Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

AIE Active Triphenylamine –Benzothiazole Based Motifs: ESIPT or ICT Emission

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Table S1. Optical properties of compounds **8** and **9** in THF and THF–water mixture

Comp	Medium Water: THF	0:100	10:90	20:80	30:70	40:60	50:50	60:40	70:30	80:20	90:10	95:05
8	λ_{max}^{Abs} (nm)	302 389	302 389	302 389	303 389	303 389	302 390	302 390	410	398	307 404	403
	λ_{max}^{Em} (nm)	478	497	501	505	508	510	516	493	482	484	484
9	λ_{max}^{Abs} (nm)	297 394	299 392	299 391	285 391	297 391	295 391	295 391	301 414	282 401	295 402	299 406
	λ_{max}^{Em} (nm)	483	498	501	504	505	508	511	492	484	480	484

Measured from 10^{-5} M solution; λ_{ex}: 380 nm for fluorescence measurement at room temperature.

Details of Steady State Measurement

The steady state measurements were performed in solution and in solid state. Non–polar, polar–protic and polar–aprotic solvents were used for absorption and emission study. All spectroscopic measurements were carried out at room temperature (20 ºC). Concentrations used for the measurement was 10^{-5} M in solution. Solid samples were prepared on quartz plate by spin-casting of dichloromethane compounds solution. λ_{max}^{Abs}: Absorption maxima presented in nm. λ_{max}^{Em}: Emission maxima presented in nm; Excitation wavelength used was absorption maxima of compounds in respective solvents for fluorescence mesurement unless stated. Quinine sulphate was used as standard for relative quantum yields evaluations.

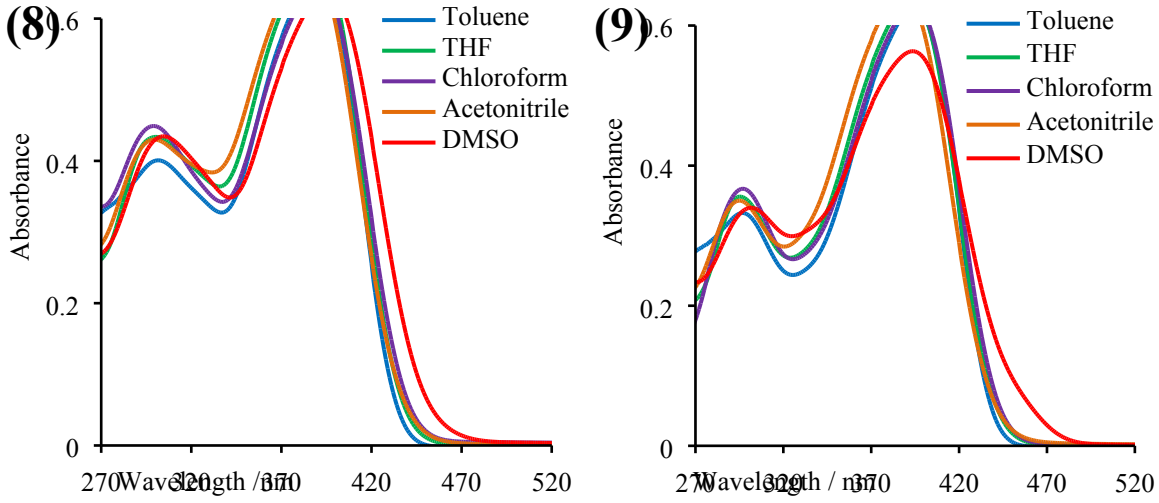


Fig S1. Steady state absorption spectra of compounds **8** (left) and **9** (right) in different solvents (10^{-5} M concentration) at room temperature

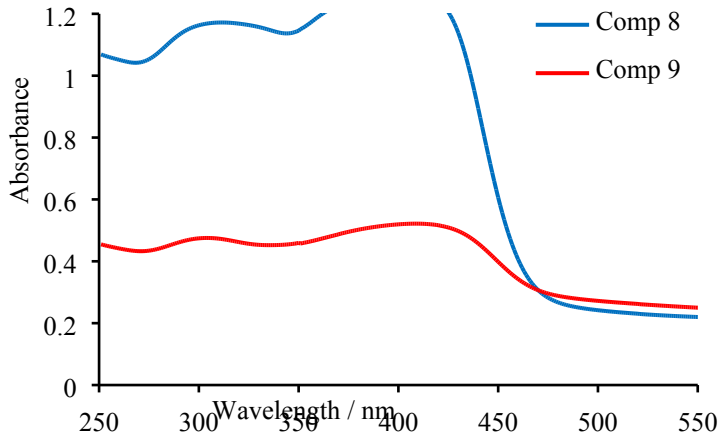


Fig S2. Steady state absorption spectra of compounds **8** and **9** in solid state (spin coated, 1 wt %) at room temperature

