Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.

Multiple-responsive fluorescence switches and iodine capture of four-armed divinylanthracene

Xinyu Chen, Tong Zhang, Yanning Han, Qiao Chen, Chengpeng Li, Pengchong Xue*
Tianjin Key Laboratory of Structure and Performance for Functional Molecules, College of Chemistry, Tianjin Normal University, No. 393 Bin Shui West Road, Tianjin, 300387, PR China. Email: xuepengchong@126.com; hxxyxpc@tjnu.edu.cn

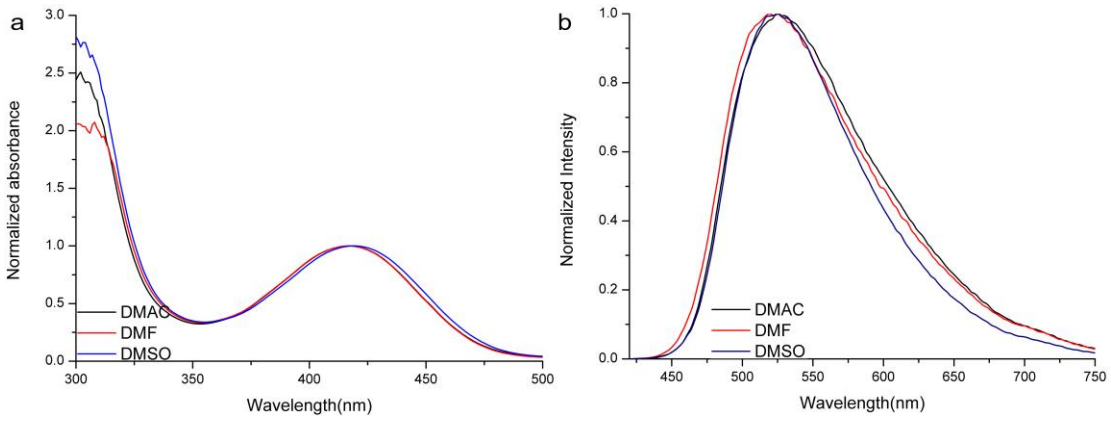

Figure S1. Normalized absorption and emission spectra of ENTDAT in different solvents.

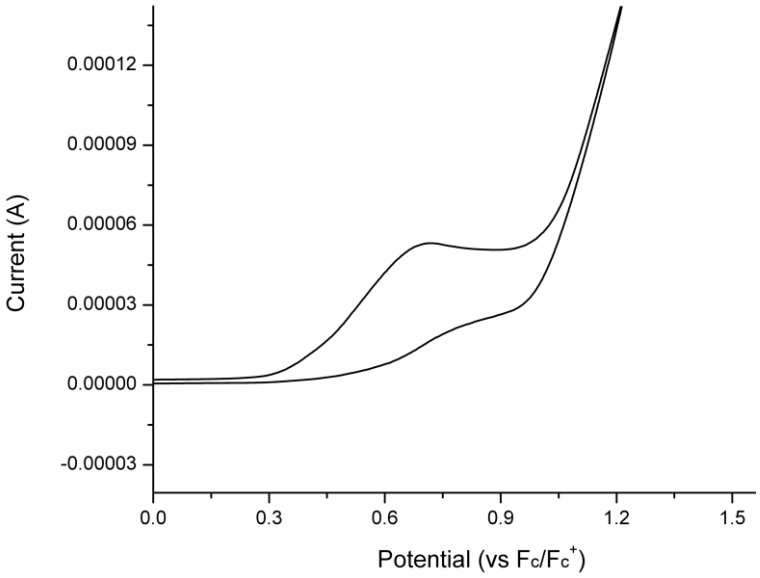

Figure S2. CV curve of ENTDAT in DMF.

Table S1. Photophysical data of ENTDAT obtained by quantum chemical calculation in DMF.

