

Supporting Information

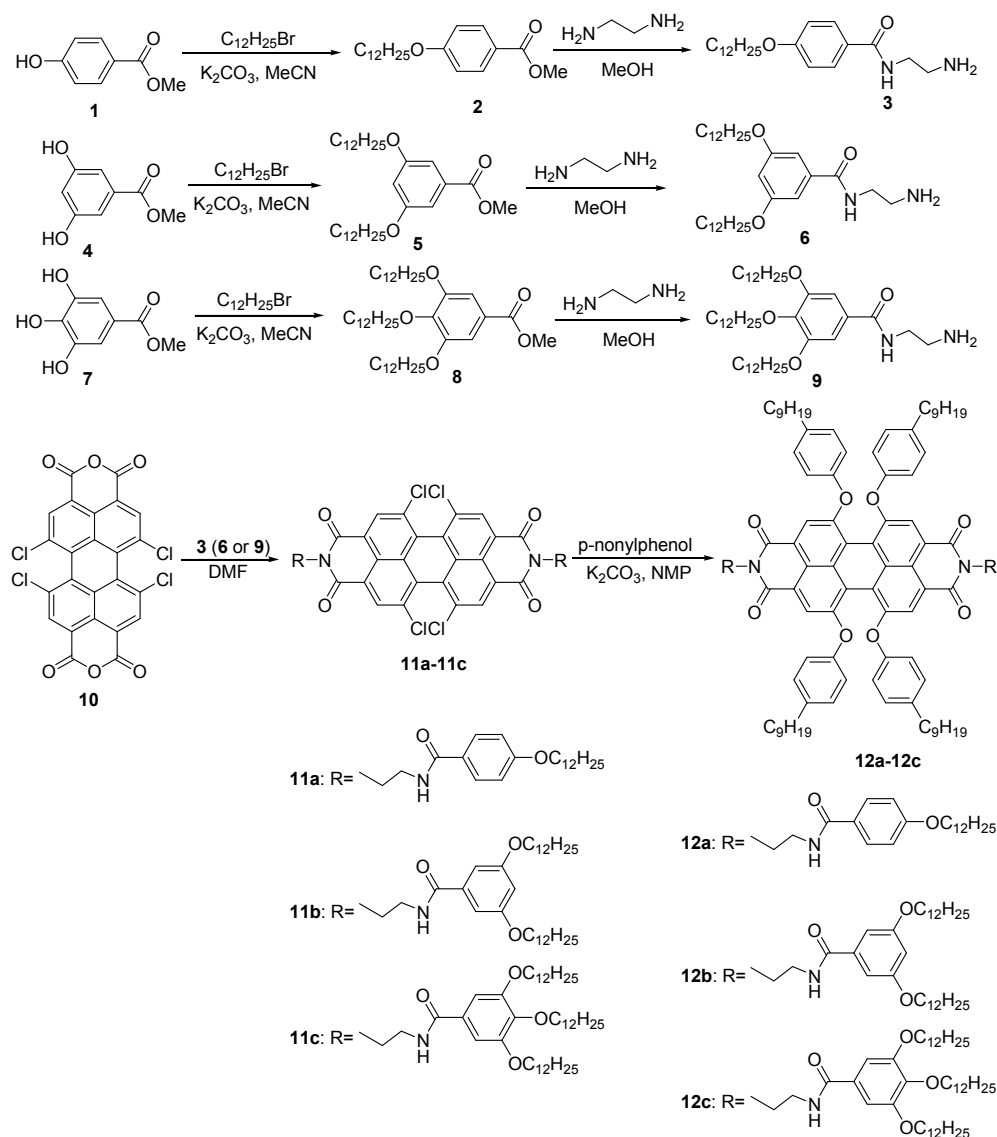
Perylene liquid crystals with multiple alkyl chains: Investigation of the influence of peripheral alkyl chain numbers on mesomorphic and photophysical properties

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1. Synthetic routes for PBI derivatives



Scheme S1. The synthetic routes of perylene liquid crystals **11a-11c** and **12a-12c**

2. Analytical Data

2.1. ^1H NMR and ^{13}C NMR Spectroscopy

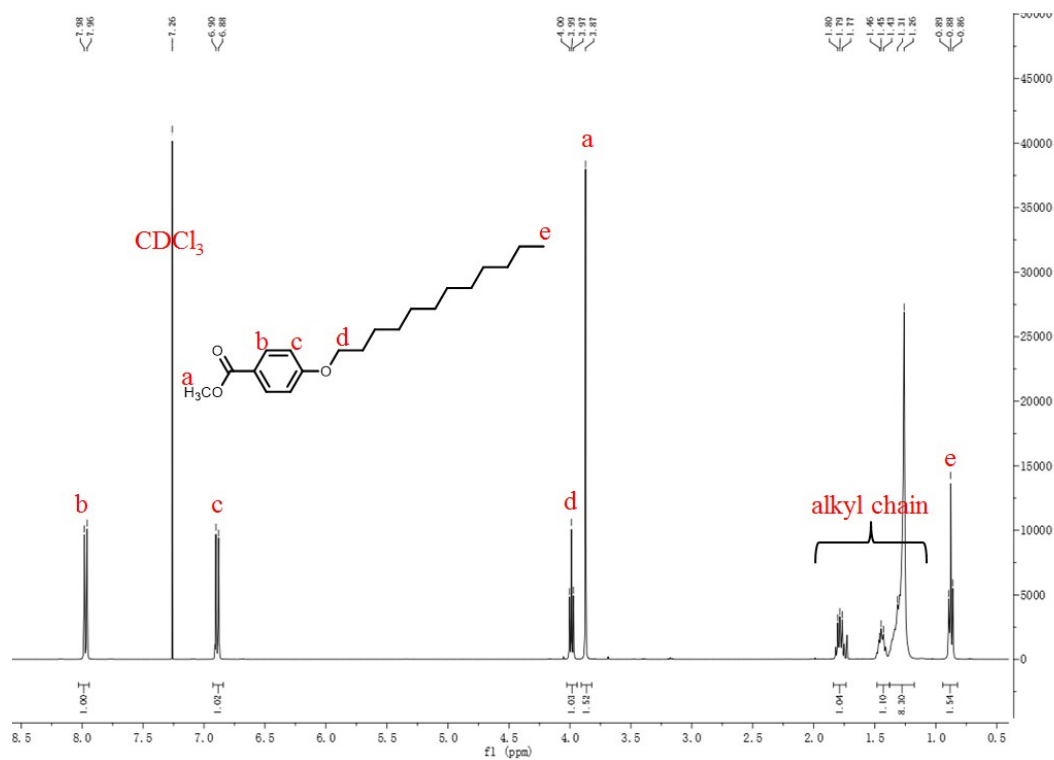


Fig. S1: ^1H NMR spectrum of compound 2.

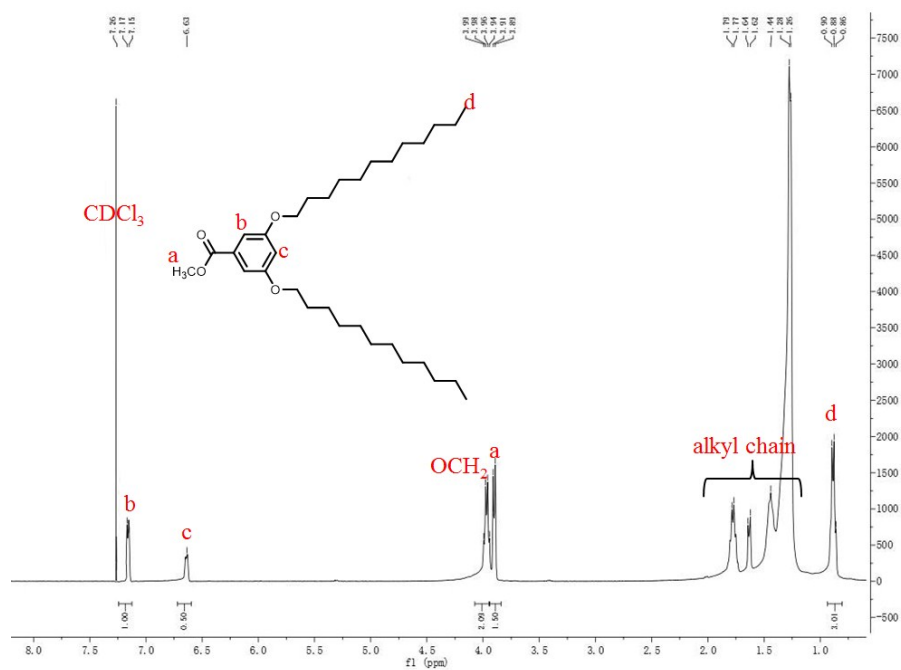


Fig. S2: ^1H NMR spectrum of compound 5.

