

# Ratiometric fluorescence sensing and cellular imaging of Cu<sup>2+</sup> by a new water soluble trehalose-naphthalimide based chemosensor

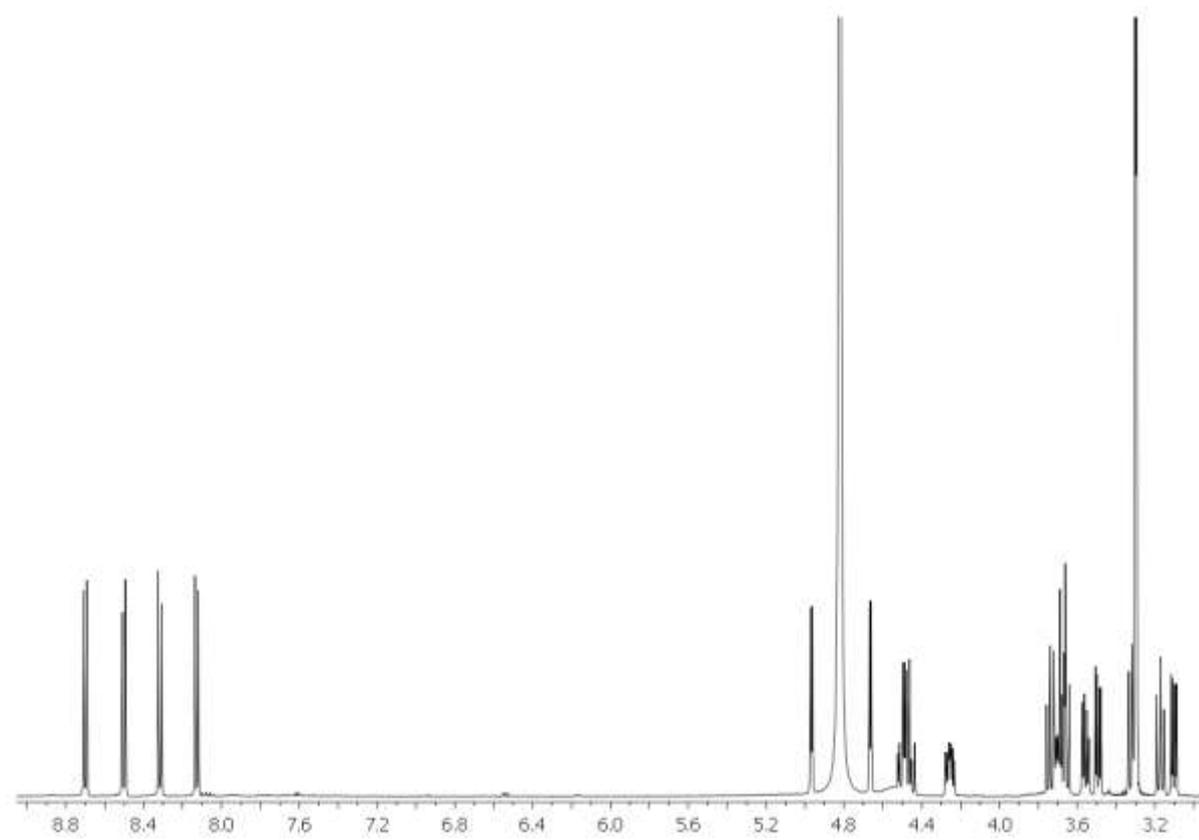
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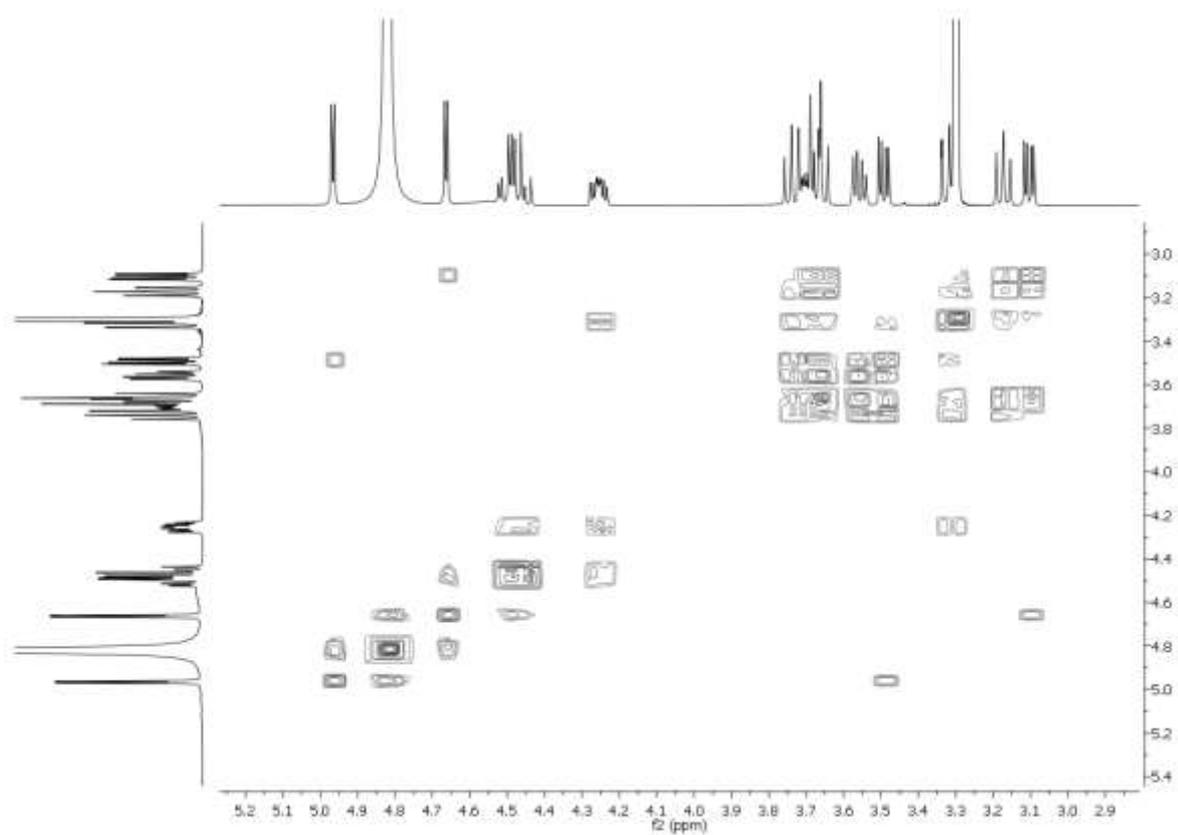
