

Synthesis, Photophysics, Ion Detection and DFT Investigation of Novel Cyano-substituted Red-light Chromophores with Triphenylamine Donor

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Supporting Information

Table S1. The electrochemical parameter of compounds **3-5**

Fig.S1. TGA curves of compounds **3-5** at a heating rate of 10°C min⁻¹ under nitrogen

Fig.S2. DSC curves of compounds **3-5** at a heating rate of 10°C min⁻¹ under nitrogen

Fig.S3. X-ray powder diffraction patterns and d-space data for compounds **3-5**

Fig.S4. The emission spectra in powder for compounds **3-5**

Fig.S5. The images of the emissions in the powder for compounds **3-5**

Fig.S6. The dependence of the emission spectra of compounds **3** and **4** on their concentration in dichloromethane solution (mol/L)

Fig.S7. The dependence of absorption spectra of the compounds **3-5** on the solvent polarity

Fig.S8. The photographs of compounds **3-5** in different polar solvents (10⁻⁵M) (left to right, toluene, dichloromethane, THF, ethyl acetate and DMF).

Fig.S9. The responses of absorption and fluorescence spectra of the compound **3** (1×10⁻⁵ M/L) in DMF with the addition of ion metal-DMF (1×10⁻⁴ M/L)

Fig.S10. The responses of absorption and fluorescence spectra of the compound **4** (1×10⁻⁵ M) in DMF with the addition of ion metal-DMF (1×10⁻⁴ M/L)

Fig.S11. The ion responses of absorption and fluorescence spectra of the compound **5** (1×10⁻⁵ M/L) in DMF with the addition of ion metal-DMF (1×10⁻⁴ M/L)

Fig.S12. Fluorescence spectra of the compounds **3-5** (1×10⁻⁵ M/L) in DMF upon

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addition of Hg^{2+} -DMF solution ranging from 1×10^{-4} to 9×10^{-4} M/L

Table S1

Compd	E_{ox, peak} (ev)		E_{red, peak} (ev)	
3	1.39	-1.70	–	–
4	1.49	-1.85	-2.70	–
5	1.48	-1.94	-2.27	-2.57