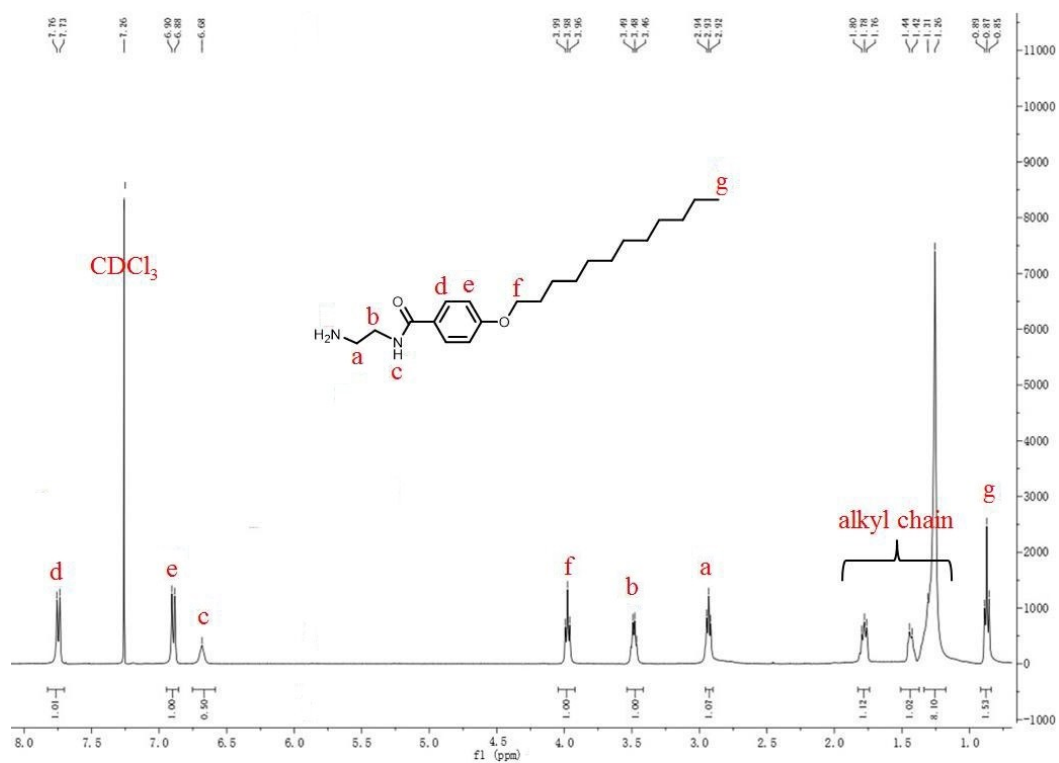


Fig. S3: ¹H NMR spectrum of compound **3**.

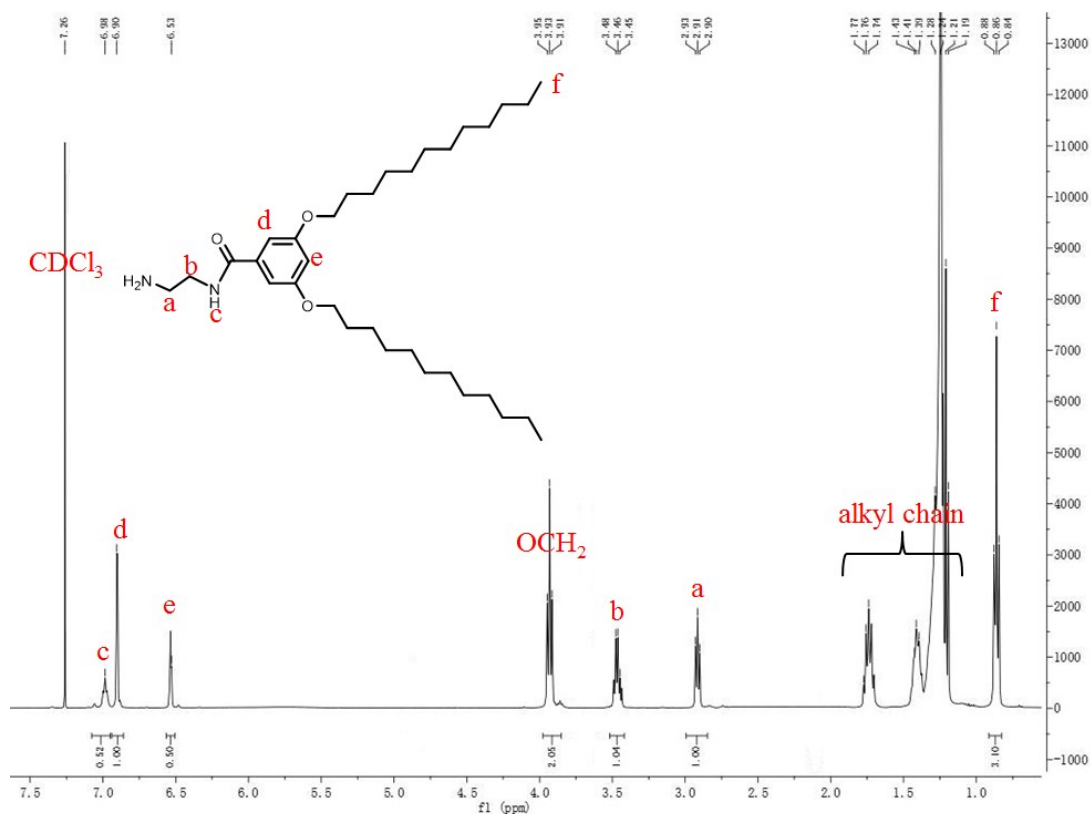


Fig. S4: ¹H NMR spectrum of compound **6**.

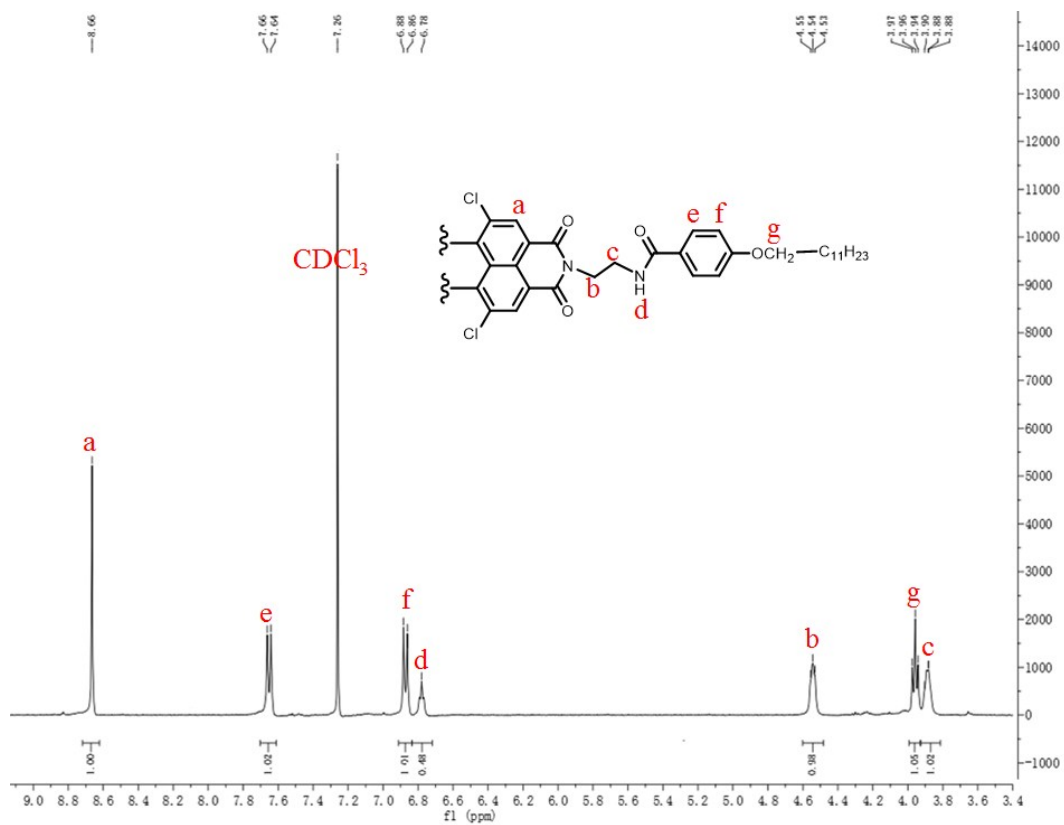


Fig. S5: ^1H NMR spectrum of compound **11a**.

