

**1-Adamantanamine based triazole appended organosilanes as chromogenic  
“naked-eye” and fluorogenic “turn-on” sensors for highly selective detection  
of Sn<sup>2+</sup> ions**

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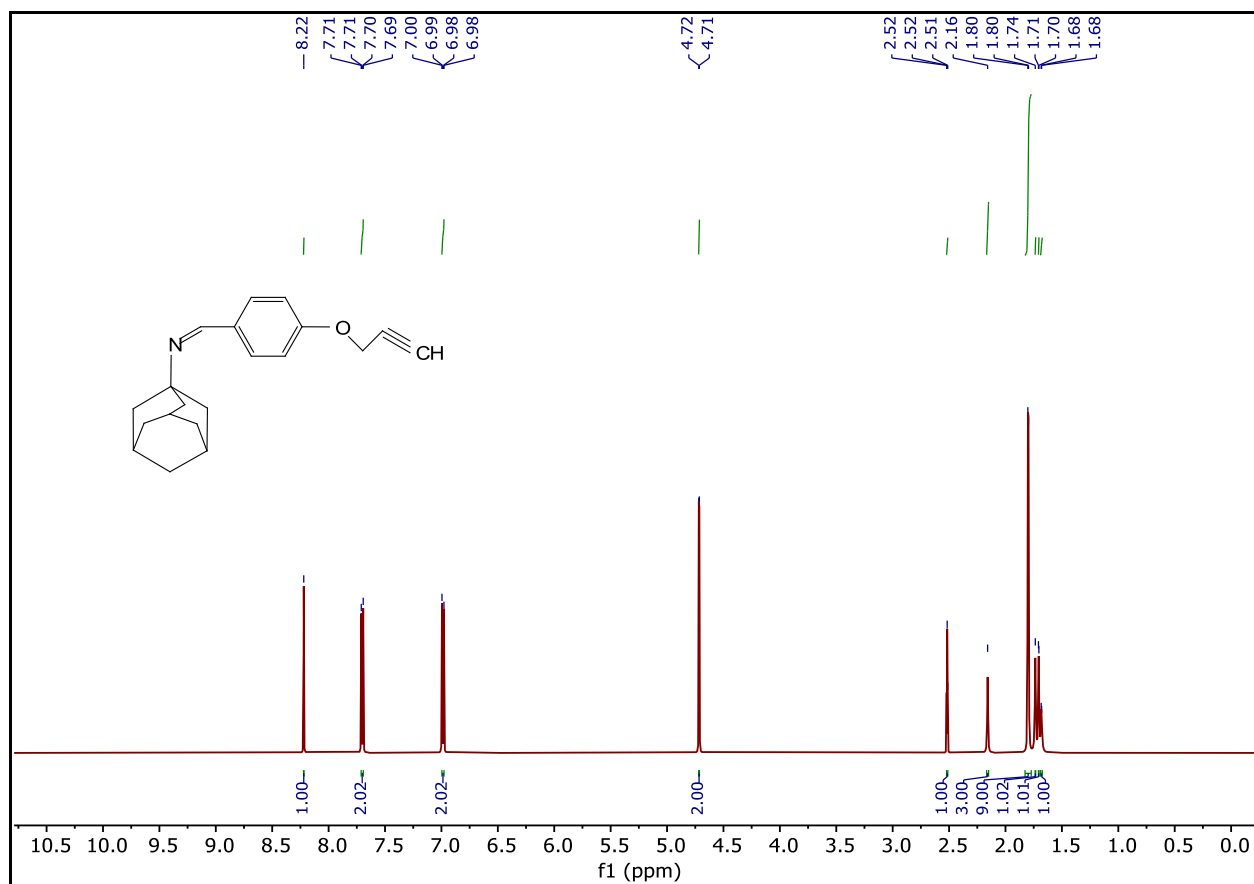
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**Fig.S1:**  $^1\text{H}$  NMR spectrum of compound 3a

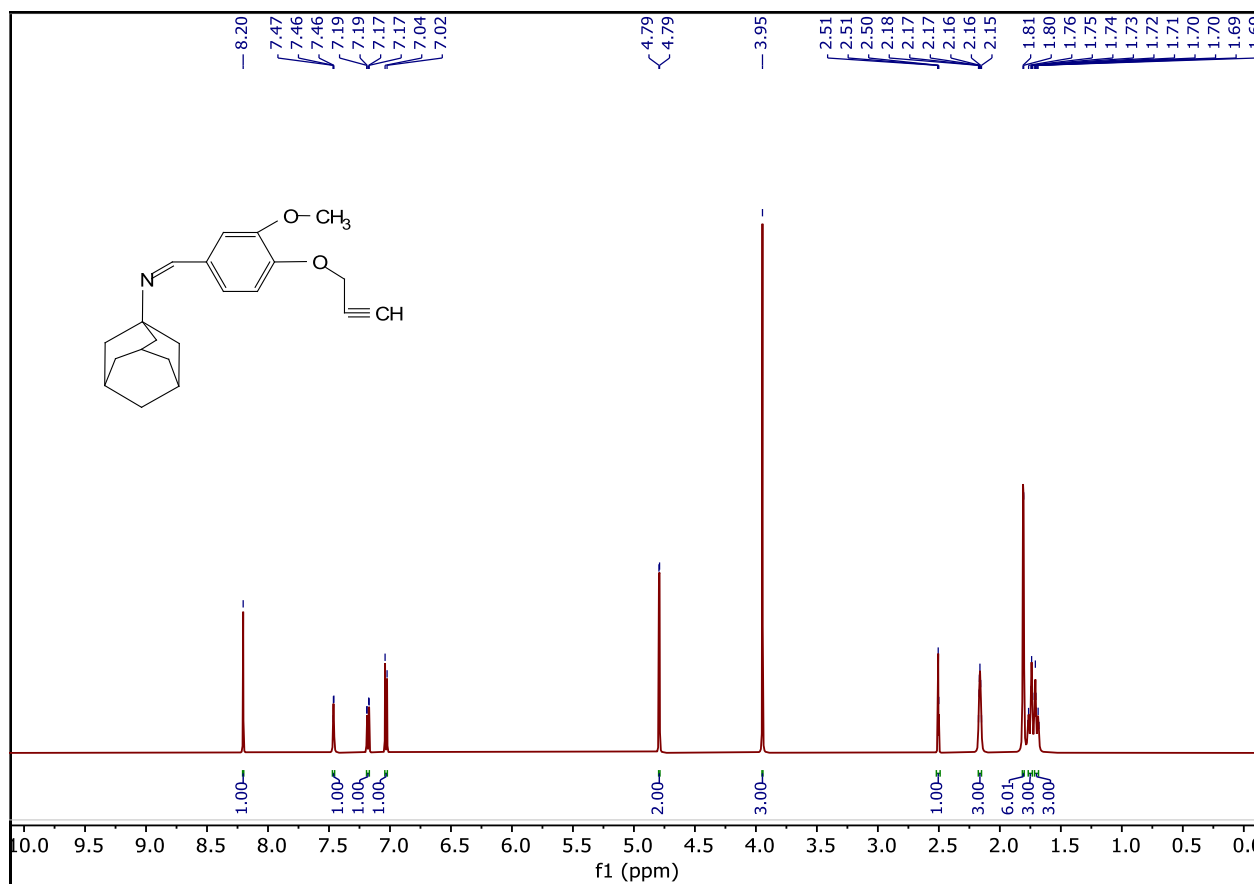


Fig.S2: <sup>1</sup>H NMR spectrum of compound 3b

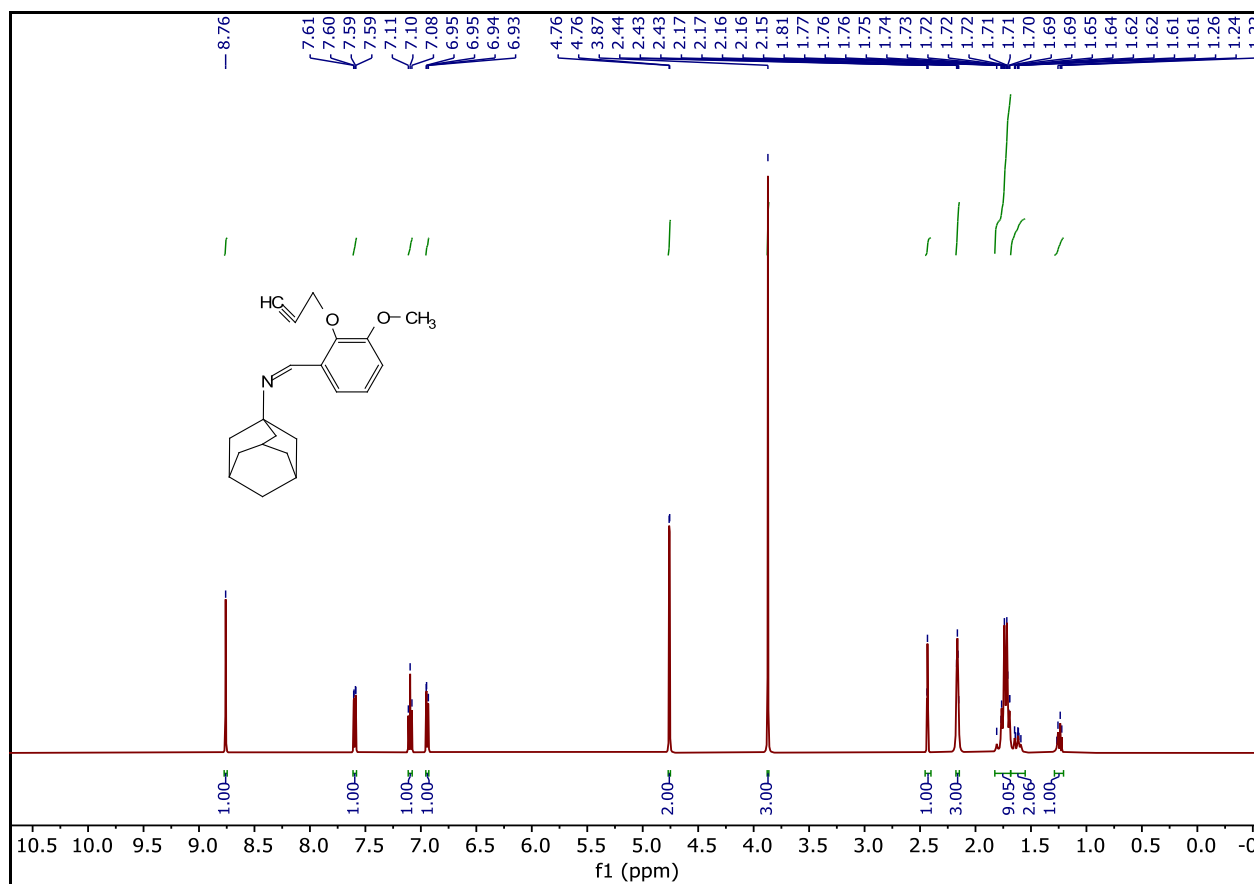
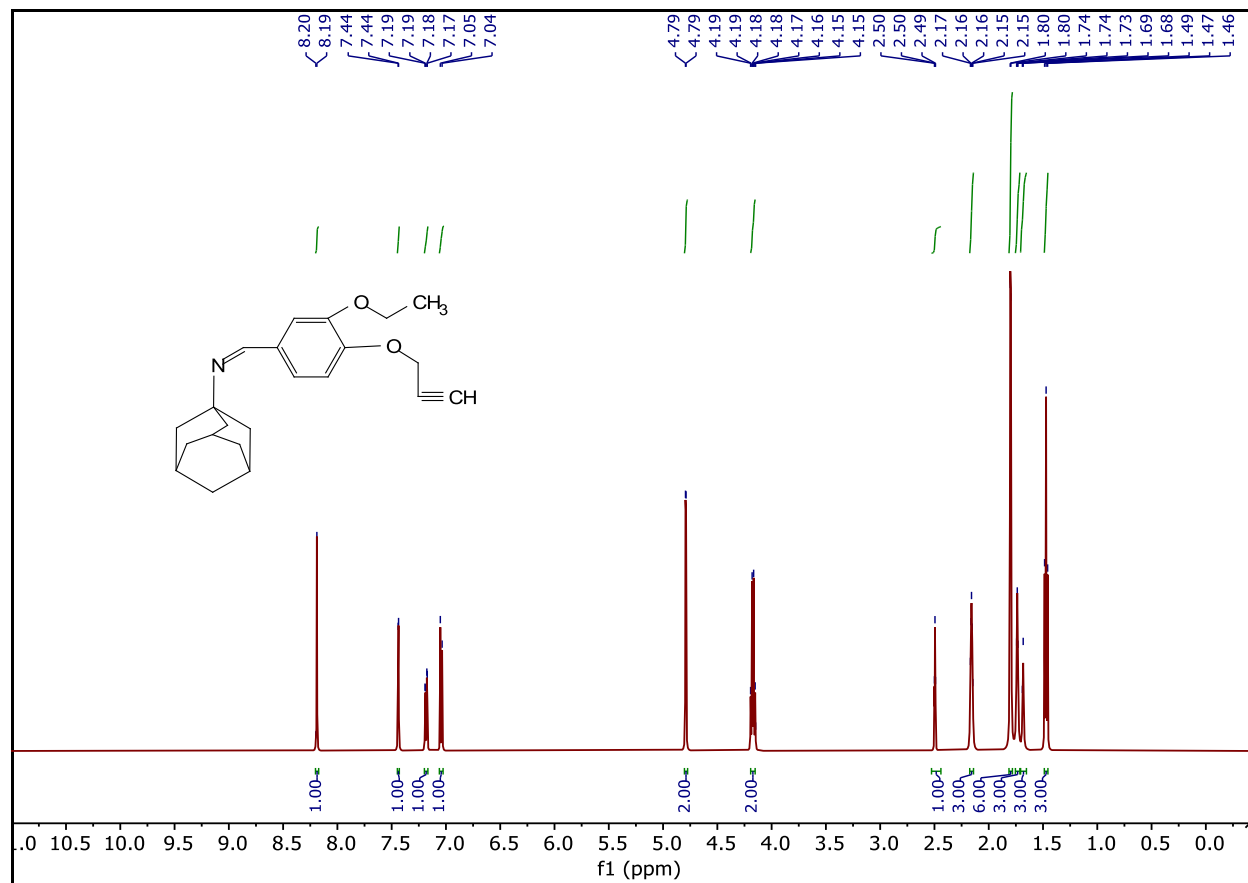
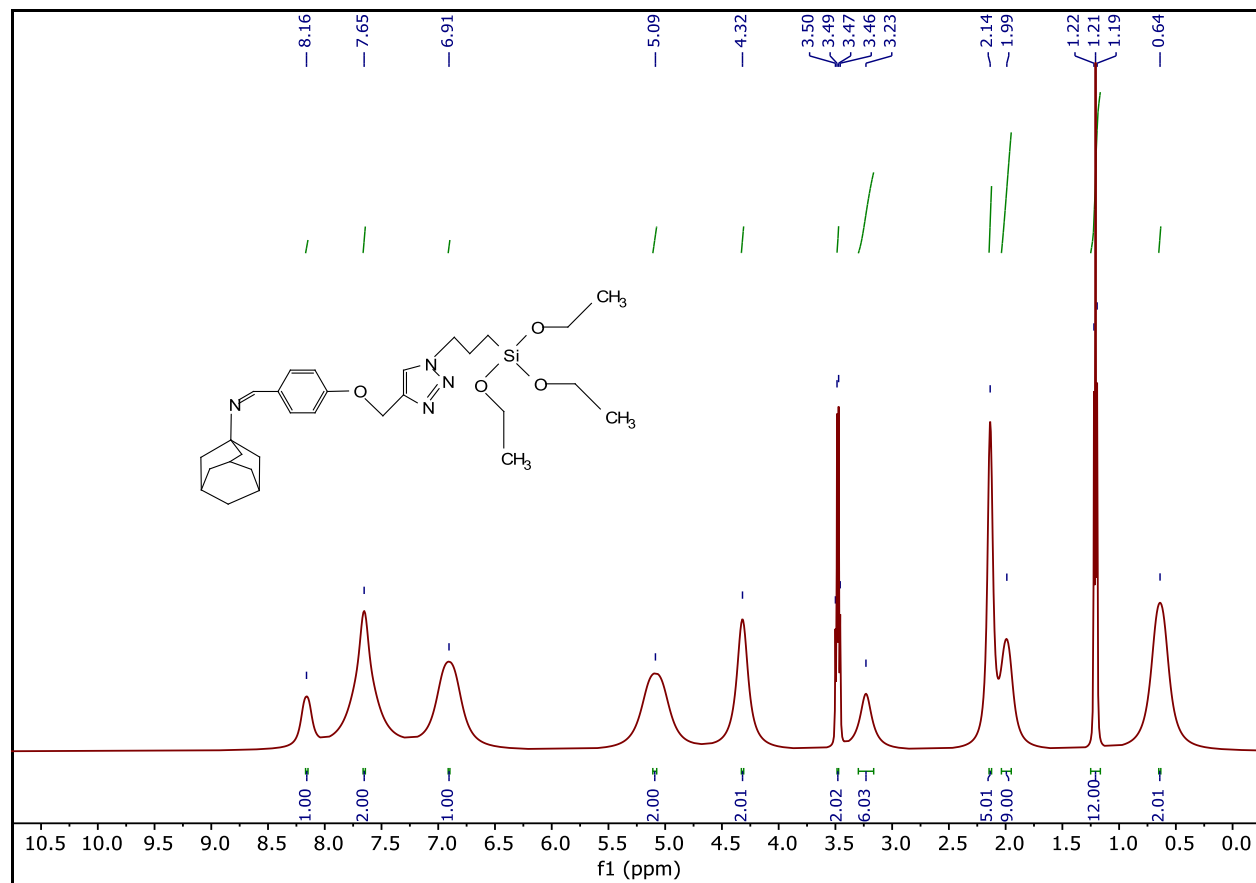