Fig.S1

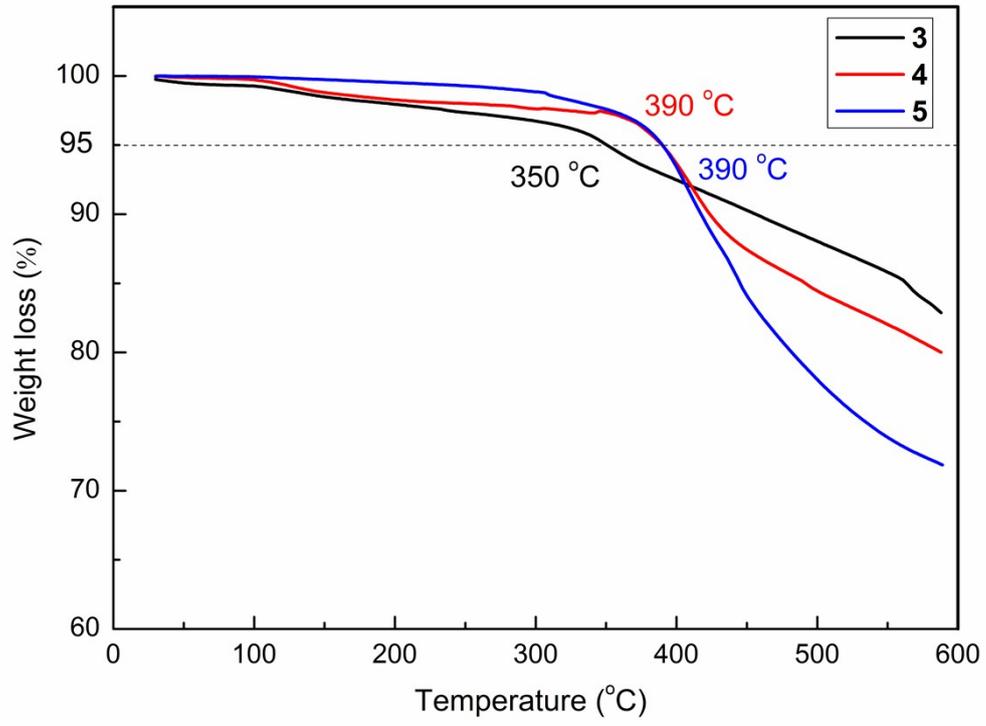


Fig.S2

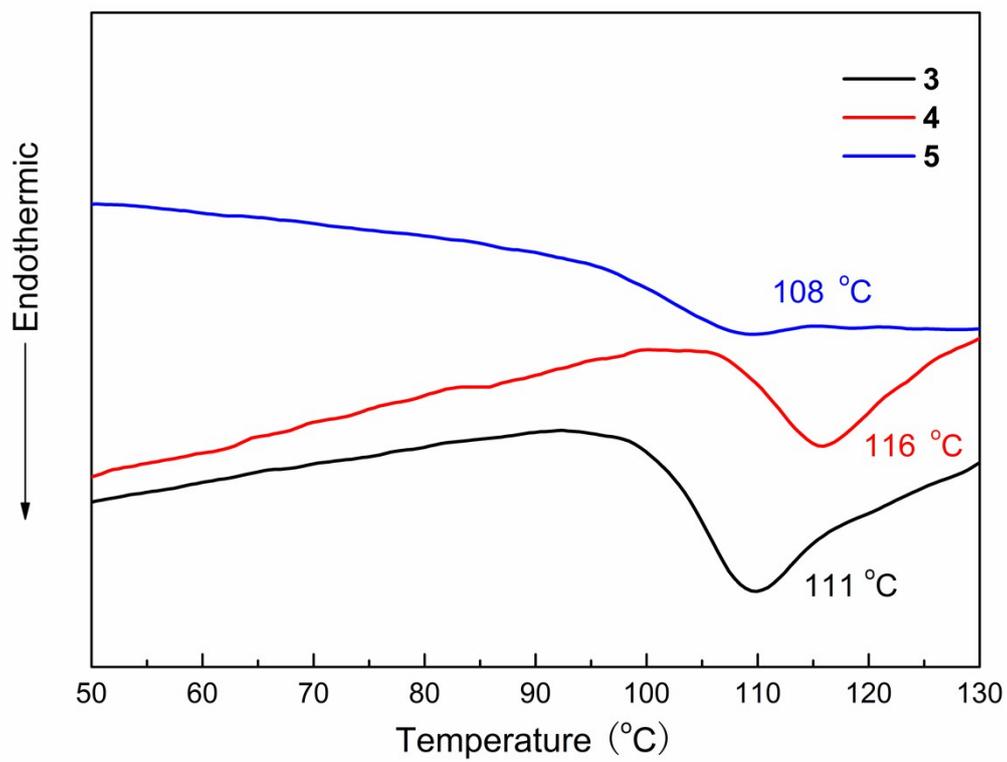


Fig.S3