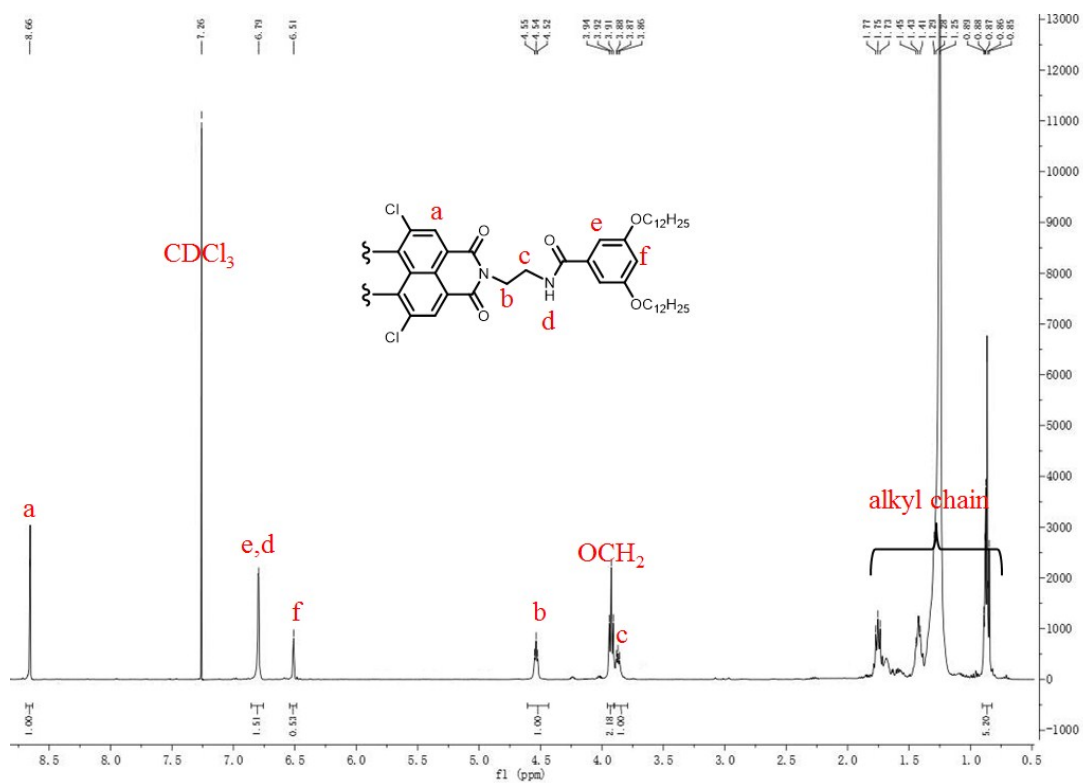
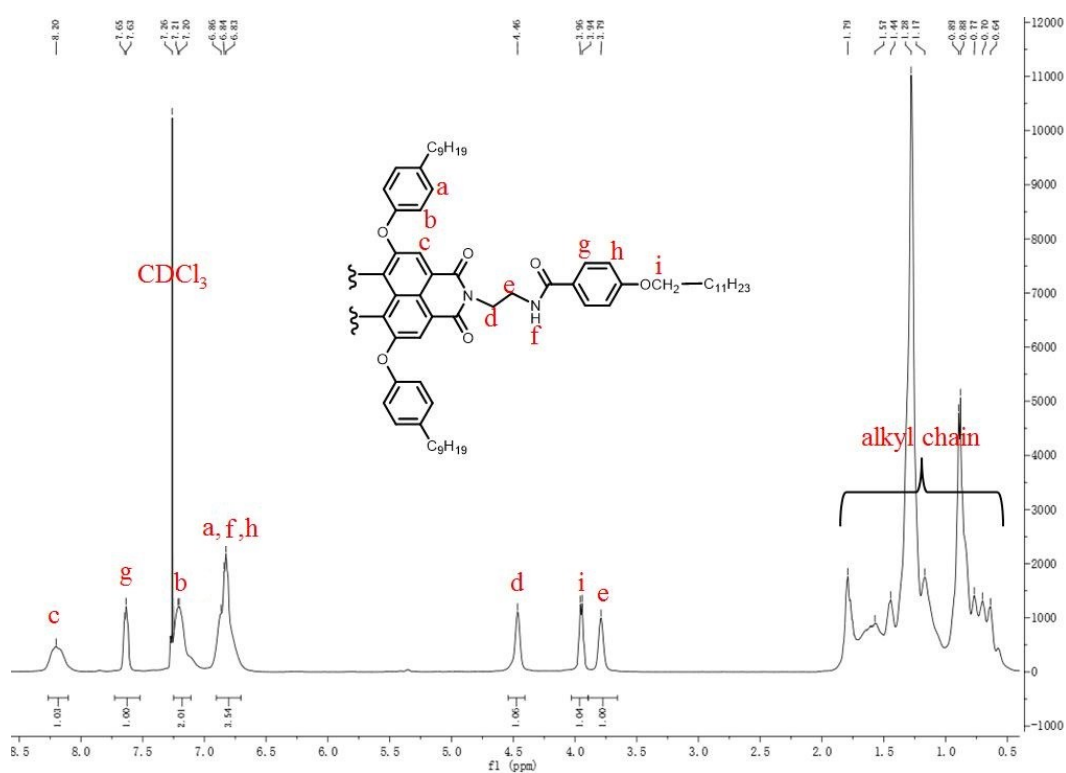
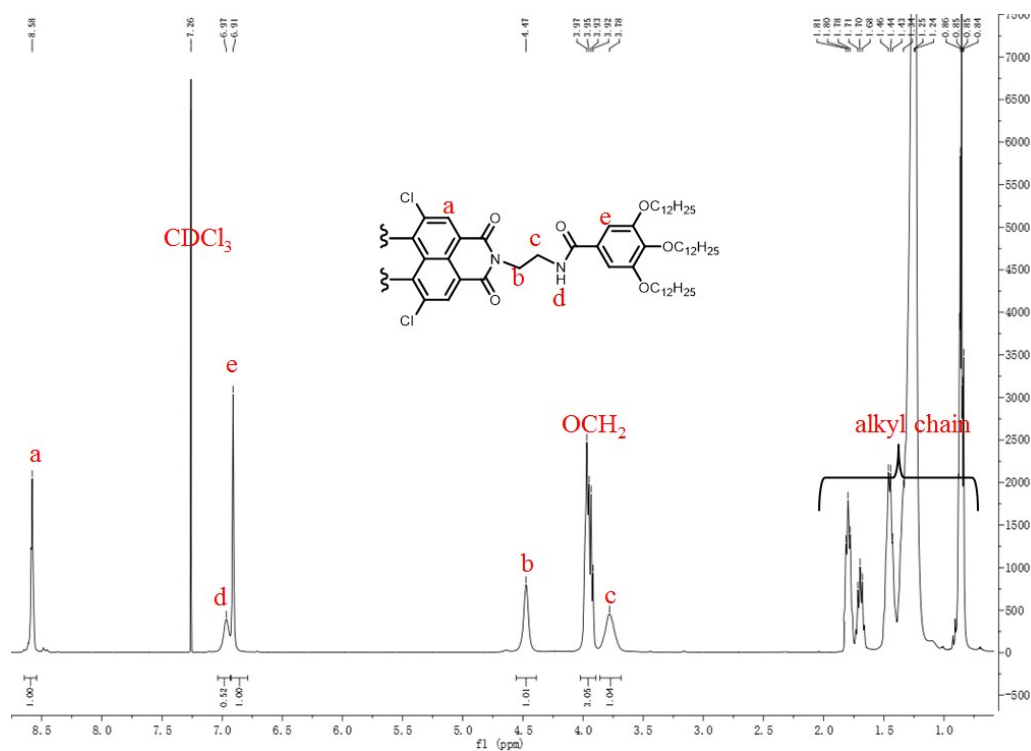


Fig. S6: ^1H NMR spectrum of compound **11b**.



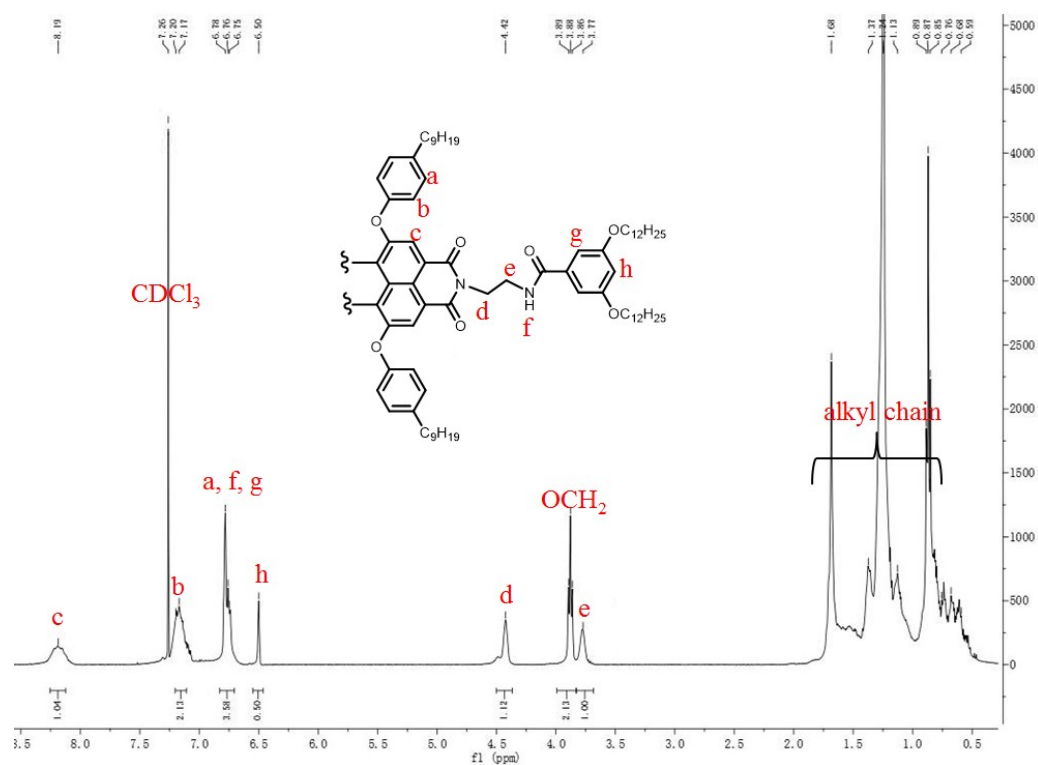


Fig. S9: ^1H NMR spectrum of compound **12b**.

