Supporting Informantion

Amperometric hydrogen peroxide and glucose biosensor based on the $NiFe_2$/ordered mesoporous carbon nanocomposites

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Fig. S1

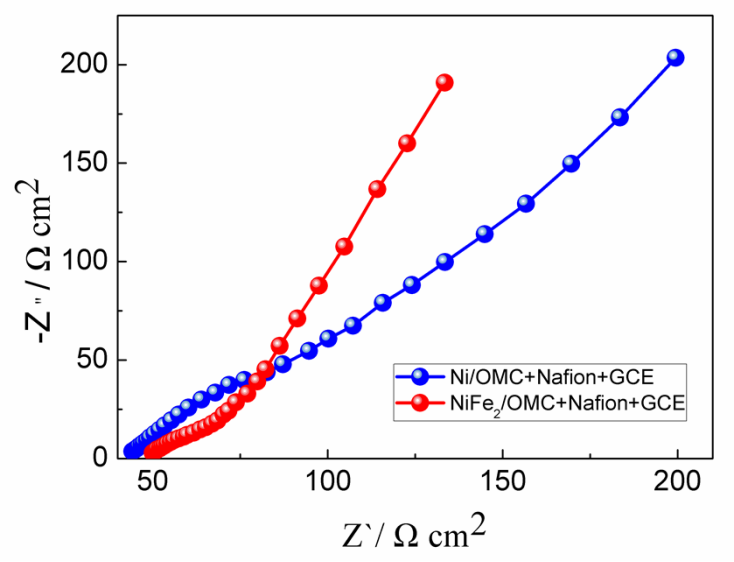

Fig. S1 Nyquist diagram of electrochemical impedance spectroscopy in 0.1 M PBS (pH 7.0) containing 1.0 mM H_2O_2 at Ni/OMC+Nafion+GCE and $NiFe_2$/OMC+Nafion+GCE.

Fig. S2

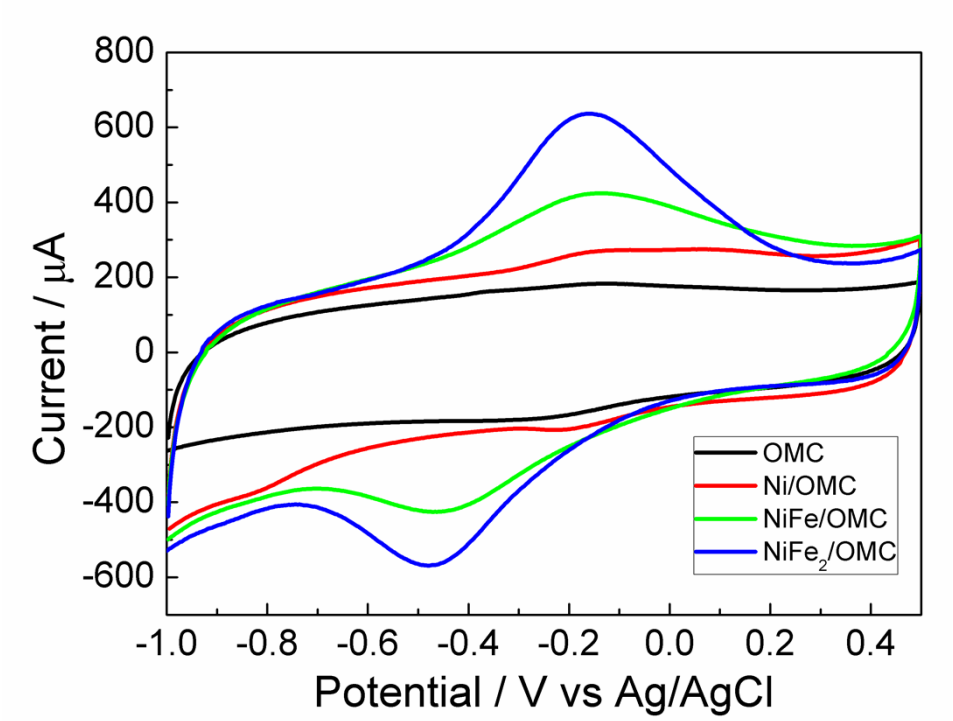

Fig. S2 Cyclic voltammograms (CVs) of OMC+Nafion+GCE and $NiFe_x$/OMC+Nafion+GCE (x=0, 1, 2) of 1.0 mM H_2O_2 in 0.1 M PBS, scan rate: 50 mV/ s.

