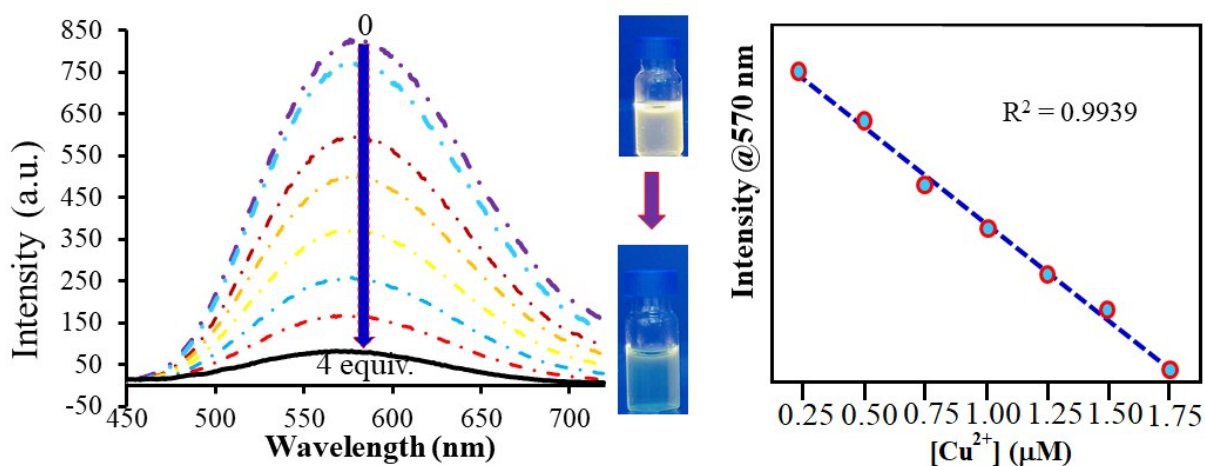
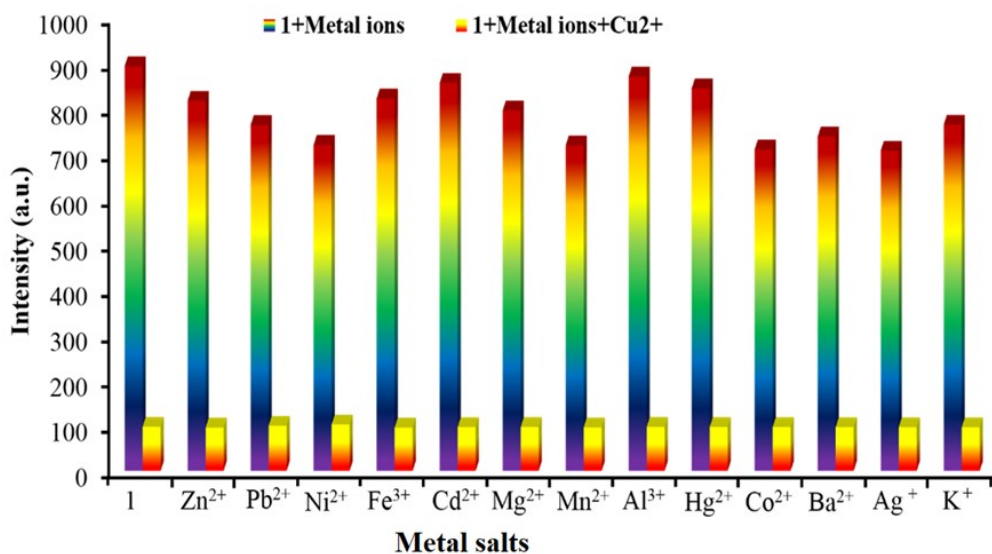