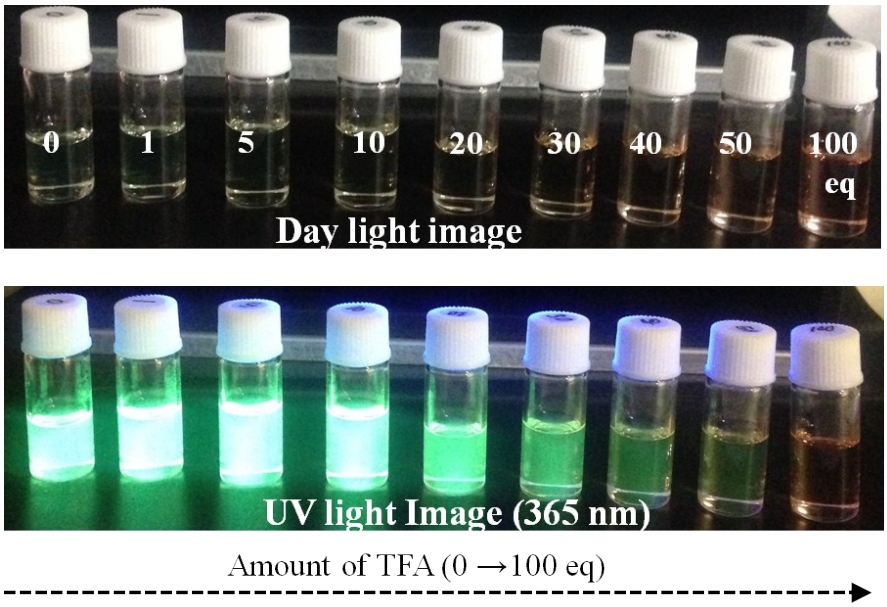


Fig S3. Day light and UV light images of compound **9** at various amount of TFA (10^{-5} M concentration of **9** and different eq. of TFA at room temperature)

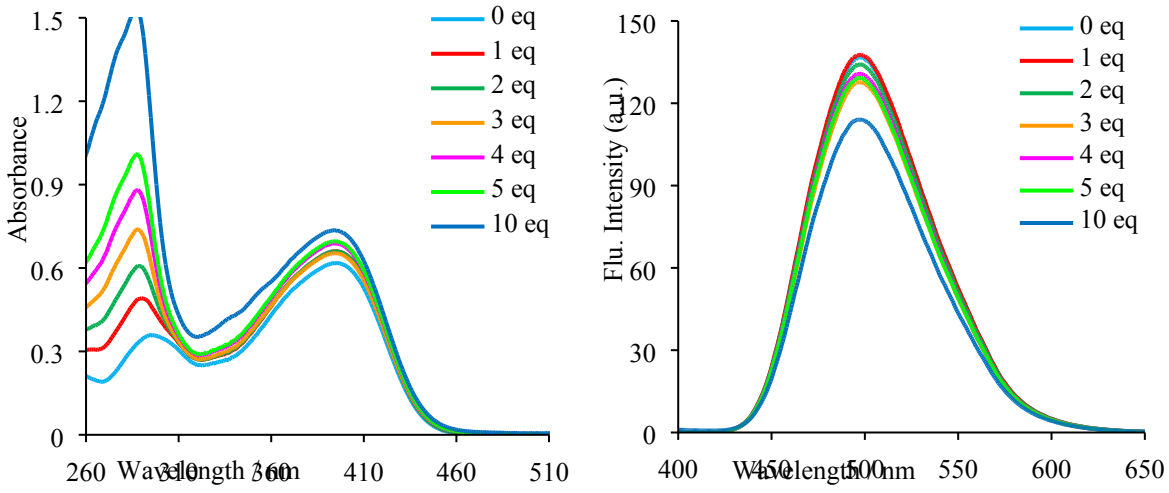


Fig S4. Absorption (left) and emission (right) spectra of mixture of compound **9** and various amount of DDQ (10^{-5} M concentration, room temperature, DDQ amount (eq))

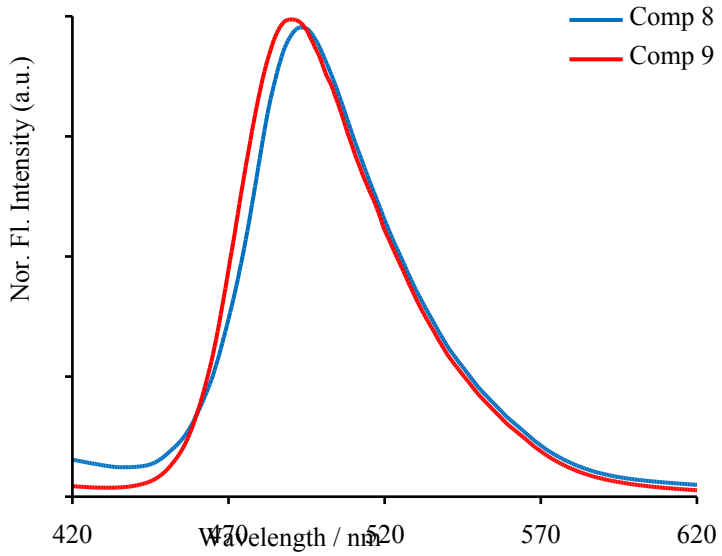


Fig S5. Normalised emission spectra of compounds **8** and **9** in solid state (spin coated, 1 wt %) at room temperature

