

pH Selective Synthesis of Monodisperse Nanoparticles and 3D Dendritic Nanoclusters of CTAB-stabilized Platinum for Electrocatalytic O₂ Reduction

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Abstract

Monodisperse Pt nanoparticles and 3D dendritic Pt nanoclusters (see image), stabilized by cetyltrimethylammonium bromide, were synthesized selectively at pH values of ≈ 7 and ≈ 1.7 , respectively. Both Pt species, which can be immobilized electrochemically onto glassy carbon electrodes, possess excellent catalytic activity toward the reduction of O₂.