Short Communication

Preparation of Low-cost Carbon-supported Mn_3O_4 with a Nano-mesoporous Structure and Its Application in Oxygen Reduction Reactions

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Oxygen reduction reactions are of significance because they are the main cathodic reaction in metal-air batteries and fuel cells. In this study, we successfully synthesize a $\text{Mn}_3\text{O}_4/\text{C}$ catalyst with an uncomplicated method. The pore size, distribution, morphology and structure of the $\text{Mn}_3\text{O}_4/\text{C}$ catalyst are studied with scanning electron microscopy, transmission electron microscopy, X-ray diffraction, X-ray photoelectron spectroscopy, and the Brunauer-Emmett-Teller equation. The catalyst activity is investigated by cyclic voltammetry on the gas diffusion electrodes. The result shows the $\text{Mn}_3\text{O}_4/\text{C}$ catalyst has a nano-mesoporous structure and excellent catalytic ability for oxygen reduction reactions.

Keywords: $\text{Mn}_3\text{O}_4/\text{C}$; Gas diffusion electrode; Oxygen reduction reaction;

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