Electronic Supplementary Information

Metal-organic framework and conducting polymer based electrochemical sensor for high performance cadmium ions detection

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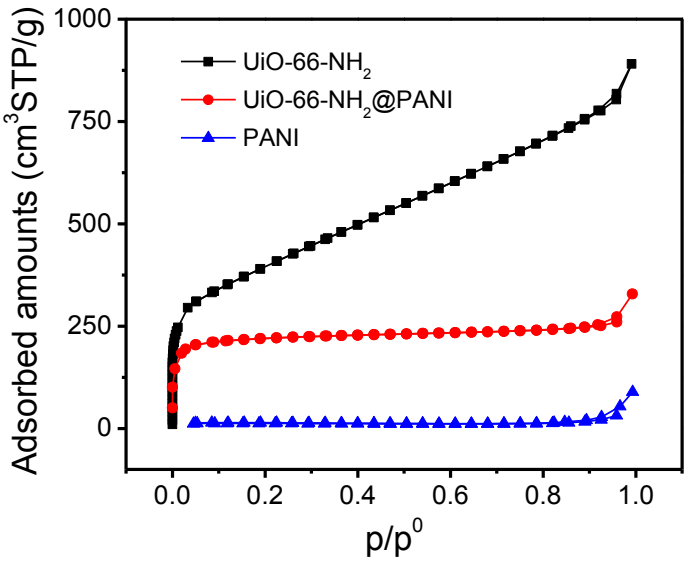

Fig. S1. Nitrogen-sorption isotherm curves of UiO-66-NH_2, PANI, and UiO-66-NH_2@PANI.

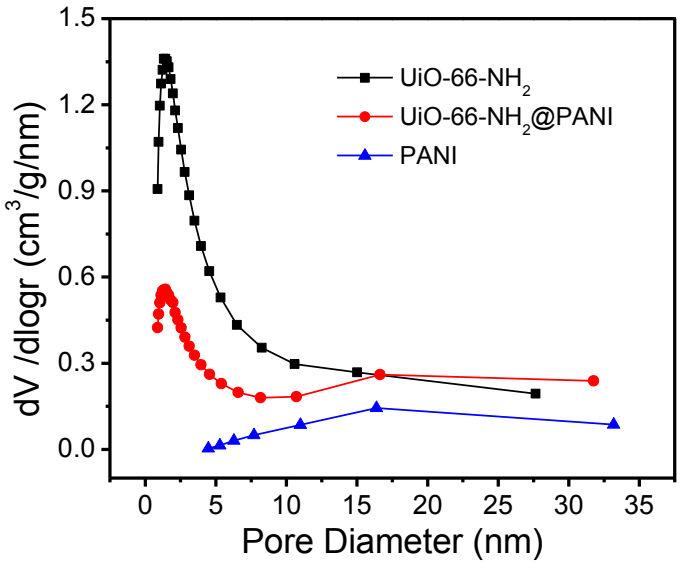

Fig. S2. Nitrogen-sorption isotherm curves of UiO-66-NH_2, PANI, and UiO-66-NH_2@PANI.

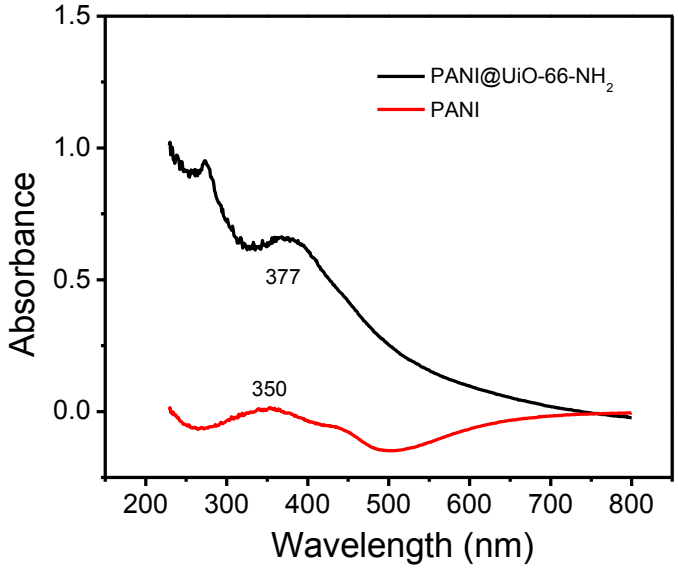

Fig. S3. UV–vis spectrum of PANI, and PANI@UiO-66-NH_2.

