nanotubes<br>for Optical<br>and Material<br>Applications | <i>Optoelectronics with Macroscopically Aligned Carbon Nanotubes</i><br>Junichiro Kono, Rice University                                   | Jeffrey Fagan                  |
|          |   | <i>Semiconductor Nanoparticle and Carbon Nanotube Architectures for Solar Hydrogen Production</i><br>Todd Krauss, University of Rochester |                                |
|          |   | <i>Optical Spectroscopy in Single-Walled Carbon Nanotube Applications</i><br>R. Bruce Weisman, Rice University                            |                                |
|          |   | "..."<br>Matteo Pasquali, Rice University   |                                |
| 12:30 PM | Lunch   |   |                                |
| 1:00 PM  | NanoFab Tour (by request)   |   |                                |
| 1:30 PM  | Speaker Session 7:<br>Developing Tools<br>and Techniques<br>for Characterizing<br>Nanoparticles         | <i>Advances in Nanoparticle Characterization Techniques for Life Science Applications</i><br>Samiul Amin, Malvern Instruments             | J. Alexander Liddle            |
|          |   | <i>ZENO: A Computational Tool For Nanoparticle and Polymer Characterization</i><br>Jack Douglas, NIST                                     |                                |
|          |   | <i>Nanofabricated Devices and Optical Microscopy for Nanoparticle Characterization</i><br>Samuel Stavis, NIST                             |                                |
| 3:00 PM  | Break   |   |                                |
| 3:20 PM  | Speaker Session 8:<br>Working Together<br>to Advance<br>Nanoparticle<br>Manufacturing                   | "..."<br>Frank Gayle, Advanced Manufacturing National Program Office  | Samuel Stavis                  |
| 3:50 PM  | Open Discussion<br>Session  | We encourage all registered participants to speak their minds   | Samuel Stavis<br>Jeffrey Fagan |
| 5:30 PM  | Workshop Ends   |   |                                |

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