

Preparation and electrocatalytic activity of Pt-Ru catalysts deposited on branched polyer modified graphene sheets

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In this study, we used cationic polymers to modify the surface of modified graphene oxide (GO) which have a good dispersion in various solutions and an enhanced electrochemical sensitivity with electrolytes. The interlayer distance of graphene sheets was also increased by modifier agent. The branched polyethyleneimine (BPEI), one kind of ionic polymer, was used for modifier agent and GO was prepared by modified Hummers method. In addition, the electrochemical analysis was carried by cyclic voltammetry (CV). CV was operated at room temperature and electrolytes were used 1.0M methanol and 0.5M sulfuric acid. The transmission electron microscopy (TEM) and scanning electron microscopy (SEM) were used to observe particle size and morphology of Pt-Ru electrocatalysts, respectively. Furthermore, microstructure and metal components on graphene sheet were confirmed by x-ray diffraction (XRD) and x-ray photoelectron spectroscopy (XPS), respectively.