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**SAM Surface Domains of  
(11-Mercaptooundecyl)-N,N,N-Trimethylammonium Bromide and Dodecathiols on Au(111) Investigated Via AFM** MICHAEL SCHELL, INDRAJITH C. SENEVIRATHNE, JOHN MURPHY, ALBERT FOSTER III, Lock Haven University — Charged/functional SAM (Self Assembled Monolayer) surfaces have many potential applications in various domains including devices for bioengineering. These surfaces also may be interesting because of the complex physics and chemistry of the charged/conductive molecular layers. The SAM used in our study is (11-Mercaptooundecyl)-N,N,N-trimethylammonium bromide, which have shown conductive properties. The substrate support for SAMs are by Au(111) on mica. Crystalline substrate Au surface was established via in-house hydrogen flame annealing. Thiolated solutions of (11-Mercaptooundecyl)-N,N,N-trimethylammonium bromide and dodecanthiol of varying concentration ratios were used as media for self assembly. Total molarity of the solutions was kept at 5mM for with the time for self assembly at 24 hours or more. Morphology, structure and conductivity characteristics were measured via tapping mode Atomic Force Microscopy (AFM) in the topography/phase imaging and Scanning Tunneling Microscopy (STM) in constant current mode. Data will be used to assess the surface structure of these systems.

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