

**Supporting Information for:**

**A Bromine-Catalysis-Synthesized Poly(3,4-  
ethelenedioxythiophene) /Graphitic Carbon Nitride  
Electrochemical Sensor for Heavy Metal Ion Determination**

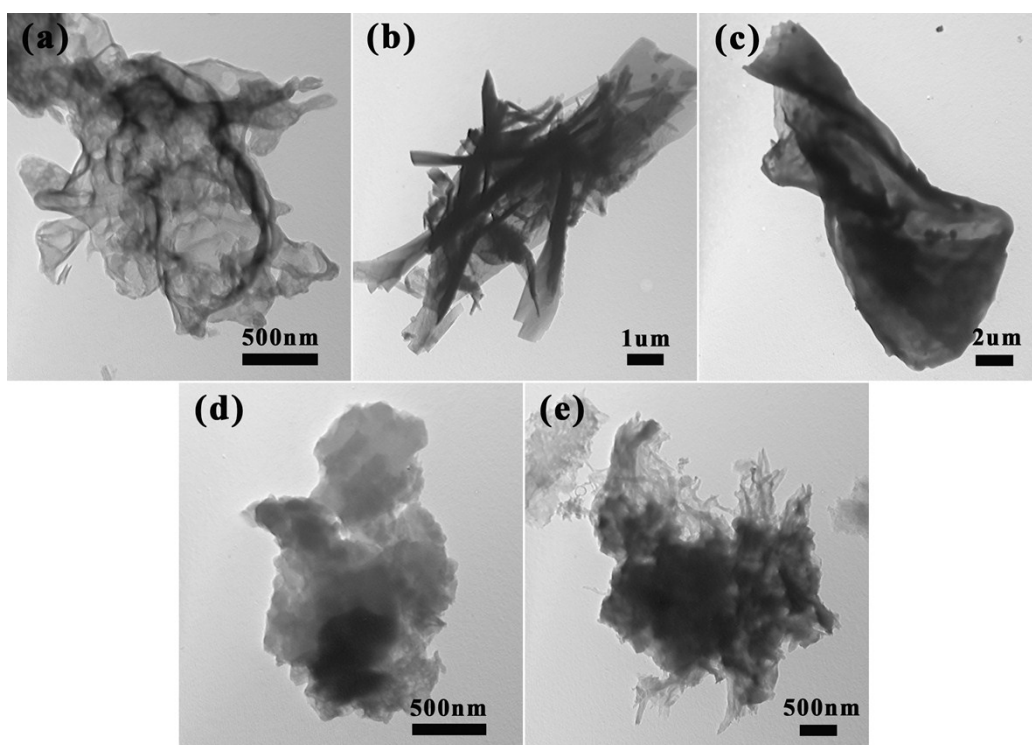
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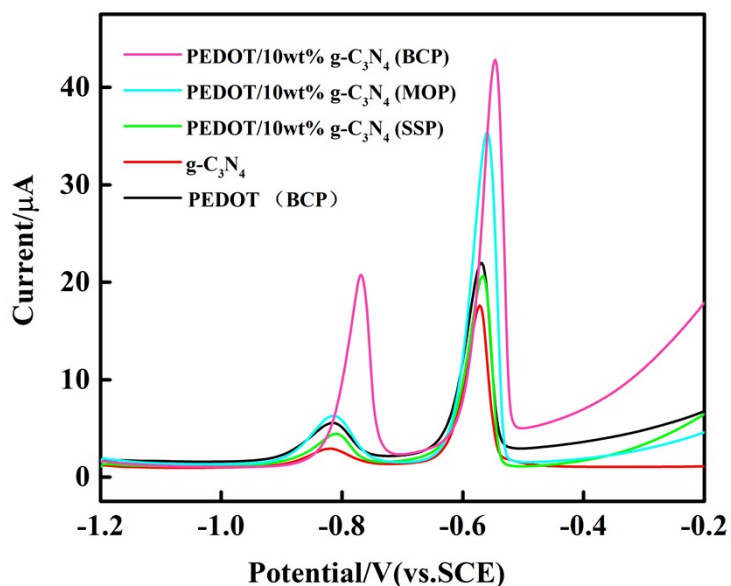
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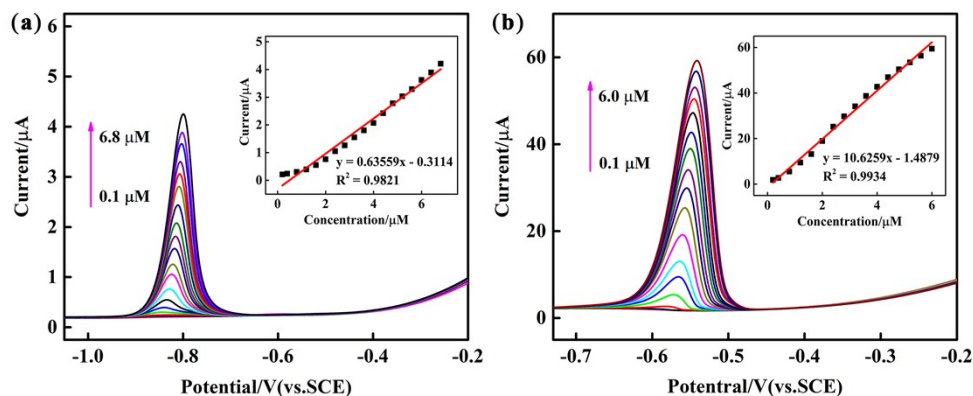
E-mail: [tursunabdir@sina.com.cn](mailto:tursunabdir@sina.com.cn); [jruxangul@xju.edu.cn](mailto:jruxangul@xju.edu.cn)