Fig.S3:  $^1\text{H}$  NMR spectrum of compound 3c

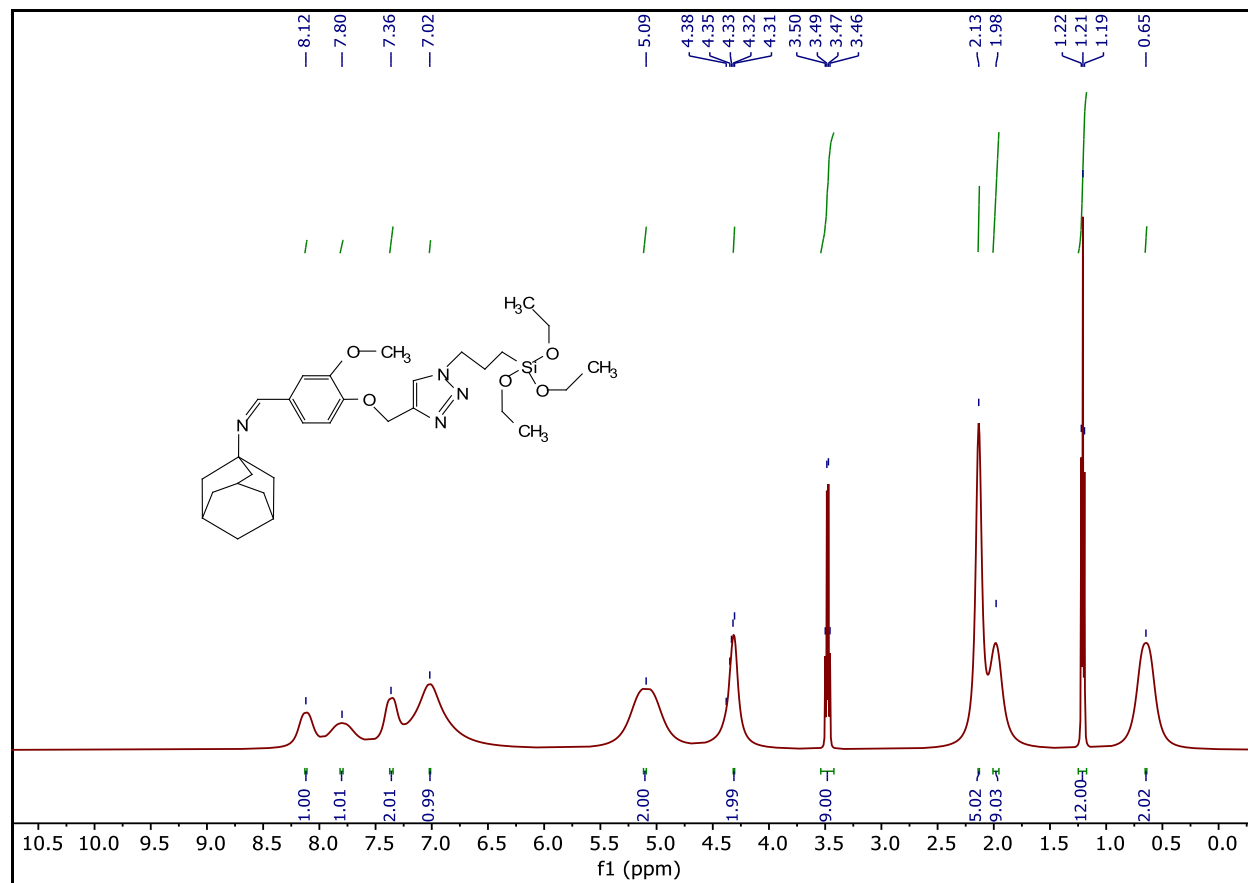


**Fig.S4:** <sup>1</sup>H NMR spectrum of compound 3d

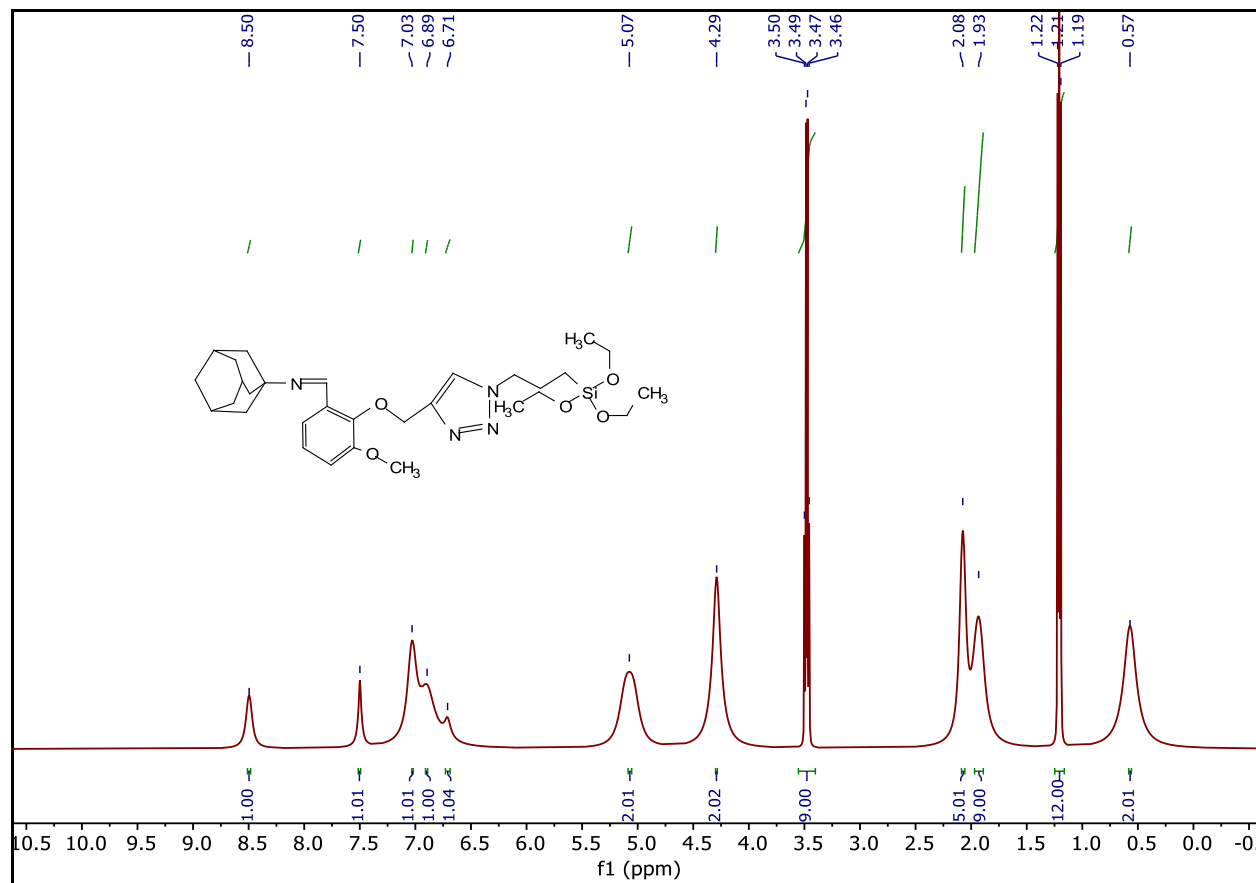


**Fig.S5:**  $^1\text{H}$  NMR spectrum of compound 4a

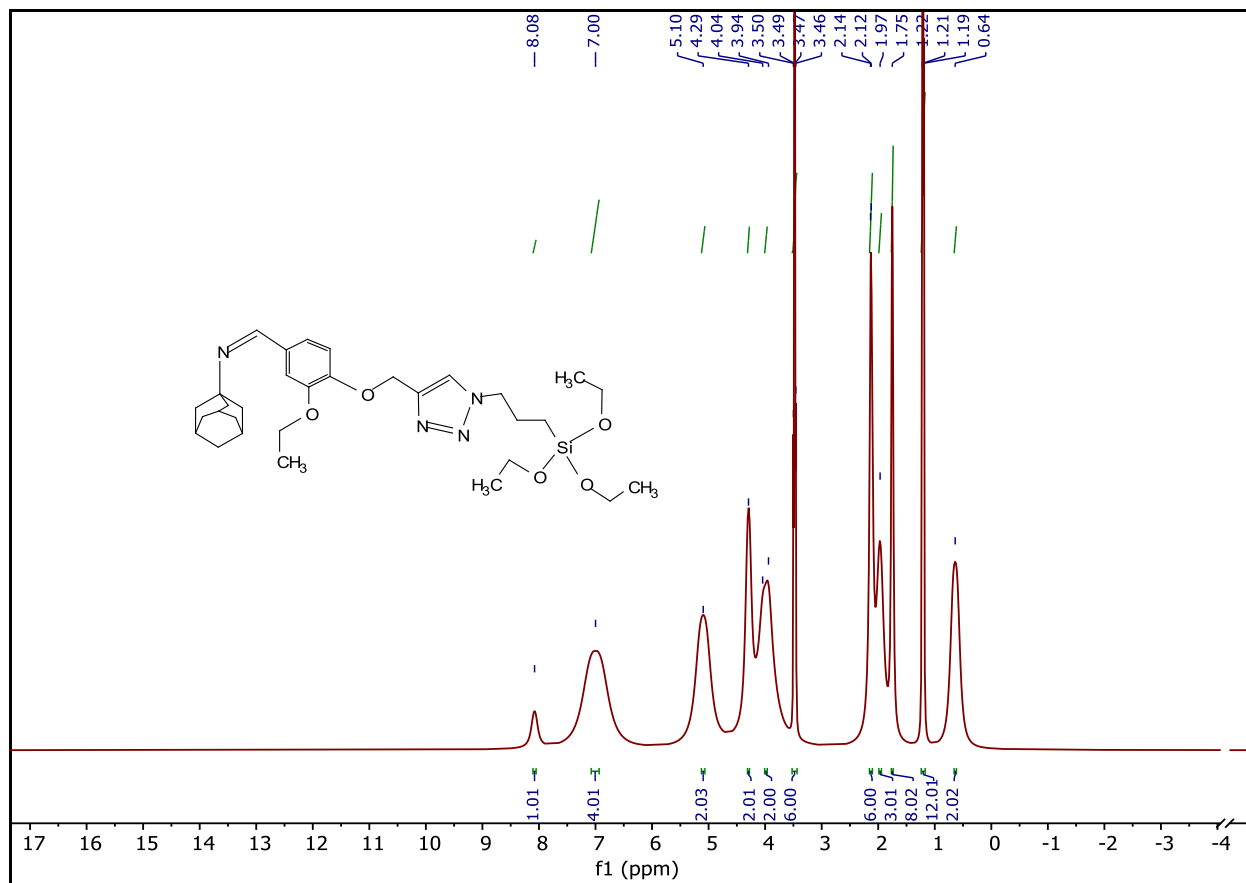




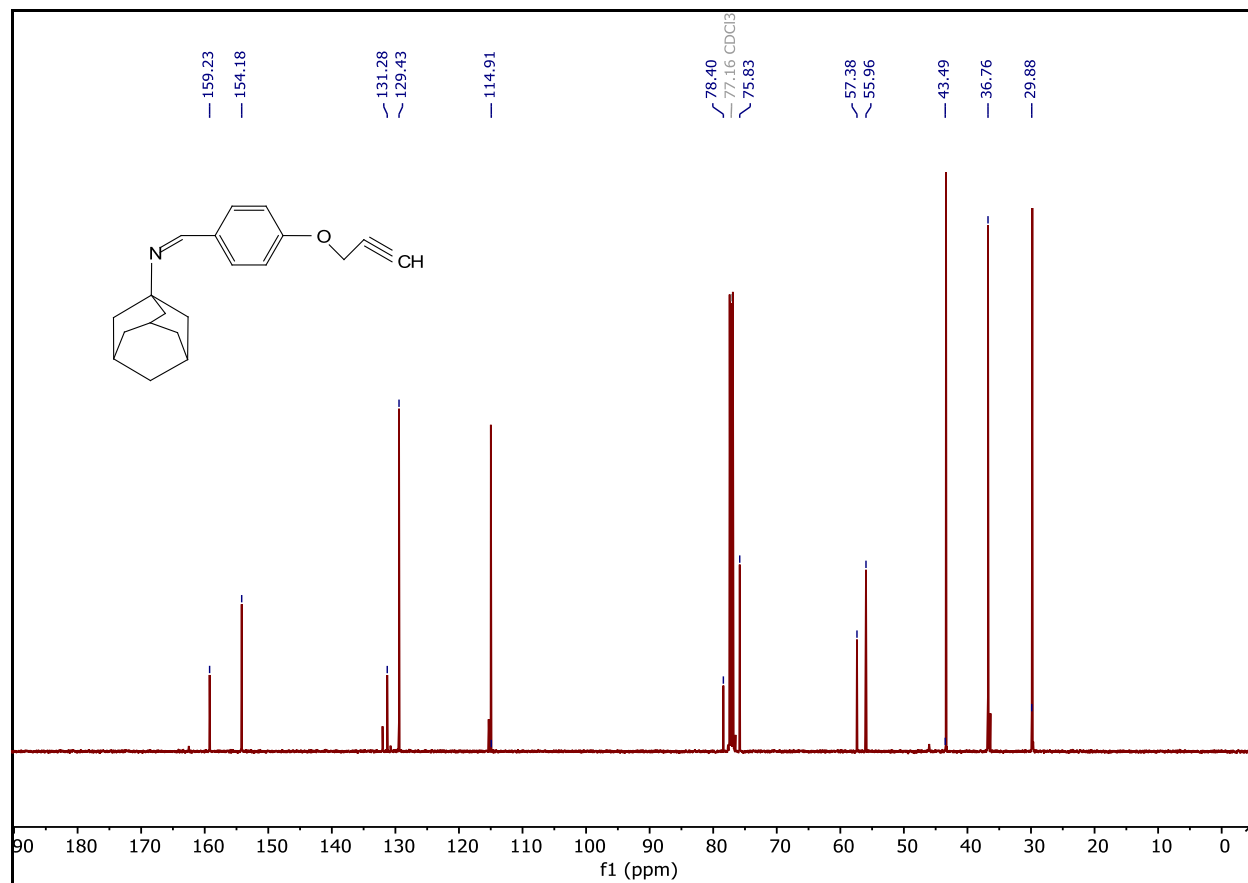
**Fig.S6:**  $^1\text{H}$  NMR spectrum of compound 4b