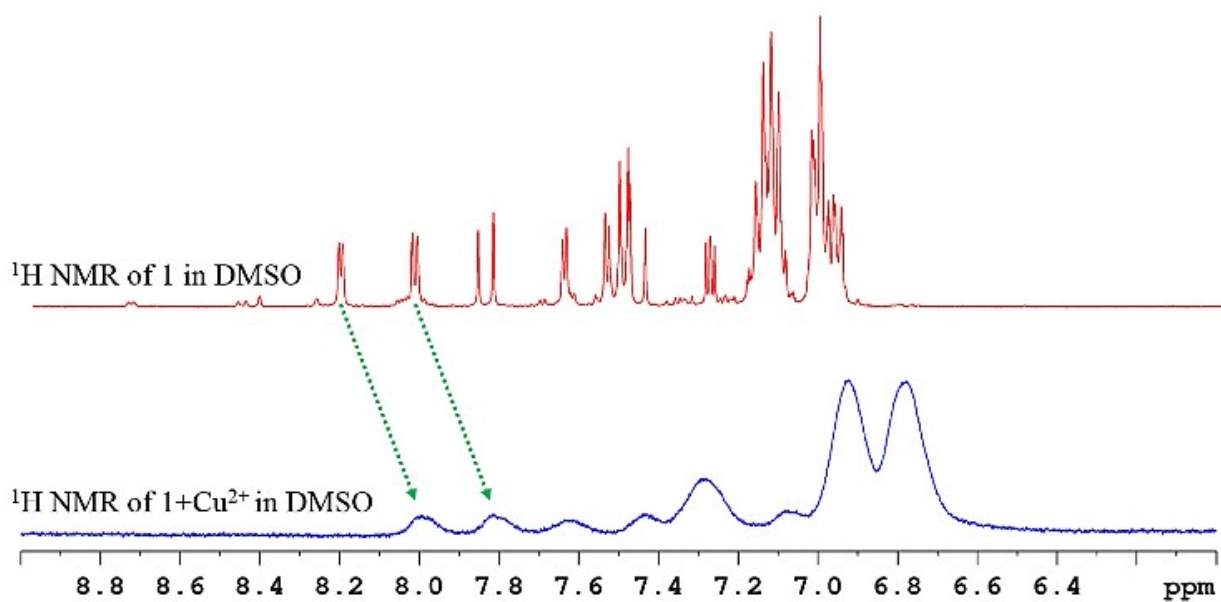
## Supplementary Information



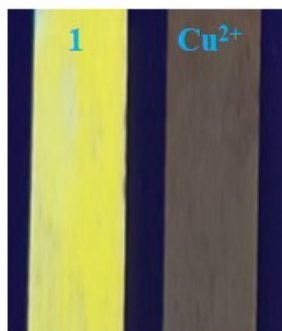
**Fig. S1** Emission spectra of **1** ( $2.0 \times 10^{-4}$  M) in acetonitrile presence with the addition of Cu<sup>2+</sup> (0-4 equiv.) and detection limit.



**Fig. S2** Pictogram fluorescence spectra of **1** ( $2.0 \times 10^{-4}$  M) exposed to 10 equiv. various metal ions and to the mixture of **1** and 10 equiv. Cu<sup>2+</sup> with in ACN solution.



**Fig. S3**  $^1\text{H}$  NMR spectral changes of **1** (a) in  $\text{DMSO-}d_6$  and (b) upon addition of 1 equiv.  $\text{Cu}^{2+}$  ions.



**Fig. S4** Paper strip (prepared in acetonitrile solvent of **1**: 3.5 mM) as shown in left strip, and detection of copper metal ions (strip is shown in right) upon dipping strip in copper solution (10 mM), picture is taken under UV light 365 nm.

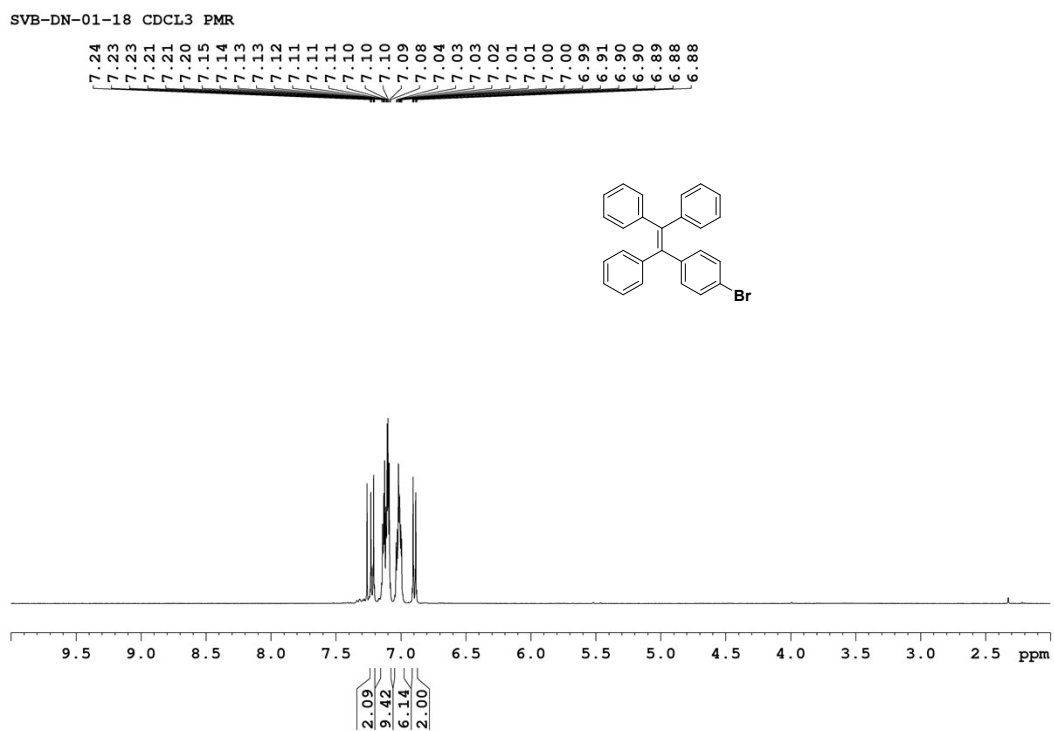


Fig. S5 <sup>1</sup>H NMR spectra of compound 4.