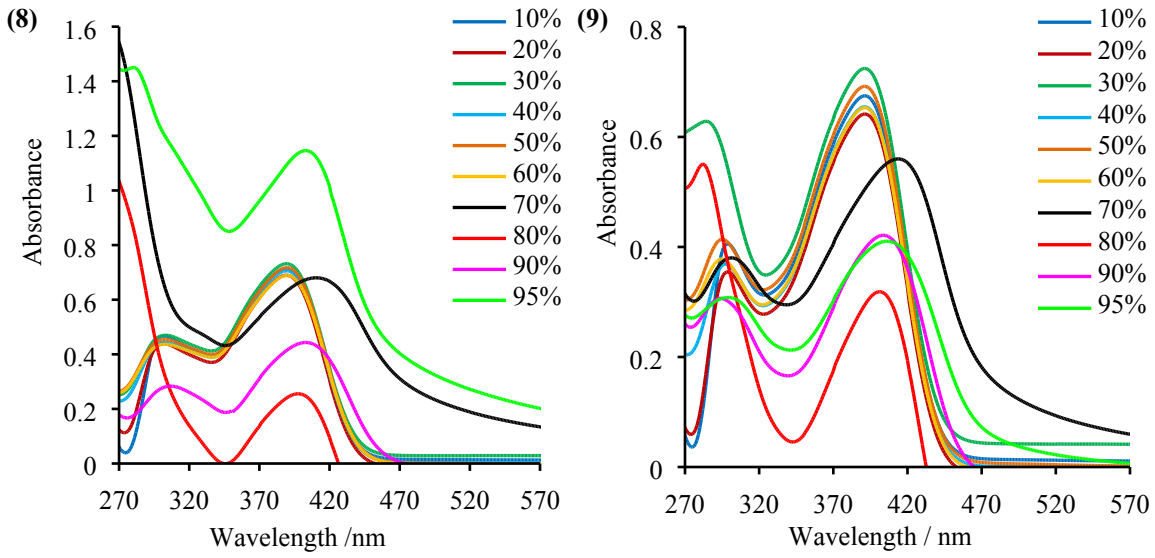


Fig S6. Steady state absorption spectra of compounds **8** (left) and **9** (right) in THF and THF–water mixture (10^{-5} M concentration, room temperature, water fraction (vol%))

