

Supporting Information

Three-Dimensional Carbon Nanotube-Doped Hydrogel Network Enabling Sensitive Electrochemical Detection of Hydrogen Peroxide

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Figure S7. The absolute value of charge intensity (|Q|) during the reduction of 10 mM H₂O₂ at -0.60 V was determined using chronocoulometry in air-saturated PBS (0.1 M) to optimise the pH of the PBS solution.

Table 1 Elemental composition of HG/CNTs material surfaces

Sample	Element (wt%)		
	C	O	N
GCE/HG/CNTs	55.75	31.54	12.71

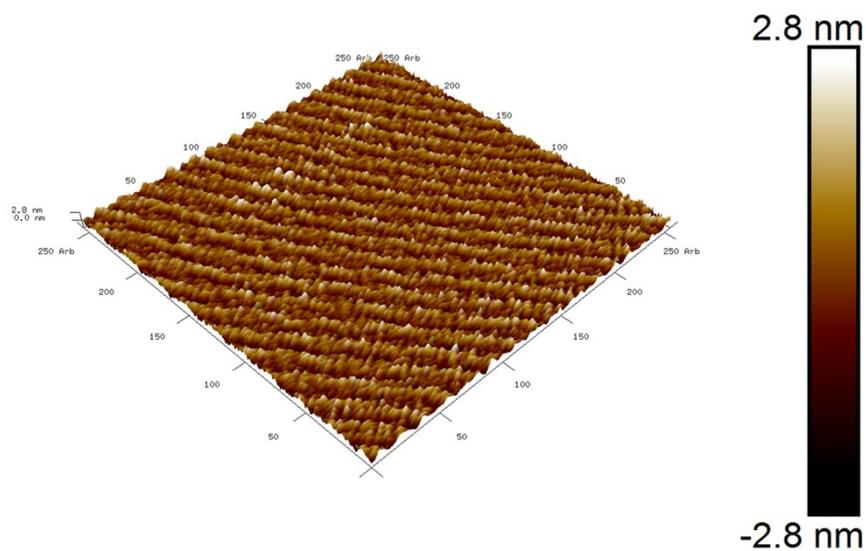


Figure S1. AFM image of HG/CNT-OH modification on the electrode surface.

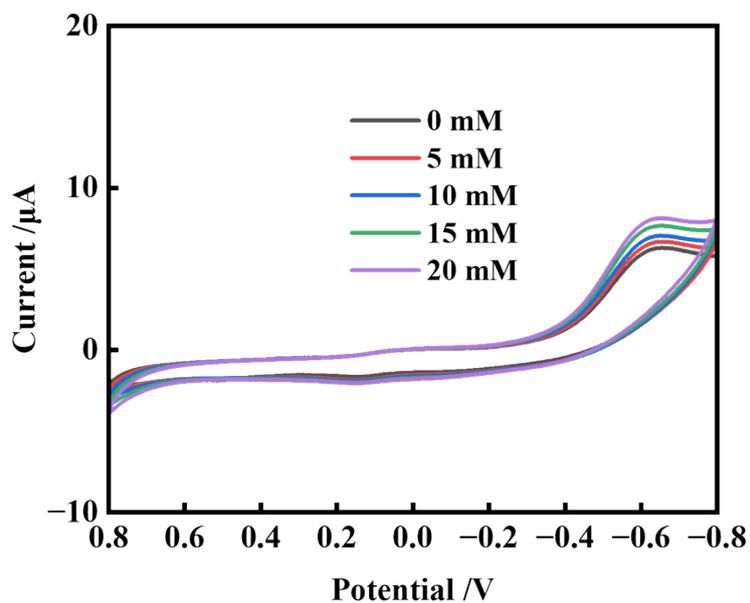


Figure S2. CV curves of hydrogen peroxide detected by the GCE/CNTs-OH electrode in air-saturated PBS (0.1 M, pH=7.0).

