SUPPORTING INFORMATION

Gold nanoparticle-composite nanofibers for enzymatic electrochemical sensing of hydrogen peroxide

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**Fig. S1**

![Graph showing particle size distribution of DMAP-protected Au NPs in water.](image)

**Fig. S1:** Particle size distribution of DMAP-protected Au NPs in water.
Figure S2: XRD patterns for Nafion NFs and Au NP-composite NFs.
Figure S3: UV-Vis-NIR spectra for (a) Nafion NFs, (b) Au NP-composite NFs, (c) DMAP-protected Au NPs, (d) Nafion NFs-HRP and (e) Au NP-composite NFs-HRP.
Figure S4. Linear dependency between the peak current and the scan rate on the Nafion NFs/HRP electrode. Inset shows the variation of the peak current with the square root of scan rate.
**Figure S5.** Voltammetric response of the Au NP-composite NFs (HRP-free electrodes) in the presence and absence of 25 mM H$_2$O$_2$. 

**Fig. S5**
Figure S6: Dependence of pH on the peak currents obtained from cyclic voltammogram of HRP immobilized Au NP-composite nanofibers. The current response to 0.01 mM H₂O₂ was performed at different pH levels (from pH 3 to pH 8).
Fig. S7

Figure S7: Response of steady state current with $[\text{H}_2\text{O}_2]$ for the electrodes modified with Nafion NFs/HRP.
Figure S8: Stability of Au NP-composite NFs towards 0.05 mM H$_2$O$_2$. The electrodes were stored at 4º C over three weeks and used for the analysis at different time points.