SUPPORTING INFORMATION FOR

# $MoS_2$ Nanosheets-Au Nanorods Hybrids for Highly Sensitive Amperometric Detection of $H_2O_2$ in Living Cells

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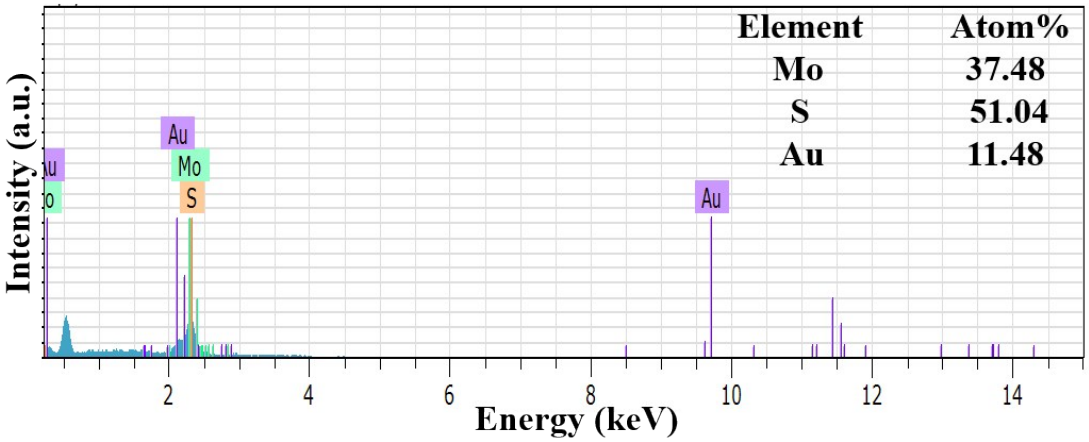


Fig. S1. EDX spectrum of $MoS_2$-Au hybrid.

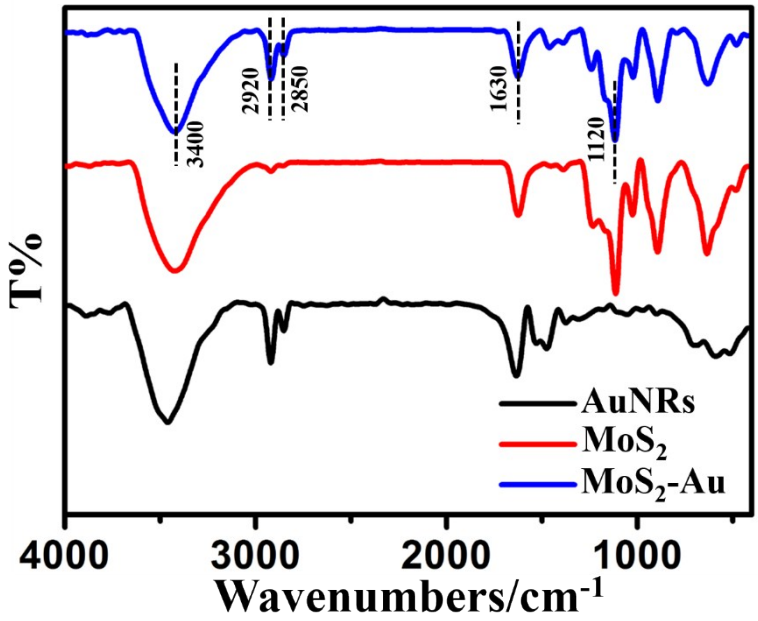


Fig. S2. FT-IR spectra of AuNRs, $MoS_2$ and $MoS_2$-Au hybrid.