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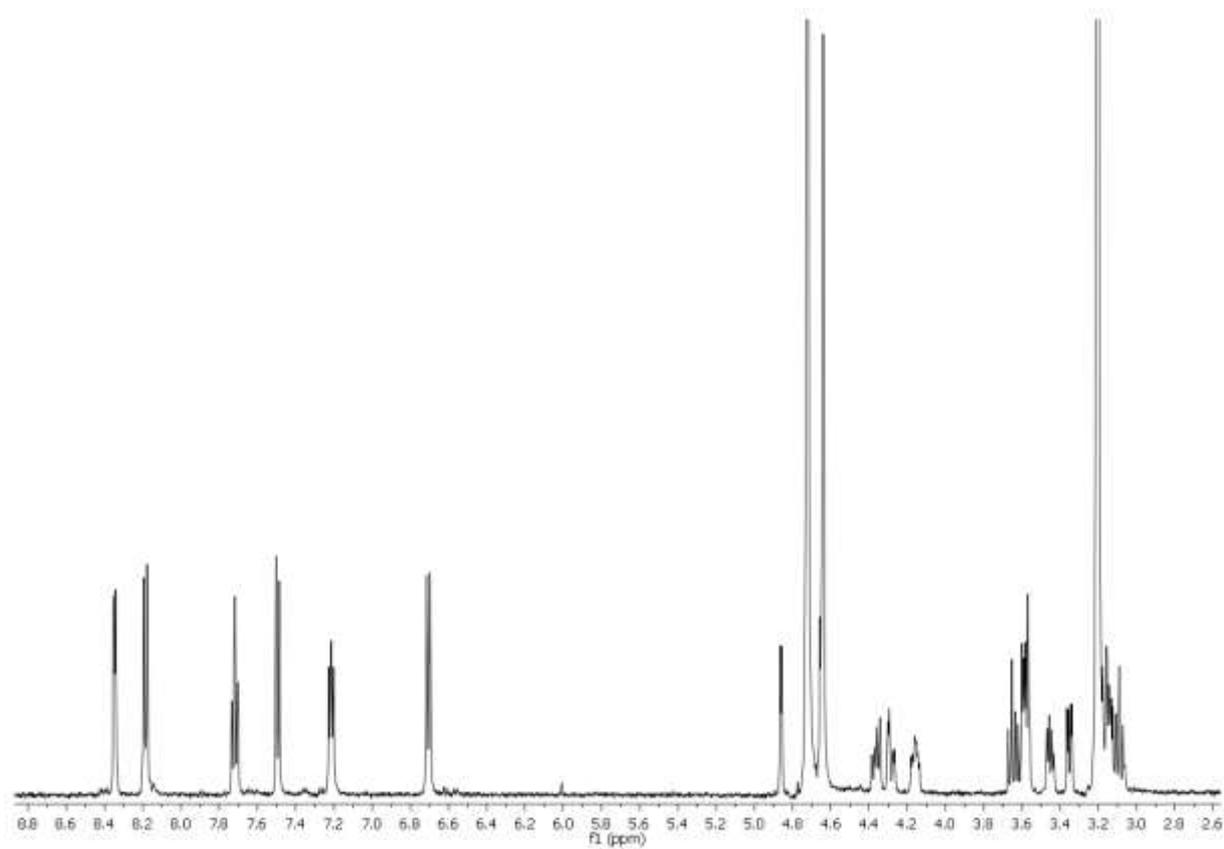
Supplementary Information