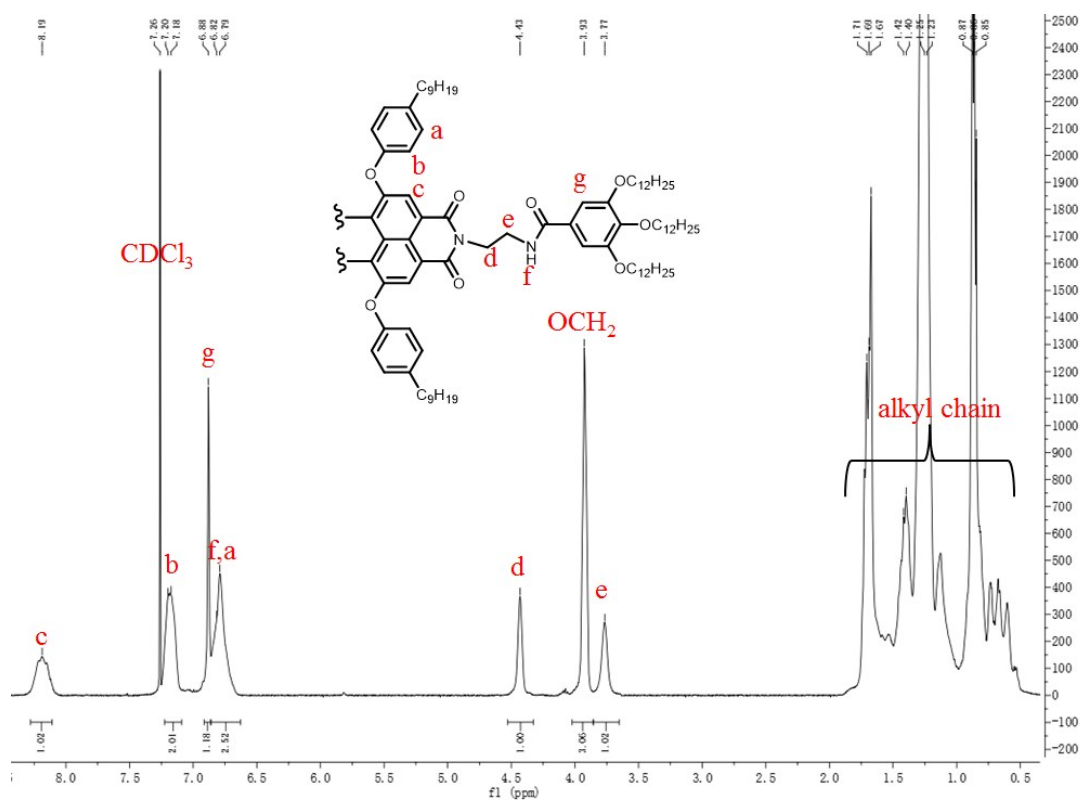


Fig. S10: ^1H NMR Spectrum of compound **12c**.

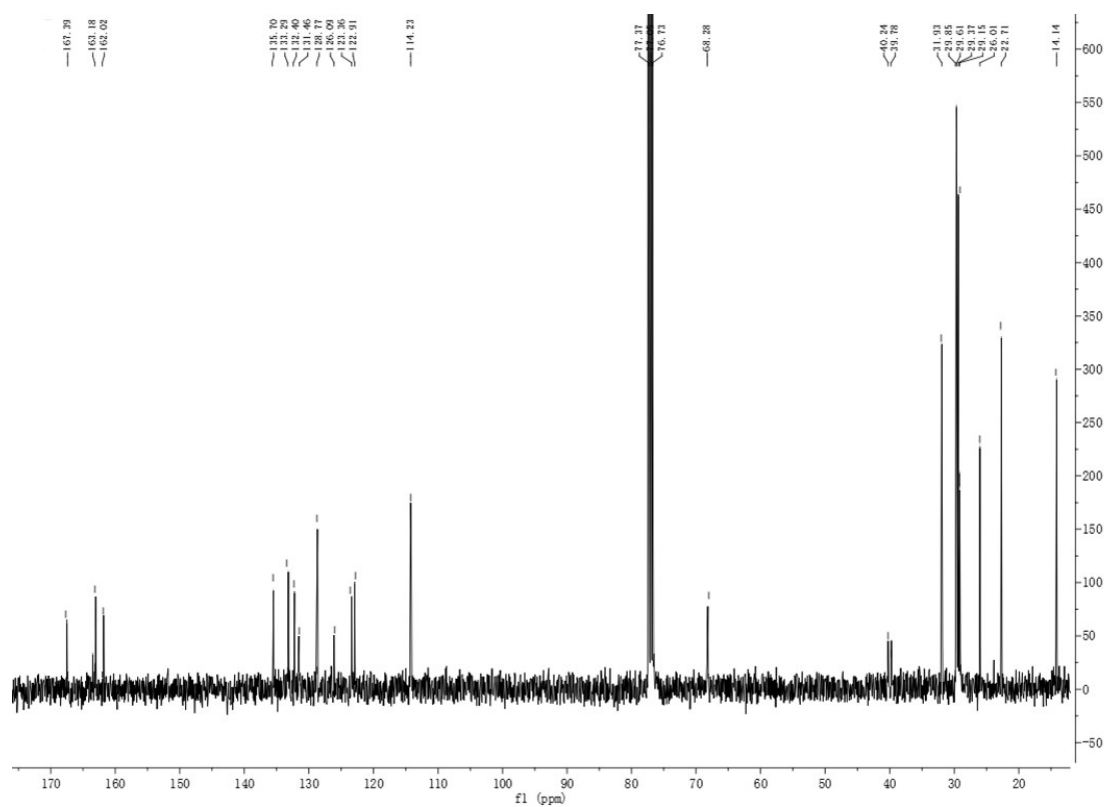


Fig. S11: ^{13}C NMR Spectrum of compound **11a**.

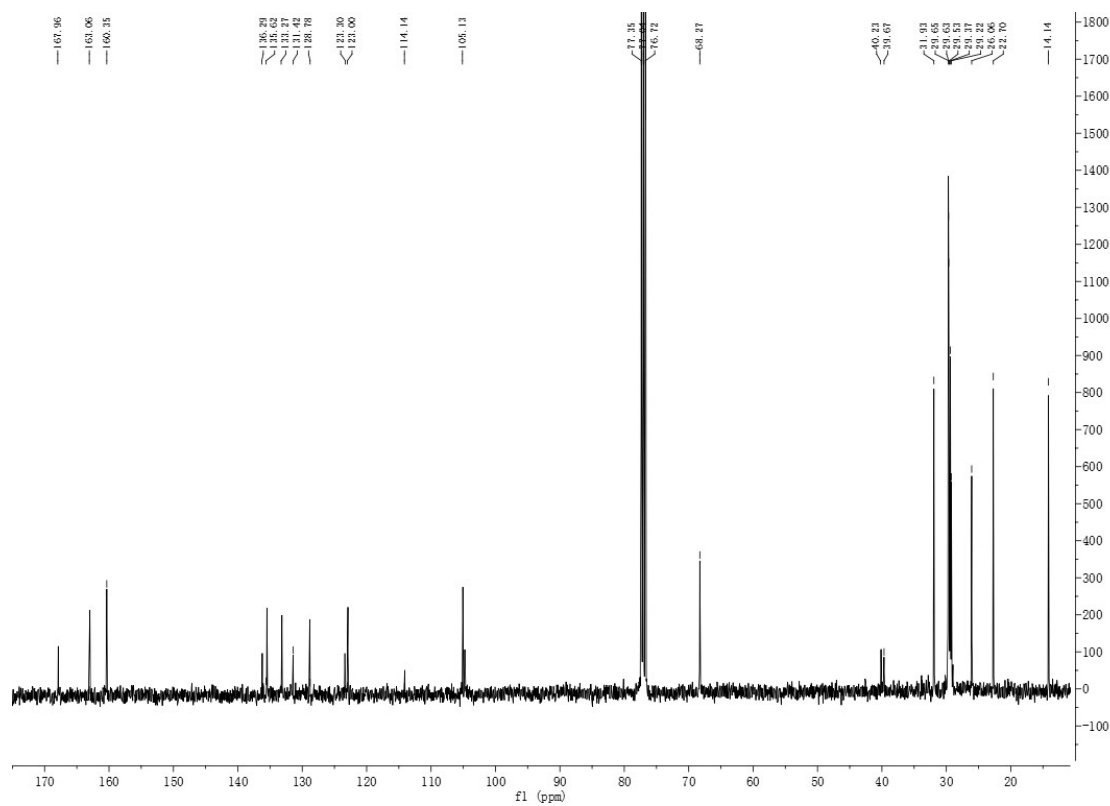


Fig. S12: ^{13}C NMR Spectrum of compound **11b**.

