Supporting Information

Preparation, adsorption and recognition properties of a facile solid symmetric tetramethylcucurbit[6]uril-based porous supramolecular assembly

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EXPERIMENTAL SECTION

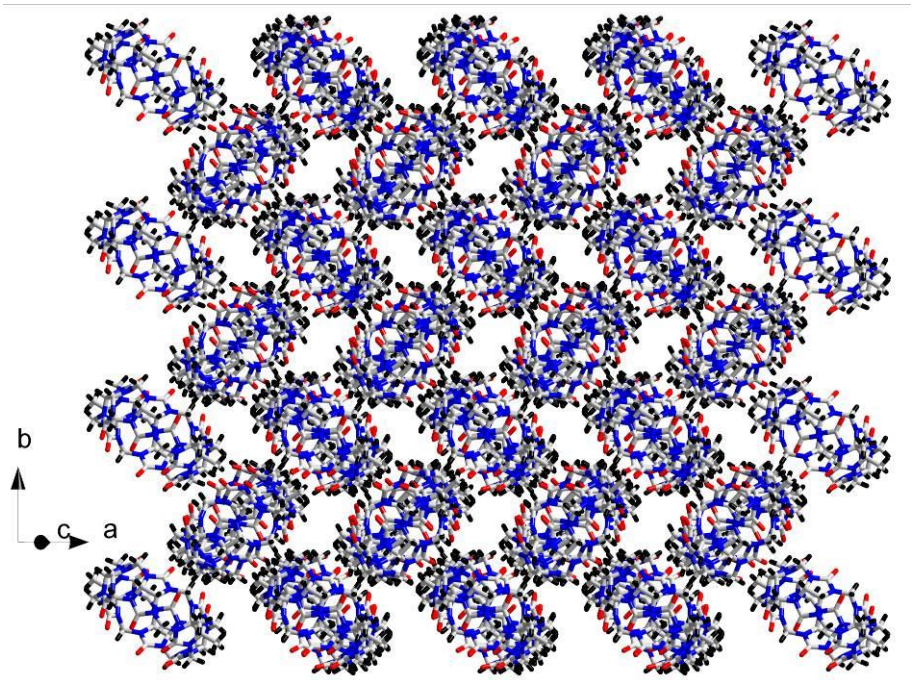


Fig. S1 Stacking structure from *ab* plane in compound **A**.

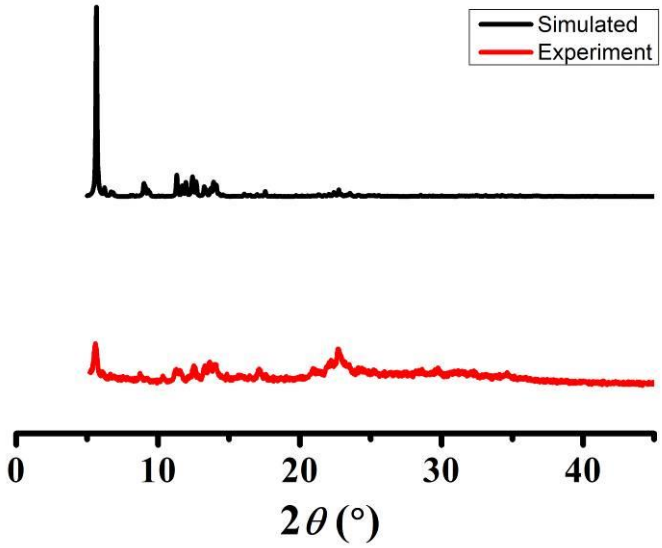


Fig. S2 Powder X-ray diffraction analyses of **A** (top) and comparison with simulation (bottom)

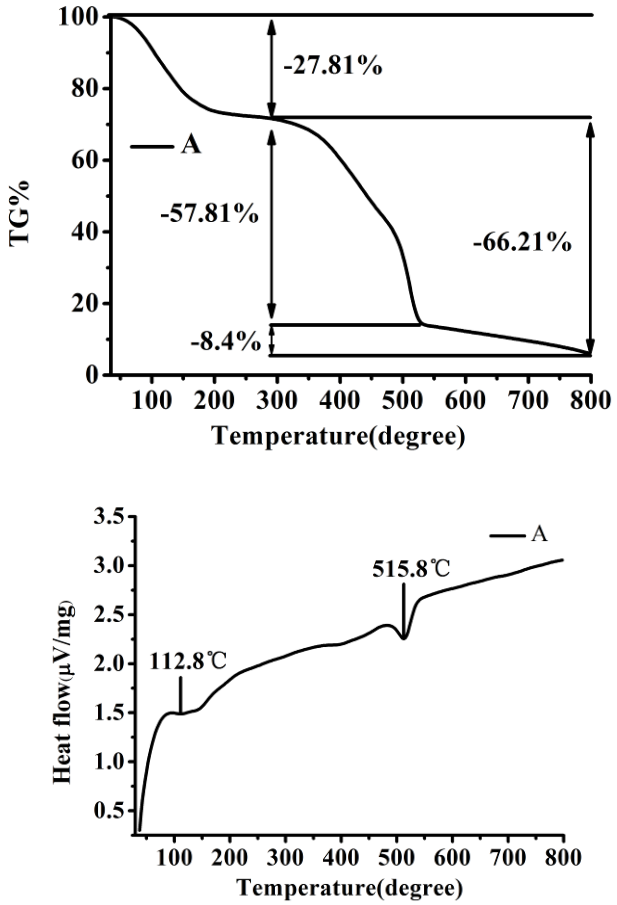
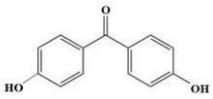
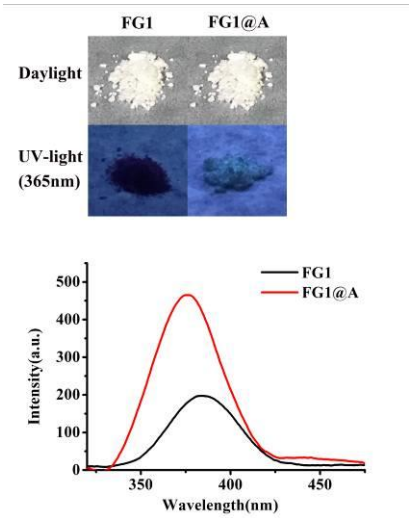
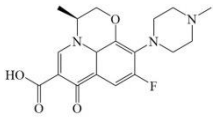
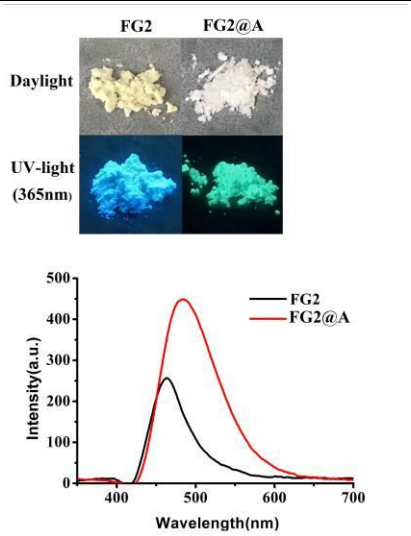
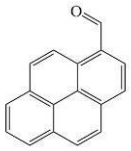
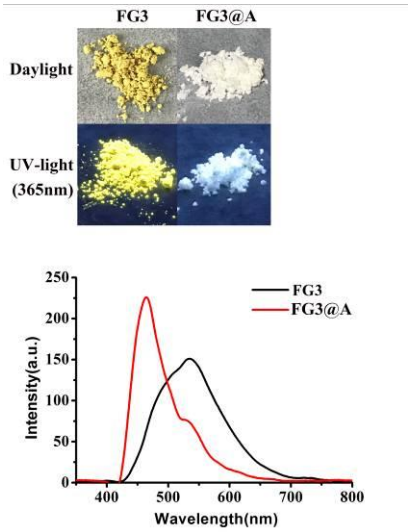
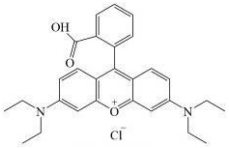
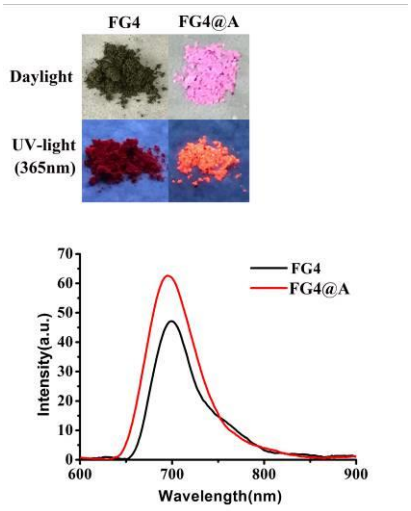
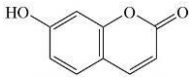
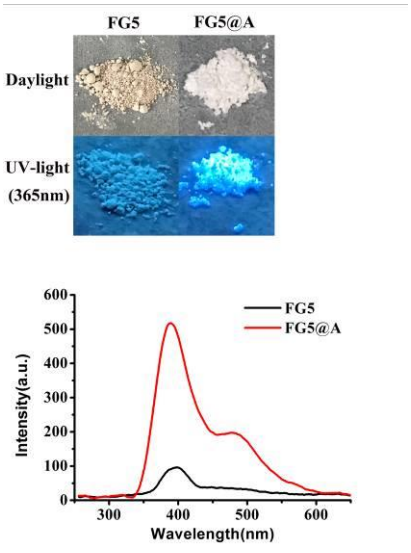
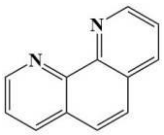
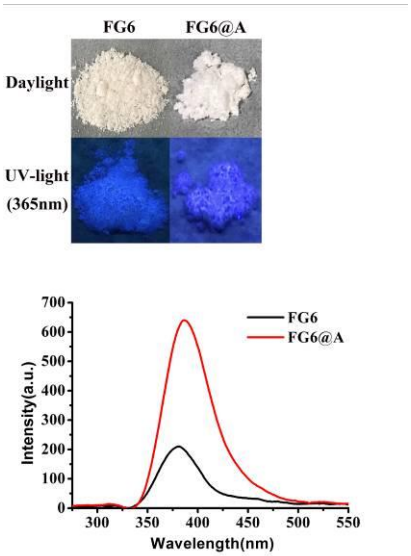
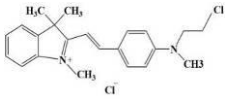
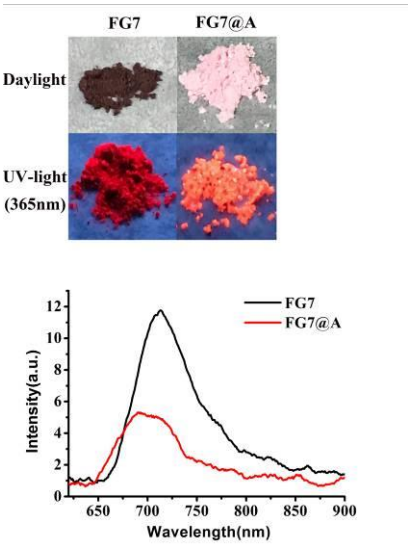
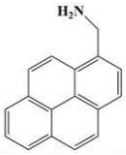
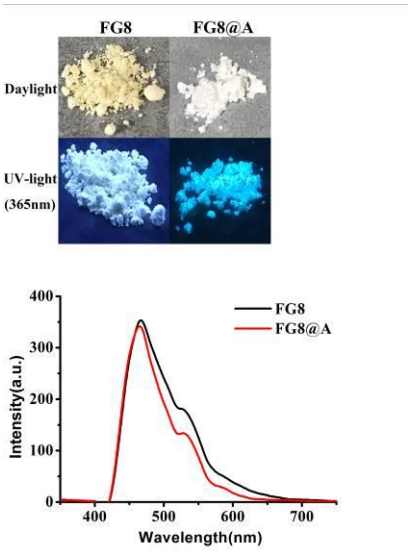


