

### Synthesis of Carbon Nanotubes Reinforced Poly(*p*-phenylenediamine) Nanocomposites by Chemical Oxidative Polymerization

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The incorporation of carbon nanotubes (CNTs) into the polymer matrices forming nanocomposites has so far been attracting enormous attention due to the improvement in either mechanical or electrical properties of the materials. Herein, we report a facile method for synthesizing nanocomposite constituting a conducting polymer, poly (*p*-phenylenediamine) (P*p*PD), reinforced by multiwall carbon nanotubes (MWCNTs) using chemical oxidative polymerization. Astonishingly, we found that the composite products with 5% MWCNT loading possess an extremely high conductivity in comparison with the bare polymer with a difference of more than six orders of magnitude. TEM pictures clearly showed coating layers of P*p*PD on the surface of MWCNTs. Crystallinity, thermal stability, and optical properties were also investigated using XRD, TGA and UV-visible, respectively. (Regional Technology Innovation Program (RT104-01-04) of MOCIE)