

## Electronic Supplementary Information:

# Aromatic/Perfluoroaromatic Self-Assembly Effect: an Effective Strategy to Improve NLO Effect

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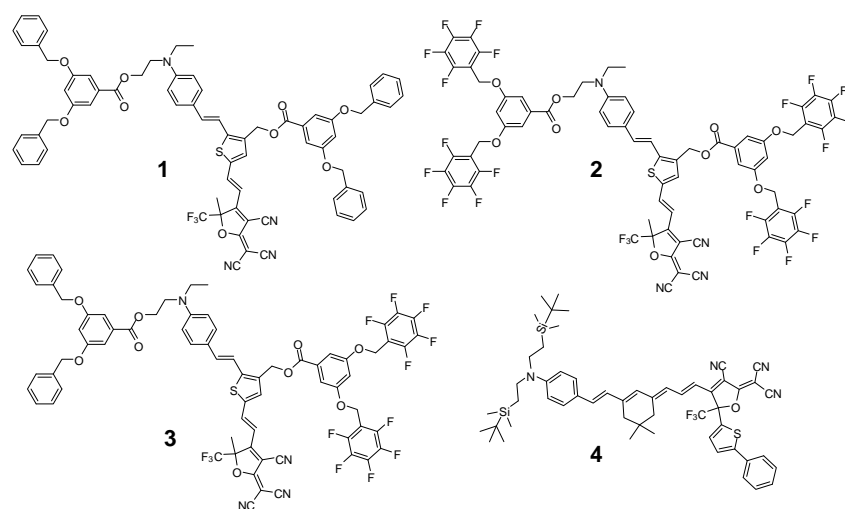


Chart S1.

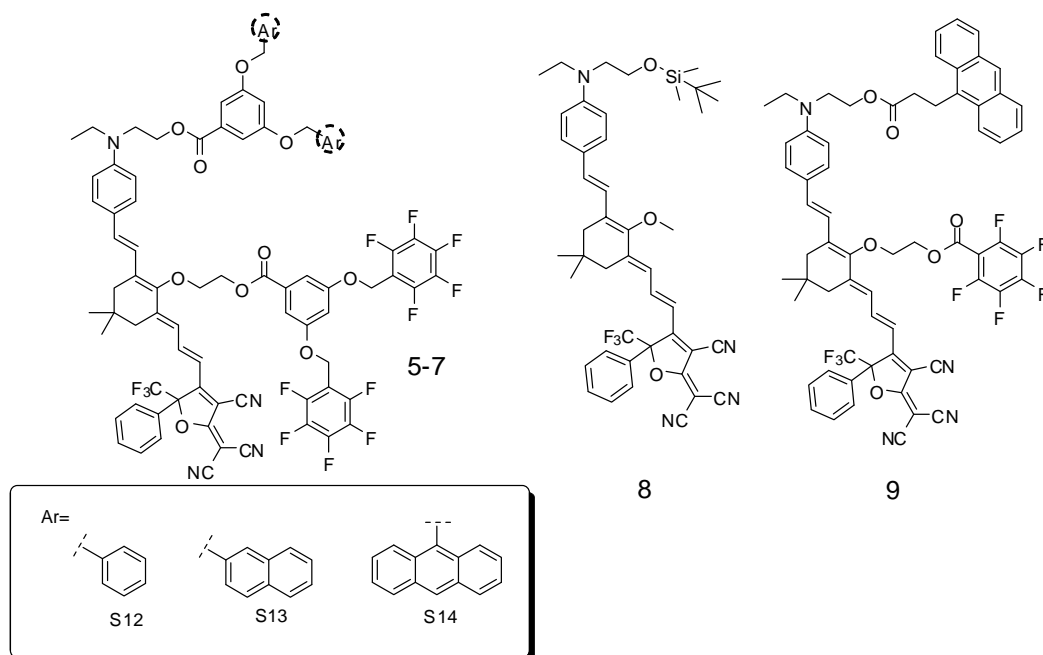


Chart S2.

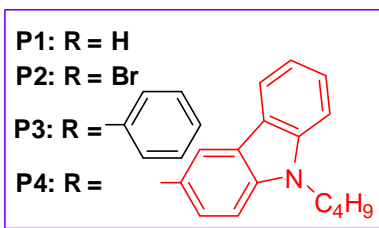
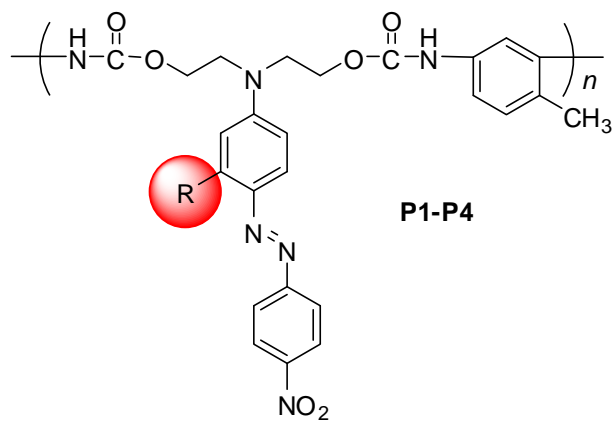


Chart S3.

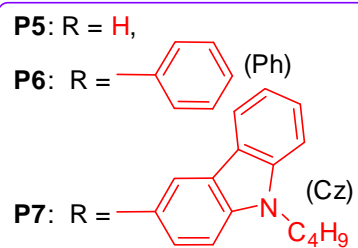
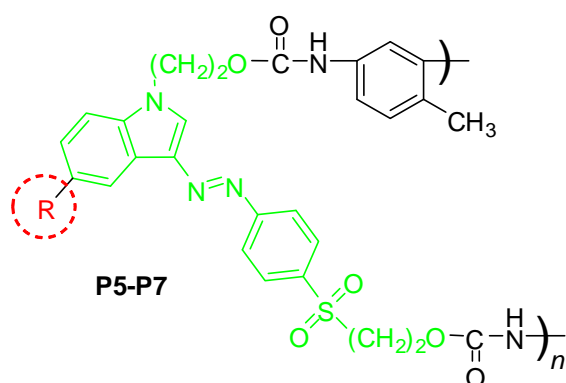


Chart S4.

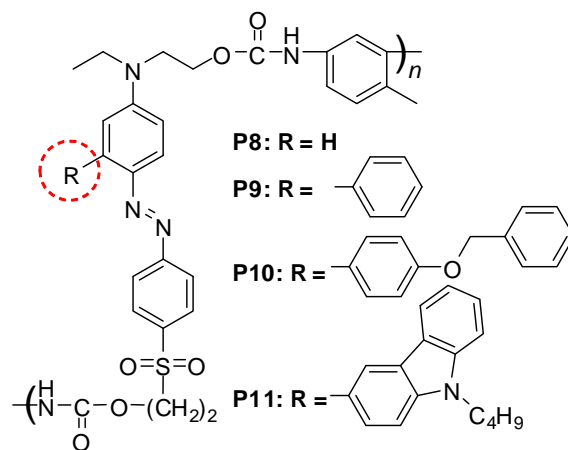


Chart S5.

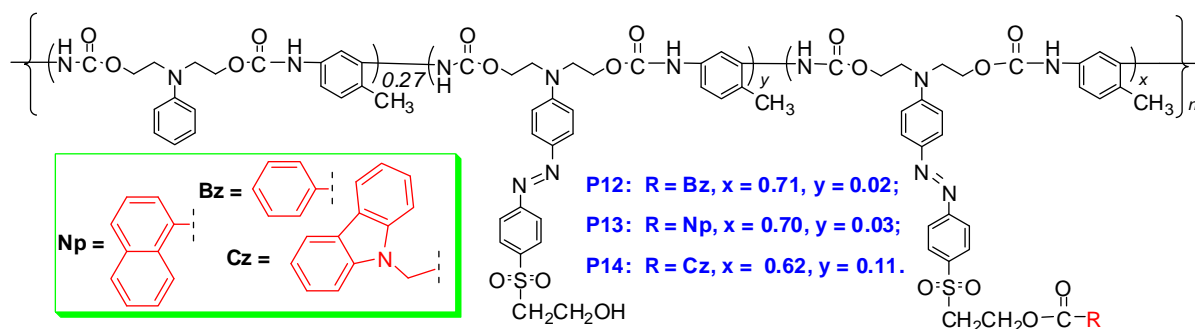


Chart S6.