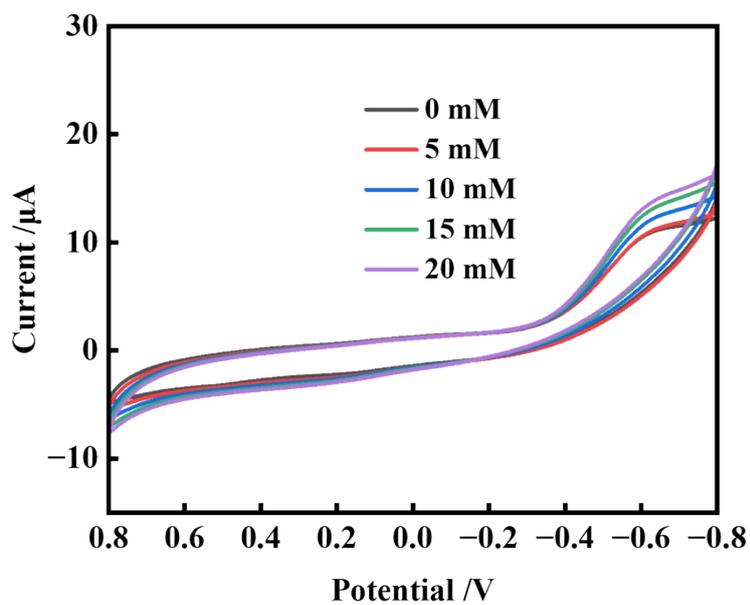


Figure S3. CV curves of H₂O₂ detected by the GCE/HG electrode in air-saturated PBS (0.1 M, pH=7.0).

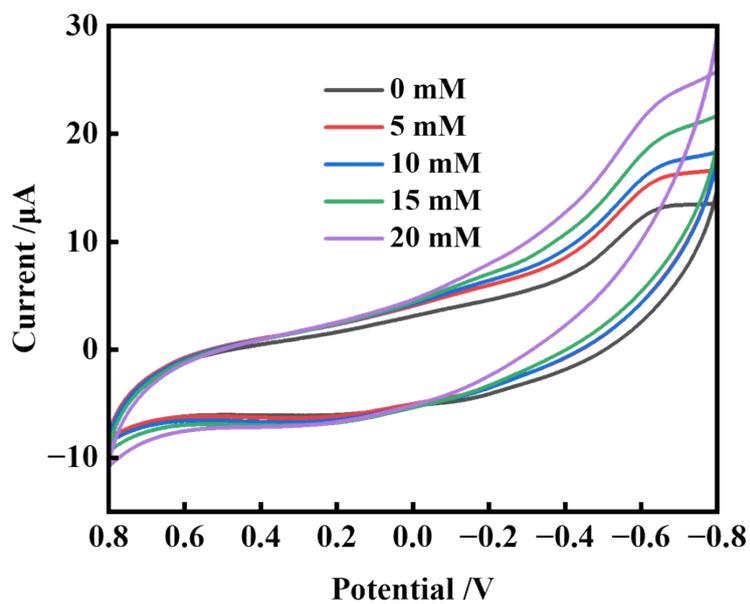


Figure S4. CV curves of H₂O₂ detected by the GCE/HG/CNTs-OH electrode in air-saturated PBS (0.1 M, pH=7.0).

