

Lehigh University's Center for Advanced Materials & Nanotechnology

Date: Monday, March 5th, 2012

Location: 3rd Floor Whitaker Lab, Room 303, Lehigh University, 5 E. Packer Ave. Bethlehem, PA

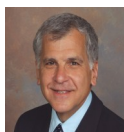
Time: 9:00 am – 5:00 pm

Cost: Free (Lunch Included) sponsored by the CAMN and LNN

Registration: <http://www.lehigh.edu/lnn/events.shtml> or email jdsj@lehigh.edu

OPEN HOUSE AGENDA (click on name to view research interests)

9:00 - 9:20



Gene Lucadamo, Industry Liaison
[Center for Advanced Materials and Nanotechnology \(CAMN\)](#)

9:20 - 9:50



[Dr. Helen M. Chan](#)
Materials Science and Engineering Department Chair

9:50-10:20



[Dr. Raymond A. Pearson](#)
Director: [Center for Polymer Science and Engineering](#)

10:20-10:30

Networking Session Break

10:30 - 11:00



[Dr. Xuanhong Cheng](#)
The Lab of Micro- and Nanotechnology for Diagnostics and Biology

11:00 - 11:30



[Dr. Richard P. Vinci](#)
Nano- and Micro-Mechanical Behavior Laboratory (NMBL)

11:30 - 12:40

Lunch and Lab Tours

12:40 - 1:10



[Dr. Martin P. Harmer](#)
Director: [Center for Advanced Materials and Nanotechnology](#)

1:10 - 1:40



[Dr. Himanshu Jain](#)
Director: [International Materials Institute for New Functionality in Glass](#)

1:40 - 1:50

Networking Session Break



Center for
Advanced Materials
and Nanotechnology



1:50 - 2:20



[Dr. Sabrina Jedlicka](#)
Biomaterials Laboratory

2:20 - 2:50



[Dr. Mark A. Snyder](#)
Department of Chemical Engineering

2:50 - 3:00

Networking Session Break

3:00 - 3:30



[Dr. Nelson Tansu](#)
Center for Optical Technologies

3:30 - 4:00



[Dr. Filbert J. Bartoli](#)
Electrical & Computer Engineering Department Chair

4:00 - 4:10

Networking Session Break

GRADUATE STUDENT SEMINAR: TARGET NANOTECH TALENT

4:10 - 4:35 **Timothy M. Prozonic=>Toughenability of Epoxies:
The Role of Crosslink Density vs. Average Functionality of Crosslinks**

Education:

Ph.D. candidate, Polymer Science and Engineering, Lehigh University, PA
B.S., Materials Science and Engineering, Lehigh University, PA, 2006



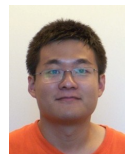
Research activities, consulting, patents, etc.:

Extensive research in fracture mechanics of epoxy resins, especially highly crosslinked epoxy resins for structural applications. Ph.D. dissertation focused on improving toughenability of epoxy resins, particularly by comparing the effects of cross link density and average curative functionality on toughenability. Materials characterization techniques used include mechanical characterization (DMA, TMA, Instron), thermal analysis (DSC), microscopy (SEM), and spectroscopy (FTIR). Additional research includes mechanical and thermal testing of lightly crosslinked rubber-modified epoxy resins for adhesive bonding purposes as well as evaluating the mechanical behavior of polyurea-based elastomers for ballistic coating applications. Research has been presented at several conferences and published in associated conference proceedings.

4:35 - 5:00 **(Ken) Qian Wu
Hafnium Doping Effect on Oxygen Grain Boundary Diffusion in α -Al₂O₃**

Education:

Ph.D. candidate, Materials Science and Engineering, Lehigh University, PA
B.S., Optical Science and Engineering, Fudan University, China 2007



Research activities, consulting, patents, etc:

Extensive research in processing and microstructural characterization of oxide –ceramics especially in diffusion study of dopants' effect on the rate of oxidation of alumina for high temperature structural applications in naval aircraft and ships. Ph.D. dissertation is focused on elucidating the impact of rare-earth dopants on grain boundary cationic and anionic transport in alumina. Materials characterization techniques used in the research are mainly focused on microscopy (TEM, SEM, FIB, AFM), spectroscopy (XRD) and ceramic processing techniques include spark plasma sintering, hot pressing, etc. Current research includes investigating dopants' segregation behavior at the alumina grain boundary by using high resolution TEM, correlating this with the transport data and exploring co-doping effect to obtain better oxidation resistance by using newly designed composite samples.