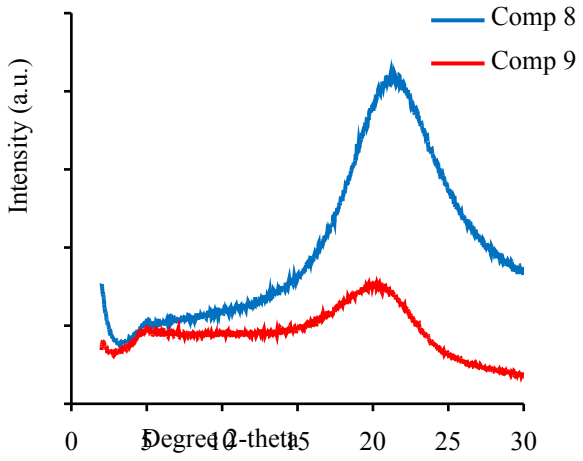


Fig S7. Powder X-ray data of compounds **8** and **9** on quartz film

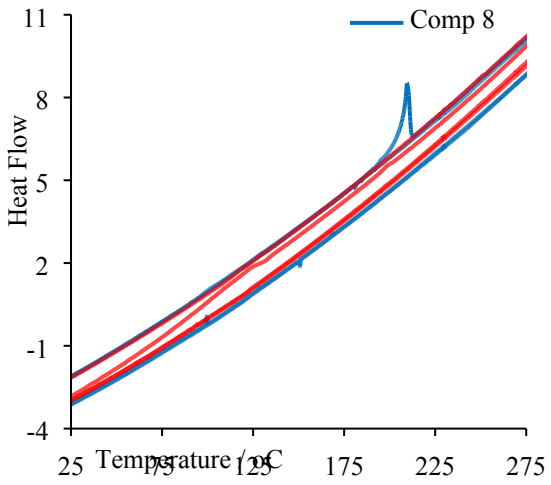


Fig S8. Two DSC cooling and heating cycles for **8** and **9**

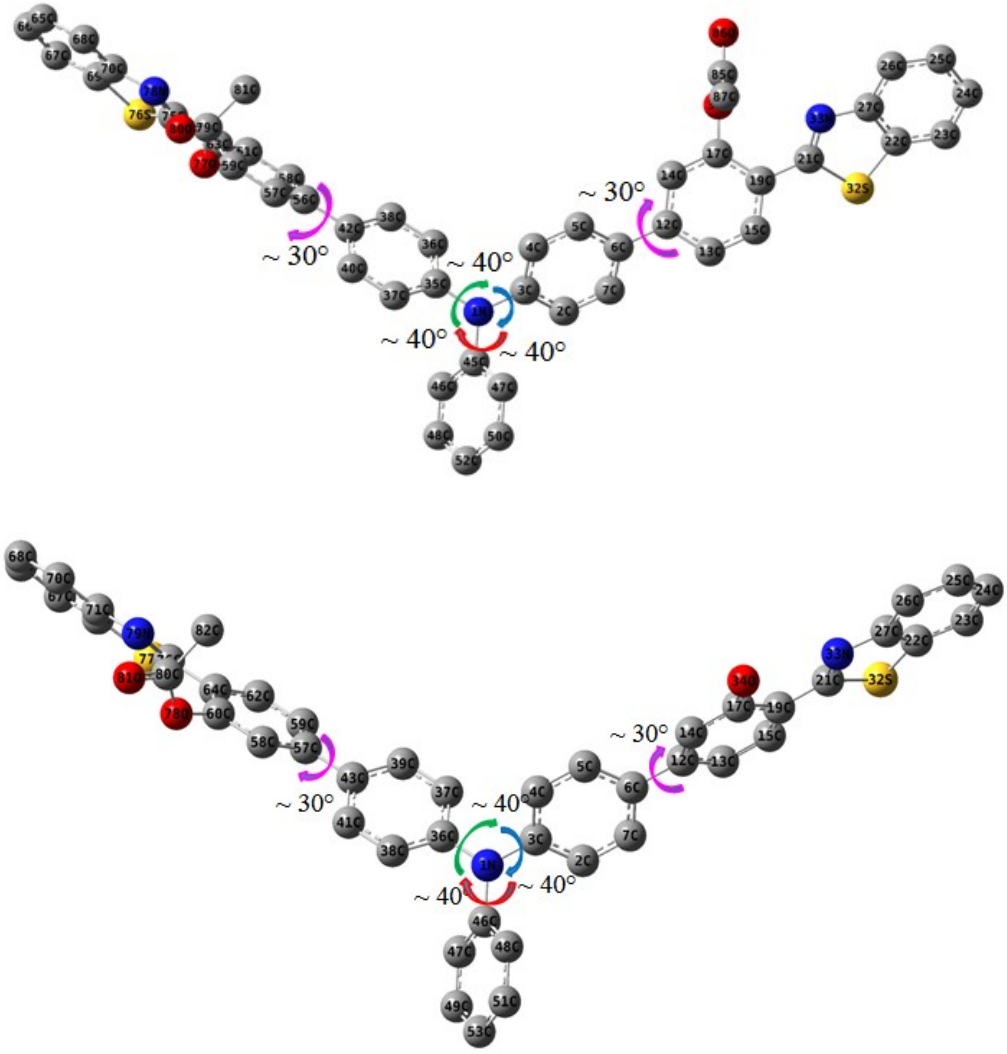


Fig S9. Optimized geometries of compounds **8** and **9** respectively (hydrogen atoms are omitted for clarity).

