Electronic Supporting Information

Fluoranthene dyes for the detection of water content in methanol

Jie-Wei Rong[b, §], Yu-Chen Liu[a, §], Jia-Hui Zhou[a], Guo-Dan Lu[a], Hui-Yan Liu[a, *] and Hai-Ying Wang [a, *]

[a] School of Chemistry & Materials Science, Jiangsu Normal University, Jiangsu Key Laboratory of Green Synthetic Chemistry for Functional Materials, Xuzhou 221116, P. R. China
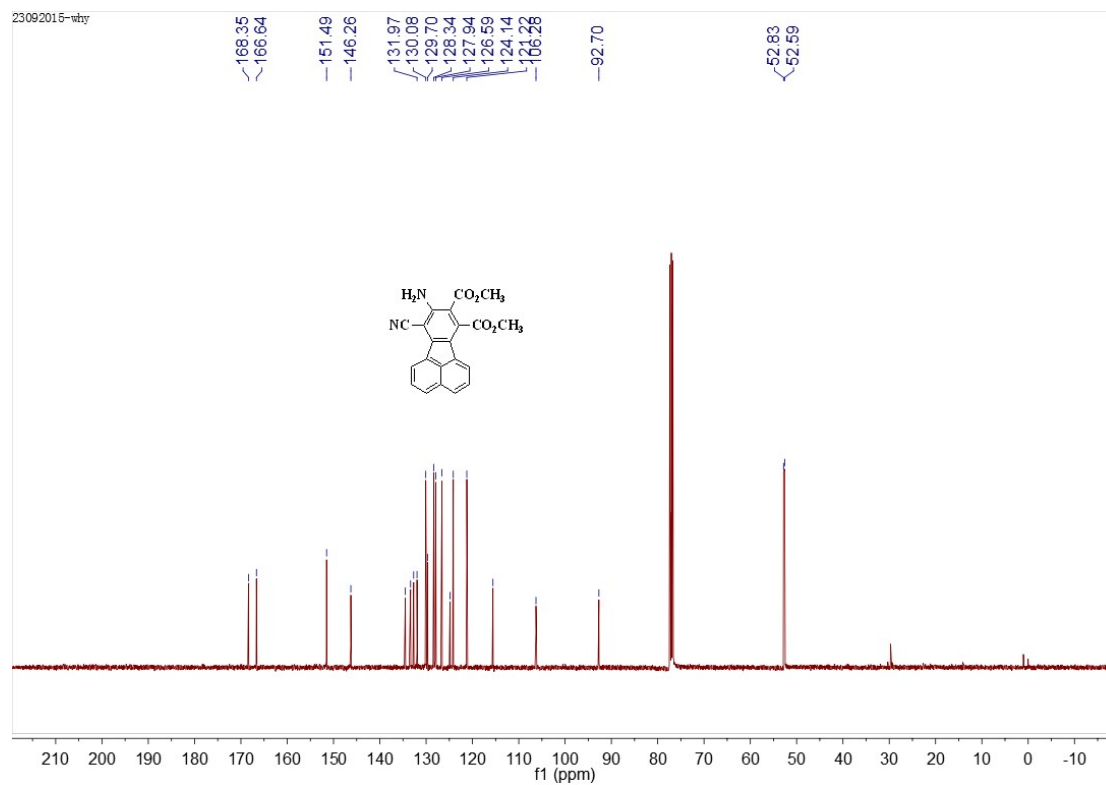[b] School of Chemistry and Materials Engineering, Huainan Normal University, Huainan, 232038, P. R. China

