Short Communication

Electrochemical Determination of Vanillin in Food Samples Using MgO/SWCNTs-ionic Liquid Modified Electrode

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The development of a novel electrochemical sensor, based on modification of the carbon paste electrode with MgO/SWCNTs nanocomposite and 1-butyl-3-methylimidazolium hexafluoro phosphate (MgO/SWCNTs/BMPF₆/CPE) has been reported. The electro-oxidative behavior of vanillin in food samples at MgO/SWCNTs/BMPF₆/CPE using square wave and linear sweep voltammetry was investigated. The oxidation signal of vanillin at MgO/SWCNTs/BMPF₆/CPE increased when compared with the unmodified electrode. The catalytic current showed a linear relationship with vanillin concentration in the range 0.02 to 800 μ M with a detection limit of 8.0 nM. The MgO/SWCNTs/BMPF₆/CPE was applied for vanillin determination in food samples.

Keywords: Vanillin, MgO/SWCNTs, 1-butyl-3-methylimidazolium hexafluoro phosphate, Modified electrode.

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