

Abstract Submitted
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Investigation of Silver Thin Film Reactivity via STM¹ JEHOVANI LOPEZ, Department of Chemistry, California State University San Marcos, STEPHEN TSUI, Department of Physics, California State University San Marcos — The operation of a scanning tunneling microscope (STM) to some extent is nearly as much art as it is science. A recent attempt was made to examine the surface topography of glass by depositing a thin conducting silver film over the surface via plasma sputtering. Preliminary results show our instrument's inability to image this silver. Our hypothesis is that the silver nanoparticles may react in air, thereby creating a tunneling barrier that impedes the STM current. Silver nanoparticles deposited on highly orientated pyrolytic graphite at varying layers of thickness were imaged to analyze scatter patterns and deposition. Over time, STM images of the silver nanonclusters on HOPG showed some inconsistency in the diameters of the deposited clusters, possibly due to an artifact from the suggested reactivity of the silver. To confirm this, we also investigate depositions of gold, which is nonreactive.

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