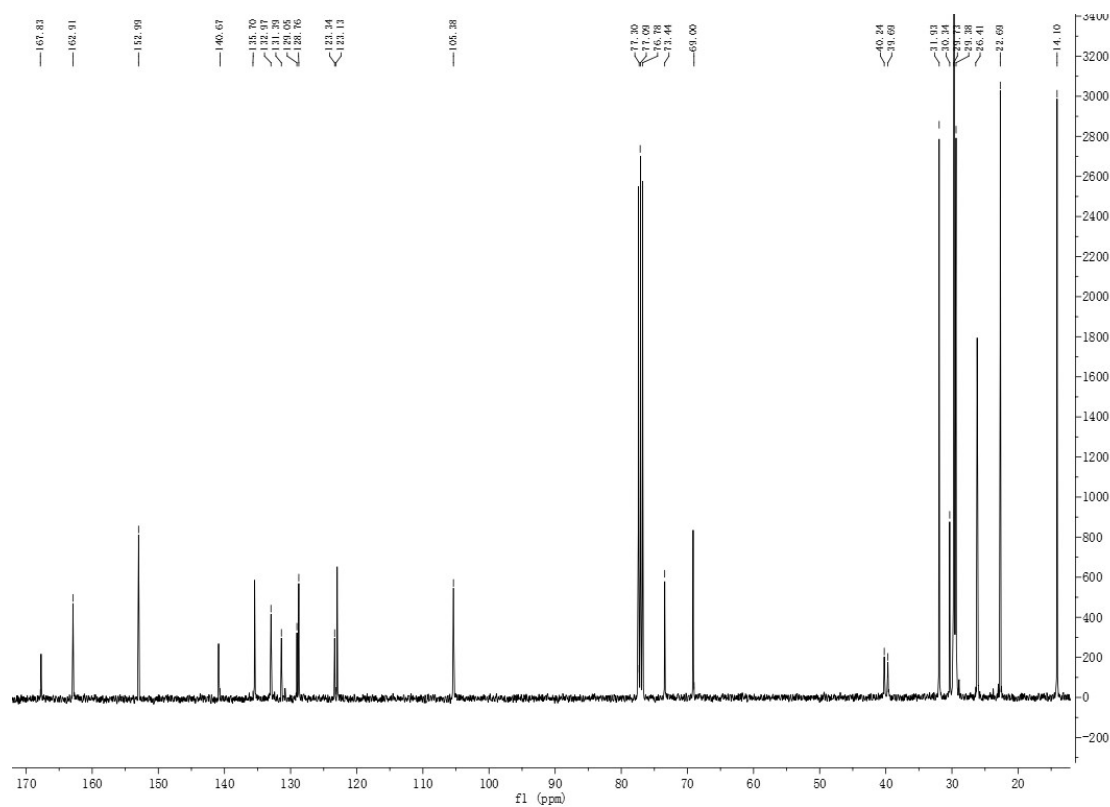


Fig. S13: ^{13}C NMR Spectrum of compound **11c**.

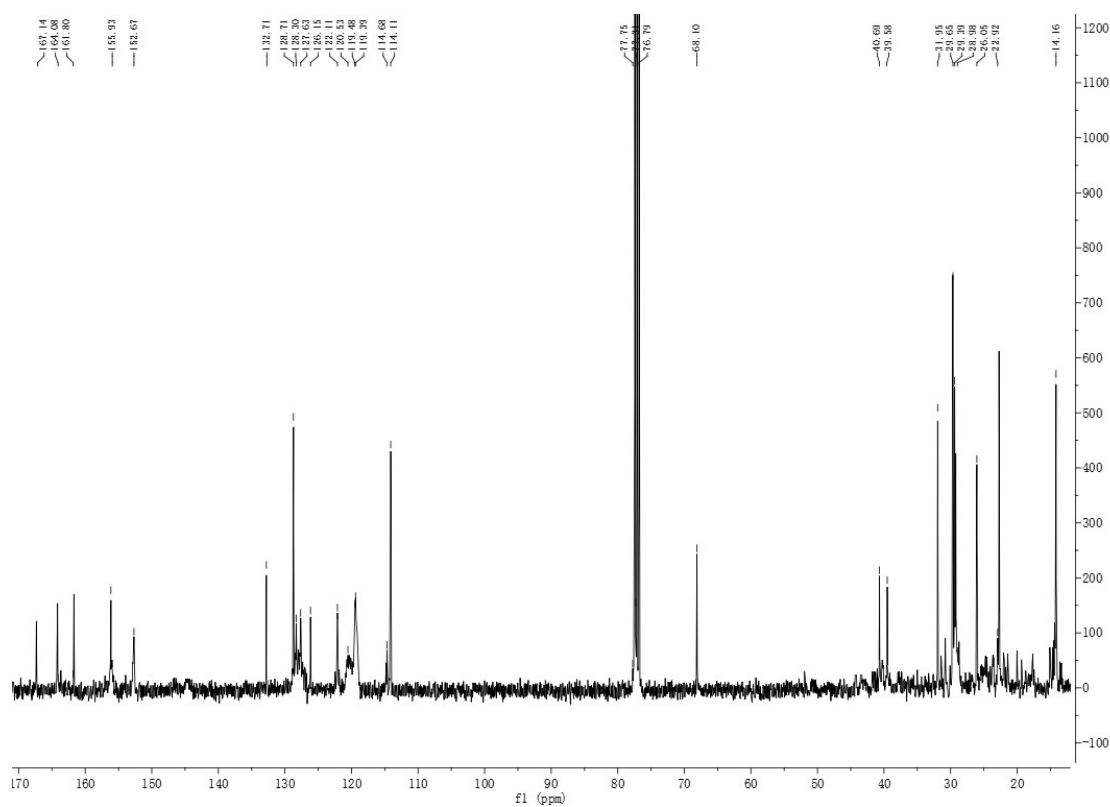


Fig. S14: ^{13}C NMR Spectrum of compound **12a**.

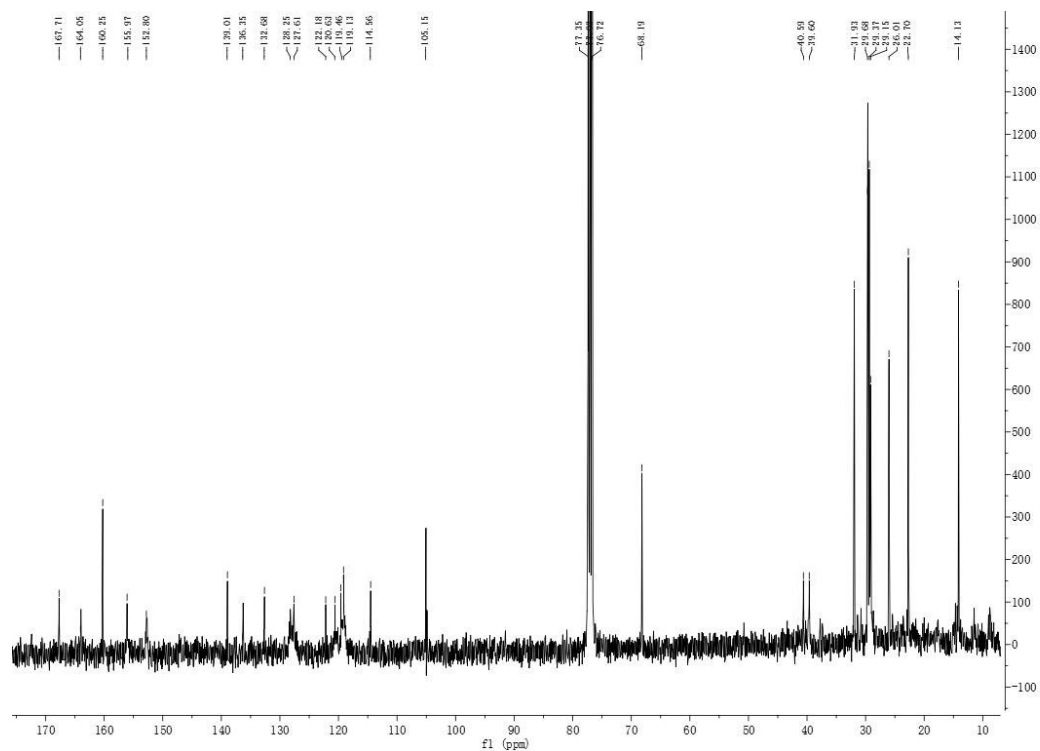


Fig. S15: ^{13}C NMR Spectrum of compound **12b**.

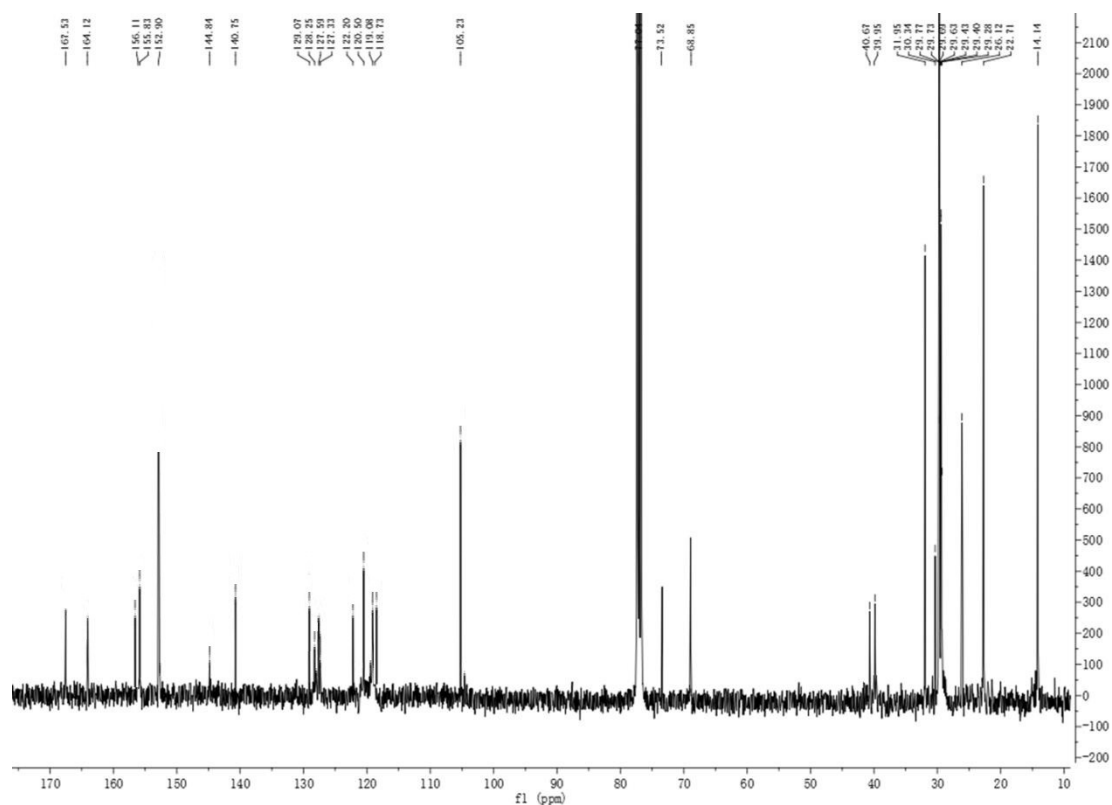


Fig. S16: ^{13}C NMR Spectrum of compound **12c**.

