

Fabrication of highly sensitive nitrite electrochemical sensor in foodstuff using nanostructure sensor

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In this research, we introduced a powerful electrochemical sensor (based carbon paste electrode) for analysis of nitrite in foodstuff, using CdO decorated single wall carbon nanotube incorporated with 1-methyl-3-butylimidazolium bromide (CdO/SWCNTs/1-3-MBIB/CPE). Our results revealed that CdO/SWCNTs/1-3-MBIB/CPE shows excellent electro-catalytic activity towards electro-oxidation of nitrite. The obtained data illustrated an irreversible oxidation peak current at 0.92 V, pointing to the oxidation of nitrite. The CdO/SWCNTs/1-3-MBIB/CPE exhibited a linear response from 0.1 μM to 900.0 μM of nitrite with no interfering from other food compounds. The CdO/SWCNTs/1-3-MBIB/CPE has been used for determination of nitrite in real samples.

Keywords: Nitrite determination, CdO/SWCNTs, Sensor, Food analysis

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