

Supporting information

A dye@MOF crystalline probe serving as a platform for ratiometric sensing of trichloroacetic acid (TCA), a carcinogen metabolite in human urine

Bing-Hui Wang,^a and Bing Yan^{*a,b}

^a *School of Chemical Science and Engineering, Tongji University, Shanghai 200092, China*

^b *School of Materials Science and Engineering, Liaocheng University, Liaocheng 252059, China*

* Corresponding author: Email address: byan@tongji.edu.cn (Bing Yan)

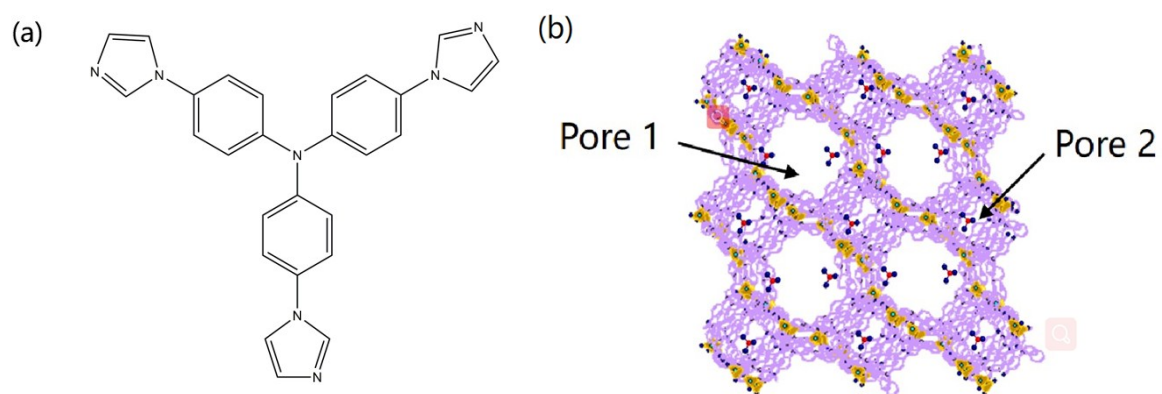


Fig. S1 (a) The structure of Tipa ligand; (b) the framework of compound **1**. Green, red, purple, blue spheres represent Zn, O, C, N atoms, respectively.

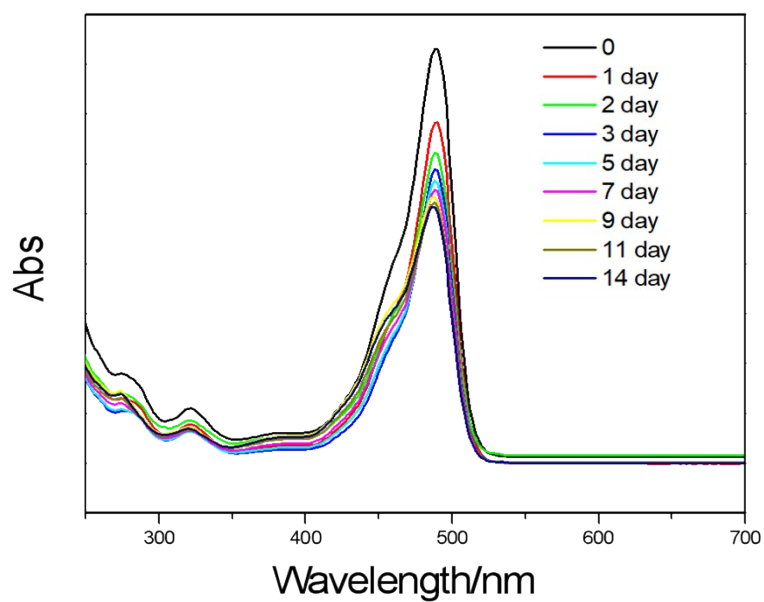


Fig. S2 UV-vis absorption spectra of FS exchange solution.

