Supporting Information

Responsive Lanthanide Coordination Polymer for Hydrogen Sulfide

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Figures and Tables

Figure S1

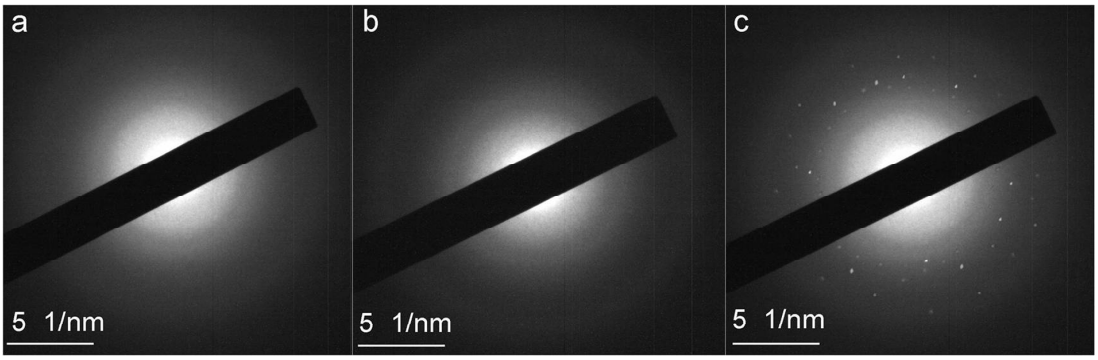
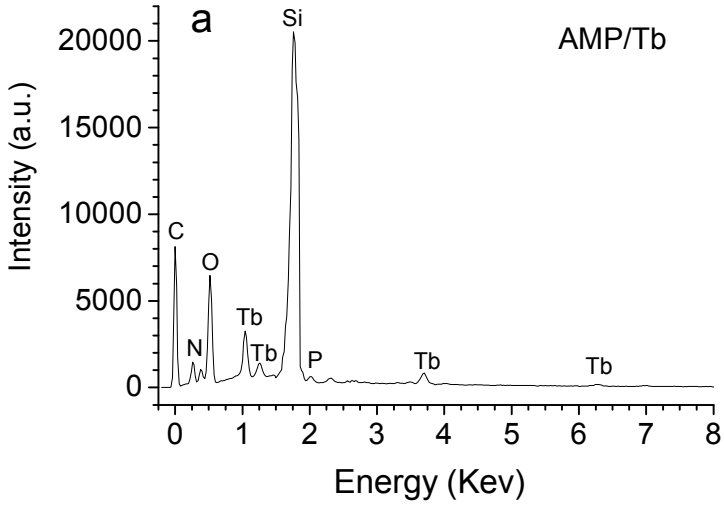
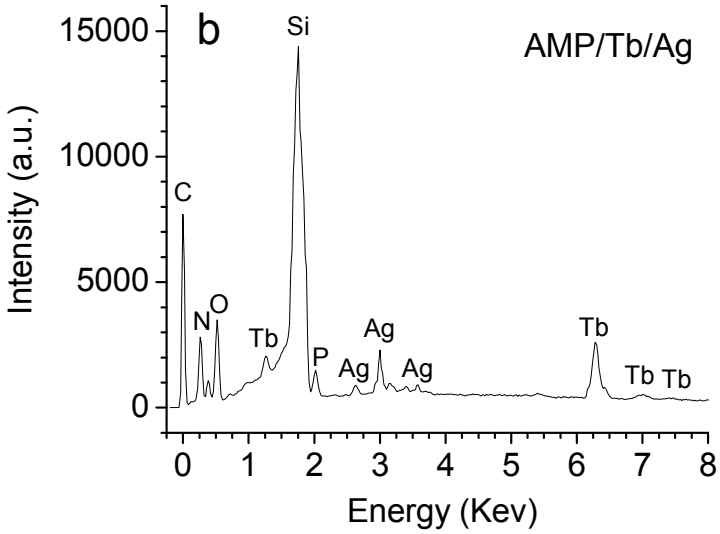


Figure S1. Selected area electron diffraction (SAED) images of AMP/Tb CP (a), AMP/Tb/Ag CP (b), and AMP/Tb/Ag CP after the interaction with sulfide (c).

