The possibilities are too great to ignore...*

Nanoscience and nanotechnology, the most rapidly progressing fields of science and engineering, could probably not have evolved to their current status if research laboratories had not been equipped with the scanning probe microscopy (SPM) instruments. Using SPM, researchers can now observe, measure, interact with, and manipulate the world of natural and engineered materials and biological specimens at microscopic and even sub-nanometer scales. The instruments’ versatility for non-destructive, real-time imaging of surfaces at atomic resolutions is broadly utilized, often combined with the ability to characterize mechanical, adhesive, electrical, magnetic, and many other interesting properties. In this undergraduate course, students will learn basics of design and fundamental physics behind SPM techniques through hands-on activities and class discussions. The students will receive basic training in the operation of SPM units available at MTU and explore their capabilities during assigned team projects.

Prerequisites: enrollment in Nanotechnology Enterprise, otherwise instructor approval is required;

Lab Fee: $100

*Ratner and Ratner - Nanotechnology: A Gentle Introduction to the Next Big Idea