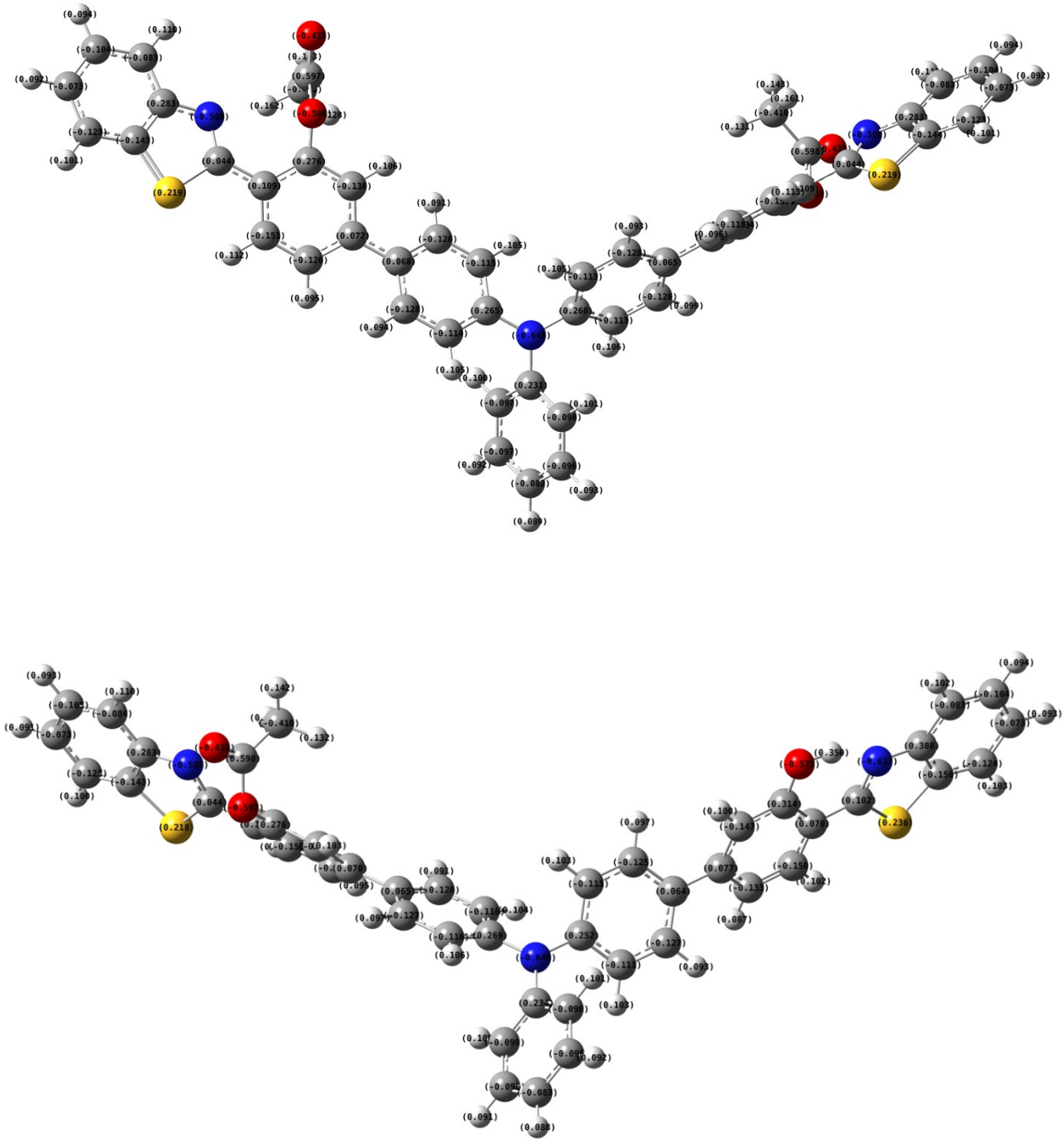
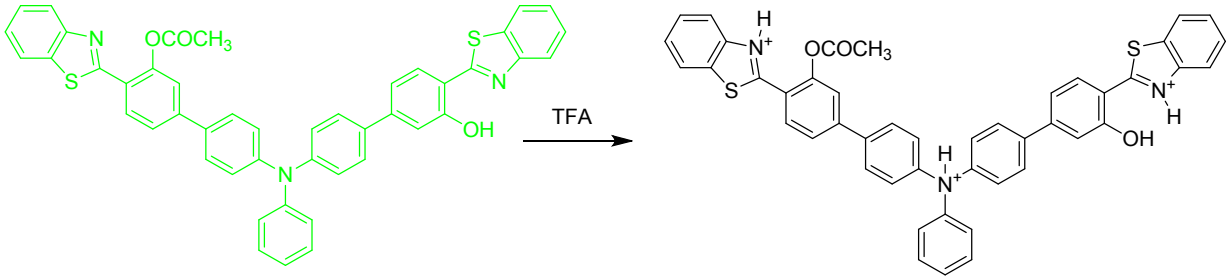


Fig S10: Mulliken charges of all atoms for compounds **8** and **9** respectively



