Supplementary Information

Quinoxaline derivatives with broadened absorption patterns

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Fig. S1. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of **Q3**

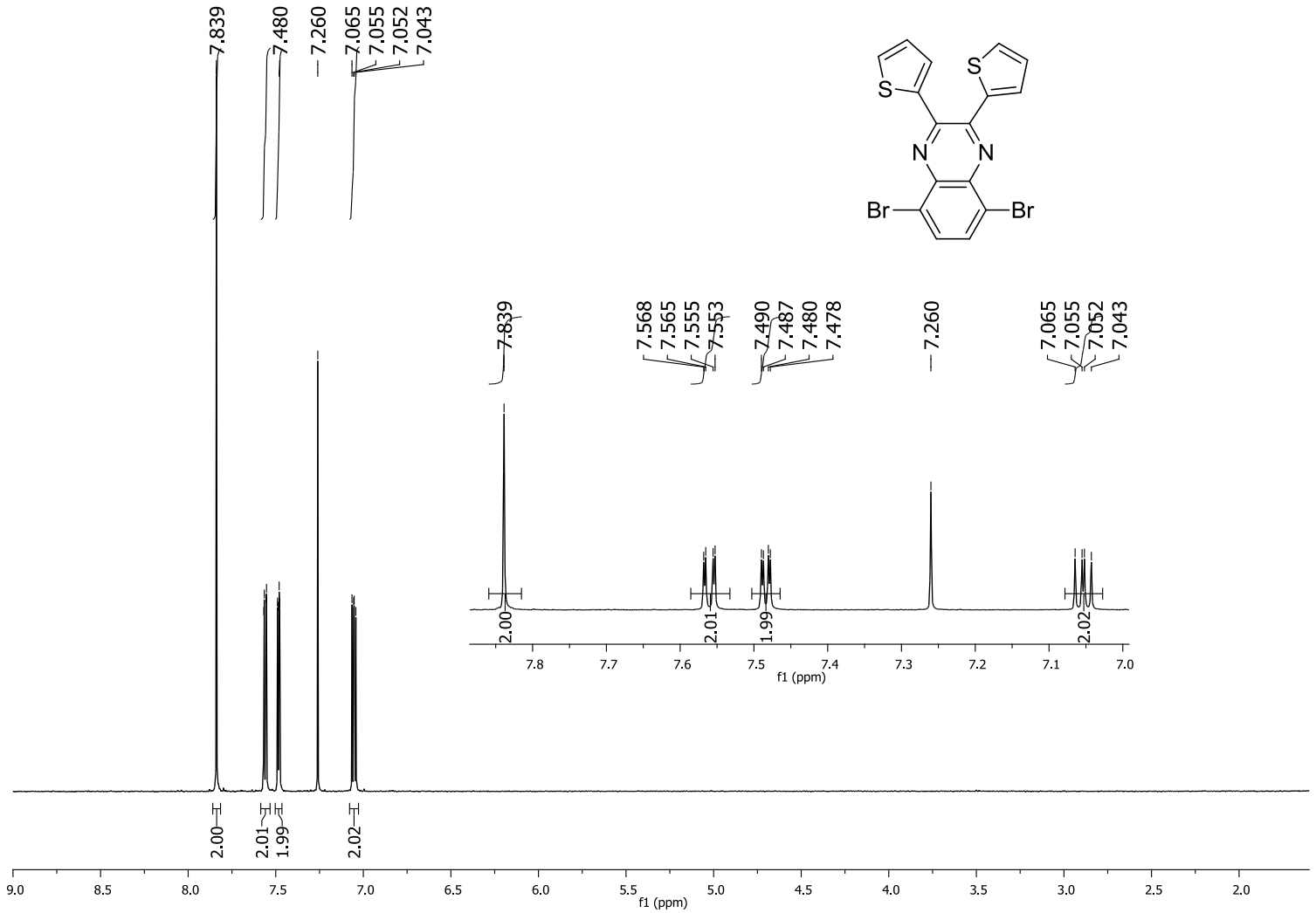

Fig. S2. APT spectrum (75 MHz, $CDCl_3$) of **Q3**

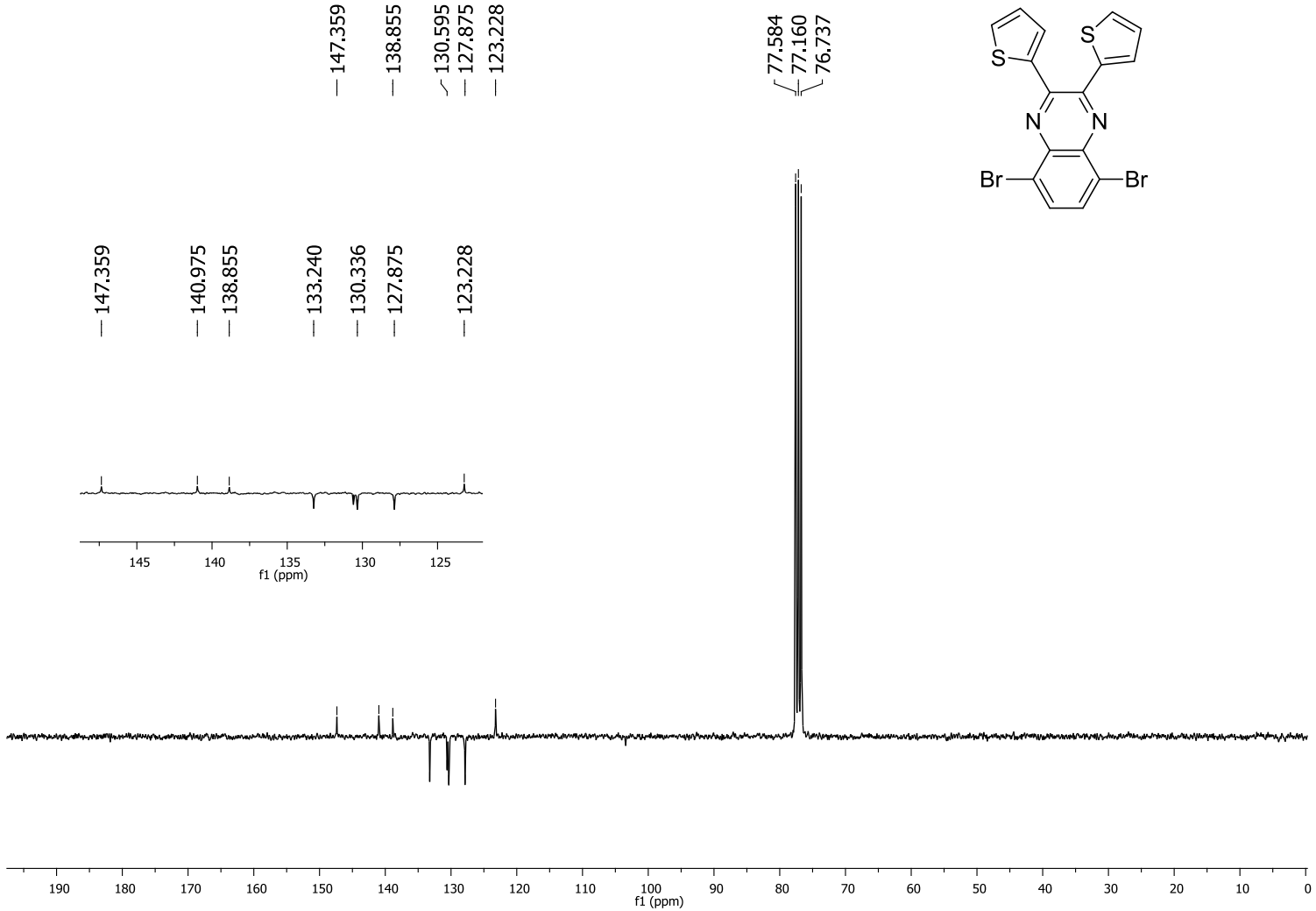

Fig. S3. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of 2-(2-ethylhexyl)thiophene

