

Ultrasensitive electrochemical sensor based on in-situ synthesized manganese dioxide / gold nanoparticles nanocomposites for rapid detection of methylmercury in foodstuffs

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Fig. S1 The CV curve for electrodeposition of MnO_2 on GCE in 0.1 mol/L H_2SO_4 aqueous solution containing 5 mmol/L MnSO_4 . Scan rate: 50 mV/s.

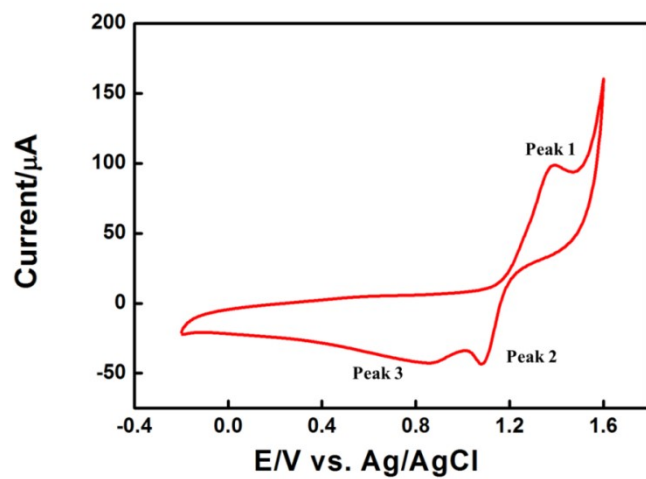


Fig. S2 Cyclic voltammograms in a 0.1 mol/L KCl solution containing 5 mmol/L $\text{Fe}(\text{CN})_6^{3-/4-}$ at different scan rates, and corresponding linear relationship between redox peak currents and the scan rates using $\text{MnO}_2/\text{GCE}(\text{A,B})$, $\text{AuNPs}/\text{GCE}(\text{C,D})$, and $\text{MnO}_2/\text{AuNPs}/\text{GCE}(\text{E,F})$

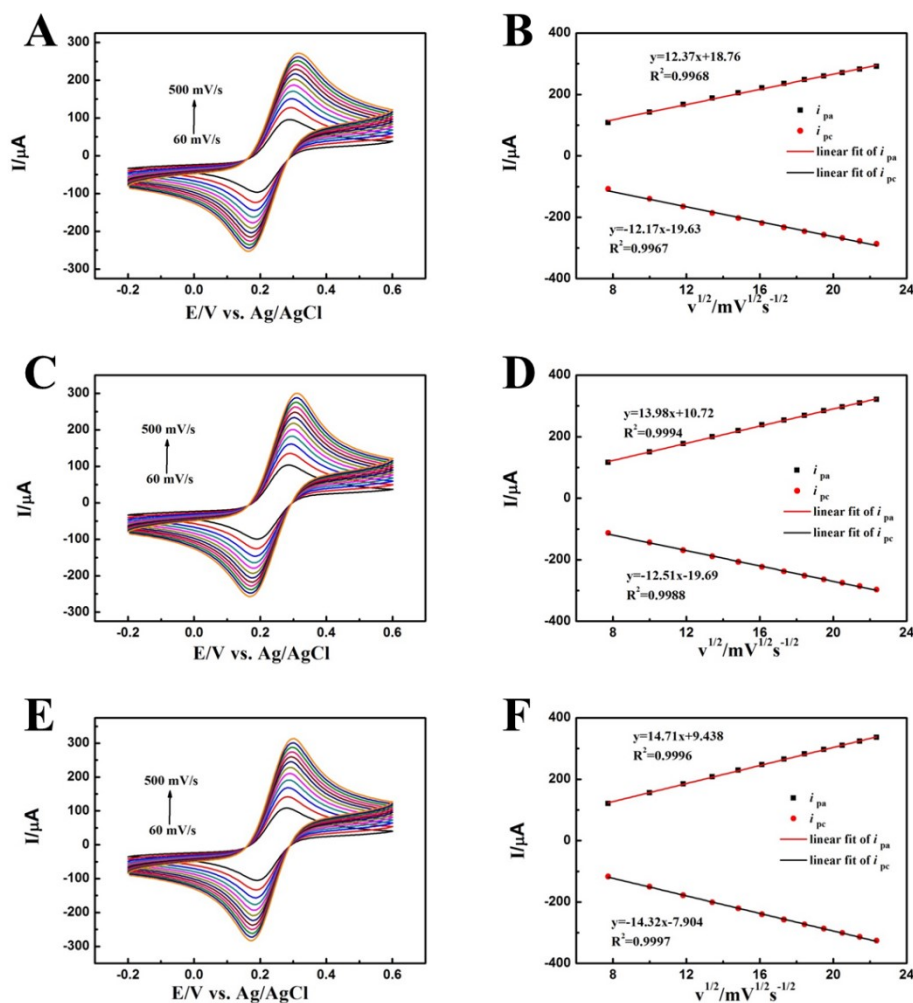


Fig. S3 (A) CV curves of $\text{MnO}_2/\text{AuNPs}/\text{GCE}$ towards $10\text{ }\mu\text{g/L}$ CH_3Hg^+ at different scan rates in 0.1 mol/L acetate buffer solution ($\text{pH } 5.0$). (B) Corresponding linear relationship between redox peak currents and scan rates.

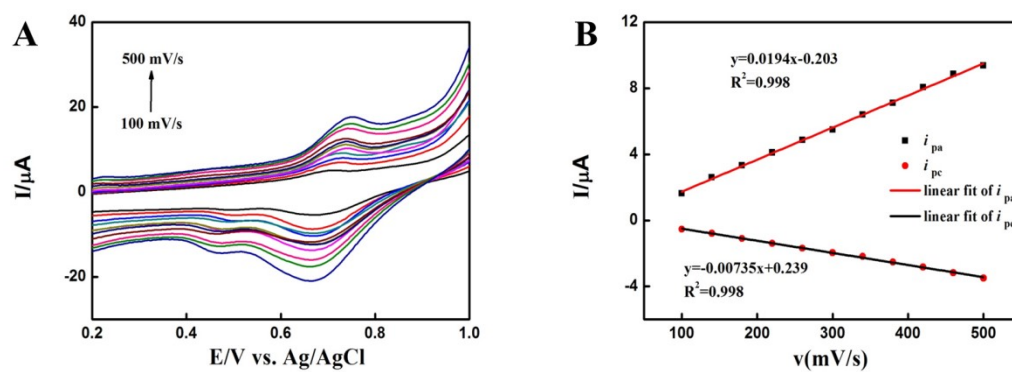


Fig. S4 The influences of (A) deposition cycles for MnO_2 , (B) pH, (C) accumulation potential and (D) accumulation time on the peak current of $10\ \mu\text{g/L}\ \text{CH}_3\text{Hg}^+$.

