NiO/reduced graphene oxide nanocomposite synthesized in tert-butanol for supercapacitor application

라미엘 샤메인 산호세, Van Hoa Nguyen, Thi Toan Nguyen, Van Chinh Tran, Dian Kharismadewi, 심재진†

Yeungnam University

(jjshim@ynu.ac.kr†)

With the vast exploration in the application of graphene oxide, researchers nowadays study different methods in producing supercapacitors, with high capacitance but low material and energy cost. In this research, reduced graphene oxide-nickel oxide (RGO-NiO) composite was prepared using a nonaqueous solvent-based method. Among the numerous solvent-based precursors that had been studied in literature, tert-butanol has not yet been fully explored. RGO-NiO composite was prepared using Nickel acetate tetrahydrate and tert-butanol as the precursor and the solvent, respectively, by solvothermal method. The product was characterized by XRD, XPS, TEM, SEM and CV, which conformed the feasibility of this research as an alternative method for synthesizing low-cost supercapacitor.