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**Detection of H<sub>2</sub>O<sub>2</sub> based on multi-porous SnO<sub>2</sub> nanofiber carbon nanotube nanocomposite with facilitated electron transfer of redox protein****A K M Kafi**

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A novel H<sub>2</sub>O<sub>2</sub> biosensor is fabricated using multi-porous SnO<sub>2</sub> nanofiber/carbon nanotubes (CNTs) composite as a matrix for the immobilization of redox protein onto glassy carbon electrode. The Multi-Porous Nanofiber (MPNFs) of SnO<sub>2</sub> is synthesized by electro-spinning technique from the tin precursor. This nanofiber shows high surface area and good electrical conductivity. The SnO<sub>2</sub> nanofiber/CNT composite increases the efficiency of biomolecule loading due to its high surface area. The morphology of the nanofiber has been evaluated by Scanning Electron Microscopy (SEM). A direct electron transfer between the protein's redox center and the glassy carbon electrode is established after fabrication of the electrode. The fabricated electrode shows excellent electro-catalytic reduction to H<sub>2</sub>O<sub>2</sub>. The catalysis currents increases linearly to the H<sub>2</sub>O<sub>2</sub> concentration in a wide range of 1.0×10<sup>-6</sup>-1.4×10<sup>-4</sup> M and the lowest detection limit was 30 nM (S/N=3).

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