

Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Rubrene Thin Film Transistors SOONJOO SEO, University of Wisconsin-Madison, BYOUNG-NAM PARK, University of Wisconsin-Madison, PAUL EVANS, University of Wisconsin-Madison — We report on the fabrication and characterization of field-effect transistors formed from rubrene thin films deposited on SiO₂/Si substrates by thermal evaporation. The growth and electrical properties of rubrene thin films are closely related. Rubrene thin film transistors have a lower saturation field effect mobility, $\sim 10^{-4}$ cm²/Vs, than single crystal devices and thin films of other materials. In comparison with pentacene, which initially forms 2D islands, atomic force microscopy shows that rubrene immediately forms circular multilayer islands. We discuss the electrical properties of rubrene transistors based on the geometry of rubrene islands.

Paul Evans
University of Wisconsin-Madison

Date submitted: 01 Dec 2004

Electronic form version 1.4