Electrochemical Determination of Maltol in Food Sample Based on Nitrogen-Doped Graphene -Modified Electrode

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There is an easily accessible and low cost approach to generating nitrogen-doped graphene (NG). This method is shown through the combination of high exfoliation speed and covalent metamorphose from the melamine (MA)–graphene oxide (GO) mixture. NGs processed during the temperature of 300, 600, and 900 °C featured X-ray photoelectron spectroscopy (XPS) in a systematic way. As for XPS, graphitic-N, pyridinic-N, as well as pyrrolic-N and are regarded to be three major nitrogen-doped frameworks with different proportions. NG modified GCE exerted a strengthening influence on the electrochemical oxidation process. After optimization, the anodic ultimate current of maltol react was in accordance with its concentration ranging from 0.05 μM to 70 μM , along with the detection limit of 0.02 μM , has been obtained.

Keywords: Graphene; Maltol; N-Doping; Electrochemical oxidation; Annealing temperature

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