Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Transparent Carbon Nanotube layers in OLED device structures
ALEXIOS PAPADIMITRATOS, Solarno Inc, ANVAR ZAKHIDOV, NanoTech Institute University of Texas at Dallas, JOHN FERRARIS, University of Texas at Dallas — Organic Light Emitting diodes (OLEDs) have become well recognized as an important candidate for future lighting and display applications. Reported work on tandem OLED technology has displayed devices with increased, brightness, efficiency and lifetime. The developed tandem structure OLEDs is consisted of multiple electroluminescent units in series that require a complex interconnecting layer. Carbon nanotube (CNT) sheets are alternative interconnecting layers that simplify the fabrication process. CNT sheets are excellent candidates due to their transparency, simple processing, flexibility, electrical and mechanical properties[1]. We have shown earlier that transparent CNT can be used as effective three dimensional charge injectors in OLEDs[2]. Recently, SOLARNO and UTD have demonstrated growth of CNT sheets with improved conductivity. The true advantage of using the CNT sheets lies in flexible devices and new architectures which impossible with brittle ITO. We show that CNT can be used as efficient electrodes or interlayer in multi cell OLEDs with complimentary colors. [1] R.H.Baughman et al. Science, 297,787(2002).[2] C.D.Williams et al. APL 93, 183506(2008).

Alexios Papadimitratos
Solarno Inc

Date submitted: 08 Dec 2009 Electronic form version 1.4