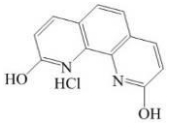
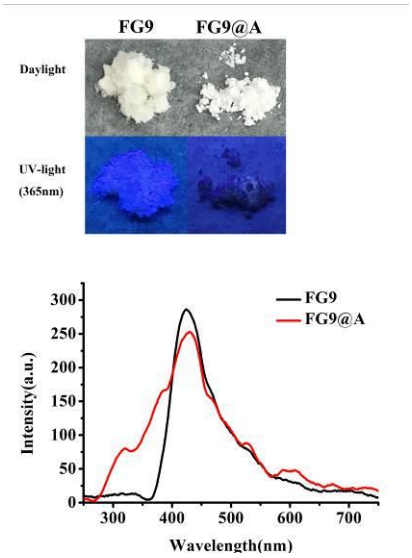
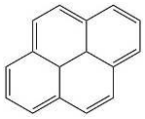
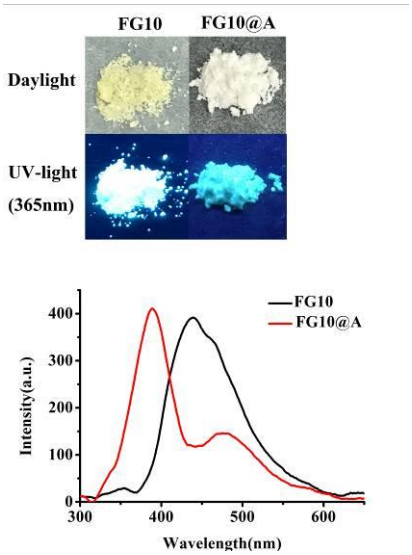
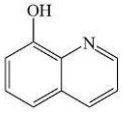
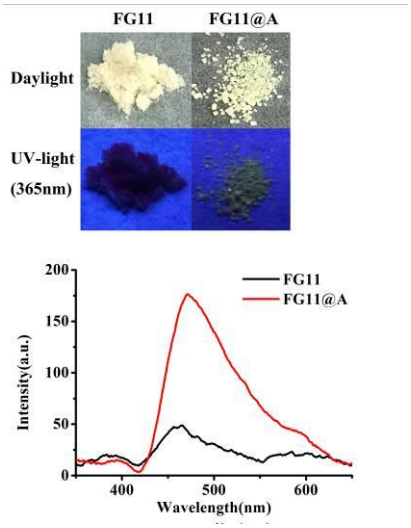
Fig. S3 TG (top) and DTA (bottom) curves of **A** in N_2.

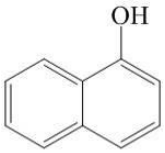
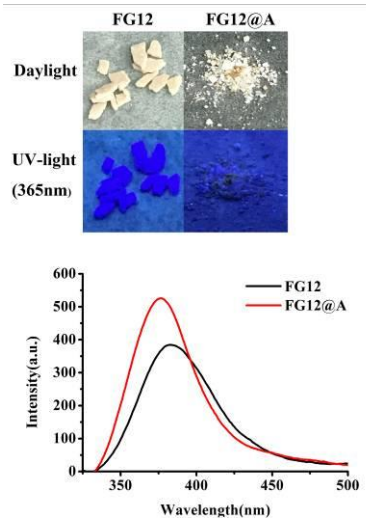
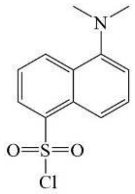
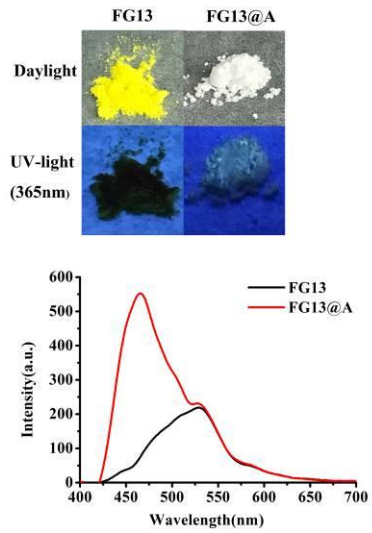
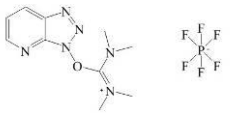
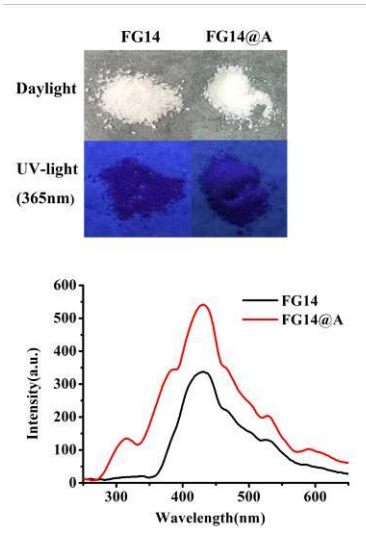
Table S1 (in the first column) Selected 15 fluorophore guests (**FG**s); (in the second column) General survey of loading **A** with 15 fluorophore guests (**FG**s) to form luminescent assemblies (**FG@A**s) by comparison of coulur and fluorescence spectra of **FG** and solid **FG@A**s, respectively.