2.2. MALDI-TOF Mass spectrometry

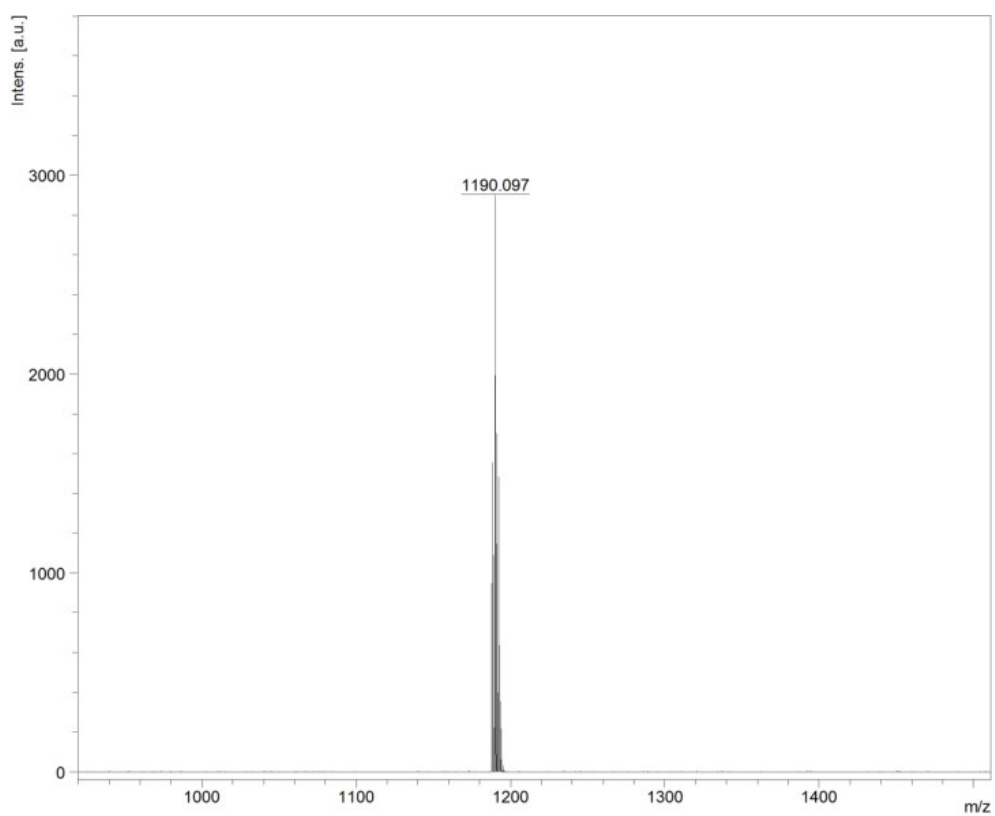


Fig. S17: MALDI-TOF mass spectrum of compound **11a**.

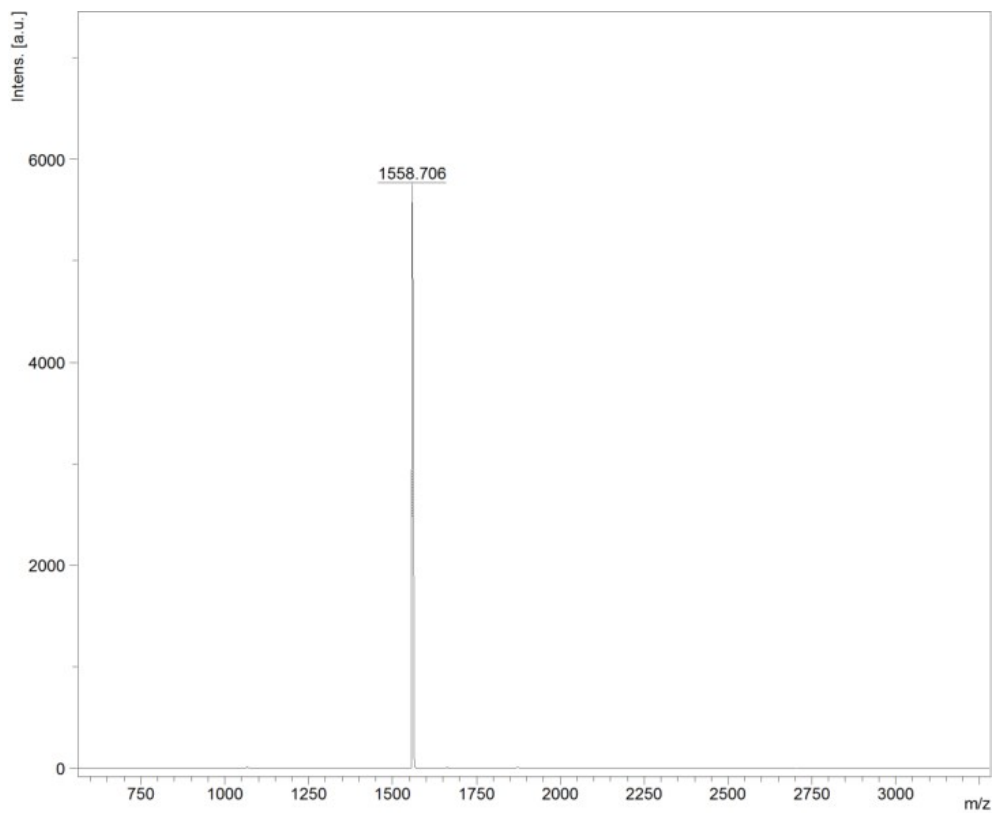


Fig. S18: MALDI-TOF mass spectrum of compound **11b**.

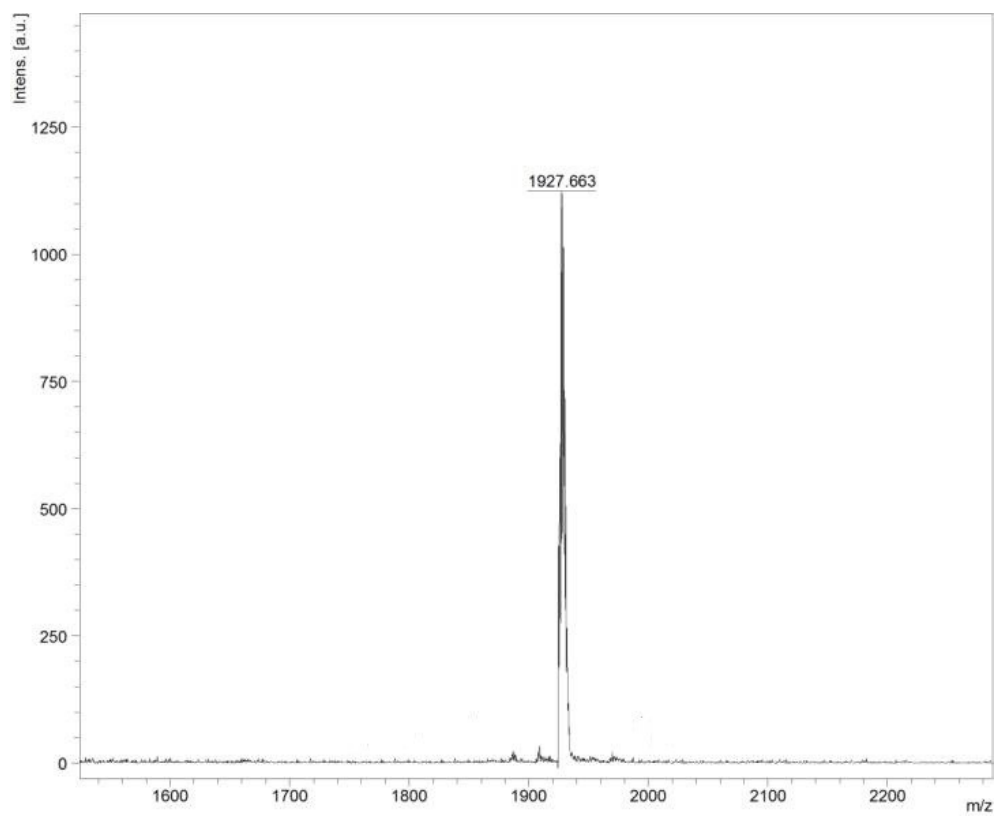


Fig. S19: MALDI-TOF mass spectrum of compound **11c**.