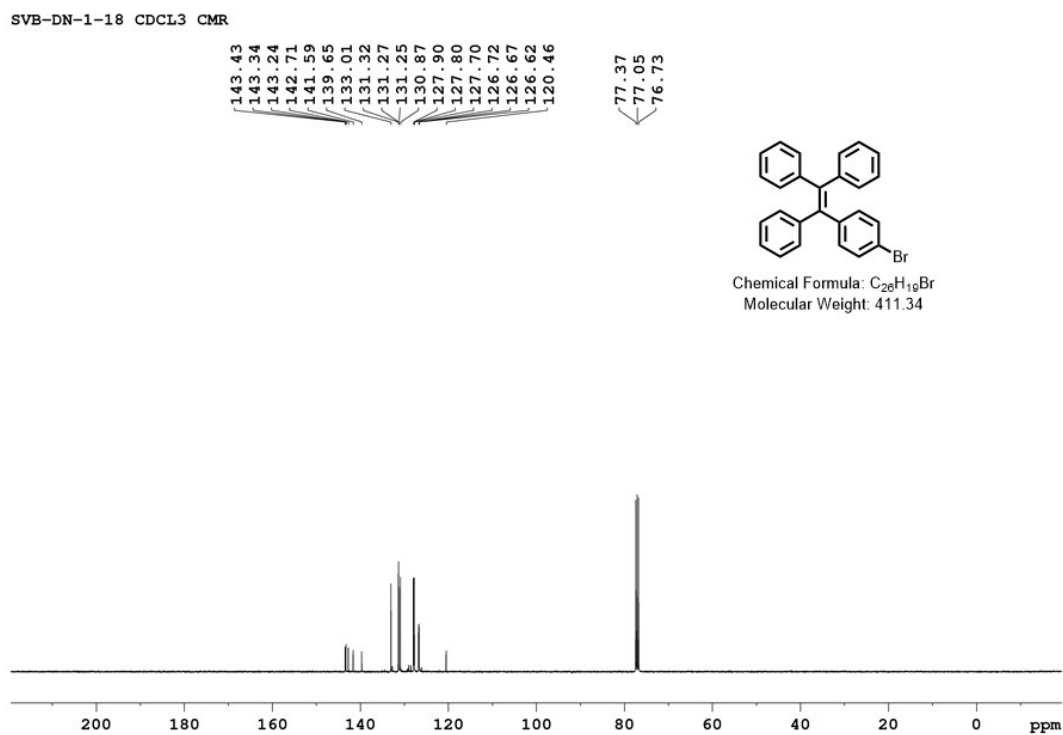


Fig. S6 <sup>13</sup>C NMR spectra of compound 4.