Fig. S3

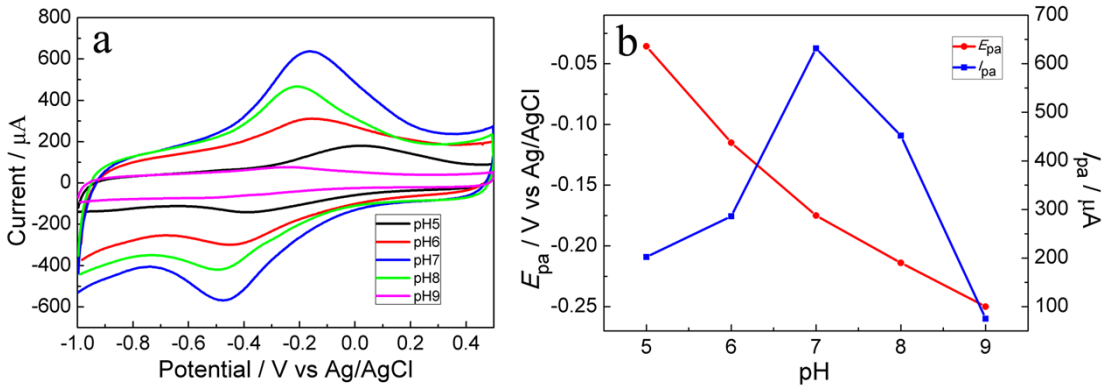

Fig. S3 (a) Cyclic voltammograms (CVs) of $NiFe_2$/OMC+Nafion+GCE of 1.0 mM H_2O_2 in 0.1 M PBS at different pHs from 5 to 9, scan rate: 50 mV/s, (b) effects of solution pH on the E_{pa} (red rotundity) *vs.* I_{pa} (blue triangle).

Fig. S4

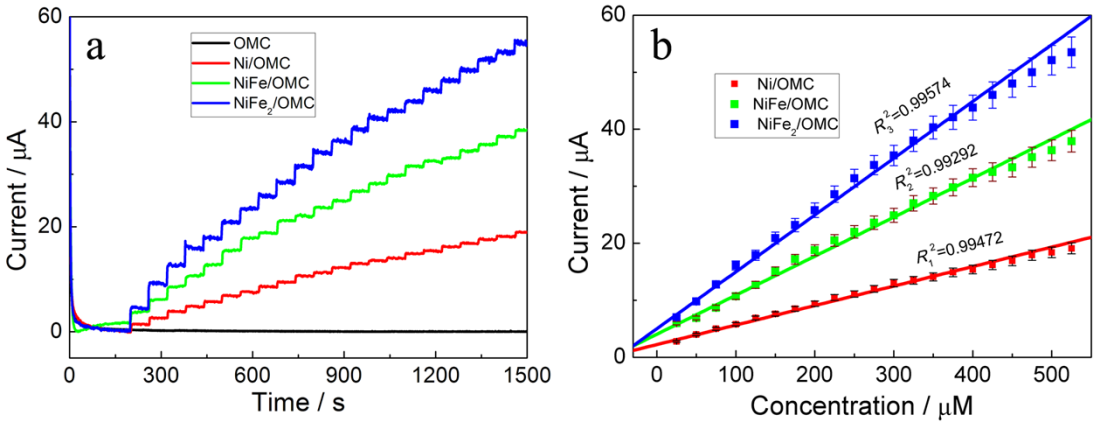

Fig. S4 Dynamic response (current *vs* time, *I-t*) of the biosensor to successive addition of 1 mM H_2O_2 steps in the 0.1 M PBS (pH 7) solution at the applied potential of –0.2 V in N_2 saturated , rotation speed: 400 rpm, (a), the resulting data was processed and plotted as a scatter plot (current *vs.* concentration) with linear regression analysis (b) for the $NiFe_x$/OMC electrodes.