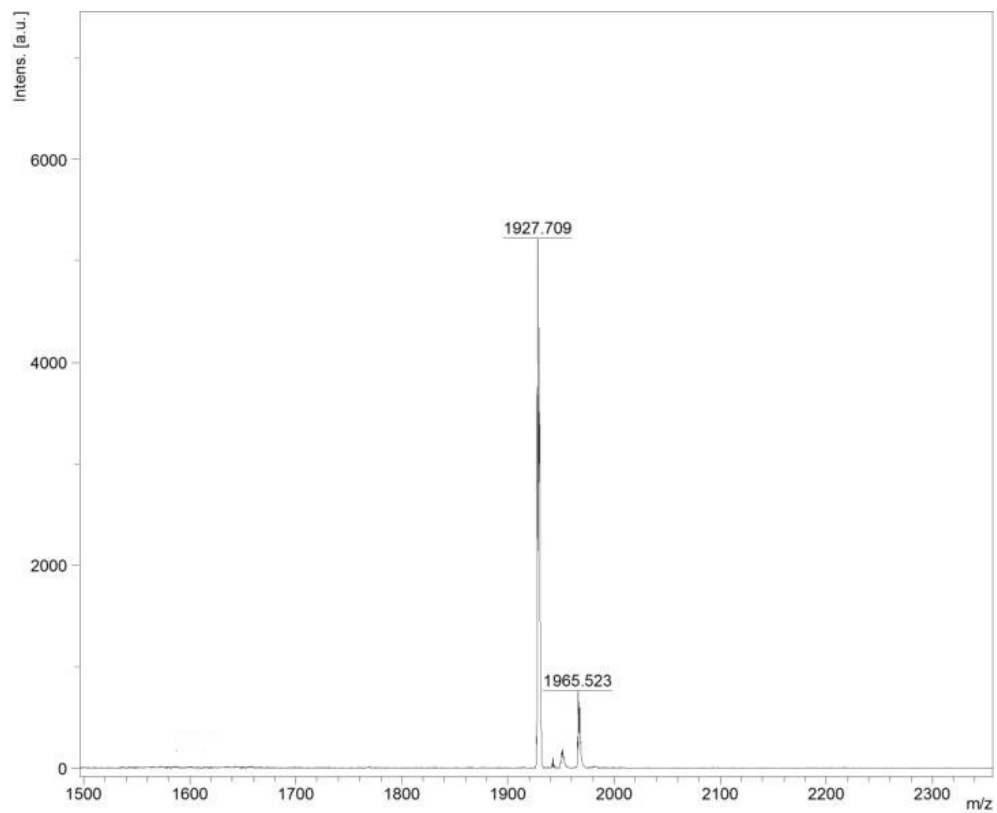


Fig. S20: MALDI-TOF mass spectrum of compound **12a**.

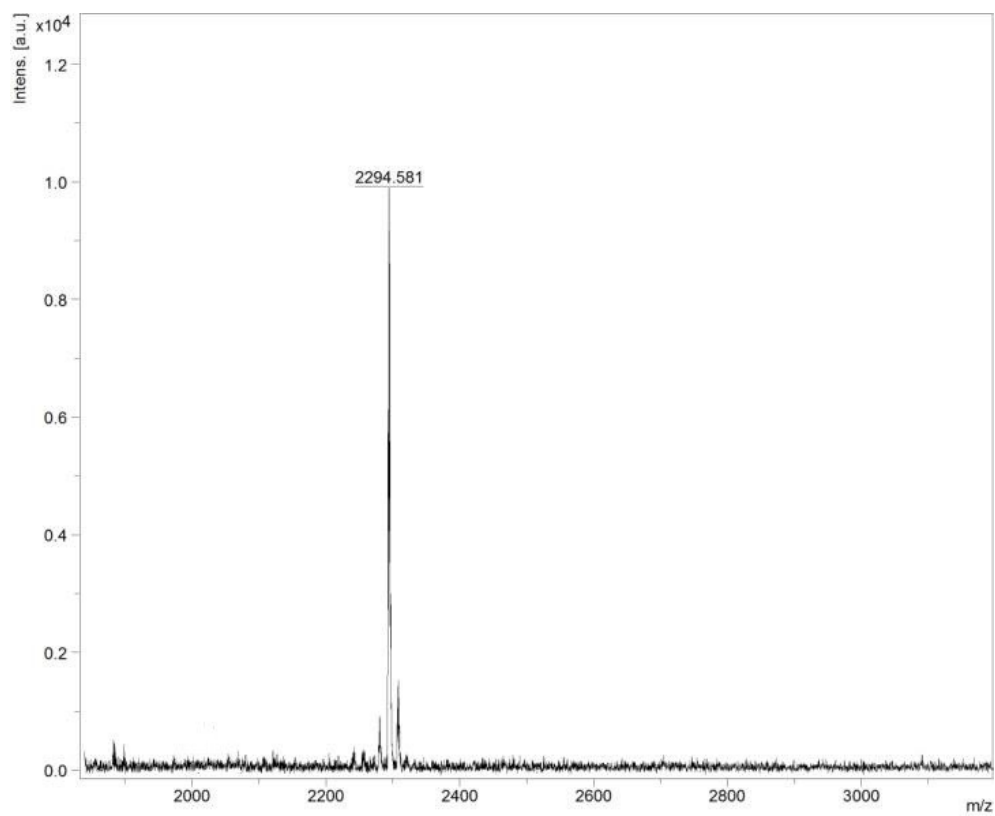


Fig. S21: MALDI-TOF mass spectrum of compound **12b**.

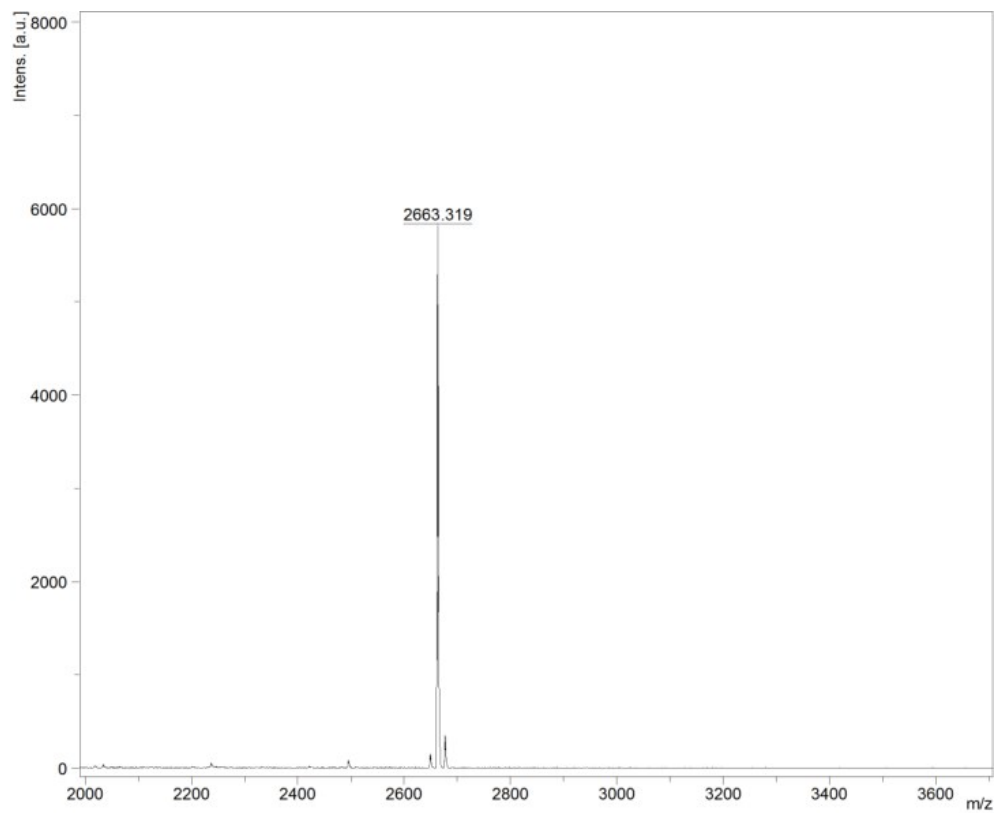


Fig. S22: MALDI-TOF mass spectrum of compound **12c**.

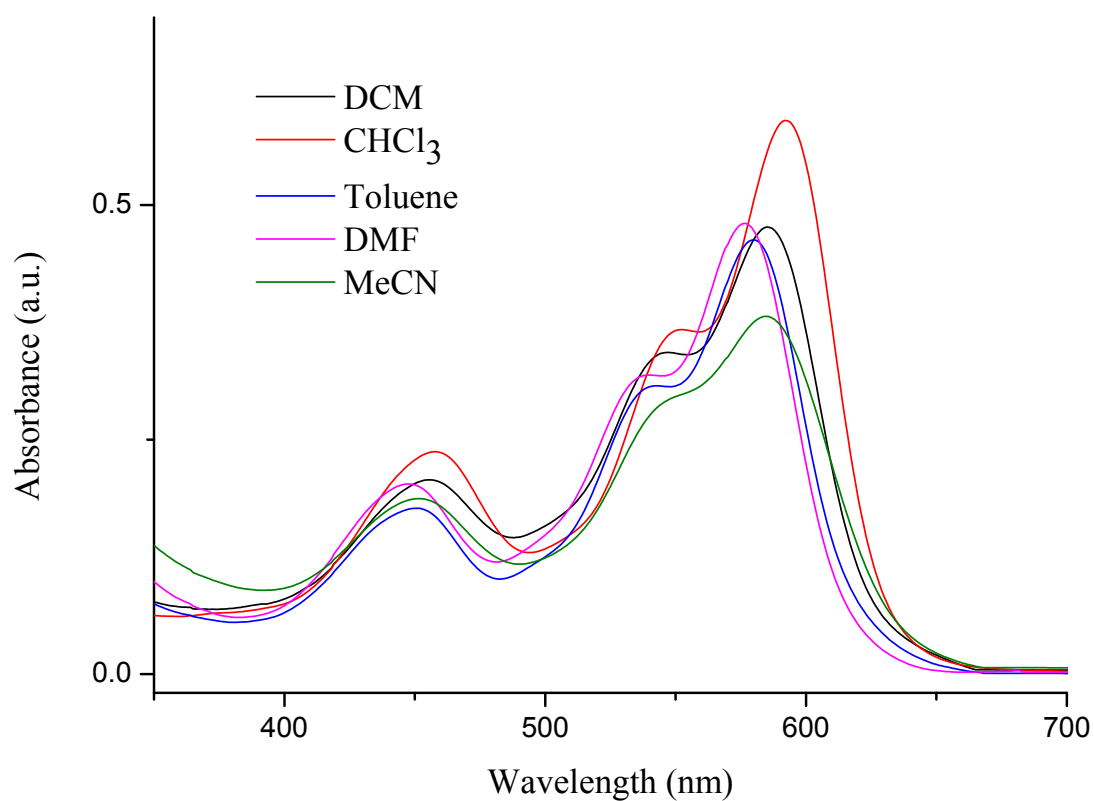


Fig. S23 UV-vis absorption spectra of **12b** in different solvents (1.0×10^{-5} M).