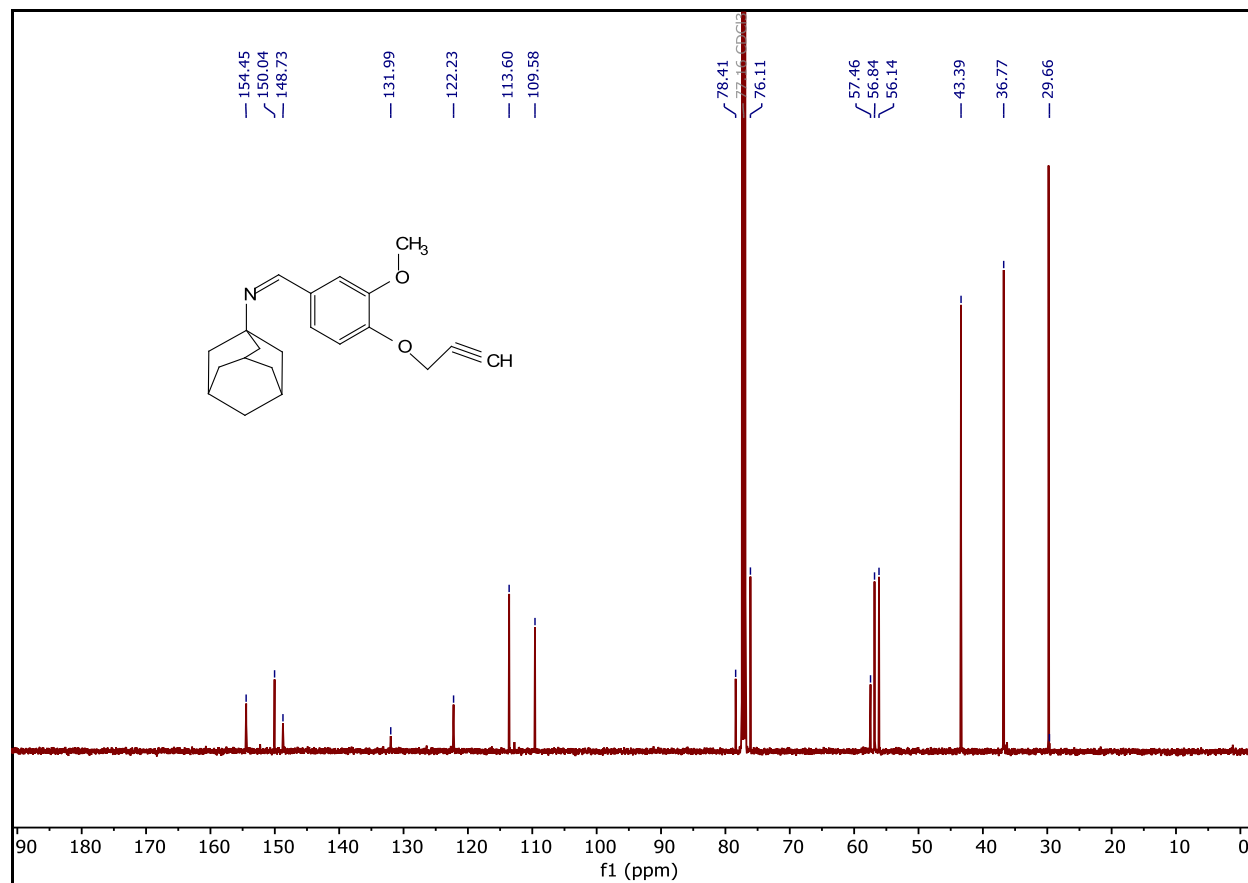
**Fig.S7:** <sup>1</sup>H NMR spectrum of compound 4c



**Fig.S8:** <sup>1</sup>H NMR spectrum of compound 4d



**Fig.S9:** <sup>13</sup>C NMR spectrum of compound 3a



**Fig.S10:**  $^{13}\text{C}$  NMR spectrum of compound 3b

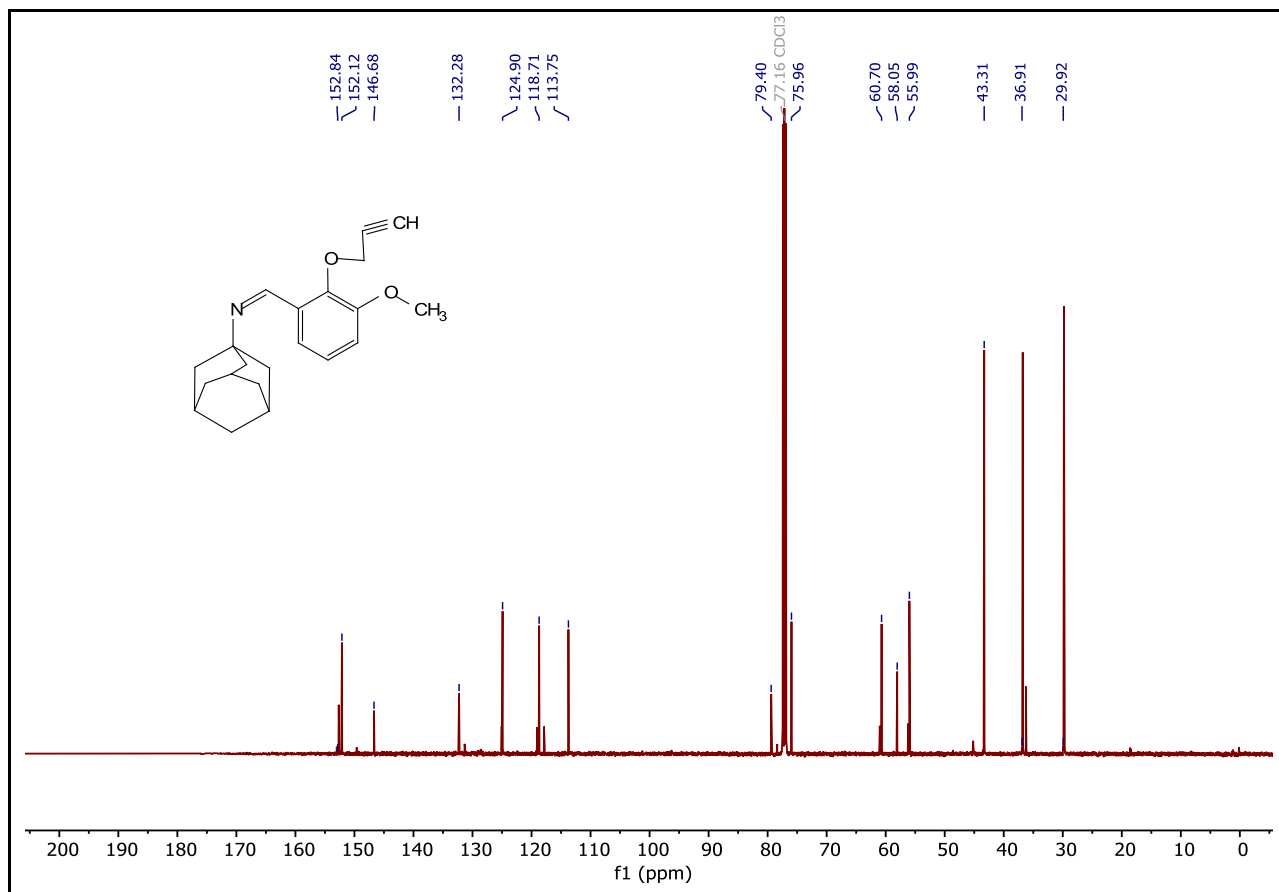


Fig.S11:  $^{13}\text{C}$  NMR spectrum of compound 3c

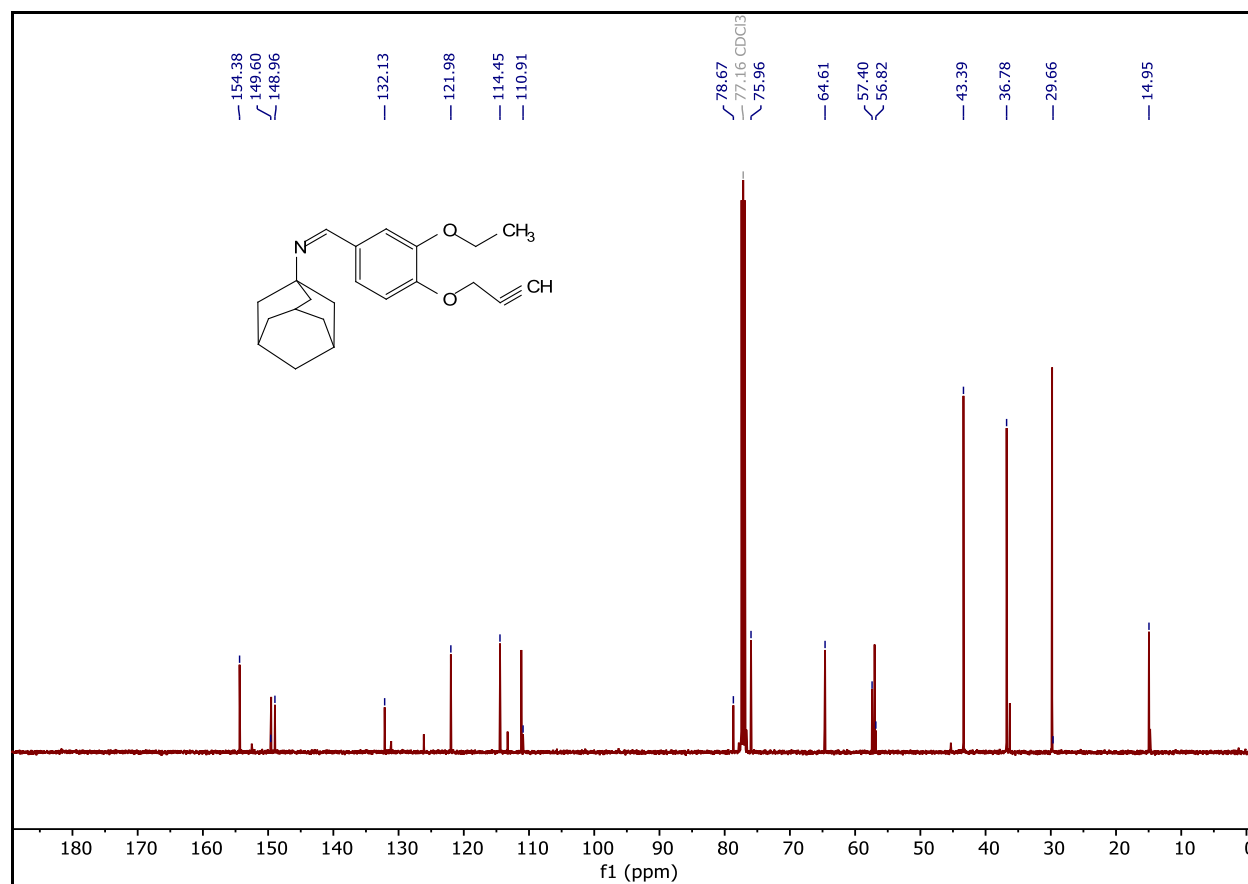
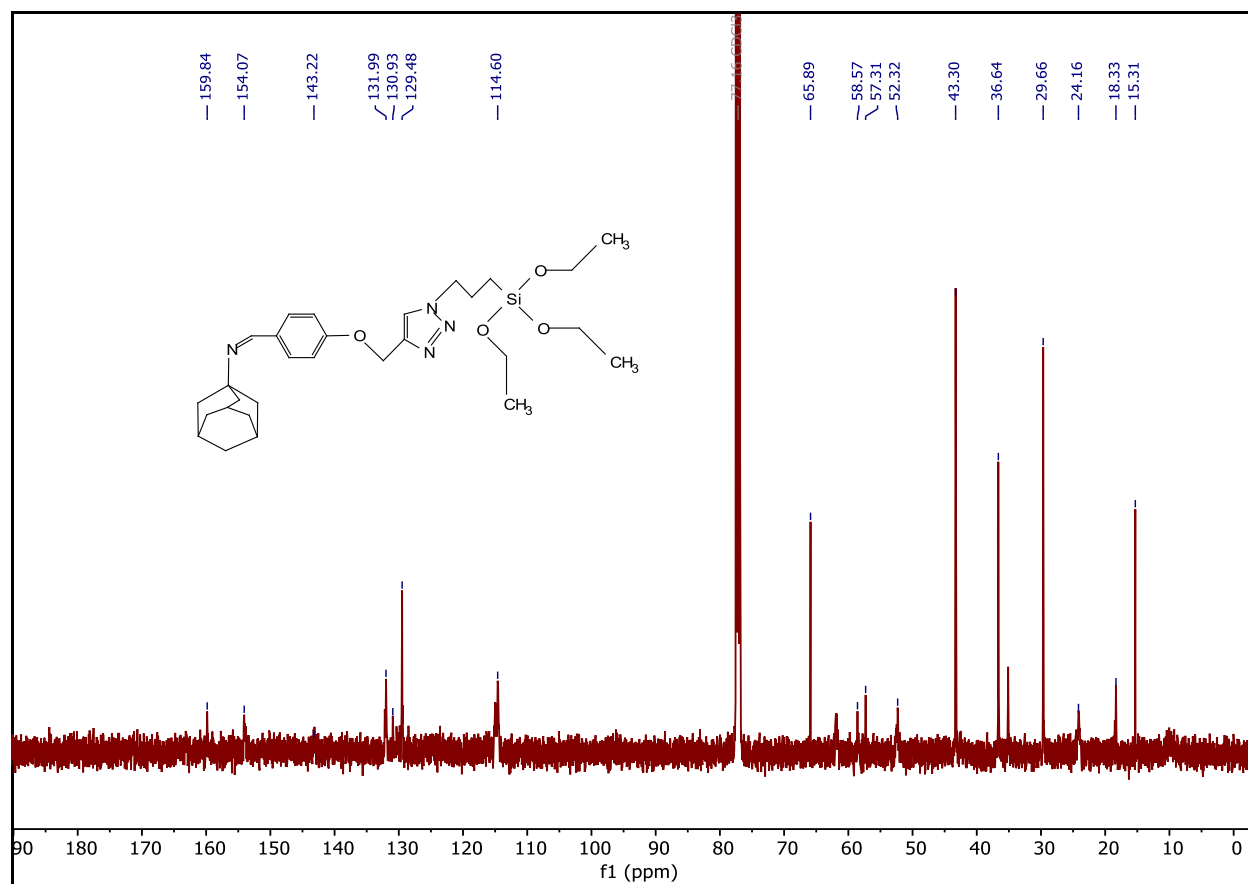
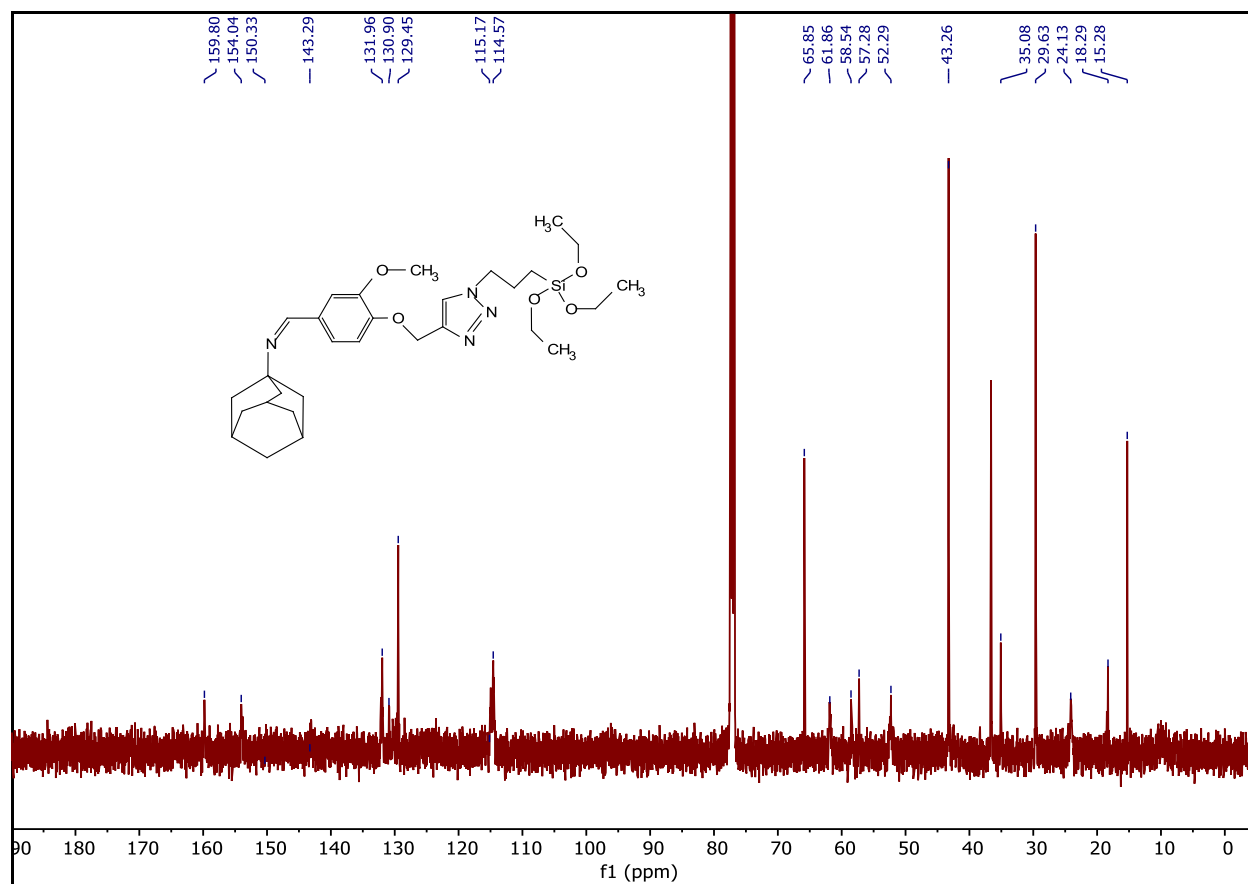


