

Abstract Submitted
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Measuring adsorbate-induced resistivity changes on Au (111) thin films¹ JIANG HONG WAN, DENNIS KUHL, Marietta College — Theoretical predictions for the relationship between broad-band adsorbate-induced changes in the resistivity and the reflectance of thin metal films have been shown in the literature to fail quantitatively in all experimental tests, and to fail qualitatively in some experimental tests. We are building an experiment that will enable both resistivity change and reflectance change to be measured simultaneously on the same sample, which should enable clarification of some issues of disagreement between experiment and theory. The experiment requires ultra-high vacuum, four-probe resistance measurements, a lock-in amplifier technique, and gas dosing methods. Preliminary measurements of resistivity change for dibutyl sulfide adsorption on a 150 nm thick, polycrystalline gold (111) film will be presented.

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