## Poly(sulfosalicylic acid)/multi-walled Carbon Nanotube Modified Electrode for the Electrochemical Detection of Catechol

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A novel carbon paste electrode (CPE) modified by the poly(sulfosalicylic acid) and multi-walled carbon nanotubes (MWCNTs) composite (poly-SA/MWCNTs) has been easily constructed as an electrochemical sensor for the catechol determination. The electrochemical behaviors of catechol are investigated by cyclic voltammetry (CV) and differential pulse voltammetry (DPV) at the modified electrode. It is found that (i) poly-SA/MWCNTs/CPE exhibits a better electrical conductivity than bare CPE and MWCNTs/CPE; (ii) the anodic peak current of catechol at the poly-SA/MWCNTs/CPE electrode is about 8-fold larger than that at the bare CPE electrode; (iii) the detection limit of concentrate of catechol is 0.16  $\mu$ mol L<sup>-1</sup> (S/N = 3) and the linear dynamic range varies from 3 to 240  $\mu$ mol L<sup>-1</sup>. The newly developed sensor exhibits many advantages for catechol detection, such a low-cost, easy preparation, high sensitivity, good anti-interference ability, excellent reproducibility and long-term stability and so on, which will be a potential candidate for the detection of phenolic derivatives.

**Keywords:** Electrochemical detection, multi-walled carbon nanotube, sulfosalicylic acid, catechol, electrode modification

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