Interfacial Structure imaging of Pentacene/Si(111) by model-independent method

SONGTAO WO, HUA ZHOU, RANDALL HEADRICK, University of Vermont, ALEXANDER KAZIMIROV, Cornell High Energy Synchrotron Source, CORNELL HIGH ENERGY SYNCHROTRON SOURCE TEAM — Synchrotron x-ray reflectivity is utilized to study the Pentacene/Si(111) interfacial structure in the direction normal to the surface. Model-independent algorithm is used to analyze the reflectivity data to extract the electron density profile. It indicates two partially ordered layers along the interfacial normal with thickness $\sim 0.6$ nm and an interfacial water layer $\sim 0.9$ nm as we reported in our previous work. A pentacene monolayer $\sim 1.6$ nm can also be revealed.

Songtao Wo
University of Vermont

Date submitted: 20 Nov 2008

Electronic form version 1.4