Fig.S12:  $^{13}\text{C}$  NMR spectrum of compound 3d

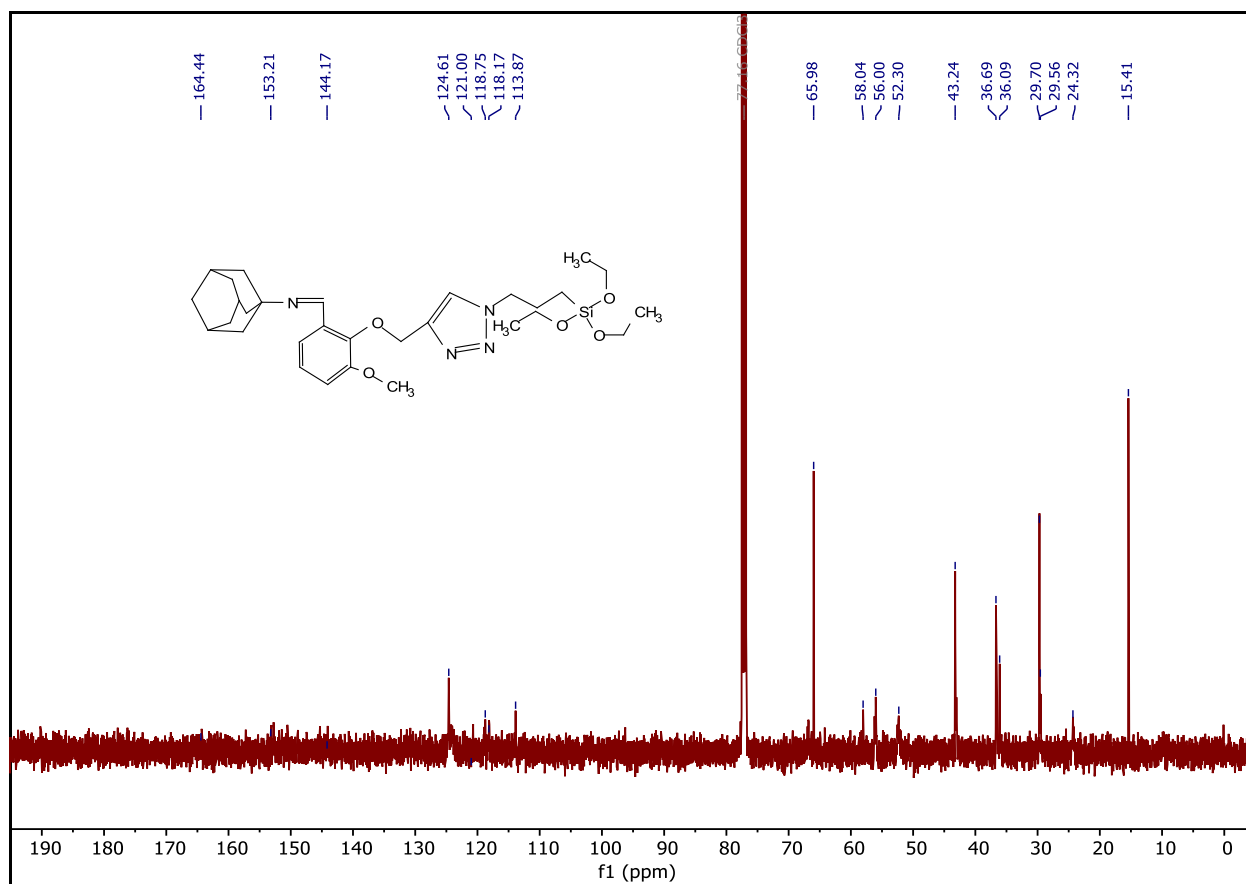


**Fig.S13:** <sup>13</sup>C NMR spectrum of compound 4a

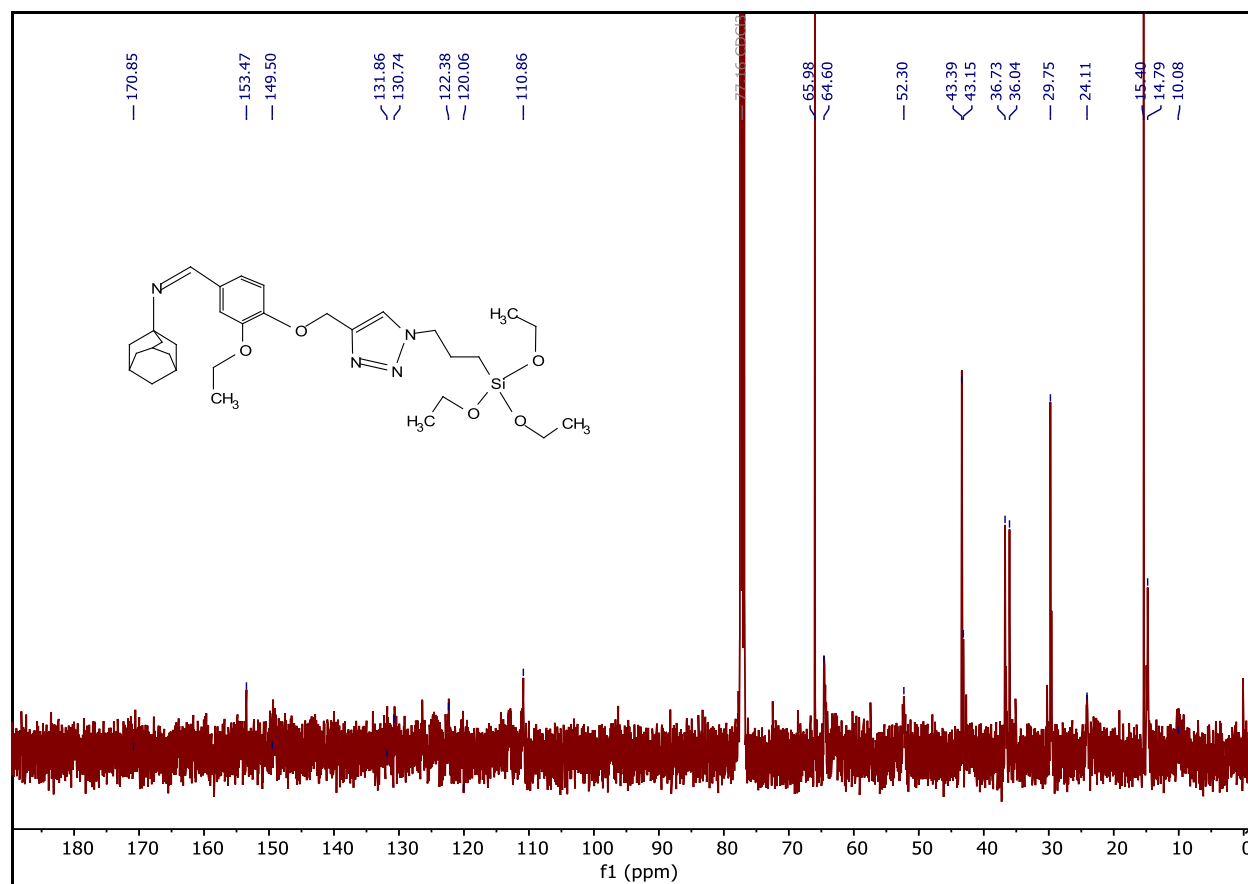




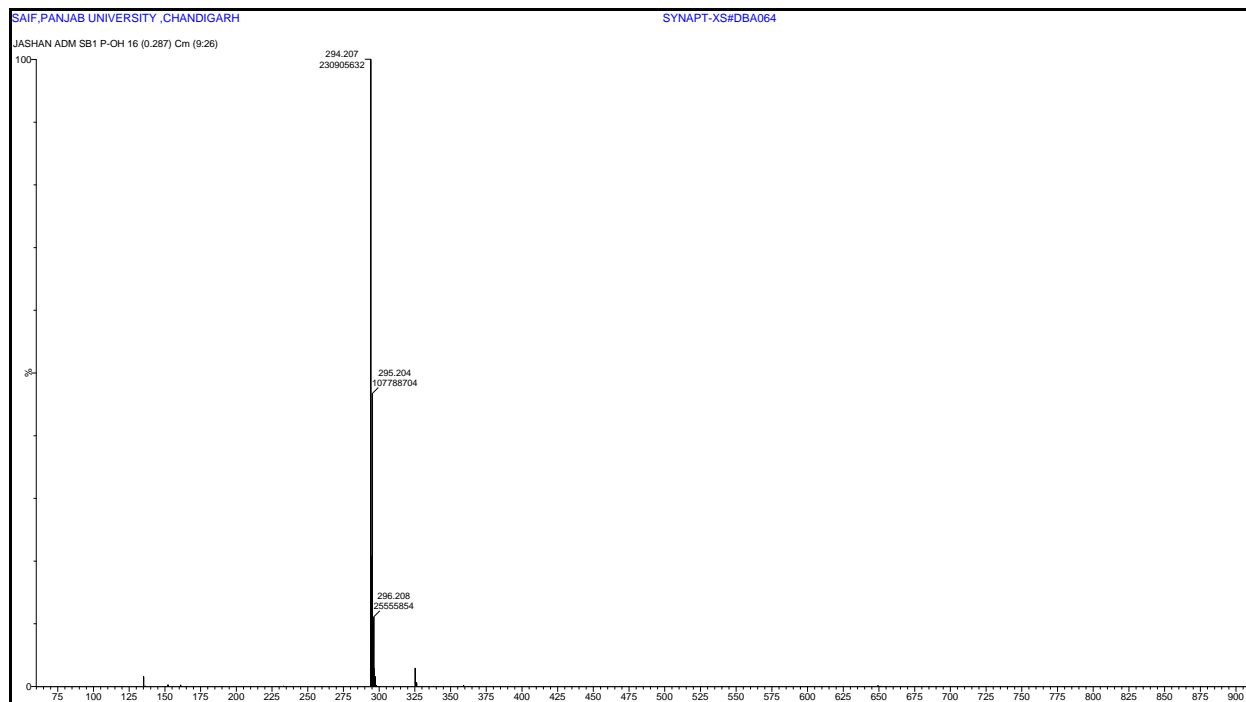
**Fig.S14:** <sup>13</sup>C NMR spectrum of compound 4b