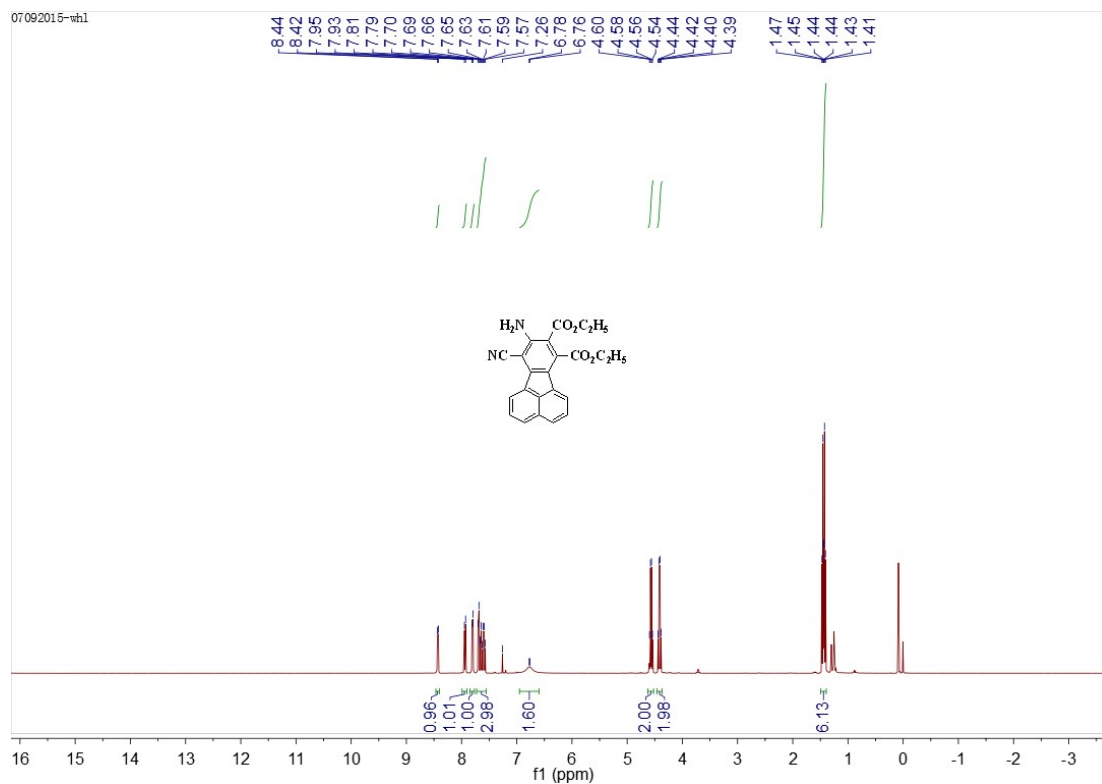**NMR spectrum of all new compounds:**
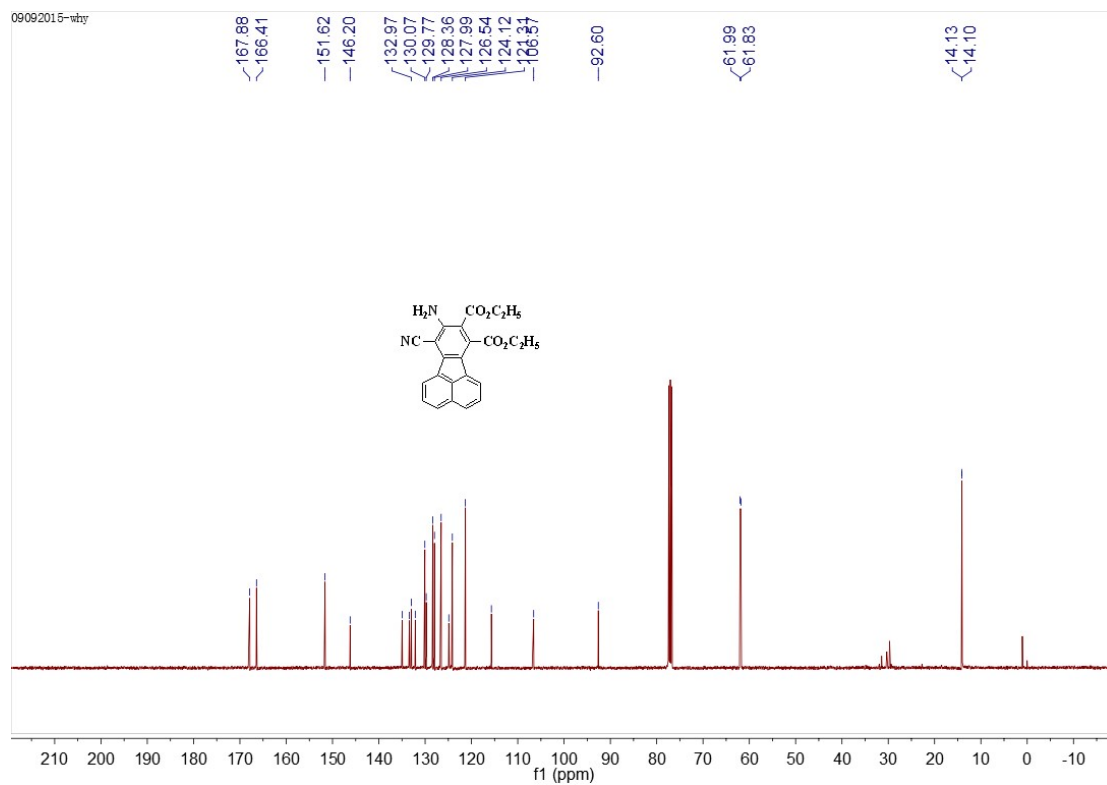
^{1}H NMR spectrum of compound 4a in CDCl$_3$, 400 MHz
