Voltammetric behavior of a Chemically Modified Carbon Paste Electrode with Cadmium Nitroprusside Prepared in Different Water to Formamide Ratios

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This paper describes a voltammetric study of cadmium nitroprusside synthesized from different compositions of water/formamide in your reaction of Cd^{2+} with $[\text{Fe}^{\text{III}}(\text{CN})_5\text{NO}]^{2-}$ (CdNP). After infrared and transmission electron microscopy characterization, the CdNP was incorporated into a carbon paste electrode and a systematic voltammetric study was performed for four systems (CdNP-1, CdNP-2, CdNP-3 and CdNP-4). The spectroscopic studies reveals that all preparations was conducted with success. The cyclic voltammogram of all CdNP particles obtained from a carbon paste electrode modified (10% m/m) exhibited a redox couple with formal potential (E^0) = 0.63 ± 0.02 V (10 % (m/m); $v=20$ mV s⁻¹; KNO_3 1.0 M)) attributed to the redox process $[\text{Fe}^{\text{II}}(\text{CN})_5\text{NO}]/[\text{Fe}^{\text{III}}(\text{CN})_5\text{NO}]$ in the presence of Cd^{2+} .

Keywords: Cadmium nitroprusside, voltammetry, formamide, eletro-oxidation, isoniazid

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