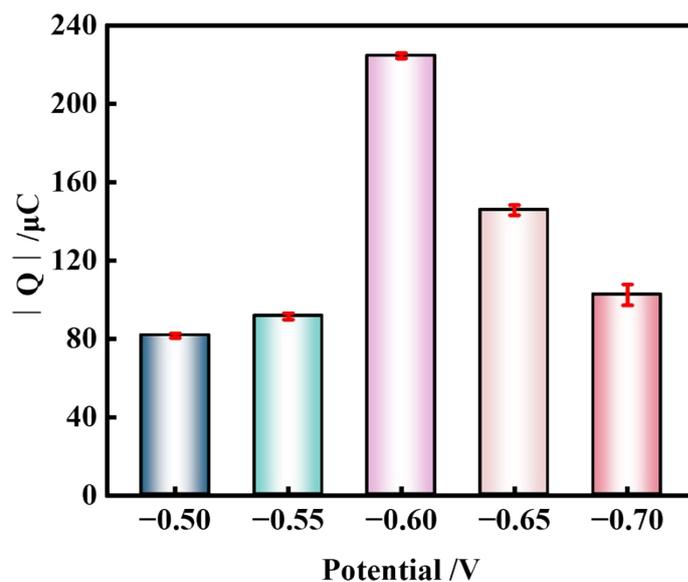


Figure S5. In air-saturated PBS (0.1 M, pH=7.0), the absolute value of charge intensity ($|Q|$) during the reduction of 10 mM H_2O_2 was measured at different potentials using chronocoulometry to optimize the operating voltage of the sensor.

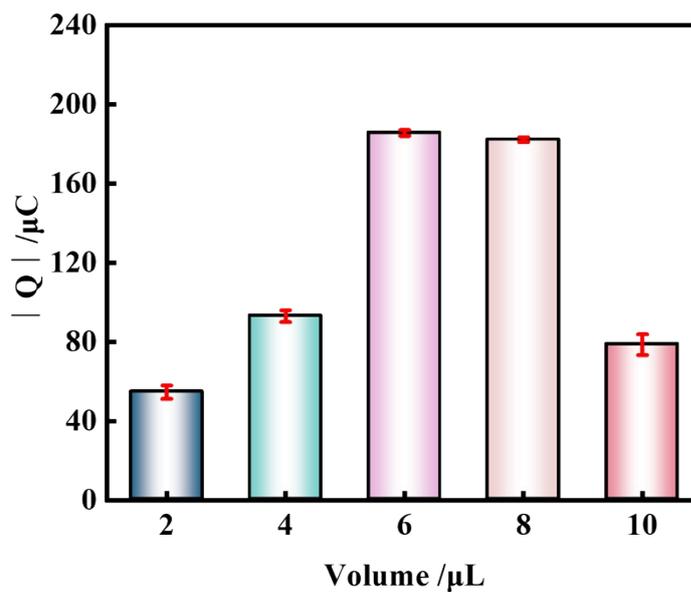


Figure S6. The absolute value of charge intensity ($|Q|$) during the reduction of 10 mM H_2O_2 at -0.60 V was determined using chronocoulometry in air-saturated PBS (0.1 M, pH=7.0) to optimise the volume of HG/CNTs-OH immobilised on the GCE surface.

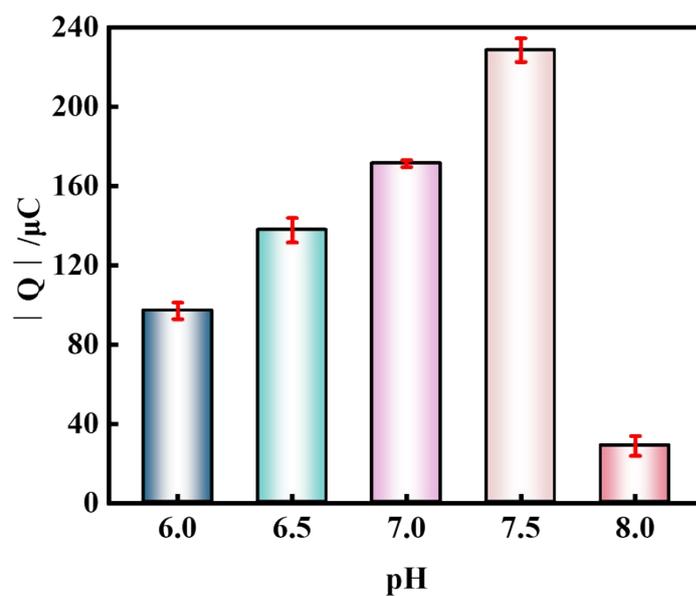


Figure S7. The absolute value of charge intensity ($|Q|$) during the reduction of 10 mM H_2O_2 at -0.60 V was determined using chronocoulometry in air-saturated PBS (0.1 M) to optimise the pH of the PBS solution.