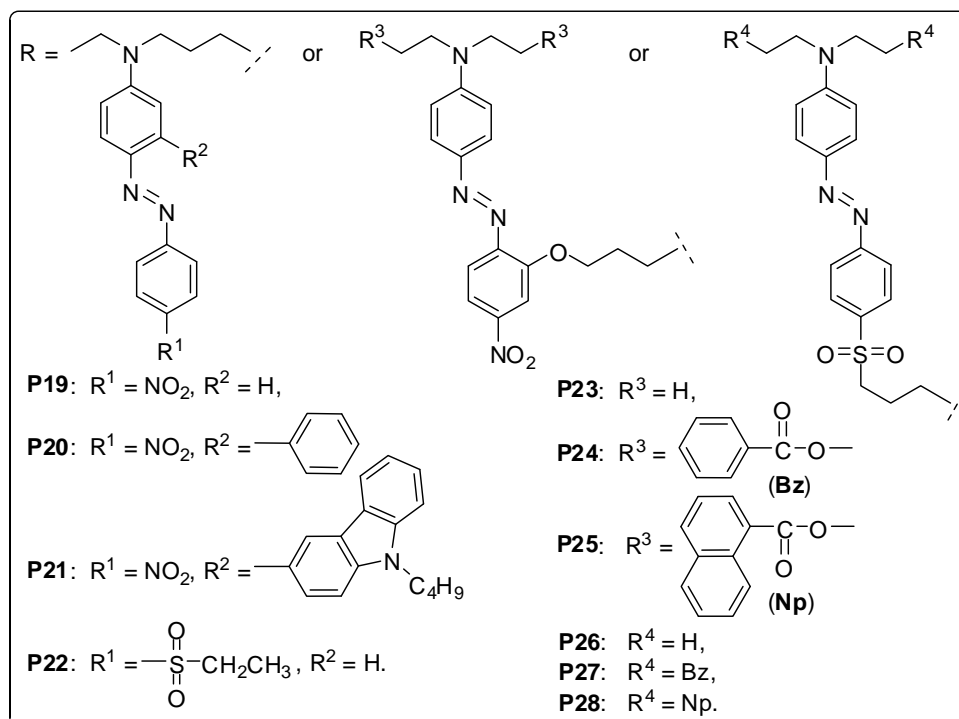
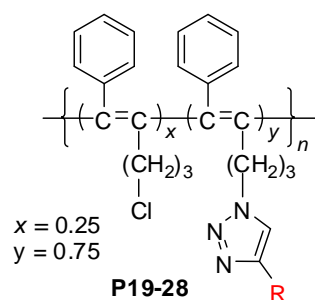


Chart S7.

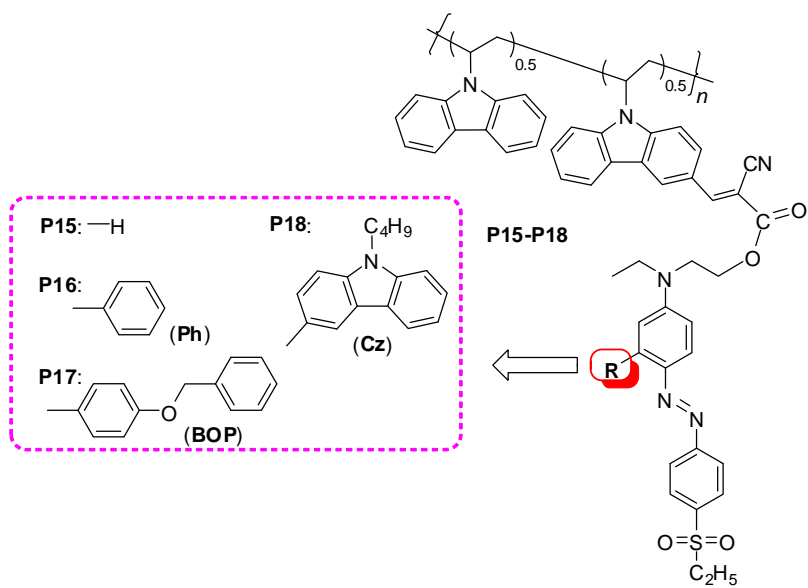


Chart S8.

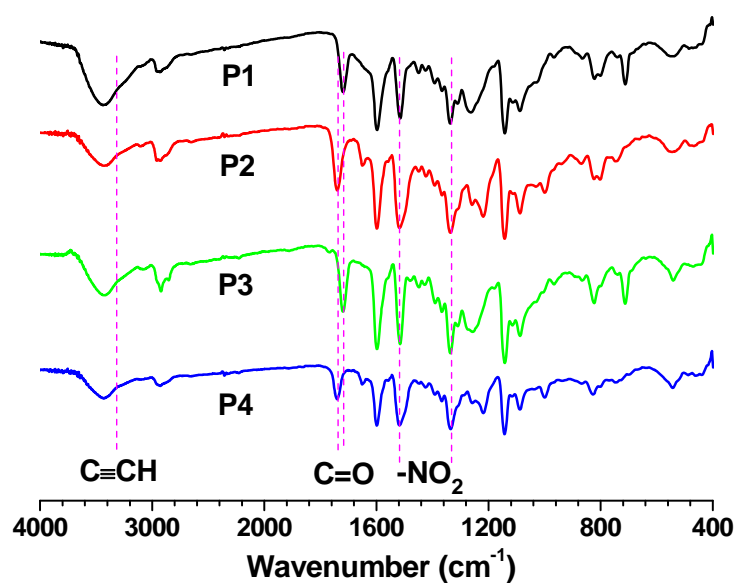


Fig. S1. The FT-IR spectra of polymers P1-P4.



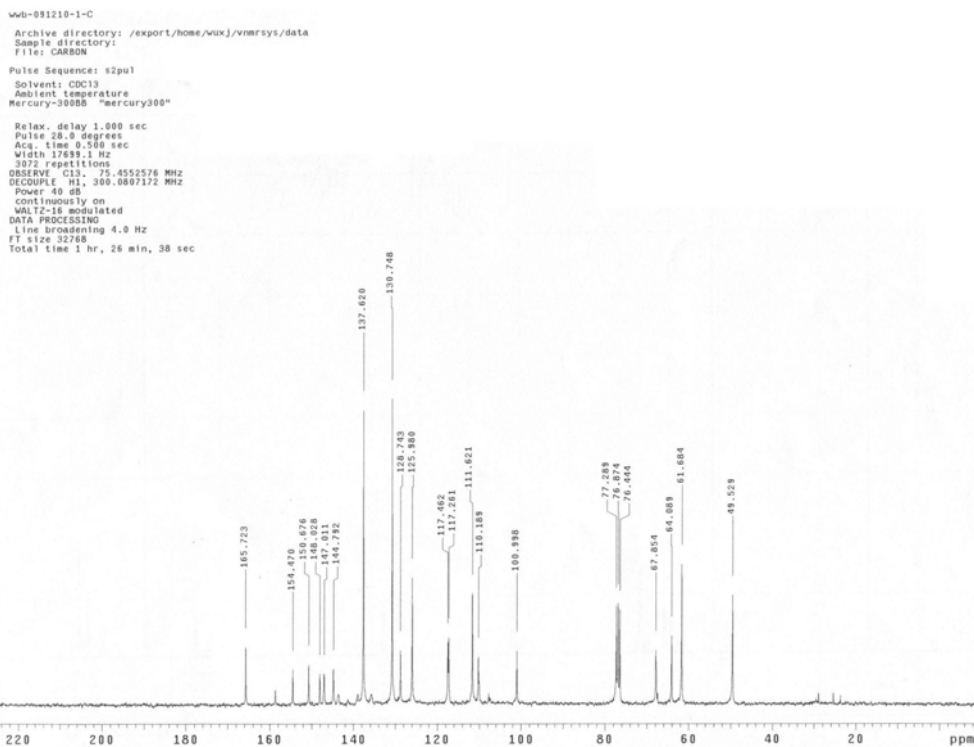


Fig. S4.  $^{13}\text{C}$  NMR spectrum of chromophore C1 in chloroform-*d*.