Figure S2





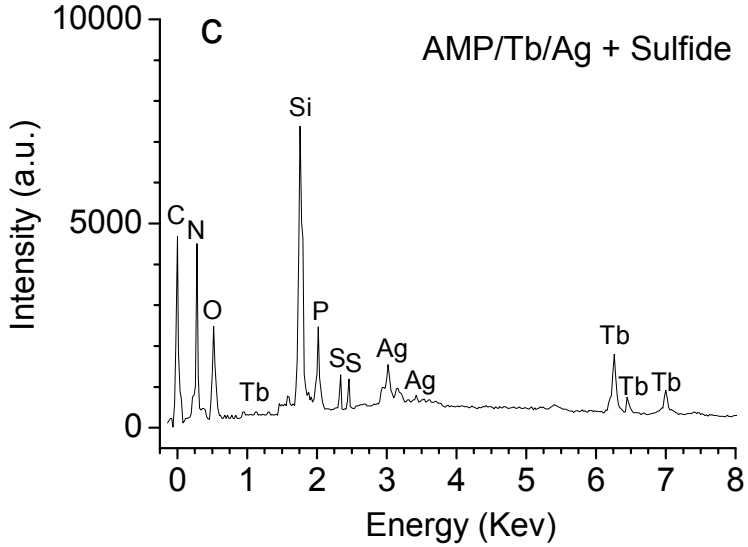


Figure S2. Energy-dispersive X-ray (EDX) spectra of AMP/Tb CP (a), AMP/Tb/Ag CP (b), and AMP/Tb/Ag CP after the interaction with sulfide (c)

Figure S3

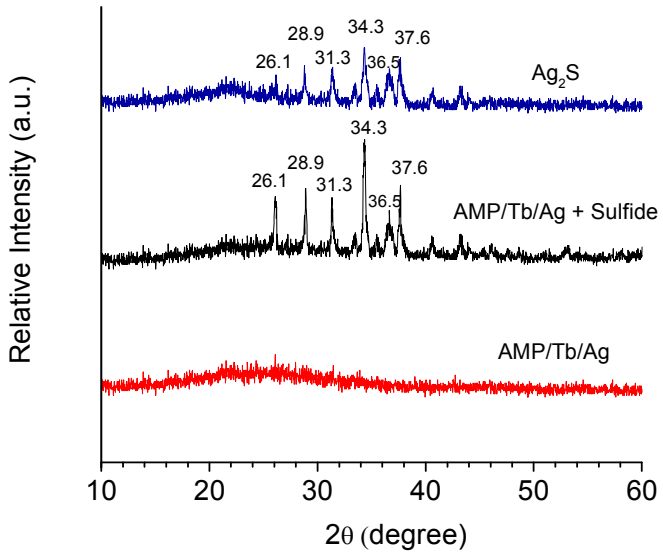


Figure S3. X-ray diffraction (XRD) spectra of Ag_2S, AMP/Tb/Ag CP, and AMP/Tb/Ag CP after the interaction with sulfide.

Figure S4

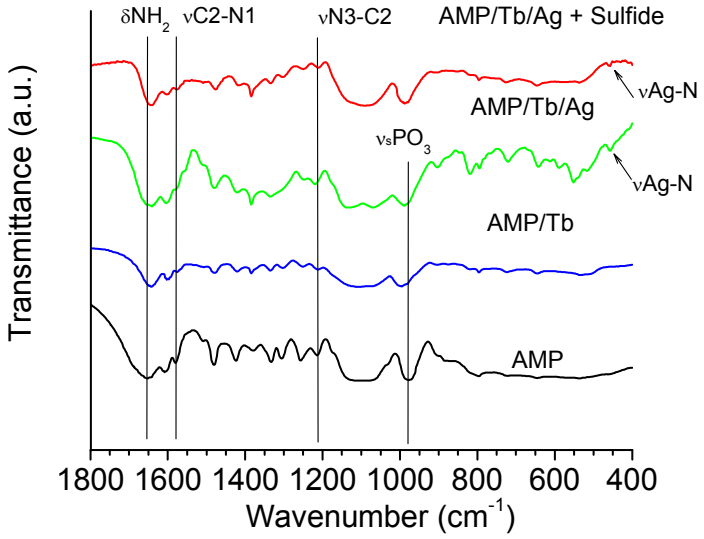


Figure S4. FTIR spectra of AMP, AMP/Tb CP, AMP/Tb/Ag CP, and AMP/Tb/Ag CP after the interaction with sulfide. ν: stretching vibration; δ: scissoring vibration.

