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Amperometric Sensing of Hydrogen Peroxide Using Graphene Oxide-Alizarin Modified Glassy Carbon Electrode

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A sensitive and selective amperometric sensor for hydrogen peroxide was constructed by mixing graphene oxide (GO) and alizarin red (Ali) at certain amounts, and dropping it onto a glassy carbon electrode (GC). The freshly prepared electrode (Ali-GO/GC) was activated by voltage scans at the range of -0.6 V and 0.9 V for ten cycles. Activated Ali-GO/GC has possessed a reversible redox activity in both anodic and cathodic directions. Ali-GO/GC exhibits a suitable electrocatalytic activity against hydrogen peroxide towards the anodic redox region with a linear range from 3.6 μM to 513 μM of H_2O_2 and a detection limit of 1.1 μM. Ali-GO/GC displays selectivity, relatively high sensitivity, and reproducibility at the amperometric analysis of hydrogen peroxide.

Keywords: Hydrogen peroxide, Alizarin, Graphene oxide; Glassy carbon electrode.

FULL TEXT

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