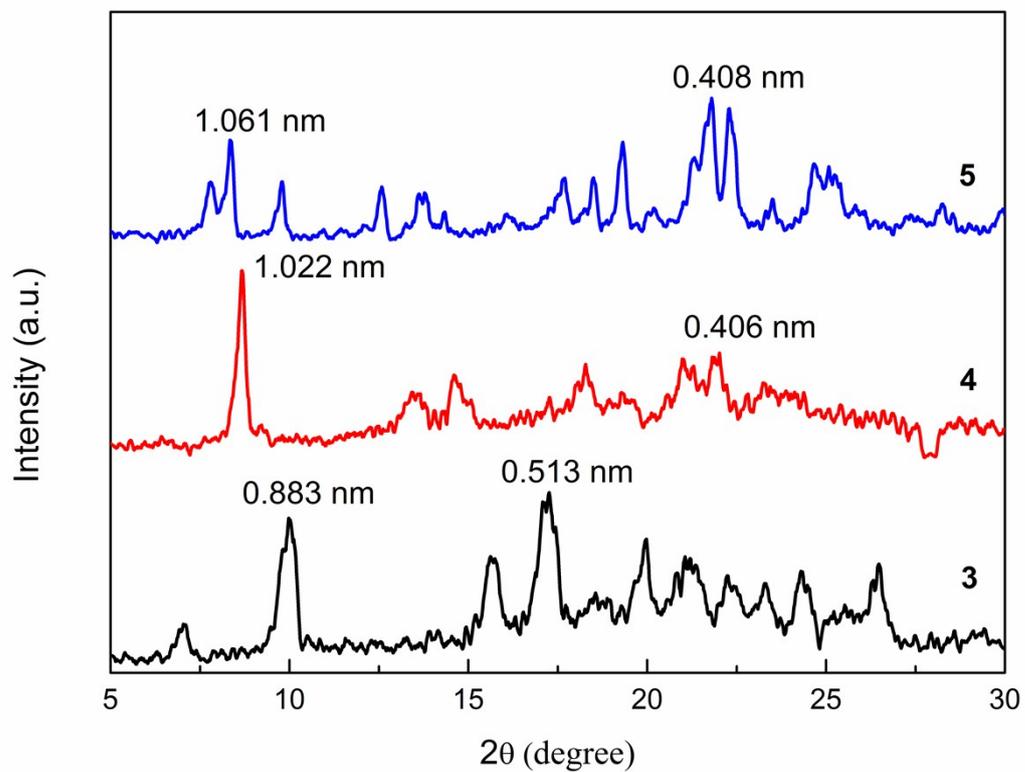


Fig.S4

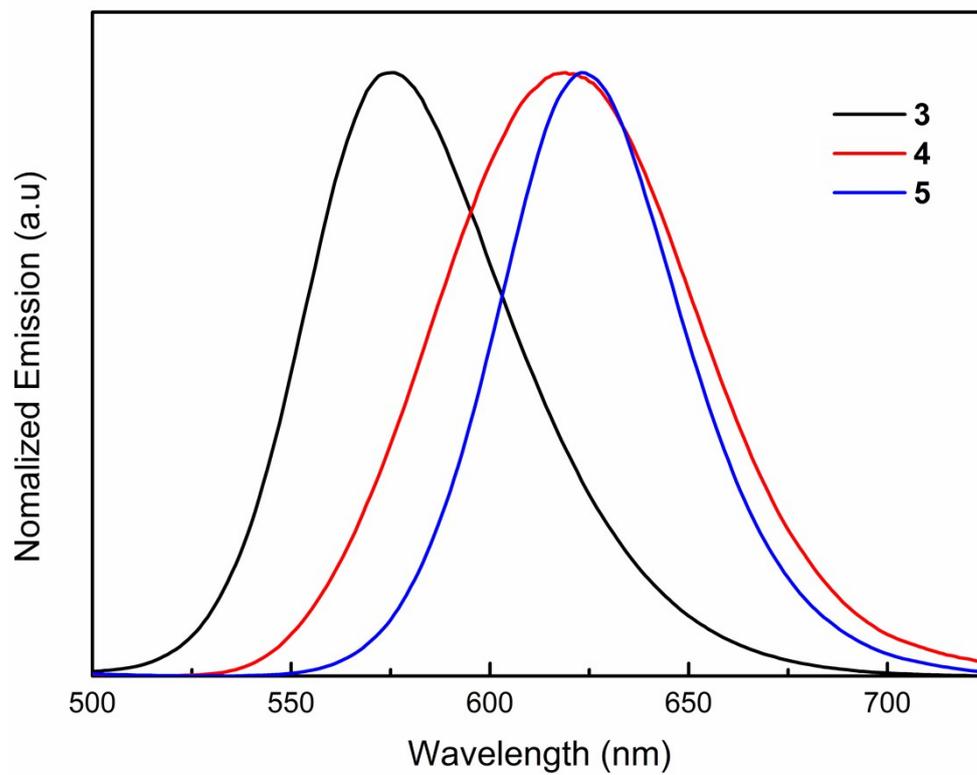


Fig.S5