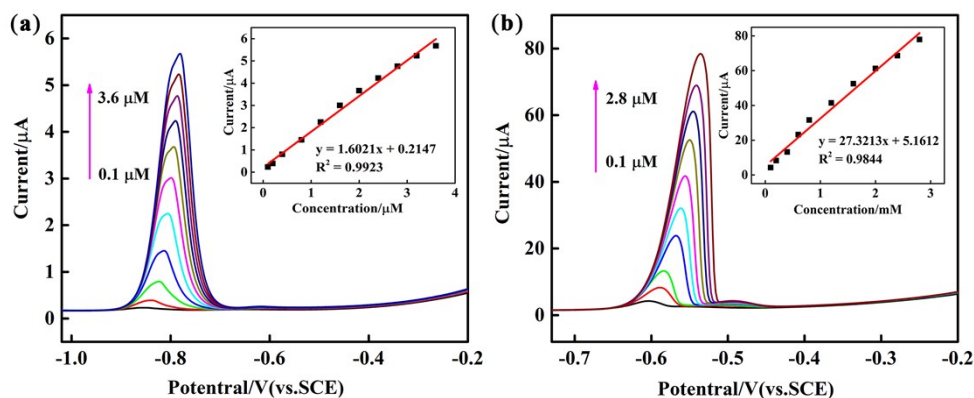
**Fig. S1.** TEM images of (a)  $g\text{-C}_3\text{N}_4$  (b) PEDOT (BCP), (c) PEDOT/10wt% $g\text{-C}_3\text{N}_4$  (BCP), (d) PEDOT/10wt% $g\text{-C}_3\text{N}_4$  (SSP), (e) PEDOT/10wt% $g\text{-C}_3\text{N}_4$  (MOP).