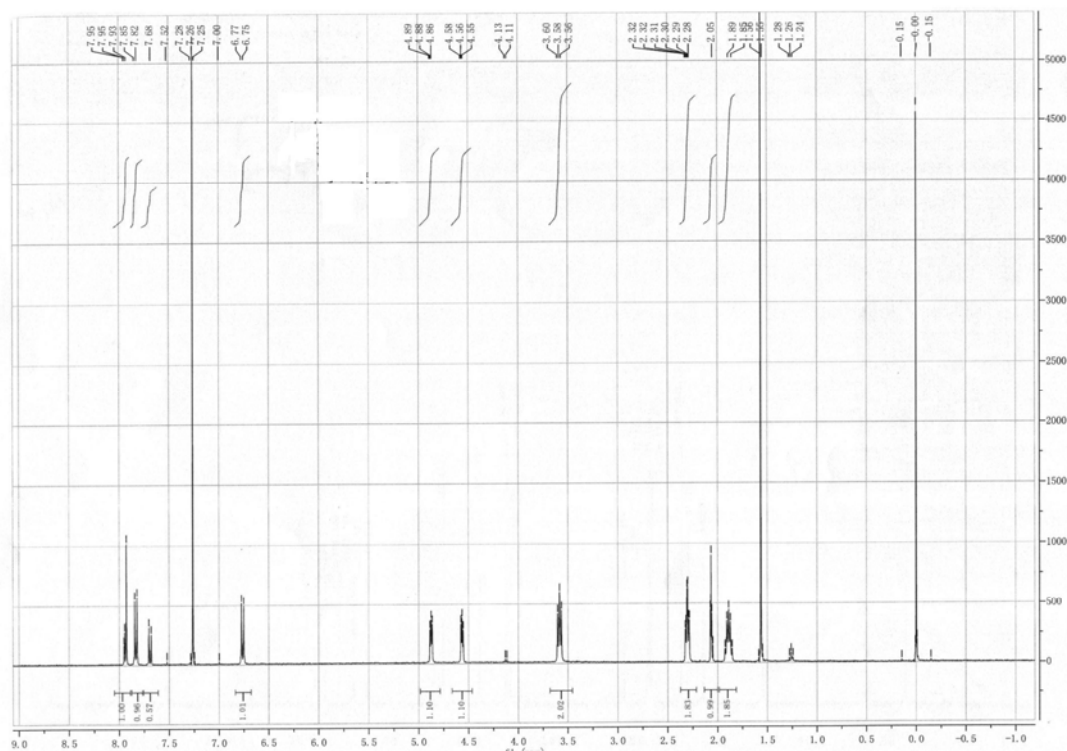


Fig. S5.  $^1\text{H}$  NMR spectrum of chromophore C2 in chloroform-*d*.

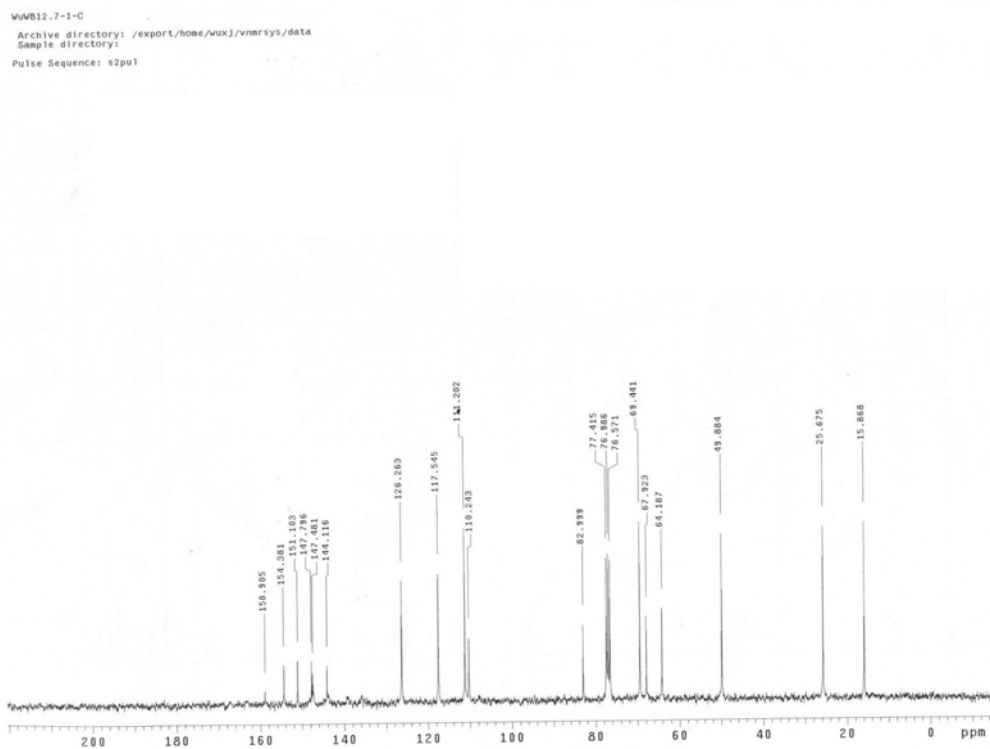


Fig. S6.  $^{13}\text{C}$  NMR spectrum of chromophore **C2** in chloroform-*d*.

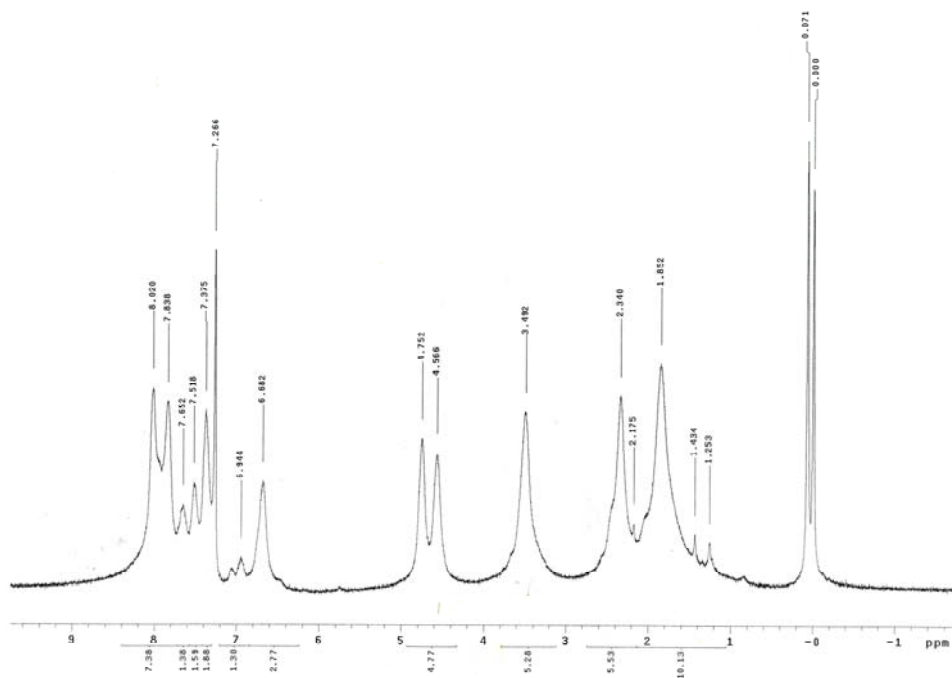
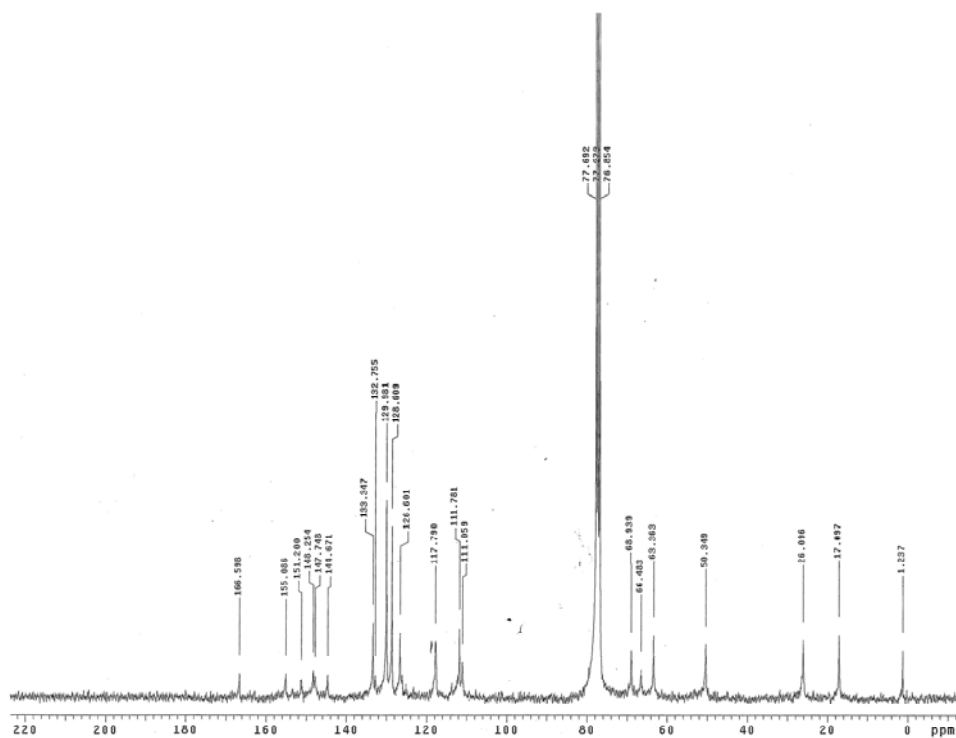
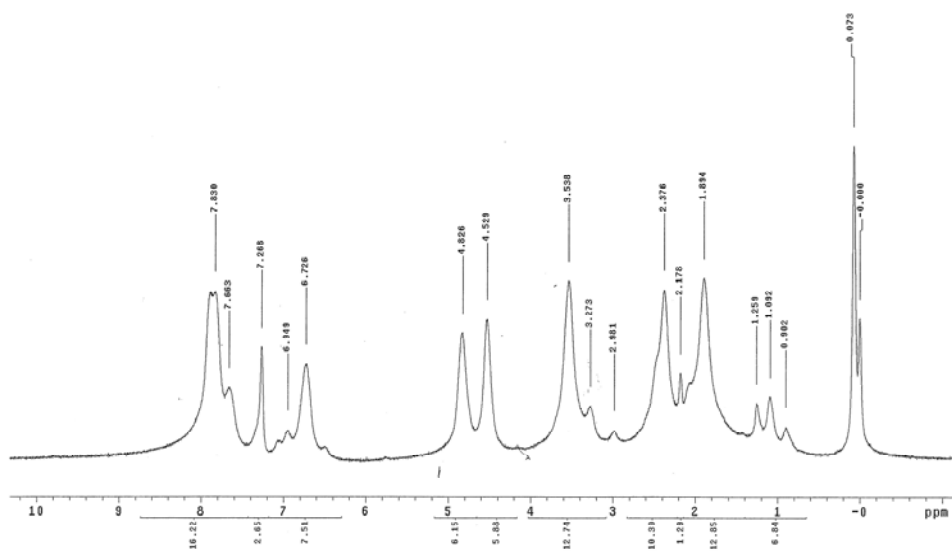


