

Electrochemical Determination of Pyrogallol at Aluminum Oxide Modified Paste Carbon Electrodes

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Abstract. Paste carbon electrode modified with aluminum oxide (Al₂O₃-PCE) have been used for the detection of pyrogallol (PG). The electrocatalytic oxidation of PG at the Al₂O₃-GPE was investigated by cyclic Voltammetry (CV), and differential pulse Voltammetry (DPV). The modified electrode showed an anodic oxidation pic in a round of +0.75 V. Under optimum experimental conditions using differential pulse Voltammetry, the sensor showed a linear calibration plot in 1–1000 µM of pyrogallol, sensitivity of $6.58 \times 10^{-4} \mu A \cdot L \cdot mol^{-1}$, and a detection limit of 5 µM after 10 min accumulation.

Keywords: pyrogallol, modified carbon paste electrode, differential pulse Voltammetry, cyclic Voltammetry