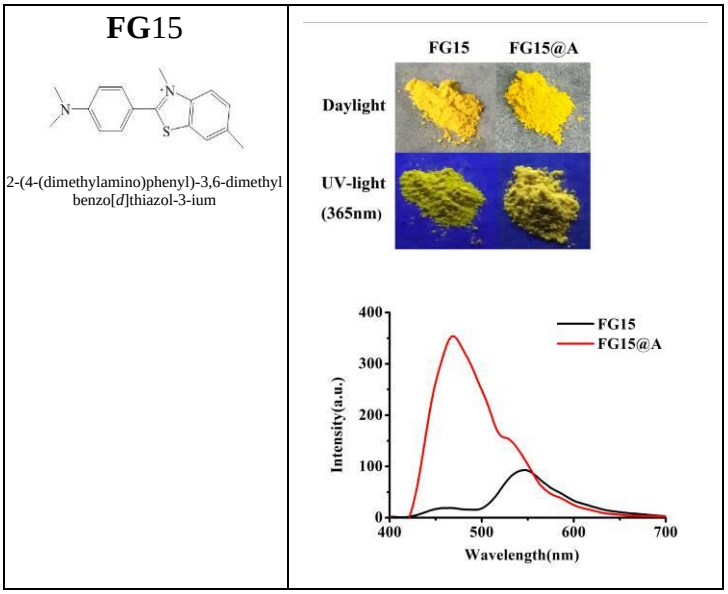
fluorophore guests	Survey of loading **A** with **FG** (saturated adsorption)
FG1  4,4,'-dihydroxybenzophenone	
FG2  levofloxacin	

FG3  1-pyrenecarboxaldehyde	
FG4  rhodamine B	
FG5  7-hydroxycoumarin	

FG6  1,10-phenanthroline	
FG7  astrazon pink FG	
FG8  1-pyrenemethylamine hydrochloride	

FG9  Neocuproine hydrochloride	
FG10  pyrene	
FG11  8-hydroxyquinoline	

FG12  1-Naphthol	
FG13  Dansyl choride	
FG14  2-(3*H*-[1,2,3]triazolo[4,5-*b*]pyridine-3-yl)-1,1,3,3-tetramethylisouronium	



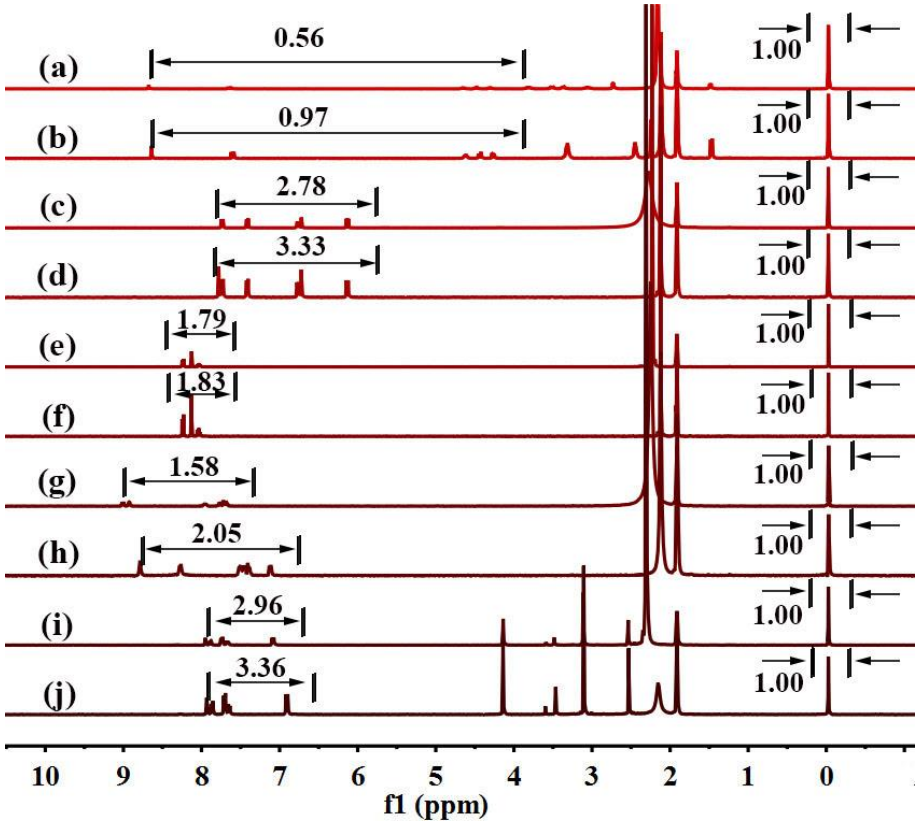


Fig. S4 ^{1}H NMR spectra in deuterated acetonitrile: (a) 0.5 mL 0.01 M **FG2** added 10 mg **A**; (b) 0.5 mL 0.01 M **FG2**; (c) 0.5 mL 0.01 M **FG5** added 10 mg **A**; (d) 0.5 mL 0.01 M **FG5**; (e) 0.5 mL 0.01 M **FG10** added 10 mg **A**; (f) 0.5 mL 0.01 M **FG10**; (g) 0.5 mL 0.01 M **FG11** added 10 mg **A**; (h) 0.5 mL 0.01 M **FG11**; (i) 0.5 mL 0.01 M **FG15** added 10 mg **A**; (j) 0.5 mL 0.01 M **FG15**;

Table S2. Normalized adsorption data of **A** for five dyes, respectively (mol/g)

A	(b) **FG**	(d) **FG5**	
	(a) 2.11×10^{-6}	(c) 2.75×10^{-7}	
	(f) **FG10**	(h) **FG11**	(j) **FG15**
	(e) 1.11×10^{-7}	(g) 1.15×10^{-6}	(i) 5.98×10^{-6}

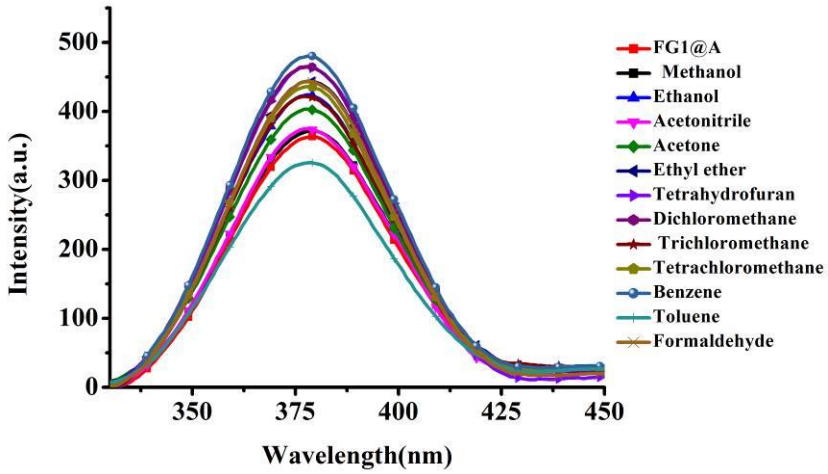


Fig. S5 General survey of fluorescence spectra of **FG**1@**A** loaded with the 12 **VOC**s, respectively.