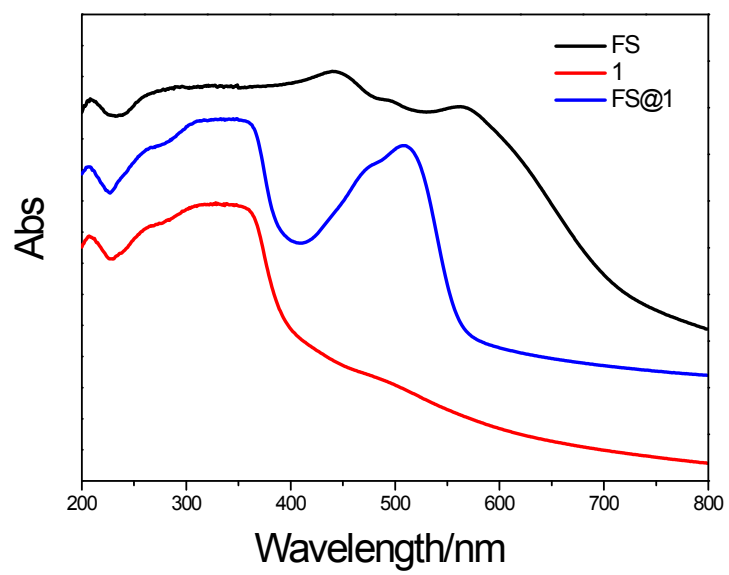


Fig. S3 UV-vis diffuse reflectance spectra of FS, **1** and FS@**1**.

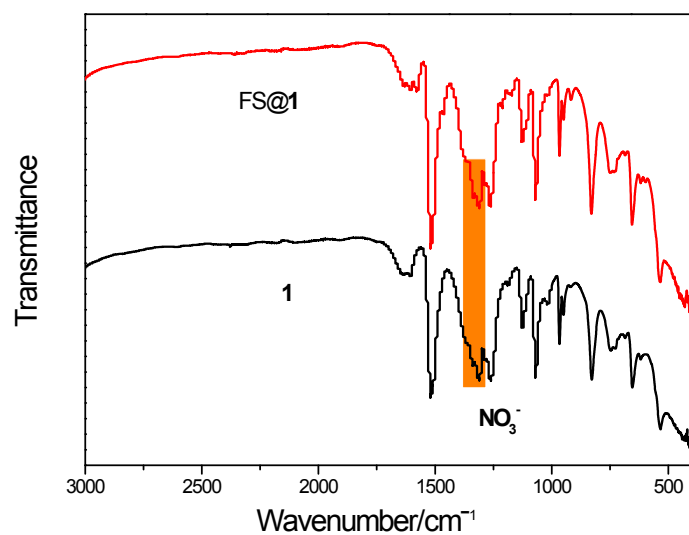


Fig. S4 FTIR spectra analysis of compound **1** and FS@**1**.