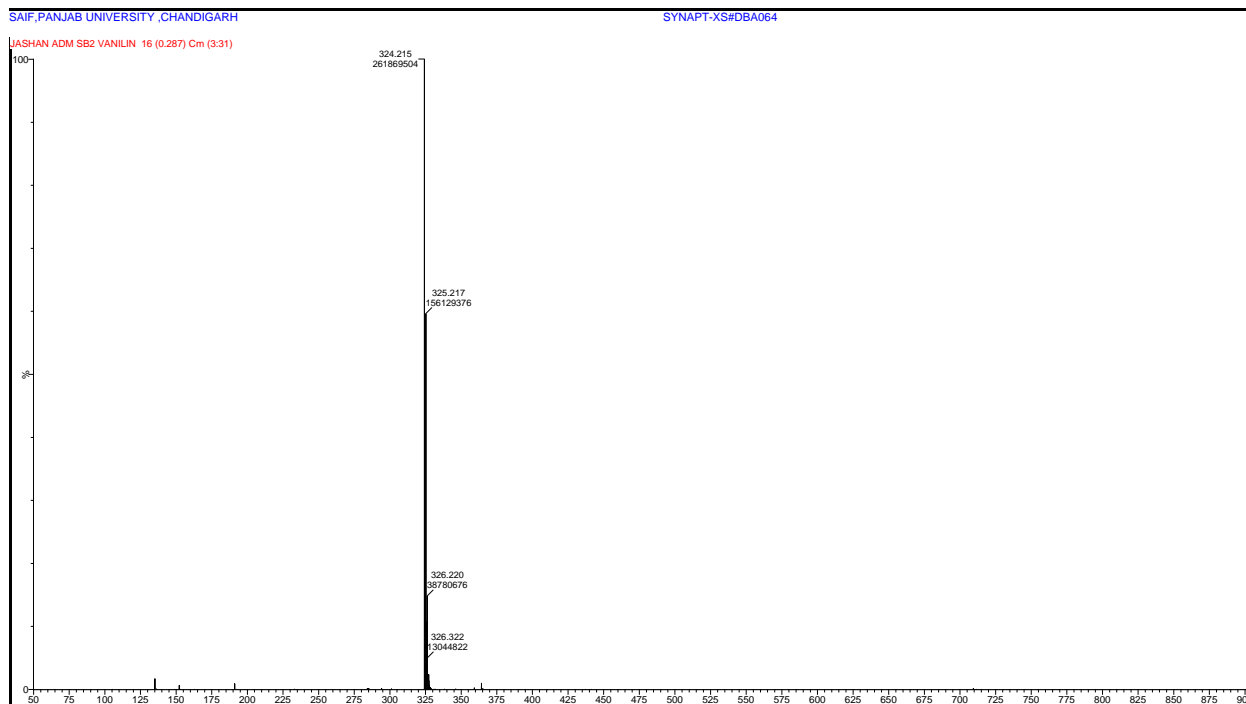
**Fig.S15:** <sup>13</sup>C NMR spectrum of compound 4c



