

Supporting information

Electrochemical sensor based on lead ion-imprinted polymer particles for ultra-trace determination of lead ions in different real samples

Xuan Luo¹, Weihong Huang¹, Qingye Shi², Wanzhen Xu^{1*}, Yu Luan³, Yanfei Yang³, Huajie Wang², Wenming Yang^{2*}

¹*School of the Environment and Safety Engineering, Jiangsu University, Zhenjiang 212013, China*

²*School of Materials Science and Engineering, Jiangsu University, Zhenjiang 212013, China*

³*Zhenjiang Institute for Drug Control of Jiangsu Province, Zhenjiang 212013, China*

* Corresponding author: Wanzhen Xu (E-mail: xwz09@ujs.edu.cn), Wenming Yang (E-mail: ywm@ujs.edu.cn)

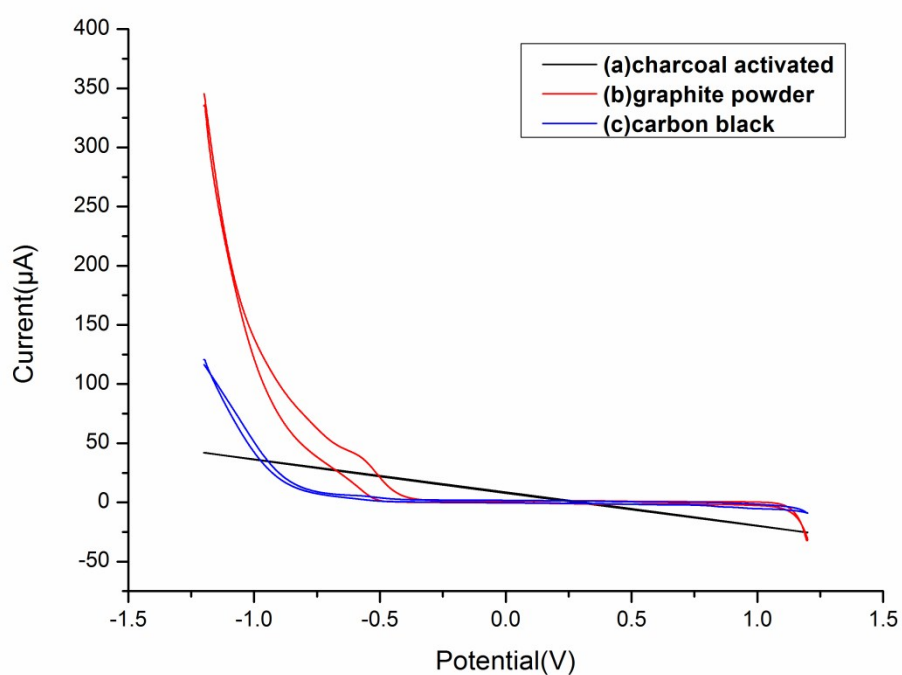


Fig.S1 The current response of different carbon forms(a. charcoal activated b. Graphite powder c. Carbon black)

