Supporting Information of

A novel δ-MnO₂ with carbon nanotubes nanocomposites as enzyme-free sensor for hydrogen peroxide electrosensing

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Figure S1: Distribution of carbon species obtained from the C1s peaks by XPS.
Figure S2: Plot of 1 mM H$_2$O$_2$ current response vs. $\delta$-MnO$_2$/CNTs ink loading (µL) onto GCE by CVs in Ar-saturated 0.1 M PBS at 50 mV s$^{-1}$ scan rate.

Figure S3: Scan rate dependent CVs recorded in Ar-saturated 0.1 M PBS at pH 7.4 on $\delta$-MnO$_2$/CNTs/GCE at 10 to 150 mV s$^{-1}$ scan rates.
**Figure S4:** Amperometric response on δ-MnO$_2$/CNTs/GCE upon addition of 2 mM H$_2$O$_2$ in Ar-saturated 0.1 M PBS at different applied potentials for applied potential optimization.

**Figure S5:** Enlarged amperometric response on δ-MnO$_2$/CNT/GCE upon addition H$_2$O$_2$ in 0.1 M PBS at an applied potential of -0.3 V at cited time range.
Figure S6: The stability and reproducibility of δ-MnO$_2$/CNT/GCE by CVs response in Ar-saturated 0.1 M PBS with 1 mM H$_2$O$_2$ at a scan rate of 50 mV s$^{-1}$; inset: the reproducibility of seven different modified electrodes.

Figure S7: CVs response for real sample analysis on δ-MnO$_2$/CNT/GCE in Ar-saturated 0.1 M PBS (a), 0.1 M PBS + Tomato sauce (TS) (b), and 0.1 M PBS + Tap water (TW) (c) with the subsequent addition of 1, 2, 3, 4 mM H$_2$O$_2$ at a scan rate of 50 mV s$^{-1}$. 