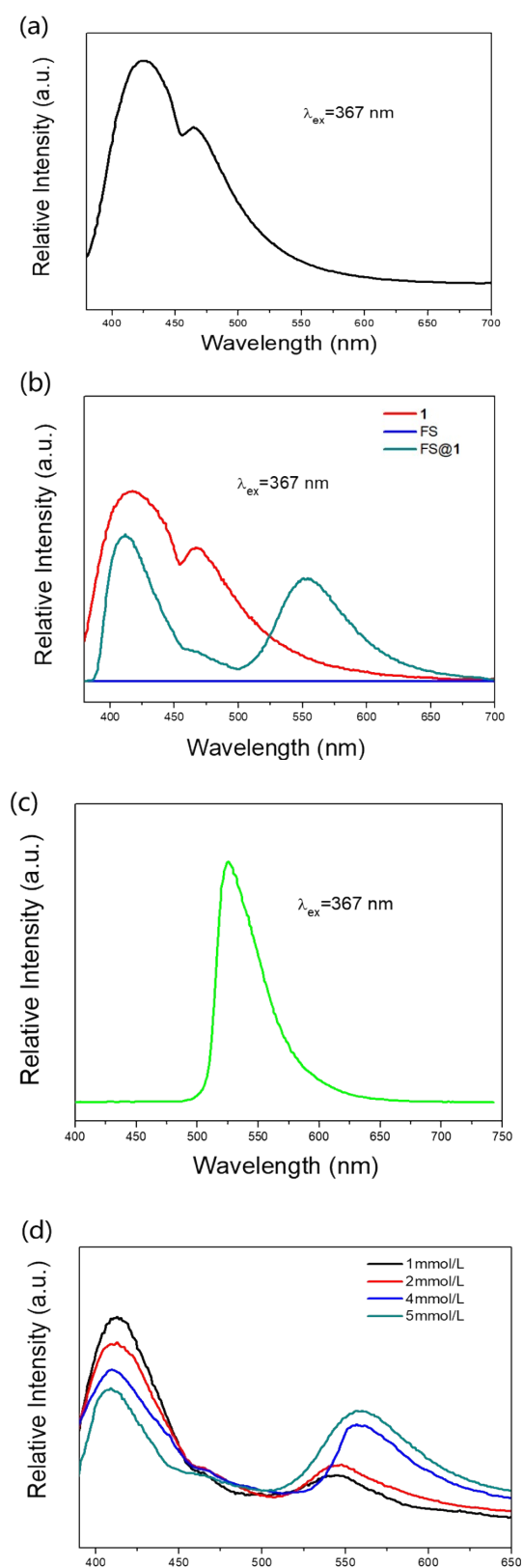


Fig. S5 (a) emission spectra of free ligand Tipa in the solid state; (b) compound **1**, FS and FS@**1** in the solid state ; (c) FS in aqueous solution state; FS@**1** prepared by immersing in FS solution with different concentrations.