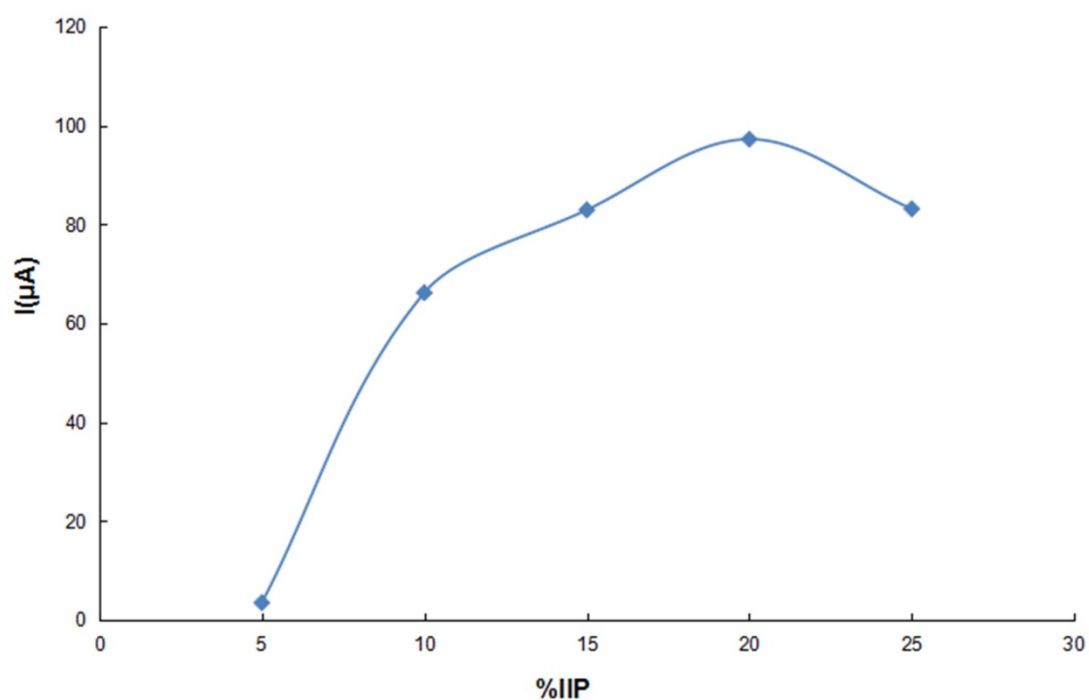


Fig.S2 The influence of IIP composition percent on the graphite powder/IIP/paraffin oil electrode.

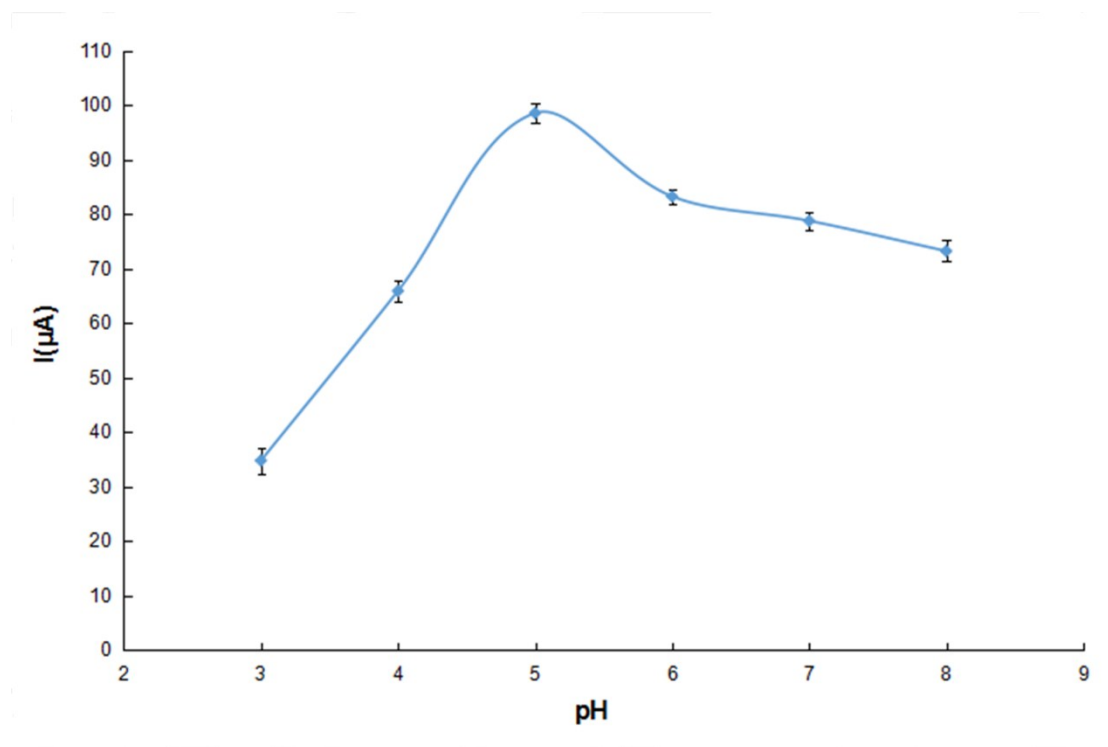


Fig.S3 Differential pulse voltammetry of $5.0 \times 10^{-7} \text{ mol L}^{-1} \text{ Pb}^{2+}$ on IIP-CPE at different

pH.(n=5)