	Energy levels (eV)		Dipole moment (Debye)	Transition	Transition assignment	E (eV)	λ_{abs} (nm)	Oscillator strength
	H	L						
ENTDAT	-5.10	-2.12	2.4723	S0→S1	H→L (95.4 %)	3.0159	411.10	1.1121
				S0→S2	H-5→L (45.1%) H-5→L+6 (2.2%) H→L+7 (46.3%)	3.9850	311.45	0.0005
				S0→S3	H-2→L+1 (2.4%) H-1→L (5.7 %) H-1→L+1 (3.7%) H→L+1 (21.3%) H→L+3 (6.4 %) H→L+4 (3.3%) H→L+5 (26.6%) H→L+6 (16.9%)	4.2040	294.92	0. 0.1728

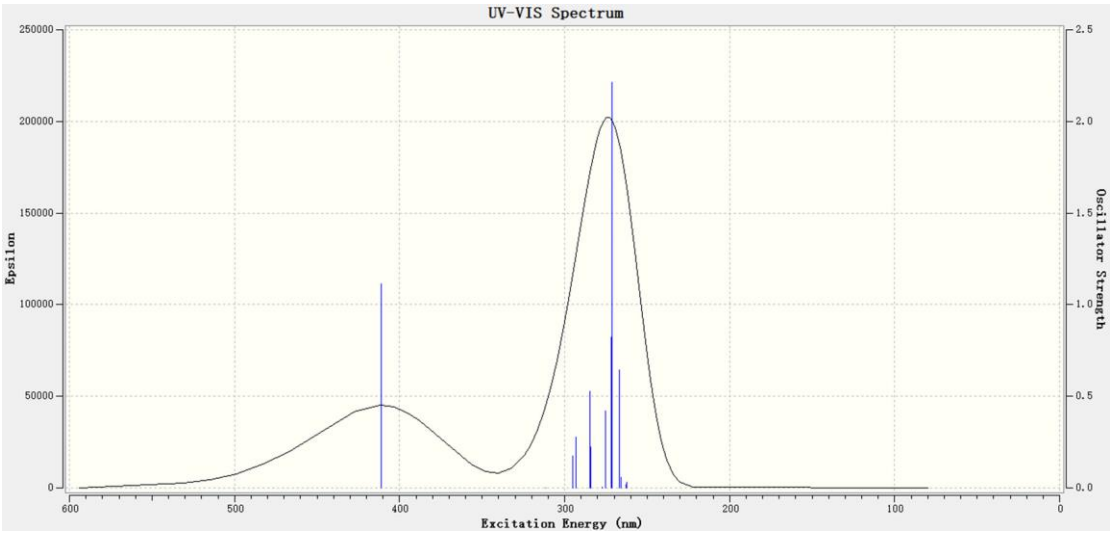

Figure S3. Simulated absorption spectrum of ENTDAT in DMF.

