

Electronic Supplementary Information

Photoluminescent histidine-stabilized gold nanoclusters as efficient sensors for fast and easy visual detection of Fe ions in water using paper-based portable platform

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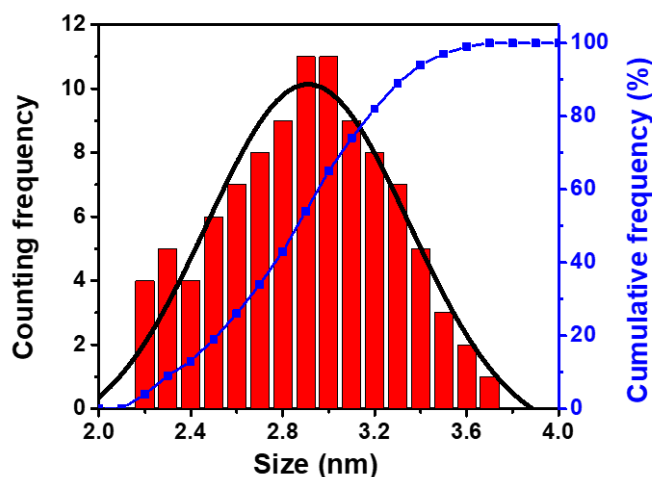


Figure S1. The size histogram of His-AuNCs with the corresponding counting and cumulative frequencies.

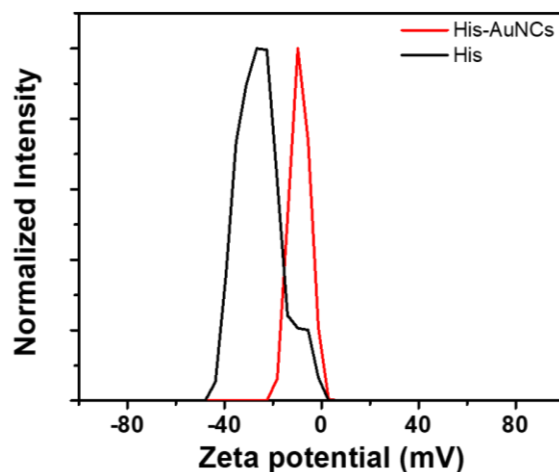


Figure S2. The zeta-potential of His and His-AuNCs.

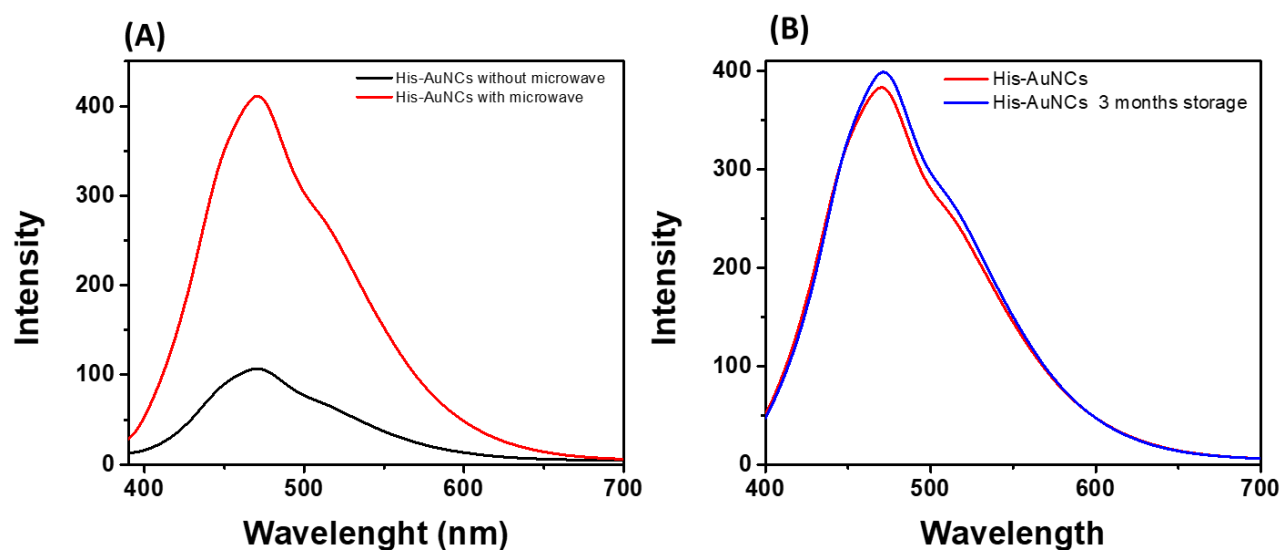


Figure S3. (A) The PL emission of His-AuNCs synthesized with and without microwaves. (B) The PL emission of His-AuNCs immediately after the synthesis and after 3 months of storage. Excitation wavelength: 380 nm.