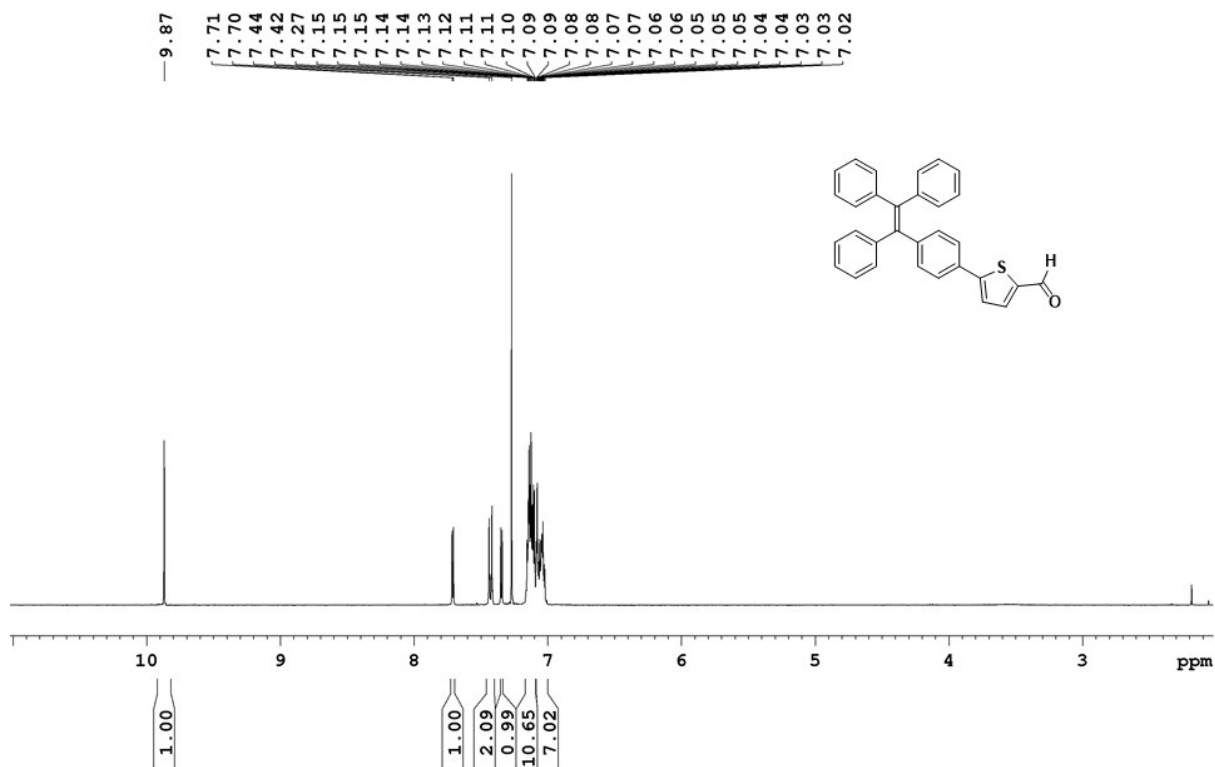


Fig. S7 <sup>1</sup>H NMR spectra of compound 6.

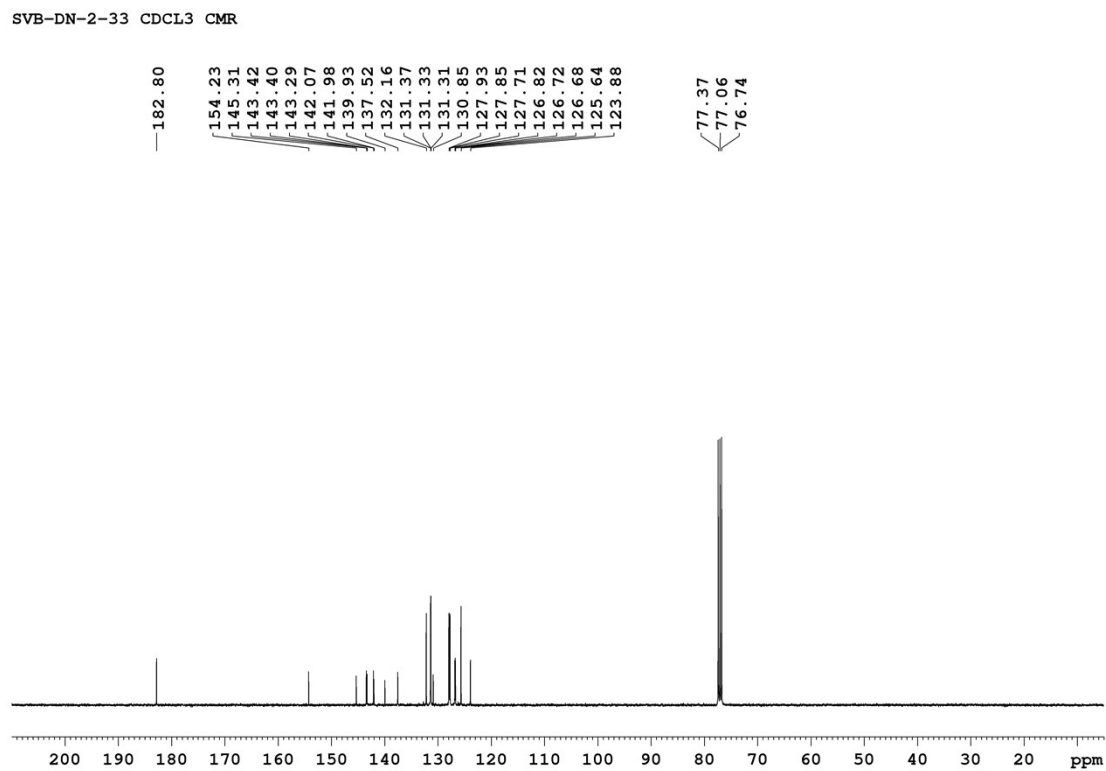


Fig. S8 <sup>13</sup>C NMR spectra of compound 6.