Fig. S5

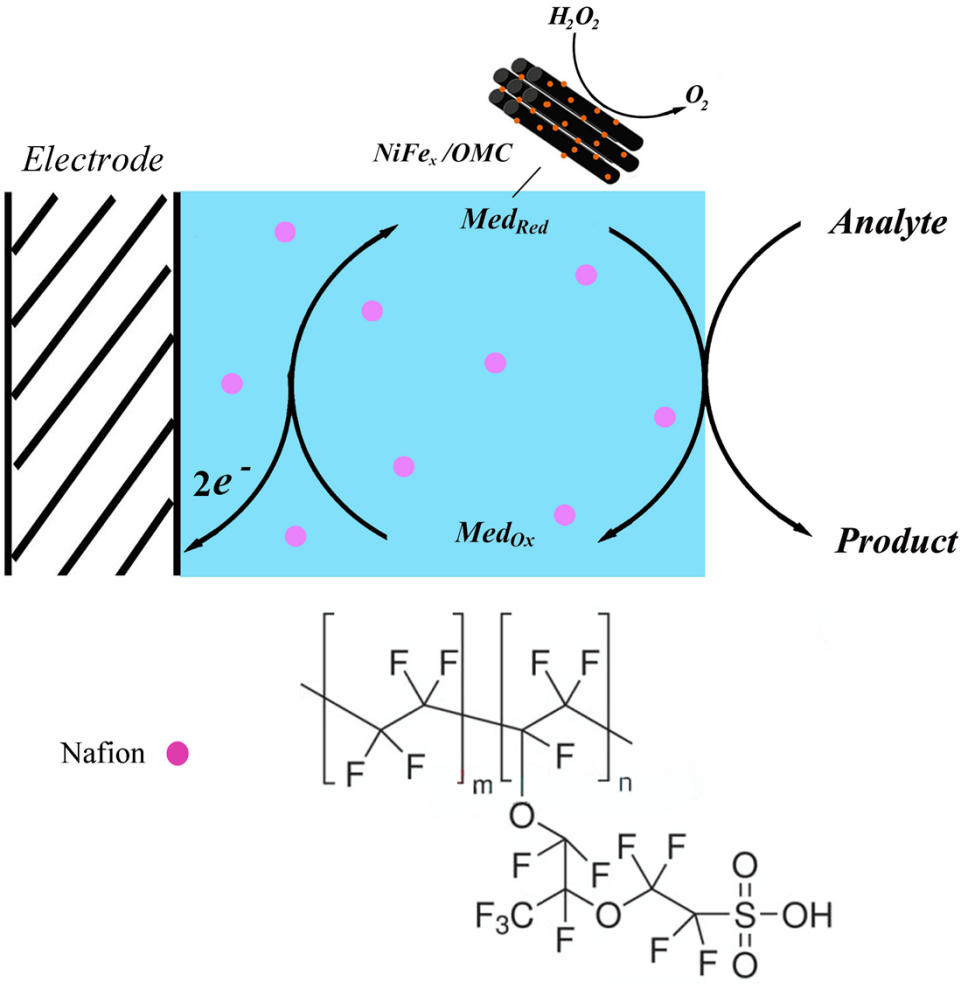

Fig. S5 The redox reaction drawing for H_2O_2 at $NiFe_x$/OMC+Nafion+GCE.

