

Electrochemical Properties of Pt/Carbon Nanotube Catalysts Modified by Oxyfluorination

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Direct methanol fuel cells (DMFCs) are promising candidates for the next generation of power sources for portable electronic devices. The ideal support material of electrocatalysts should have the following features: provide a high electrical conductivity, have an adequate water-handling capability, and also show a good corrosion resistance under oxidizing conditions. A widely used supporting material of catalysts is a carbon, on which metallic nanoclusters should be well dispersed to minimize a metal loading. Generally, electrocatalysts with a small particle size and a high dispersion will result in high electrocatalytic activity. Therefore, in this work, the effects of the oxyfluorination treatment for carbon nanotubes (CNTs) on the surface functional groups and Pt catalyst deposition are investigated. By cyclic voltammetry (CV) experiments, electrochemical properties of the Pt/CNTs catalysts are analysed.