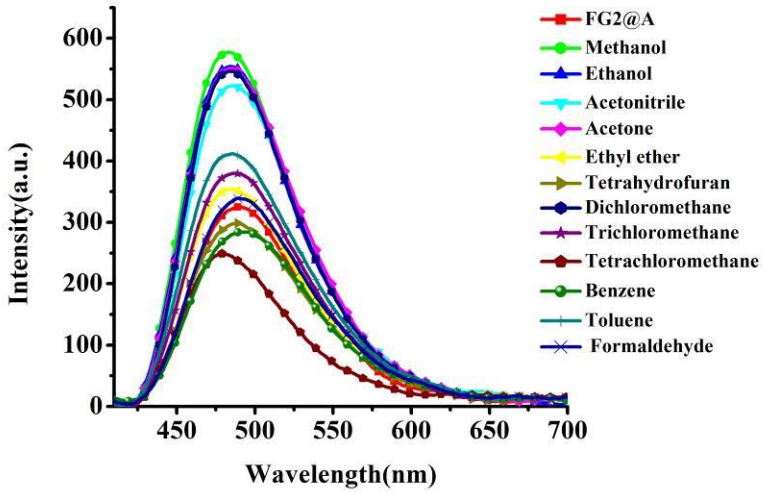


Fig. S6 General survey of fluorescence spectra of **FG**2@**A** loaded with the 12 **VOC**s, respectively.

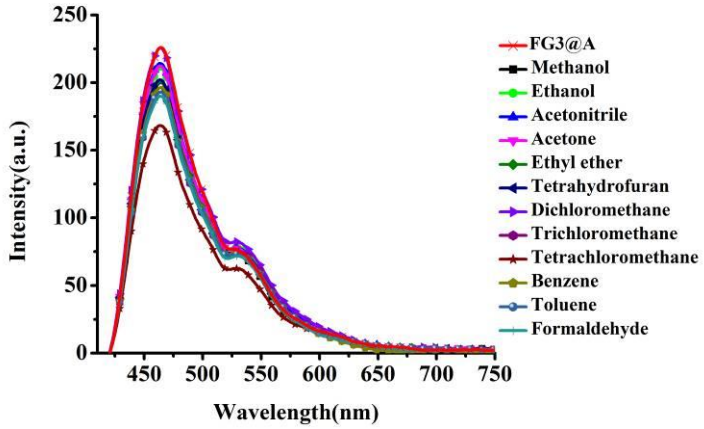


Fig. S7 General survey of fluorescence spectra of **FG**3@**A** loaded with the 12 **VOC**s, respectively.

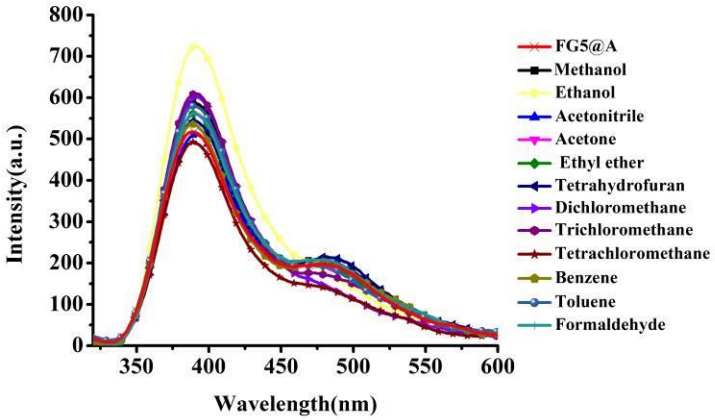


Fig. S8 General survey of fluorescence spectra of **FG**5@**A** loaded with the 12 **VOC**s, respectively.

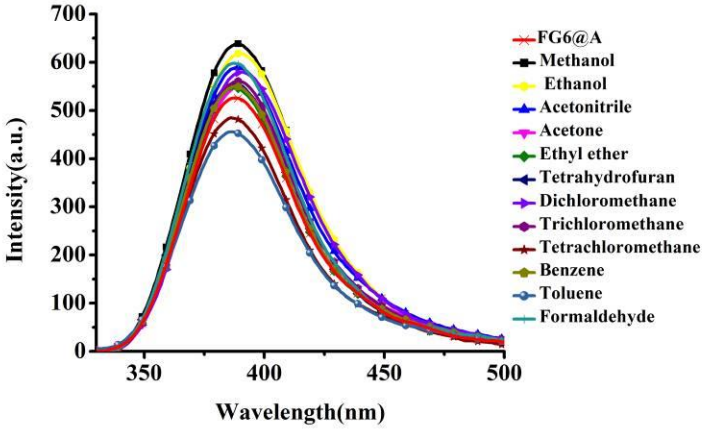


Fig. S9 General survey of fluorescence spectra of **FG**6@**A** loaded with the 12 **VOC**s, respectively.

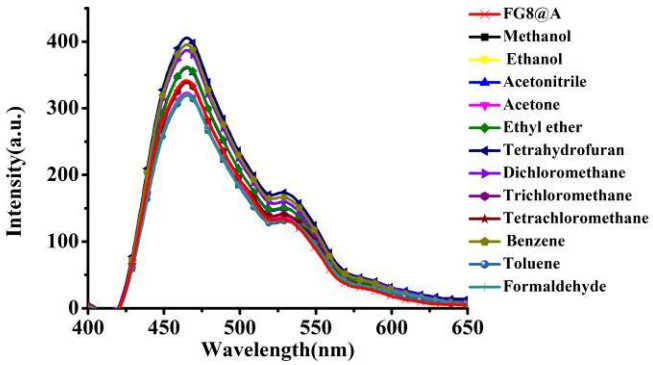


Fig. S10 General survey of fluorescence spectra of **FG**8@**A** loaded with the 12 **VOC**s, respectively.

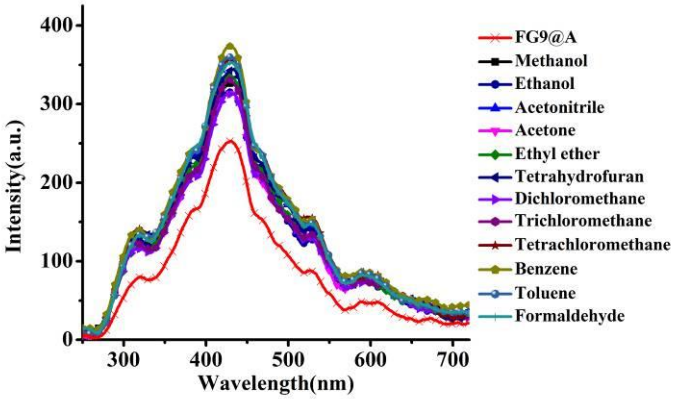


Fig. S11 General survey of fluorescence spectra of **FG**9@**A** loaded with the 12 **VOC**s, respectively.

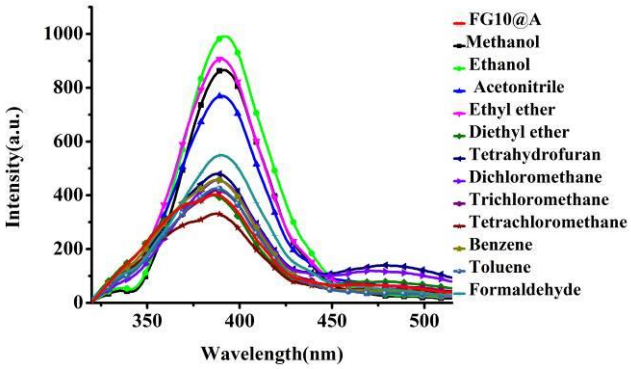


Fig. S12 General survey of fluorescence spectra of **FG**10@**A** loaded with the 12 **VOC**s, respectively.