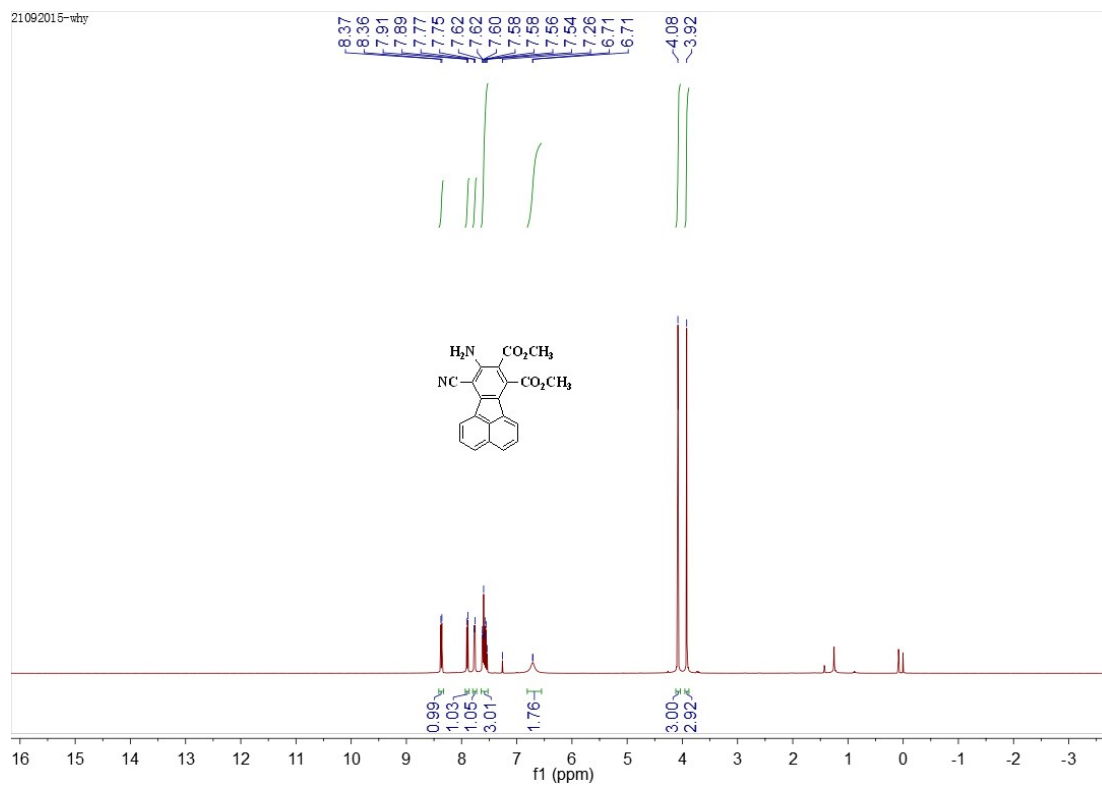
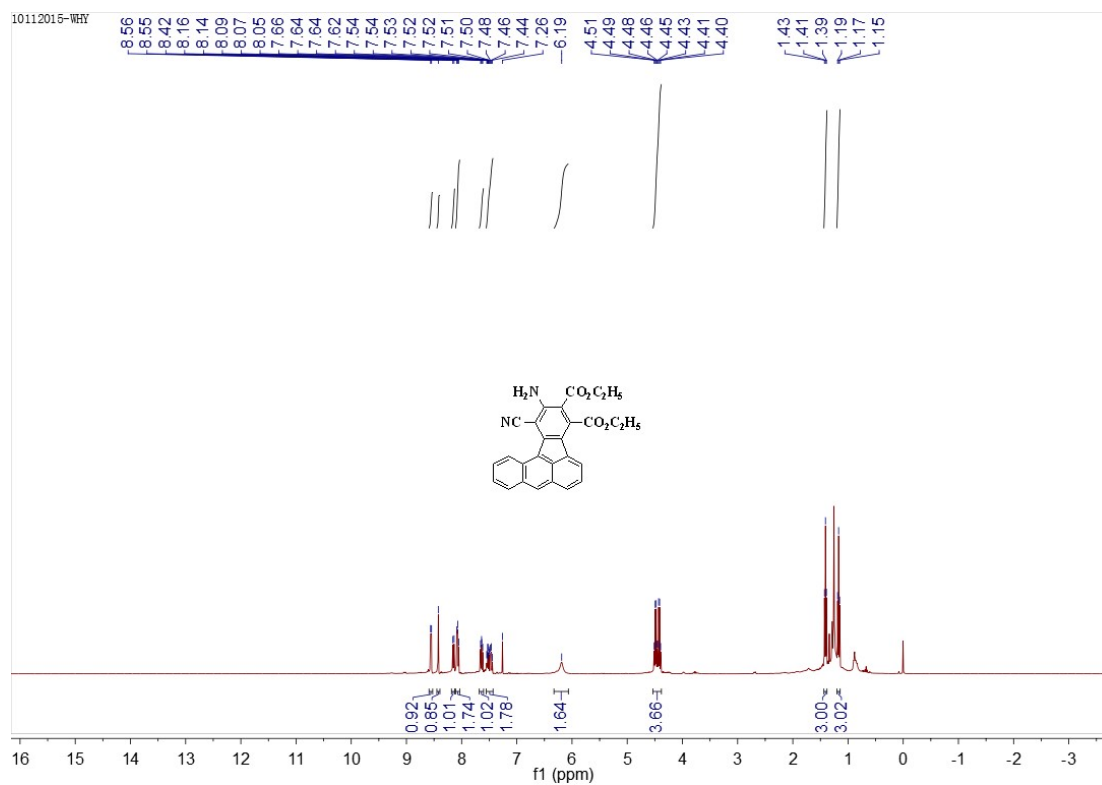**^{13}C NMR spectrum of compound 4a in CDCl$_3$, 100 MHz**