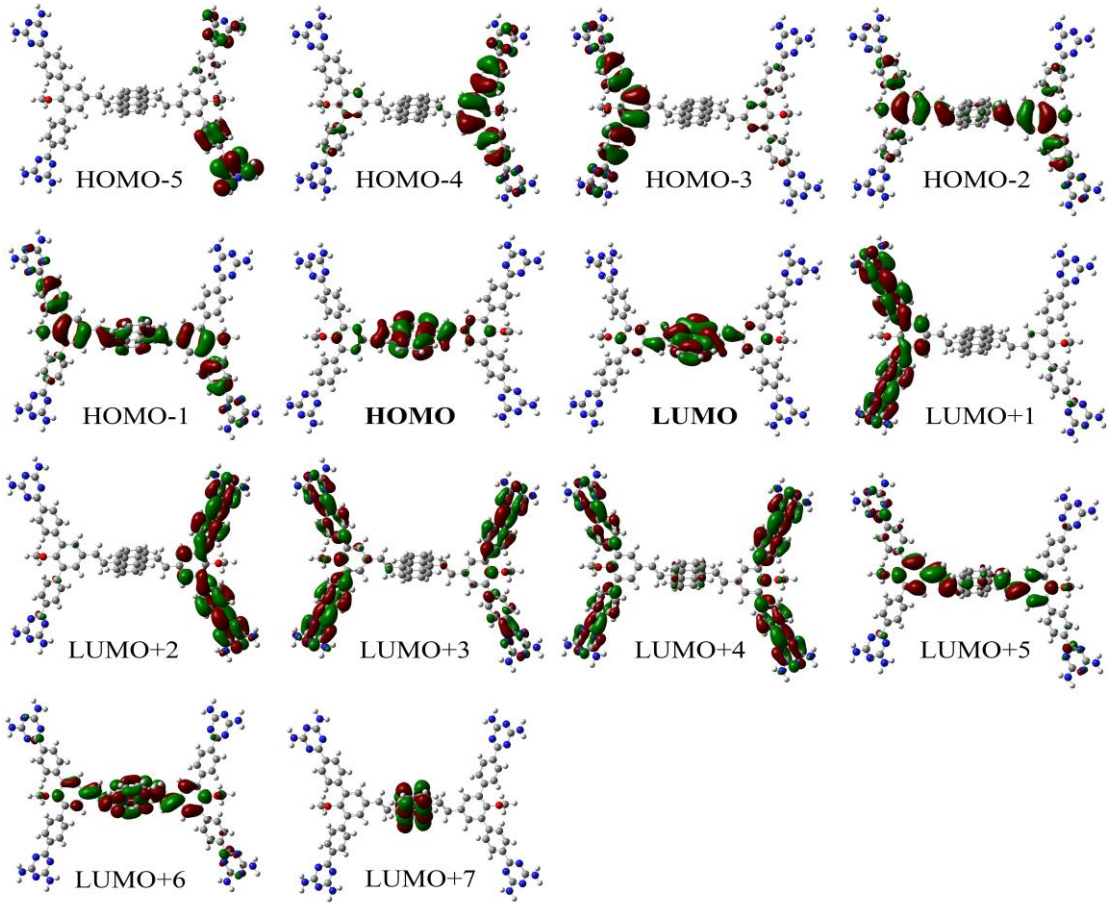

Figure S4. The distributions of frontier orbitals of ENTDAT.