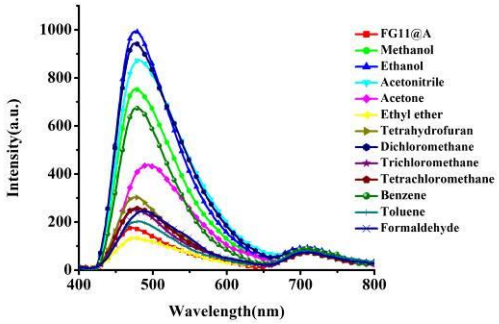


Fig. S13 General survey of fluorescence spectra of **FG**11@**A** loaded with the 12 **VOC**s, respectively.

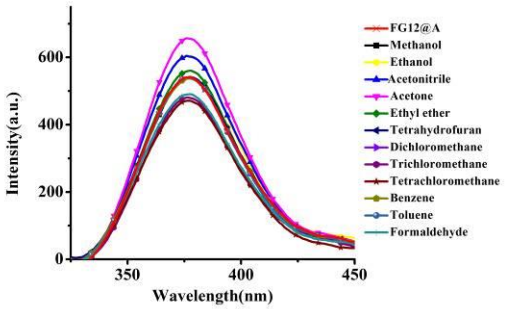


Fig. S14 General survey of fluorescence spectra of **FG**12@**A** loaded with the 12 **VOC**s, respectively.

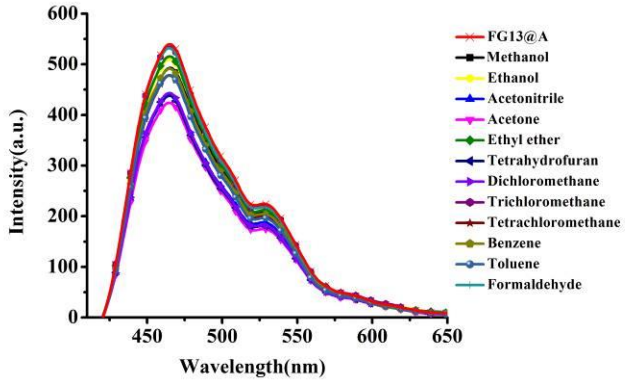


Fig. S15 General survey of fluorescence spectra of **FG**13@**A** loaded with the 12 **VOC**s, respectively.

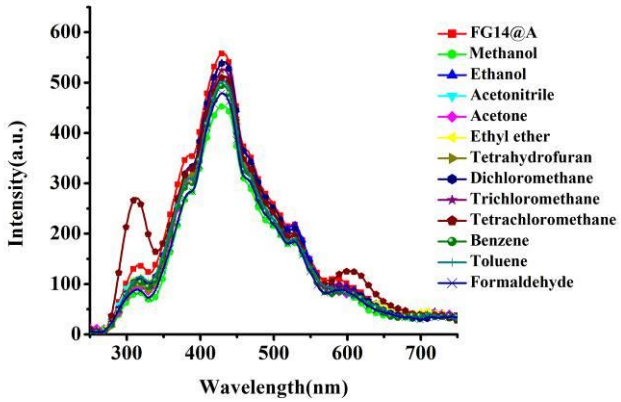


Fig. S16 General survey of fluorescence spectra of **FG**14@**A** loaded with the 12 **VOC**s, respectively.

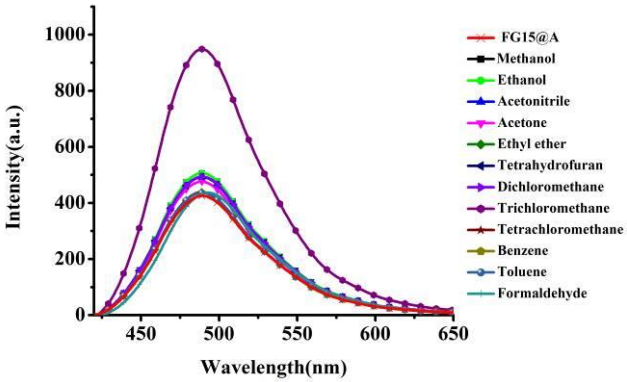


Fig. S17 General survey of fluorescence spectra of **FG**15@**A** loaded with the 12 **VOC**s, respectively.

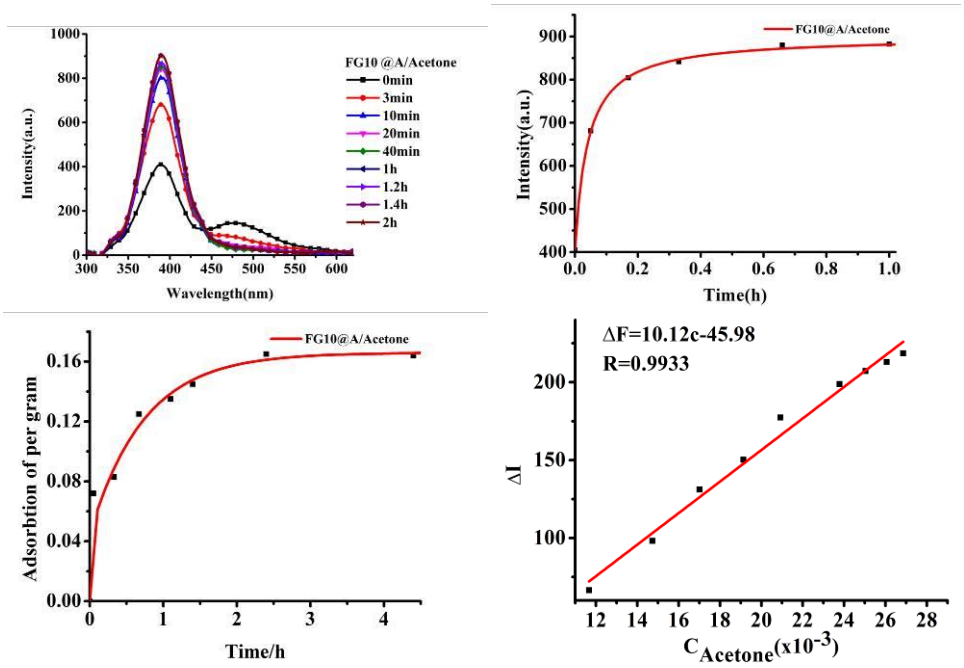


Fig. S18 (a) Titration fluorescence spectra of the loading of **FG**10@**A** with acetone; (b) Change in fluorescence intensity of **FG**10@**A** with increasing adsorption time; (c) Adsorption profile of the loading of acetone in **FG**10@**A**; (d) Plot of ΔI *vs*. the amount of acetone adsorbed by solid **FG**10@**A**.