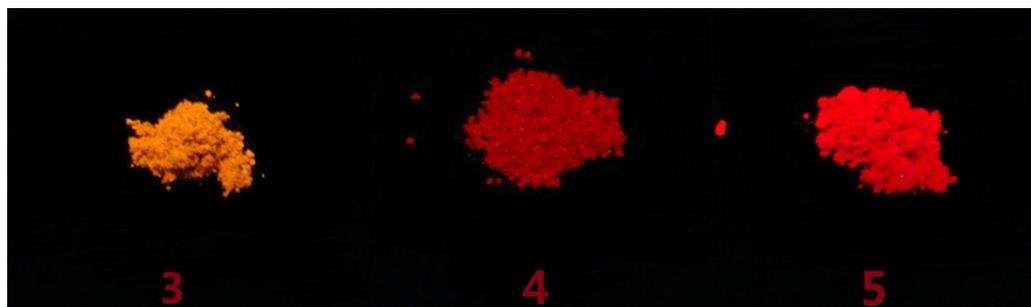


Fig.S6

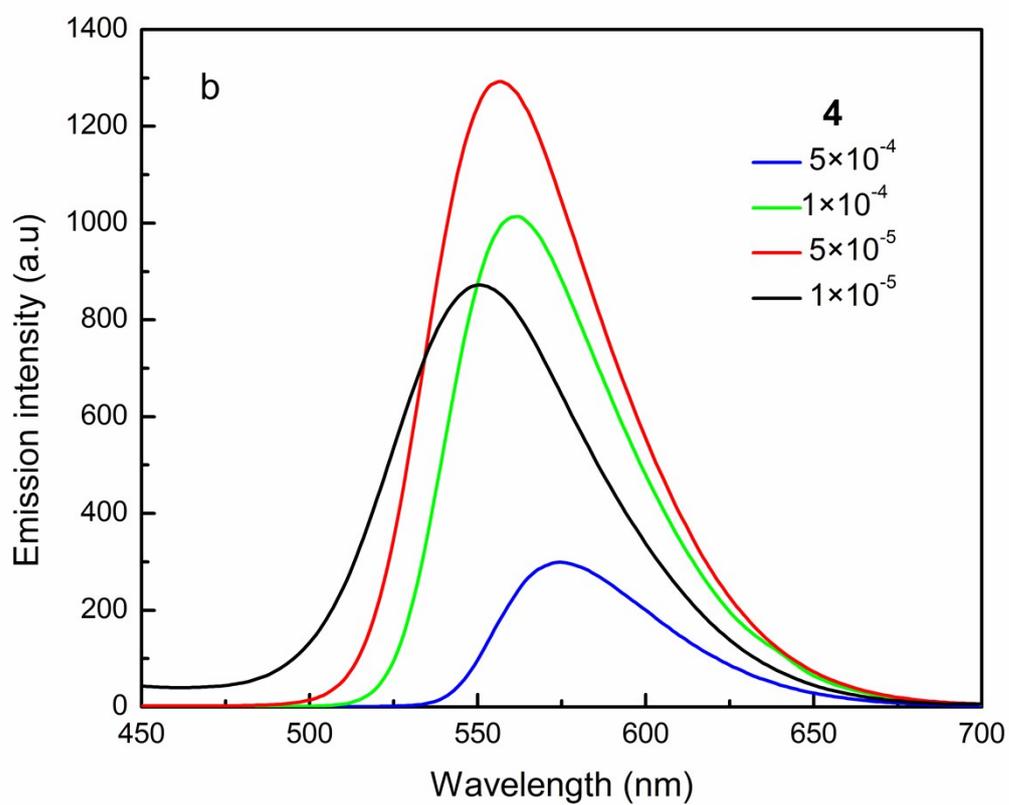
