

**FORCE SPECTROSCOPY USING THE AFM:
CHEMICAL INTERROGATION OF THE
ELECTRODE SURFACE**

Andrew A. Gewirth, Joseph Serafin, Myungchan Kang
Department of Chemistry, University of Illinois,
600 S. Mathews Avenue, Urbana, IL 61801

We describe our recent measurements using force spectroscopy to interrogate the chemical identity of electrode surfaces immersed in solution and under potential control. Differences in adhesion force between electrode and AFM tip are used to clarify changes in electrode identity as a function of potential control. The AFM is used not only to image evolving structures, both at the micron and nanometer scale, but also to examine the composition and tribological properties of the evolving interface by taking advantage of specific interactions between the tip and the surface. Specific measurements directed at discerning the structure of solvents as well as the nature of oxides formed on Au and Cu surfaces at the electrified interface will be discussed.