

Abstract Submitted
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Surfactant Mediated Growth of Co on MgO(111) H. TREVOR JOHNSON-STEIGELMAN, The College at Brockport: State University of New York, SOMENDRA S. PARIHAR, PAUL F. LYMAN, University of Wisconsin-Milwaukee — Monolayer films of Co were deposited using an electrostatic electron-beam evaporator on single-crystal MgO(111)- $\sqrt{3} \times \sqrt{3}$ *R* 30° substrates held at room temperature, with subsequent annealing of temperatures 400 °C to 800 °C. These films were characterized using low-energy electron diffraction (LEED), x-ray photoelectron spectroscopy (XPS), atomic force microscopy (AFM), and x-ray diffraction (XRD). After short anneals of 400 °C, AFM, LEED, and XPS suggest that islanding has occurred at the surface. XPS and XRD indicate the presence of elemental Co. 1-2 ML films of Ag were examined as a potential surfactant to aid in the growth of smooth Co films. Despite the fact that Ag itself formed islands, it was found that the presence of Ag did have a surfactant effect upon the thin-film growth of Co on Ag/MgO(111)- $\sqrt{3} \times \sqrt{3}$ *R* 30°. Co islands were still present, but much more smooth than islands formed without Ag. XPS and AFM suggest strongly that Ag floated to the top of these samples at temperatures above 400 °C.

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