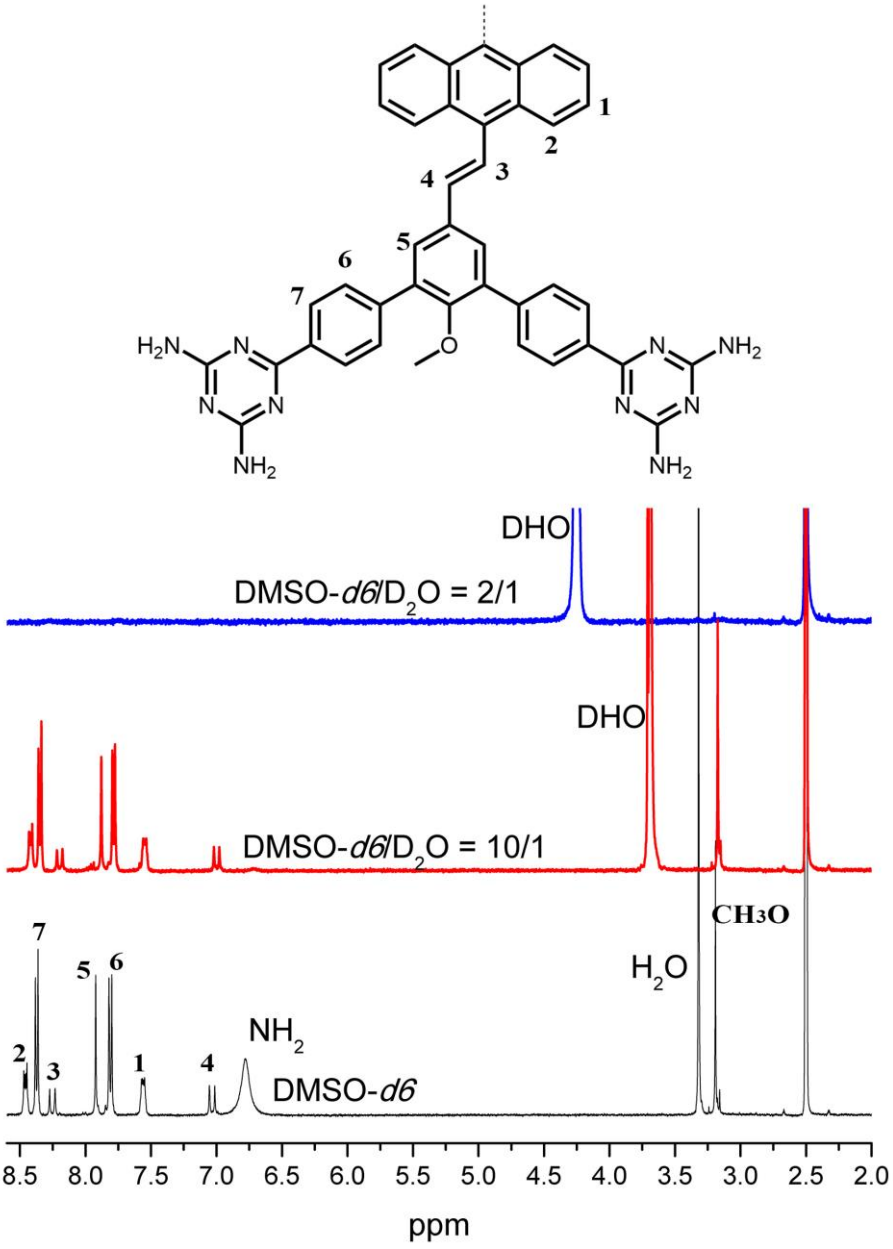

Figure S5. ^{1}H NMR spectrum of ENTDAT in different solvents (C = 2.0mg/mL).

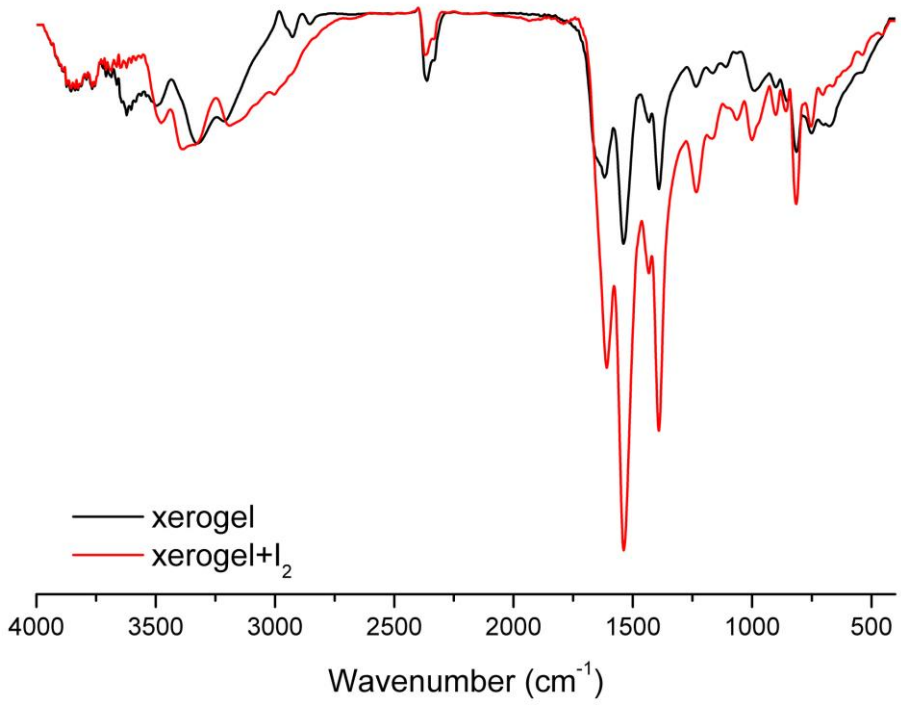

Figure S6. FT-IR spectra of xerogels before and after absorbing I_2 for 2 h in aqueous solution.

