Preparation of Porous Carbon-Manganese Dioxide Nanocomposite for Sensitive Determination of Cadmium Ion

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A cost-effective pyrolysis carbonization, together with a subsequent alkali activation, was performed for the preparation of activated porous carbons (APCs) with meso-/macropores and micropores. This was followed by electrodepositing manganese oxide nanostructures onto the as-prepared APC substrate with a constant anodic current. In addition, as studied by square-wave voltammetry (SWV) measurements, MnO₂-activated carbon (AC) was utilized for the detection of cadmium(II) (Cd(II)), where the metal ions accumulated on MnO₂-AC. Through the modification of the electrode surface and the optimization of relevant parameters, the behaviour of MnO₂-AC reached an optimum level in this study

Keywords: Activated porous carbon; Manganese oxide; Cadmium ion; Square wave voltammetry;

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