Invited Speech I

Synthesis and Characterization of KOH-modified Graphene-activated carbon-Fe2O3 Composite as Novel Electrodes for Supercapacitor

Jeonghyun Kim
Dept. of Chemical and Biomolecular Engineering, Pusan National University

Abstract. In this study, we report the KOH-modified graphene-activated carbon-Fe2O3 using concentrated KOH solution and their resulted electrochemical performance as supercapacitor electrode materials. The introduction of Fe2O3 into graphene substrate highly improves the electrochemical performance because Fe2O3 not only serve as pseudocapacitance, but also prevent reaggregation and restacking graphene nanosheet as nanospacer. In addition, activated carbon improves the rate capability of the composite as another substrate. The morphology, structure of the composites was examined by Fourier-transform infrared spectroscopy (FT-IR), scanning electron microscopy (SEM). Electrochemical properties were characterized by Cyclic Voltammetry (CV) and Charge-Discharge (CD) in 6M KOH electrolyte.