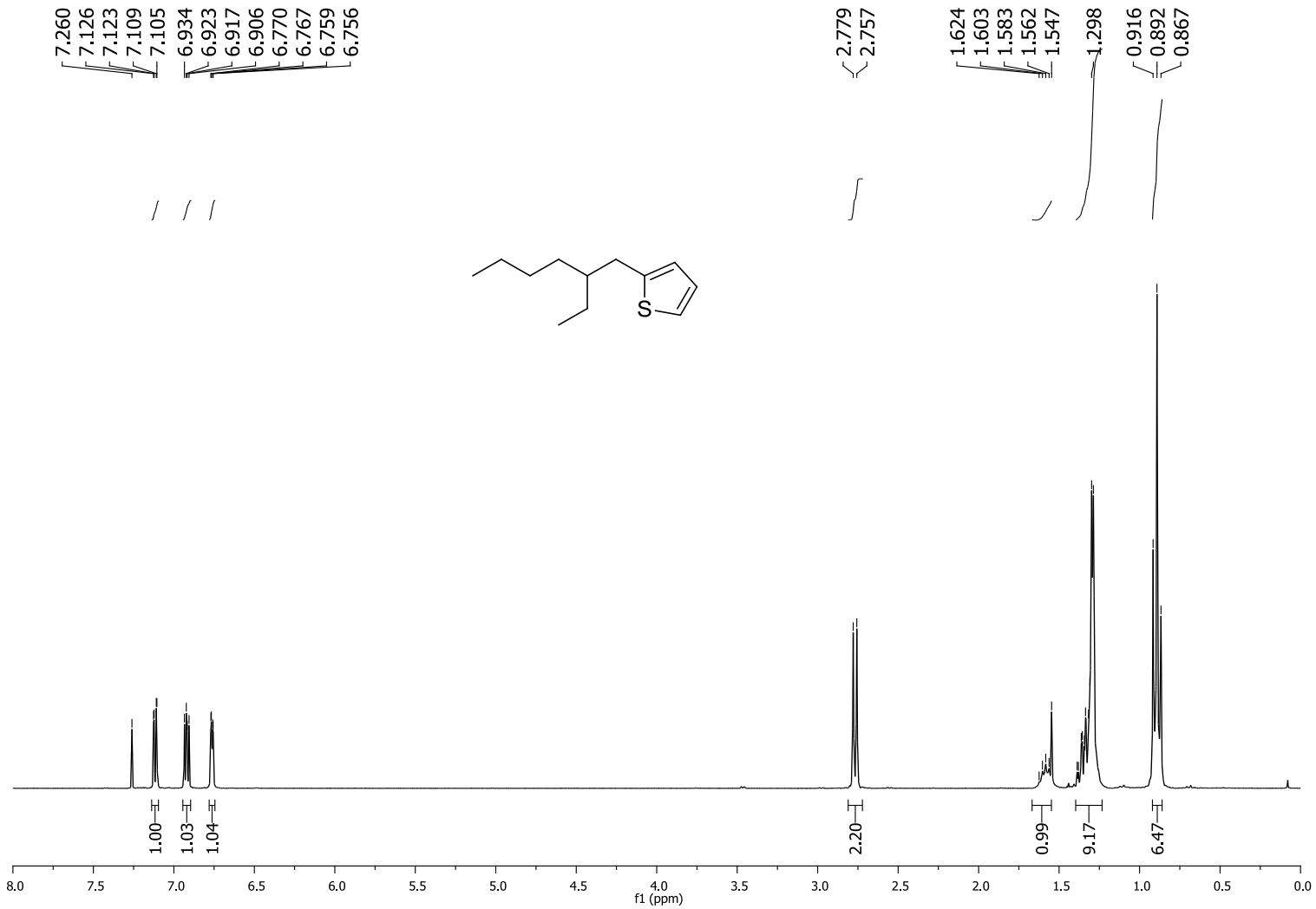

Fig. S4. APT spectrum (75 MHz, $CDCl_3$) of 2-(2-ethylhexyl)thiophene

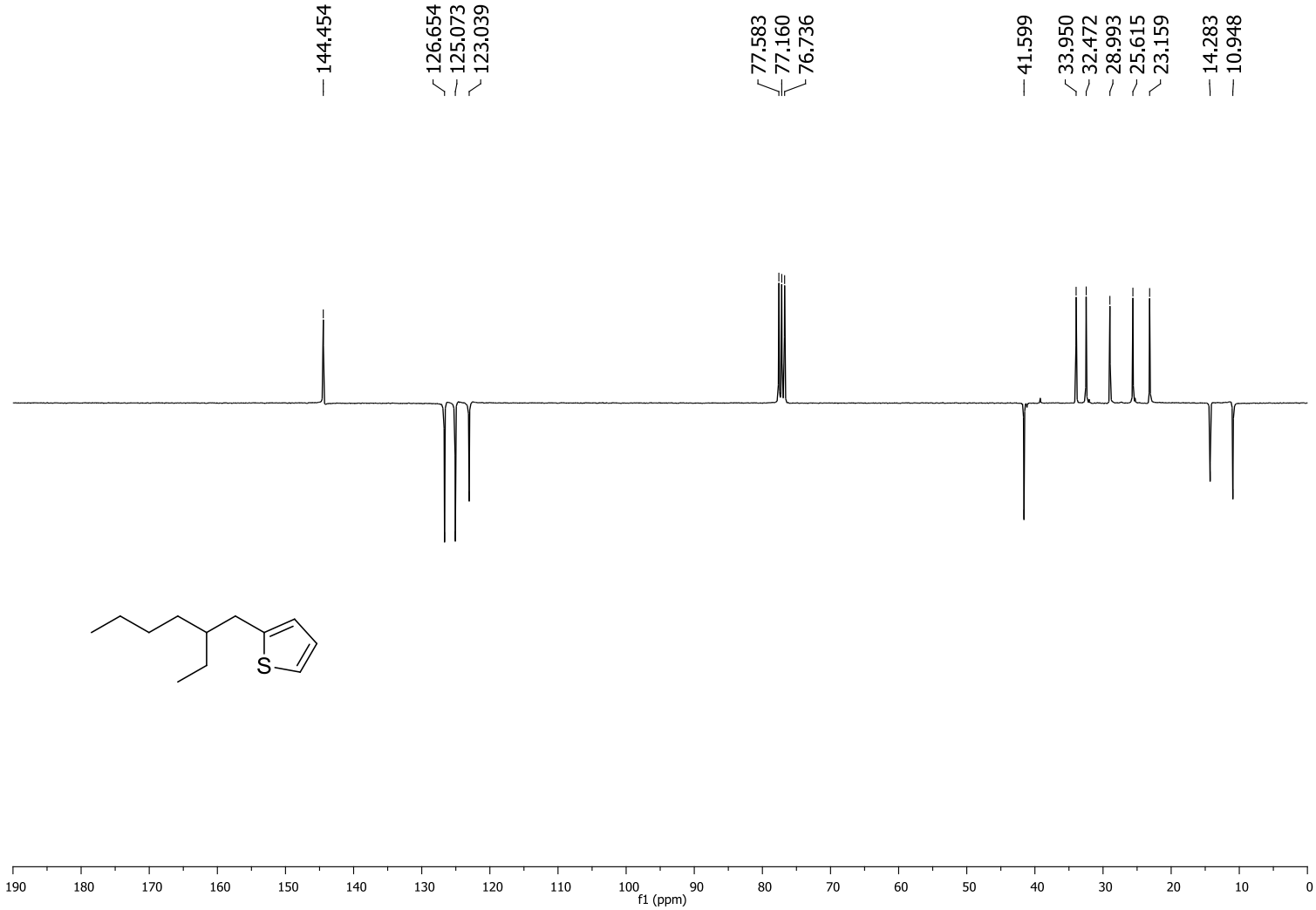

