Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Supplementary Information

Tb^{3+} functionalized triazine-porous organic framework as a ratiometric fluorescence sensor for determination of ciprofloxacin in aquatic products

Zhenyu Lu, Gongke Li*, Yufei Hu*

School of Chemistry, Sun Yat-sen University, Guangzhou 510006, China.

*Corresponding Authors

E-mail: cesgkl@mail.sysu.edu.cn;

huyufei@mail.sysu.edu.cn

Fig. S1 Synthesis routine of TAPOF

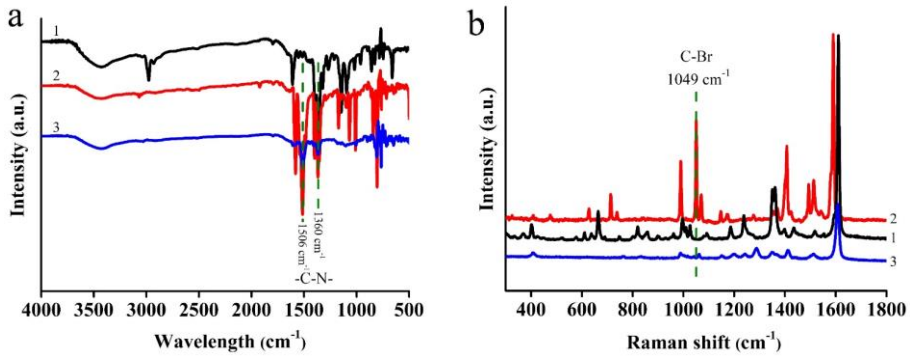

Fig. S2 FT-IR spectra (a) and Raman spectra (b) of TAPOF (curve 1), monomer1 (curve 3) and monomer 2 (curve 2)