**Fig.S16:**  $^{13}\text{C}$  NMR spectrum of compound 4d



**Fig.S17:** Mass spectrum of compound 3a



**Fig.S18:** Mass spectrum of compound 3b

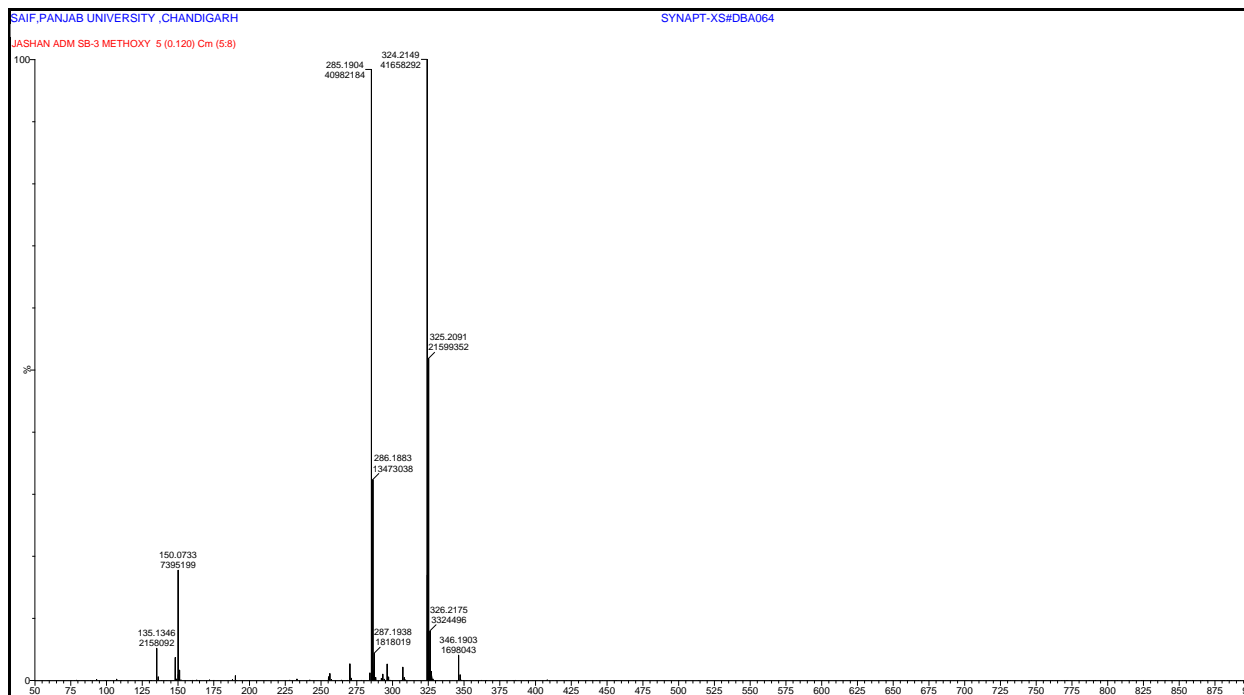


Fig.S19: Mass spectrum of compound 3c

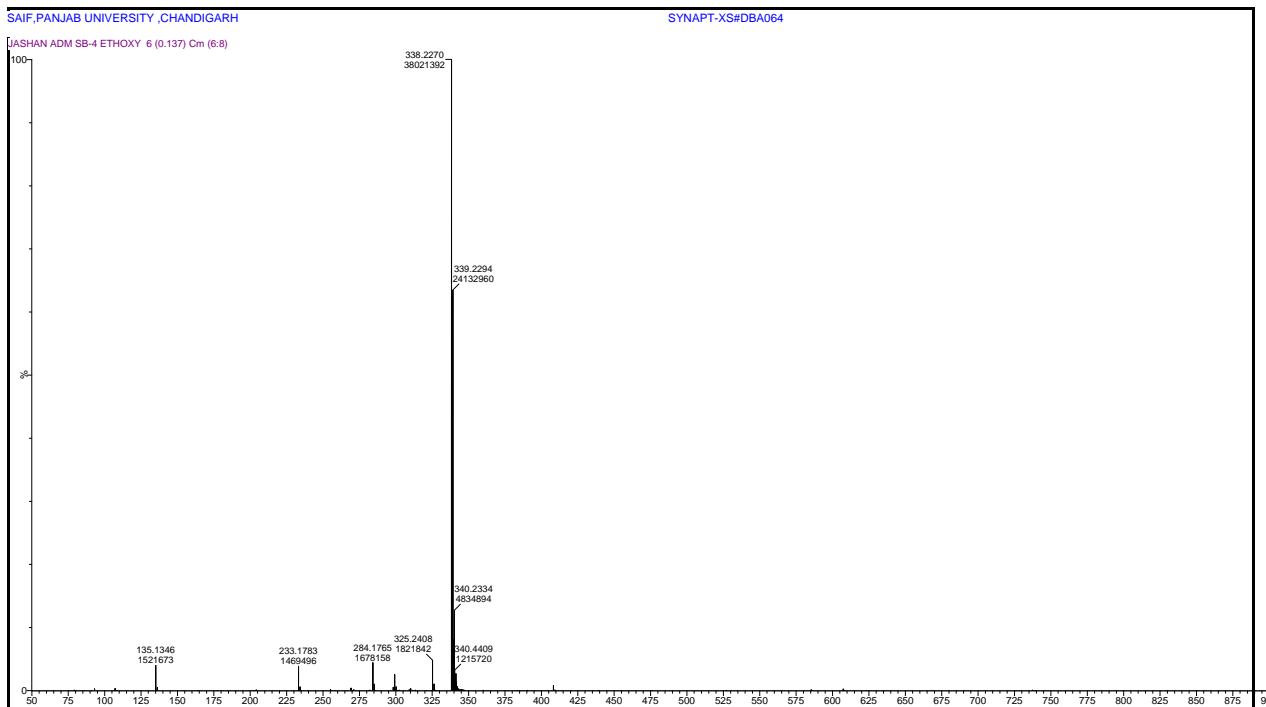


Fig.S20: Mass spectrum of compound 3d

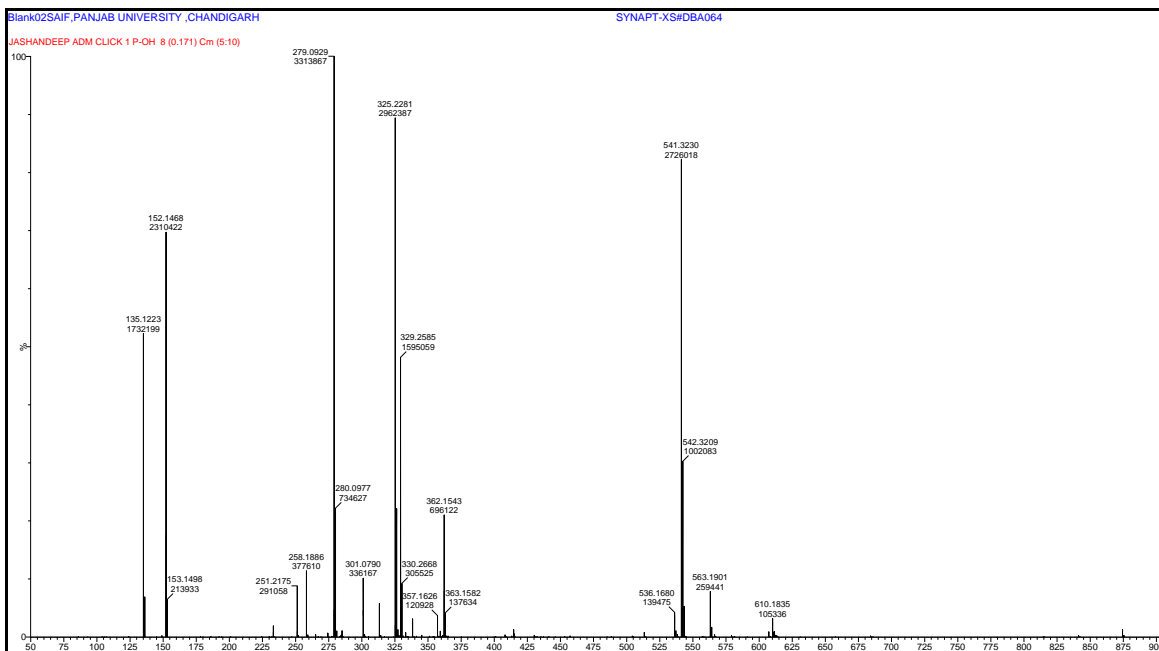


Fig.S21: Mass spectrum of compound 4a

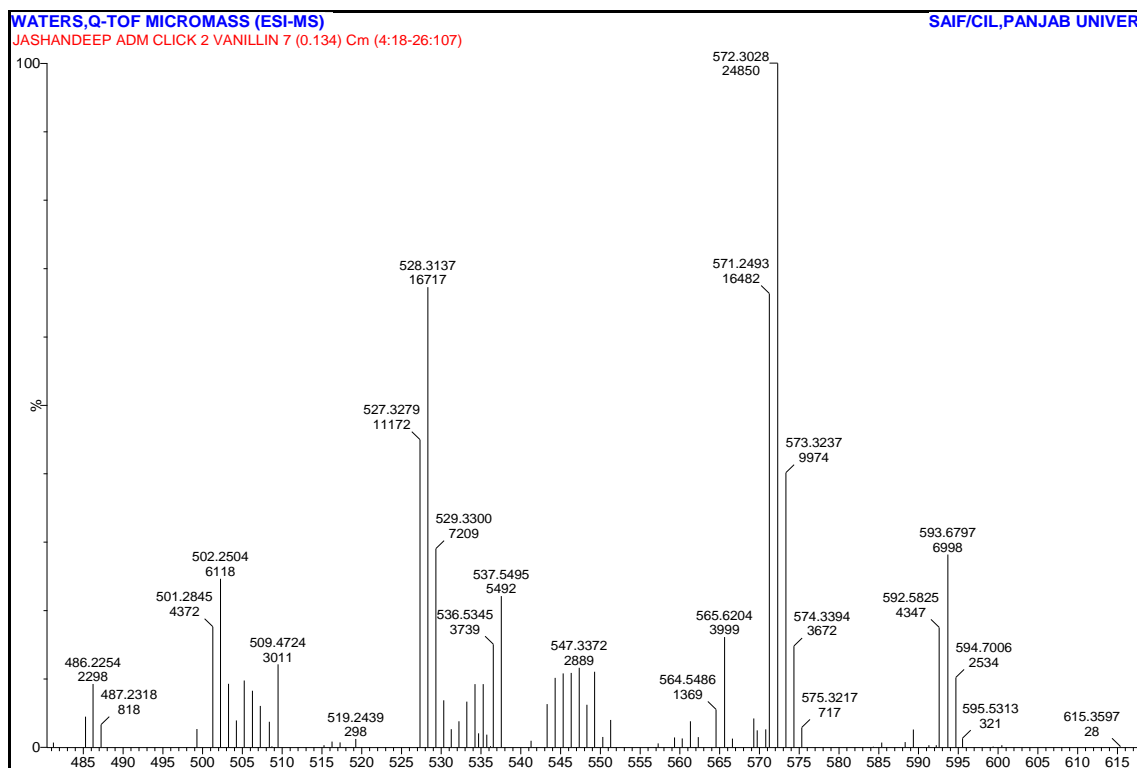


Fig.S22: Mass spectrum of compound 4b

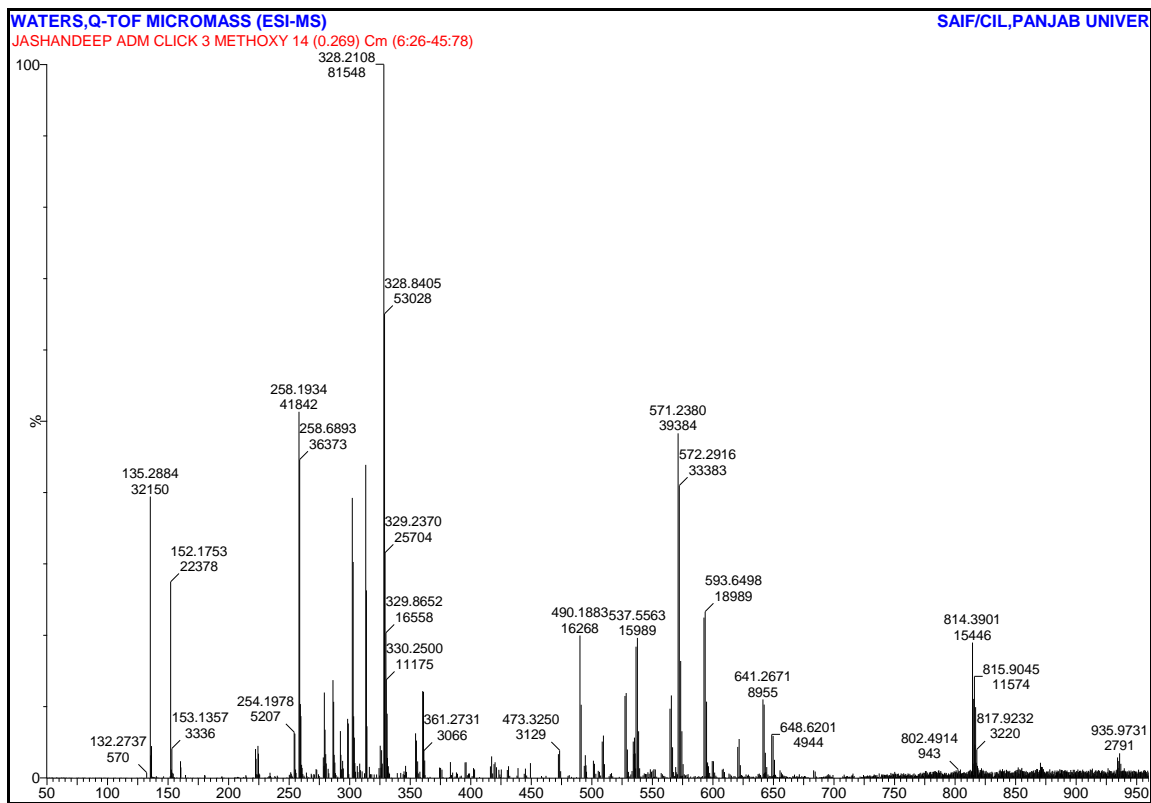


Fig.S23: Mass spectrum of compound 4c

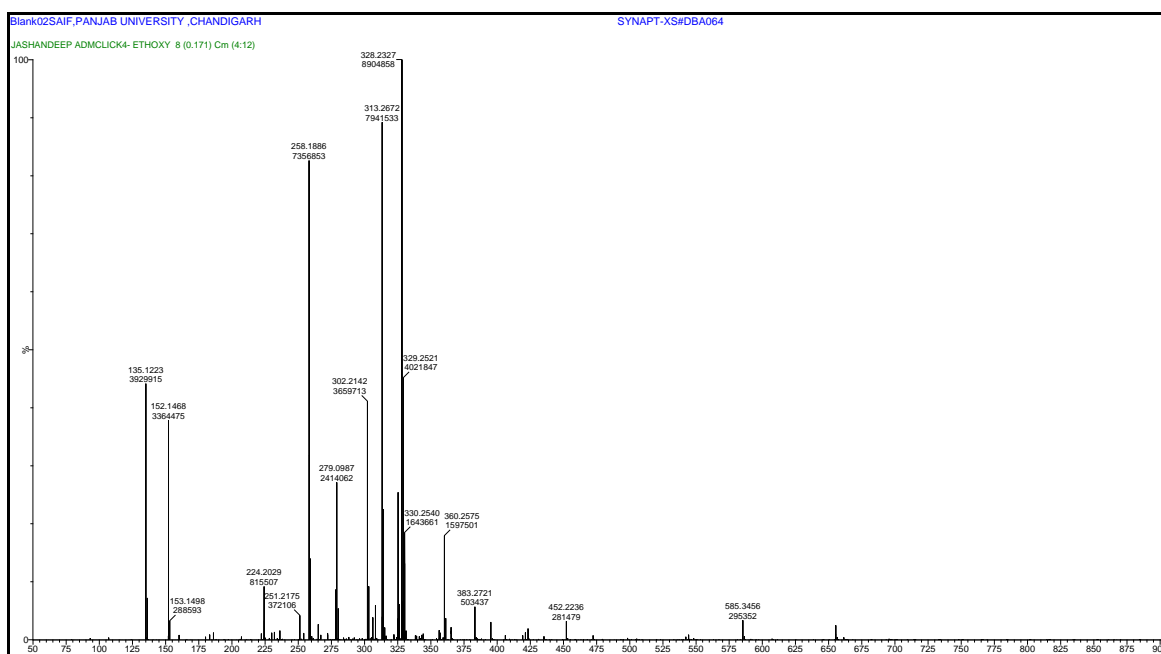
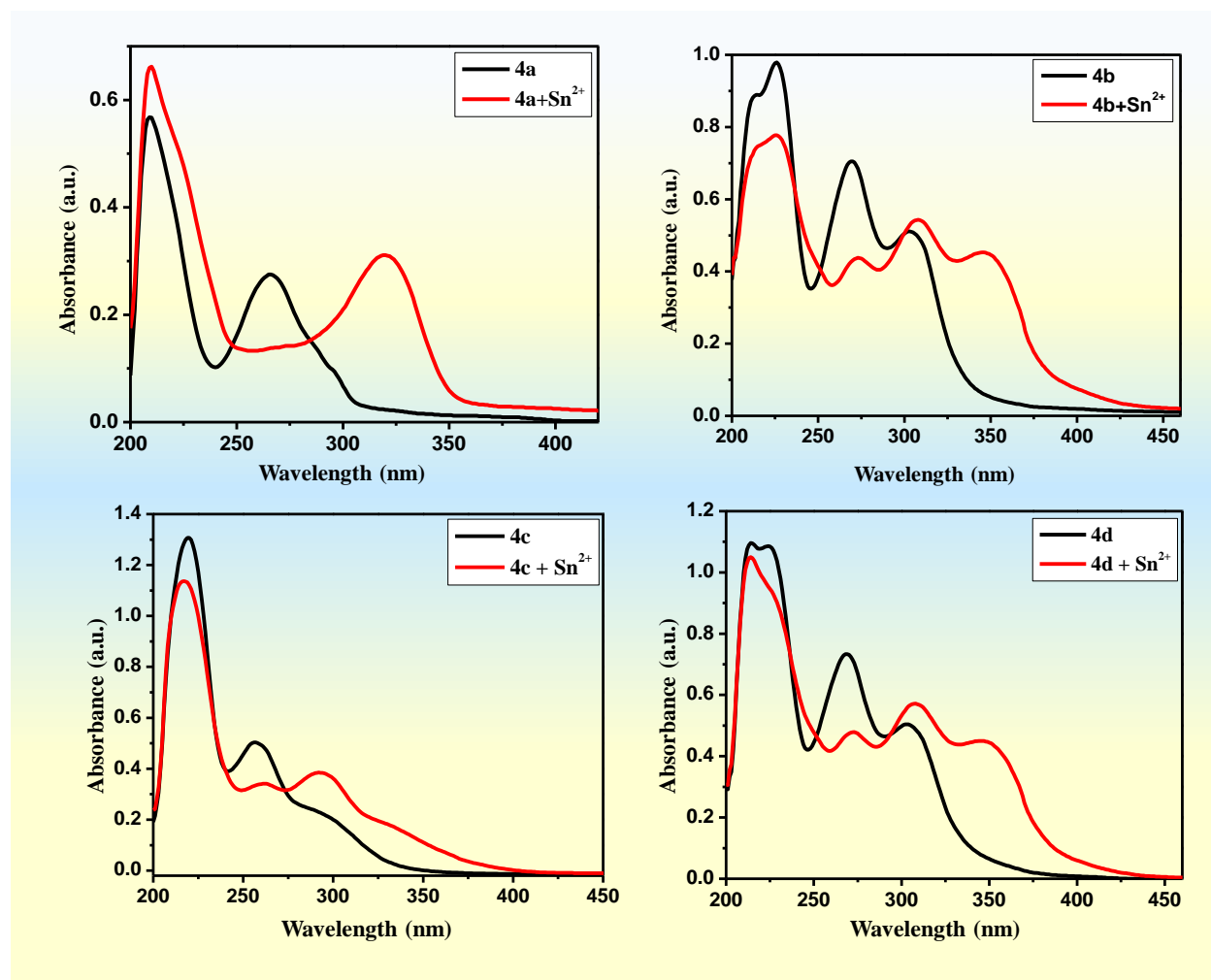
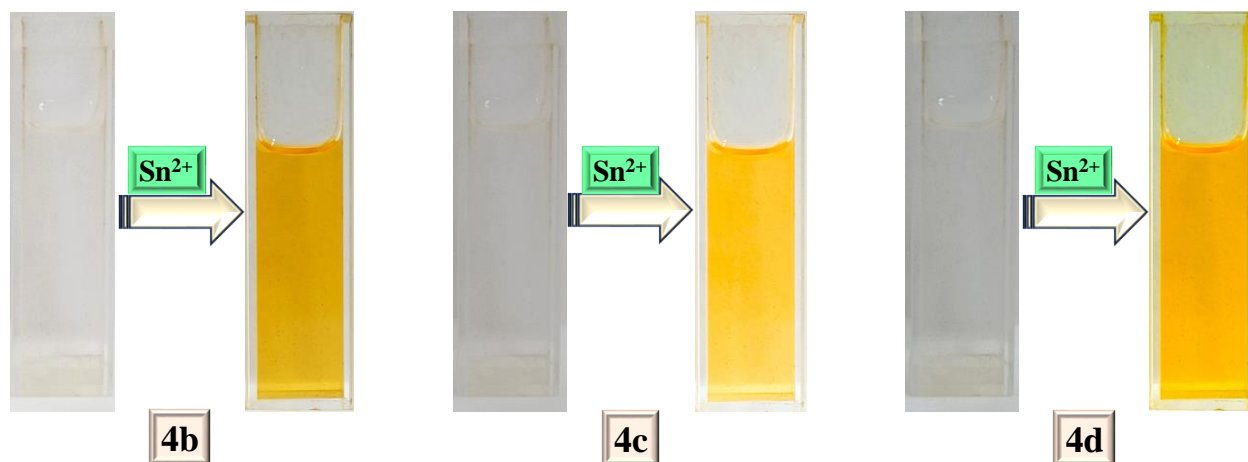


