Abstract Submitted
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Growth and Characterization of Metal Oxides Layers on CVD Graphene A. MATSUBAYASHI, J. ABEL, D.P. SINHA, J.U. LEE, V.P. LABELLA, College of Nanoscale Science and Engineering, University at Albany, State University of New York — Thin metal oxide layers deposited on graphene can be utilized as dielectric barriers between ferromagnetic metals and graphene to help overcome conductivity mismatch between the metal and graphene. Furthermore, these layers have been shown to increase the spin relaxation time measured utilizing non local detection and spin precession measurements. However, simply depositing metal oxide layers such as aluminum oxide on graphene results in non uniform film lowering the quality of the interface barrier. This presentation will show our work growing uniform aluminum oxide layers on graphene under ultra high vacuum conditions utilizing a Ti seed layer. The surface roughness of the films was measured with atomic force microscopy with and without titanium seed layers. The results show titanium seed layers reduced the surface roughness by a factor of 4 indicating a more uniform film. In addition, X-ray photoelectron spectroscopy results will be presented to confirm the stoichiometry of the films.

Akitomo Matsubayashi
College of Nanoscale Science and Engineering,
University at Albany, State University of New York

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