Fig. S5. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of **D4**

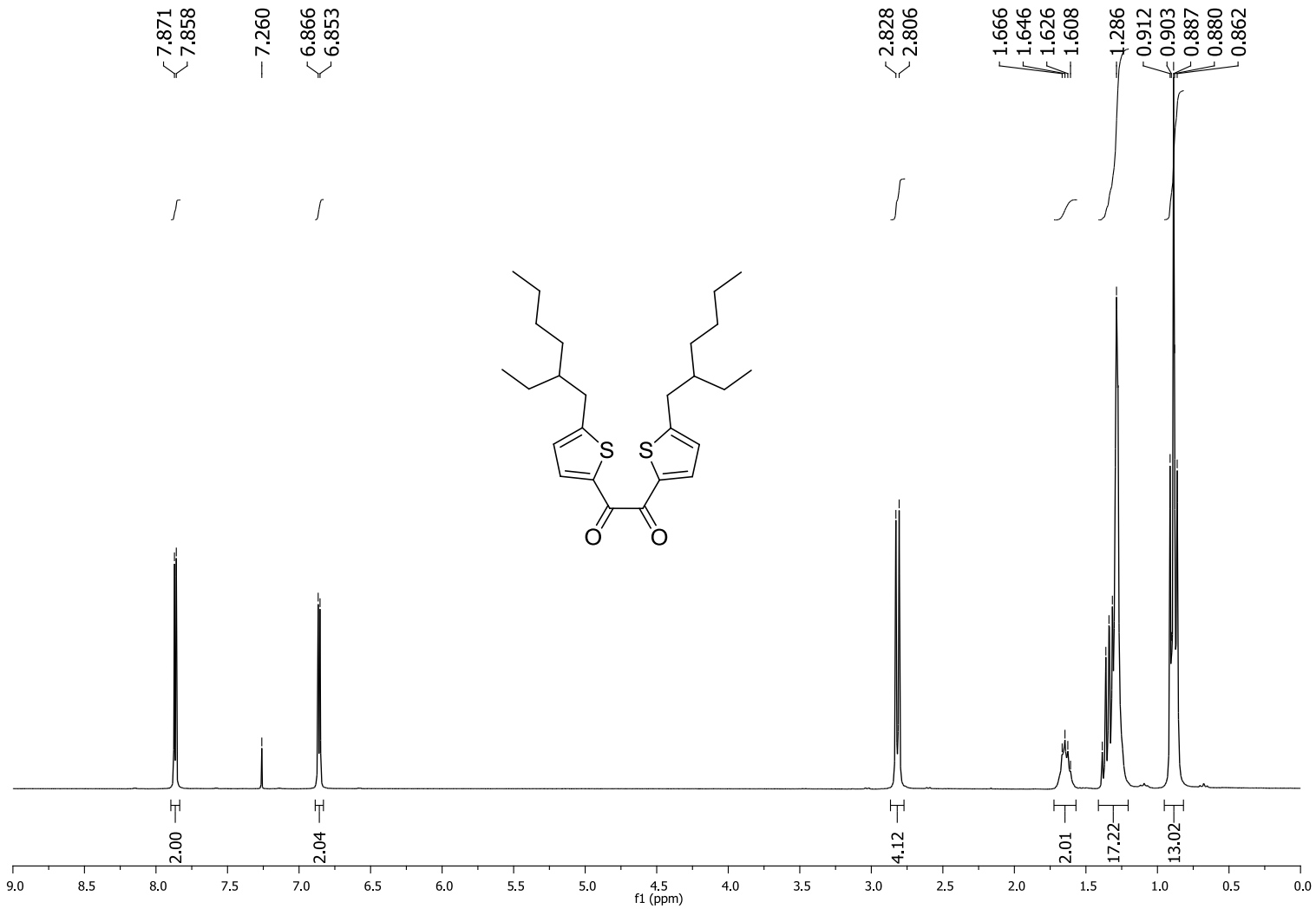