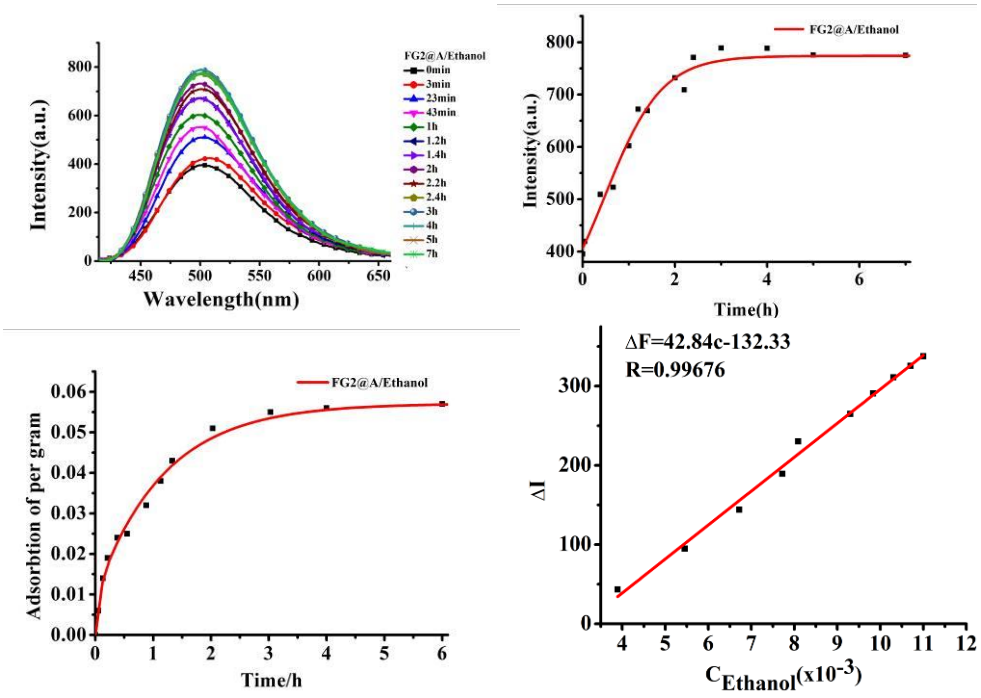


Fig. S19 (a) Titration fluorescence spectra of the loading of **FG**2@**A** with ethanol; (b) Change in fluorescence intensity of **FG**2@**A** with increasing adsorption time; (c) Adsorption profile of the loading of ethanol in **FG**2@**A**; (d) Plot of ΔI *vs*. the amount of ethanol adsorbed by solid **FG**2@**A**.

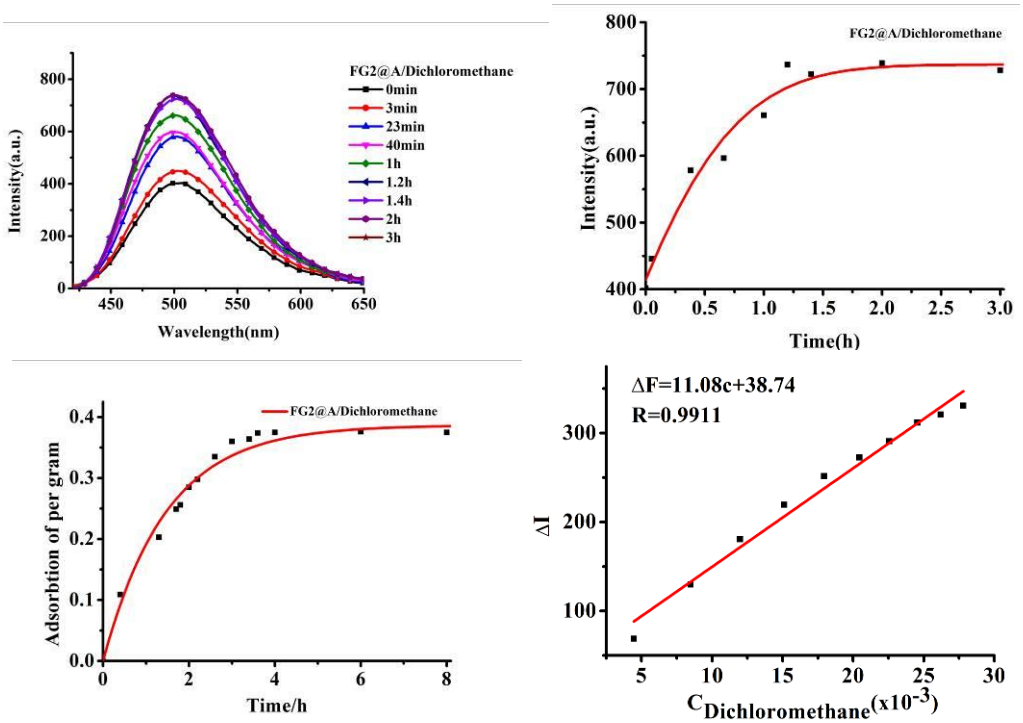


Fig. S20 (a) Titration fluorescence spectra of the loading of **FG**2@**A** with dichloromethane; (b) Change in fluorescence intensity of **FG**2@**A** with increasing adsorption time; (c) Adsorption profile of the loading of dichloromethane in **FG**2@**A**; (d) Plot of ΔI *vs*. the amount of dichloromethane adsorbed by solid **FG**2@**A**.

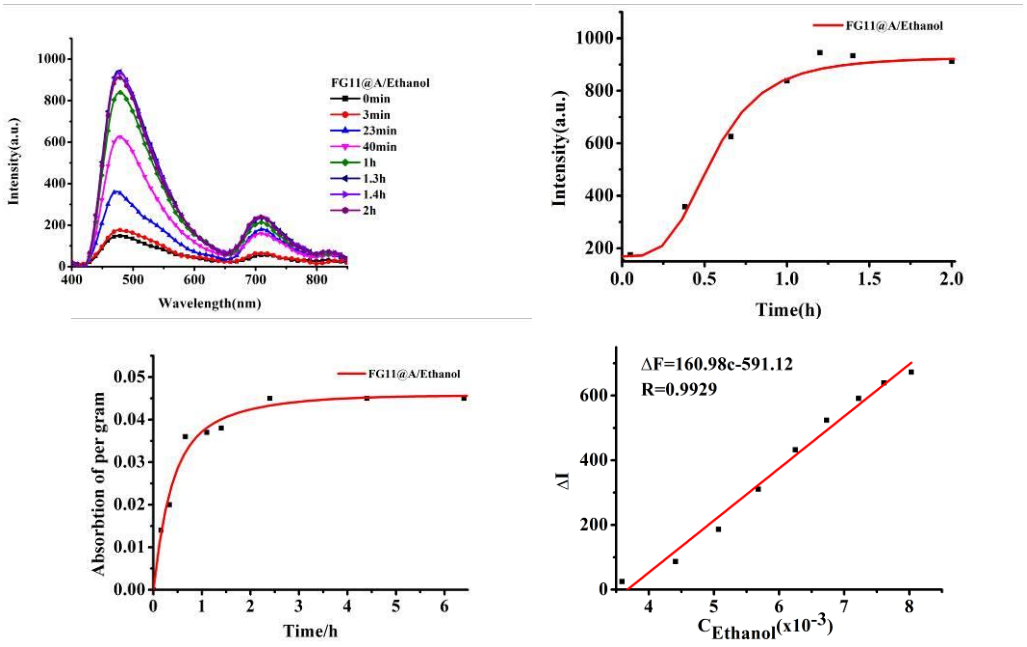


Fig. S21 (a) Titration fluorescence spectra of the loading of **FG**11@**A** with ethanol; (b) Change in fluorescence intensity of **FG**11@**A** with increasing adsorption time; (c) Adsorption profile of the loading of ethanol in **FG**11@**A**; (d) Plot of ΔI *vs*. the amount of ethanol adsorbed by solid **FG**11@**A**.

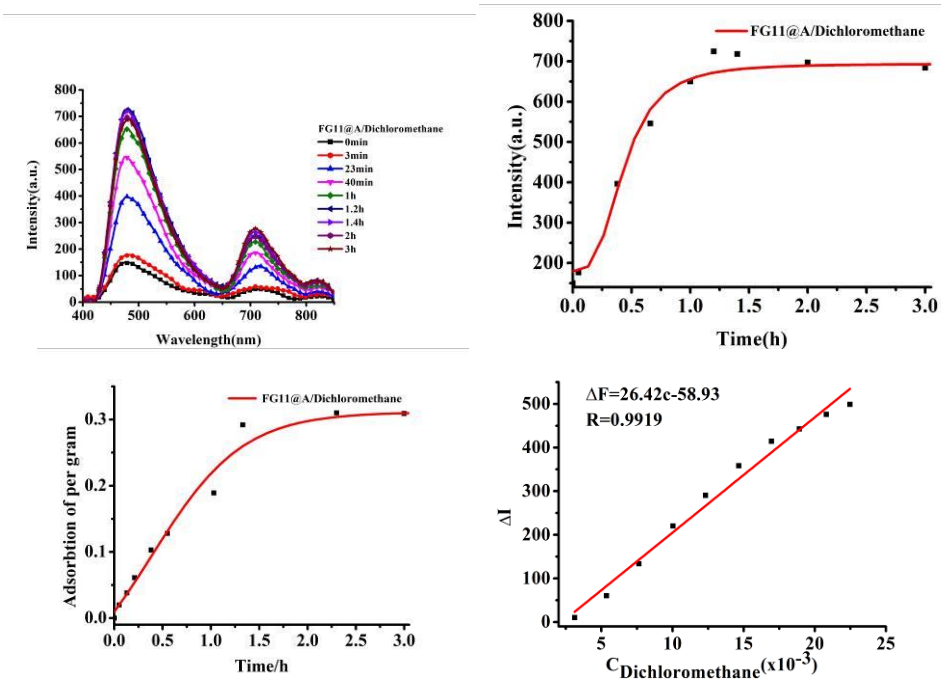


Fig. S22 (a) Titration fluorescence spectra of the loading of **FG**11@**A** with dichloromethane; (b) Change in fluorescence intensity of **FG**11@**A** with increasing adsorption time; (c) Adsorption profile of the loading of dichloromethane in **FG**11@**A**; (d) Plot of ΔI *vs*. the amount of dichloromethane adsorbed by solid **FG**11@**A**.