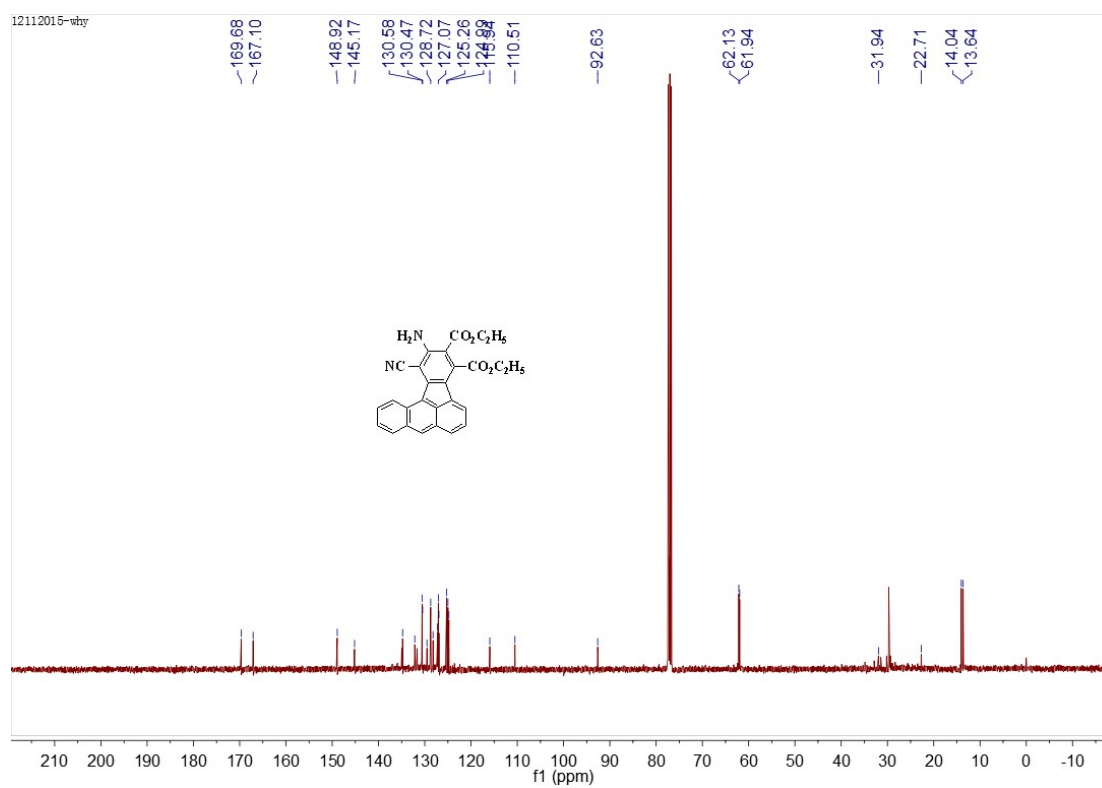# ¹H NMR spectrum of compound 4b in CDCl₃, 400 MHz