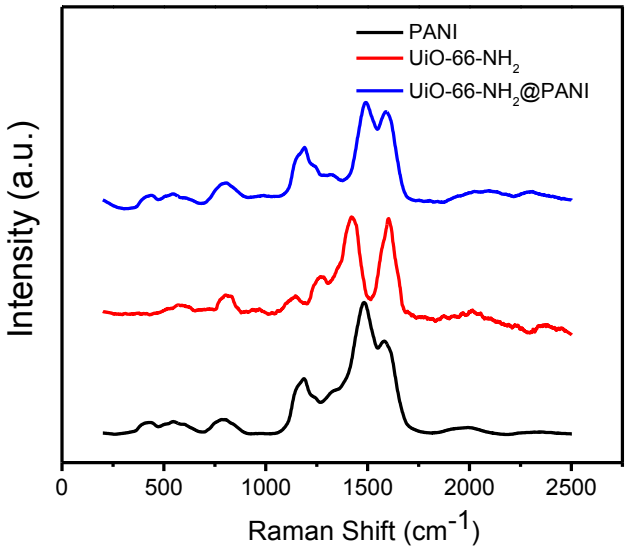

Fig. S4. Raman spectra of the UiO-66-NH_2, PANI, and UiO-66-NH_2@PANI.

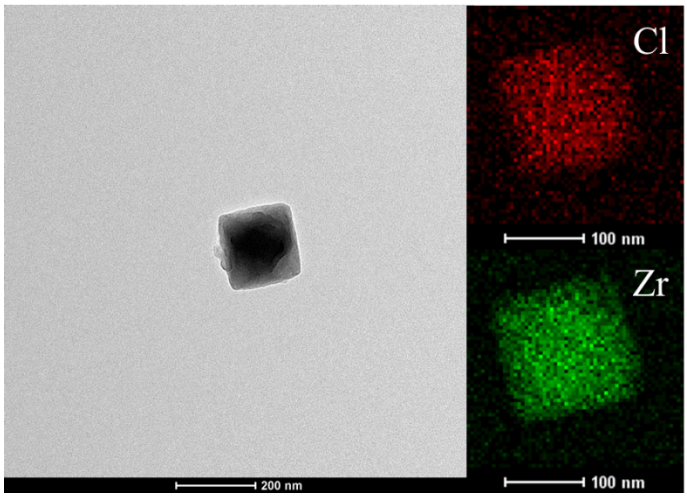

Fig. S5. TEM images of UiO-66-NH_2@PANI. EDS elemental maps of Cl (red), and Zr (green).