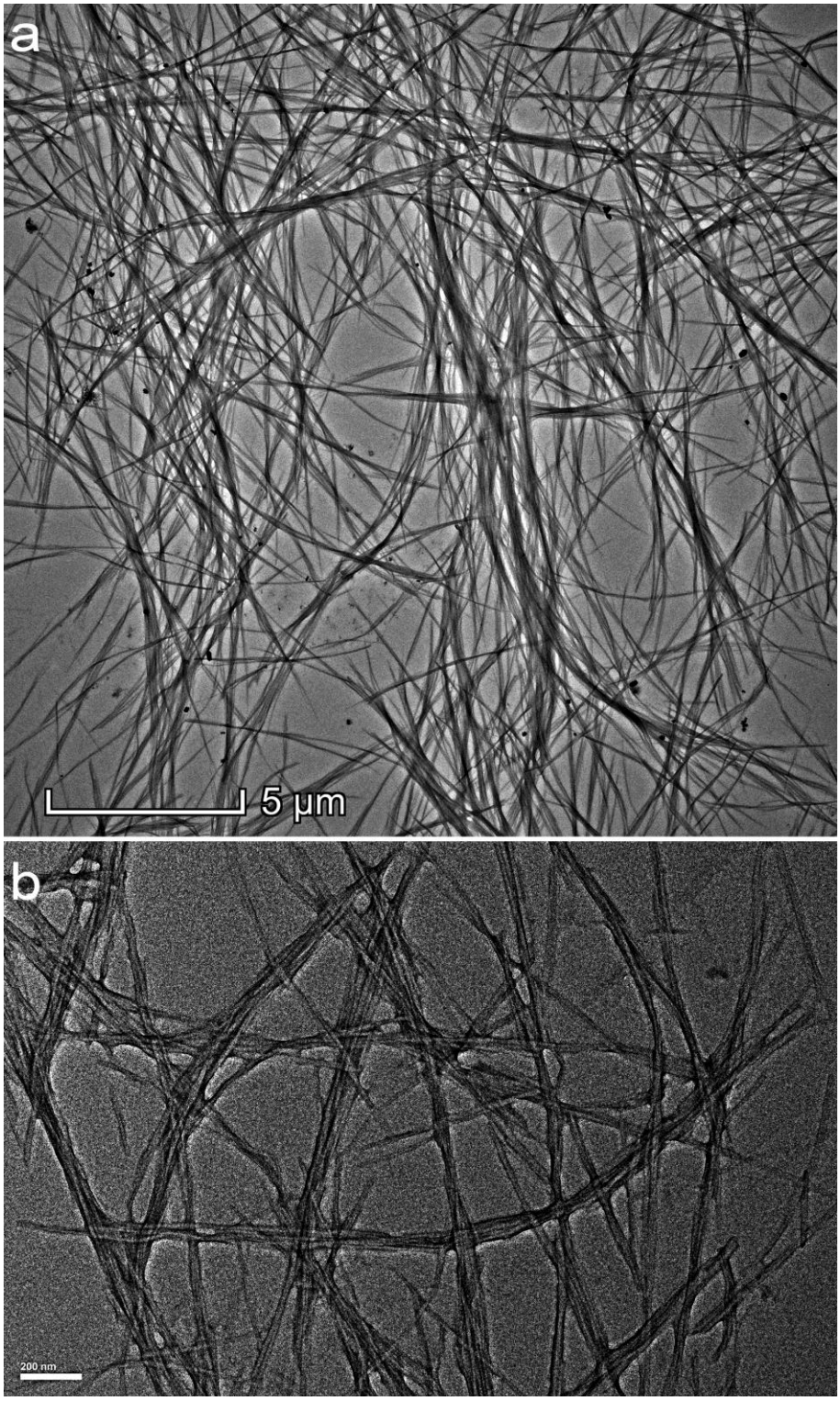

Figure S7. (a) Large-scale normal and (b) negative staining TEM images of DMF/H_2O gel.

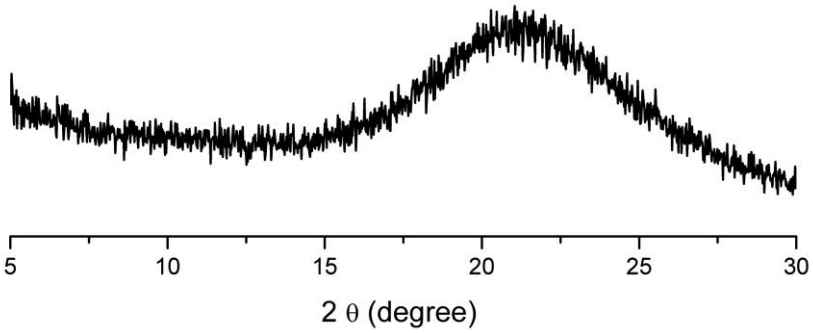

Figure S8. XRD pattern of xerogel solids.

