

Abstract Submitted
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Flexible OLED with Transparent Multiwall Carbon Nanotubes Electrodes RAQUEL OVALLE ROBLES, CHRISTOPHER WILLIAMS, MEI ZHANG, SHAOLI FANG, SERGEY LEE, JOHN FERRARIS, RAY BAUGHMAN, ANVAR ZAKHIDOV, University of Texas, Dallas, NANOTECH INSTITUTE UT-D TEAM, PHYSICS DEPARTMENT UT-D TEAM, CHEMISTRY DEPARTMENT UT-D TEAM — We have demonstrated earlier, that transparent carbon nanotube (T-CNT) sheets, prepared by dry spinning of CVD grown multiwall nanotube forests can be used as hole injectors in bright OLEDs with Alq3 as emissive layers [1]. Now we demonstrate here that advantages of mechanically strong, elastomeric T-CNT over traditional ITO can be further favorably used in flexible OLEDs (based on Alq3 emitter) fabricated on mylar or PET substrates. The high work function of T-CNT sheet (~ 5.2 eV) and the geometry of sharp tips allows to achieve tunneling charge injection regime at relatively low voltages, which allows to achieve higher hole injection current densities. Moreover we demonstrate, that the use of low quality ITO on PET, combined with T-CNT as tunneling hole injector may have advantages for large area OLED/PLEDs.

[1] M. Zhang, S. Fang, A. Zakhidov, S. B. Lee, A. Aliev, R.H. Baughman, Strong, Transparent, Multifunctional, Carbon Nanotube Sheets, *Science*, 309,(2005) 1215

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