SVB-DN-2-44-B CDCL3 PMR

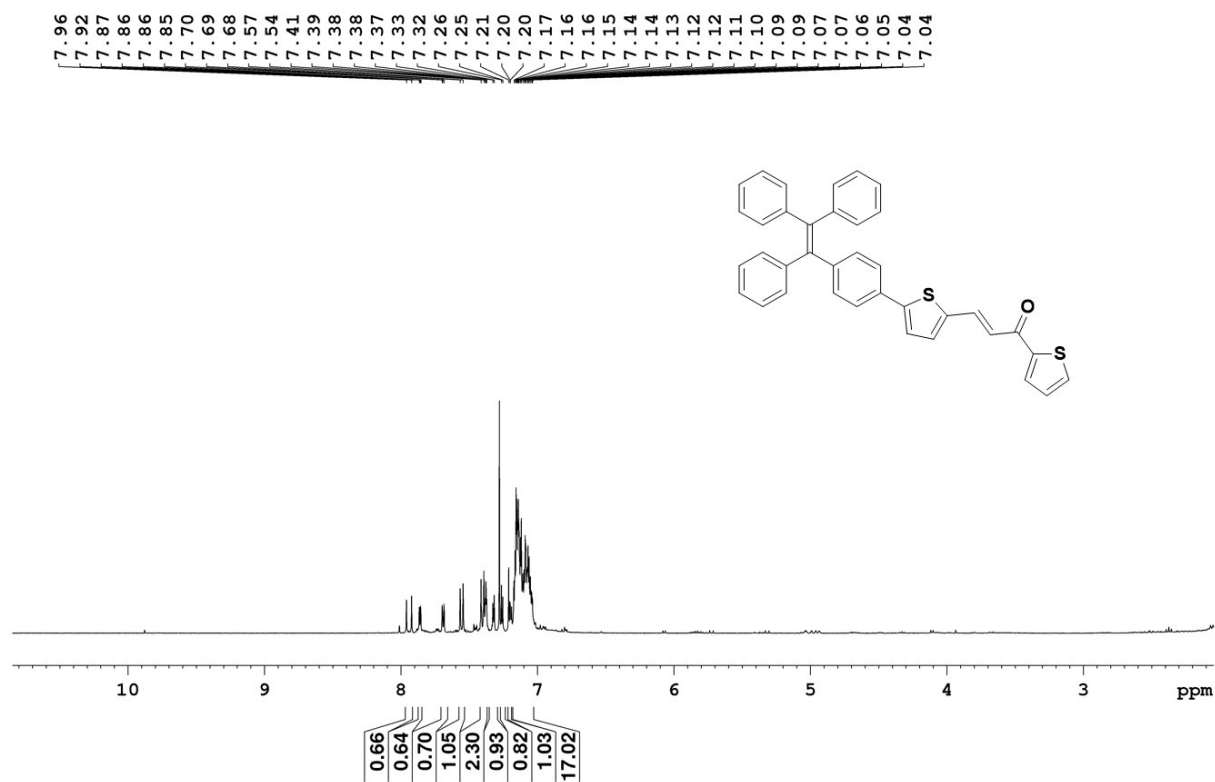


Fig. S9 <sup>1</sup>H NMR spectra of chalcone.

