

Accepted Manuscript

Title: A novel and sensitive hexadecyltrimethylammonium bromide functionalized grapheme supported platinum nanoparticles composite modified glassy carbon electrode for determination of sunset yellow in soft drinks

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PII: S0925-4005(14)01310-0
DOI: <http://dx.doi.org/doi:10.1016/j.snb.2014.10.098>
Reference: SNB 17596

To appear in: *Sensors and Actuators B*

Received date: 13-5-2014
Revised date: 13-10-2014
Accepted date: 22-10-2014

Please cite this article as: L. Yu, M. Shi, X.Y., L. Qu, A novel and sensitive hexadecyltrimethylammonium bromide functionalized grapheme supported platinum nanoparticles composite modified glassy carbon electrode for determination of sunset yellow in soft drinks, *Sensors and Actuators B: Chemical* (2014), <http://dx.doi.org/10.1016/j.snb.2014.10.098>

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A novel and sensitive hexadecyltrimethylammonium bromide functionalized graphene supported platinum nanoparticles composite modified glassy carbon electrode for determination of sunset yellow in soft drinks

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Abstract : A new and sensitive electrochemical sensor based on hexadecyltrimethylammonium bromide (CTAB) functionalized graphene supported platinum nanoparticles (CTAB-Gr-Pt) composite was fabricated via one step hydrothermal method. CTAB acted as a surfactant and absorbed platinum nanoparticles (Pt NPs) on the graphene surface. The CTAB-Gr-Pt composite greatly improved the oxidation activity of sunset yellow, owing to the synergistic effect of the large surface area and electrocatalytic activity of both Gr and Pt NPs, and further increased the sensitivity of the method. Cyclic voltammetry (CV) and differential pulse voltammetry (DPV) were used to investigate the electrochemical behavior of sunset yellow. Under the optimized experimental conditions, the oxidation peak currents of sunset yellow were proportional to its

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