Electrochemical Synthesis of Bi/Pt Bimetallic Nanodentrites for the Electrooxidation of Methanol

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The purpose of this work is to delineate electrooxidation of methanol using hierarchical platinum-bismuth nanodentrites as an electrocatalyst. Potentiostatic electrochemical method was applied to prepare the nanostructures. The shape of nanostructures was controlled by varying the concentration of Pt Cl_6^{2-} ions in fixed Bi^{3+} ions and reaction time. The prepared nanocomposites were characterized by SEM, EDX, XPS and CV techniques. The electrocatalytic activity of Pt–Bi nanodentrites was studied towards methanol oxidation. The prepared nanostructures are simple, eco-friendly and with high electrocatalytic activity.

Keywords: Bismuth, Platinum, nanodentrites, electrochemical method, methanol oxidation

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