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Graphene nanoribbon/FePt bimetallic nanoparticles/uric acid as a novel magnetic sensing layer of screen printed electrode for sensitive determination of ampyra

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ABSTRACT

A novel electrochemical sensor for sensitive determination of ampyra (Am) based on graphene nanoribbons modified by iron-platinum bimetallic nanoparticles and uric acid (SPCE/FePtGNR/UA) dropped on the screen-printed carbon electrode (SPCE) surface and magnetically captured onto an SPCE working electrode surface is reported in the present work. The modified nanocomposite and sensing layer was characterized by different techniques, including cyclic voltammetry (CV), linear sweep voltammetry (LSV), electrochemical impedance spectroscopy (EIS), transmission electron microscopy (TEM), Fourier transform infrared spectroscopy (FT-IR) and X-ray powdered diffraction (XRD). Am determination by conventional electrochemical methods is not possible, because of its high redox overpotential. Therefore, the differential pulse voltammetry (DPV) signals of UA were

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