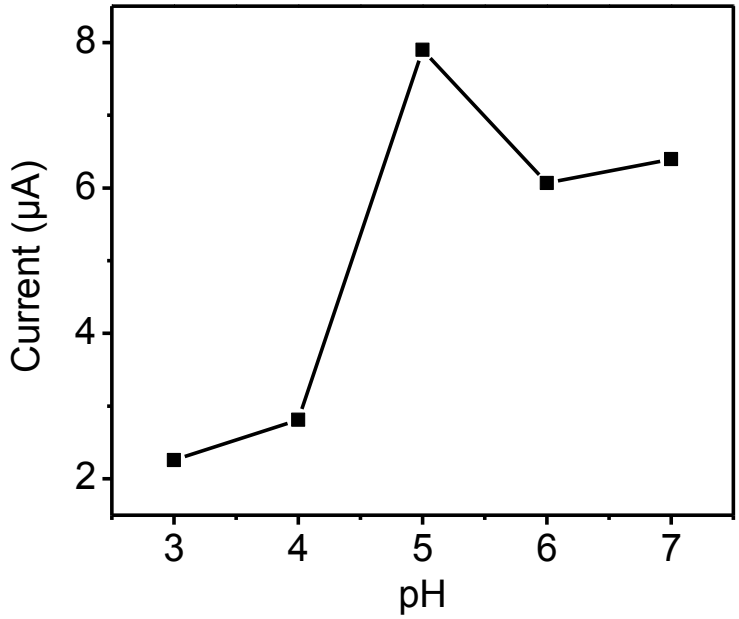

Fig. S6. Effect of solution pH on the current intensity of cadmium ions.

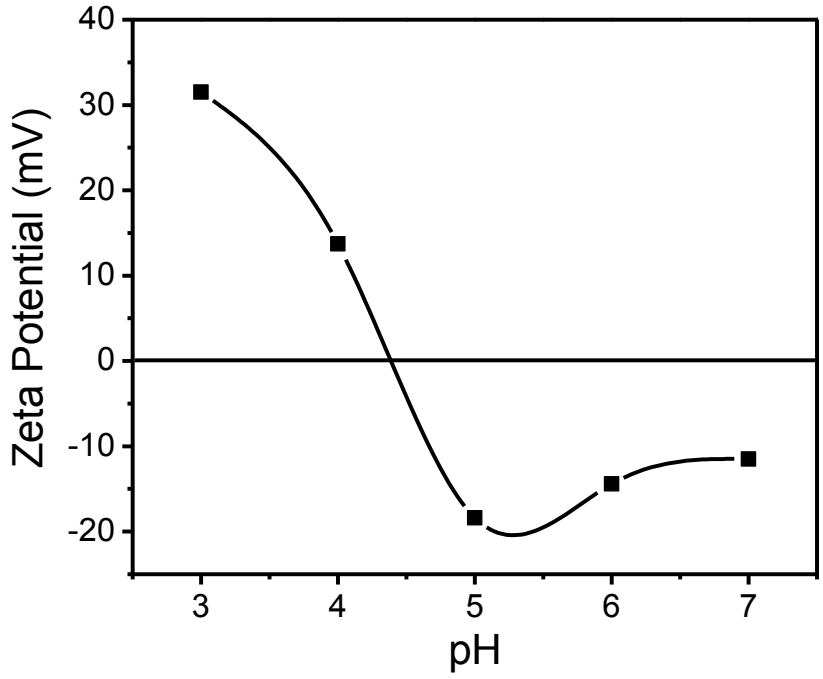

Fig. S7. The zeta potential value of PANI@UiO-66-NH_2.

