

## Electronic Supporting Information

### A ratiometric electrochemical sensor for detecting lead in fish based on the synergy of semi-complementary aptamer pairs and Ag nanowires@zeolitic imidazolate framework-8

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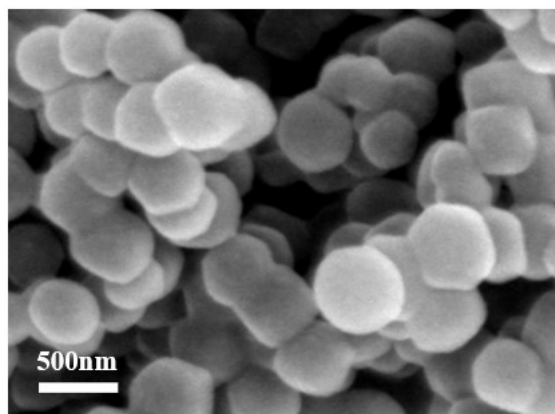


Fig. S1. pure ZIF-8

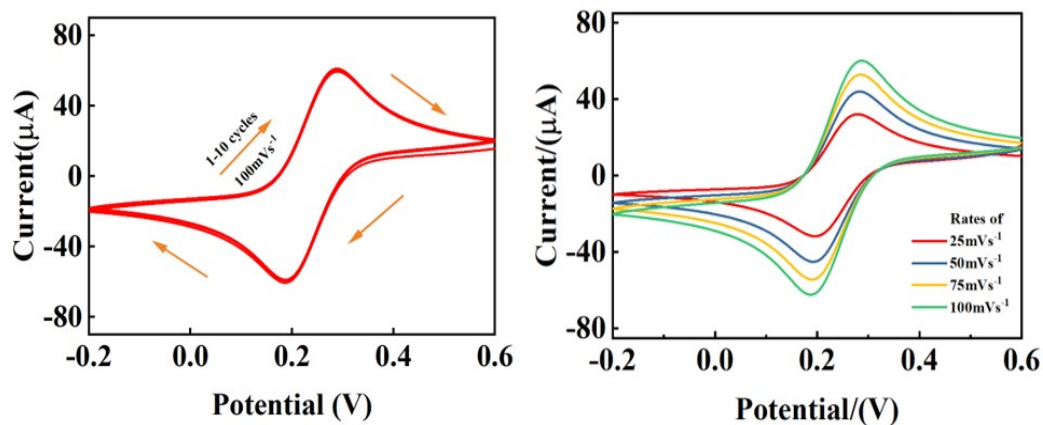


Fig. S2. the performance characteristics of the exposed GCE

Table S1:

Signal amplification strategy	Linear range	LOD	References
DNA/AgNWs@ZIF-8	20 nM-9.0 $\mu$ M	10nM	This work
FePc/N,B-rGO	0.05 $\mu$ M-1600 $\mu$ M	7.1nM	1
gold nanofilm	1.0-10 $\mu$ M	0.1 $\mu$ M	2
graphene QD/L-Cys	0.1 nM-10 $\mu$ M	70nM	3
PPy NPs	100nM-50 $\mu$ M	55nM	4
Au@Py	1.52nM-75.76nM	1.82nM	5
graphene ultrathin films	7.0nM-1.2 $\mu$ M	7.0nM	6

## References

- 1 P. Lei, Y. Zhou, R. Zhu, Y. Liu, C. Dong, S. Shuang, Facile synthesis of iron phthalocyanine functionalized N,B-doped reduced graphene oxide nanocomposites and sensitive electrochemical detection for glutathione, *Sens. Actuators B Chem.*, 2019, 297, 126756.
- 2 H. Wan, Q. Sun, H. Li, F. Sun, N. Hu and P. Wang, Screen-printed gold electrode with gold nanoparticles modification for simultaneous electrochemical determination of lead and copper, *Sensors and Actuators B*, 2015, 209, 336-342.
- 3 Y. Dong, W. Tian, S. Ren, R. Dai, Y. Chi and G. Chen, Graphene quantum Dots/L-Cysteine coreactant electrochemiluminescence system and its application in sensing lead(II) ions, *Applied Materials & Interfaces*, 2014, 6, 1646-1651.
- 4 T. Xu, H.i Dai and Y. Jin, Electrochemical sensing of lead(II) by differential pulse voltammetry using conductive polypyrrole nanoparticles, *Microchimica Acta*, 2020,187, 1-7.
- 5 P.T. Lee, R.G. Compton, Electrochemical detection of NADH, cysteine, or glutathione using a caffeic acid modified glassy carbon electrode, *Electroanalysis*, 2013, 25, 1613-1620.
- 6 Z. Wang, E. Liu, Graphene ultrathin film electrode for detection of lead ions in acetate buffer solution, *Talanta*, 2013,103, 47-55.