

Preparation of reduced Graphene Oxide/Polyacrylonitrile nanofiber for redox flow battery electrode materials

이민철, 홍창국^{1,*}

전남대학교; ¹전남대학교 응용화학공학부

(hongck@chonnam.ac.kr*)

The Graphene has paid attention to many researchers. Because it has exceptional properties such as electric, mechanical, and thermal properties. Polymer nanocomposites show substantial enhancement at much lower loadings than conventional micron-scale fillers. The Graphene oxide(GO) was prepared by modified Hummers method. Its method was enable to the Graphene of large quantity production. after Hummer method process, the GO was reduced by hydrazine hydrate to recover a electric properties of graphene. The rGOs in N,N-dimethylformamide(DMF) were sonicated for exfoliation and dispersion in DMF. ltra sonicator (0.01wt%, 0.05wt%, 0.1wt% and 0.5wt% ratio of rGO to DMF). The electrospun fiber was stablized in air at 280°C and then carbonized in atmosphere at 800°C. The rGO/PAN nanofiber were characterized by scanning electron microscope and Transmission electron microscope. The electrochemical properties were also evaluated by cyclic voltammetry.