

Electrochemical Properties of Nickel-plated Polystyrene-based Carbon Fibers

정기호, 박수진*
인하대학교
(sjpark@inha.ac.kr*)

In this work, the electrochemical properties of nickel-phosphorous (Ni-P) coated carbon fibers were studied. The carbon fibers were synthesized by solution polymerization method with styrene and trimethylolpropane triacrylate. The effect of coating time on electroless Ni-P coated carbon fibers was investigated with X-ray diffraction (XRD), energy dispersive X-ray analysis (EDX), scanning electron microscopy (SEM), and thermogravimetric analysis (TGA) measurements. Also, the electrochemical properties of the fibers were measured by cyclic voltammetry. Experimental results indicated that the coating thickness and nickel content were increased with increasing the coating time. It was also found that the nickel coating led to an improvement of thermal stability of the carbon fibers, mainly due to the increase of deposited Ni-P alloys.