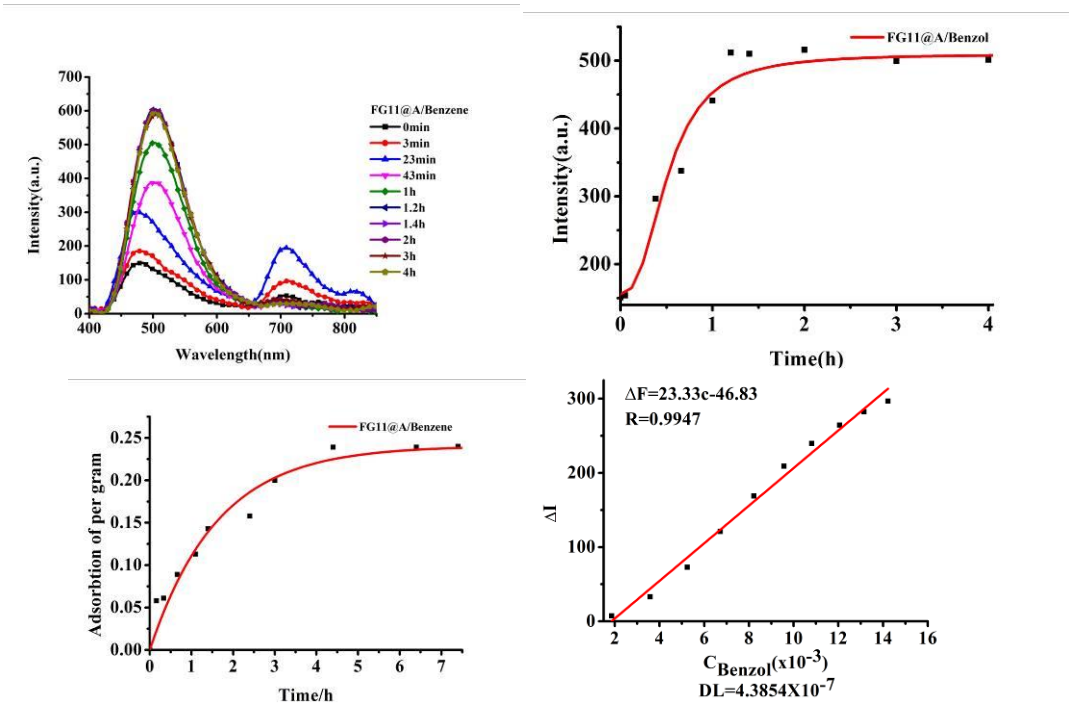


Fig. S23 (a) Titration fluorescence spectra of the loading of **FG**11@**A** with benzol; (b) Change in fluorescence intensity of **FG**11@**A** with increasing adsorption time; (c) Adsorption profile of the loading of benzol in **FG**11@**A**; (d) Plot of ΔI *vs*. the amount of benzol adsorbed by solid **FG**11@**A**.

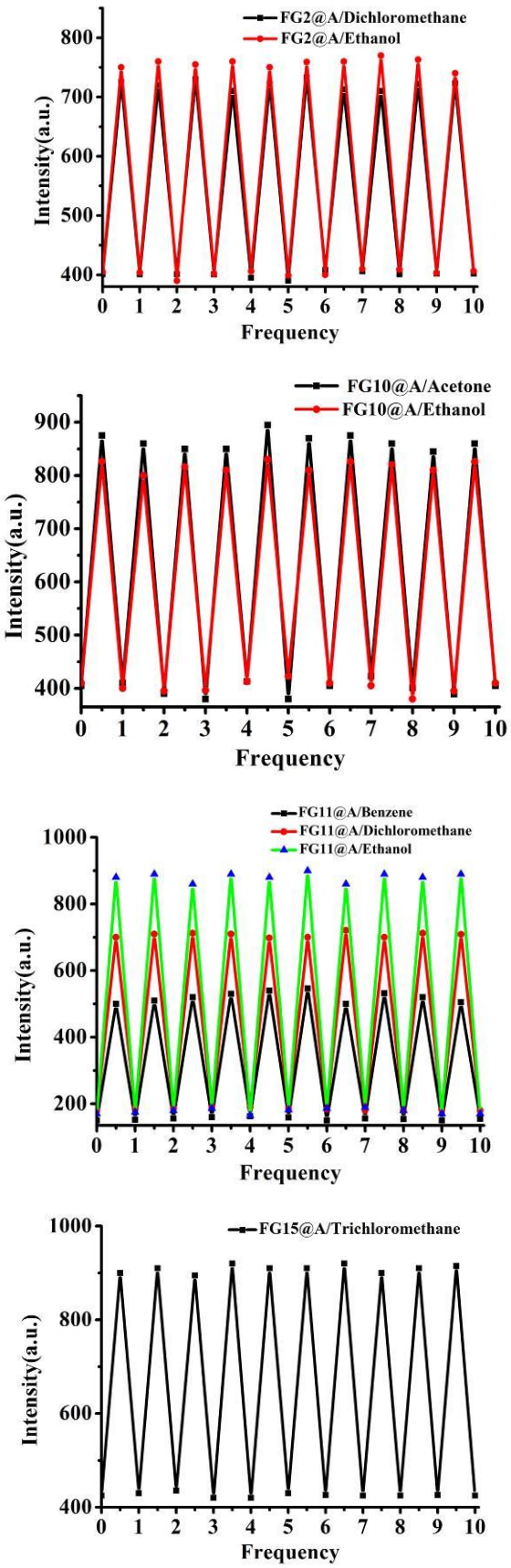


Fig. S24 Lifetime experiments of fluorescence strength of solid **FG@A**s for selected volatile compounds.