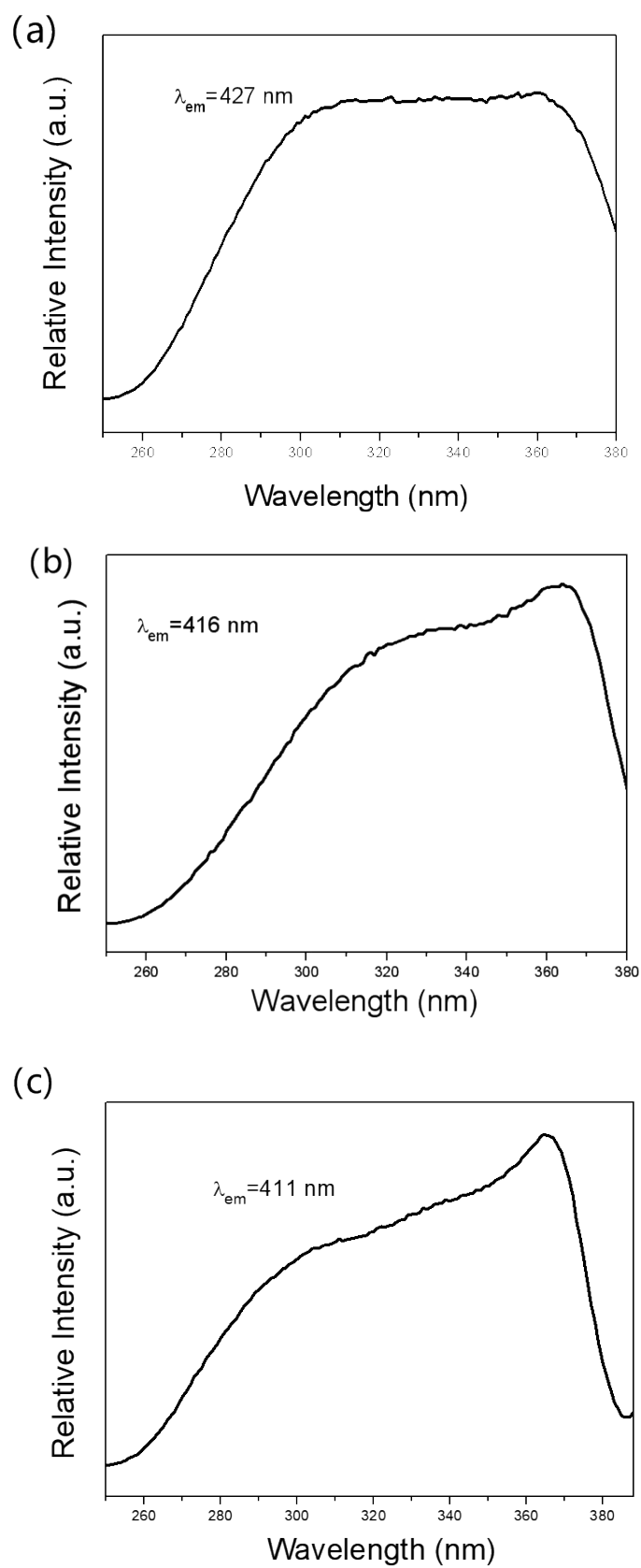


Fig. S6 Excitation spectra of Tipa(a), compound **1**(b) and FS@**1**(c).

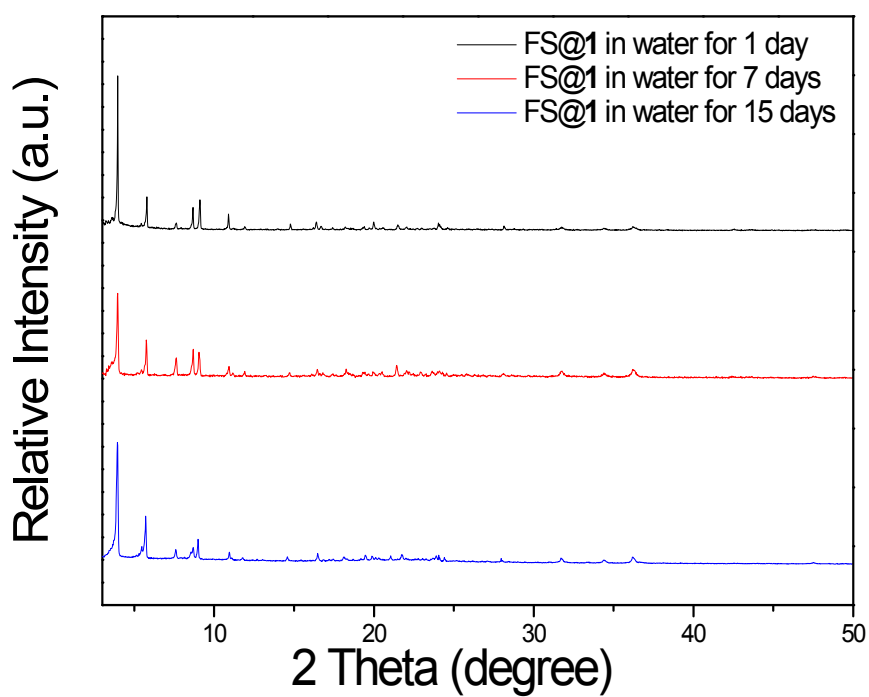


Fig. S7 PXRD pattern of FS@1 after immersing in water for 1 day, 7days, 15 days, respectively.