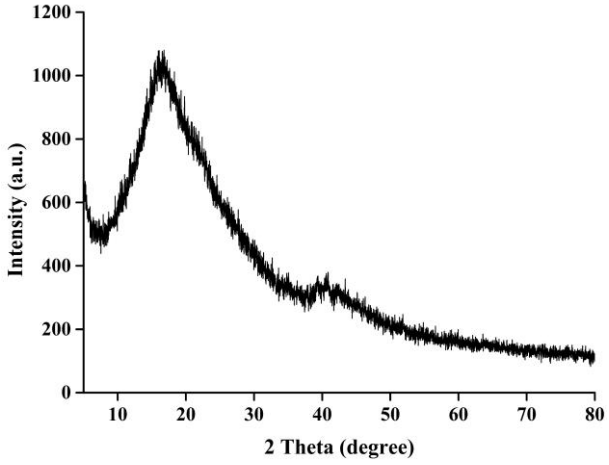

Fig.S3 PXRD pattern of TAPOF

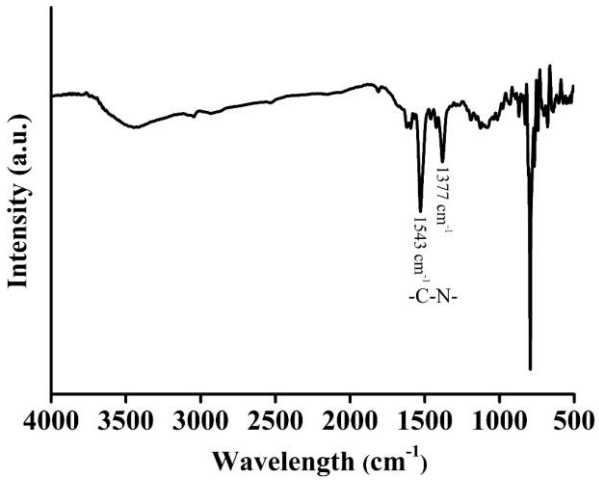

Fig. S4 FT-IR spectrum of Tb^{3+}/TAPOF

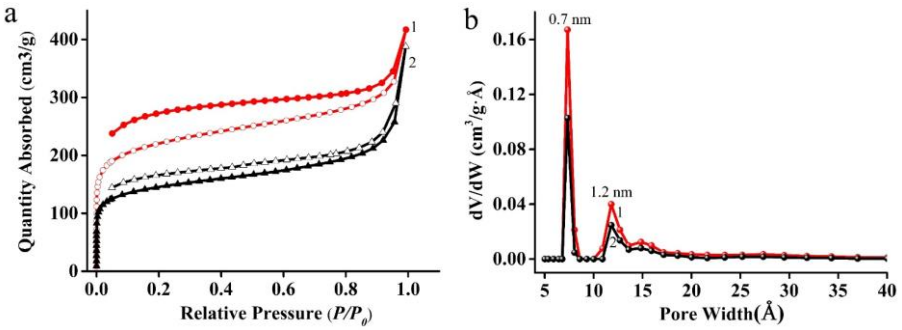

Fig. S5 (a) N_2 adsorption-desorption isotherms and (b) pore size distribution of TAPOF (curve 1) and Tb^{3+}/TAPOF (curve 2)

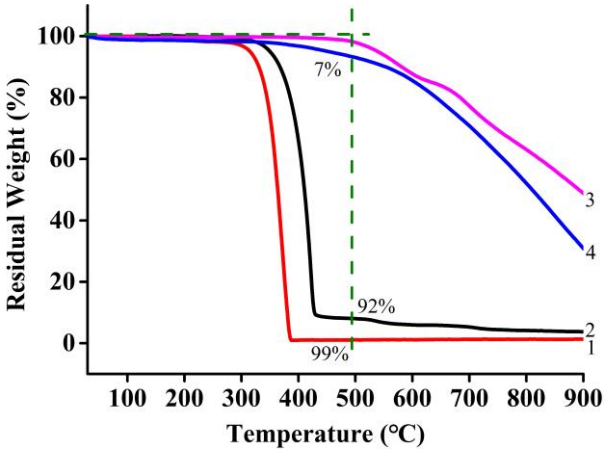

Fig. S6 TGA curves of Tb^{3+}/TAPOF (curve 4), TAPOF (curve 3), 2, 4, 6-tris (4-bromophenyl)-1, 3, 5-triazine (curve 1) and 1, 3, 5-tri (4-pinacolatoborolanephenyl) benzene (curve 2)