¹³C NMR spectrum of compound 4b in CDCl₃, 100 MHz

¹H NMR spectrum of compound 4c in DMSO, 400 MHz
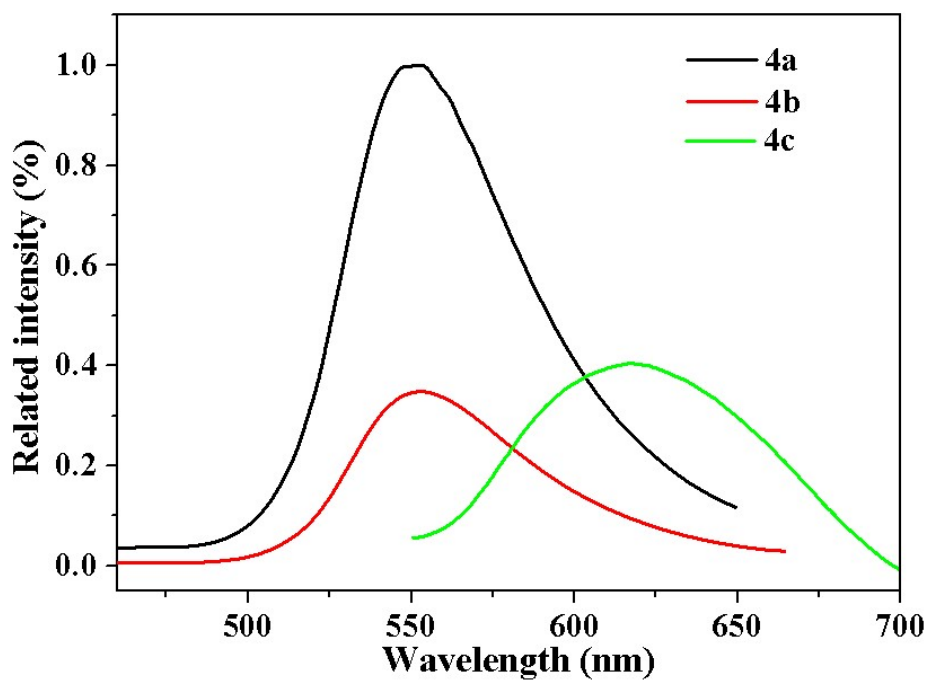

¹³C NMR spectrum of compound 4c in DMSO, 100 MHz

Fig. S1 Emission spectra of 4a,4b and 4c in solid state (λex = 336 nm for 4a and 4b, λex = 380 nm for 4c).

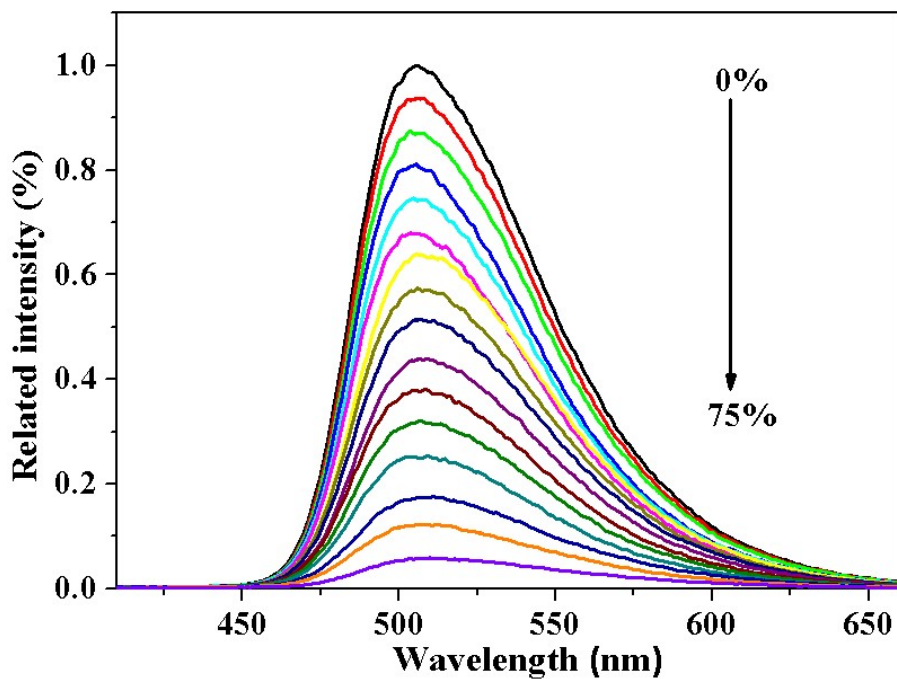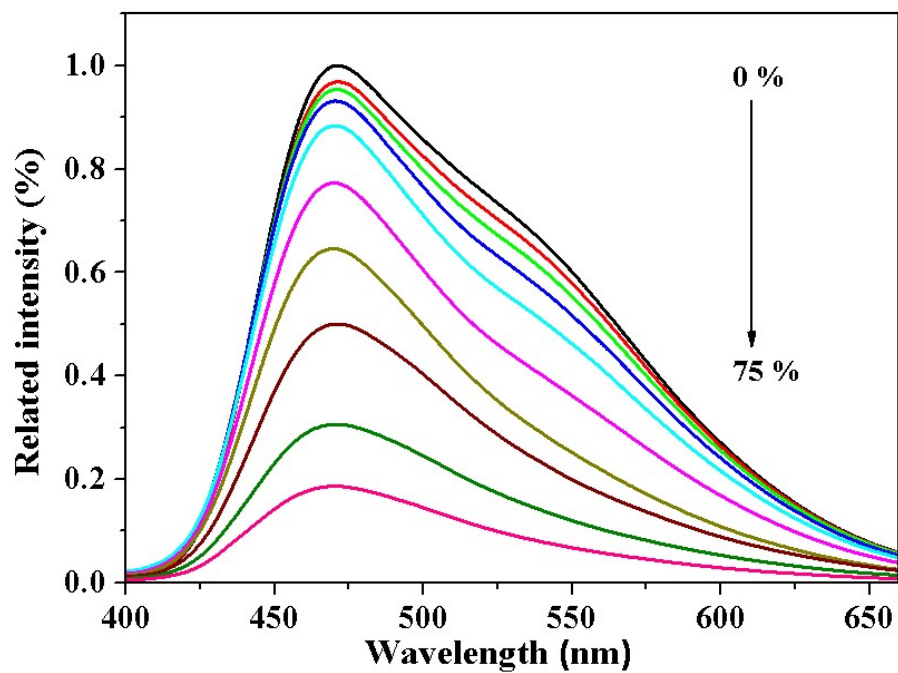**Fig. S2** Fluorescence emission spectra of the **4b** probe contacted with different water contents in methanol in the range of 0 to 75% (v/v, λex = 336 nm).

