

**Nanoprobe Laboratory for Bio- & Nanotechnology and Biomimetics (NLB²)
The Ohio State University**

**NLBB Sixteenth Annual Research Meeting and Short Course Agenda
July 27-28, 2009**

**E100 Scott Laboratory
(Please note, the room number has changed)**

201 W. 19th Avenue, Columbus, OH 43210-1142

Monday, July 27, 2009

7:45 - 8:25	Registration and Continental Breakfast
8:30 - 8:35	College Dean's Welcome (Prof. G. Washington)
8:35 - 9:00	NLBB Director's Report (Prof. B. Bhushan)
9:00 - 9:10	OSU Faculty Presentation (Prof. S. Babu)
9:10 - 12:15	<i>Short Course</i>
12:30 - 1:45	Buffet Lunch at the Blackwell
2:00 - 5:00	Research Projects Presentations
5:00 - 5:30	Laboratory Walk Through (W374, W376, W380, W381 Scott Laboratory)
7:30 - 9:30	Dinner at Martini's 445 North High Street 614-224-8259

Tuesday, July 28, 2009

8:00 - 8:30	Continental Breakfast
8:30 - 12:15	Research Projects Presentations
12:30 - 1:45	Buffet Lunch at Faculty Club, Lower Level
2:00 - 2:30	<i>Presentations by Industry</i>
2:30 - 2:45	Advisory Council Meeting
2:45 - 3:30	Individual Meetings (on request)

Monday, July 27, 2009

OSU Faculty Presentation

9:00 - 9:10 OSU Faculty Presentation (Role of Multi-scale Modeling and Characterization for Energy Storage Device Performance)

Short Course

9:10 - 10:15 Nanotribology, Nanomechanics and Material Characterization Studies and Applications to Bio/nanotechnology and Biomimetics

10:15 - 10:45 **Coffee Break**

10:45 - 12:15 AFM Probe-based Data Recording Technology
Biomimetics - Lessons from Nature: An Overview

12:30 - 1:45 **Buffet Lunch at the Blackwell**

Research Projects Presentations

Atomic Force Microscopy

2:00 – 3:00 Normal and Lateral Force Calibration Techniques for AFM Cantilevers
AFM Electric Force Microscopy
Quantitative Mechanical Measurement at the Nanometer Scale (Peter De Wolf, Veeco Instruments)

Nanotribology and Nanomechanics

3:00 – 3:30 AFM-Based Nanotribological and Electrical Characterization of Ultrathin Wear-Resistant Ionic Liquid Films

3:30 – 4:00 **Coffee Break** (Lab Group Photo)

4:00 – 5:00 Nanotribological Properties of Novel Lubricants for Magnetic Tapes
Humidity Effect on Carbon Nanotube Interaction with Graphite

Laboratory Tour

5:00 - 5:30 Laboratory Walk Through (W374, W376, W380, W381 Scott Laboratory)

Tuesday, July 28, 2009

8:00 - 8:30 **Continental Breakfast**

Research Projects Presentations

Bio- & Nanotechnology

8:30 – 9:30 Boundary Slip and Nanobubble Study in Micro/Nanofluidics with Atomic Force Microscope
Morphology of Block Copolymer Films for Bone Regeneration Scaffold Applications (with Prof. S. Schricker, College of Dentistry)
Friction and Wear of New Dental Materials (with Prof. S. Schricker, College of Dentistry)

Biomimetics

9:30 - 10:00 Lotus Effect: Surfaces with Roughness-Induced Superhydrophobicity, Self-Cleaning and Low Adhesion
10:00 - 10:30 **Coffee Break**
10:30 - 11:00 Mechanically Durable Superhydrophobic, Self-Cleaning, and Low-Drag Surfaces with Hierarchical Structure
Gecko-Inspired Hierarchical Structures for Reversible Adhesion

Beauty Care Products

11:00 – 11:30 Adhesion, Friction and Wear Characterization of Skin and Skin Cream Using Atomic Force Microscope

Batteries Aging

11:30 - 12:00 Aging Mechanisms in Lithium-ion Batteries (with Profs. S. Babu, G. Rizzoni, and Y. Guezenec, College of Eng.)

New Projects

12:00 - 12:15 Shark-Skin Inspired Structures for Low Drag
Biomimetic-Inspired Superhydrophobic and High Adhesion Surfaces
Nanotribology of Digital Microprojectors
12:30 - 1:45 **Buffet Lunch at Faculty Club, lower level**

Presentations and Demos by Industry/Visitors

2:00 – 2:30 Green Lasers for Microprojection Displays, Satish Chaparala, Corning
Instrumented Nanoindenting with the MFP-3D AFM, John Green, Asylum Research
Mechanical Testing at the Nanoscale, Hysitron Inc.