

Ag nanoparticles on nanosheets of reduced graphene oxide for oxygen reduction reaction in alkaline media

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Attention to the alkaline fuel cells has been increased due to the development of anion exchange membranes. Much effort in the past has been focused on Pt based catalysts for cathodic side catalyst. However, high price and limited supply of the noble metal electrode catalysts restrict the fuel cells commercialization. In this study, we produced highly dispersed Ag nanoparticles even at a high metal loading of 60 wt.% Ag on a reduced graphene oxide via surfactant free method. RDE test and cyclic voltammetry analysis are applied to investigate the electrocatalytic properties. The prepared catalyst was analyzed by transmission electron microscope, X-ray diffraction, X-ray photoelectron spectroscopy in order to investigate structural and electronic properties. [This work was supported by the New & Renewable Energy program of the Korea Institute of Energy Technology Evaluation and Planning (20103020030020-11-2-200) and the Global Frontier R&D Program on Center for Multiscale Energy System funded by the NRF under the Ministry of Education, Science and Technology, Korea (0420-20120126)]