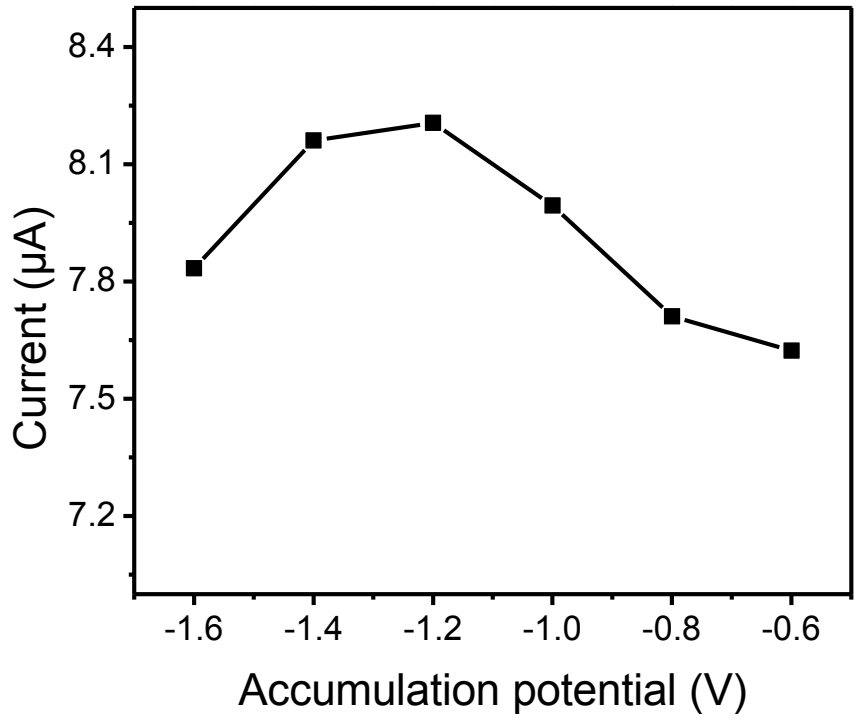

Fig. S8. Effect of accumulation potential on the current intensity of cadmium ions.

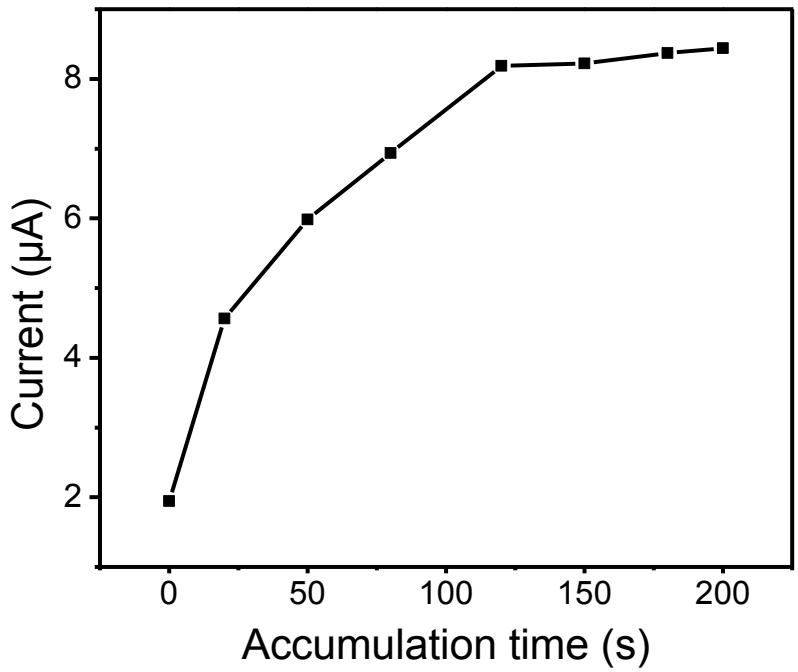

Fig. S9. Effect accumulation time on the current intensity of cadmium ions.

Table S1. Interferences of some inorganic species on the stripping peak currents of cadmium ions.

Interfering ions	Concentration ($\mu g\ L^{-1}$)	Signal change (%)
Na^{+}	5×10^{3}	+0.4
Ca^{2+}	5×10^{3}	+1.5
Mn^{2+}	5×10^{3}	+2.3
Mg^{2+}	5×10^{3}	+1.8
Al^{3+}	5×10^{3}	+2.3
Zn^{2+}	5×10^{2}	-1.5
Co^{2+}	5×10^{2}	+2.1
Fe^{2+}	5×10^{2}	+2.6
Cu^{2+}	50	+2.1
Hg^{2+}	50	+4.8
F^{-}	2×10^{4}	-0.8
Cl^{-}	2×10^{4}	-0.5
Br^{-}	2×10^{4}	+0.8
SCN^{-}	2×10^{4}	+1.1.
SO_4^{2-}	2×10^{4}	+2.2
NO^{3-}	2×10^{4}	+1.8
PO_4^{3-}	2×10^{4}	-0.7