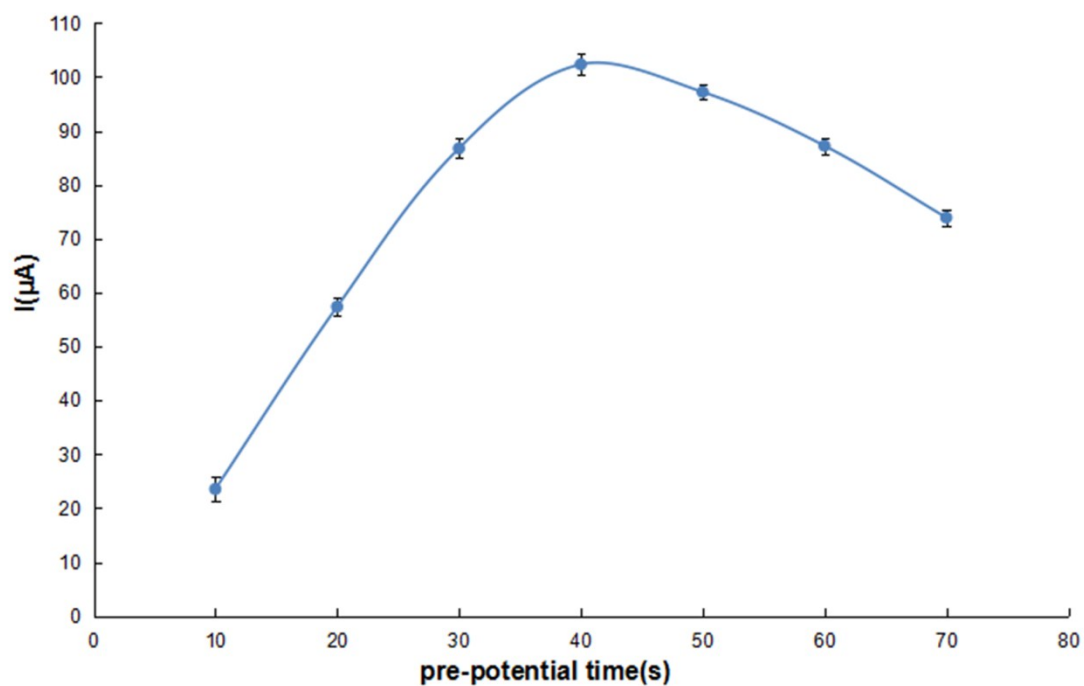


Fig.S4 Effect of pre-potential time on IIP-CPE response of $5.0 \times 10^{-7} \text{mol L}^{-1} \text{Pb}^{2+}$ at pH 5.0.(n=5)