**Fig. S1** <sup>1</sup>H-NMR spectrum of N-trehalose-4-bromo-5-nitro-1,8-naphthalimide.

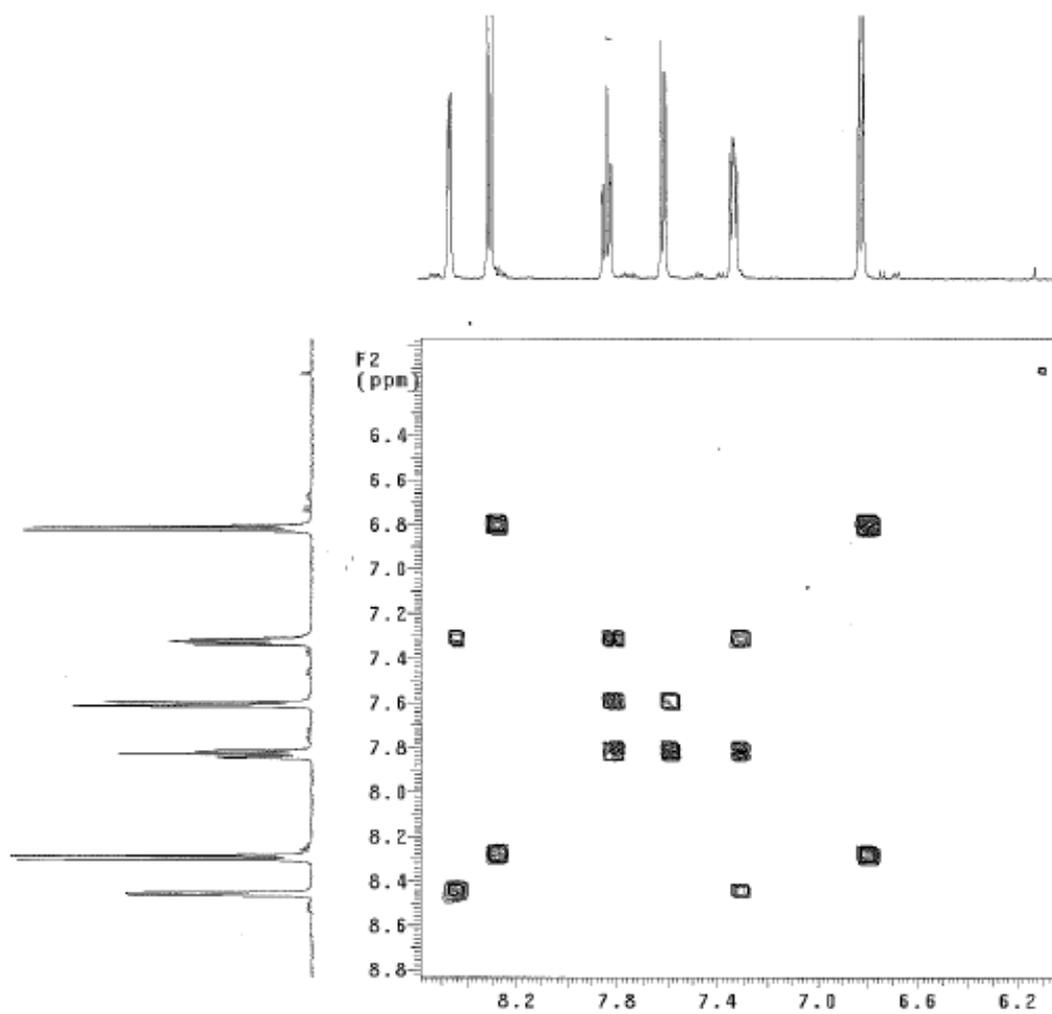