Fig. S6

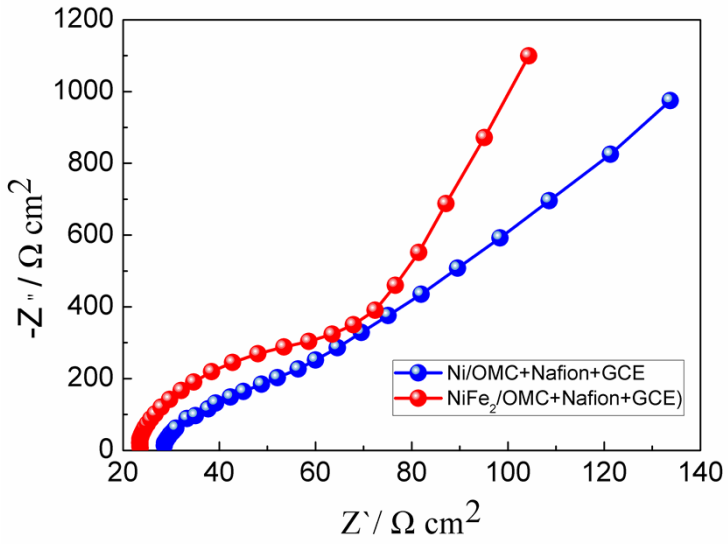

Fig.S6 Nyquist diagram of electrochemical impedance spectroscopy in 0.1 M PBS (pH 6.5) containing 1.0 mM glucose at GOx+Ni/OMC+Nafion+GCE and GOx+$NiFe_2$/OMC+Nafion+GCE.

Fig. S7

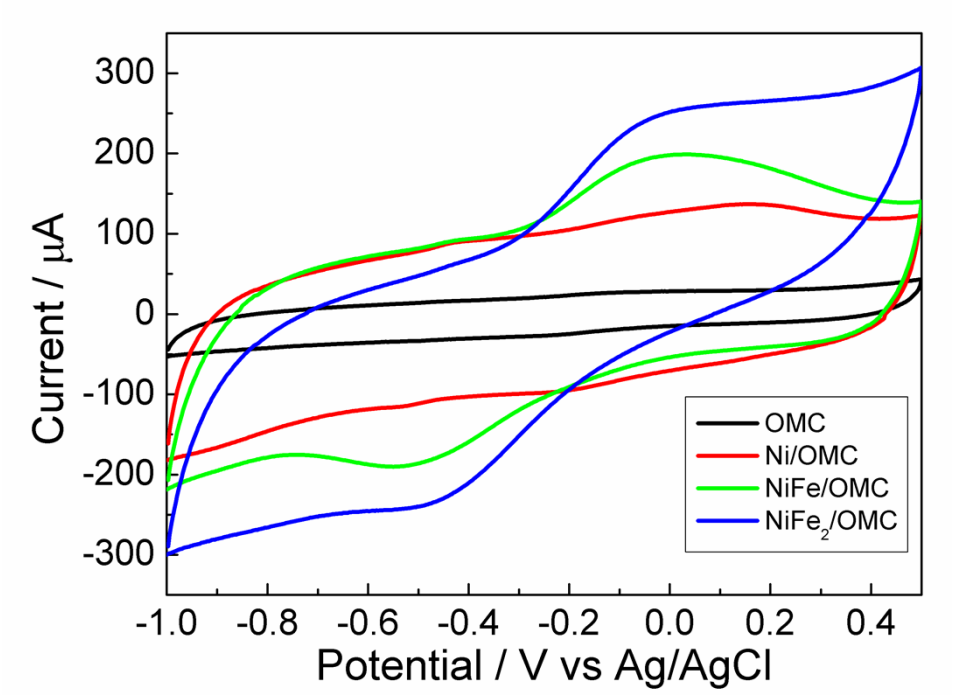

Fig. S7. Cyclic voltammograms (CVs) of GOx+ OMC+Nafion+GCE and GOx+NiFe$_x$/OMC+Nafion+GCE (x=0, 1, 2) of 1.0 mM glucose in 0.1 M PBS, scan rate: 50 mV/s.