Fig. S7.  $^1\text{H}$  NMR spectrum of **P1** in chloroform-*d*.

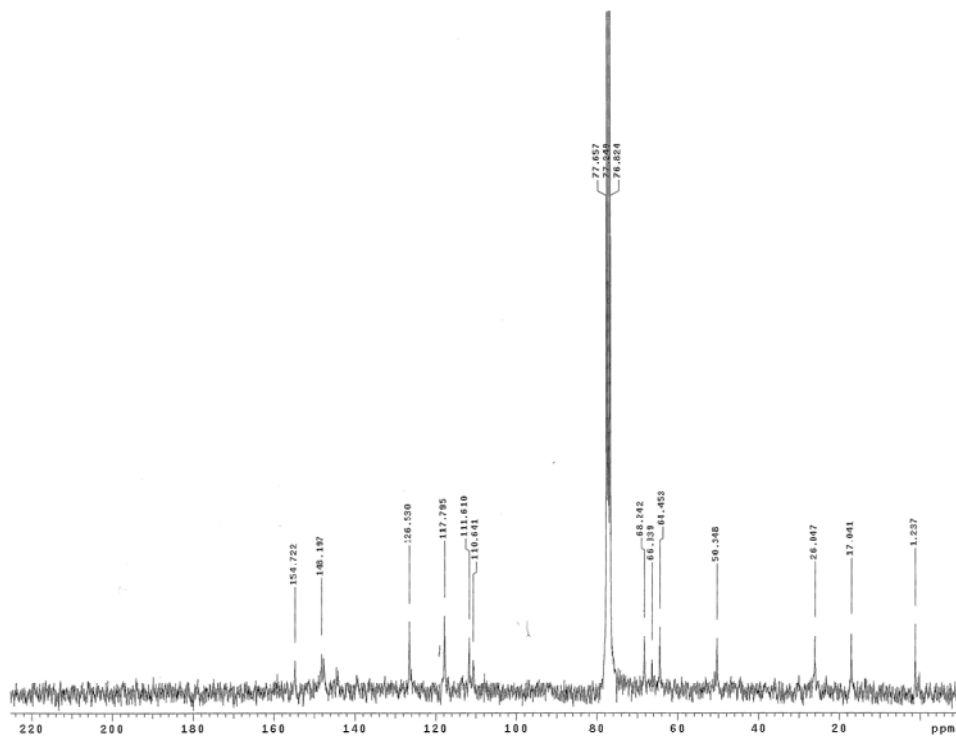


**Fig. S8.**  $^{13}\text{C}$  NMR spectrum of **P1** in chloroform-*d*.

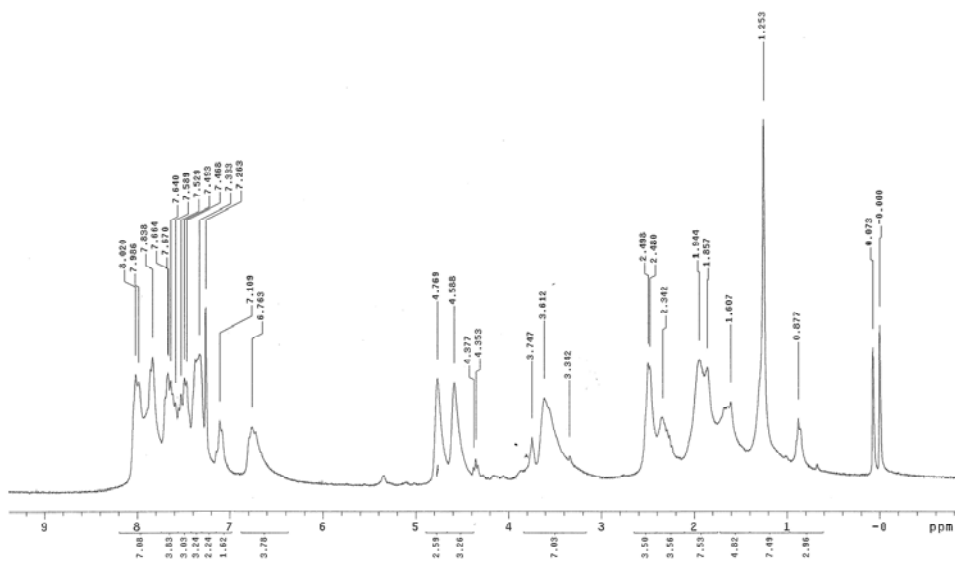


**Fig. S9.**  $^1\text{H}$  NMR spectrum of **P2** in chloroform-*d*.

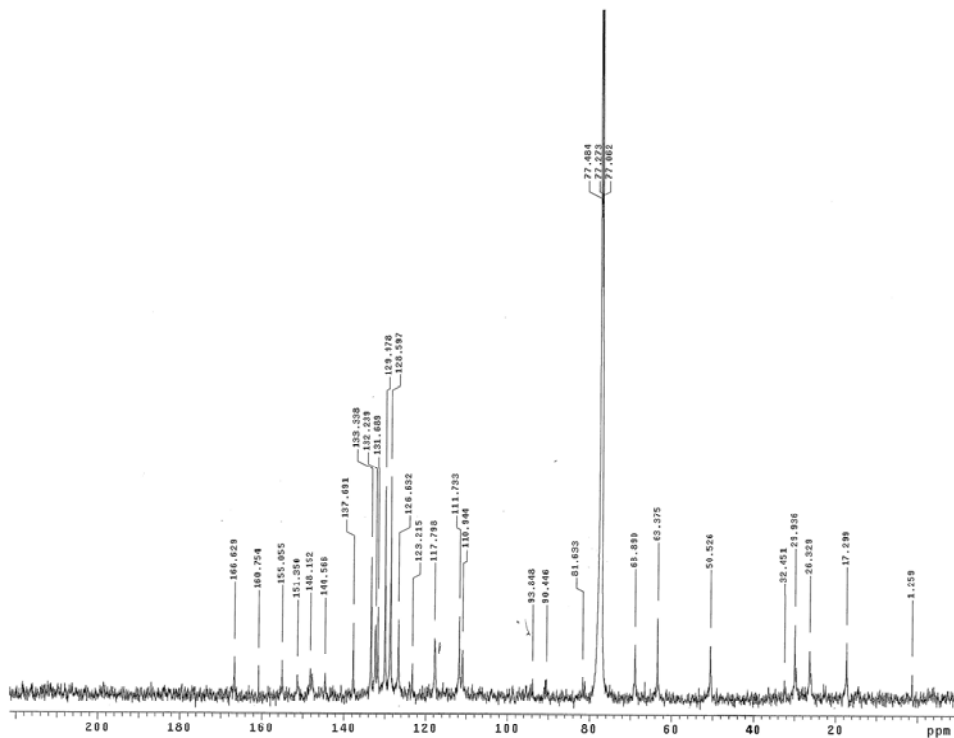




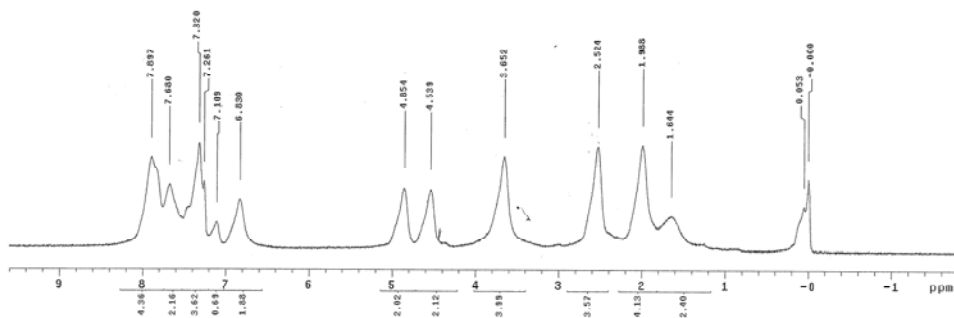
**Fig. S10.**  $^{13}\text{C}$  NMR spectrum of **P2** in chloroform-*d*.