**Fig. S2** COSY spectrum of N-trehalose-4-bromo-5-nitro-1,8-naphthalimide: aliphatic region

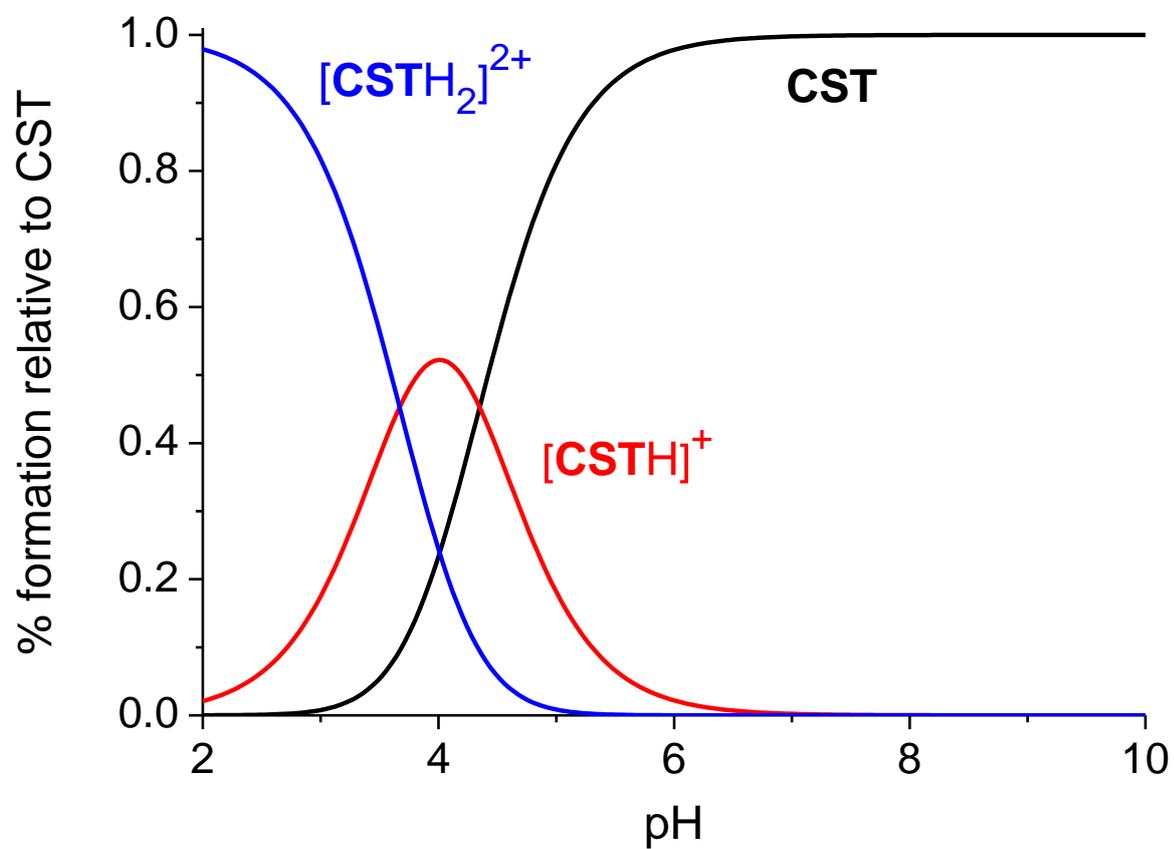


**Fig. S3** <sup>1</sup>H-NMR spectrum of CST.

