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Co-MOF/GO composites as electrocatalyst for DMFC

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The activity of cobalt based MOF and its composites with graphene oxide towards electrochemical oxidation are studied. It answers one of the challenges faced by the field of electrochemistry; finding the best catalyst, which could offer excellent current density at low voltages and be available at reduced cost. Co-MOF-71 and its GO composites were prepared by hydrothermal method and characterized by X-ray diffraction, scanning electron microscopy and FT-infrared spectroscopy. These catalysts were tested for its electrocatalytic activity for methanol oxidation reaction (MOR) in three electrode systems by cyclic voltammetry, Tafel plot and Nyquist plot. The electrochemical parameters calculated for modified GCE represent the effect of graphene oxide on oxidation reaction catalysed by Co-MOF-71. Our work demonstrates that the synthesized catalysts are of great potential for the applications in direct methanol fuel cell.

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