SVB-DN-2-44-B CDCL3 CMR

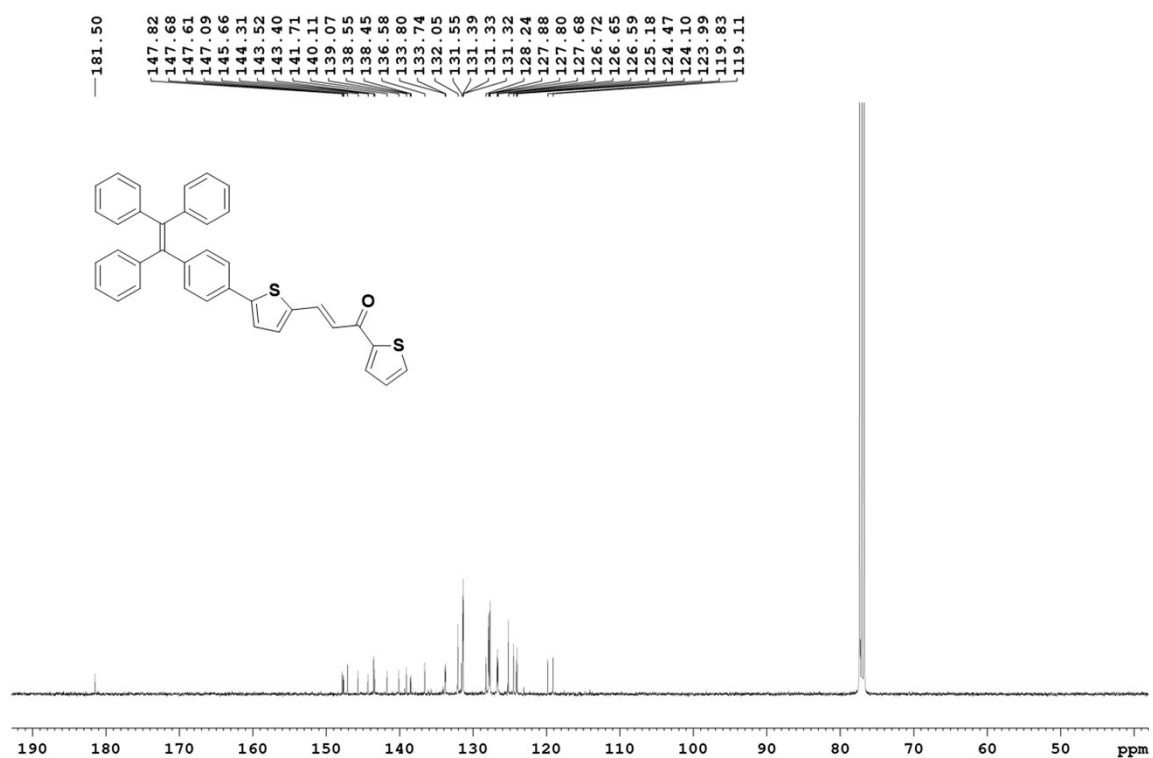


Fig. S10  $^{13}\text{C}$  NMR spectra of chalcone.

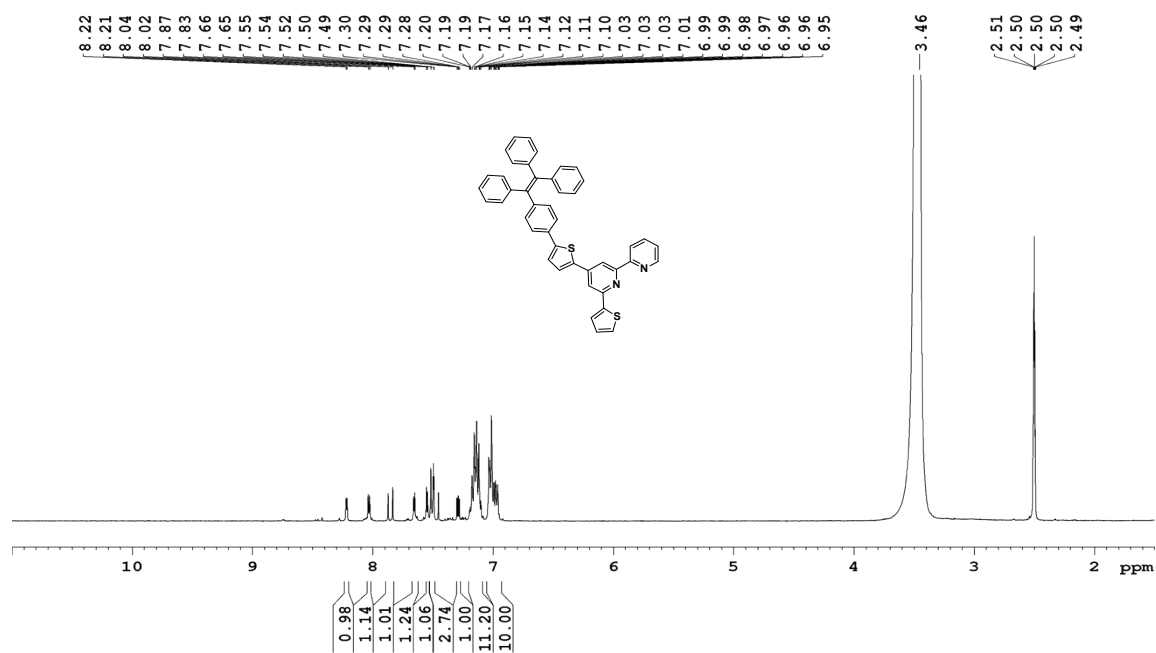


Fig. S11  $^1\text{H}$  NMR spectra of sensor 1.