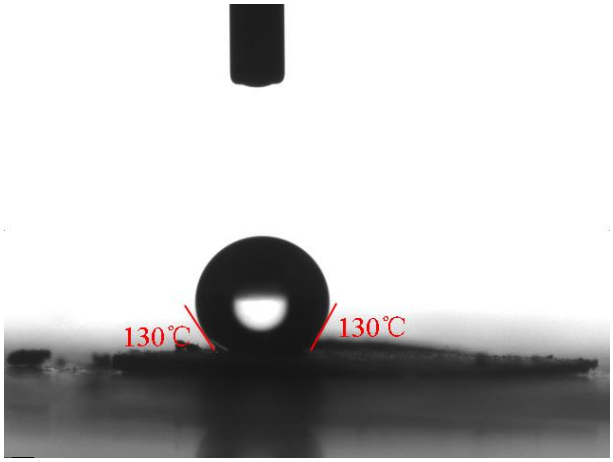

Fig. S7 Water contact picture of Tb^{3+}/TAPOF

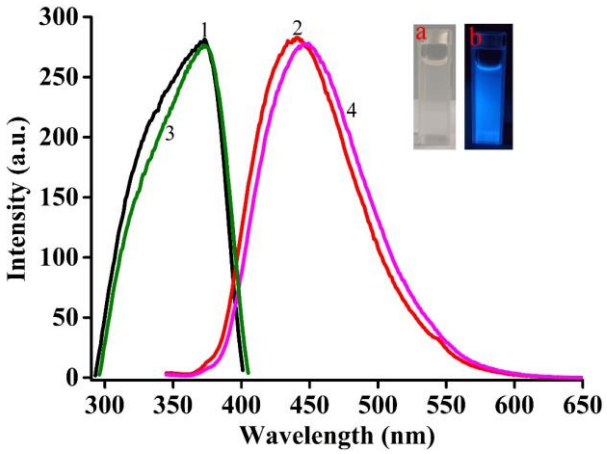

Fig. S8 The excitation (curve 1) and emission (curve 2) spectra of Tb^{3+}/TAPOF; The excitation (curve 3) and emission (curve 4) spectra of TAPOF. (Illustrations a-b are sunlight and fluorescent photographs of Tb^{3+}/TAPOF dispersed solution, λex=365 nm)

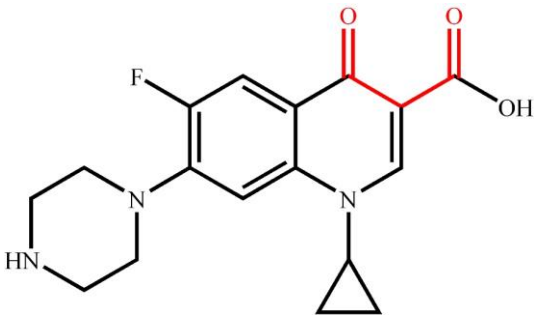

Fig. S9 The formula of ciprofloxacin

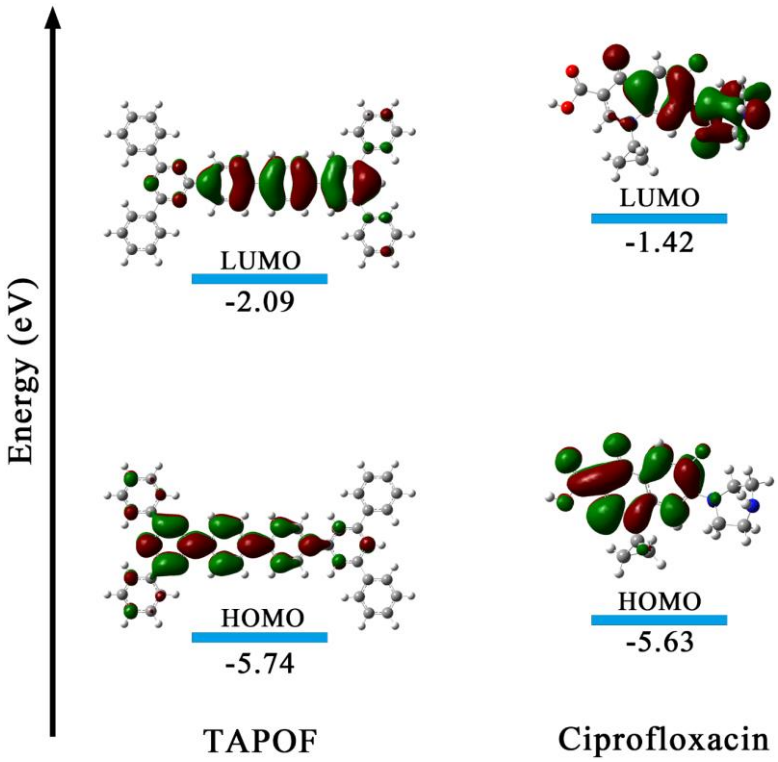

Fig. S10 LUMO-HOMO energy profiles of TAPOF and ciprofloxacin

Table S1 Fluorescence lifetime and energy transfer efficiency of Tb^{3+}/TAPOF and floxacin compounds

Names	Lifetime (μs)	Energy transfer efficiency (%)
Tb^{3+}/TAPOF	4.9	-[a]
Ciprofloxacin	338.9	98.6
Difloxacin	40.5	88.5
Marbofloxacin	26.2	82.4
Ofloxacin	19.4	76.3
Levofloxacin	16.3	71.7
Fleroxacin	5.8	20.4
Gatifloxacin	5.9	22.4
Sparfloxacin	5.7	20.0
Moxifloxacin	6.0	23.7