Fig. S6. ^{13}C NMR spectrum (75 MHz, $CDCl_3$) of **D4**

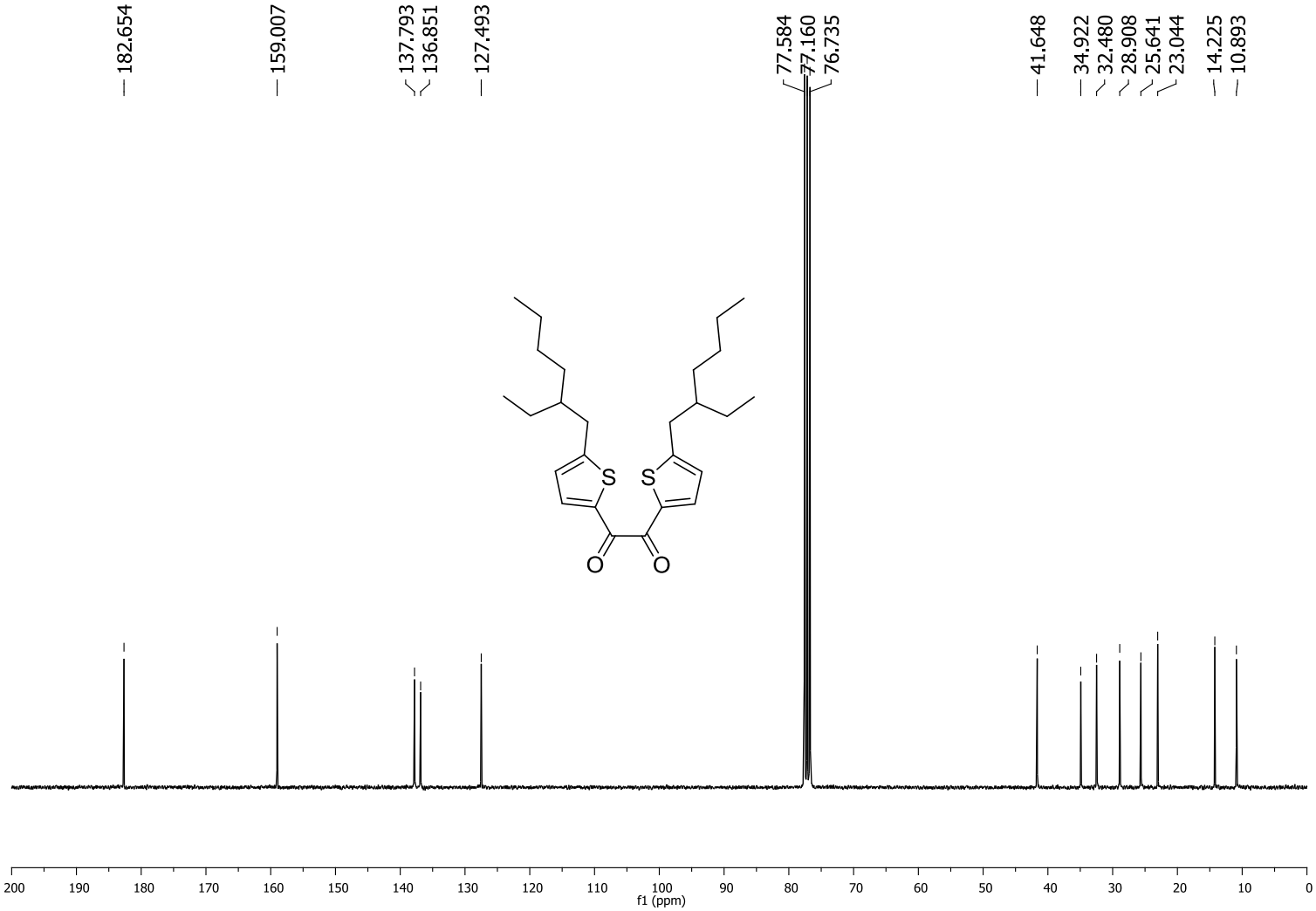

Fig. S7. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of **Q4**

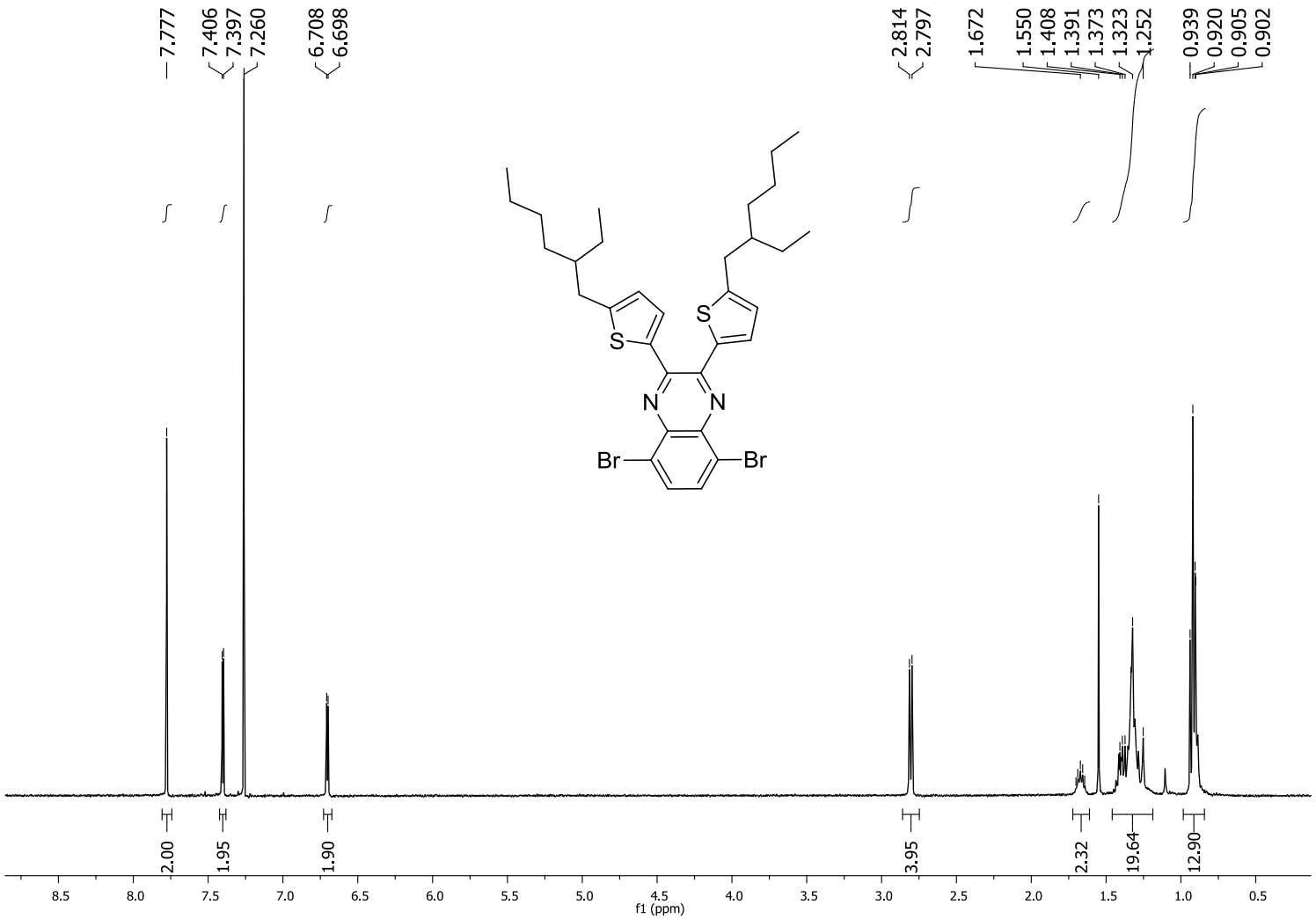

Fig. S8. ^{13}C NMR spectrum (75 MHz, $CDCl_3$) of **Q4**

