Abstract Submitted for the MAR05 Meeting of The American Physical Society

Thin Film Carbon Nanotube FETs with Polymer Electrolytes TANER OZEL, Dept. of Physics, University of Illinois at Urbana-Champaign, AN-SHU GAUR, Dept. of Materials Science and Engineering, University of Illinois at Urbana-Champaign, JOHN ROGERS, Dept. of Materials Science and Engineering, University of Illinois at Urbana-Champaign, MOONSUB SHIM, Dept. of Materials Science and Engineering, University of Illinois at Urbana-Champaign — Thin film transistors of single-walled carbon nanotubes were operated with polymer electrolyte as gate media. Nearly ideal gate efficiencies allow low-voltage operation with the absence of the common hysteresis problem observed in back-gated carbon nanotube FETs yielding a reliable and simple method for measuring the device characteristics. Furthermore, the conduction type (p/n-type) of the devices can easily be controlled by varying the electrolyte media. Effects such as charge transfer between polymer and nanotubes, and tube-tube interactions in arrays of nanotubes will be discussed.

Taner Ozel

Date submitted: 30 Nov 2004

Electronic form version 1.4