

# Electrical Properties of Transparent Conductive CNT Films

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Carbon nanotube (CNT) based technologies offer conducting substrates having a broad range of conductivity, excellent transparency, neutral color tone, good adhesion, abrasion resistance, and flexibility. CNT has good individual conductivity but a bundle of CNT has different electrical properties than their individual counterparts. Therefore, transparent conducting electrode and flexible display electrode materials containing CNT are quite a challenge to realize their application. Transparent conductors are an essential component in many optoelectronic devices, including LCDs, OLEDs, touch screens, and photovoltaics. We presented a fabrication method for CNT thin films on various substrates including glass, polyethylene terephthalate (PET), and silicon. The method combines a polydimethylsiloxane (PDMS) based transfer-printing technique with vacuum filtration. The sheet resistance, optical transmittance, optical conductivity, dc conductivity and flexibility of the fabricated films were measured and compared with those of commercialized flexible indium tin oxide (ITO) films.