Short Communication

Microwave Synthesis of Reduced Graphene Oxide-Supported Platinum Nanocomposite with High Electrocatalytic Activity for Methanol Oxidation

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Pt/RGO electrocatalyst was successfully prepared by the deposition of platinum nanoparticles on the surface of reduced graphene oxide with a rapid and environment-friendly microwave-assisted polyol method. The electrochemical activity of as-synthesized Pt/RGO for methanol electrooxidation was investigated in detail. As can be seen from certain values including diffusion coefficient, current density of forward oxidation peak and ratio of the current density of forward peak to reverse peak, the electrooxidation performance of Pt/RGO was superior to that of Pt/C and Pt/graphite catalysts. For example, the current density of forward oxidation peak obtained with Pt/RGO catalyst for methanol oxidation was 18.5 mA/cm², which was higher than that obtained with Pt/C catalyst (9.65 mA/cm²).

Keywords: Graphene; Platinum; Methanol oxidation; Electrocatalysis; Microwave synthesis

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