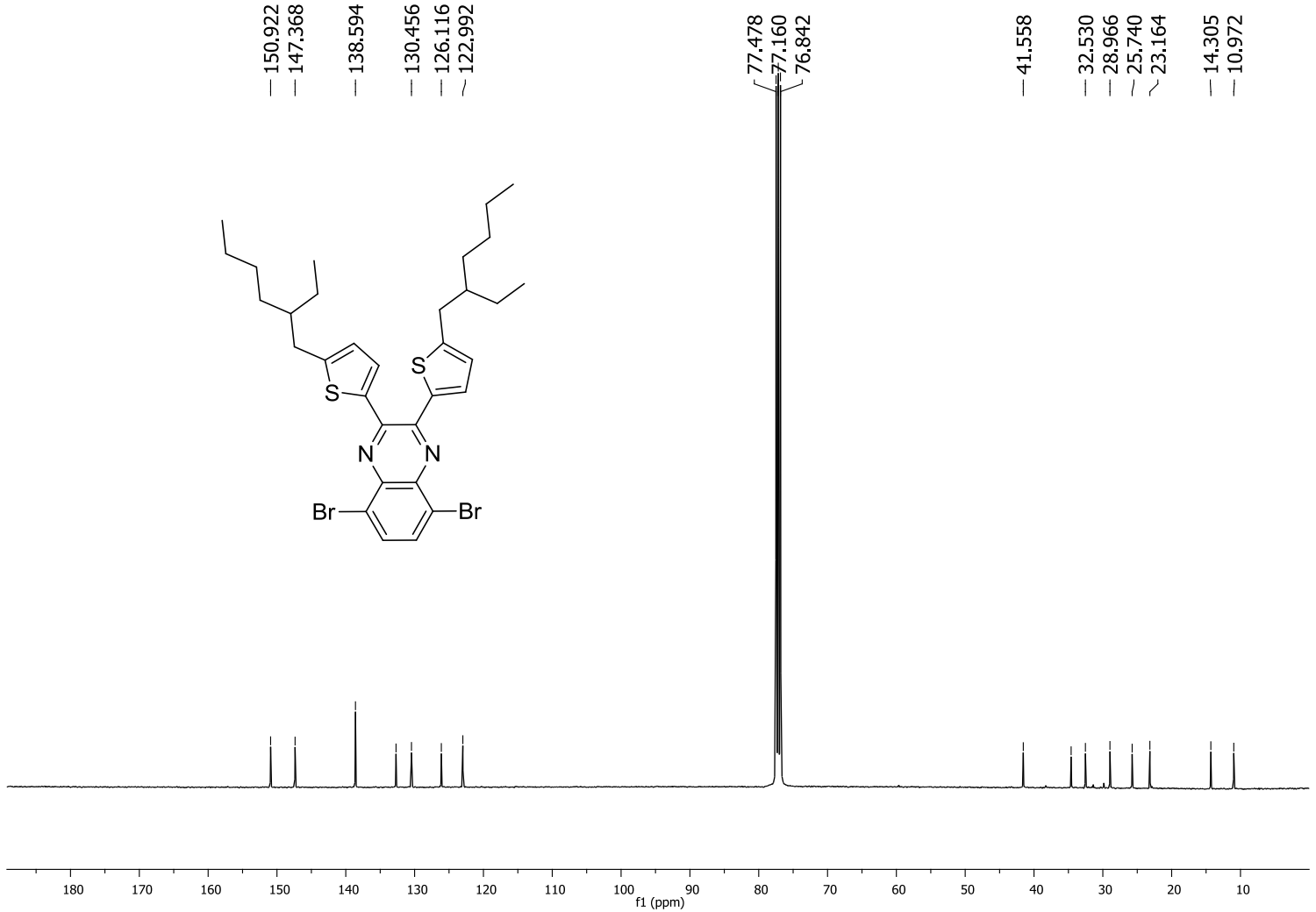

Fig. S9. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of **M1**

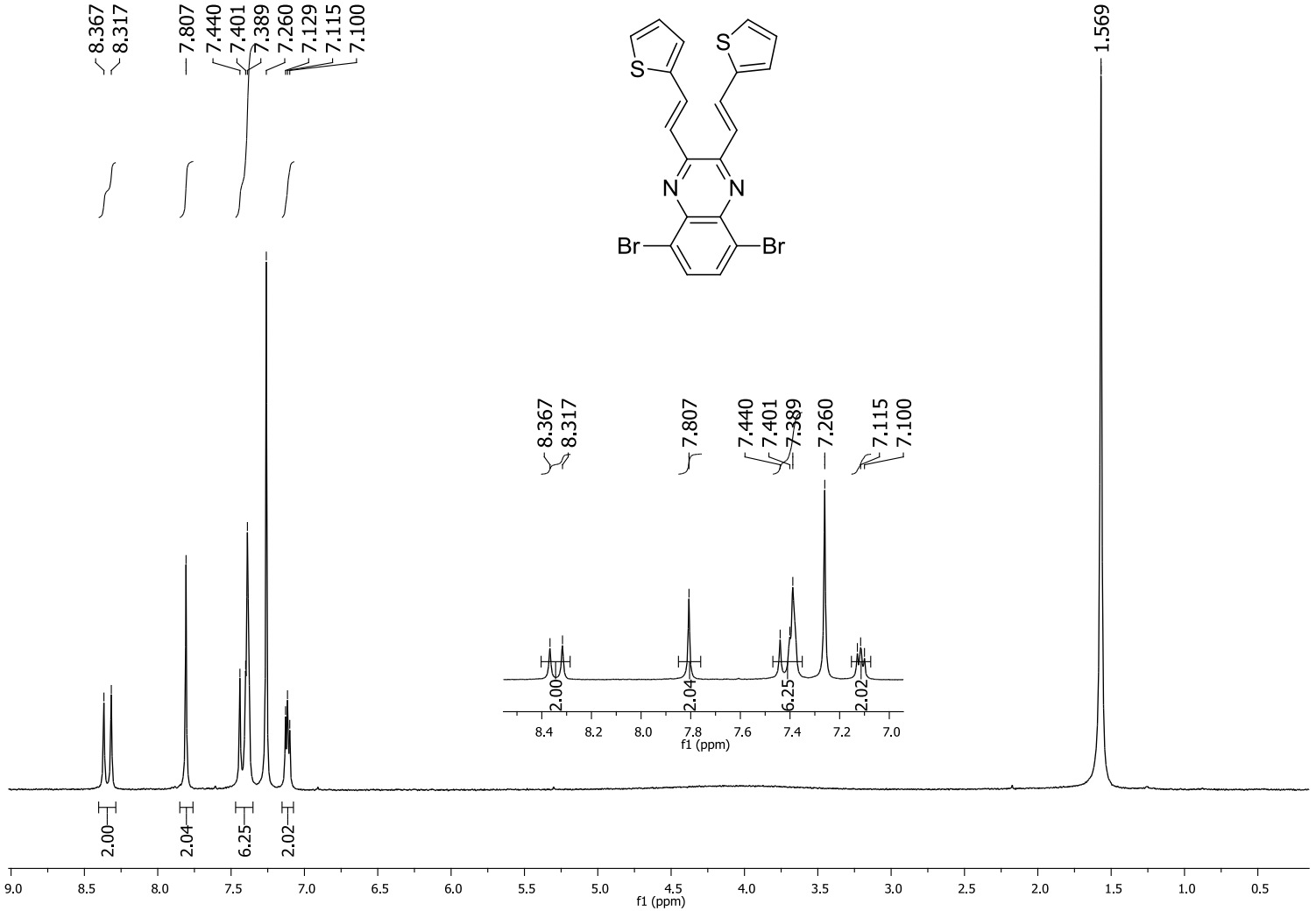

