

Preparation and characterization of platinum and ruthenium catalysts deposited on the fluorinated carbon supports

손희진, 김 석, 박수진^{1,*}
한국화학연구원; ¹인하대학교
(sjpark@inha.ac.kr*)

In this study, the effect of fluorinated carbon blacks (CBs) on the preparation of metal alloy catalysts was investigated by analyzing surface functional groups of CBs. The surface characteristics of the fluorinated CBs were determined by Fourier transformed-infrared (FT-IR) and X-ray photoelectron spectroscopy (XPS). The crystallinity of fluorinated CBs was evaluated using X-ray diffraction (XRD). Electrochemical properties of the fluorination CBs-supported platinum-ruthenium (PtRu/CBs) catalysts were analyzed by cyclic voltammetry (CV) experiments. From the results of FT-IR, the intensity of characteristic peaks were increased with increasing the temperature. Due to the formation of new basic functional groups. And XPS analysis revealed that the catalysts contained mostly, Pt and Ru as a metallic state. The diffraction peaks were observed at 40, 46, 70 and 80° in the diffraction patterns. Consequently, it was found that electroactivity of PtRu catalysts had been improved by surface treatments.