Electronic Supplementary Material (ESI) for RSC Advances.

Development of Fe_3O_4@Cu silicate based sensing platform for the electrochemical sensing of dopamine

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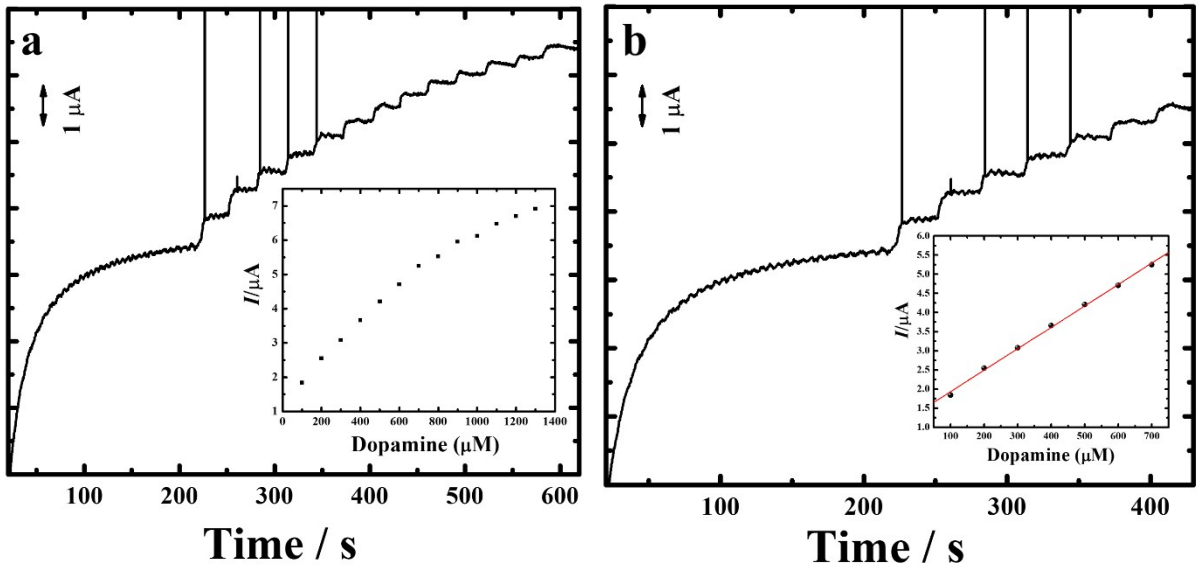

Fig. S1 Amperometric response of CP-Fe_3O_4@Cu silicate core-shell urchin electrode for successive additions of (a) 100 μM of DA up to 13 additions and (b) 100 μM of DA up to 7 additions. The inset in (a) and (b) represents the relevant calibration plots.