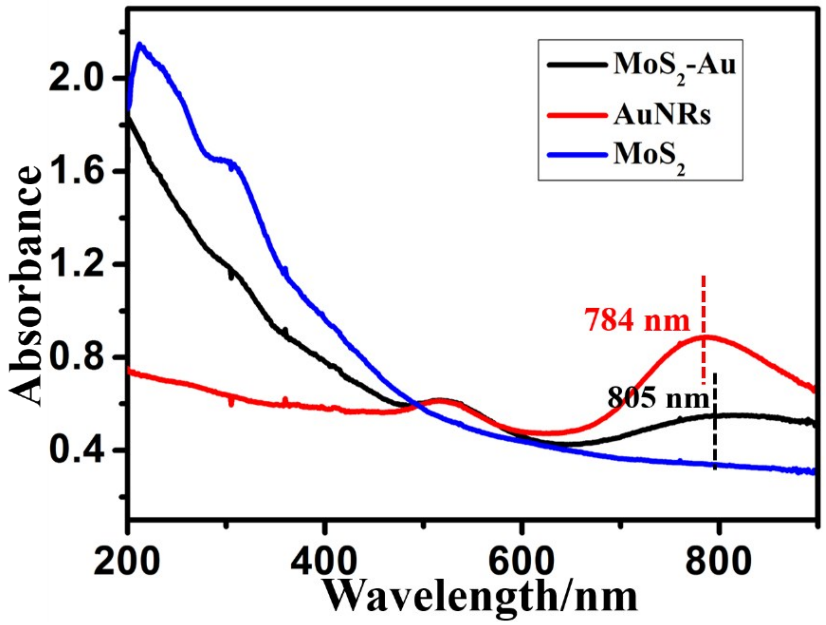


Fig. S3. UV-vis absorption spectra of AuNRs, $MoS_2$ and $MoS_2$-Au hybrid.

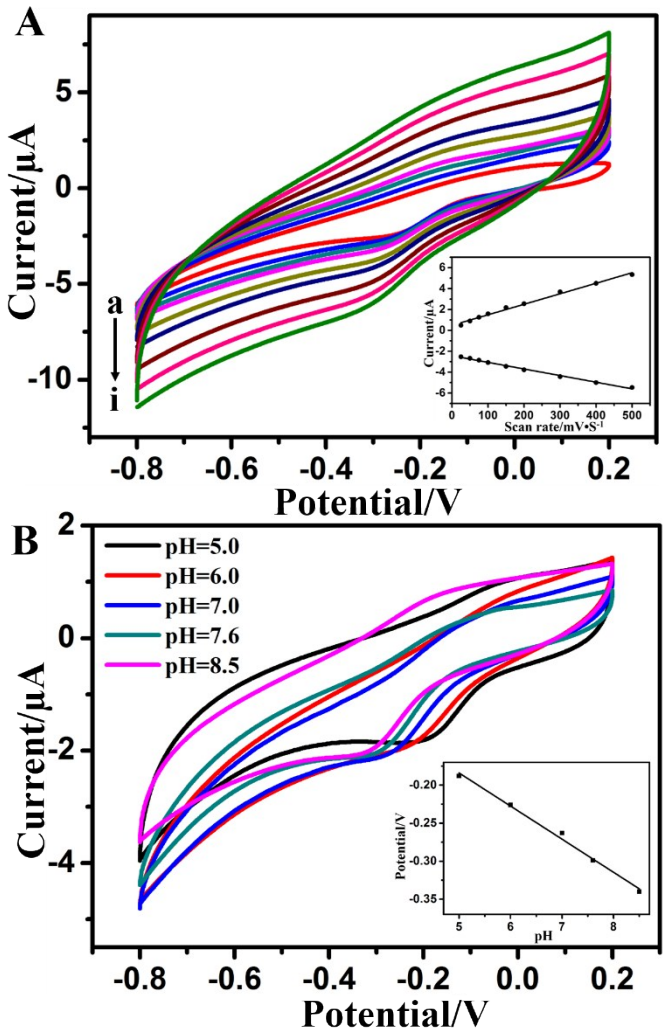


Fig. S4. (A) CVs of the CAT/$MoS_2$-Au/chitosan modified GCE in an $N_2$-saturated 0.1 M PBS at different scan rates. Scan rates (a–i): 25, 50, 75, 100, 150, 200, 300, 400 and 500 mV•$s^{-1}$. Inset: the plot of cathodic and anodic peak currents versus scan rates. (B) CVs of the CAT/$MoS_2$-Au/chitosan modified GCE in an $N_2$-saturated 0.1 M PBS at different pH values. Scan rate: 100 mV•$s^{-1}$. Inset: plot of the redox peak potential versus pH value.