Fig. S10. ^{13}C NMR spectrum (75 MHz, $CDCl_3$) of **M1**

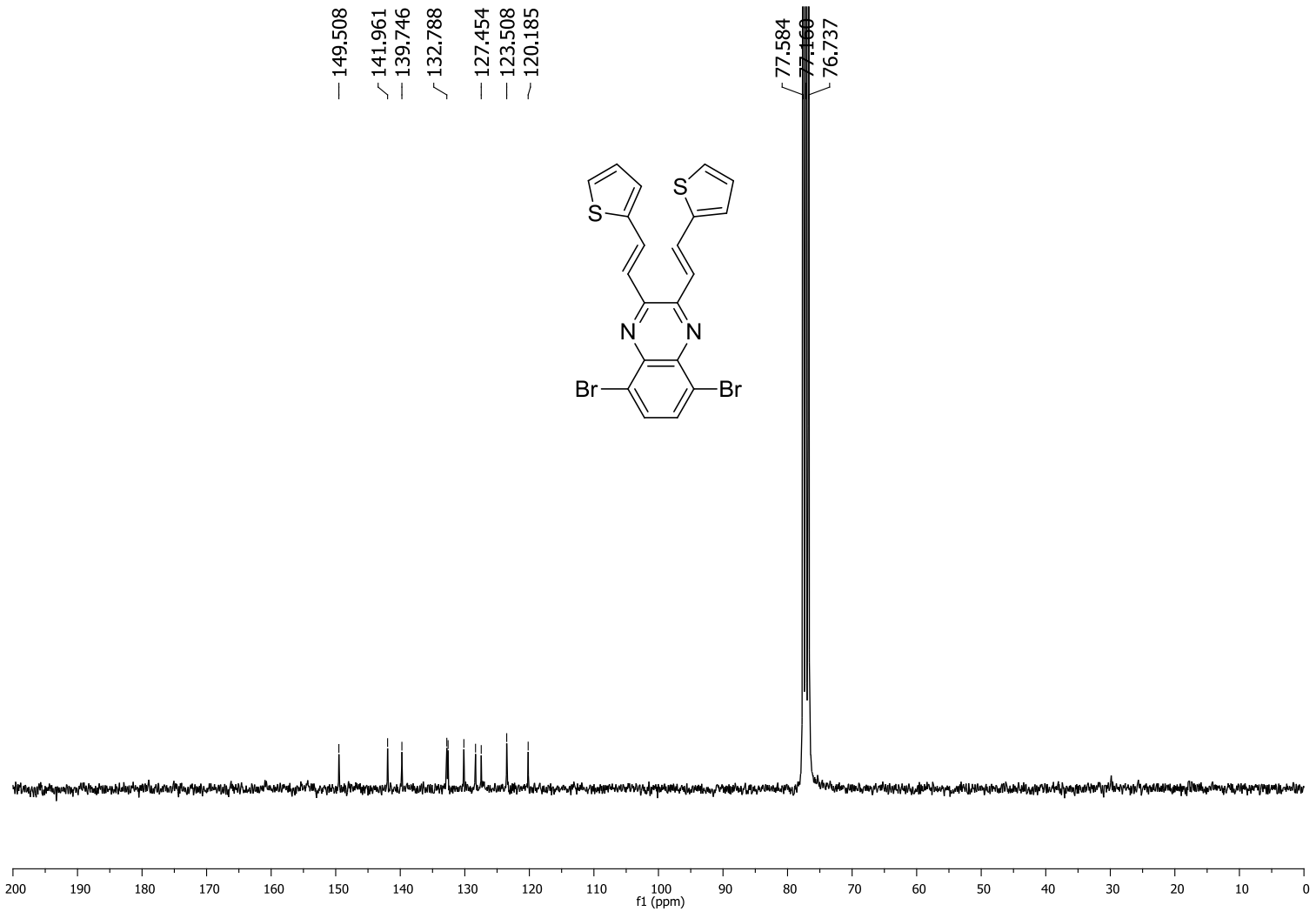

Fig. S11. