

New Journal of Chemistry

Supporting information for:

An Accurate and Portable Colorimetric Chemosensor for S^{2-} Detection *via* Two Complementary Mechanisms

Jian Chen,^{*} Ying Zhang, Shiyi Miao, Mingyue Wang, Baocheng Yang^{*}

Henan Key Laboratory of Nanocomposite and Applications, Institute of Nanostructured Functional Materials, Huanghe Science and Technology College, Zhengzhou, Henan 450006, China

Corresponding Authors

Jian Chen E-mail: jianchen@infm.hhstu.edu.cn

Baocheng Yang E-mail: baochengyang@infm.hhstu.edu.cn

Supporting Information Figures

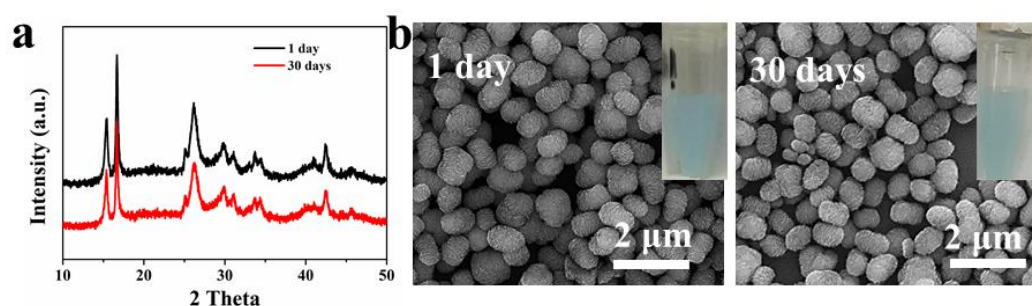


Figure S1. (a) Powder X-ray diffraction patterns for CuBDC MOFs kept for 1 day or 30 days. (b) SEM images of CuBDC MOFs kept for 1 day or 30 days. The inset images were photographs of CuBDC MOFs dispersed in water for 1 day or 30 days.

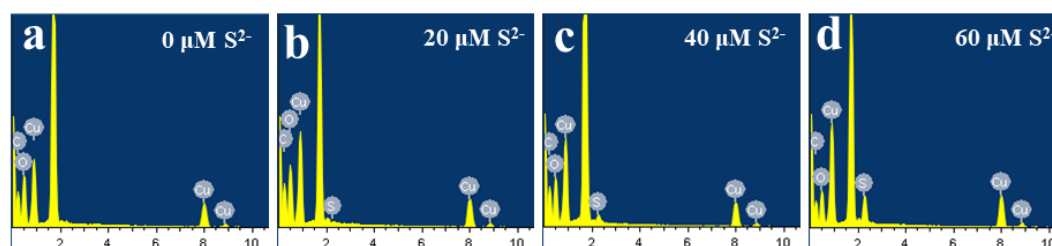


Figure S2. EDS spectra of CuBDC MOFs after interacting with different concentrations of S^{2-} .

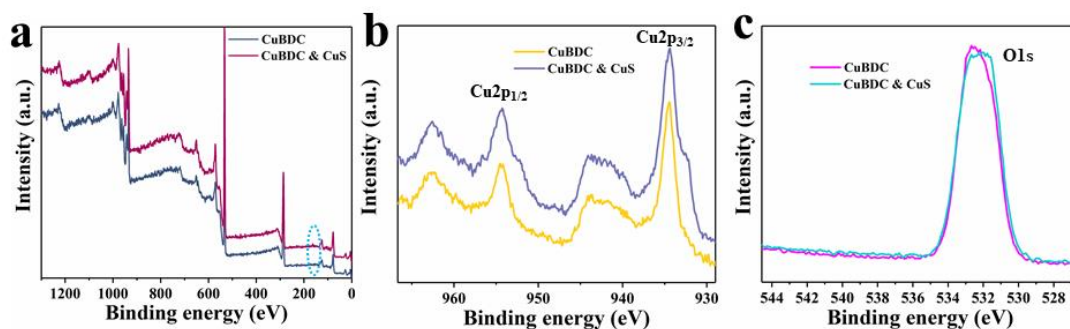


Figure S3. (a) Survey XPS spectra of CuBDC MOFs and the reaction product between CuBDC and S^{2-} . (b) High resolution Cu2p of CuBDC MOFs and the reaction product between CuBDC and S^{2-} . (c) High resolution O1s of CuBDC MOFs and the reaction product between CuBDC and S^{2-} .