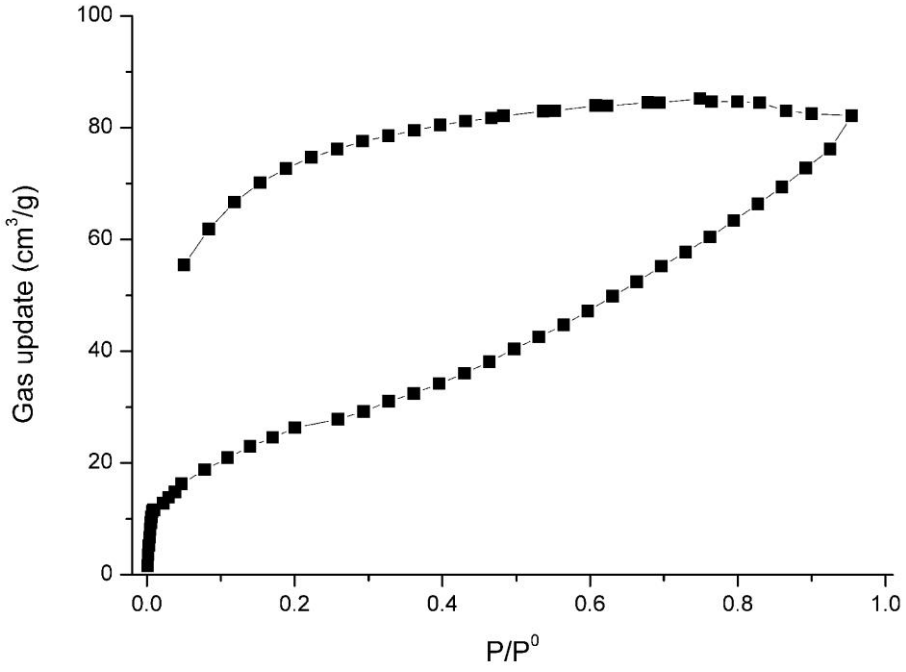

Figure S9. CO_2 sorption and desorption isotherms at 196 K.

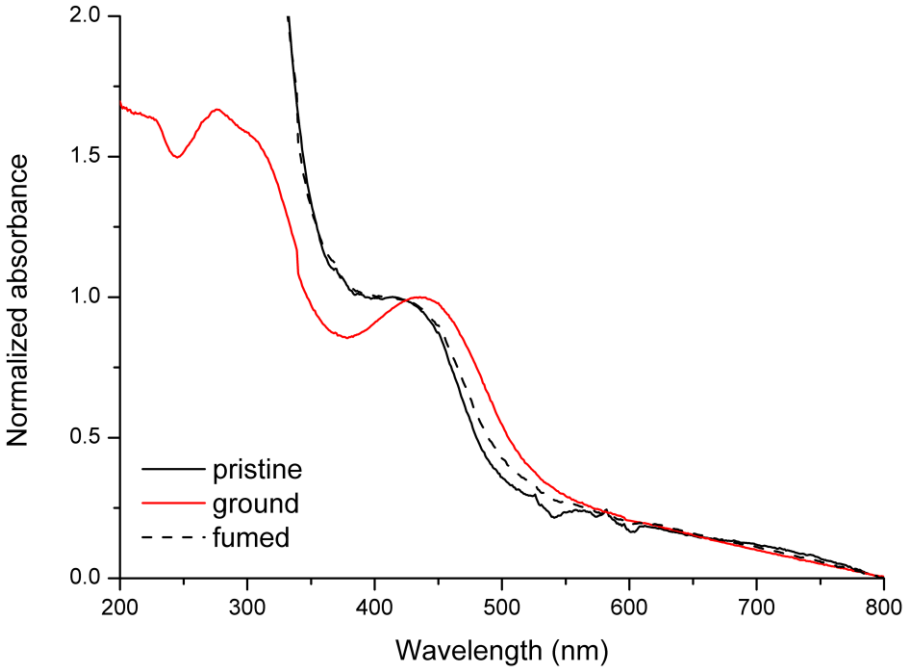

Figure S10. UV-Vis absorption spectra of gel film in different states.

