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**Electrochemical Sensing of Hydrogen Peroxide Using Nitrogen-Doped Graphene/Porous
Iron Oxide Nanorod composite**

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Abstract

In this work, iron oxide nanomaterials with different shapes and structures were used as active materials for electrode. The proposed sensitive and non-enzymatic H₂O₂ biosensor, based on N-doped Graphene/porous Fe₂O₃ NRs (N-rGO/Fe₂O₃ NRs), exhibits good stability and reproducibility under the optimal experimental conditions. Furthermore, this H₂O₂ biosensor was also utilized to detect H₂O₂ in real sample (orange juice) and high selectivity towards H₂O₂ was found. Therefore, the porous N-rGO/Fe₂O₃ NRs composite is thought of as a potential material in biosensing and bioanalysis.

Keywords: Hydrogen peroxide, electrochemical, Nitrogen doped-graphene/porous iron oxide, non-enzymatic sensor, nanocomposite, porous materials

Introduction

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