**Fig. S11.**  $^1\text{H}$  NMR spectrum of **P3** in chloroform-*d*.



**Fig. S12.**  $^{13}\text{C}$  NMR spectrum of **P3** in chloroform-*d*.



**Fig. S13.**  $^1\text{H}$  NMR spectrum of **P4** in chloroform-*d*.

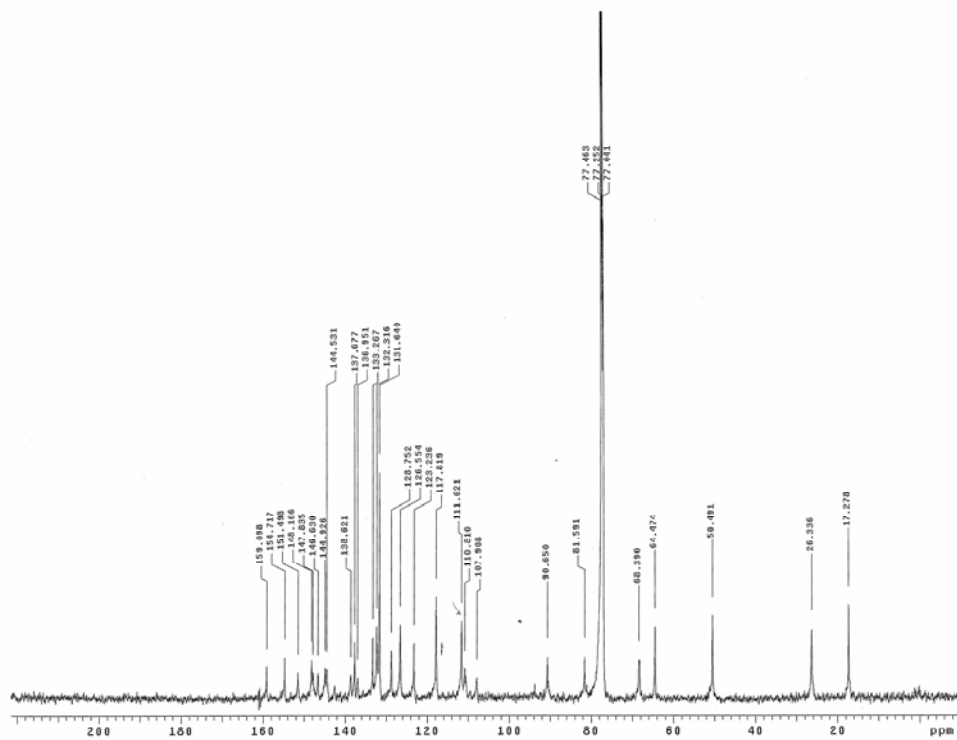


Fig. S14.  $^{13}\text{C}$  NMR spectrum of **P4** in chloroform-*d*.

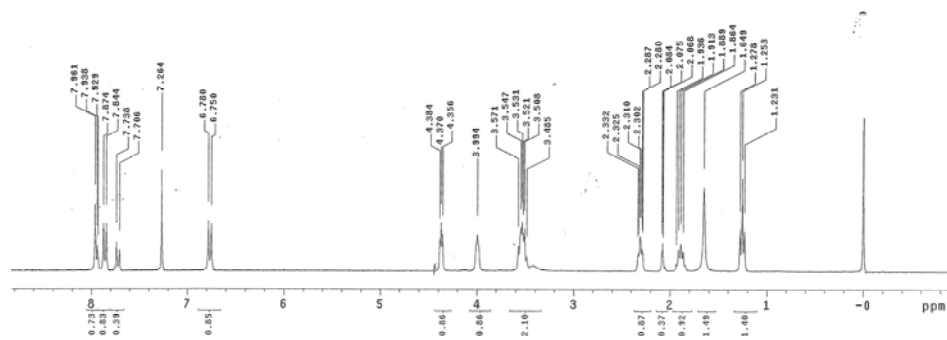


Fig. S15.  $^1\text{H}$  NMR spectrum of **S5** in chloroform-*d*.

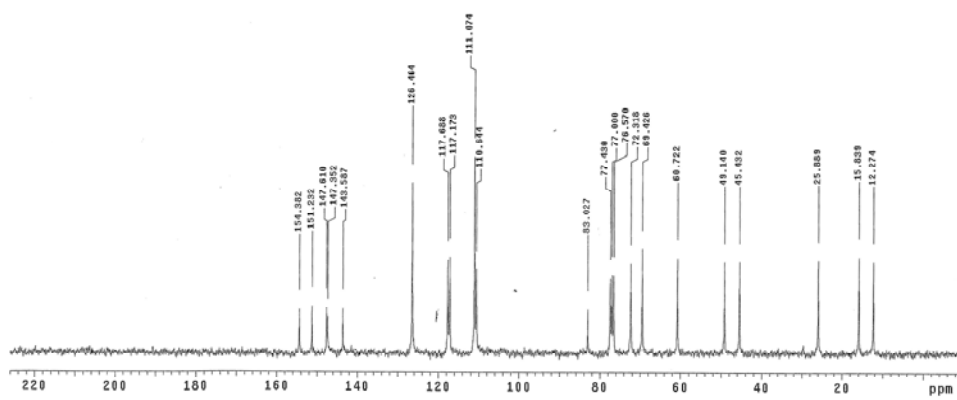


Fig. S16.  $^{13}\text{C}$  NMR spectrum of **S5** in chloroform-*d*.

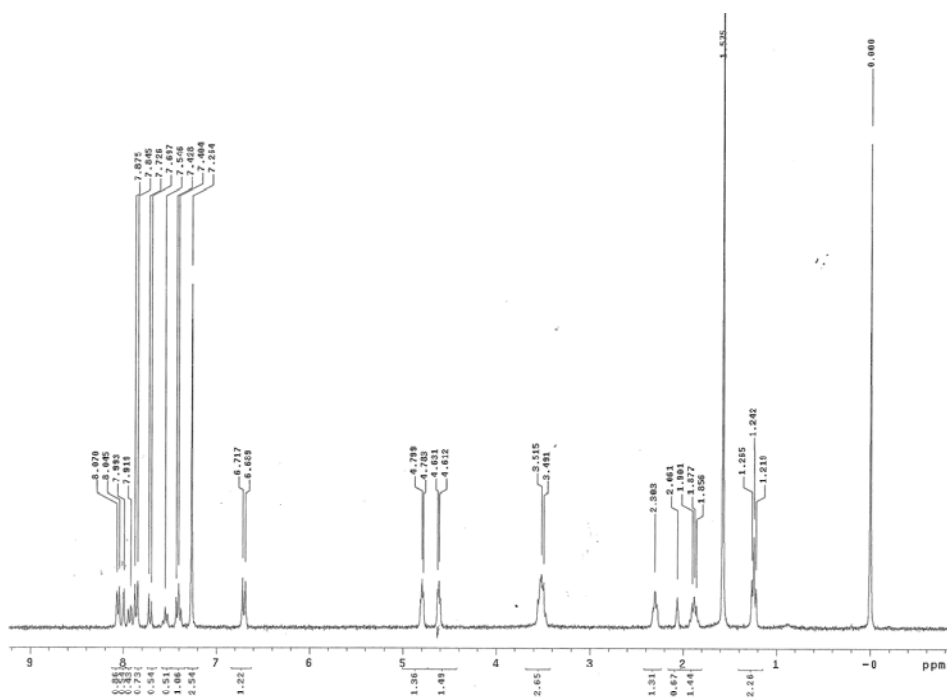


Fig. S17. <sup>1</sup>H NMR spectrum of M1 in chloroform-*d*.