[a]: no value

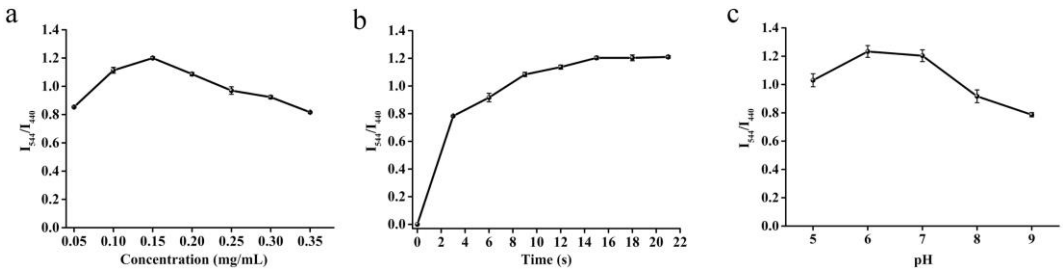

Fig. S11 (a) Optimization of Tb^{3+}/TAPOF dispersion concentration; (b) Optimization of mixing time between Tb^{3+}/TAPOF dispersion and ciprofloxacin; (c) Effect of pH on the response of Tb^{3+}/TAPOF towards the ciprofloxacin. (λex = 330 nm, *c* = 1.5 μmol/L)

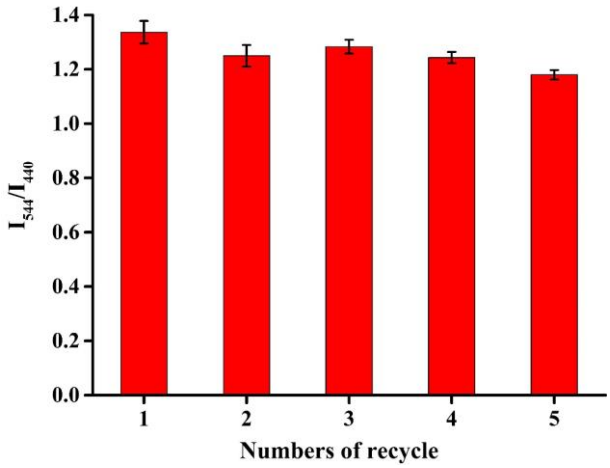

Fig. S12 Study on the reuse times of Tb^{3+}/TAPOF. (λex = 330 nm, *c* = 1.5 μmol/L)

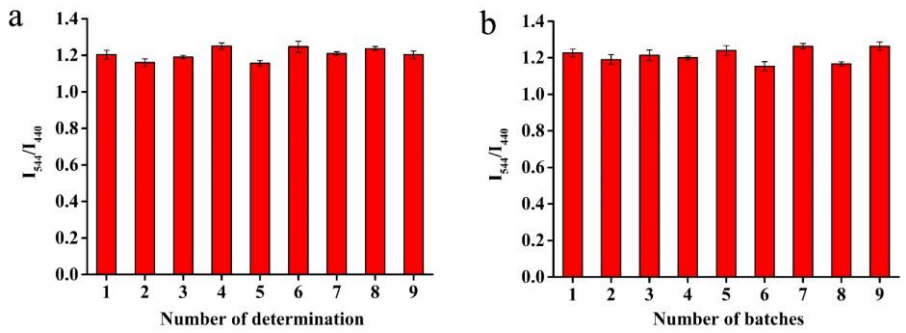

Fig. S13 (a) Study on the reproducibility of Tb^{3+}/TAPOF dispersion in the same batch; (b) Study on the reproducibility of Tb^{3+}/TAPOF dispersion in the different batches. (λex = 330 nm, *c* = 1.5 μmol/L)