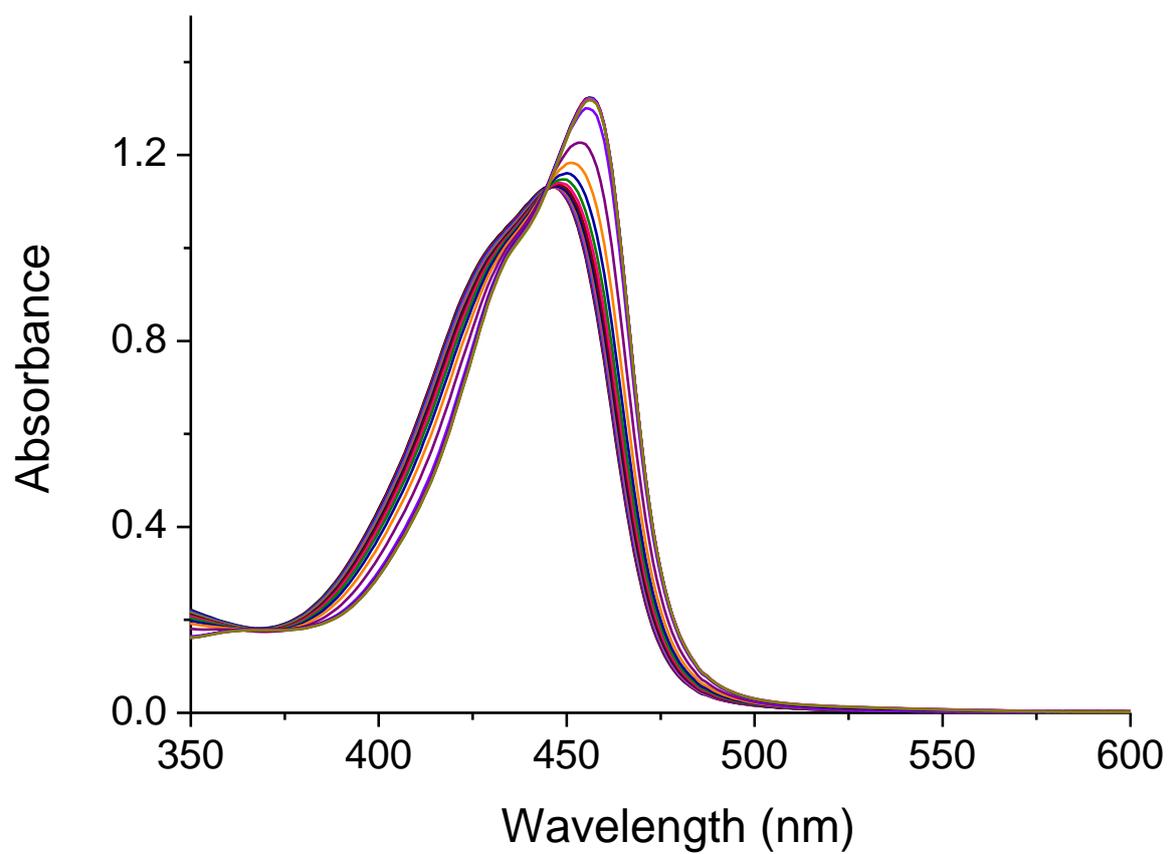




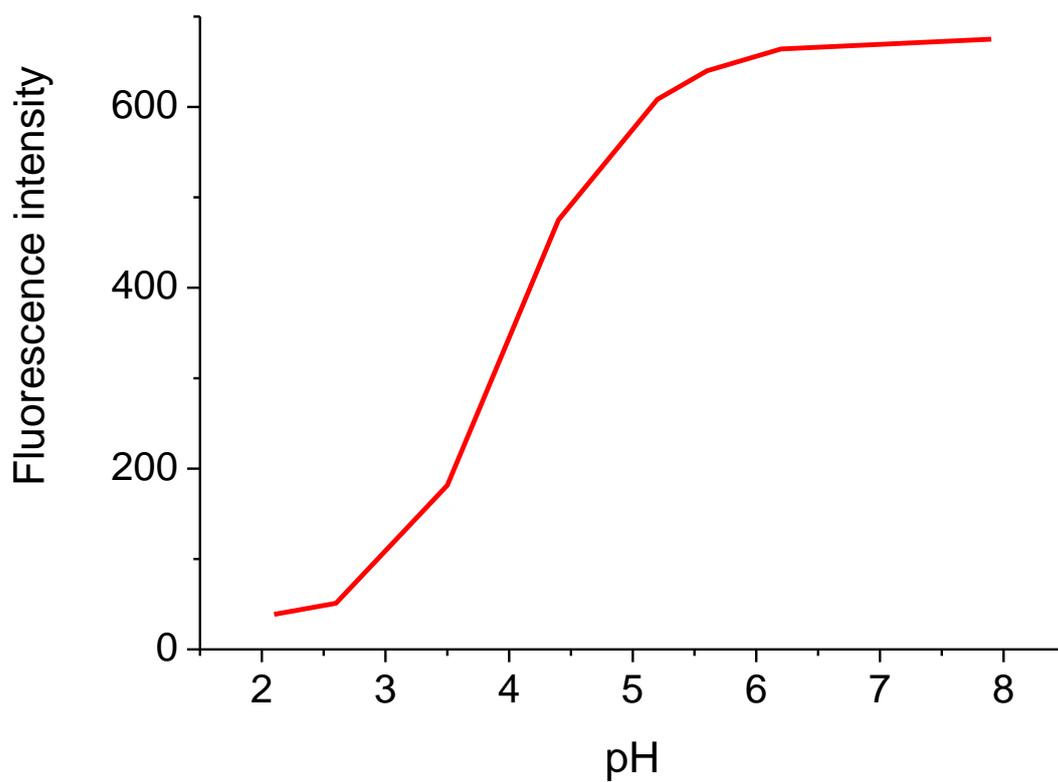
**Fig. S5** COSY spectrum of **CST**: aromatic region