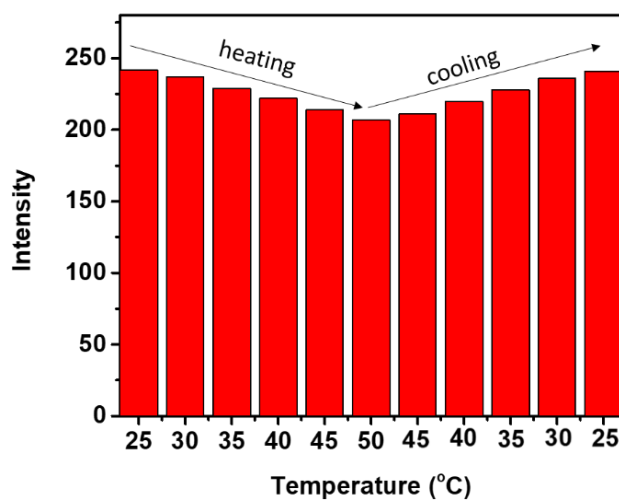


Figure S4. The temperature-dependent behavior of the His-AuNCs' PL. The intensity was recorded at 471 nm under 380 nm excitation.

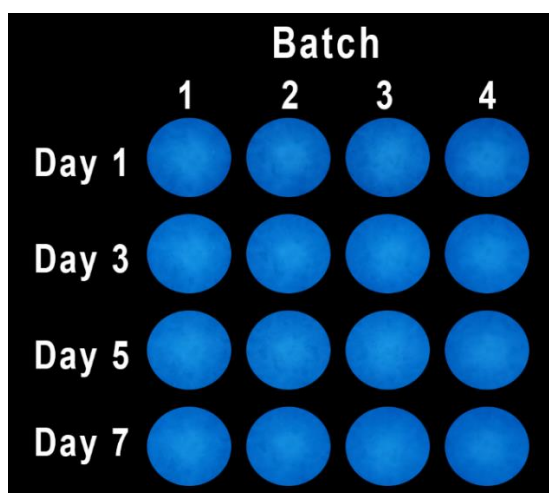


Figure S5. Photographic pictures of different batches of the paper sensing platform evaluated after 1, 3, 5 and 7 days of storage.

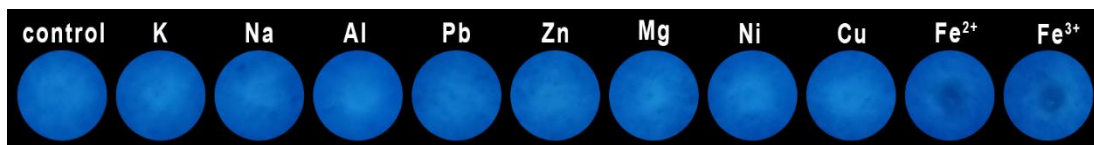


Figure S6. Photographic pictures of the paper sensing platform after interaction with common metallic ions (K, Na, Al, Pb, Mg, Ni, Zn, Cu, Fe^{2+} , Fe^{3+}) obtained in the selectivity assay.

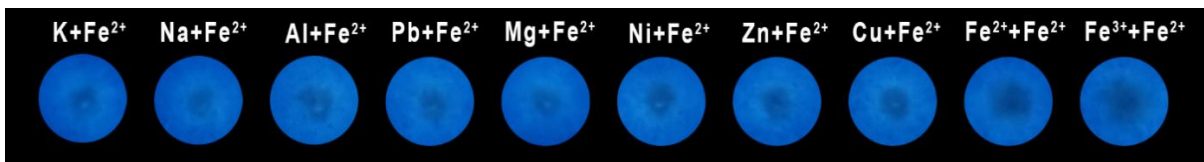


Figure S7. Photographic pictures of the paper sensing platform after interaction with a mixture of Fe^{2+} and different metallic ions (K, Na, Al, Pb, Mg, Ni, Zn, Cu, Fe^{2+} , Fe^{3+}) obtained in the competitiveness assay.

Table S1. Recovery tests for Fe^{2+} (35 μM) in the presence of different metallic ions (35 μM) obtained after the analysis of the quenching effect observed in the photographic pictures from Figure S7.

Type of ion	Found (μM)	Recovered (%)
K	34.1 ± 0.7	97.4 ± 2.0
Na	33.5 ± 0.4	95.7 ± 1.1
Al	36.4 ± 0.7	104.0 ± 2.0
Pb	34.5 ± 0.5	98.5 ± 1.4
Mg	31.7 ± 0.7	90.5 ± 2.0
Ni	34.7 ± 0.7	99.1 ± 2.0
Zn	34.3 ± 0.8	98.0 ± 2.2
Cu	33.1 ± 1.01	94.5 ± 2.9
Fe^{2+}	70.1 ± 1.3	200.2 ± 3.7
Fe^{3+}	68.3 ± 1.1	195.1 ± 3.1