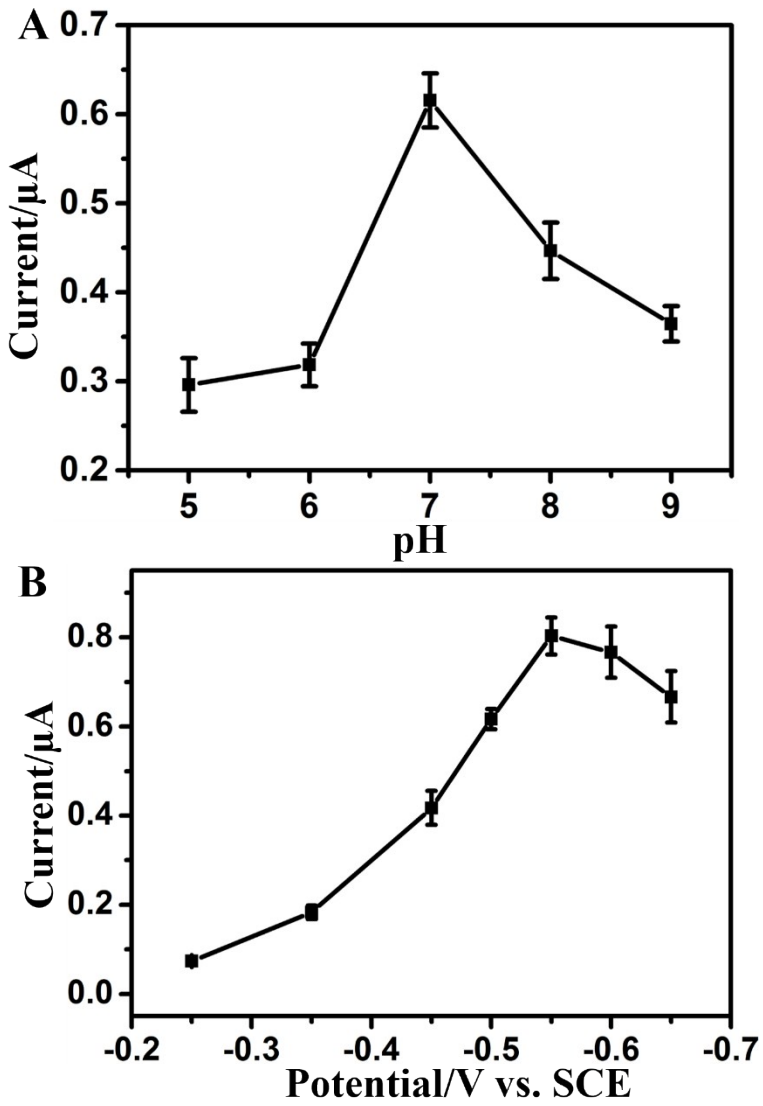


Fig. S5. (A) Influence of pH on the current response of CAT/$MoS_2$-Au/chitosan/GCE towards 80 μM $H_2O_2$ in the $N_2$-saturated 0.1 M PBS at an applied potential of -0.55 V. (B) Influence of the applied potential on the current response of CAT/$MoS_2$-Au/chitosan/GCE towards 0.1 mM $H_2O_2$ in the $N_2$-saturated 0.1 M PBS (pH= 7.0).

