

CINT Users Conference

September 14-16, 2011

Marriott Pyramid Hotel, Albuquerque, NM

Agenda

Wednesday Evening, September 14

Location

- 5:00 pm User Conference Registration Desk open
 Informal Meet & Greet Reception
- 5:30 – 6:30 pm **Special Session for Industrial Users**
 Organizer: Andrew Dattelbaum, CINT
- 8:00 pm Registration Desk closed
 Reception ends

Thursday Morning, September 15

Location

Moderator: Tom Picraux, CINT Chief Scientist

- 7:00 am Registration Desk opens
 Continental Breakfast available
 CINT User Executive Committee Caucus
- 8:30 am **David Morris**, CINT Director
 Neal Shinn, CINT Co-Director
- 8:45 am Plenary Speaker: **Raymond Orbach**,
 The University of Texas, Austin
- 9:30 am Break
- 10:00 am Plenary Speaker: **Michael Flatte**
 University of Iowa
- 10:45 am Plenary Speaker: **Ivan Schuller**
 University of California, San Diego
- 11:30 pm Buffet Lunch
 Informal poster viewing

Thursday Afternoon, September 15

Location

- 1:00 pm Concurrent Symposia
*I: Single Element Addressability and Control
from Soft to Hard Materials*
II: Probing Dynamic Nano Interfaces
- 5:00 pm Poster Session (Presenters at posters)
- 6:00 pm User Meeting Town Hall
(all conference attendees are welcome to attend)
- 7:00 pm Conference Dinner & Speaker

Friday Morning, September 16

Location

- 7:00 am Registration Desk open
Continental Breakfast available
- 8:00 am Concurrent Symposia
*I: Single Element Addressability and Control
from Soft to Hard Materials*
II: Probing Dynamic Nano Interfaces
- 12:00 pm Box Lunch available
- 1:00 pm *Tour of Core Facility (Optional)
*US Citizens only

Symposium I:

Single Element Addressability and Control from Soft to Hard Materials

Organizers:

Stephen K. Doorn, CINT Nanophotonics Partner Science Leader
Sasha Balatsky, CINT Theory and Simulation Partner Science Leader
Michael P. Lilly CINT Nanoscale Electronics and Mechanics Partner Science Leader

Single element interrogation and control are important issues in nanomaterials integration and applications ranging from single molecule and nanoparticle tracking and spectroscopy to control and measurement of single dopants. Such capabilities will also be an essential aspect of

advancing the emerging field of solotronics: optoelectronics based on single, independently addressable (optically, electronically, or magnetically) dopant or defect sites. To explore CINT's role in this arena, this symposium will encompass the following themes: Single molecule and nanoparticle spectroscopy, tracking, and control. Preparation of, and incorporation into, materials with single dopant sites. New functionality emerging from single defects and dopants. Imaging, spectroscopy and dynamics of single dopants. Correlated electrons and the emergence of new states inside a nominally "rigid" gap. These themes will include discussion of top-down generation and bottom-up synthesis techniques, exploration of defects and dopants in graphene, topological insulators and superconductors; single optical or magnetic dopants in quantum dots; dynamic probes of dopant migration at nanomaterials surfaces; and control and tracking of single molecules through nanopores.

Symposium II:
Probing Dynamic Nano Interfaces

Organizers:

Dvora Perahia, Clemson University

Gary Grest, CINT Nanophotonics Partner Science Leader

Due to their unique size and shape dependent, nanoparticles exhibit significance enhanced tunable electro-optical and magnetic characteristics, together with an exceptional mechanical strength in comparison with bulk materials. However integration of nanoparticles into materials and devices without losing their properties pose a barrier to bridging the gap from scientific discovery to engineering innovation that will take advantage of the enhanced properties of the nano particles. Integration requires control of structure and dynamics at interfaces, often requiring development of new experimental methodologies. Structure and dynamics at soft nano-interface as resolved by different techniques including optical methods, scattering techniques and computer simulations, will be discussed.