Physical Chemistry Laboratory  
CH 445/545 SB2 – B71 and SB2 405  
Spring 2012  
Thursday Section I: 8-12am Section II 1-5pm  
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Overview: This interdisciplinary Lab/lecture class is designed to providestudents with hands on learning experience valuable for working in the local semiconductor companies such as Intel, Triquint, Lattice, Maxim, and Sharp. This class is offered in collaboration with the physics and the electrical computer engineering departments and would involve partnering with the students from these departments. Experiments incorporate commonly used semiconductor processing and modeling techniques. Students will learn how to work in a clean-room environment and process silicon wafers. The lab reports would emphasize underlying photochemistry, chemical kinetics, and surface chemistry at semiconductor surface.

The lists of experiments are listed below.

1. Photolithography software: PROLITH**
2. Growth kinetics of Silicon oxide
3. Spin coating to fabricate controlled thickness thin films
   • Viscosity polymer solution
   • Film thickness measurement using a reflectance spectrometer
4. Characterization of SPR photoresist
   • Viscosity photoresist emulsion
   • Determination of Dill’s parameter
   • Fabrication of the microstructures on silicon substrate using SPR photoresist using projection aligner.
5. Reactive ion etching.