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Cobalt Sulfide-Based Biosensor anchored on Graphene for Continuous Monitoring of glucose in sweat.

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Abstract

Currently, there is an overwhelming demand for the development of biocompatible glucose sensors with improved sensing capabilities such as, low limit of detection, high sensitivity and selectivity as compared to current technologies. To meet these needs, a move towards nonenzymatic glucose sensors has become necessary. These new sensors have gained significant interest due to their capacity to achieve continuous glucose monitoring, their high stability compared to traditional glucose sensors, and the ease of their fabrication. Research has been extensively geared towards the preparation of these nonenzymatic glucose sensors from novel materials, often with unique micro- or nanostructures, which possess ideal properties for electrochemical biosensor applications. In recent years, a variety of materials including transitional metal-Sulfides (TMSs) have been explored for their electrocatalytic response to the oxidation of glucose due to their abundant nature, facile synthesis method and biocompatibility. In this regard, a flexible electrode based on Cobalt Sulfide (CoS) nanoparticles anchored on graphene as a flexible have been successfully fabricated using inkjet printing technology for the electrochemical sensing of glucose in sweat.

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