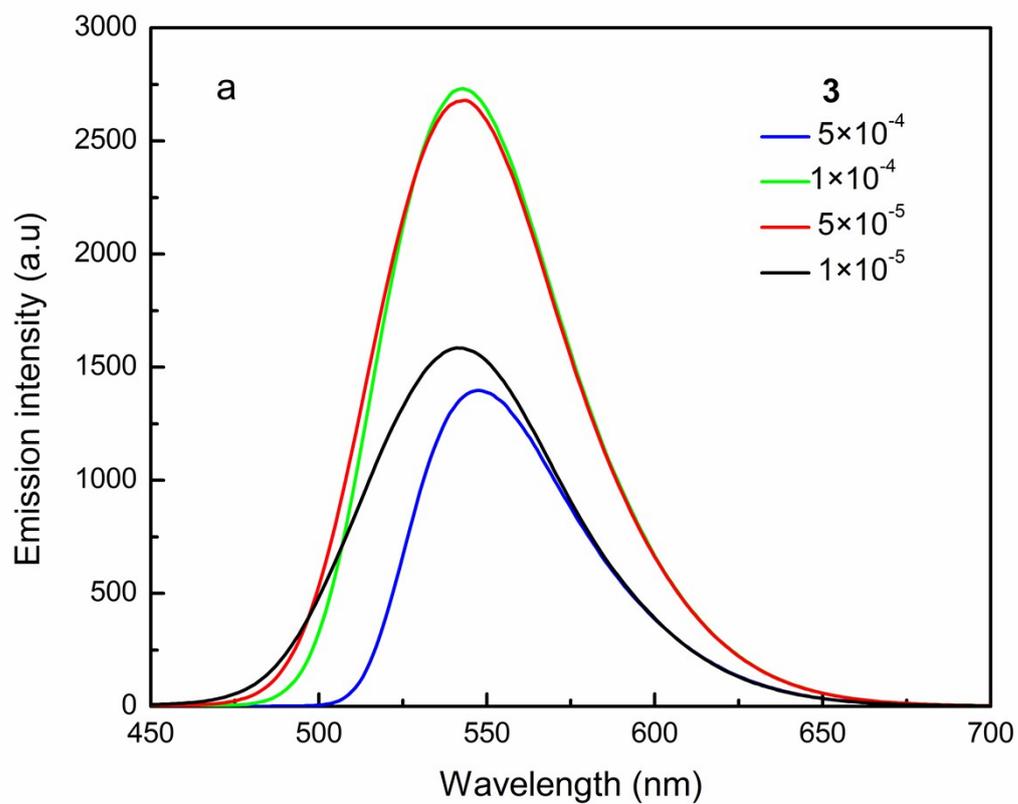
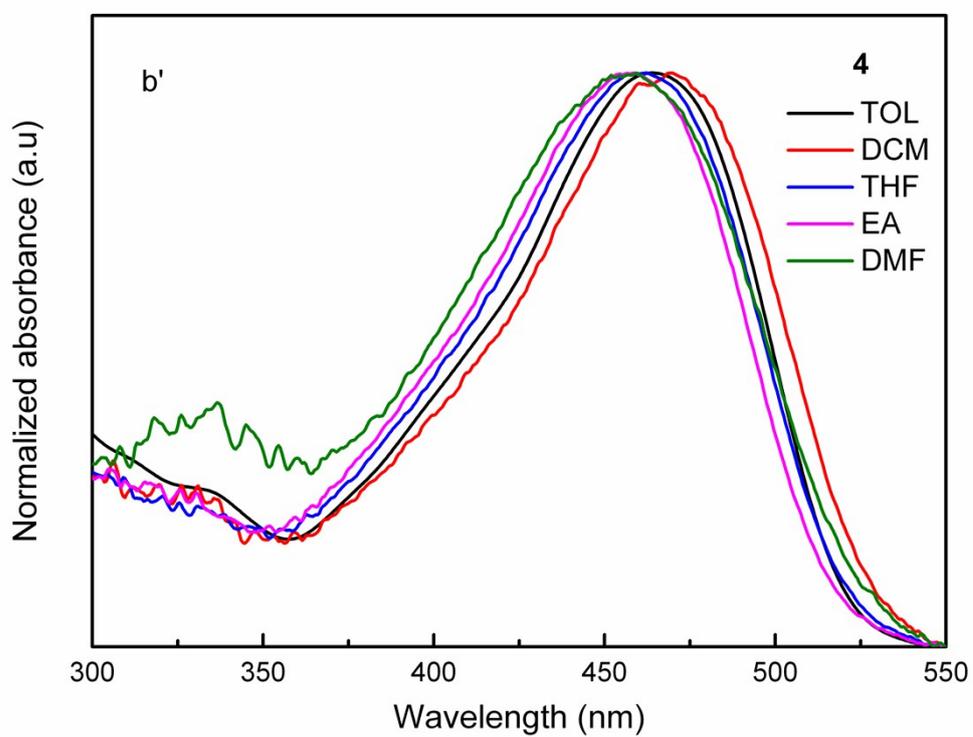
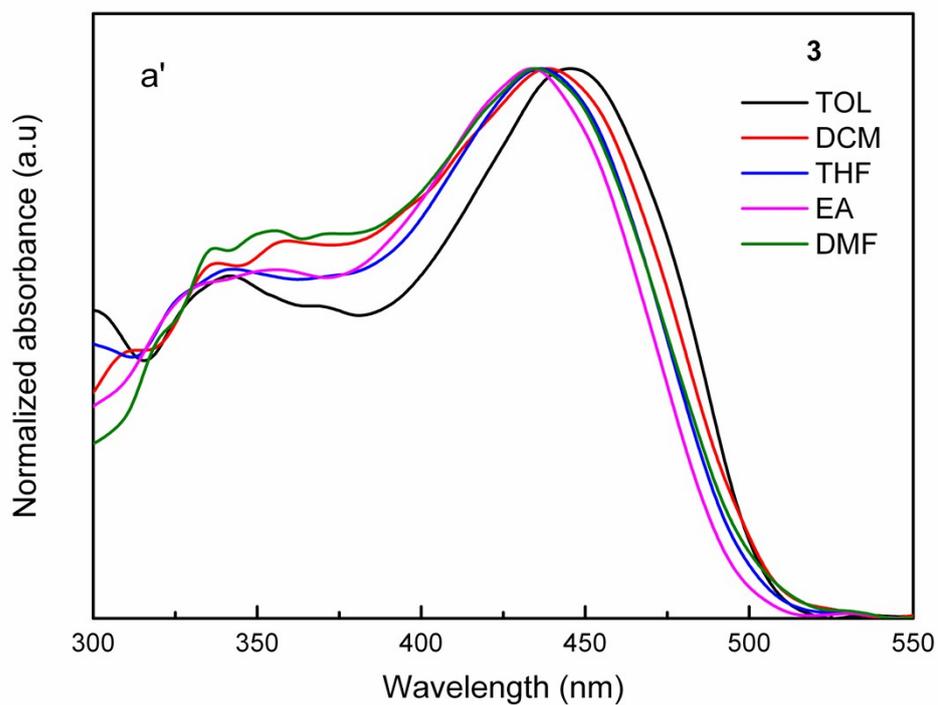


