

## Electrochemical Detection of Hydroquinone by Square Wave Voltammetry Using a Zn Layered Hydroxide-Ferulate Modified Multiwall Carbon Nanotubes Paste Electrode

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**Abstract :** In this paper, a multiwall carbon nanotubes (MWCNT) paste electrode modified by a Zn layered hydroxide-ferulate (ZLH-F) was used for detection of hydroquinone (HQ). The morphology and characteristic of the ZLH-F/MWCNT were investigated by scanning electron microscope (SEM), transmission electron microscope (TEM) and square wave voltammetry (SWV). Under optimal conditions, the SWV response showed linear plot for HQ concentration in the range of  $1.0 \times 10^{-5}$  M -  $1.0 \times 10^{-3}$  M. The detection limit was found to be  $5.7 \times 10^{-6}$  M and correlation coefficient of 0.9957. The glucose, fructose, sucrose, bisphenol A, acetaminophen, lysine,  $\text{NO}_3^-$ ,  $\text{Cl}^-$  and  $\text{SO}_4^{2-}$  did not interfere the HQ response. This modified electrode can be used to determine HQ content in wastewater and cosmetic cream with range of recovery 97.8% - 103.0%.

**Keywords :** 1,4-dihydroxybenzene, hydroquinone, multiwall carbon nanotubes, square wave voltammetry

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