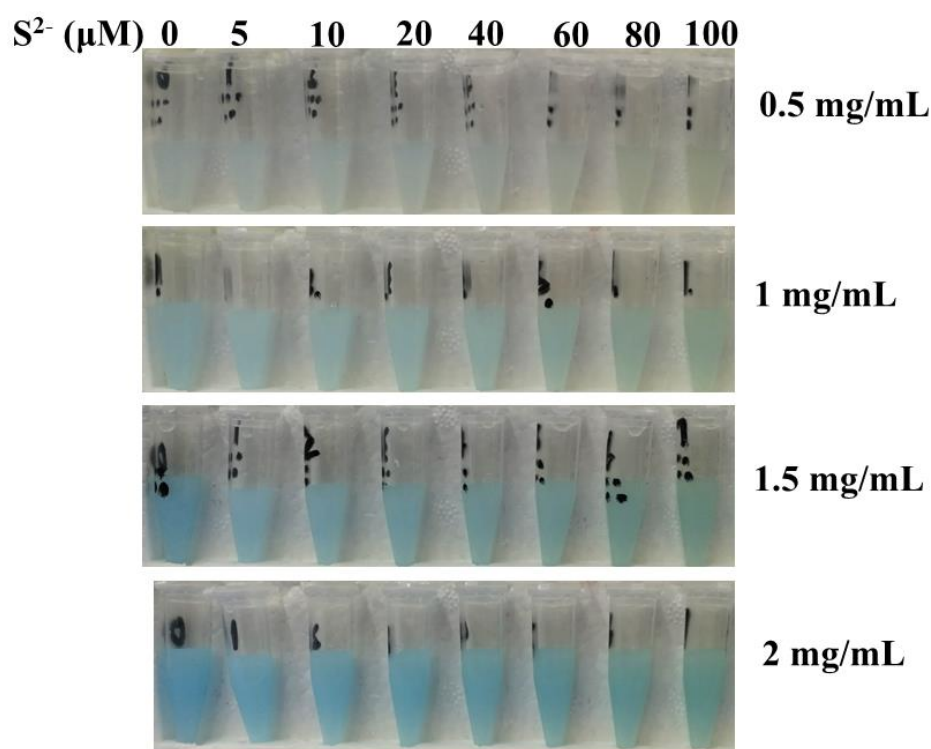


Figure S4. Photographs of aqueous solution containing different amount of CuBDC MOFs with various concentrations of S^{2-} added.