Fig.S7



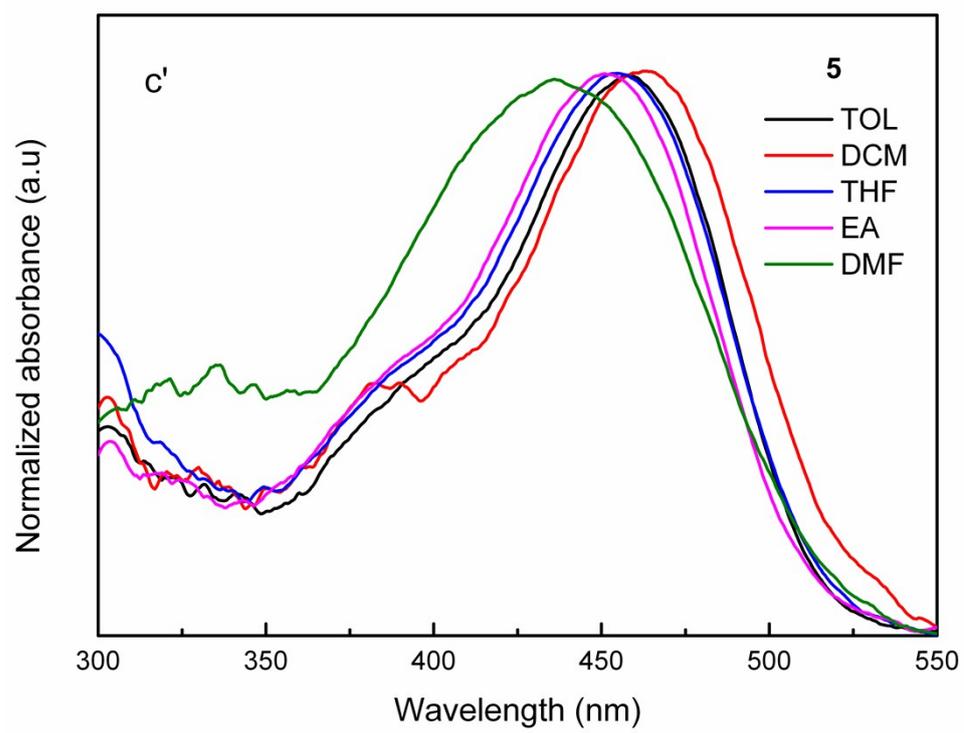


Fig.S8

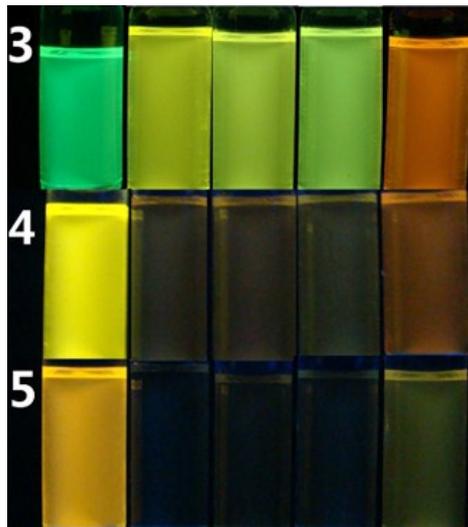


Fig.S9

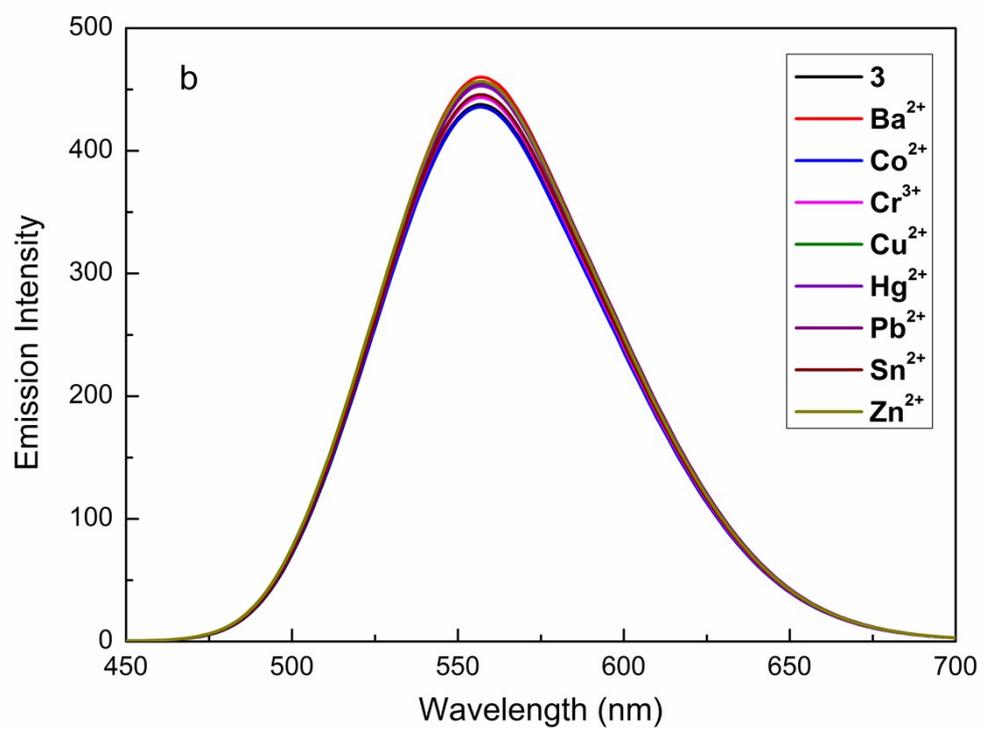
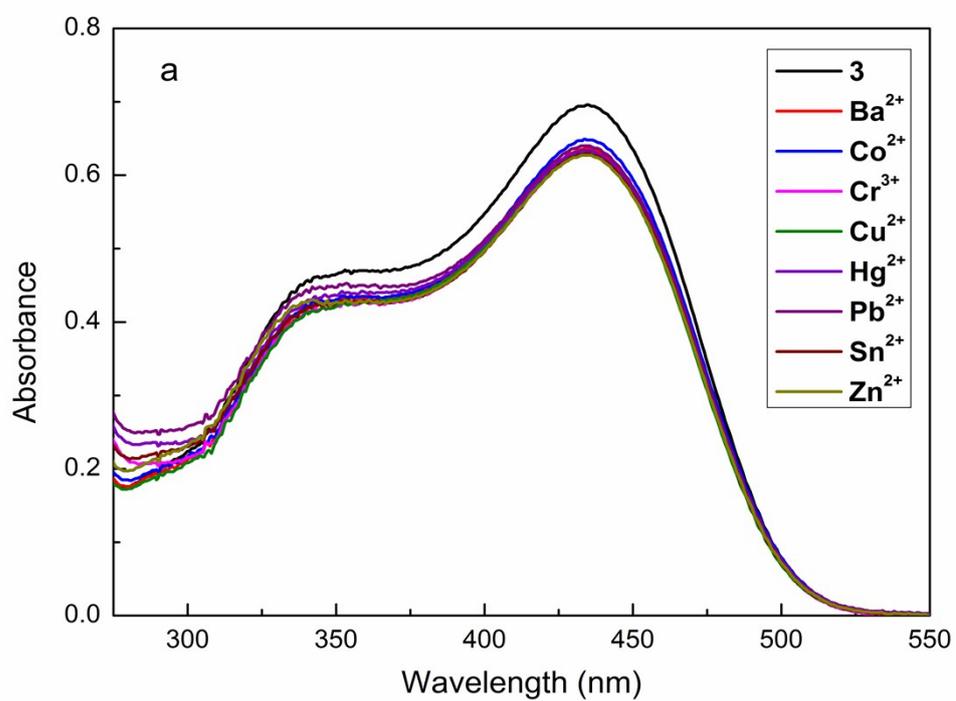