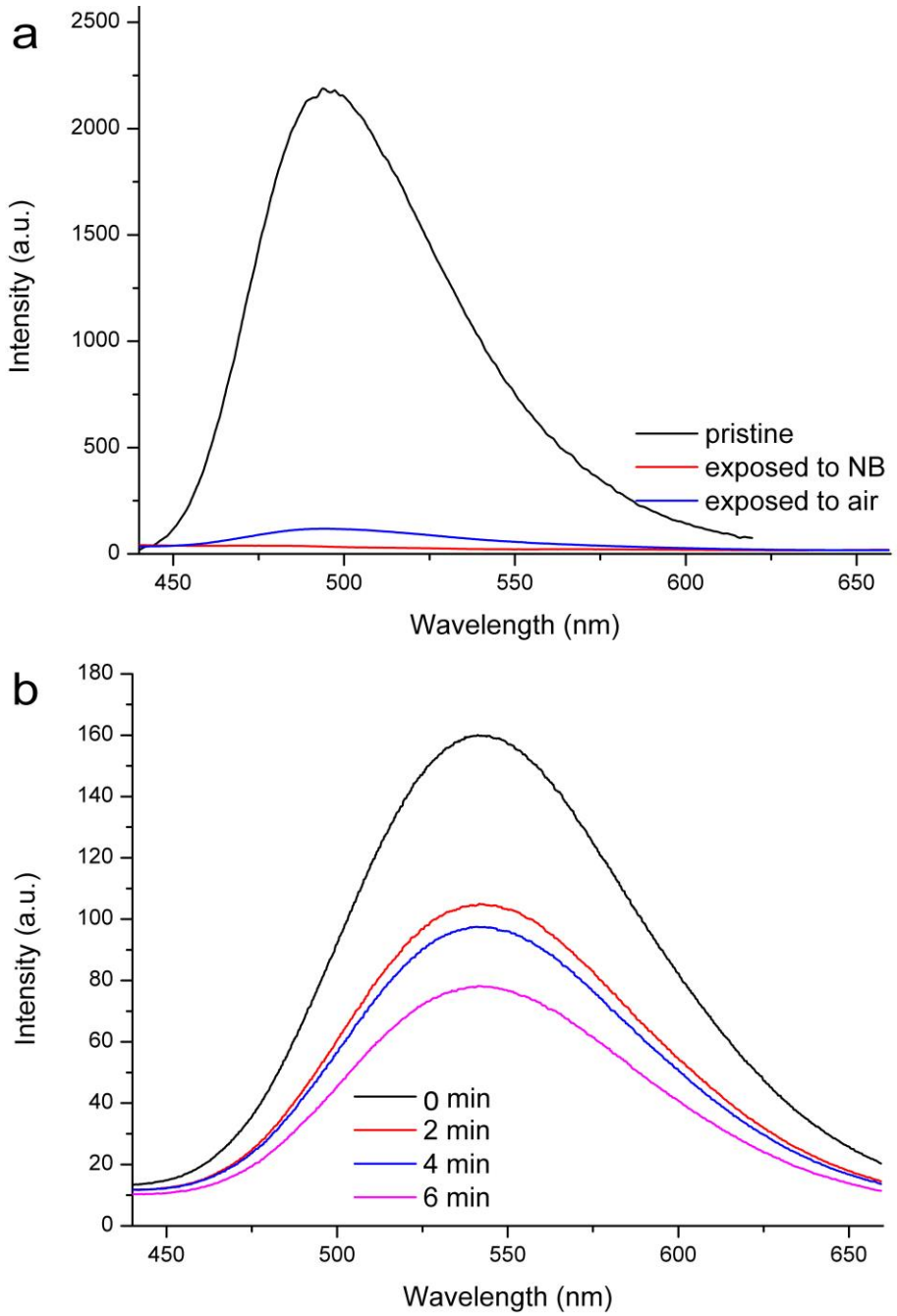

Figure S11. Fluorescence changes of (a) the pristine gel film exposed to saturated NB vapor for 2 s or air for 10 min, and (b) ground gel films exposed to saturated NB vapor.