Fig. S3 Fluorescence emission spectra of the **4c** probe contacted with different water contents in methanol in the range of 0 to 75% (v/v, λex = 375 nm).
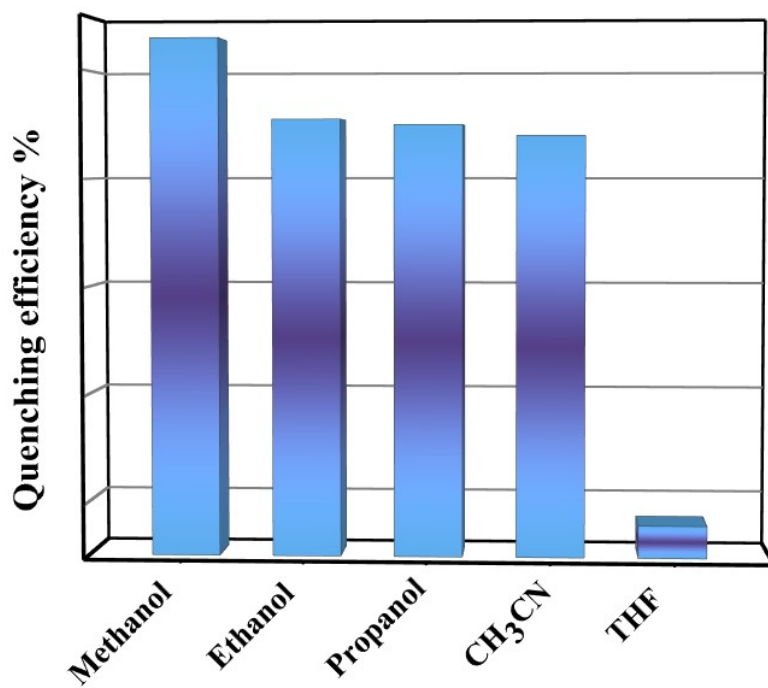

Fig. S4 The fluorescence quenching efficiency of the **4a** in different solvents with 75% water contents (v/v, λex = 336 nm).