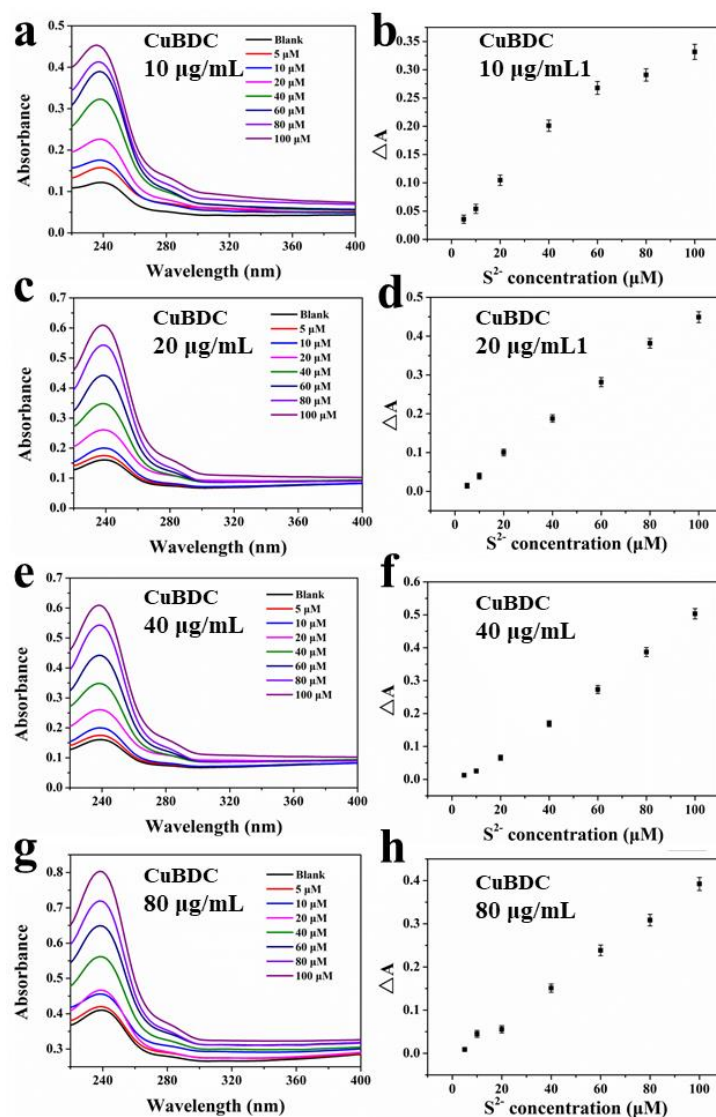


Figure S5. The UV-Vis absorption spectra of aqueous solution containing different amount of CuBDC MOFs with various concentrations of S^{2-} added, and the corresponding linear relationship between ΔA_{240} and S^{2-} concentration in solutions.

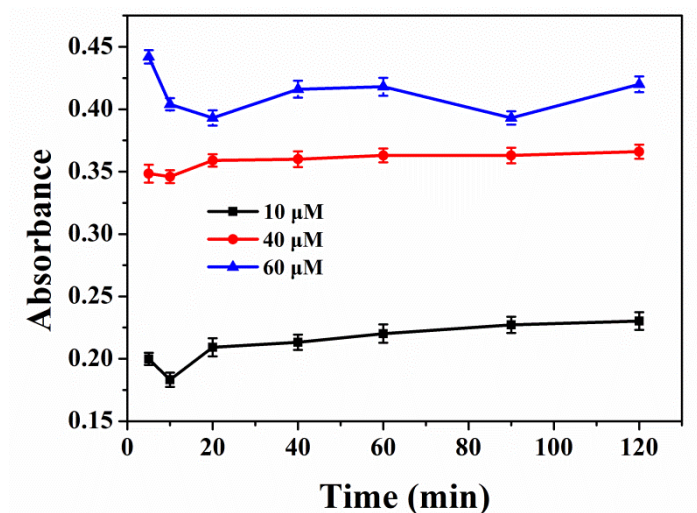


Figure S6. Effects of incubation time on the sensing efficiency for S^{2-} .

