Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

Experimental Study of the Temperature Dependence of Substrate Coverage in Ionic Self-Assembled Monolayers BRIAN SIMPSON[1], MOHAMMAD ABUDAYYEH, MD ALI, ALENA HAMRICK, DAN MAZILU, IRINA MAZILU, Washington and Lee University — We investigate the temperature dependence of the surface coverage of thin films consisting of silica nanoparticles deposited on glass substrates via the ISAM (ionically self-assembled monolayers) technique. Variables such as the concentration and pH of the silica colloidal suspension and polyelectrolyte solution, dipping time, and particle size among others are controlled, and the thin films are deposited on substrates under a range of temperature values. The samples are analyzed using scanning electron microscopy. The surface coverage is estimated by employing a pixel-count comparison of grayscale values in the SEM micrographs and compared to analytical results obtained using a cooperative sequential adsorption model.

[1]Presentor

Brian Simpson
Washington and Lee University

Date submitted: 14 Nov 2013 Electronic form version 1.4