

基于静电沉积壳聚糖铂纳米颗粒复合膜构建葡萄糖生物传感器

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摘要:

在金电极上静电沉积壳聚糖铂纳米颗粒, 采用壳聚糖包埋固定葡萄糖氧化酶构建葡萄糖生物传感器。实验结果表明: 制得的葡萄糖生物传感器响应时间小于7s, 线性测量范围为 1×10^{-5} ~ 0.6×10^{-3} mol/L, 检测限为 1×10^{-6} mol/L。该传感器灵敏度高, 稳定性好。

关键词: 循环伏安法, 生物传感器, 葡萄糖氧化酶, 铂纳米颗粒, 壳聚糖

Electrodeposition of chitosan-platinum nanoparticle biocomposite onto gold electrode for glucose sensing

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Abstract:

Chitosan-pt nanoparticles deposited on the gold electrode by electrodeposting, then glucose oxidase was immobilized on the surface of modified electrode by chitosan embedding. The result showed that the biosensor exhibited a fast amperometric response (<7s) to glucose. The linear range for glucose detection was 1×10^{-5} ~ 0.6×10^{-3} mol/L. The detection limit for glucose was 1×10^{-6} mol/L. The biosensor had more sensitivity and more stability.

Keywords: cyclic voltammetry, biosensor, glucose oxidase, Pt nanoparticles, Chitosan

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