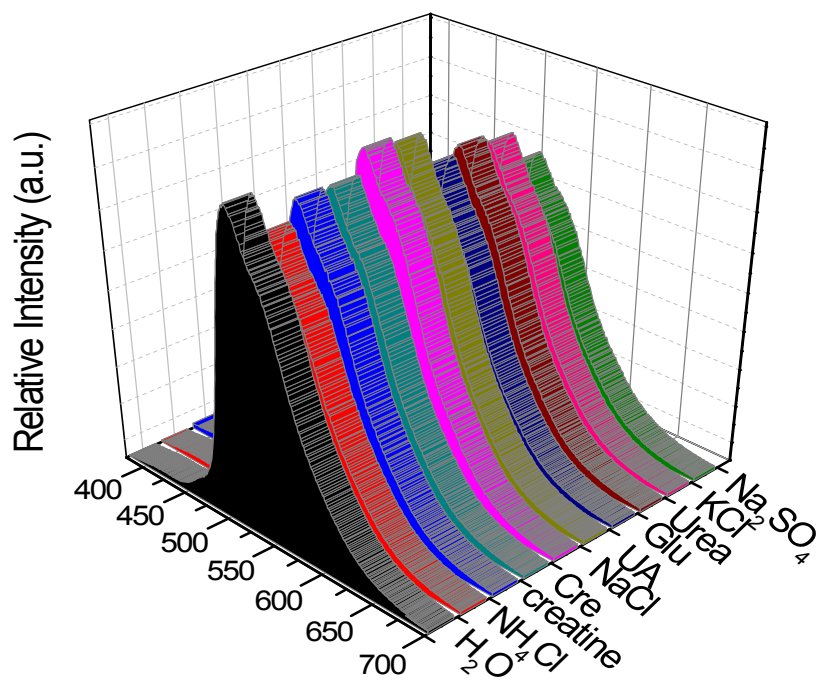


Fig. S8 Emission spectra of FS@1 toward TCA in the presence of background of other various urine components ($\lambda_{ex} = 367nm$).

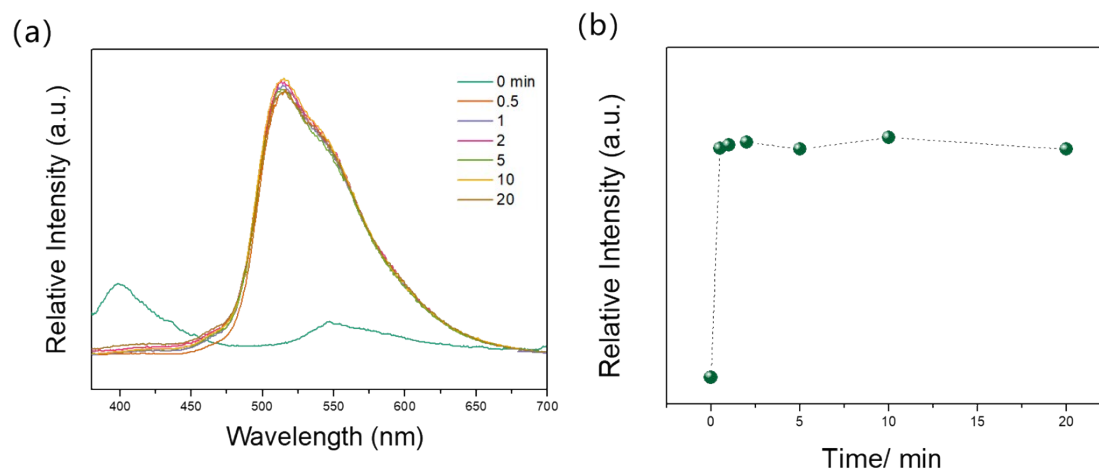


Fig. S9 Time-dependent emission spectra(a) and intensities(b) at 518 nm of the FS@1 to the TCA solution.

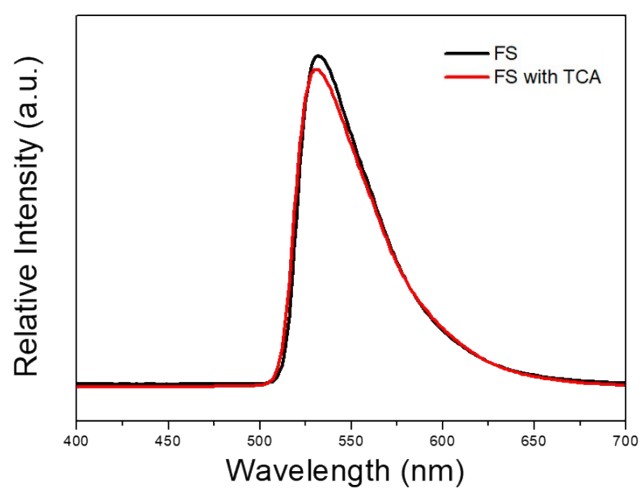


Fig. S10 Emission spectra of FS solution and FS (in the same concentration) with TCA (10 mM).

