Fast and sensitive visual detection of Fe²⁺ using silver nanoparticles modified by 3,3',5,5'-tetramethylbenzidine and 3-mercaptopropionic acid

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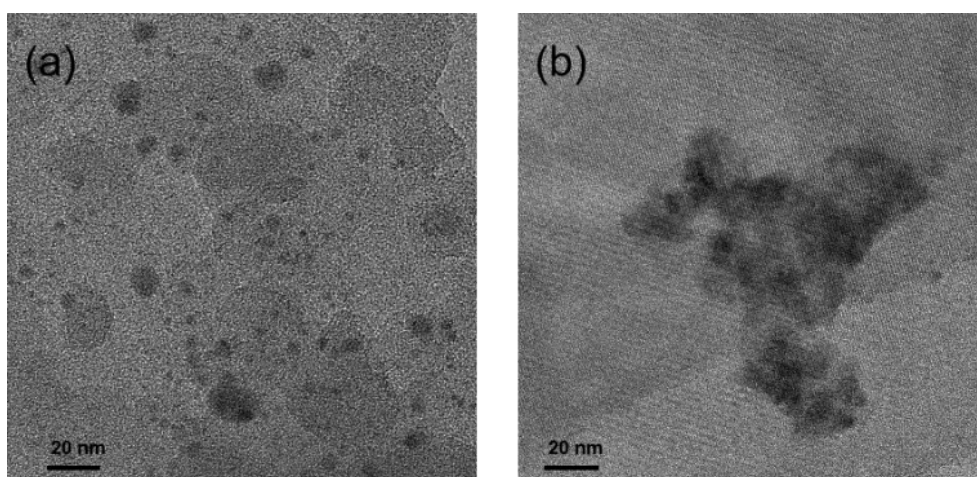
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Figure S1.TEM images of (a) 3-MPA-TMB-AgNPs and (b) 3-MPA-TMB-AgNPs incubated with Fe^{2+}.
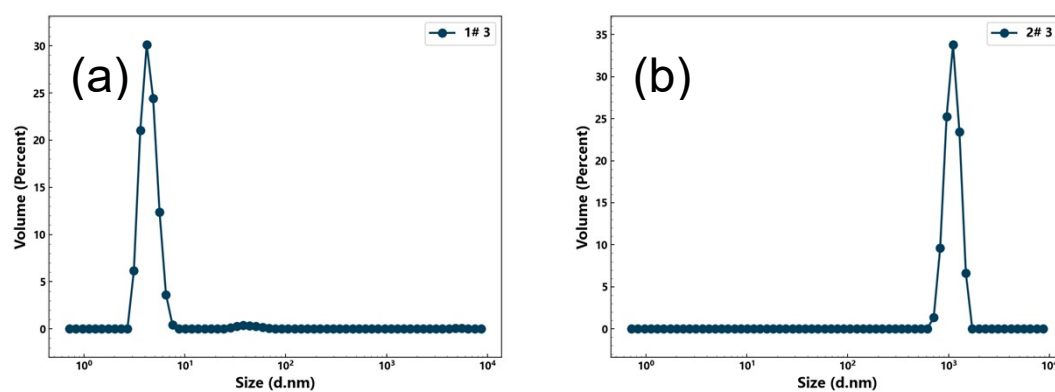

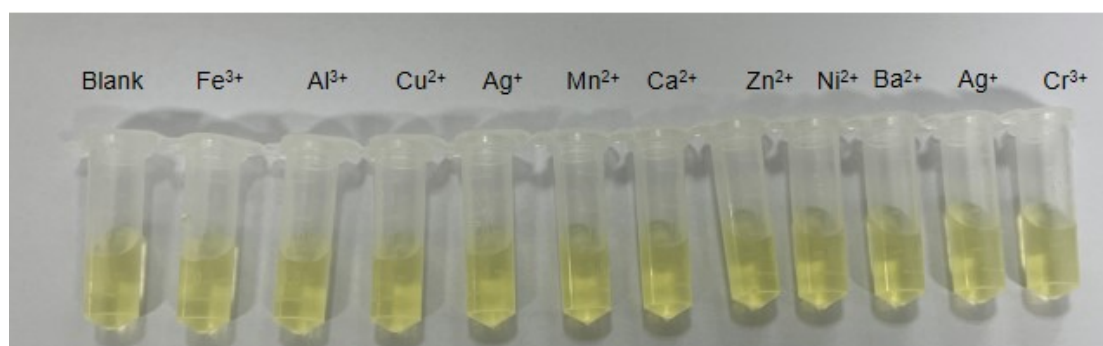Figure S2. DLS images of (a) 3-MPA-TMB-AgNPs and (b) 3-MPA-TMB-AgNPs incubated with Fe^{2+}.

Figure S3. The colorimetric results of various metal ions (1.00×10^{-6} M) under different pH conditions in lake water.

Table S1. Analytical results for detection of Fe^{2+} in tap and lake water sample

Sample		Backgroud values(μM)	Added (μM)	Detection (μM)	Found (μM)	Average (μM)	Recovery (%)	RSD (%, n = 3)
Tap water	1		0.5	0.57	0.51	0.52	104	2.21
				0.60	0.53			
				0.60	0.53			
	2	0.07	2	2.12	2.05	2.06	103	1.28
				2.16	2.09			
				2.11	2.04			
	3		10	10.01	9.94	10.02	100.2	0.74
				10.15	10.08			
				10.12	10.05			
Lake water	1		0.5	0.68	0.54	0.55	110	2.76
				0.73	0.55			
				0.75	0.57			
	2	0.18	2	2.26	2.08	2.07	103.5	0.74
				2.24	2.06			
				2.27	2.09			
	3		10	10.21	10.03	10.23	102.3	1.74
				10.47	10.29			
				10.55	10.37			