

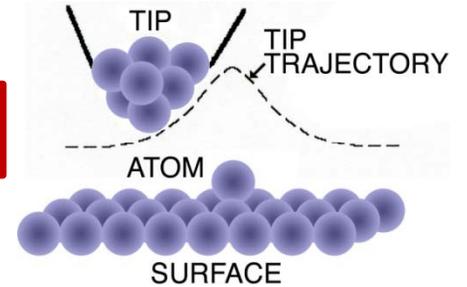
**Announcing: Nanotechnology Elective**  
**CHE 596C Spring 2009**

**Nano-scale Films and Surfaces**

12:50 – 2:05 M/W, EB1 2015

Instructor: G. Parsons, [parsons@ncsu.edu](mailto:parsons@ncsu.edu)

Co-Instructors: G. Scarel and J. Jur



*This class will provide understanding and **in-class hands-on laboratory activity** in nanoscale surface and film formation and manipulation. Focus will address applications in energy and electronic devices.*

**Course Content:**

1. Fundamentals of inorganic and organic surfaces
2. Chemical processes in film formation
  - Atomic and Molecular Layer Deposition
  - Molecular Self Assembly
  - Electrochemical methods

Lab I: Thin Film ALD

3. Nanoscale characterization tools:
  - FT-IR, X-Ray Diffraction, Atomic Force Microscopy, Ellipsometry, Auger Electron Spectroscopy, and others.

Lab II: Characterization and Surface Modification

4. Film and surface engineering
  - Thermodynamics
  - Structure and Patterning

Lab III: Organic Film Self-assembly and Patterning

5. Energy and electronic applications
6. Introduction to biological films and surfaces

