Short Communication

Methanol as the Modifier of Nanostructured Pt Films for Enhanced Electrocatalytic Methanol Oxidation Reaction Electrocatalysis

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doi; 10.20964/2018.09.68

Received: 24 May 2018 / Accepted: 5 July 2018 / Published: 5 August 2018

A rough Pt films (Pt_{meth}) were electrodeposited on a glassy carbon electrode (GCE) in a methanol-containing aqueous bath for electrocatalytic oxidation of methanol. Scanning electron microscopy (SEM), energy dispersive spectrometry (EDS), X-ray diffraction (XRD) and electrochemistry techniques were used to characterize the Pt films. Comparing to the conventional Pt films which electrodeposited in a methanol-free aqueous bath (Pt_{com}/GCE), the Pt_{meth}/GCE exhibits an improved electrocatalytic activity and poisoning-tolerance towards electrooxidation of methanol. The mechanism responsible for the improved performance has been discussed, and the principle can be extended for electrochemical preparation of other catalytic films in the energy and catalysis fields.

Keywords: Electrodeposition; Pt Films; Methanol-Containing Aqueous Bath; Electrocatalytic Methanol; Improved Electrocatalytic Activity.

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