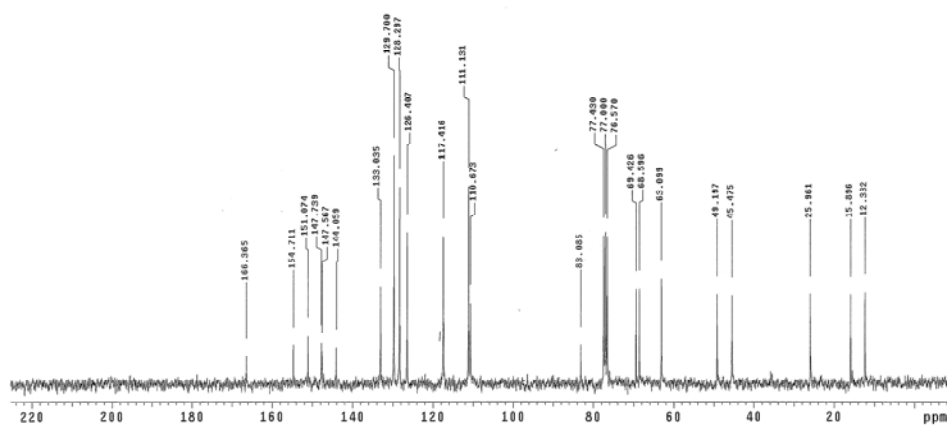


Fig. S18. <sup>13</sup>C NMR spectrum of M1 in chloroform-*d*.

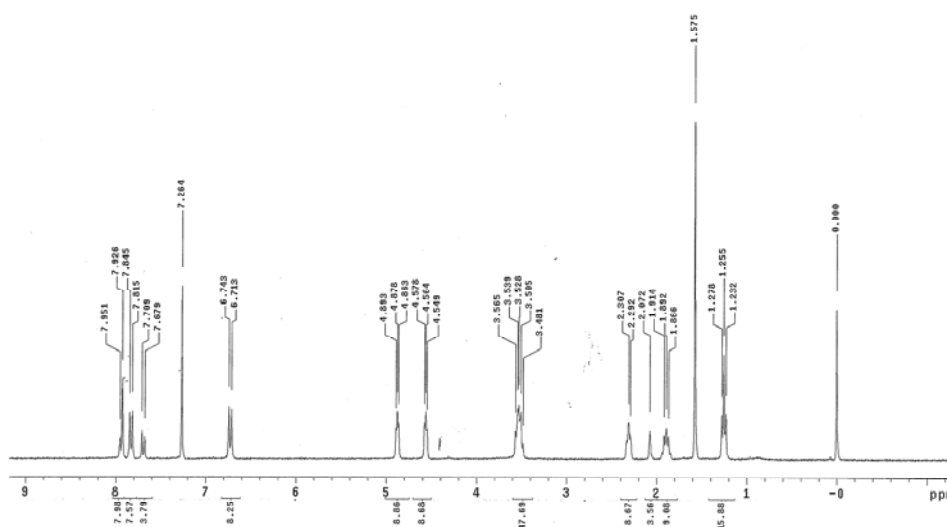


Fig. S19. <sup>1</sup>H NMR spectrum of M2 in chloroform-*d*.

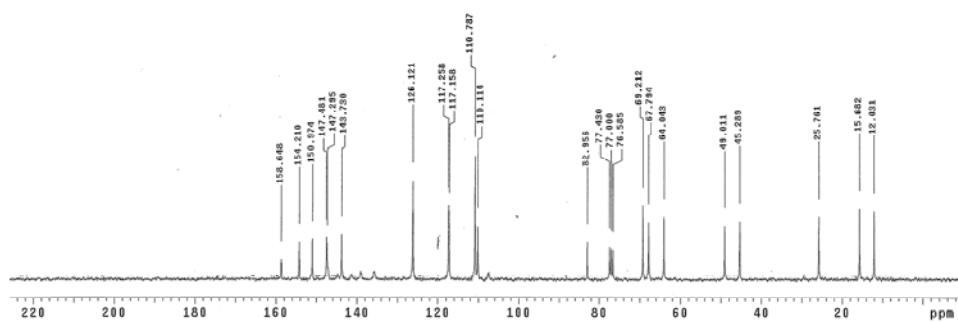


Fig. S20.  $^{13}\text{C}$  NMR spectrum of M2 in chloroform-*d*.

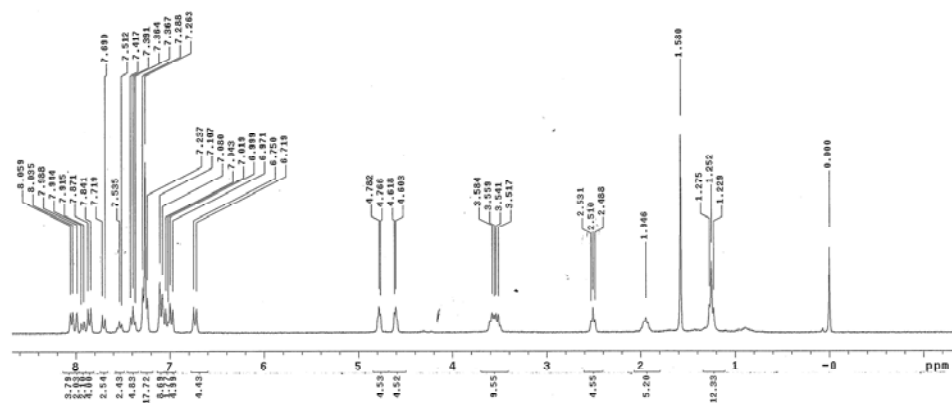


Fig. S21.  $^1\text{H}$  NMR spectrum of M3 in chloroform-*d*.

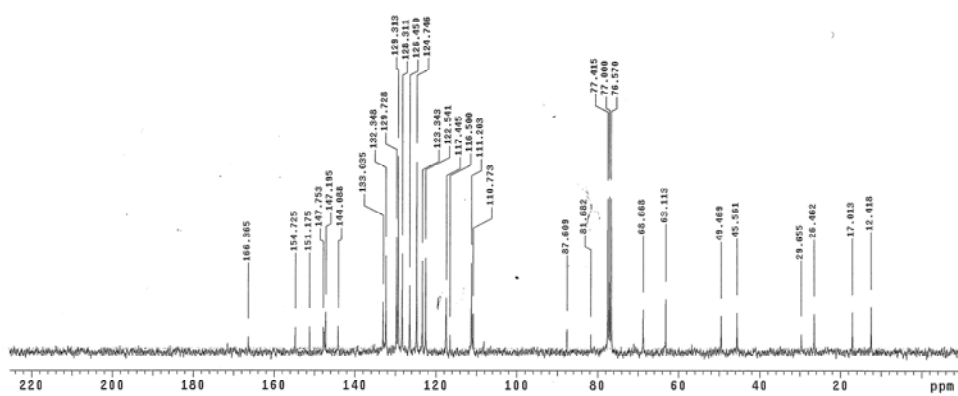


Fig. S22.  $^{13}\text{C}$  NMR spectrum of M3 in chloroform-*d*.



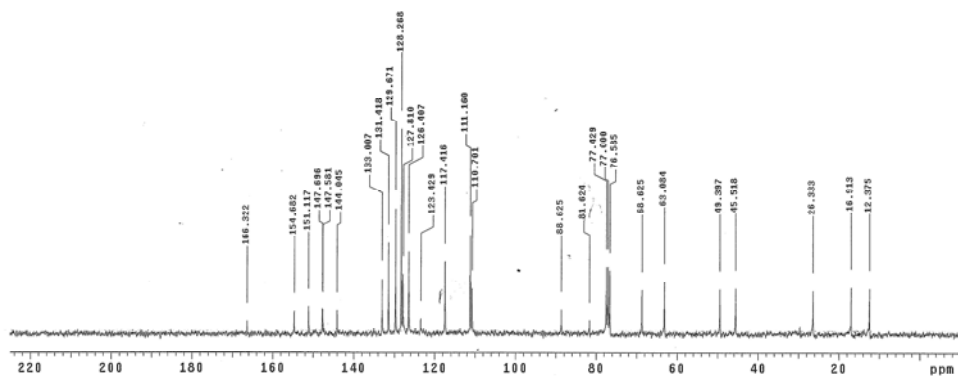


Fig. S26.  $^{13}\text{C}$  NMR spectrum of M5 in chloroform-*d*.

