Highly Sensitive Electrochemical Determination of Cadmium (II) in Environmental Water Based on the Electrodeposited Bismuth Nanoparticles

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Heavy metal ions in environmental water have become an important health threat in human due to their not biodegradable and could accumulate in aquatic organism. In this paper, we demonstrated an electrochemical approach for cadmium ions determination based on the electrodeposited bismuth nanoparticles. The morphology and properties of electrodeposited bismuth nanoparticles were characterized and discussed. The electrochemical determination conditions were optimized and then successfully applied for detecting Cd²⁺ in tourism scenic area collected hot spring water samples. The results showed the proposed Cd(II) electrochemical sensor had a high potential for tourism scenic protection application.

Keywords: Cadmium; Bismuth; Electrodeposition; Sensor; Tourism scenic protection

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