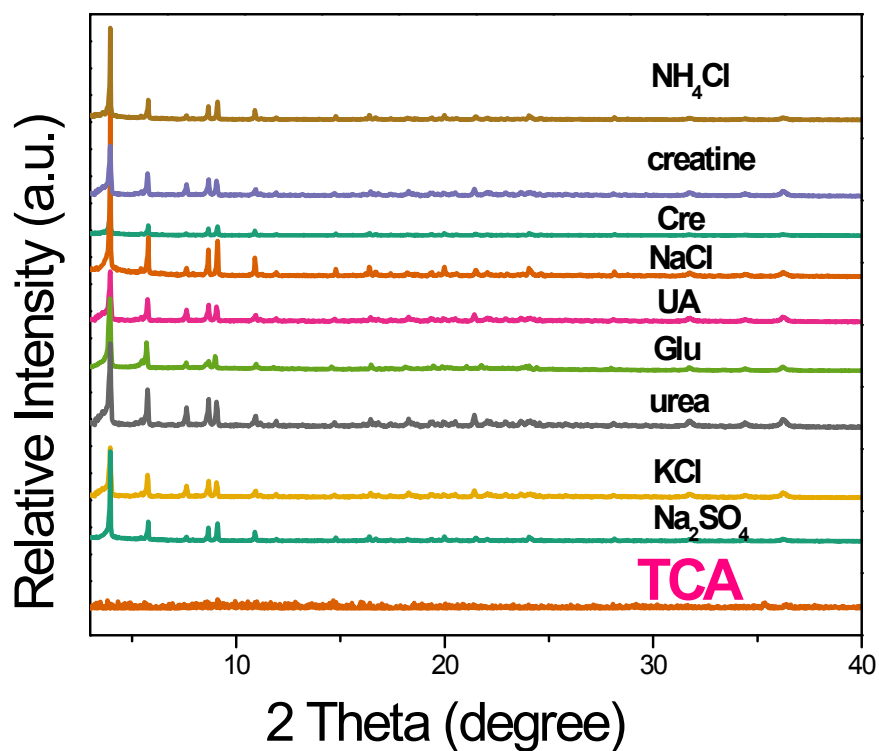


Fig. S11 PXRD patterns of the FS@1 after immersing in different constituents(10 mM).

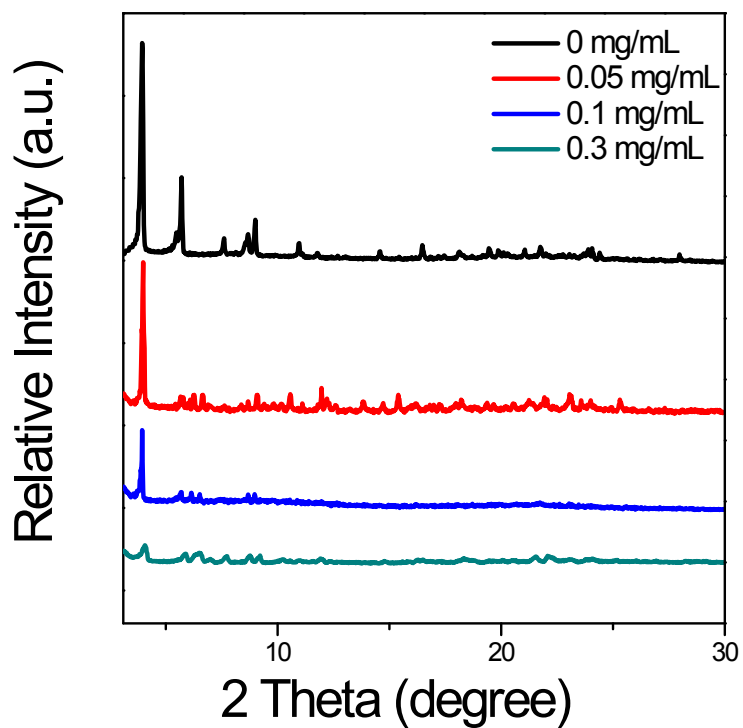


Fig. S12 PXRD patterns of the FS@1 after immersing in TCA solution with different concentrations.