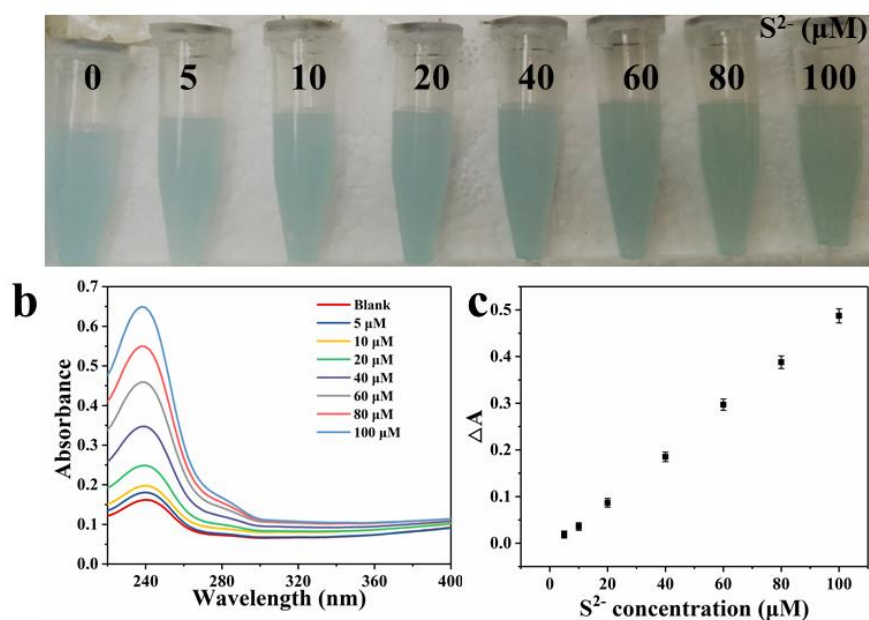


Figure S7. (a) Photographs of CuBDC solution kept for 30 days with different concentrations of S^{2-} added. (b) The UV-Vis absorption spectra of CuBDC solution kept 30 days with different concentrations of S^{2-} added. (c) Linear relationship between ΔA_{240} and S^{2-} concentration in solutions.

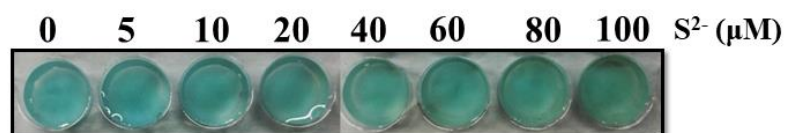


Figure S8. Photographs of PVA gels incubated with various concentrations of S^{2-} after 1 h.

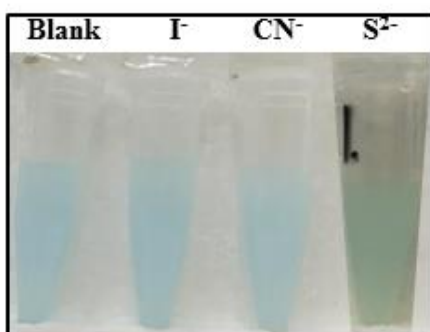


Figure S9. Photographs of CuBDC MOFs solution with I^- , CN^- or S^{2-} added.

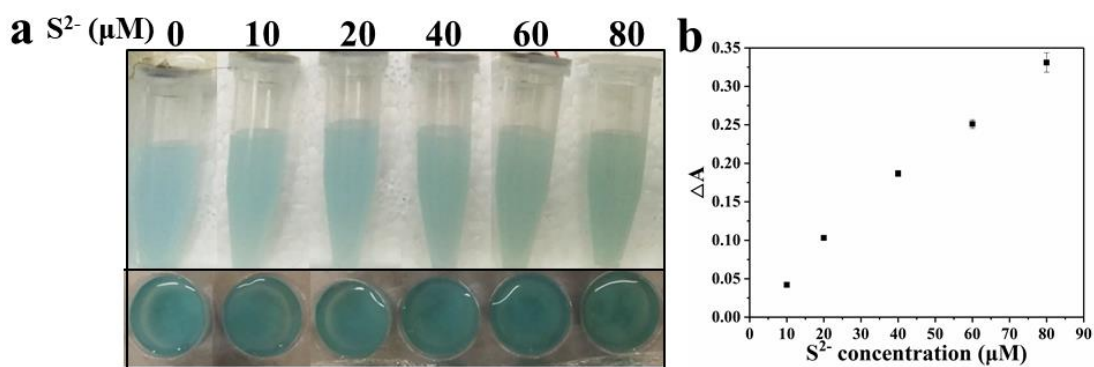


Figure S10. (a) CuBDC MOFs or PVA gels with underground water containing different concentrations of S^{2-} added. (b) Linear relationship between ΔA_{240} and S^{2-} concentration in underground water.