Fig. S5 The Stern-Volmer plots for **4b** in methnaol with a low-level of water. The solid lines represent fits to the concentration-resolved data using Stern-Volmer equation.
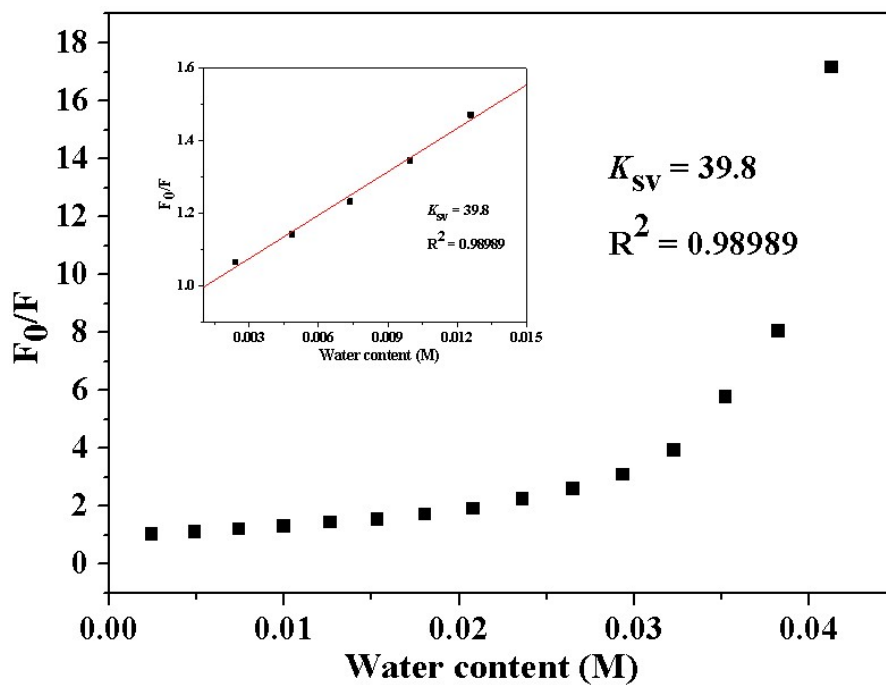