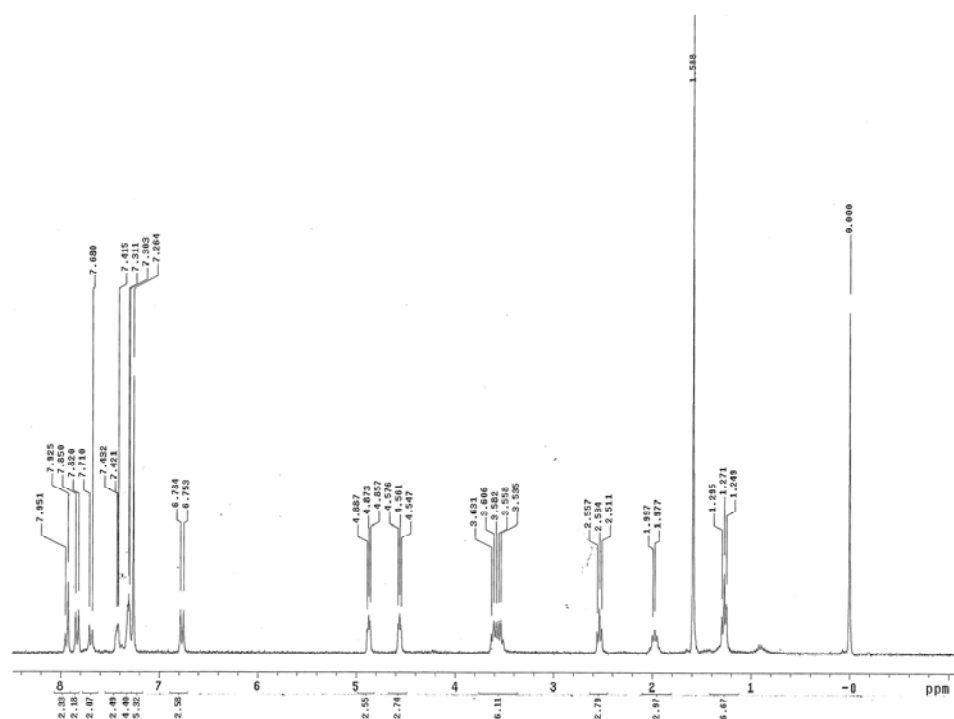


Fig. S27.  $^1\text{H}$  NMR spectrum of M6 in chloroform-*d*.

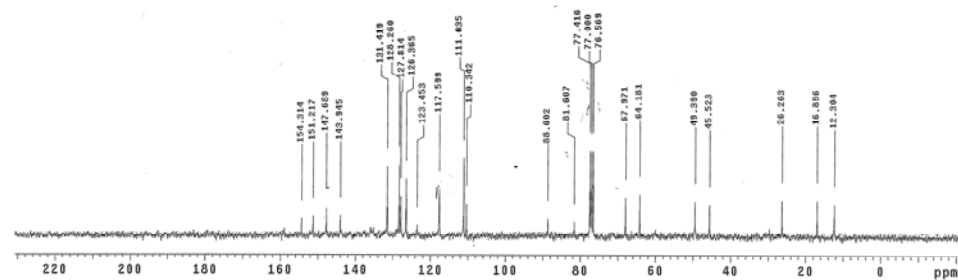
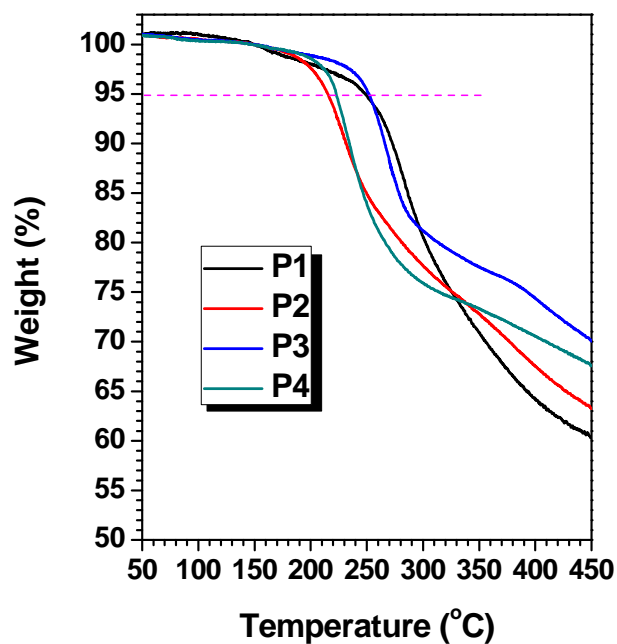
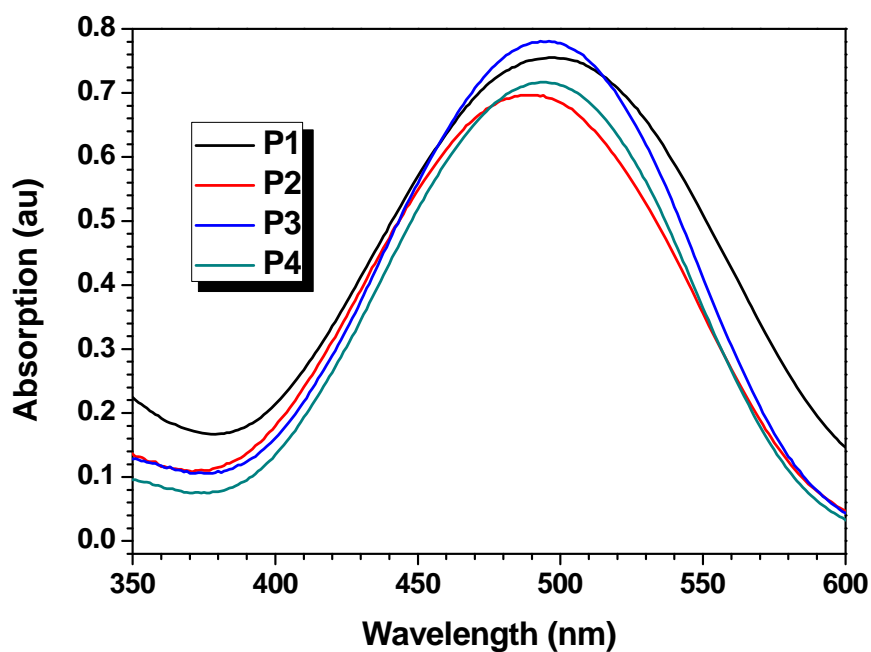


Fig. S28.  $^{13}\text{C}$  NMR spectrum of M6 in chloroform-*d*.



**Fig. S29.** TGA thermograms of polymers **P1-P4**, measured in nitrogen at a heating rate of 10 °C/min



**Fig. S30.** UV-Vis spectra of polymers **P1-P4** in THF (0.02 mg/mL).



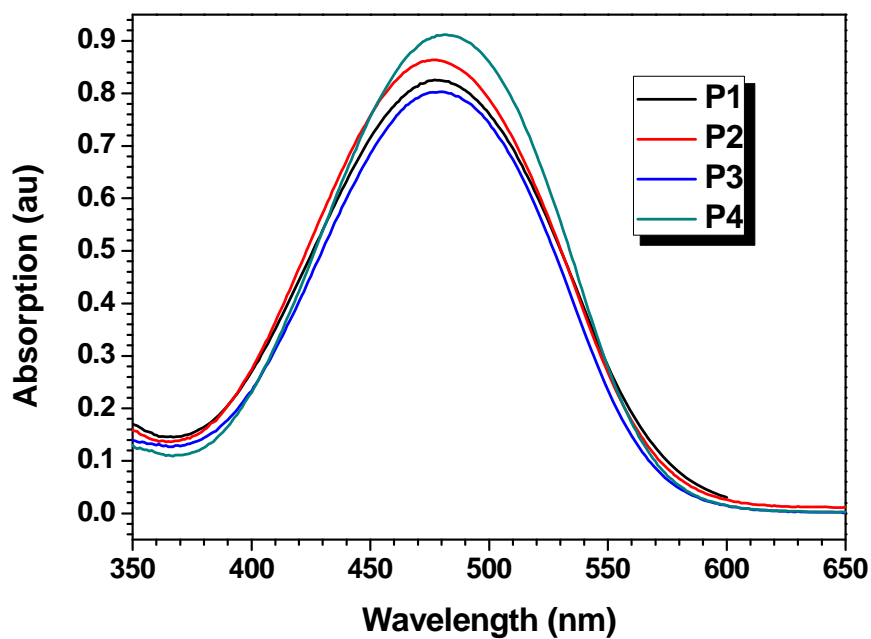


Fig. S31. UV-Vis spectra of polymers **P1-P4** in 1,4-dioxane (0.02 mg/mL).

