

Atomic Force Microscopy: Seminar and Experimental Demonstration

March 2, 2004

Seminar

Time: 1 – 2 P.M.

Location: 105 Agricultural Engineering Building

Principles and Applications of Atomic Force Microscopy (Asylum Research)

Atomic Force Microscopy (AFM) has been playing a growing role in different research fields ranging from biological sciences and tissue engineering to semiconductor and nanotechnology. Applications involve three dimensional imaging for single molecules, cells, tissues, polymers, and semiconductors at nanoscale resolution. Other applications include manipulation of single molecules and nanolithography. In addition to the applications of 3D imaging and nano-manipulation, AFM is capable of measuring forces at picoNewton scale, allowing mechanical characterizations for single molecules (e.g., proteins or polymers) and local elasticity of surfaces. This tutorial will give an overview of all AFM techniques including principles of operation, sample preparation, imaging in air and fluid, simultaneous AFM and fluorescence and phase contrast imaging, force measurements, and interpretation of the data. The tutorial will also discuss the operation, features and capabilities of the MFP-3D AFM, designed specifically for bioscience research. Representative examples of current biological research using AFM will also be presented.

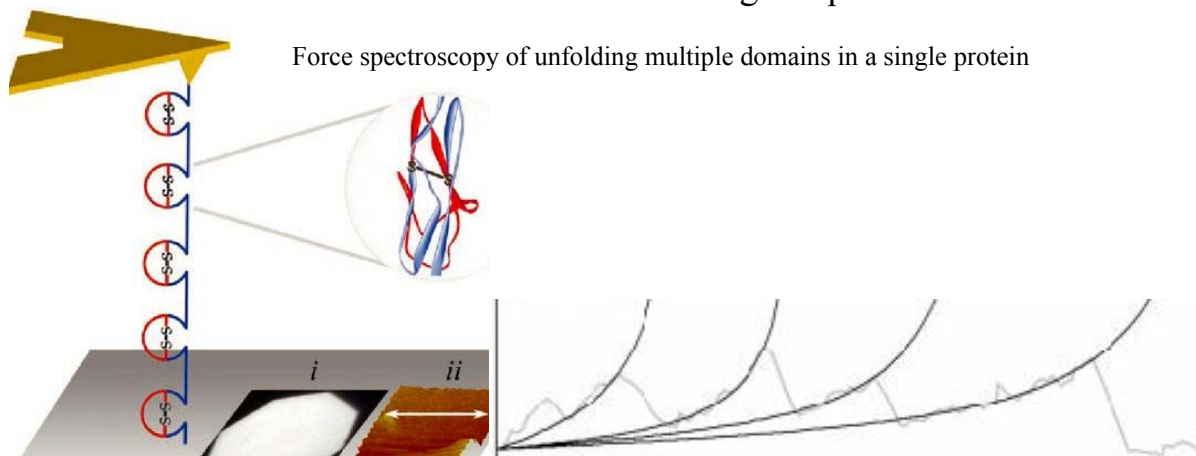
Demonstration Sessions

Non-biological applications: 2 – 4 P.M.

Biological applications: 4 – 6 P.M.

Location: 122 Agricultural Engineering Building

You are welcome to bring samples.



Organizer: Dr. James Lee, Asst. Professor, Department of Biological Engineering.