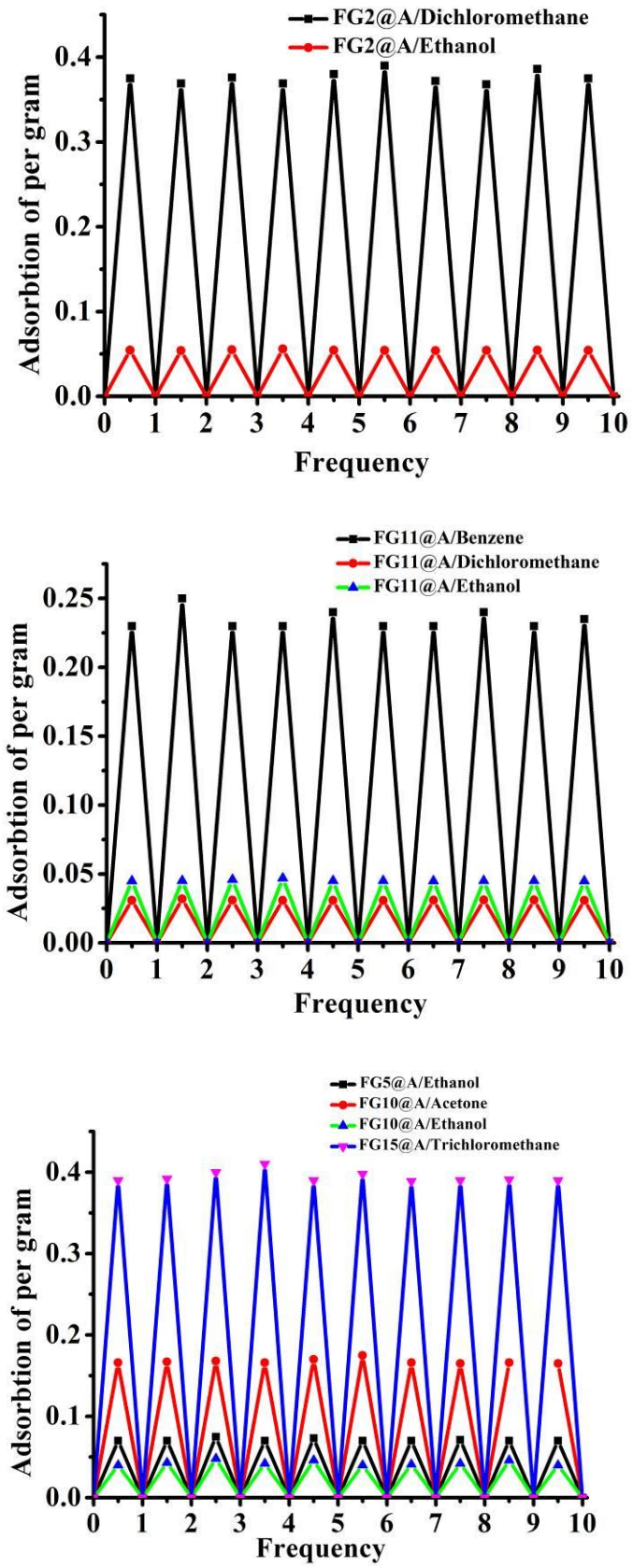
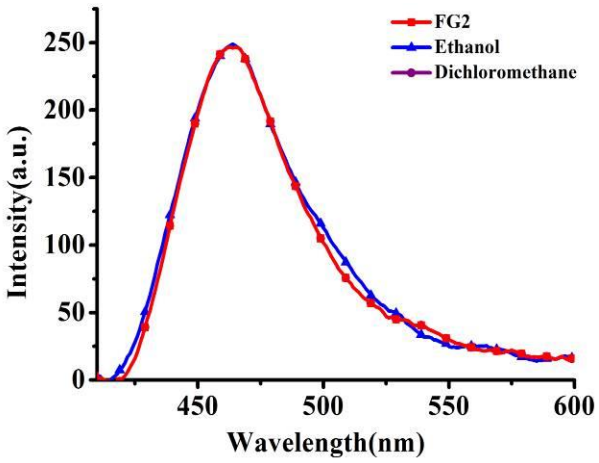
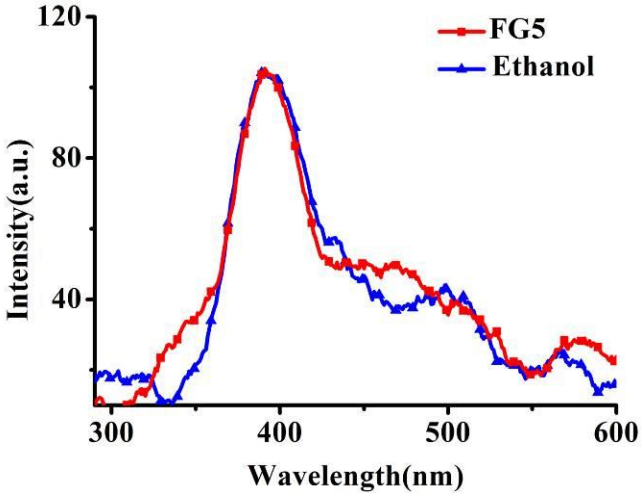
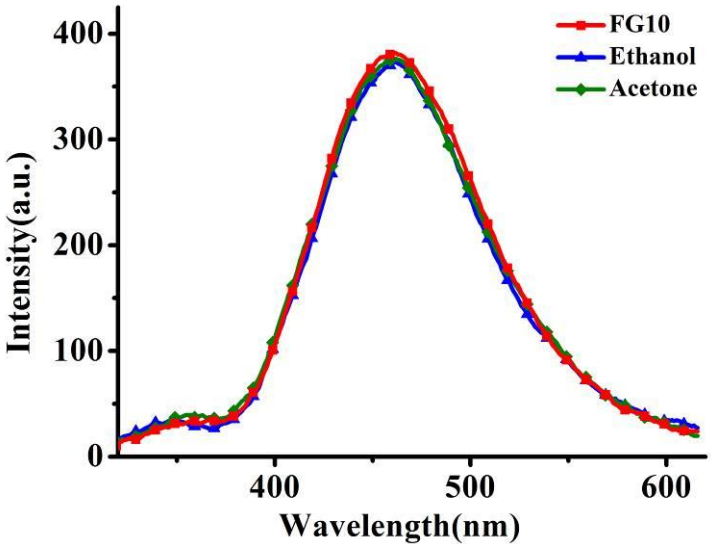


Fig. S25 Lifetime experiments of adsorption capacities of selected solid **FG@A**s for selected **VOC**s.


FG2
Ethanol
Dichloromethane
Intensity(a.u.)
Wavelength(nm)
0
50
100
150
200
250
450
500
550
600


FG5
Ethanol
Intensity(a.u.)
Wavelength(nm)
40
80
120
300
400
500
600


FG10
Ethanol
Acetone
Intensity(a.u.)
Wavelength(nm)
0
100
200
300
400
400
500
600

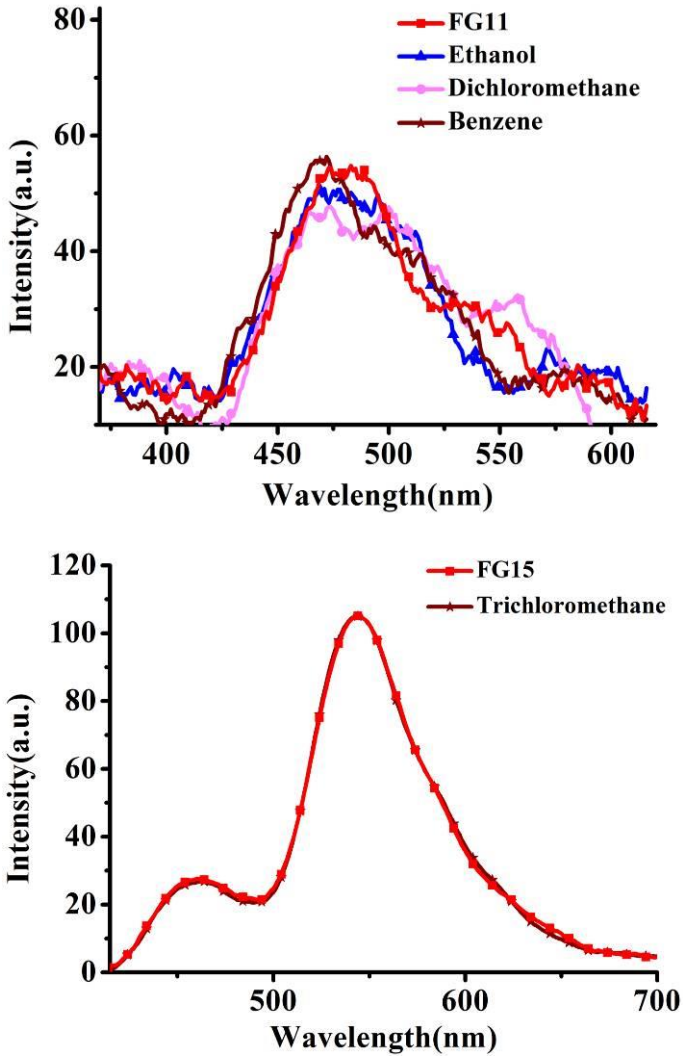


Fig. S26 the adsorption of neat **FG** for **VOCs.**