Fig.S24: Mass spectrum of compound 4d

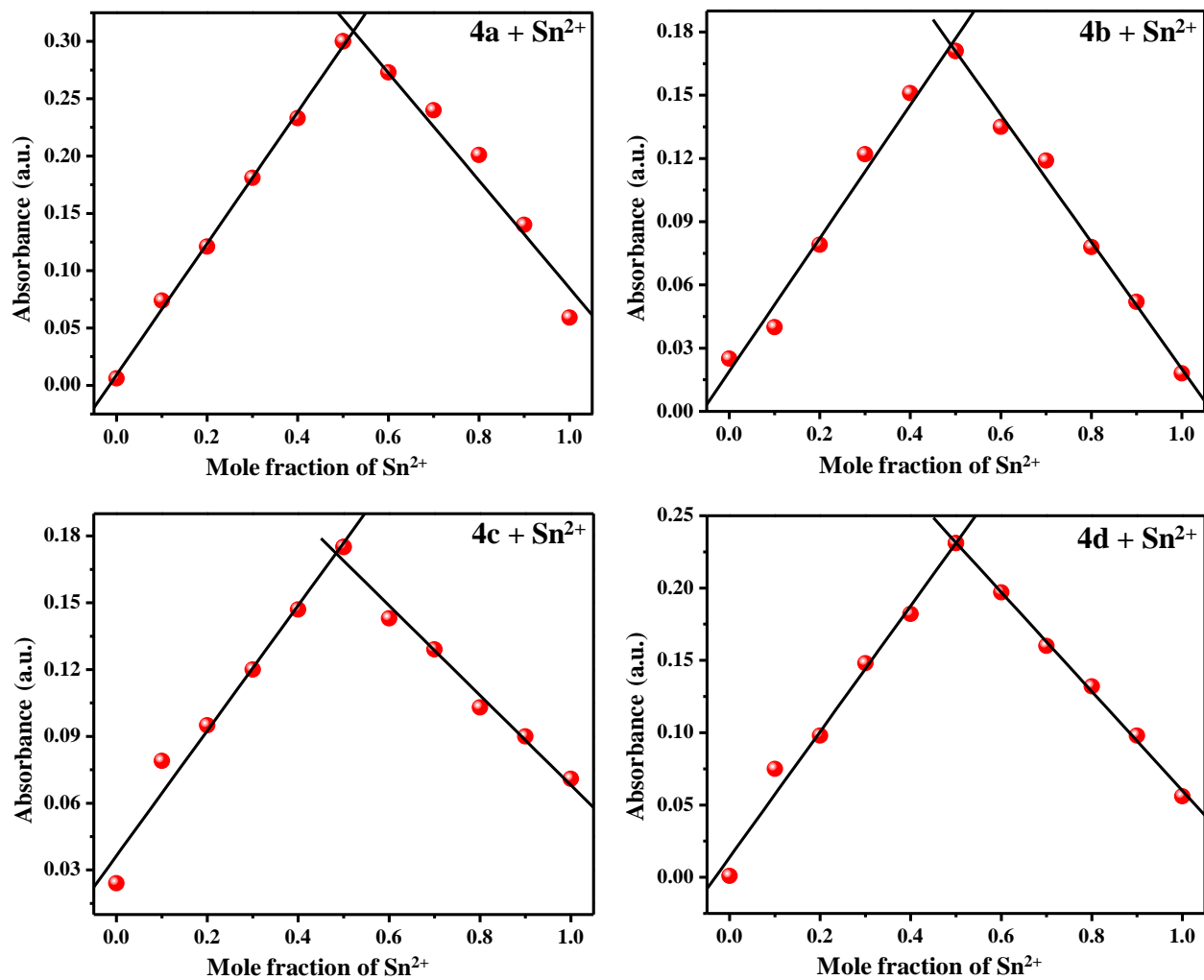


**Fig.S25:** UV-Visible spectra of 4(a-d) in methanol ( $10^{-6}$  M)

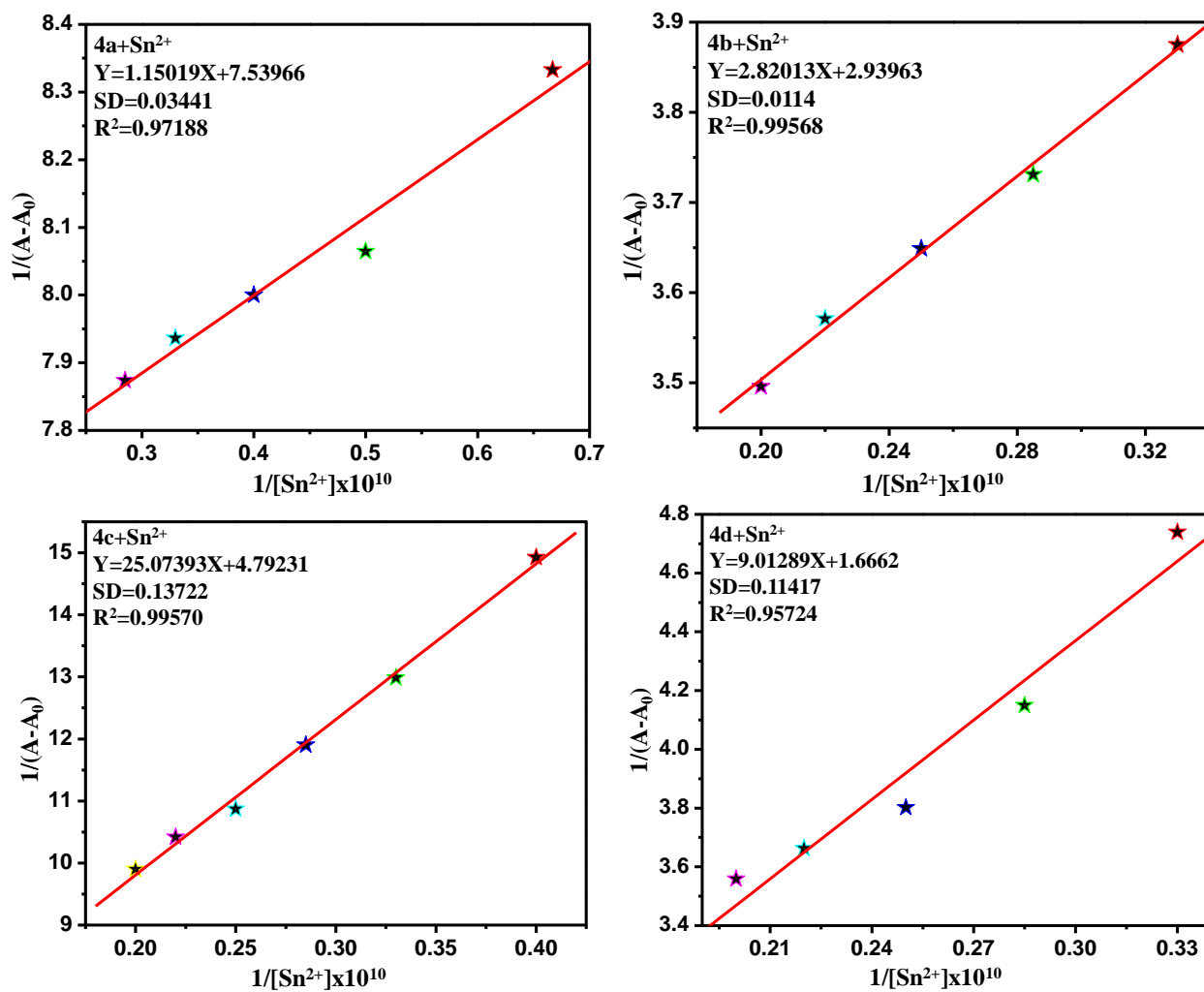


**Fig.S26.** Visual recognition of 4(b-d) in daylight in the presence of  $\text{Sn}^{2+}$  ions in methanol.

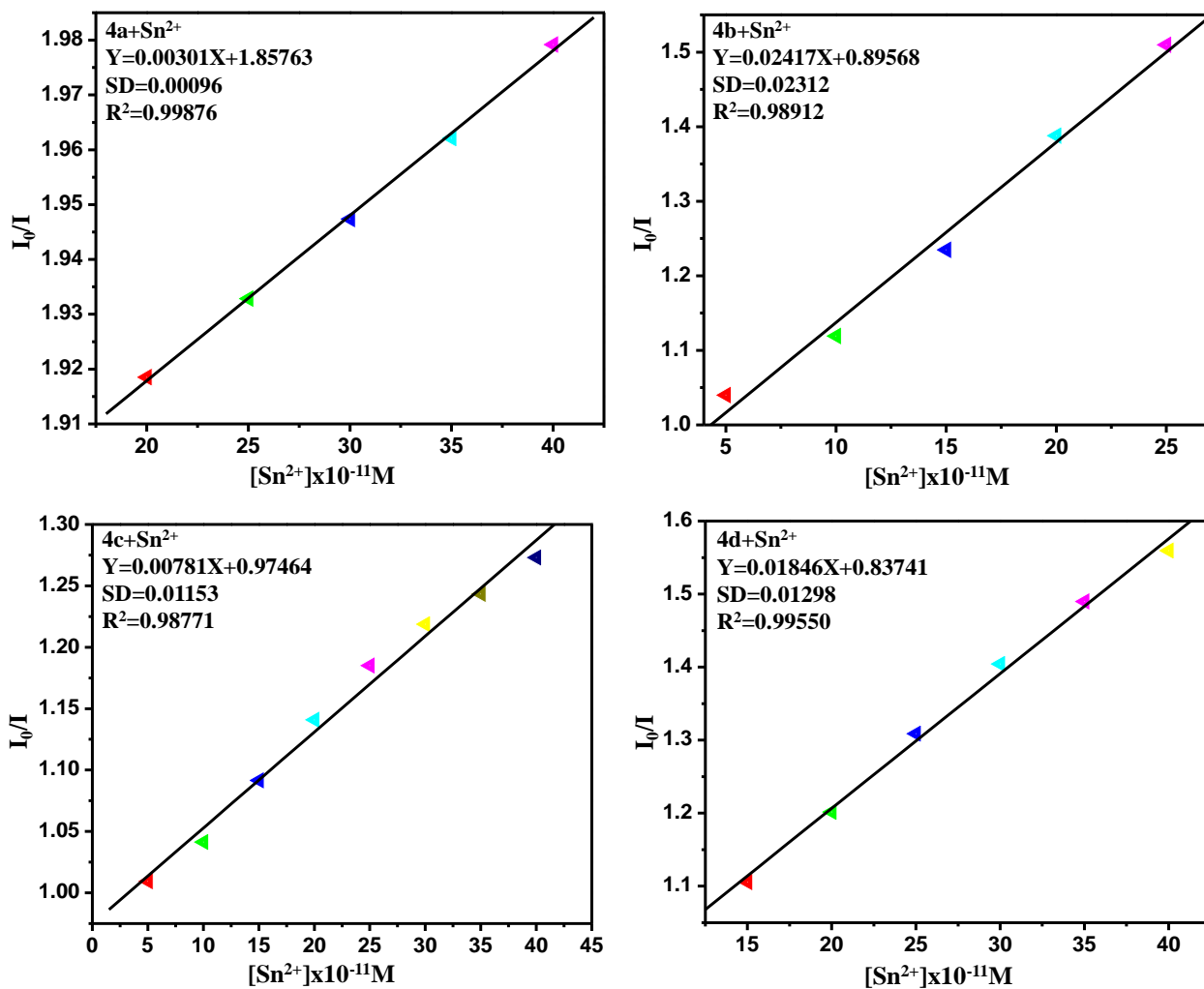




**Fig.S27:** Job's plots for the complexation of 4(a-d) with  $\text{Sn}^{2+}$  ions in methanol showing 1:1 stoichiometry



**Fig.S28:** B-H plots for the compounds 4(a-d) with Sn<sup>2+</sup> ions at 270 nm



**Fig.S29:** LOD curves for the compounds 4(a-d) with  $\text{Sn}^{2+}$  ions at 270 nm

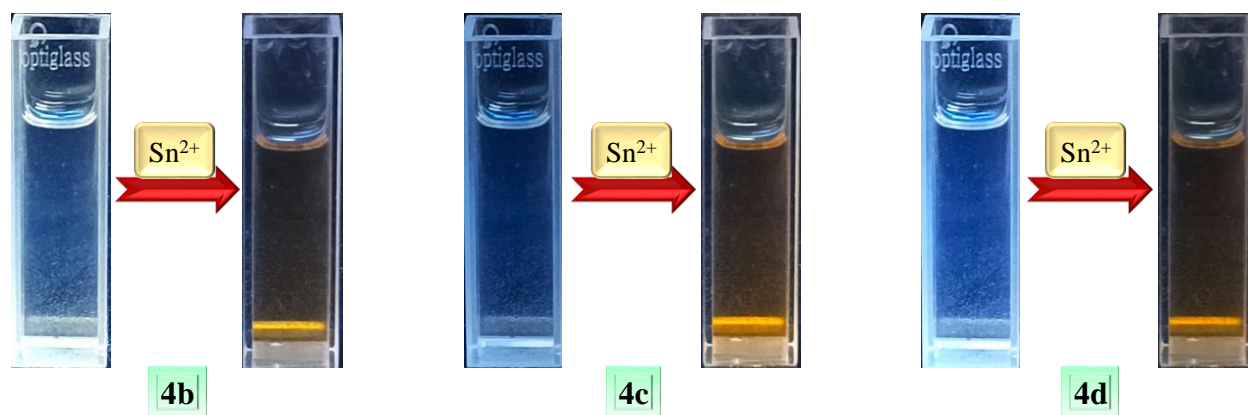


Fig.S30. Fluorescence emission under UV-light of 4(b-d) in the presence of  $\text{Sn}^{2+}$  ions in methanol.

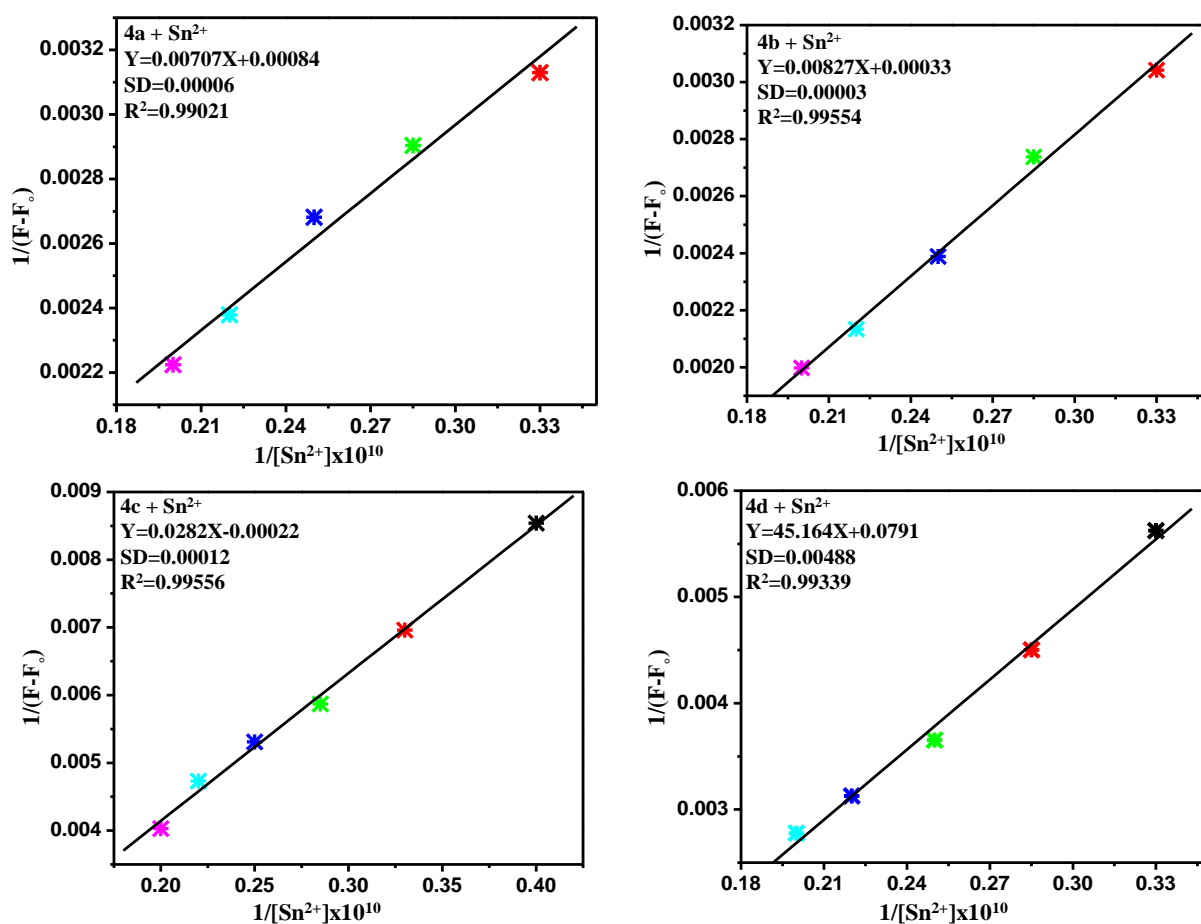
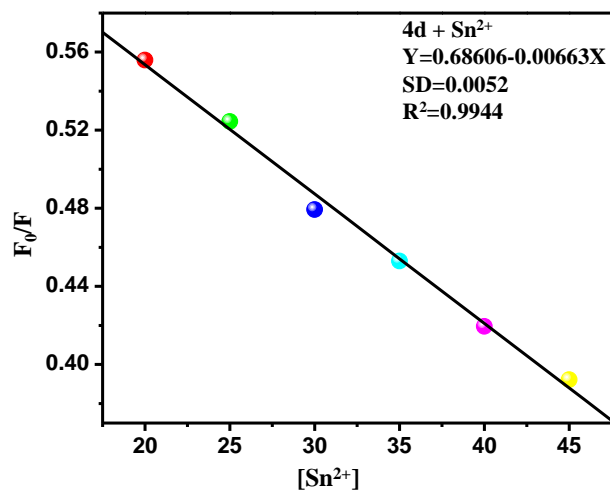
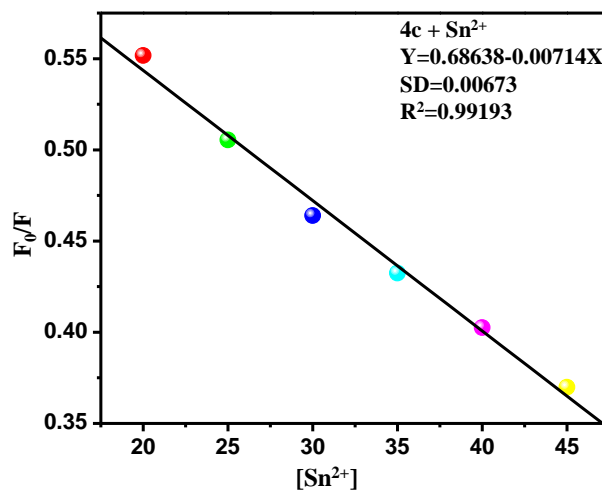
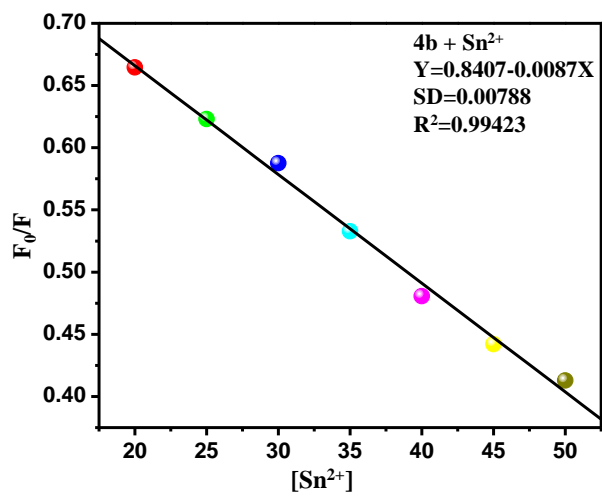
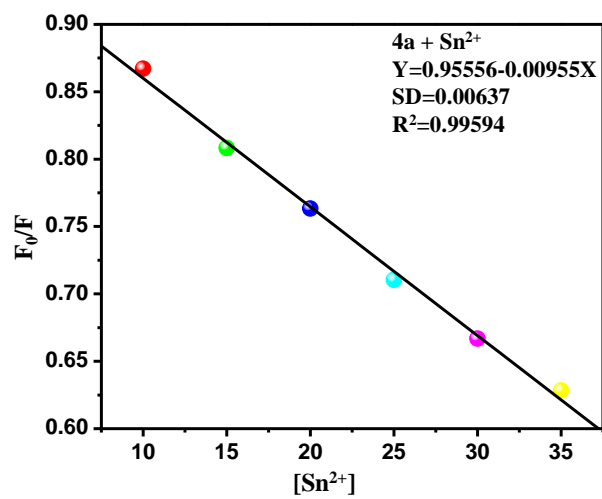
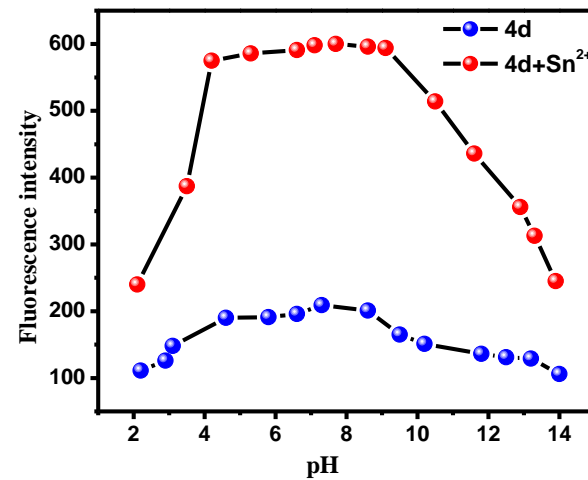
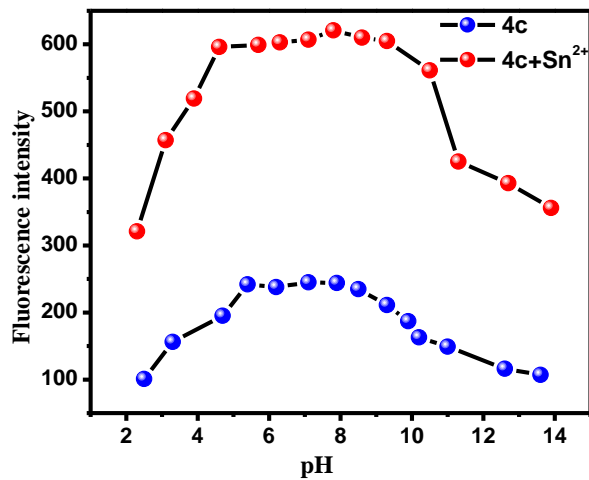
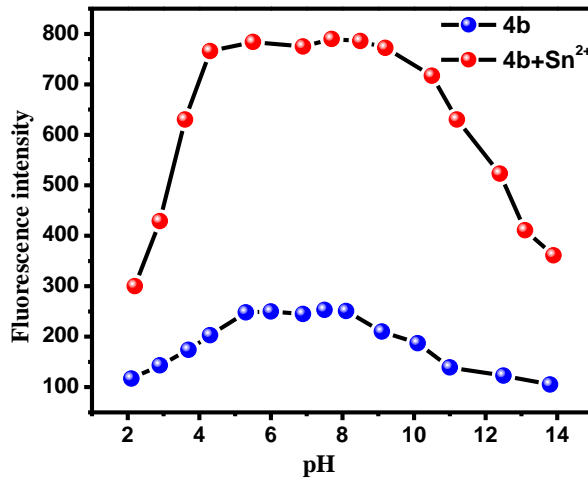
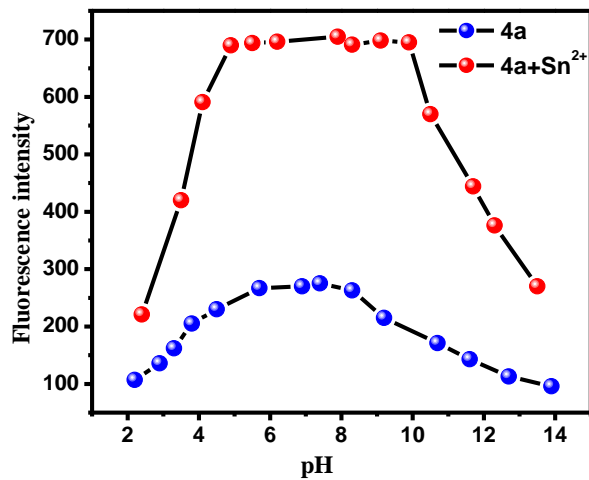