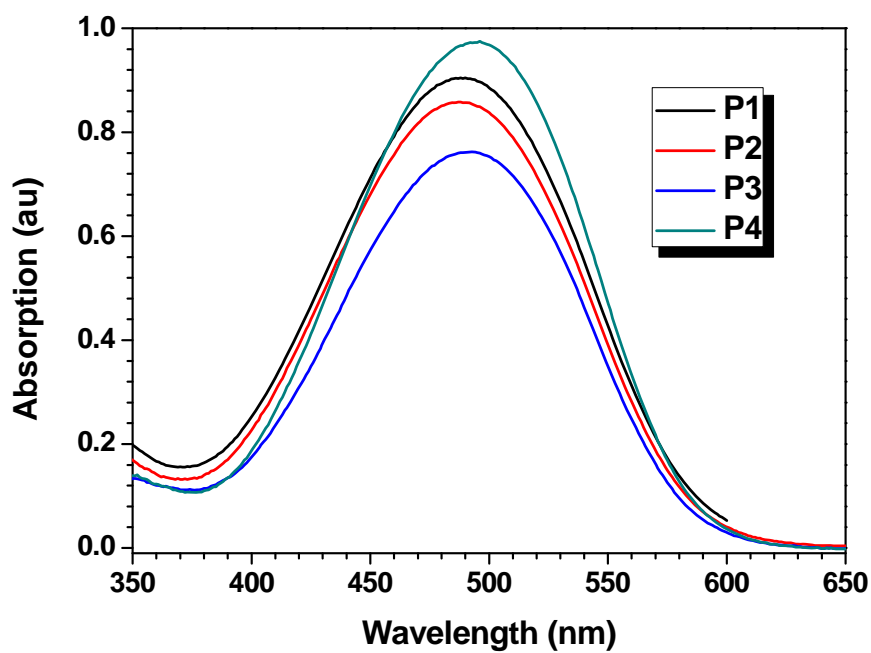
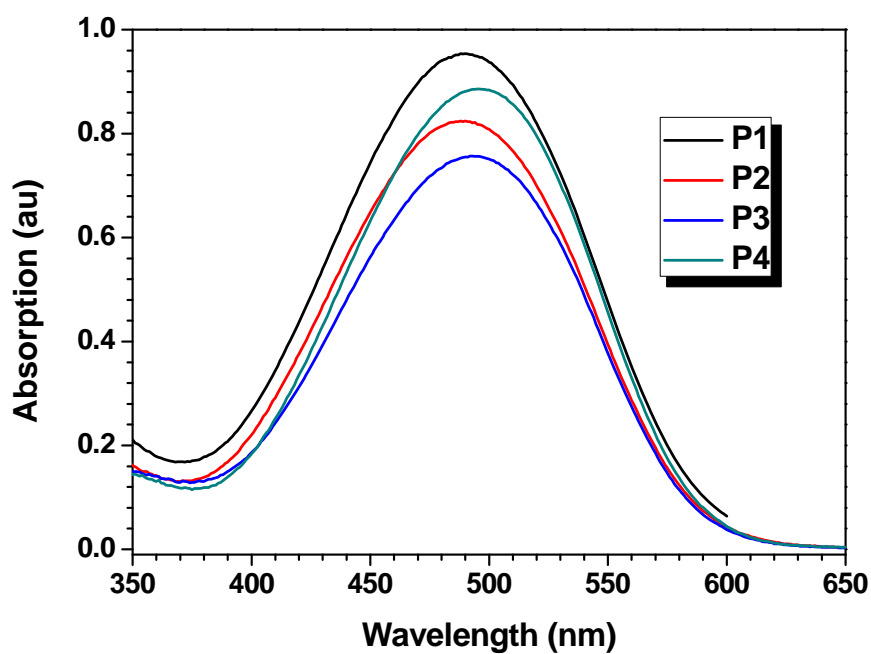
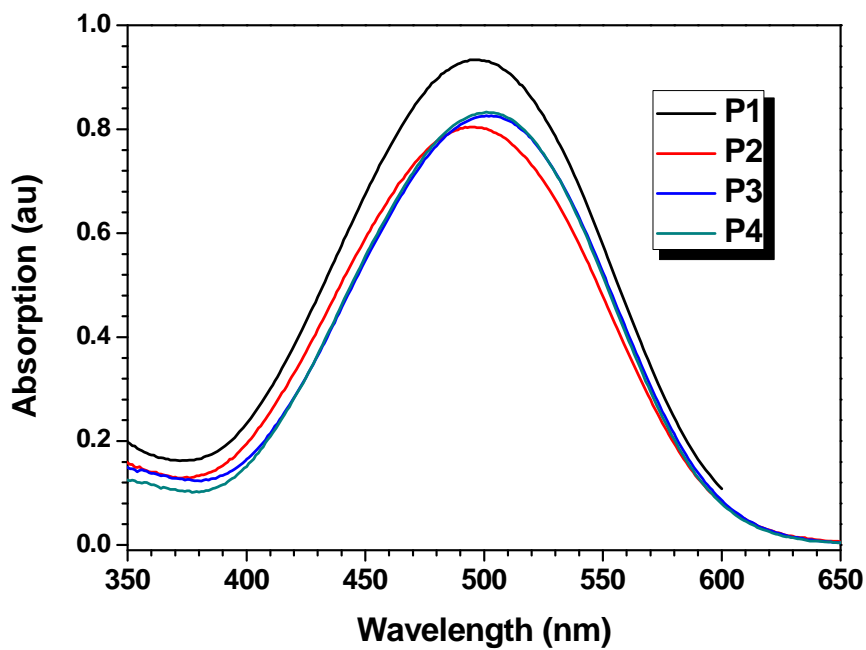


Fig. S32. UV-Vis spectra of polymers **P1-P4** in chloroform (0.02 mg/mL).



**Fig. S33.** UV-Vis spectra of polymers **P1-P4** in dichloromethane (0.02 mg/mL).



**Fig. S34.** UV-Vis spectra of polymers **P1-P4** in DMF (0.02 mg/mL).

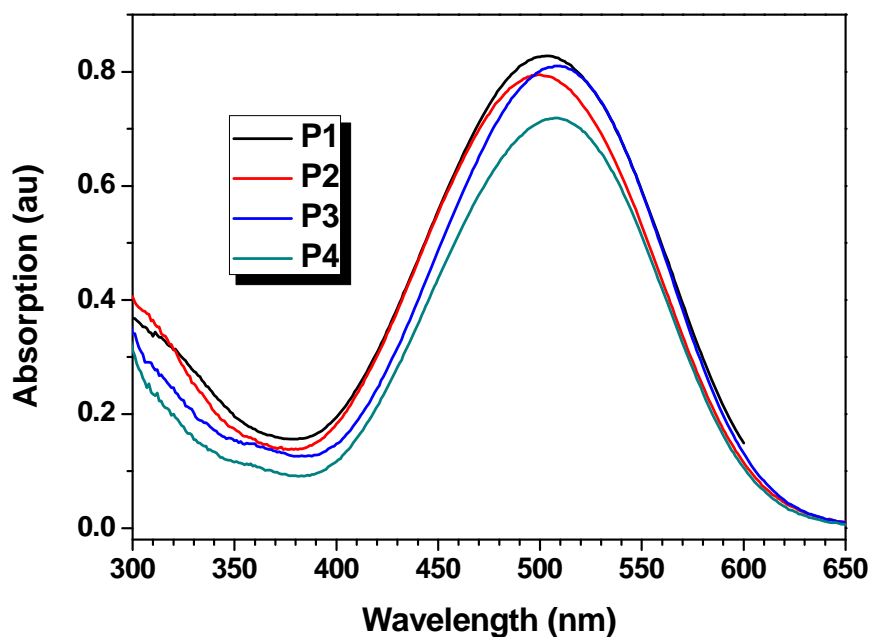


Fig. S35. UV-Vis spectra of polymers **P1-P4** in DMSO (0.02 mg/mL).

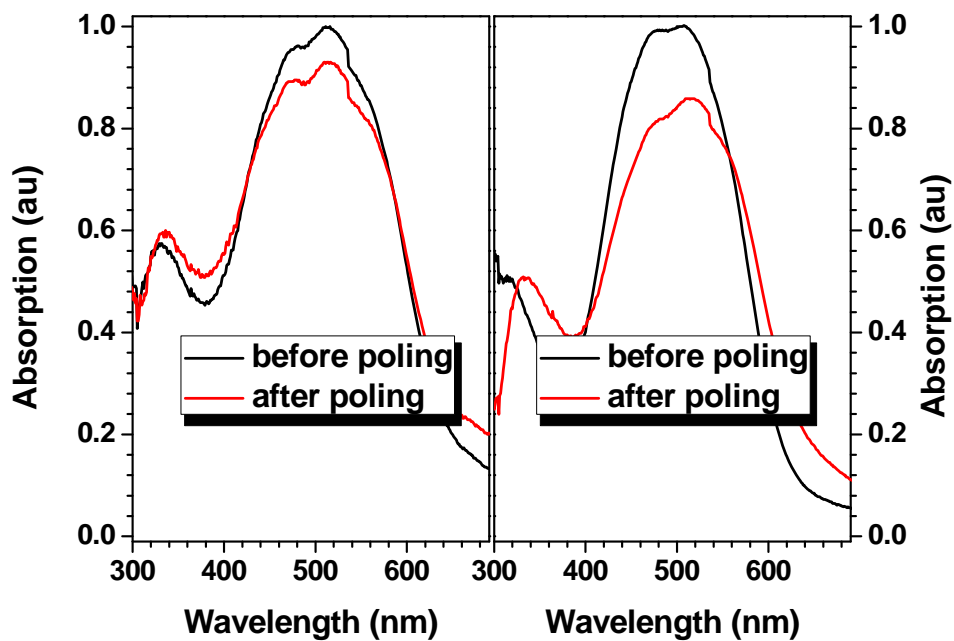


Fig. S36. Absorption spectra of the film of **P1** (left) and **P2** (right) before and after poling.