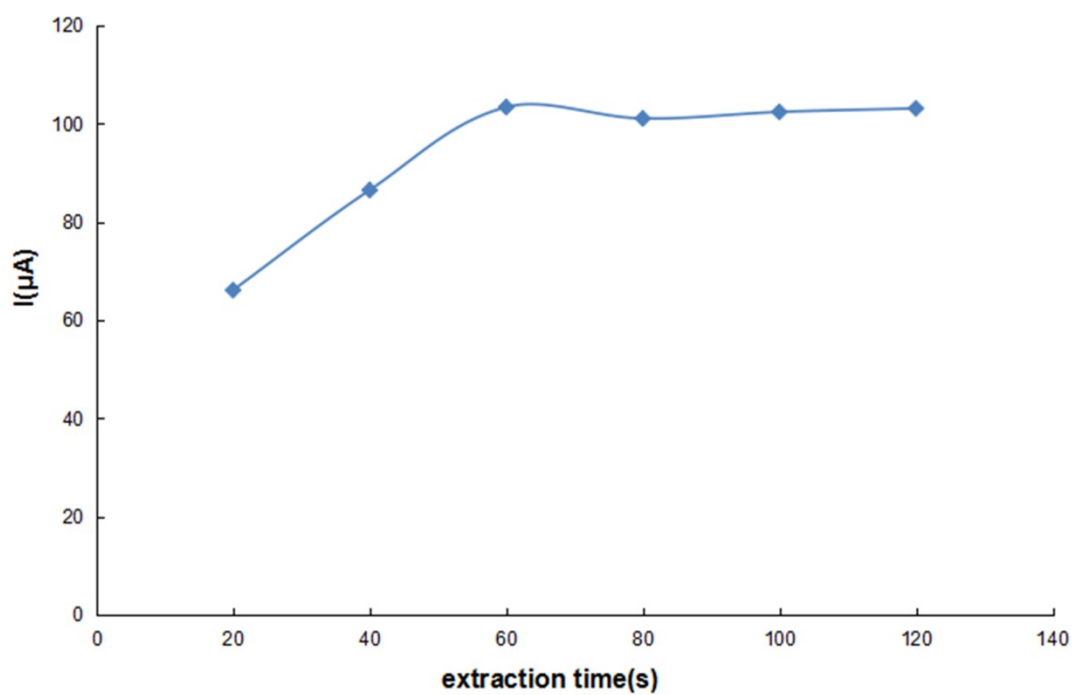


Fig.S5 Effect of extraction time on IIP-CPE response of $5.0 \times 10^{-7} \text{mol L}^{-1} \text{Pb}^{2+}$ at pH 5.0.

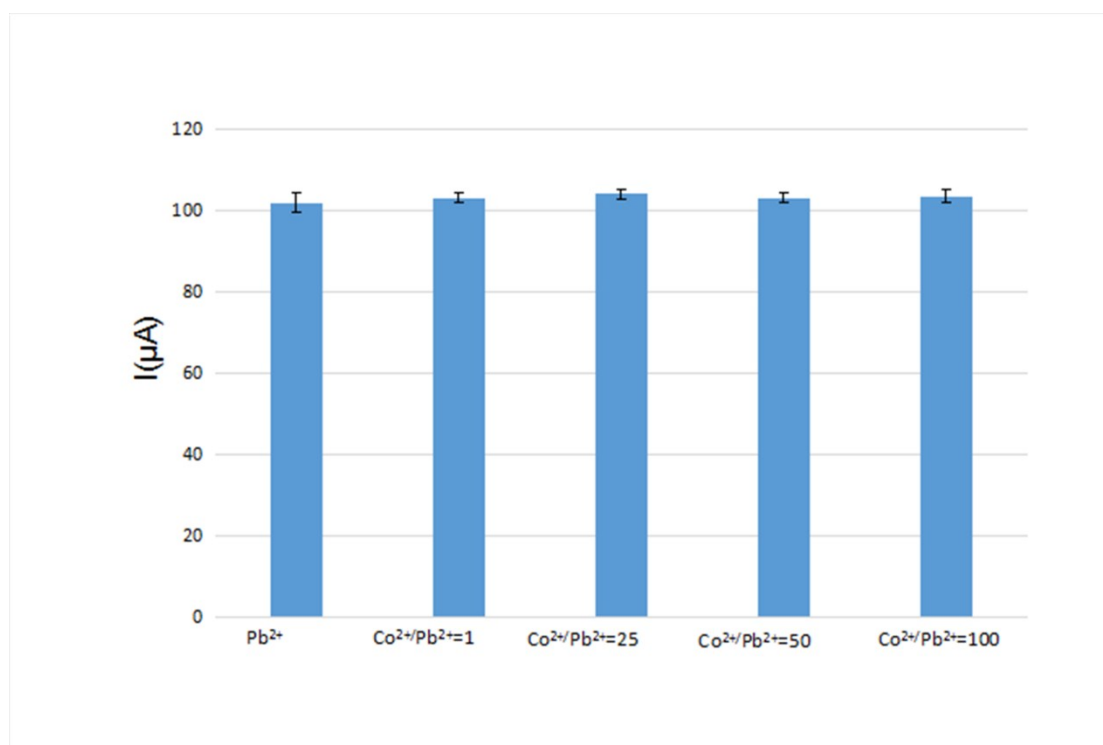


Fig.S6 Comparison of the electrode selectivity of Pb²⁺ ion in the presence of Co²⁺ at various concentrations: [Pb²⁺]=5.0×10⁻⁷mol L⁻¹, extraction time 80s, stripping voltammetry conditions: E-conditioning= -1.0V, conditioning time=40s, scan rate=0.1V s⁻¹.(n=5)

Species	Interference level
Alkali	No interference
Cd ²⁺ , Co ²⁺ , Zn ²⁺ , Cr ³⁺ , Ag ⁺ ,Hg ²⁺	No interference
Cu ²⁺	>10
Fe ³⁺	>15
Mn ²⁺	>100

Table S1 Interference levels of different tested ions in the determination of Pb²⁺ by prepared sensor.