

Abstract Submitted
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Pt Nanostructures Self Assembled on P doped Si(100) Under Ambient Conditions: AFM, and EDX Study¹ ZACHARY BARCIKOWSKI, AUSTIN MOHNEY, INDRAJITH SENEVIRATHNE, Department of Geology and Physics, Lock Haven University of Pennsylvania — Noble metal nanostructures on surface support under ambient conditions are interesting but complex due to the presence of surface adsorbed species. System may have plasmonic and catalytic uses from the applications standpoint and may give insights into thermodynamics/kinetics of such systems. Observed Pt nanostructures have deformed spherical shape. The Pt was magnetron sputter deposited at RT (300K), on Si(100) P doped cleaned with acetone and IPA. The system was studied using ambient IC mode Atomic Force Microscopy (AFM) for its structure. Elemental composition / distribution were measured with Energy Dispersive X ray Spectroscopy (EDX). Self assembled Pt nanostructures on the surface was observed with a likely Stranski - Krastanov type growth mode At Pt 30 ML coverage nucleated nanostructures observed to have a mean diameter of 15 nm and mean height of 1.5 nm. At Pt coverage of 120 ML, structures exhibited mean diameter of 40 nm and mean height of 3 nm. System was also observed at incremental annealing as well

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