

Graphen-Based Nanocomposites for Glucose and Ethanol Enzymatic Biosensor Fabrication

Authors : Tesfaye Alamirew, Delele Worku, Solomon W. Fanta, Nigus Gabbiye

Abstract : Recently graphen based nanocomposites are become an emerging research areas for fabrication of enzymatic biosensors due to their property of large surface area, conductivity and biocompatibility. This review summarizes recent research reports of graphen based nanocomposites for the fabrication of glucose and ethanol enzymatic biosensors. The newly fabricated enzyme free microwave treated nitrogen doped graphen (MN-d-GR) had provided highest sensitivity towards glucose and GCE/rGO/AuNPs/ADH composite had provided far highest sensitivity towards ethanol compared to other reported graphen based nanocomposites. The MWCNT/GO/GOx and GCE/ErGO/PTH/ADH nanocomposites had also enhanced wide linear range for glucose and ethanol detection respectively. Generally, graphen based nanocomposite enzymatic biosensors had fast direct electron transfer rate, highest sensitivity and wide linear detection ranges during glucose and ethanol sensing.

Keywords : glucose, ethanol, enzymatic biosensor, graphen, nanocomposite

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