Fluorescent

Non-fluorescent

Scheme S1: Protonated form of compound **9** in acidic condition

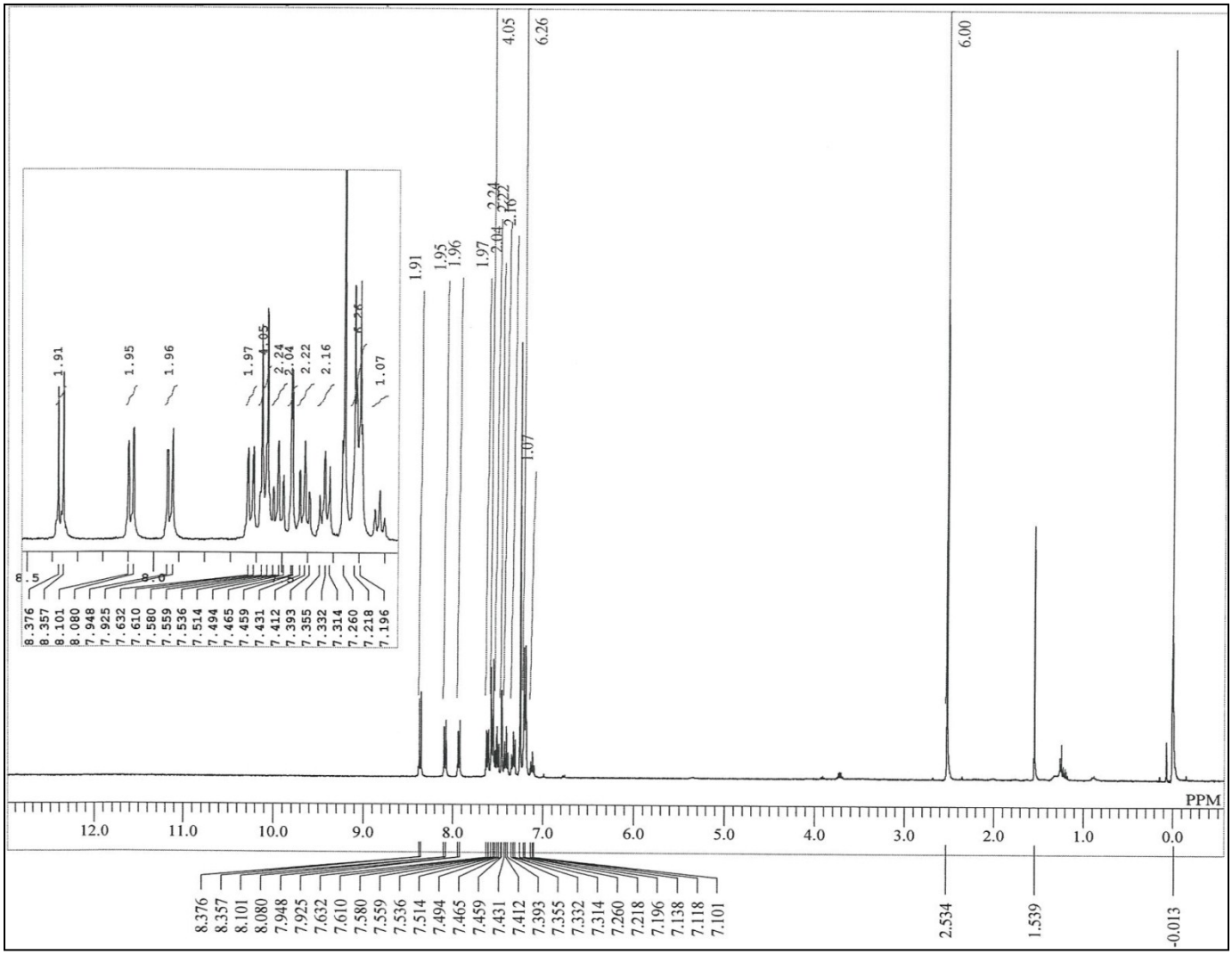