Figure S5

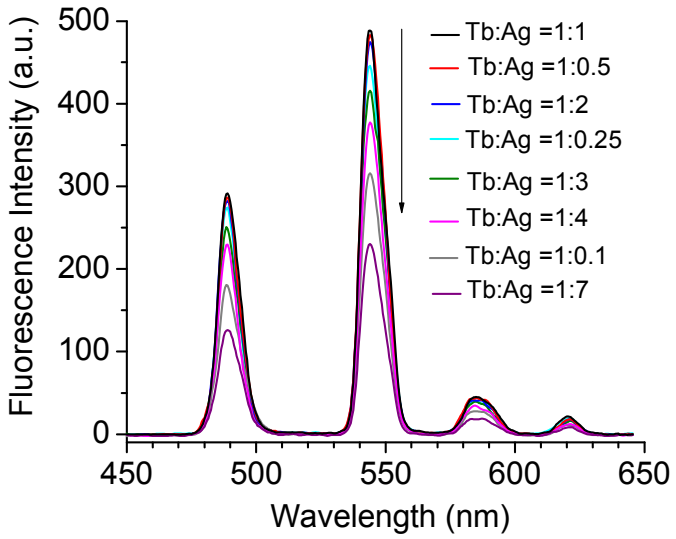


Figure S5. Effect of different mole ratio of Tb^{3+} to Ag^{+} added in the synthesis reaction on the fluorescence intensity of AMP/Tb/Ag CP.

Figure S6

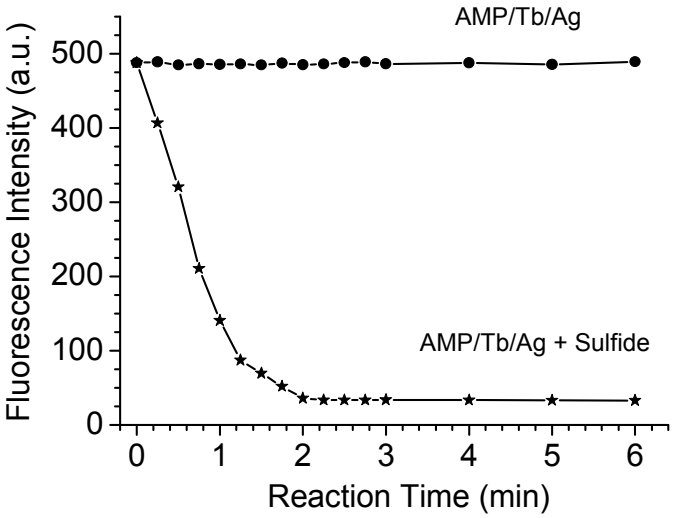


Figure S6. Response time of AMP/Tb/Ag CP for sulfide.

Figure S7

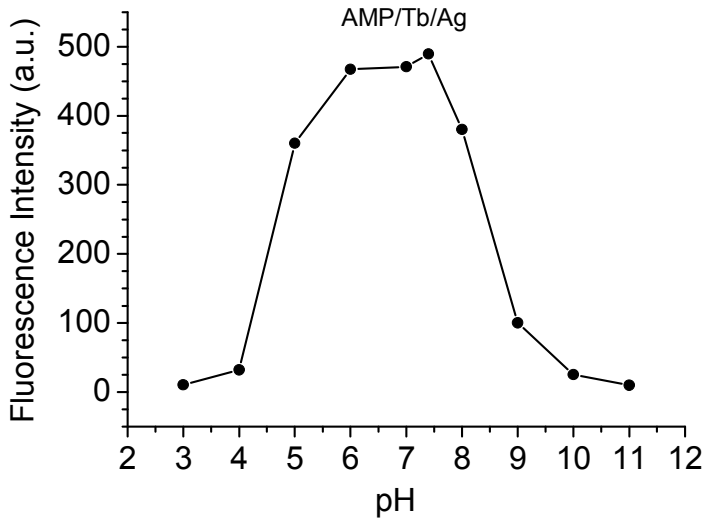


Figure S7. Effects of pH value on the fluorescence intensity of AMP/Tb/Ag CP.