Fig. S6 The Stern-Volmer plots for **4c** in methnaol with a low-level of water. The solid lines represent fits to the concentration-resolved data using Stern-Volmer equation.
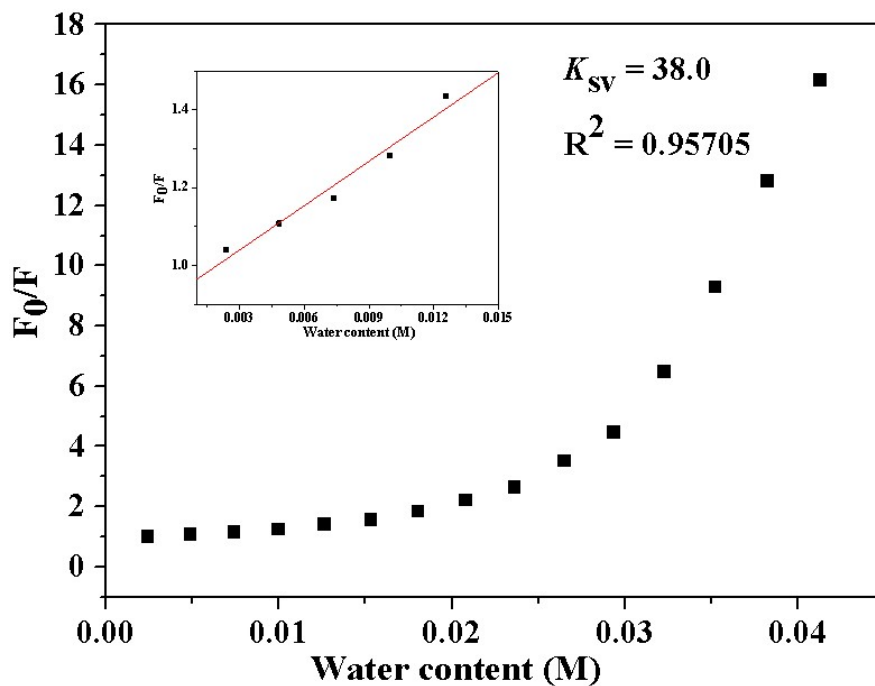
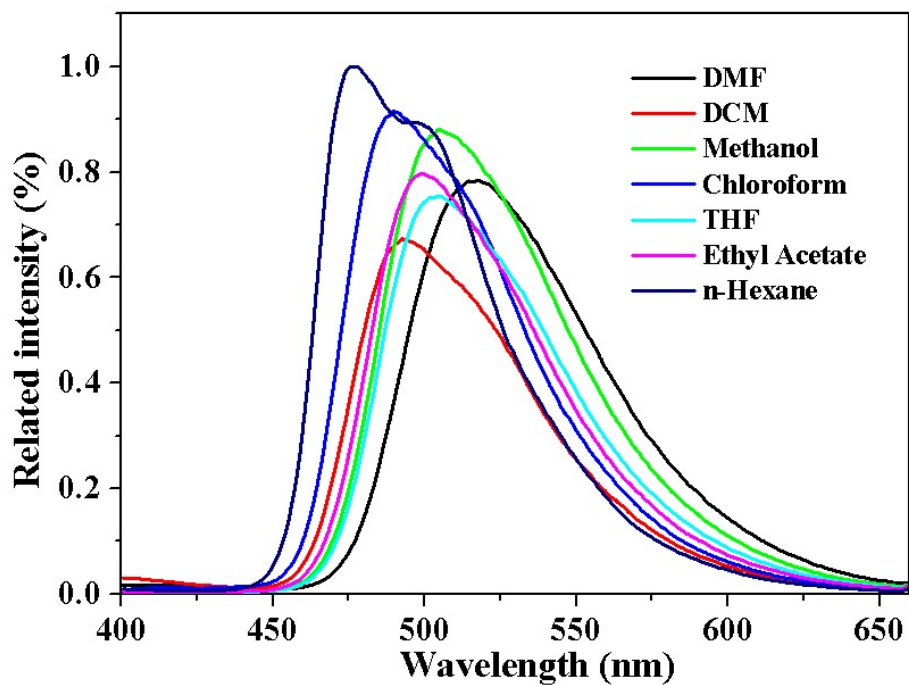**Fig. S7** The emission spectra of compound **4b** in different solvents (λ ex = 336 nm, 1×10^{-5} mol•L^{-1}).
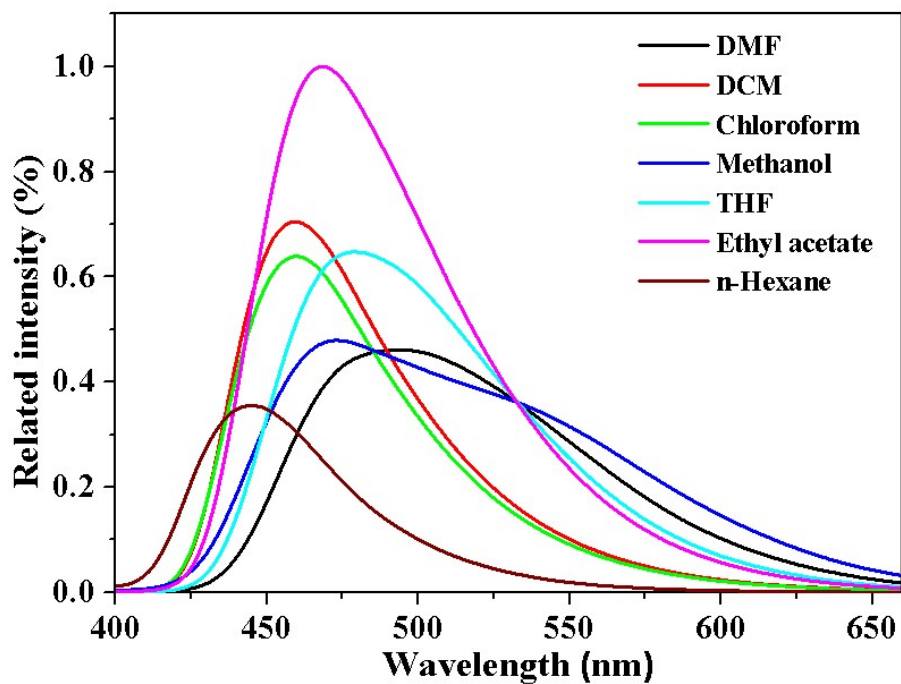
Fig. S8 The emission spectra of compound **4c** in different solvents (λ ex = 375 nm 1×10^{-5} mol•L^{-1}).

Table S1 Crystallographic data and structure refinement parameters for **4a**.

MOFs	**4a**
empirical formula	C22H14N2O5
formula wt	386.35
cryst syst	Triclinic
space group	P-1
a (Å)	9.0077(3)
b (Å)	9.8072(4)
c (Å)	11.1700(4)
α(deg)	85.052(2)
β(deg)	68.8505(19)
γ(deg)	81.886(2)
V (Å3)	910.41(6)
Z	2
ρcalcd (g cm-3)	1.409
μ (mm-1)	0.102
F(000)	400
index ranges	$-12 \leq h \leq 12$ $-13 \leq k \leq 13$ $-14 \leq l \leq 14$
Rint	0.0281
data/restraints/parameters	4594/0/274
Goodness of fit	1.032
R1 a, wR2 b (I > 2σ(I))	0. 0512, 0.1534
R1, wR2 (all data)	0. 0846, 0.1897
($\Delta\rho$)max, ($\Delta\rho$)min (e A-3)	0.670, -0.447

[a] $R_1 = \Sigma||F_o| - |F_c||/|F_o|$; [b] $wR_2 = [\Sigma w(F_o^2 - F_c^2)^2/\Sigma w(F_o^2)^2]^{1/2}$