Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Epitaxial orientations of para-sexiphenyl platelets grown on alkali halide (001) surfaces EDWARD KINTZEL, Department of Physics and Astronomy, Western Kentucky University, DETLEF SMILGIES, Cornell High Energy Synchrotron Source (CHESS), Cornell University — Thin film growth of simple aromatic molecules has been researched intensely in recent years in the burgeoning field of organic electronics. Film growth for simple rodlike molecules on the atomically well-defined and nonreactive alkali halide (001) surfaces also constitutes an archetypical model system for the study of molecular epitaxy. We have observed a surprising variety of preferential orientations of para-sexiphenyl platelets on a series of alkali halide surfaces with lattice constants ranging from 4.6 to 6.6 Angstroms. We present a metric that helps to classify the dominant epitaxial orientations and allows us to predict epitaxial orientations on other rocksalt-type substrates, and we identified surface corrugation as the driving force for these preferred relative orientations.

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Date submitted: 02 Nov 2010 Electronic form version 1.4