Fig. S8

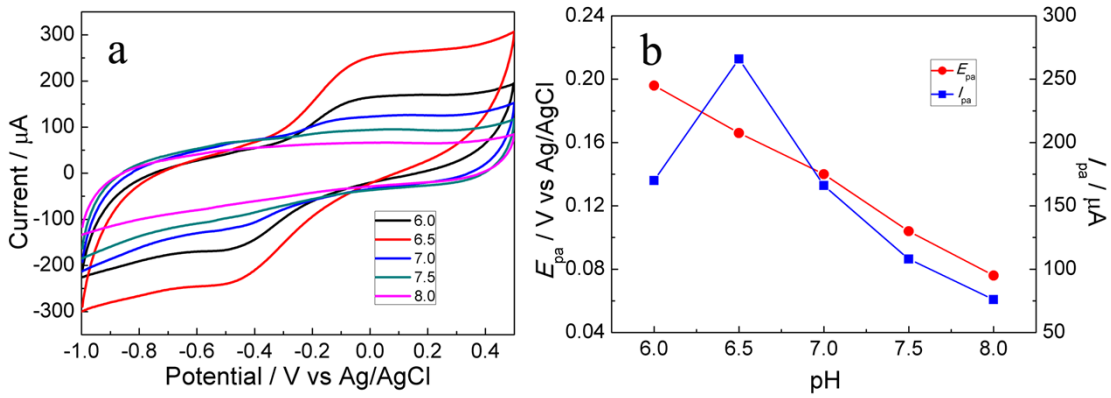

Fig. S8 Cyclic voltammograms of GOx+$NiFe_2$/OMC+Nafion+GCE of 0.5 mM glucose in 0.1 M PBS at different pHs from 6 to 8, scan rate: 50 mV/s, (b) effects of solution pH on the E_{pa} (red rotundity) *vs* I_{pa} (blue triangle).

Fig. S9

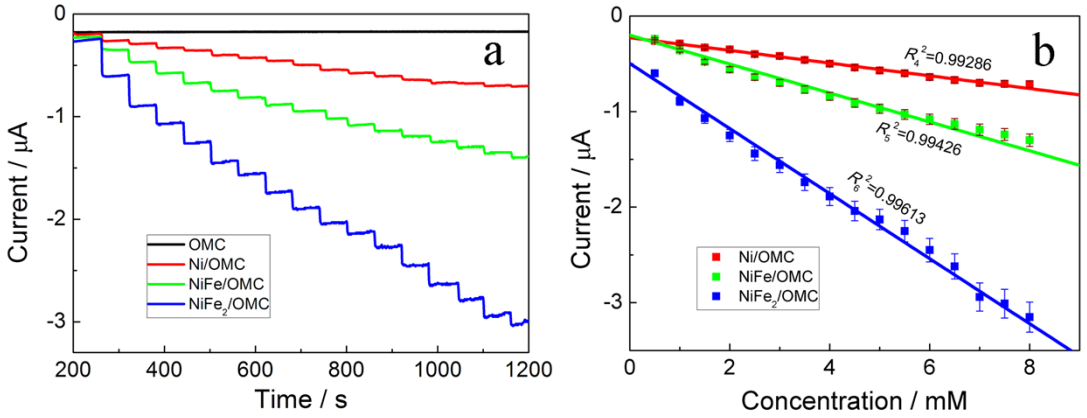

Fig. S9 (a) Dynamic response of the GOx+NiFe$_x$/OMC+Nafion+GCE sensor to successive injection of 0.5 mM glucose steps in the 0.1M PBS (pH 6.5) solution at the applied potential of –0.2 V in N_2 saturated, rotation speed: 400 rpm, (b) the resulting data was processed and plotted as a scatter plot (current *vs* concentration) with linear regression analysis.