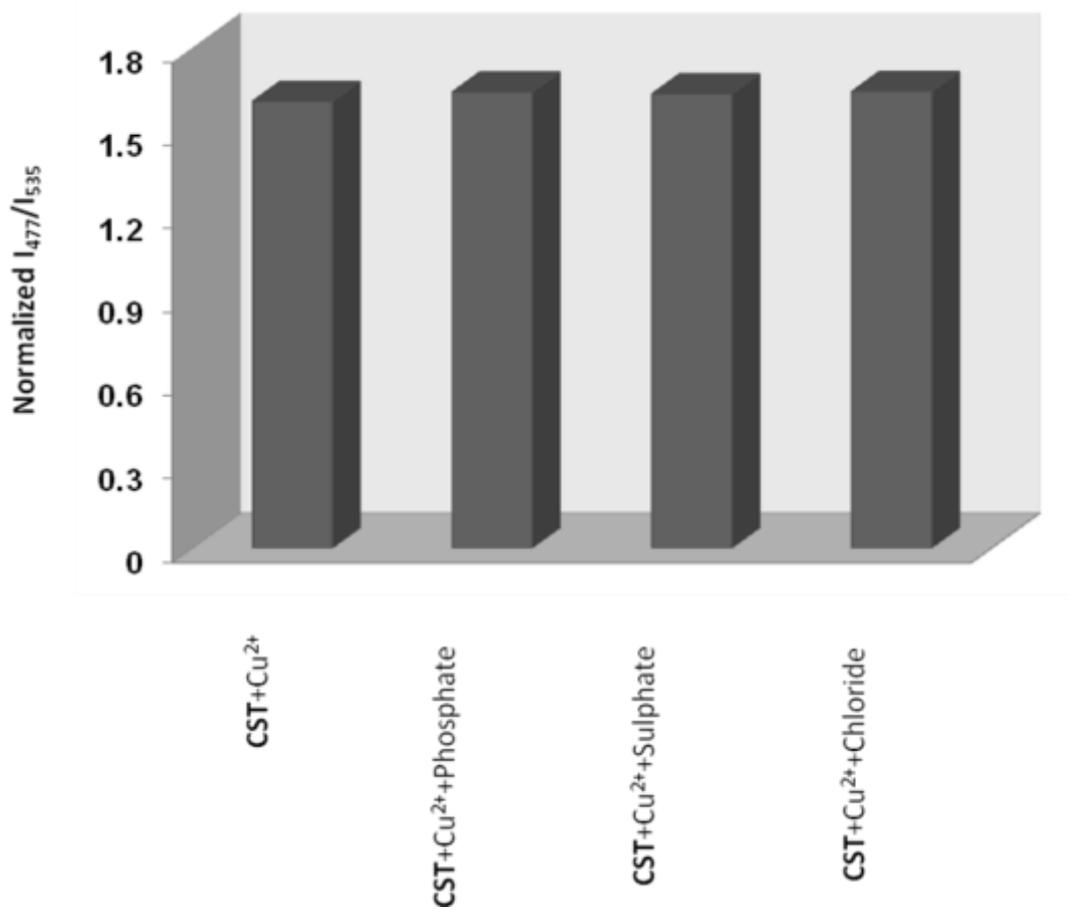
**Fig. S6** Species distribution diagram of the proton complexes of **CST**.



**Fig. S7** Typical UV-vis titration of **CST** with KOH in water at 25 °C and I = 0.1 M (KNO<sub>3</sub>).



**Fig. S8** Influence of the pH on the fluorescence emission of a  $9 \times 10^{-7}$  M CST aqueous solution at 25 °C and I = 0.001 M (KNO<sub>3</sub>)



**Fig. S9** Fluorescence response of **CST** to some selected anions in MOPS (10 mM, pH 7.2) buffered solution. The response is normalized with respect to free **CST**. 1000 equivalents of different anions were added to a  $1 \times 10^{-6}$  M **CST** solution containing one equivalent of  $\text{Cu}^{2+}$ . Excitation wavelength was 455 nm.