

Abstract Submitted  
for the MAR05 Meeting of  
The American Physical Society

**Nucleation Induced Molecular and Micron-Scale Dual Ordering of Fluorinated Dendron Monolayer**<sup>1</sup> FARHAN AHMAD, KWANWOO SHIN, Dept. of Materials Sc & Eng, GIST, Gwangju, Korea, DONG KI YOON, HAE TAE JUNG, Dept. of Chem & Bio Molecular Eng, KAIST, Taegon — Langmuir monolayer structures of a partially fluorinated dendron molecules is studied at interfaces using Langmuir balance technique, scanning probe microscopy, X ray reflectivity, and X- ray photoelectron spectroscopy. We have achieved simultaneous nano and micro length scale ordering in the Langmuir-Blodgett films of dendron molecules. The ordering process was observed to be initiated by the nucleation process on the water surface, which resulted in hexagonally arranged microsized domains. Further, characterization of these micro domains by SPM showed the perfect hexagonal molecular chain arrangement. Furthermore, molecular thickness and orientation was cross checked using XPS and X-ray reflectivity. The immobilization of biomacromolecules on the engineered thin films is limited due to the defined molecular architecture and their spacing till now. Now, these ultra thin films of dendrons can provide a control over the surface density and molecular spacing, without varying the molecular architecture of the dendron molecules.

<sup>1</sup>This work in part was supported by the Ministry of Health and Welfare in Korea.

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Date submitted: 06 Jan 2005

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