

Polyaniline/Carbon Nanotube/Graphene Oxide Composite Aerogels with Improved Capacitance for Supercapacitor Applications

라미엘 샤메인 산호세, Van Chinh Tran, Van Hoa Nguyen, 심재진[†]

Yeungnam University

(jjshim@ynu.ac.kr[†])

Polyaniline (PANI) and multiple walled carbon nanotube (MWCNT)-spaced graphene oxide (GO) aerogels PANI/MWCNT/GO was prepared by a hydrothermal method for supercapacitor applications. The specific surface area and specific capacitance properties of aerogels were controlled by using different amount of PANI or MWCNT. The prepared aerogel still kept the structure of aerogels structure containing macropores to be easily wetted by electrolyte ions, especially creates mesopores by MWCNT and PANI for ions absorption and increasing conductivity. Therefore, the aerogel exhibited advantages of supercapacitor properties not only in aqueous but also in ionic liquid electrolytes. PANI/MWCNT/GO properties were measured by scanning electron microscope (SEM), transmission electron microscope (TEM), attenuated total reflectance-fourier transform infrared spectroscopy (ATR-FTIR), X-ray diffraction (XRD), thermo gravimetric analysis (TGA), and cyclic voltammetry (CV) measurement.