

## **US-China Workshop on Nanotechnology**

**March 22<sup>nd</sup>-24<sup>th</sup>, 2006**

*All technical sessions (except poster display on evening of 22<sup>nd</sup>) will be held in room 1235 at NSF Headquarters, Arlington, Virginia*

### **Mar 22 (Weds)**

7.30 - 9.00 pm: Reception for all participants and poster display, Holiday Inn

### **Mar 23 (Thurs)**

#### ***Technical sessions***

8.00 Continental breakfast, NSF Room 1235

8.30 Welcome, introductions, chairs (Robert Hull, University of Virginia and Gang Wang, Institute of Physics, Chinese Academy of Sciences)

8.45 Overview of Nanotechnology in the US (M. Roco, National Science Foundation)

#### **Session 1 - Self assembly**

9.15 Chen Wang, National Center for Nanoscience and Technology, “Responsive Self-assembled Molecular Nanostructures on Surfaces”

9.40 Randy Heflin, Virginia Tech, “Organic Optoelectronics with Ionic Self-Assembled Multilayers”

10.05 Break

10.40 Weiping Cai, Institute of Solid State Physics, Chinese Academy of Sciences, “Nanostructured Porous Arrays and Devices based on Colloidal Monolayer”

11.05 Robert Hull, University of Virginia, “Hierarchical Assembly of Semiconductor Nanostructures”

11.30 Lunch (NSF Room 1235)

#### **Session 2 - Fundamental behavior of electrons & photons at the nanoscale**

12.45 Ningsheng Xu, State Key Laboratory of Optoelectronic Materials and Technologies, “Cold-Cathode Field Electron Nanoemitter Materials and their Device Applications”

1.10 Teri Odom, Northwestern University, “Manipulating Light in Nanohole Arrays”

1.35 Lianmao Peng, Institute of Physical Electronics, Peking University, “In-Situ Fabrication and Measurements of Electrical Properties of Individual Nanotubes and Nanowires with near Atomic Resolution”

2.00 Theresa Mayer, Penn State University, “Thermally-Oxidized Silicon Nanowires: Interfacial Properties and Field Effect Devices”

2.25 Break

### Session 3 - Surface and Catalytic Nanoscience

2.50 Xinhe Bao, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, “Catalytic Chemistry of Confined Metallic Nano-Particles”

3.15 Robert Nemanich, North Carolina State University, “Nanoscale Imaging and Patterning of Polar Surfaces for Selective Molecular Adhesion and Photochemical Reactions”

3.40 Jingfeng Jia, Institute of Physics, Chinese Academy of Sciences, “Quantum Size Effect in Nanostructures”

4.05 Peter Eklund, Penn State University, “Single-Walled Carbon Nanotubes for EMI Shielding”

4.30 Mingyuan Gao, Institute of Chemistry, Chinese Academy of Sciences, “Preparation, Physical Properties and Bioapplications of Inorganic Nanocrystals”

5.00-6.30 Poster session, NSF Room 1235

7.30 Dinner at The Chart House Restaurant in Alexandria

### **Mar 24 (Fri)**

#### ***Technical sessions***

7.30 Continental breakfast, NSF Room 1235

8.00 Overview of Nanotechnology in China (CAS Executive Vice President Chunli Bai)

### Session 4 Tools for Nanotechnology

8.30 Renu Sharma, ASU, “Dynamic Observations of Processing and Characterization of Active Nanomaterials”

8.55 Ping Sheng, Department of Physics and Institute of Nano Science and Technology  
Hong Kong University of Science & Technology, “Nanoparticles-based Microfluidic Mixer Chip”

9.20 Bob Hocken, University of North Carolina at Charlotte, “Multi-Scale Alignment  
Positioning System (MAPS)”

9.45 Shoushan Fan, Condensed Matter Physics, Tsinghua University, “Carbon Nanotubes: Controlled  
Synthesis and Possible Applications”

10.10 Break

#### Session 5 Environmental, Societal and Educational Dimensions

10.30 Zhiping Zhang, Wuhan Institute of Virology, Chinese Academy of Sciences, “Biosensitive  
Element Manipulations and applications of Nano-biosensor in Bio-analysis”

10.55 Bob Chang, Northwestern University, “An US Effort in Nanotechnology Education”

11.20 Shuit-Tong Lee, Materials Science, City University of Hong Kong “Synthesis and  
Properties of Si and II-VI Nanowires”

11.45 Wei-xian Zhang, Lehigh University, “Nanotechnologies for Environmental Restoration  
and Remediation”

12.10 – 1.45 Lunch at Hilton hotel adjacent to NSF

#### Session 5 Environmental, Societal and Educational Dimensions - continued

1.45 Ke Lu, Director, Institute of Metal Research, Chinese Academy of Sciences,  
“Mechanical Properties of Copper with Nano-scale Twins”

2.10 Barbara Karn, Wilson Center, Title to be Provided

2.35 Richard Applebaum, UC Santa Barbara, “Overview of the proposed work of the Center for  
Nanotechnology in Society (CNS) at the University of California, Santa Barbara”

3.00 Jun Li, The Biomedical Engineering Center of Hunan University, “The Investigation of  
Biocompatible Characters of Silica based Core-Shell Nano-particles”

3.30 – 4.30 Collaborative discussions and future plans

6.30 Dinner at the Front Page Restaurant in Arlington

## **Poster Presentations**

Thomas Pearl, North Carolina State University, “Probing surface chemical reactions, interactions, and behavior of single molecules with atomic scale tools”

Lincoln Lauhon, Northwestern University, “Semiconductor Nanowires: Visualization of Nanoscale Composition and Carrier Transport”

Yoke Khin Yap, Michigan Technological University, “Growth and Characterization of Carbon, Boron Nitride, and ZnO Nanotubes”

Keith Williams, University of Virginia, Title to be provided

Jordan Poler, UNC-Charlotte, “Binding of Rigid Dendritic Ruthenium Complexes to Carbon Nanotubes”

Chen Wang, National Center for Nanoscience and Technology, “Responsive Self-assembled Molecular Nanostructures on Surfaces”

Weiping Cai, Institute of Solid State Physics, Chinese Academy of Sciences, “Mono-, Multi-layer Nanostructured Porous Films and Gas Sensors”

Li Song et al., Institute of Physics, Chinese Academy of Sciences, “Controllable Synthesis and Temperature Dependence of Raman Scattering of SWNT rings”

Zengxing Zhang et al., Institute of Physics, Chinese Academy of Sciences, “Growth of Periodic Single-crystal ZnO Nano-beaded-chains”

Mingyuan Gao, Institute of Chemistry, Chinese Academy of Sciences, “Preparation and Bioapplications of Inorganic Nanocrystals”

Jingfeng Jia, Institute of Physics, Chinese Academy of Science, “Quantum Size Effect in Nanostructures”