

# **CHEMICAL, BIOLOGICAL & MATERIALS ENGINEERING**

100 E. Boyd, Sarkeys Energy Center, T-301

405-325-5811

The University of Oklahoma

Norman, Oklahoma

2012 – 2013 Seminar Series

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## **DR. PAUL ASHBY**

STAFF SCIENTIST

IMAGING AND MANIPULATION FACILITY

THE MOLECULAR FOUNDRY

LAWRENCE BERKELEY NATIONAL LABORATORY

BERKELEY, CALIFORNIA

Will present a seminar on

### **“ADVANCING ATOMIC FORCE MICROSCOPY FOR DEVELOPING EXTREME ULTRAVIOLET RESISTS AND IMAGING MEMBRANE PROTEINS”**

I will present my group's research in two areas: developing new resists for efficient lithographic patterning with extreme ultraviolet light and imaging membrane proteins with high spatial and temporal resolution. First, advanced resist materials fail to pattern at high resolution due to material bending and swelling. We have incorporated dilute crosslinking agents into a small molecule resist to significantly improve its patternability by increasing the material modulus and enhancing the solubility contrast. Second, membrane protein clustering is important for many signaling processes and cellular function. I will present innovations in my group to enable in-situ Atomic Force Microscopy to image membrane protein clustering in real time. Specifically, we have developed new probes that are 10 times more gentle and new scanning modes for much higher scan speeds.

**THURSDAY, APRIL 18, 2013**

**COOKIES AND COFFEE -- 1:45 P.M.**

**SEMINAR -- 2:00 P.M.**

**SARKEYS ENERGY CENTER, ROOM M-204**

**THIS IS A REQUIRED SEMINAR FOR CHE 5971**

Accommodations on the basis of disability are available by contacting the office before the event.