

Abstract Submitted
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Thiolated Surfaces: Creation, their Qualities, and Packing: a basis for other nano/micro technologies¹ CHADD MILLER, Lock Haven University Dept. Geology Physics, TYLER ADAMS, BRIAN EVANS, Lock Haven University Dept. of Chemistry, INDRAJITH SENEVIRATHNE, Lock Haven University Dept. Geology Physics — Self-Assembled Monolayers (SAMs) of thiols are a useful base for the creation of nanotechnologies that interact with many complex systems and may be used as a basis for many detection systems. Thiol based SAMs consist of a thiol “head” group that bonds to a clean flat Au(111) and an easily modifiable “tail” group, so that the SAM can be customized to yield desired surface properties. We have used sputter deposited and commercially available Au films in the study. Our work centered specifically on the alkanethiols 11-Mercapto-1-Undecanol, 1-Undecanethiol, and 1-Dodecanethiol. Thiol SAMs were formed on Au(111). The surface properties of gold substrates before and after thiol deposition were analyzed using an Atomic Force Microscope (AFM) AFM-workshop TT on intermittent contact mode. Our results show interesting patterns in the surface arrangement of the thiols on gold, as well as a noticeable difference in the AFM images of each type of thiol.

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