Figure S8

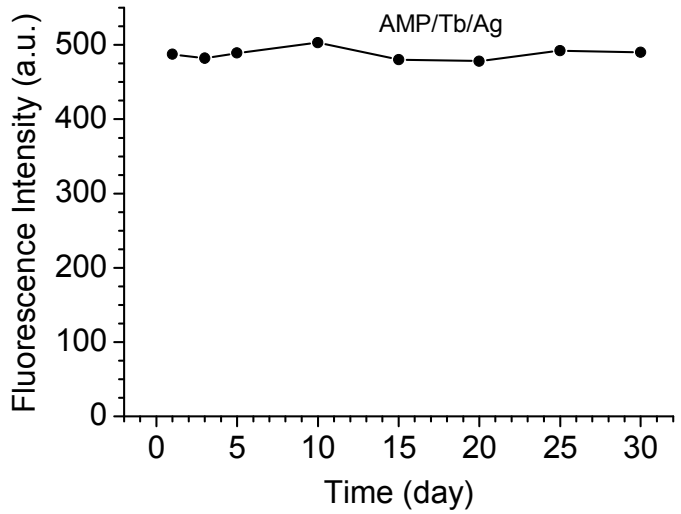


Figure S8. Stability of fluorescence intensity (at 545 nm) of AMP/Tb/Ag CP during 30 days.

Figure S9

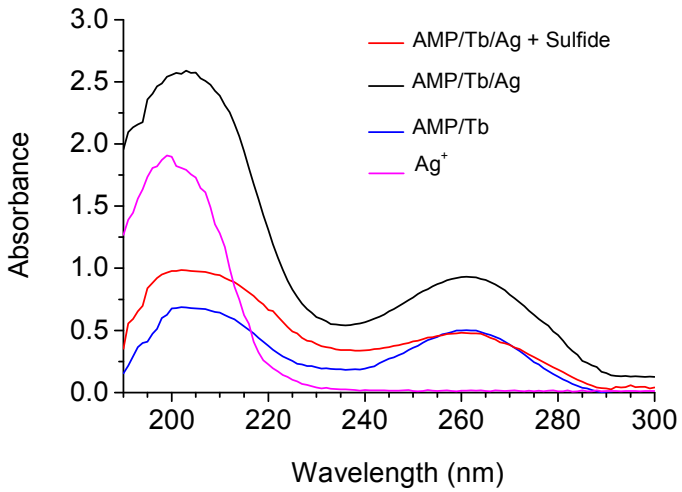


Figure S9. UV-vis spectra of 100 μM Ag^+, AMP/Tb CP, AMP/Tb/Ag CP, and AMP/Tb/Ag CP after the interaction with 170 μM sulfide.

Figure S10

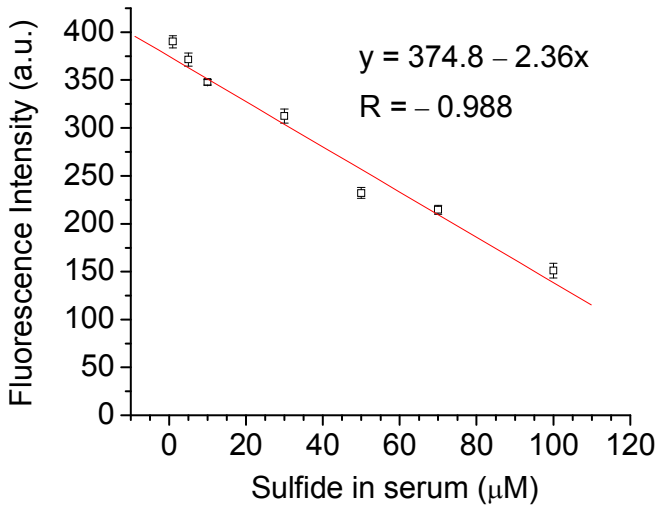


Figure S10. Linear relationship between the fluorescence intensity of AMP/Tb/Ag CP and the concentration of sulfide in human serum samples.

