Boron-modified Ordered Mesoporous Carbons as a novel electrode film for simultaneously Voltammetric Detection of Cadmium(II), Lead(II), Copper(II) and Mercury(II) ions

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The boron-modified ordered mesoporous carbons (B-OMCs) was fabricated with controllable microstructure and ordered combination, used as a novel modified electrode film to detect trace amount of cadmium ion, lead ion, copper ion, and mercury ion. In this attribution, the detailed features of the B-OMCs modified electrode were studied. Four heavy metals were detected by using the method of cyclic voltammogram (CV) and differential pulse voltammetry (DPV). The prepared B-OMCs shows superior electrochemical activity, and it could be used for tracing cadmium ion, lead ion, copper ion, mercury ion simultaneously and selectively. The obtained results demonstrate the boron-modified carbon material broaden the potential applications, and therefore, the effect of Boron on the micro structure and electrochemical activity of OMC can be understood from the perspective of mechanism.

Keywords: boron-modified ordered mesoporous carbons, electrode, detect, cadmium ion, lead ion, copper ion, mercury ion.

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