

Abstract Submitted
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Growth of Flat Au(111) Surfaces on Mica for Ellipsometric, AFM and X-ray Studies of Organic Films¹ P. SOZA, V. DEL CAMPO, E. CISTERNAS, M. PINO, U.G. VOLKMANN, P. U. Catolica Chile, H. TAUB, U. Mo.-Columbia, F.Y. HANSEN, Tech. U. Denmark — To produce large, atomically flat gold substrates for organic film studies, we have used the method reported by Hegner et al.² in which gold films grown on mica are glued onto Si(100) wafers. Atomic Force Microscopy, Energy Dispersive X-ray Spectroscopy, and x-ray diffraction measurements give evidence of the good quality of our gold surfaces. As a first check, docosane ($n\text{-C}_{22}\text{H}_{46}$) films were deposited from a heptane ($n\text{-C}_7\text{H}_{16}$) solution onto the gold surface. We conducted ellipsometric and stray light intensity measurements on these films in air as a function of temperature in order to determine their optical thickness and surface roughness. From our results, we have identified the bulk melting and the film wetting transitions. The wetting transition takes place about 2 K lower than in docosane films of the same thickness adsorbed on SiO_2 substrates. Further study of these flat gold surfaces is necessary to assure their suitability for alkane film studies by synchrotron x-ray scattering. ²M. Hegner et al., Surf. Sci. 291, 39 (1993).

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