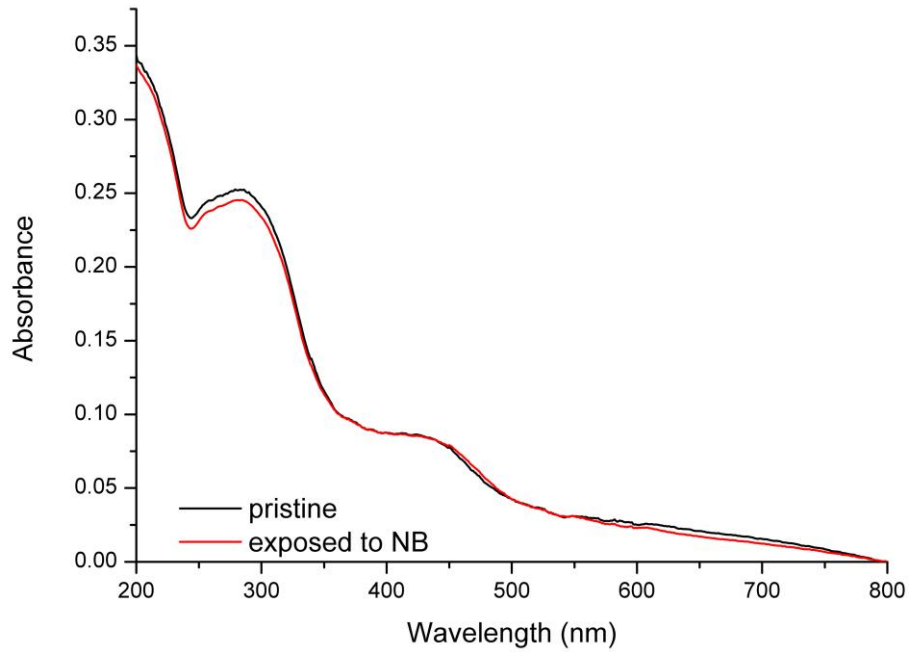

Figure S12. Absorption spectra of the gel film before and after exposing to saturated NB vapor.

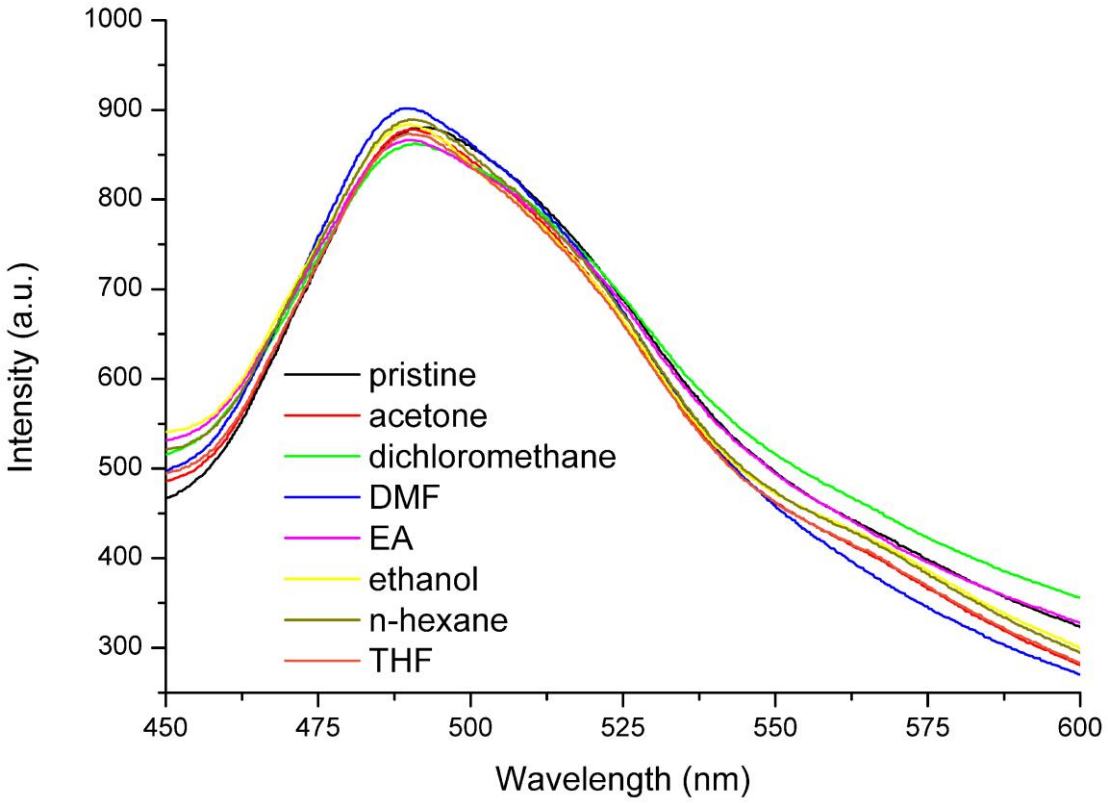

Figure S13. Fluorescence changes of the gel film upon exposure to different solvent vapors (200 ppm).