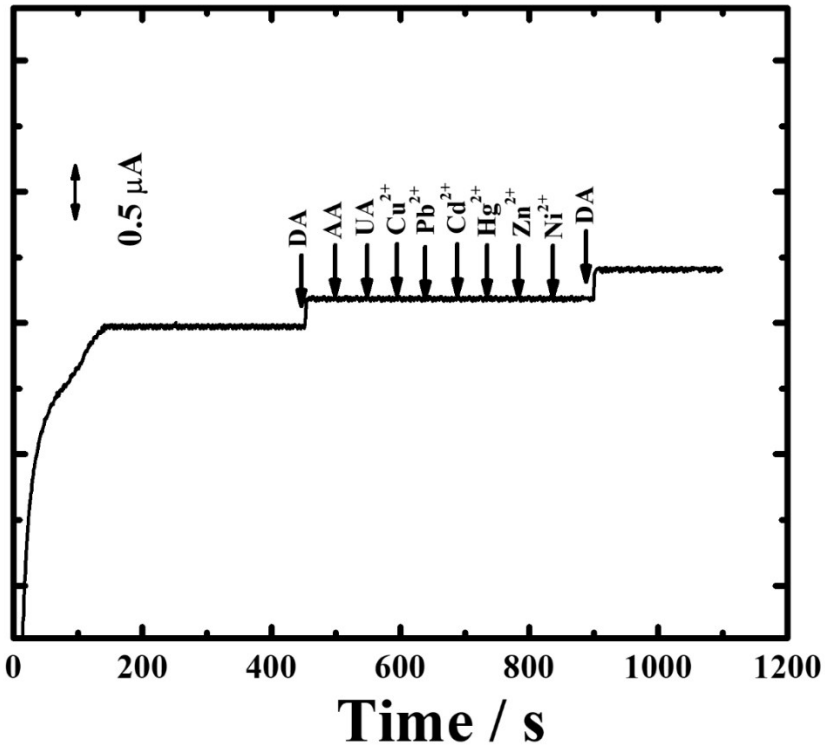

Fig. S2 Amperometric response of CP-Fe_3O_4@Cu silicate core-shell urchin electrode in 0.1 M PBS for successive additions of 0.1 mM DA, AA, UA, Cu^{2+}, Pb^{2+}, Cd^{2+}, Hg^{2+}, Zn^{2+} and Ni^{2+} ions.

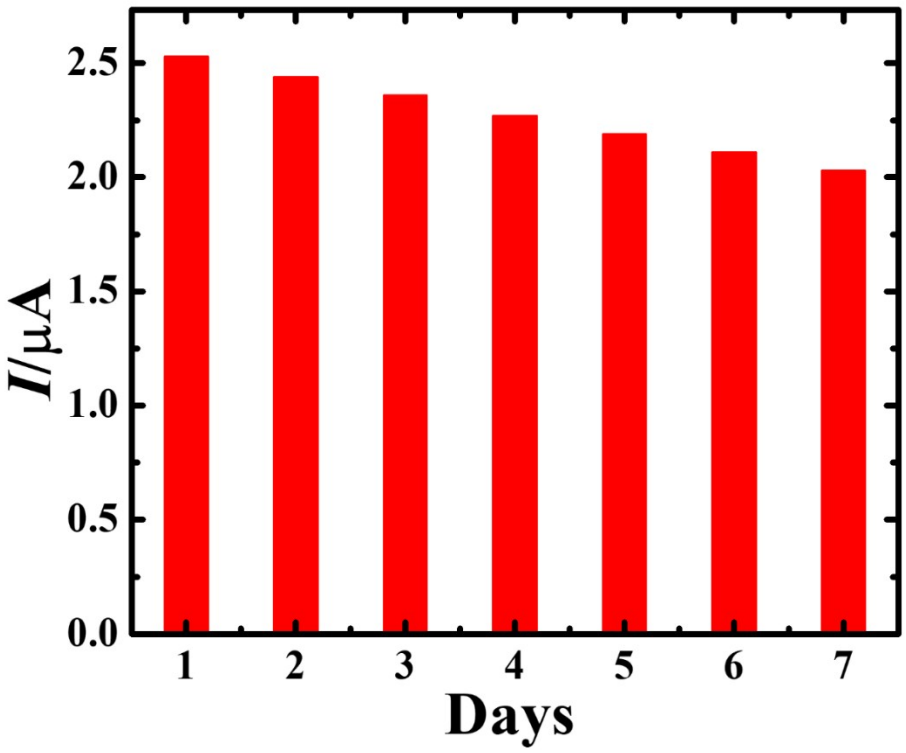

Fig. S3 Storage stability response of CP-Fe_3O_4@Cu silicate core-shell urchin electrode measured in one day gap for one week in 0.1 M PBS containing 1.8 mM DA.

