AgNPs Modified Glass Carbon Electrode Prepared with Gelatin as an Additive for Hydrogen Peroxide Sensor

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A method which was simple, cost effective and environmental friendly was employed for the synthesis of Ag nanoparticle (AgNP) with gelatin as a multifunctional additive. The hydrogen peroxide (H₂O₂) non-enzyme sensor was further fabricated using the mixture of the AgNPs with gelatin and fish-scale-based hierarchical lamellar porous carbon(FHLC). And its electrochemical behavior and stability was analyzed by CV, electrochemical impedance spectroscopy and amperometric I-t curve. In the result, the sensor exhibited an excellent response to the H₂O₂, and the detection limit was 0.6 μM with the linear response ranging from 0.2 mM to 12.3 mM (R²=0.999). In addition, it exhibited good long term stability and anti-interference capability.

Keywords: Gelatin, Ag nanoparticle, Hydrogen peroxide, Electrochemical non-enzyme sensor

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