

Glucose Oxidase Biomembrane for Glucose Sensor by Electropolymerization Technique

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Entrapment of glucose oxidase in a polymeric membrane has been done by electropolymerization process of m-phenylene diamine on platinum electrode at +0.65 V versus SCE. A Concentration of 0.03 M m-phenylenediamine in the presence of 100 u/ml of glucose oxidase was optimal for the fabrication of the biosensors. The characteristics of this biosensor was studied by measuring various concentration of glucose in phosphate buffer solution pH 7 at 25°C. The response to glucose by glucose oxidase was detected by the oxidation of hydrogen peroxide at a potential of + 0.7 V Versus SCE. The glucose biomembrane electrode exhibited good linearity in the range of 0.05-20 mM glucose. The response time was less than 60 seconds.

Keywords : Biomembrane, Glucose Sensor, Electropolymerization