

Facile Synthesis of Conducting Composites of Graphene Oxide and Poly(o-phenylenediamine) in Aqueous Medium

Van Hoa Nguyen, 이영아, 심재진*
영남대학교 디스플레이화학공학부
(jjshim@yu.ac.kr*)

A rapid and efficient approach is proposed to prepare graphene oxide (GO) and poly(o-phenylenediamine) (PoPD) microfibril composites were prepared by in situ polymerization of o-phenylenediamine monomer in the presence of graphene oxide at room temperature. Cupric sulfate was used as oxidant initiator. The as-prepared poly(o-phenylenediamine) (PoPD)/GO composites have been characterized by scanning electron microscope (SEM), transmission electron microscope (TEM), Fourier transform infrared spectroscopy (FTIR), thermogravimetric analysis (TGA) and X-ray diffraction (XRD). SEM and TEM provide the morphology of the PoPD microfibrils. FTIR, TGA and XRD were used for characterization of the structure and composition of GO/PoPD microfibril composites. Moreover, the electrical conductivity and the cyclic voltammetry (CV) analysis were investigated. This method to prepare a conducting composite is simple, economic and easy to scale up.