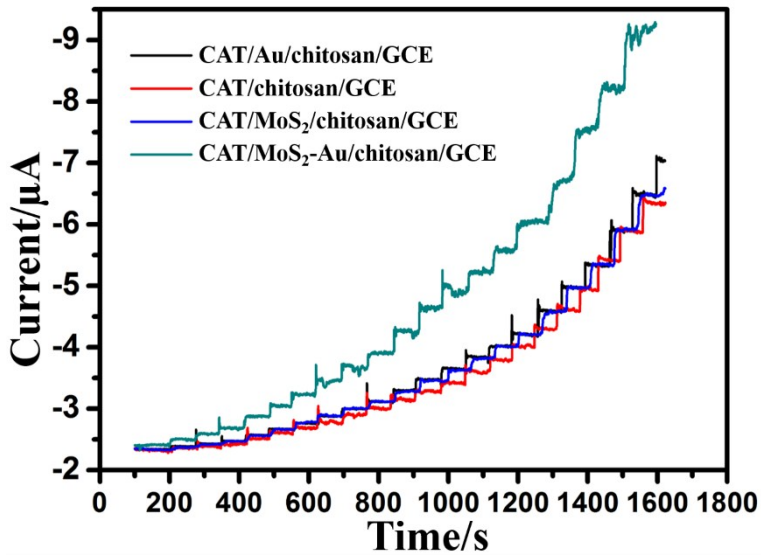


Fig. S6. Amperometric response of CAT/$MoS_2$-Au/chitosan/GCE, CAT/Au/chitosan/GCE, CAT/$MoS_2$/chitosan/GCE and CAT/chitosan/GCE in the $N_2$-saturated 0.1 M PBS at -0.55 V with successive addition of $H_2O_2$.

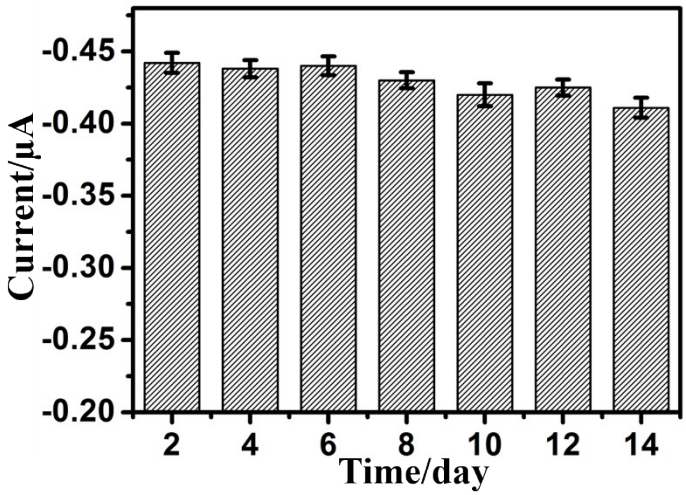


Fig. S7. Variation of the current response to 50 μM $H_2O_2$ for CAT/$MoS_2$-Au/chitosan/GCE electrode versus storage time.

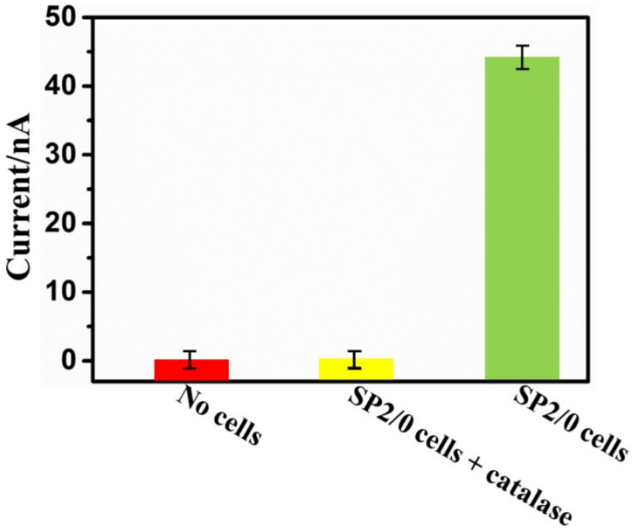


Fig. S8. The corresponding current responses obtained from amperometric curves shown in Fig. 5.