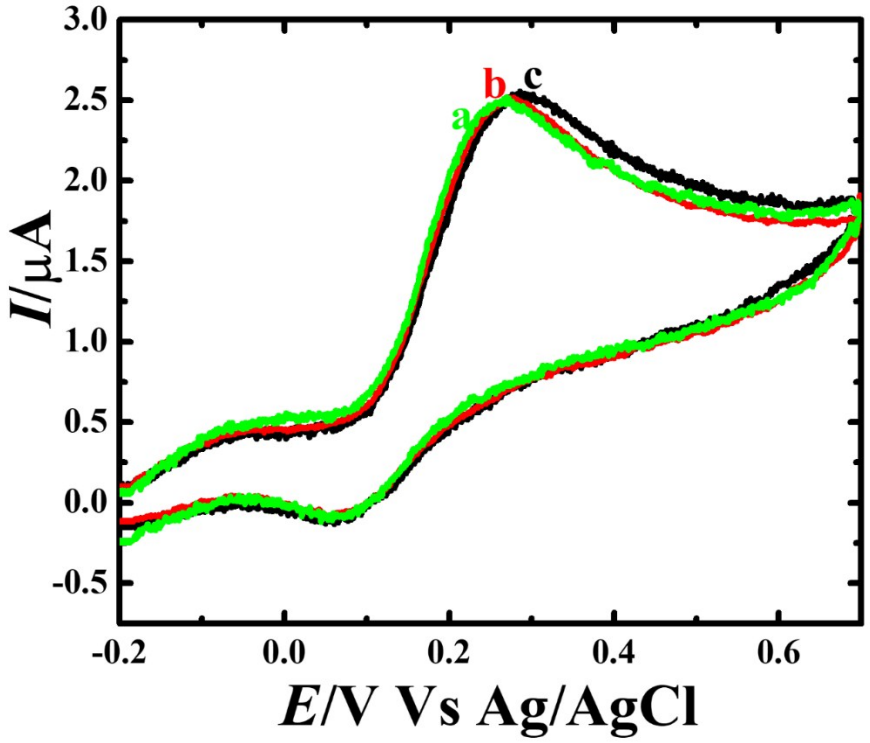

Fig. S4 Voltammetric response of three CP-Fe_3O_4@Cu silicate core-shell urchin electrodes in 0.1 M PBS containing 1.8 mM DA at 50 mV/s scan rate.

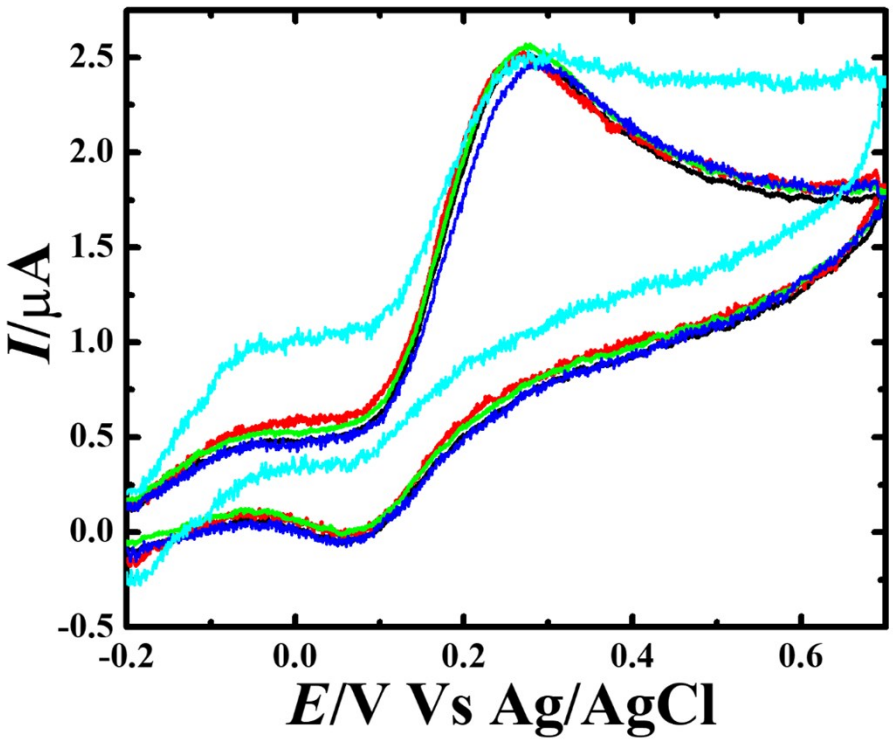

Fig. S5 Results of repeatability of the CP-Fe_3O_4@Cu silicate core-shell urchin electrode for five different measurements in 0.1 M PBS containing 1.8 mM DA at 50 mV/s scan rate.

Sample	Amount of DA Spiked (μM)	Amount of DA estimated (μM)	Recovery (%)	RSD (%)
1	5	4.8	96	2.1
2	10	10.4	104	1.8
3	15	14.7	98	1.4

Table S1. Estimation of DA in real samples using CP-Fe_3O_4@Cu silicate core-shell urchin electrode.