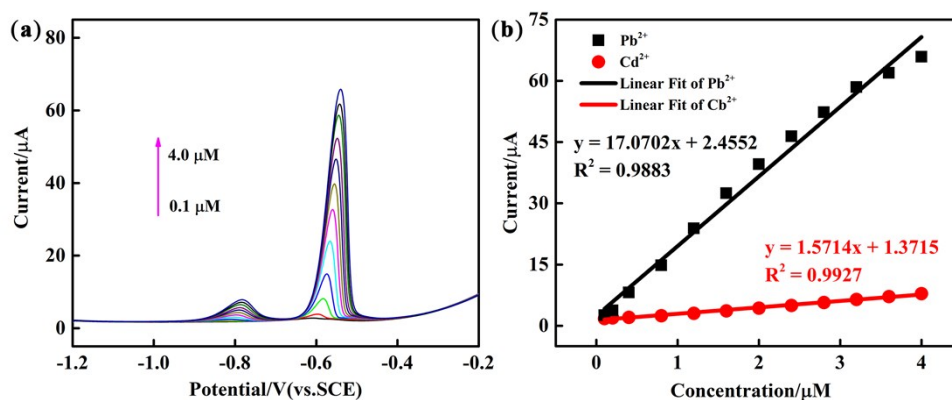
**Fig.S2.** DPV of PEDOT (BCP),  $g\text{-C}_3\text{N}_4$ , PEDOT/10wt% $g\text{-C}_3\text{N}_4$  (BCP, SSP, MOP) composite-modified GCE in 0.1M ABS (pH = 4.5) containing  $2\mu\text{M}$  of  $\text{Cd}^{2+}$  and  $\text{Pb}^{2+}$ . Deposition potential: -1.2V, deposition time: 180s, pulse width: 50ms; pulse period: 100ms; increment potential: 2mV.



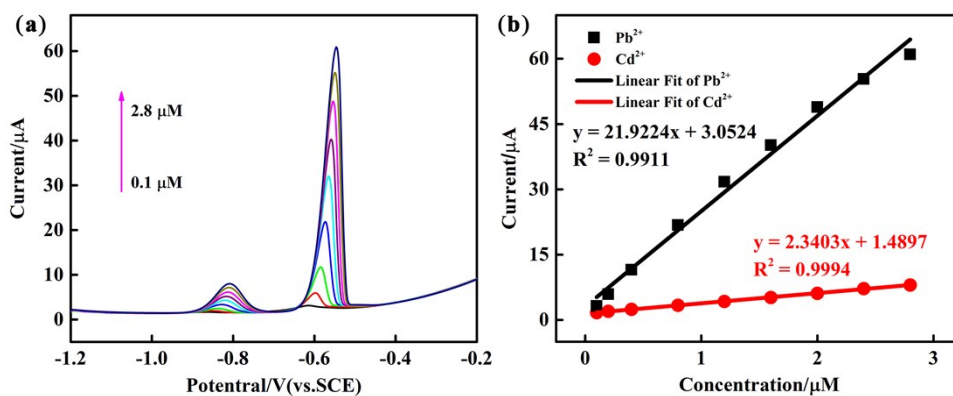
**Fig.S3.** DPV response of the PEDOT/10wt%g-C<sub>3</sub>N<sub>4</sub> (SSP) composite-modified GCE for the individual analysis of (a) Cd<sup>2+</sup> (b) Pb<sup>2+</sup>. The inset shows their linear equations as well as correlation coefficient.



**Fig.S4.** DPV response of the PEDOT/10wt%g-C<sub>3</sub>N<sub>4</sub> (MOP) composite-modified GCE for the individual analysis of (a) Cd<sup>2+</sup> (b) Pb<sup>2+</sup>. The inset shows their linear equations as well as correlation coefficient.



**Fig.S5.** DPV response of the PEDOT/10wt%g-C<sub>3</sub>N<sub>4</sub> (SSP) composite-modified GCE for the simultaneous analysis of Cd<sup>2+</sup> and Pb<sup>2+</sup> (b) the respective calibration curves of Cd<sup>2+</sup> and Pb<sup>2+</sup>.



**Fig.S6.** (a) DPV response of the PEDOT/10wt%g-C<sub>3</sub>N<sub>4</sub> (MOP) composite-modified GCE for the simultaneous analysis of Cd<sup>2+</sup> and Pb<sup>2+</sup> (b) the respective calibration curves of Cd<sup>2+</sup> and Pb<sup>2+</sup>.