

Abstract Submitted  
for the MAR05 Meeting of  
The American Physical Society

**Microscopic evidence for spatially inhomogeneous charge trapping in pentacene.** ERIK MULLER, Department of Physics, Cornell University, JOHN MAROHN, Department of Chemistry and Chemical Biology, Cornell University — Using high sensitivity electric force microscopy we are investigating the electronic properties at the semiconductor-dielectric interface in pentacene thin film devices. It is believed that the conduction takes place within the first few monolayers of the organic and is adversely affected by the presence of charge traps. We find that charge traps in polycrystalline pentacene are distributed inhomogeneously but do not appear to be associated with grain boundaries as is generally supposed. We will also report on ongoing studies of thin (1-3 monolayers) devices, where the relationship between the topography and the location of the charge traps is more easily interpreted.

Erik Muller  
Department of Physics, Cornell University

Date submitted: 01 Dec 2004

Electronic form version 1.4