

Abstract Submitted
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Ellipsometric Measurements of Dotriacontane Films Adsorbed on Au(111) Surfaces¹ P. SOZA, V. DEL CAMPO, E. CISTERNAS, M. PINO, U.G. VOLKMANN, H. TAUB, F.Y. HANSEN — We have conducted ellipsometric and stray light intensity measurements on dotriacontane ($n\text{-C}_{32}\text{H}_{66}$ or C32) films adsorbed on Au(111) substrates in air as a function of temperature in order to determine their optical thickness and surface roughness. The C32 films were deposited from a heptane ($n\text{-C}_7\text{H}_{16}$) solution onto the gold surface. Our large, atomically flat gold substrates were produced by the method reported by Hegner *et al.*² in which gold films grown on mica are glued onto Si(100) wafers. For films of 25 Å thickness, our ellipsometry measurements show a decrease of about 75% in the height of the monolayer substep compared to the same film adsorbed on SiO₂ substrates.³ This substep is believed to be contributed by a monolayer phase in which the molecules are oriented with their long axis perpendicular to the surface. The substep decrease may be interpreted as reduction in the number of molecules in this phase or possibly a tilting of the molecules. ²M. Hegner *et al.*, Surf. Sci. **291**, 39 (1993). ³U.G. Volkman *et al.*, J. Chem. Phys. **116**, 2107 (2002).

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Haskell Taub
University of Missouri-Columbia

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