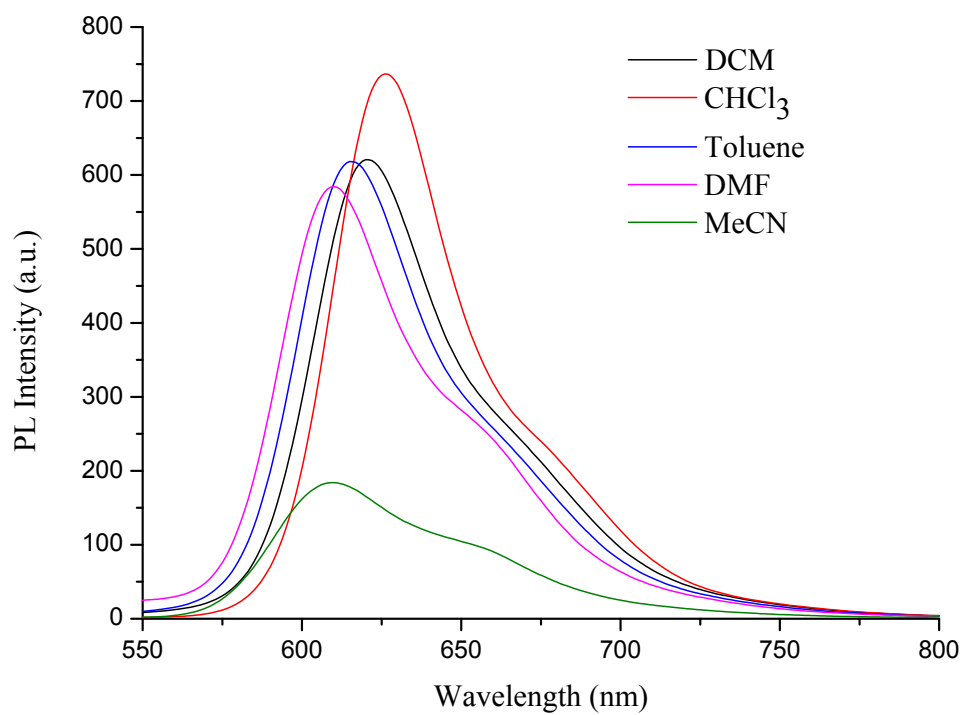


Fig. S24 Fluorescence emission spectra of **12b** in different solvents (1.0×10^{-5} M).

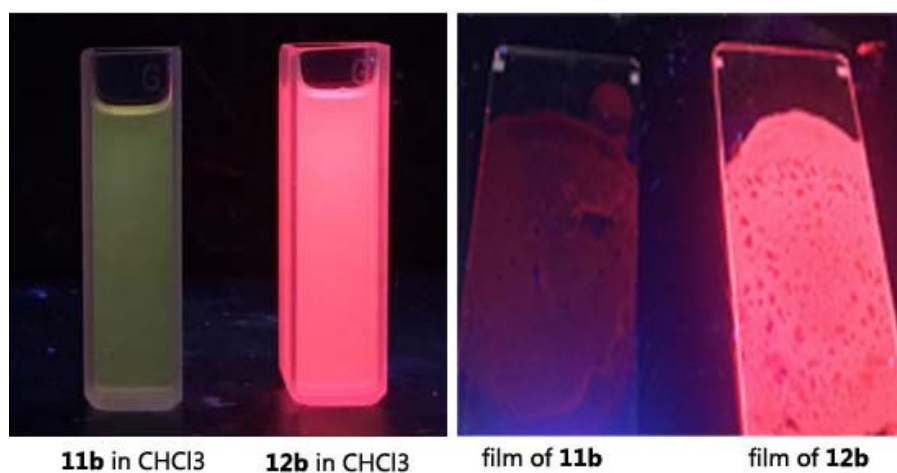


Fig. S25 Pictures of solutions and films of sample **11b** and **12b**.

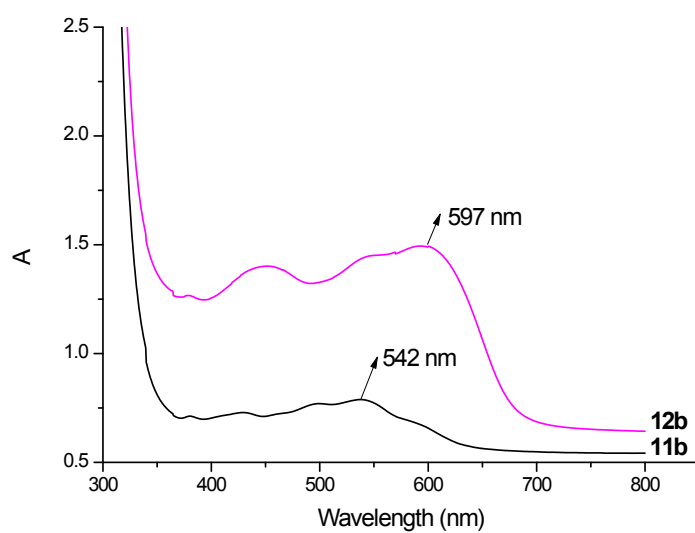


Fig. S26 UV-vis spectra of solid films for **11b** and **12b**.

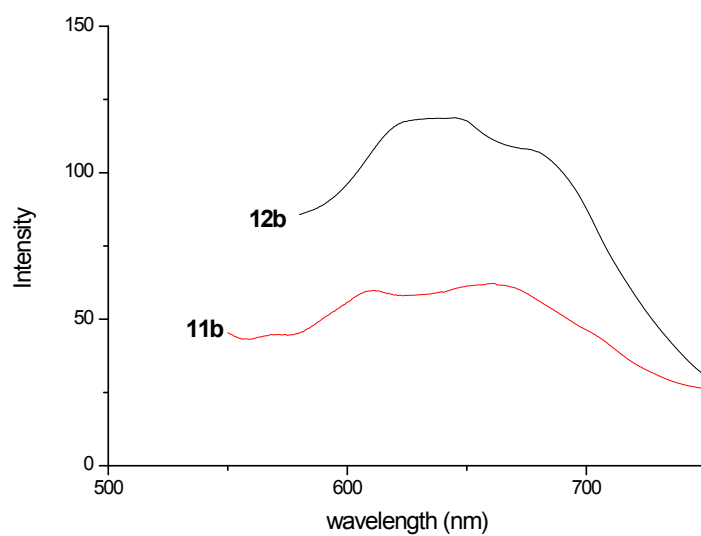


Fig. S27 fluorescence spectra of solid films for **11b** and **12b**.

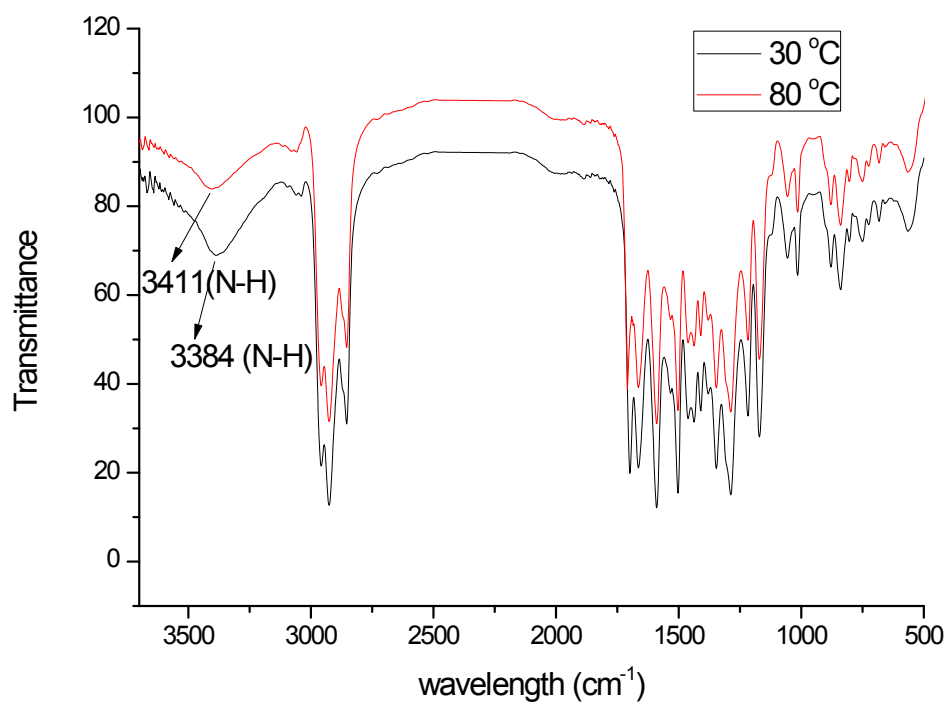


Fig. S28 IR spectra of **12b** at 30 °C and 80 °C.