Fig S11. ^{1}H-NMR spectrum of compound **8**

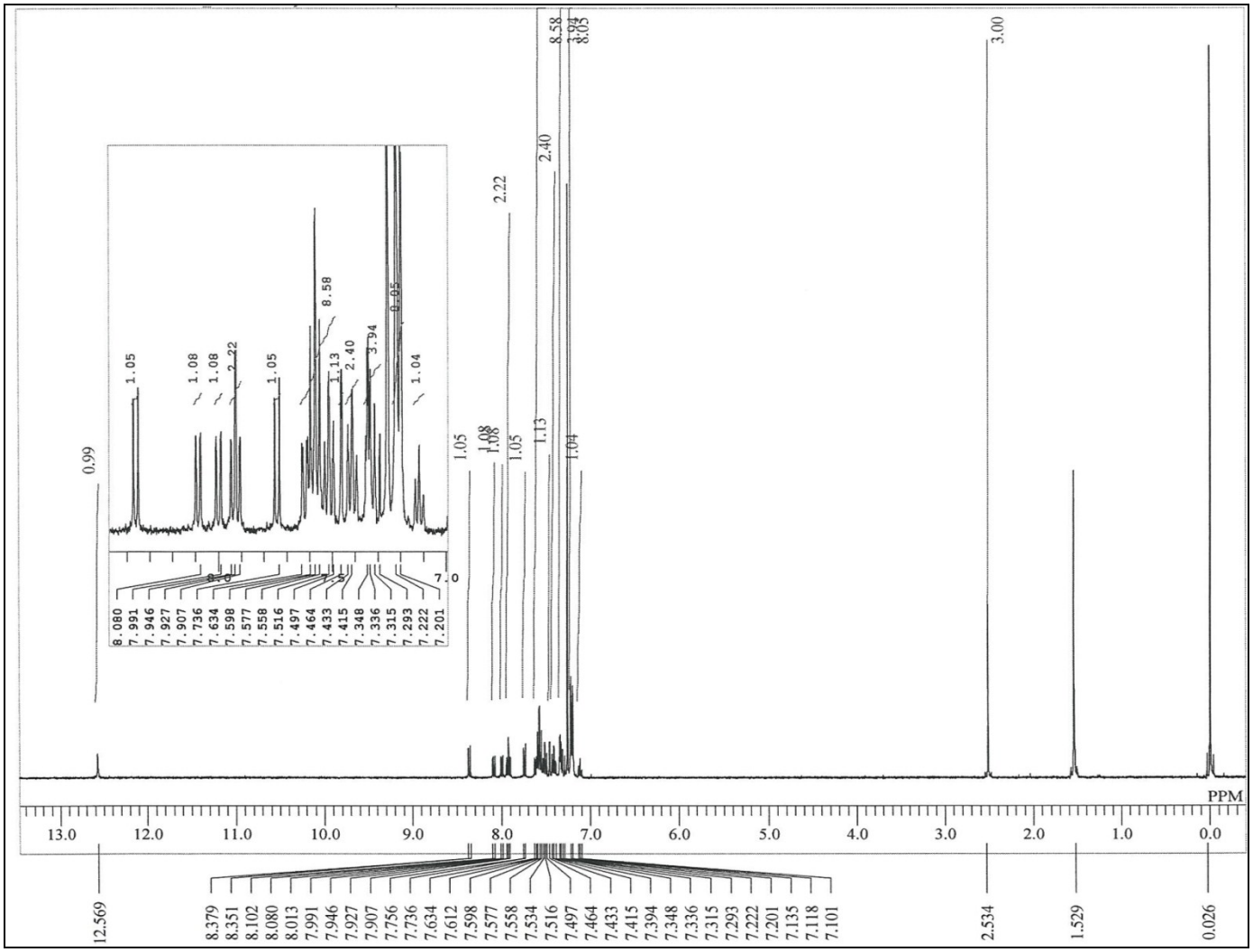


Fig **S12.** [1]H-NMR spectrum of compound **9**

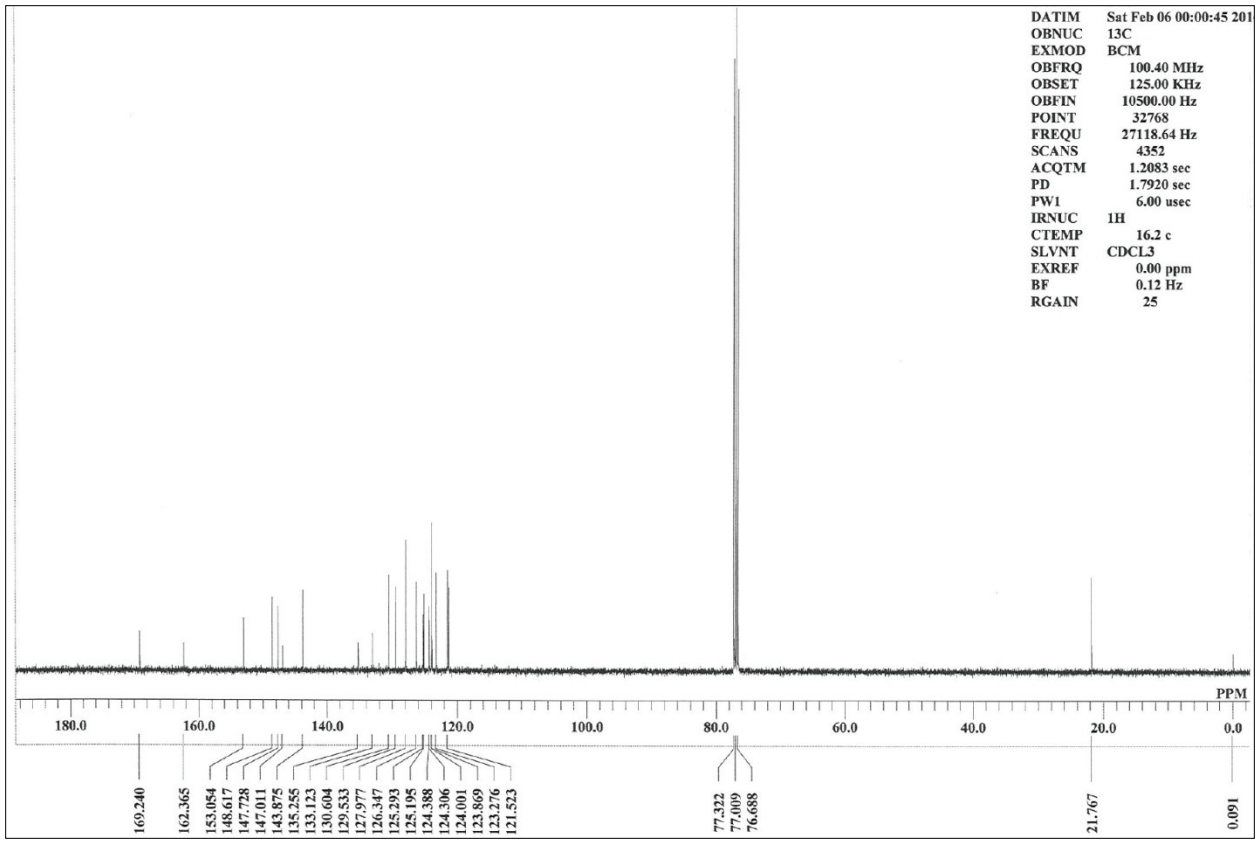