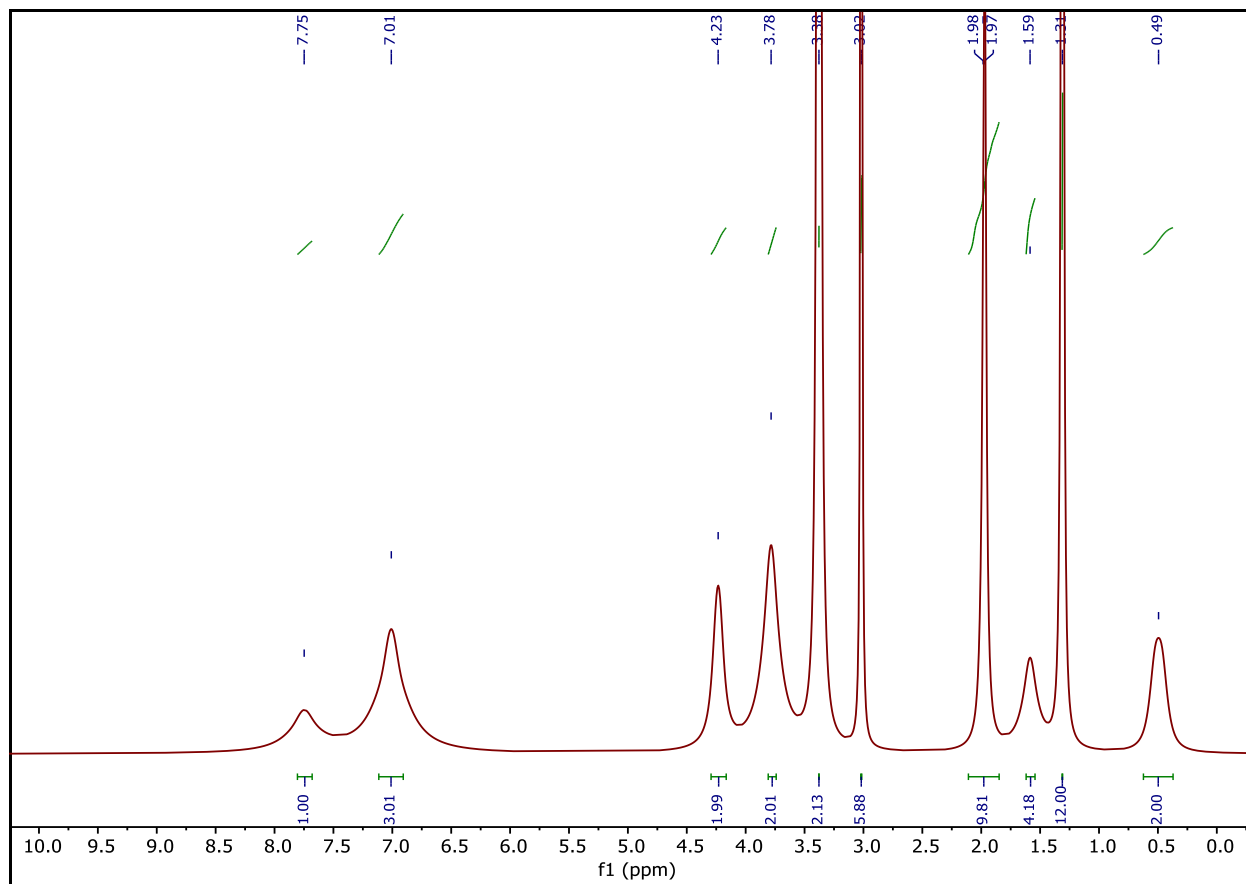
Fig.S31: Benesi-Hildebrand plots for the compounds 4(a-d) at 527 nm



**Fig.S32:** LOD curves for the compounds 4(a-d) with Sn<sup>2+</sup> ions at 527 nm



**Fig.S33:** Fluorescence intensity of compounds (4a-4d) in the absence and presence of Sn<sup>2+</sup> ions as functions of pH values at 527 nm.



**Fig.S34:**  $^1\text{H}$  NMR spectrum of compound 4a-Sn $^{2+}$

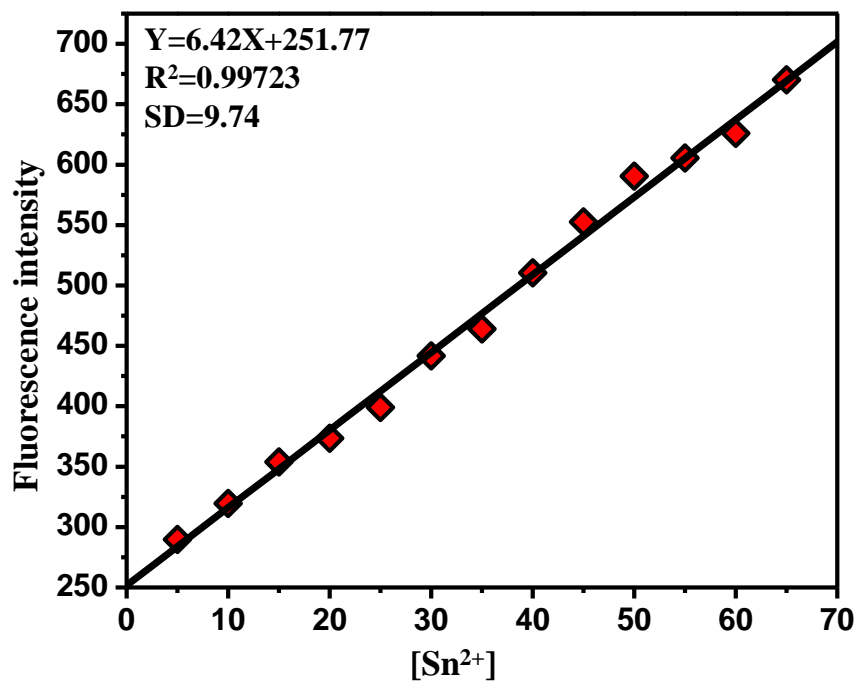
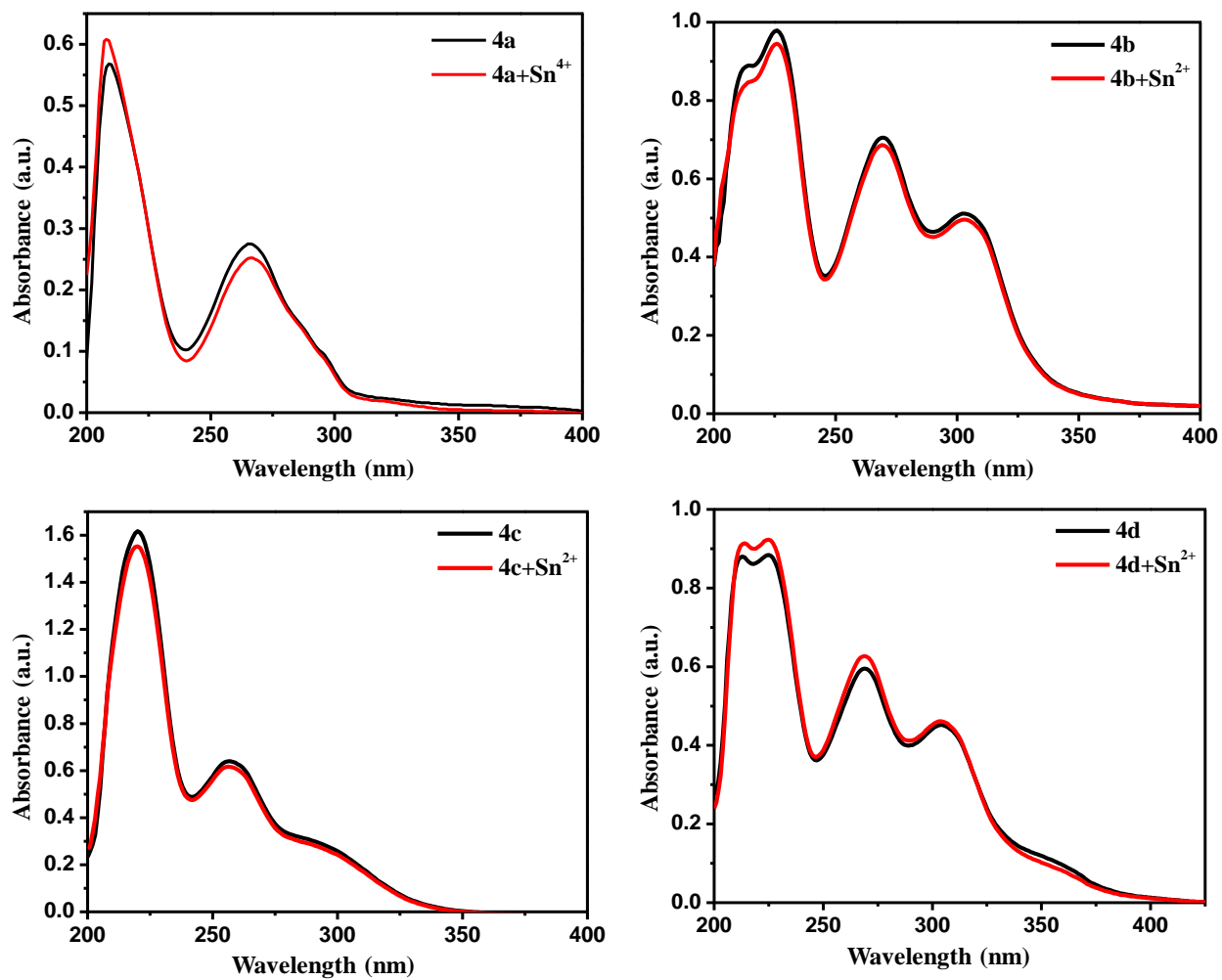


Fig.S35. Plot of  $\Delta F$  as function of concentration of  $\text{Sn}^{2+}$





**Fig.S36.** UV-visible absorption spectra of the compounds 4(a-d) in presence of Sn<sup>4+</sup> ions in methanol