SVB-DN-2-44X DMSO CMR

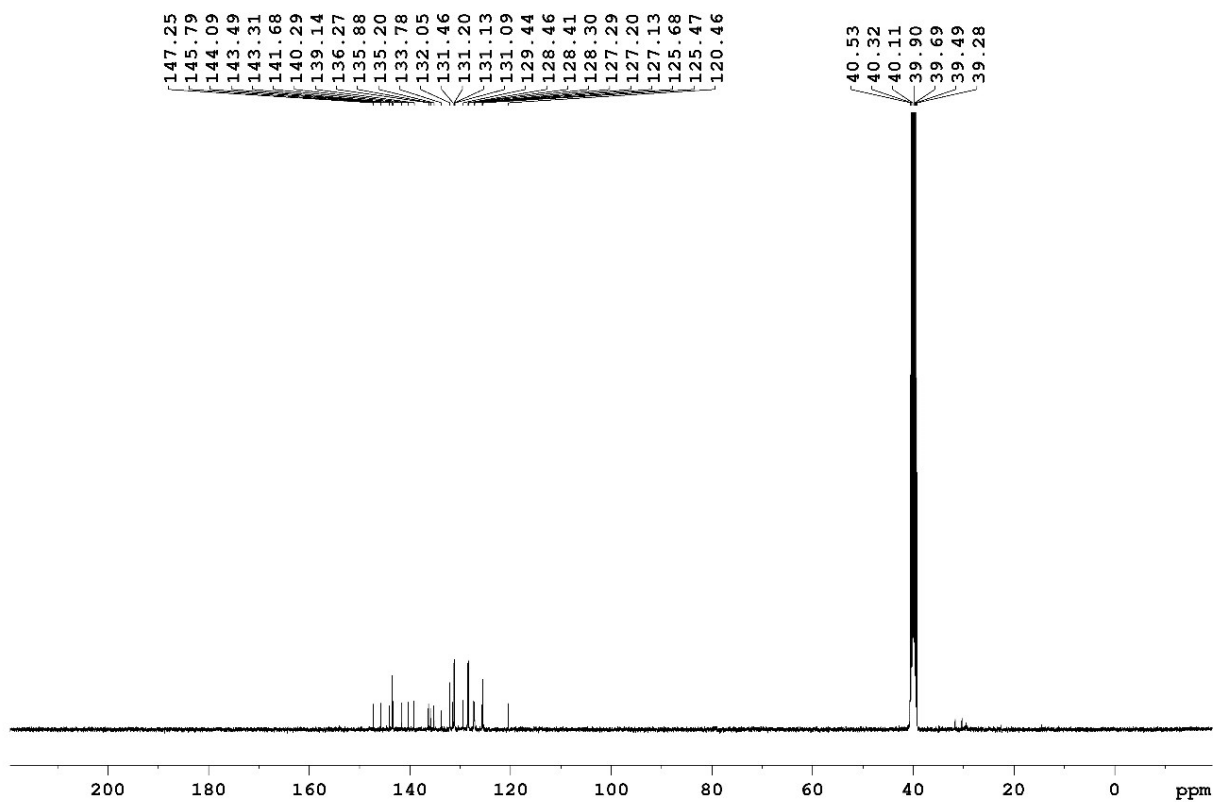
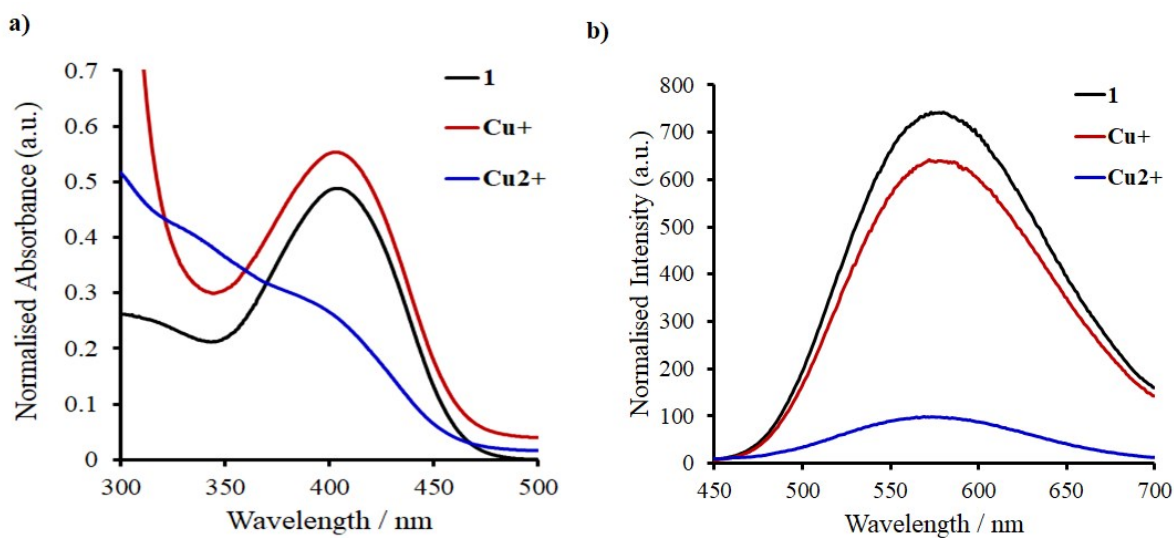


