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Gold Surface Roughness Dependence on Growth of Copper Phthalocyanine¹ ERIKA ESCOBAR, THOMAS GREDIG, Department of Physics and Astronomy, California State University Long Beach, CA 90840, USA — The phthalocyanine molecule is of primary importance in designing gas sensors, photovoltaic devices, and magnetic systems. Copper phthalocyanine (CuPc) thin films of thickness 30 nm are deposited on gold-coated silicon substrates with varying deposition temperatures and increasing amounts of gold to modify the seed layer roughness. X-ray diffraction in Bragg-Brentano configuration was used to determine the crystal structure of the CuPc thin films. Results indicate that the CuPc thin films deposited at higher growth temperatures and thicker gold films have diminished peak intensities for a d-spacing at 1.3 nm. The data suggest that CuPc crystals can grow on gold surfaces with the b-axis aligned either parallel or perpendicular depending on the substrate roughness.

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