Fig.S10

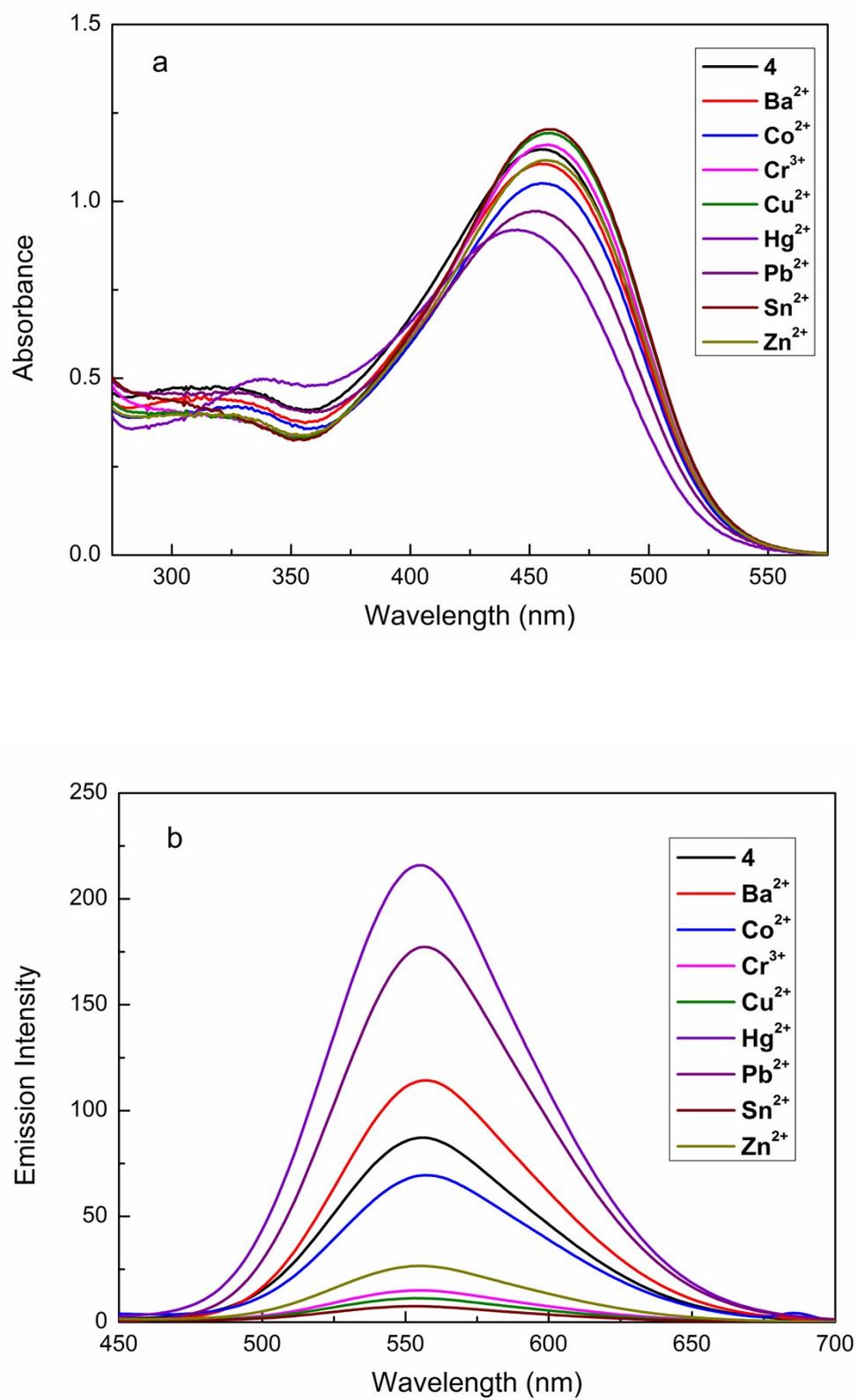


Fig.S11