Figure S11

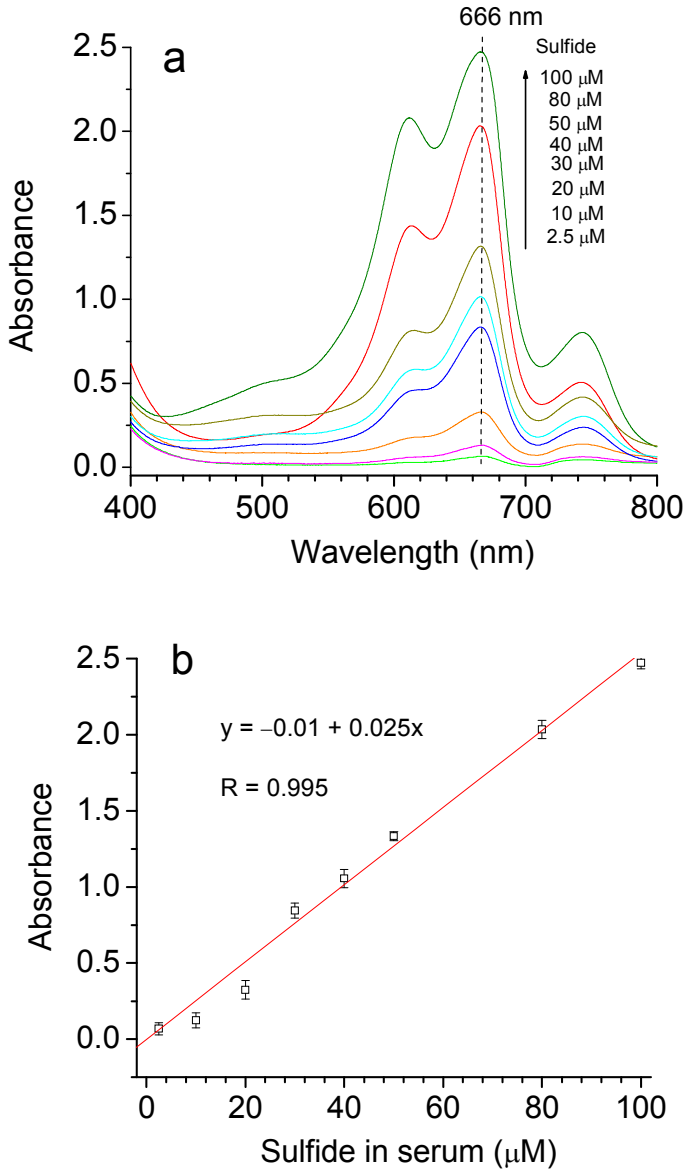


Figure S11. (a) UV-vis spectra of methylene blue (MB) method for the determination of H_2S; (b) Linear relationship between the absorption of methylene blue and the concentration of sulfide in human serum samples.

Figure S12

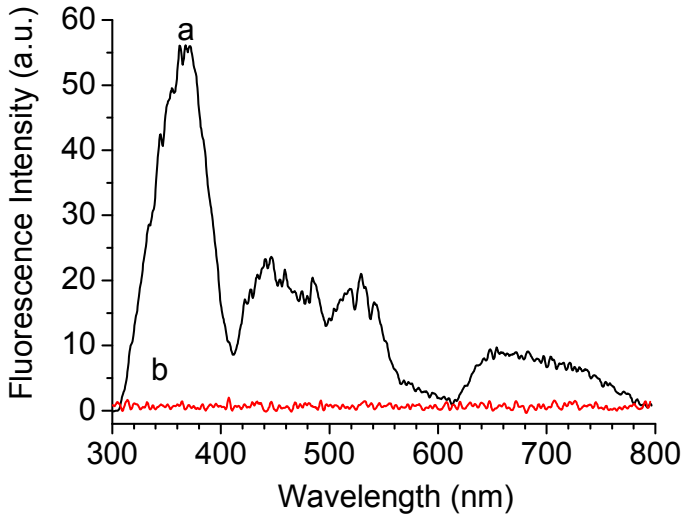


Figure S12. Background fluorescence of human serum sample under fluorescence detection mode (a) and time-resolved fluorescence detection mode with a time-delay of 50 μs (b).

Table S1

Determination of H_2S in human serum samples

Serum sample	Current method				MB method
	Endogenous sulfide (μM)[a]	Added sulfide (μM)	Detected sulfide (μM)[a]	Recovery (%)	Endogenous sulfide (μM)[a]
1	29.46 ±2.89	2.00	31.51±2.01	102.5%	28.82 ±1.59
2	43.89 ±2.37	10.01	53.65 ±3.09	97.5%	41.68 ±2.41
3	Not detected	20.02	19.05 ±3.26	95.2%	Not detected
4	Not detected	29.89	28.69±1.59	95.9%	Not detected
5	Not detected	50.09	48.29±1.98	96.4%	Not detected

a: mean value (n=3) ± standard deviation