Fig S13. ^{13}C-NMR spectrum of compound **8**

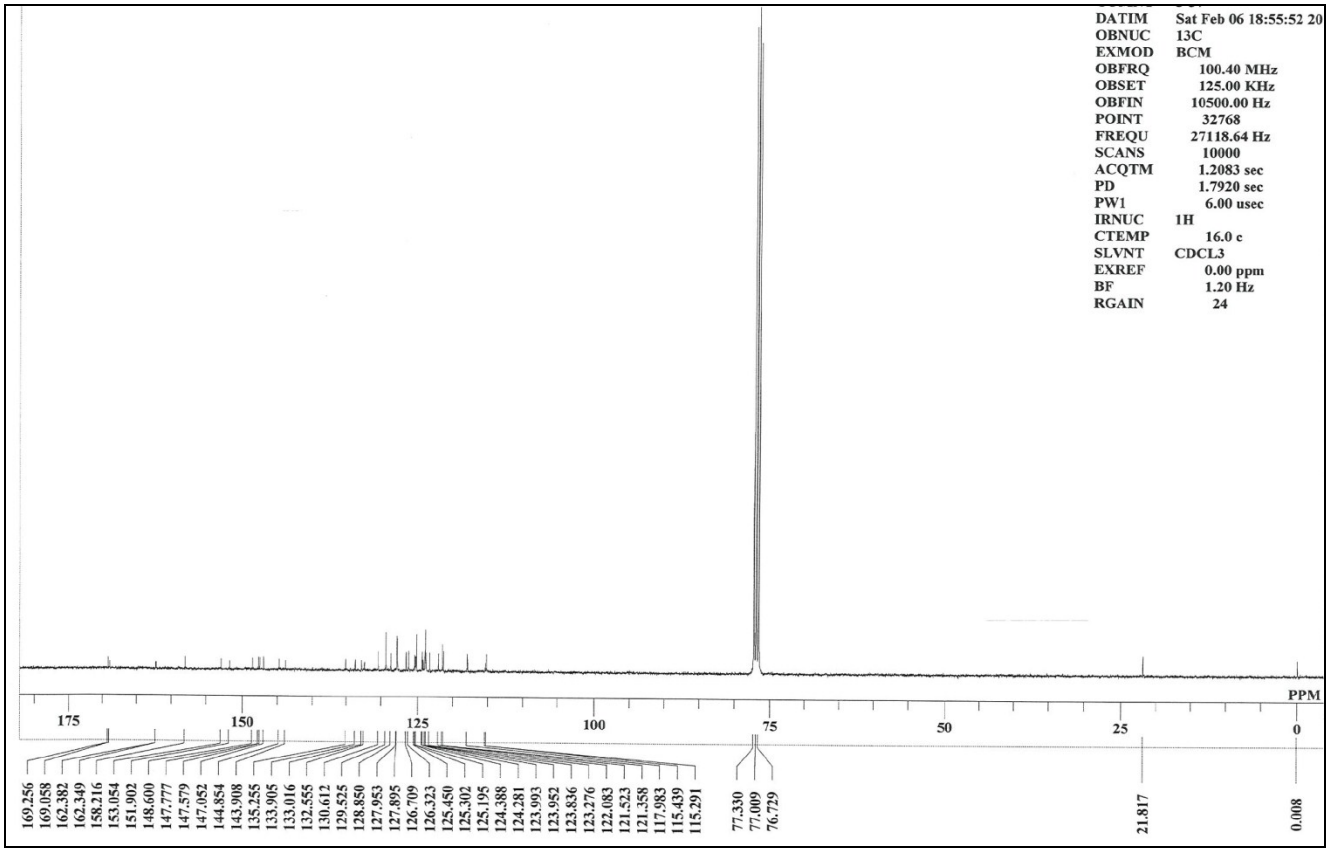


Fig S14. ^{13}C-NMR spectrum of compound **9**