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Ni foam: a novel three-dimensional porous sensing platform for sensitive and selective nonenzymatic glucose detection

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Abstract

The present communication reports on the first use of commercially available three-dimensional porous Ni foam (NF) as a novel electrochemical sensing platform for nonenzymatic glucose detection. NF not only acts as a working electrode, but also functions as an effective electrocatalyst for electrooxidation of glucose. The sensor exhibits high selectivity toward glucose. The linear range and limit of detection were 0.05-7.35 mM ($R = 0.995$) and 2.2 μ M with a signal-to-noise ratio of 3, respectively. The application of this glucose sensor in human blood serum has also been demonstrated successfully.

Keywords

KeyWords Plus: AG NANOPARTICLES; GRAPHENE OXIDE; ELECTROCHEMICAL DETECTION; H₂O₂; SENSOR; ELECTRODES; REDUCTION; BIOSENSOR

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