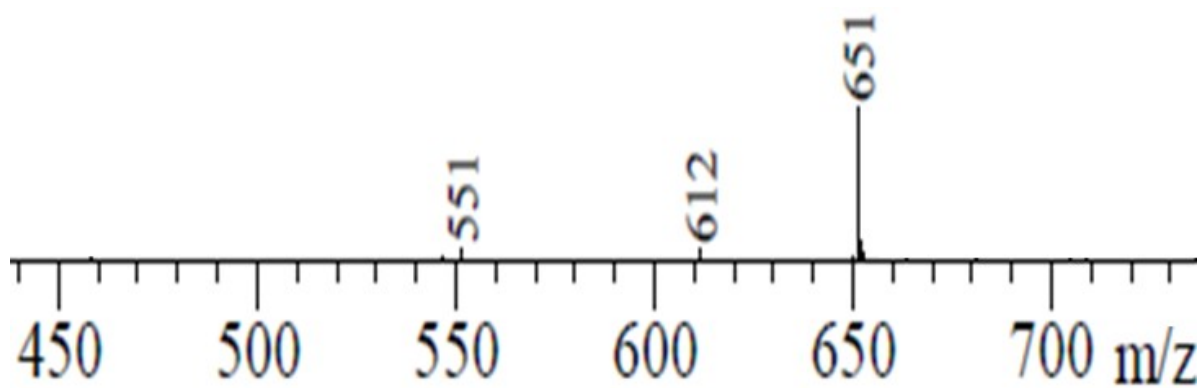
Fig. S12  $^{13}\text{C}$  NMR spectra of sensor 1.

**Table S1.** UV-vis absorption and fluorescence emission data of **1** in different solvents

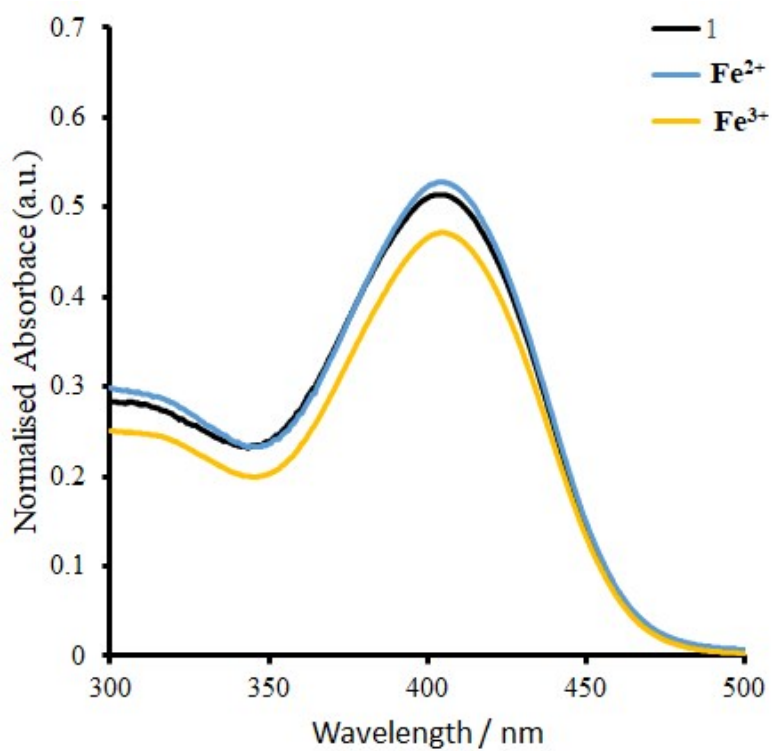
Solvent	Maximum wavelength/nm		Quantum yield ( $\Phi$ )
	Absorption ( $\epsilon/M^{-1}cm^{-1}$ )	Emission	
Hexane	404 ( $2.600 \times 10^3$ )	488	1.51
Chloroform	417 ( $2.485 \times 10^3$ )	542	4.73
THF	410 ( $2.770 \times 10^3$ )	521	4.54
Acetonitrile	406 ( $2.495 \times 10^3$ )	577	3.47
MeOH	413 ( $2.800 \times 10^3$ )	-----	N/A
DMSO	417 ( $2.795 \times 10^3$ )	570	3.73



**Fig. S13:** Comparative study of Compound **1** ( $2.0 \times 10^{-4}$  M) with copper (I) and copper (II): a) UV-Vis absorbance spectra and b) Fluorescence emission spectra.



**Fig. S14:** ESI Mass of sensor 1.



**Fig. S15:** Comparative absorbance study of 1 with Fe<sup>2+</sup> and Fe<sup>3+</sup>