

SYNTHESIS OF AMINE FUNCTIONALIZED NAPHTHALENE CONTAINING CONDUCTING POLYMER AS A MATRIX FOR BIOMOLECULE IMMOBILIZATION

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DTP (polydithienopyrroles) have been investigated as a new unit in conjugated materials because of its planar structure, extended π -conjugation across the fused rings and N-H bond. Generally N-substituted dithione [3,2-b:2',3'-d] pyrroles (DTPs) are precursors for conducting polymers[1]. Amperometric glucose biosensor was prepared by the covalent immobilization of glucose oxidase (GOx) onto graphite electrode surface which is modified with amino-functionalized naphthalene-containing a novel conducting polymer [N-naphthyl dithieno pyrroles (DTP-naphthyl-NH₂)] via electropolymerization. In the immobilization procedure of enzyme, the amino groups of GOx and DTP-naphthyl-NH₂ were crosslinked using glutaraldehyde (GA) as the bifunctional agent. Conductive polymer and glucose biosensors are attached to each other by electropolymerization as a result of the reaction between the substrate and enzyme-based amperometric biosensors both more sensitive and more durable than normal spectrophotometric [2-4].

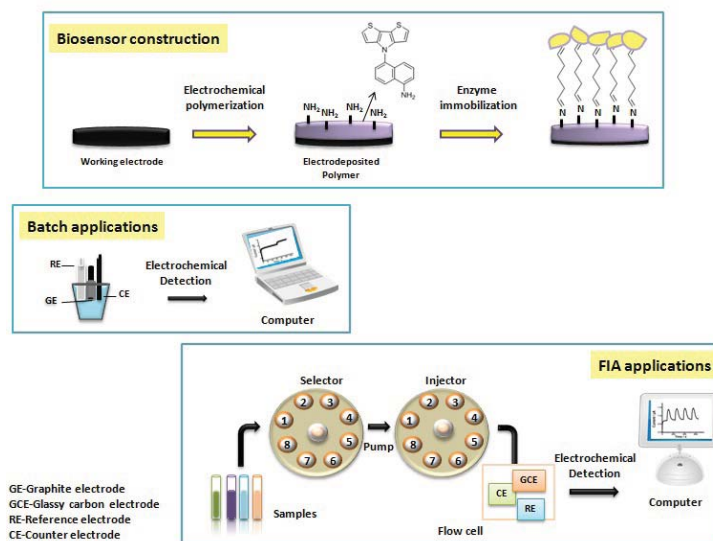


Figure 1. Schematic representation of DTP-NH₂/GOx biosensors preparation and glucose detection in batch and FIA mode

References

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