

Abstract Submitted
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AFM and EDX Study of Self Assembled Pt Nanostructures on PEDOT Thin Films under Ambient Conditions¹ INDRAJITH SENEVIRATHNE, AUSTIN MOHNEY, JOSHUA BUCHHEIT, ANURA GOONEWARDENE, Department of Geology and Physics, Lock Haven University of Pennsylvania — Noble metal nanostructure systems on conductive polymer thin films under ambient conditions are interesting due to their use in BioMEMS and hybrid systems further and considering the physics of the polymer - metal interactions The observed nanostructures have deformed spherical shape. The Pt was magnetron sputter deposited at RT (300K), PEDOT Baytron P 60nm thick, spin coated on glass slides cleaned with acetone and IPA. The system was studied using ambient IC mode Atomic Force Microscopy (AFM) for its structure. Elemental composition/distribution of the system was measured with Energy Dispersive X ray Spectroscopy (EDX). Pt nanostructures on the surface observed to be likely Volmer - Weber growth mode At Pt coverage of 120 ML, nanostructures had a mean diameter of 32 nm and mean height of 5 nm. When annealing at 15min at 473K systems changes to smaller nanostructures coexisting with bigger structures of mean diameter of 120 nm and mean height of 36 nm. Elemental/morphological variations when annealed at successively higher temperatures were also investigated.

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