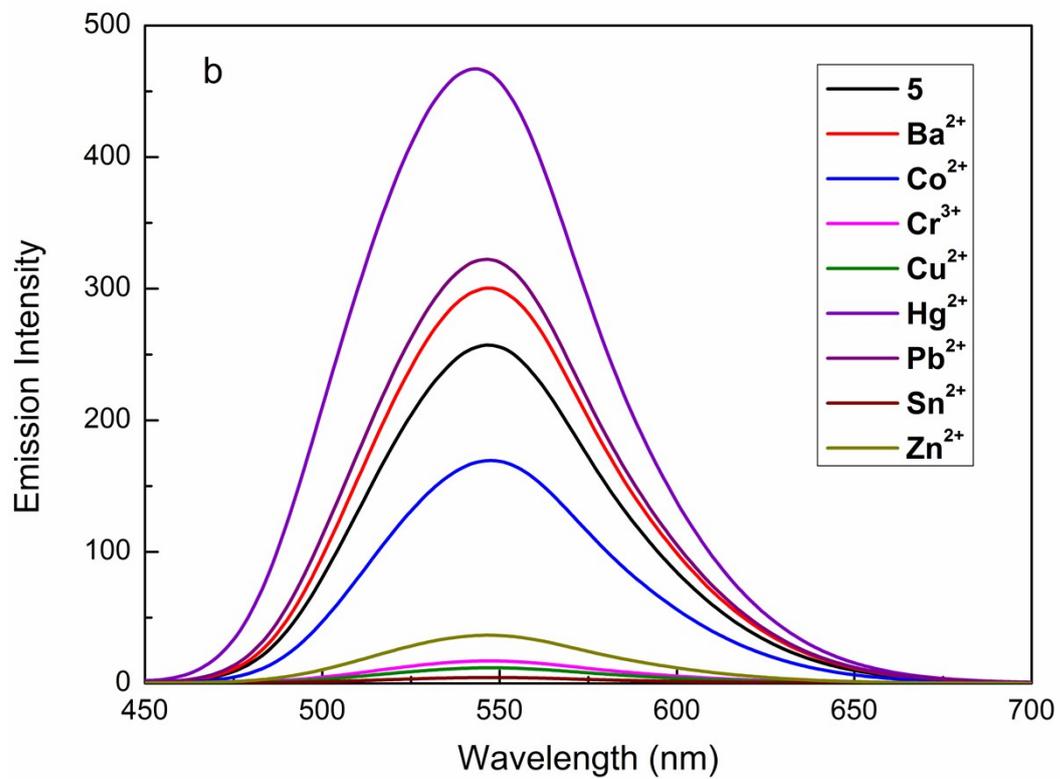
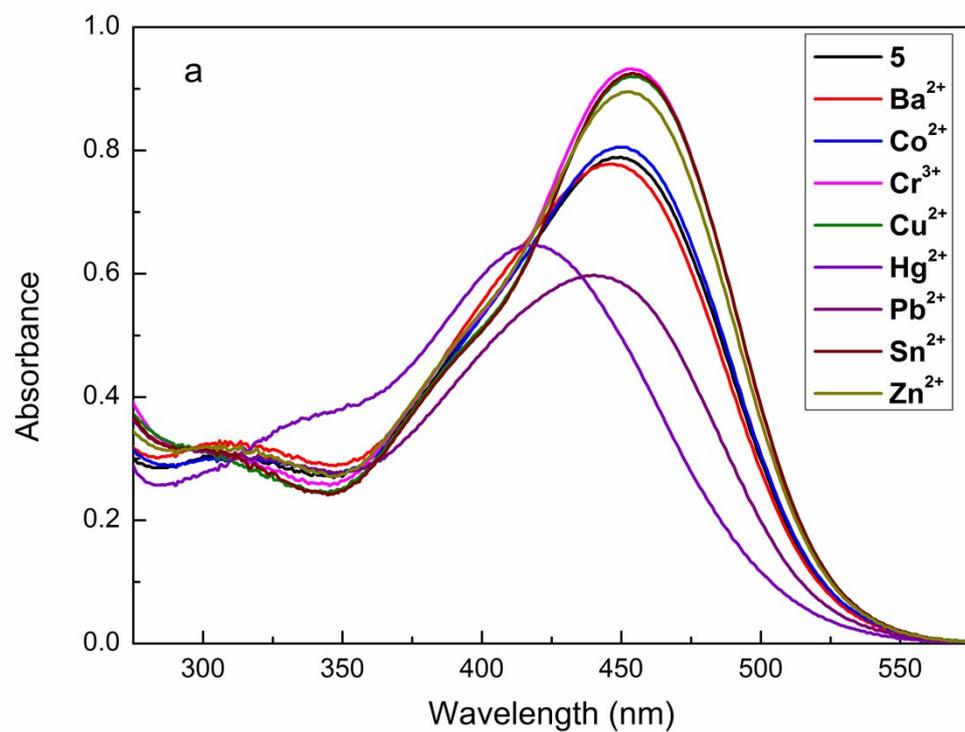


Fig.S12