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of **M2**

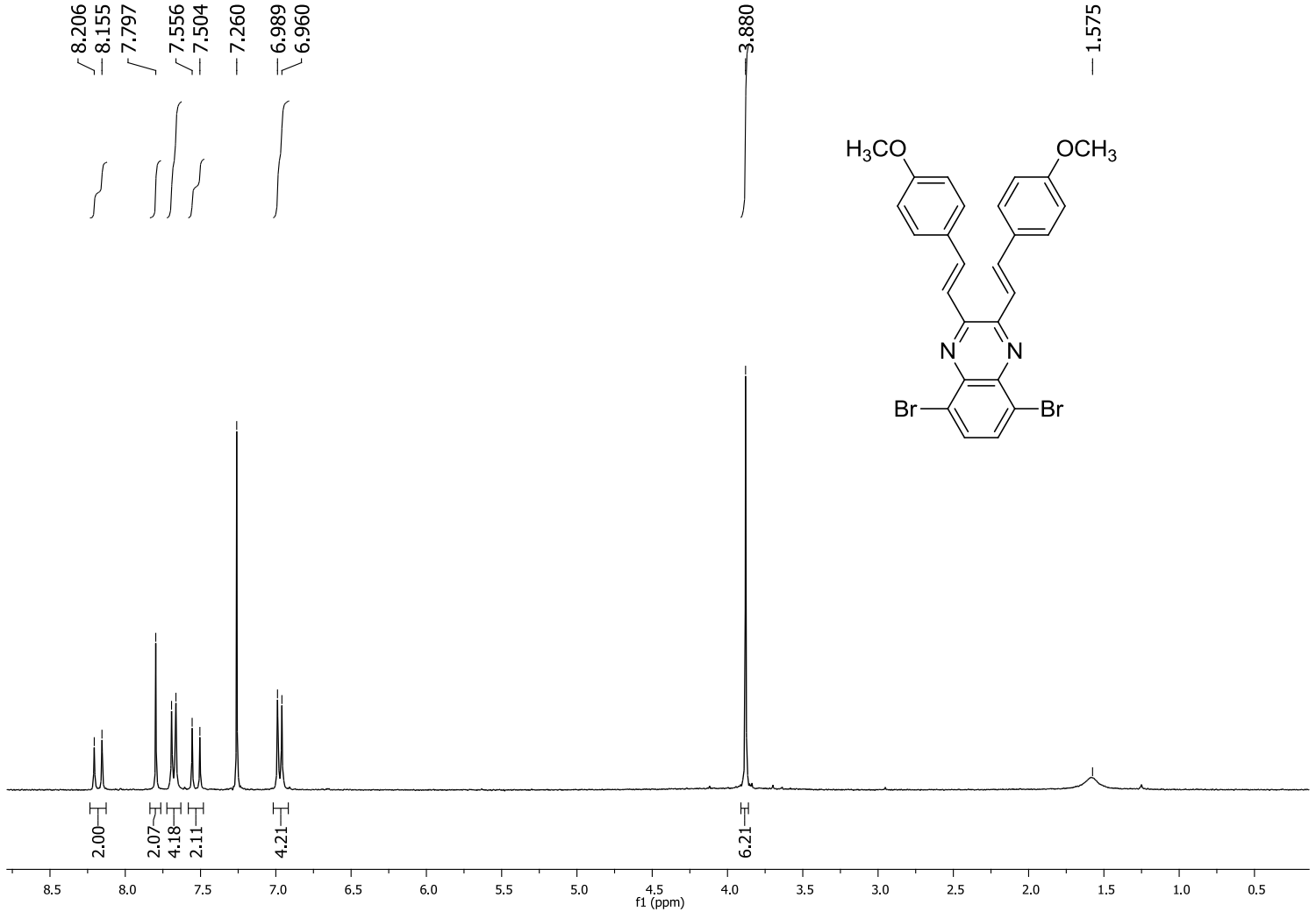

Fig. S12. APT spectrum (75 MHz, $CDCl_3$) of **M2**

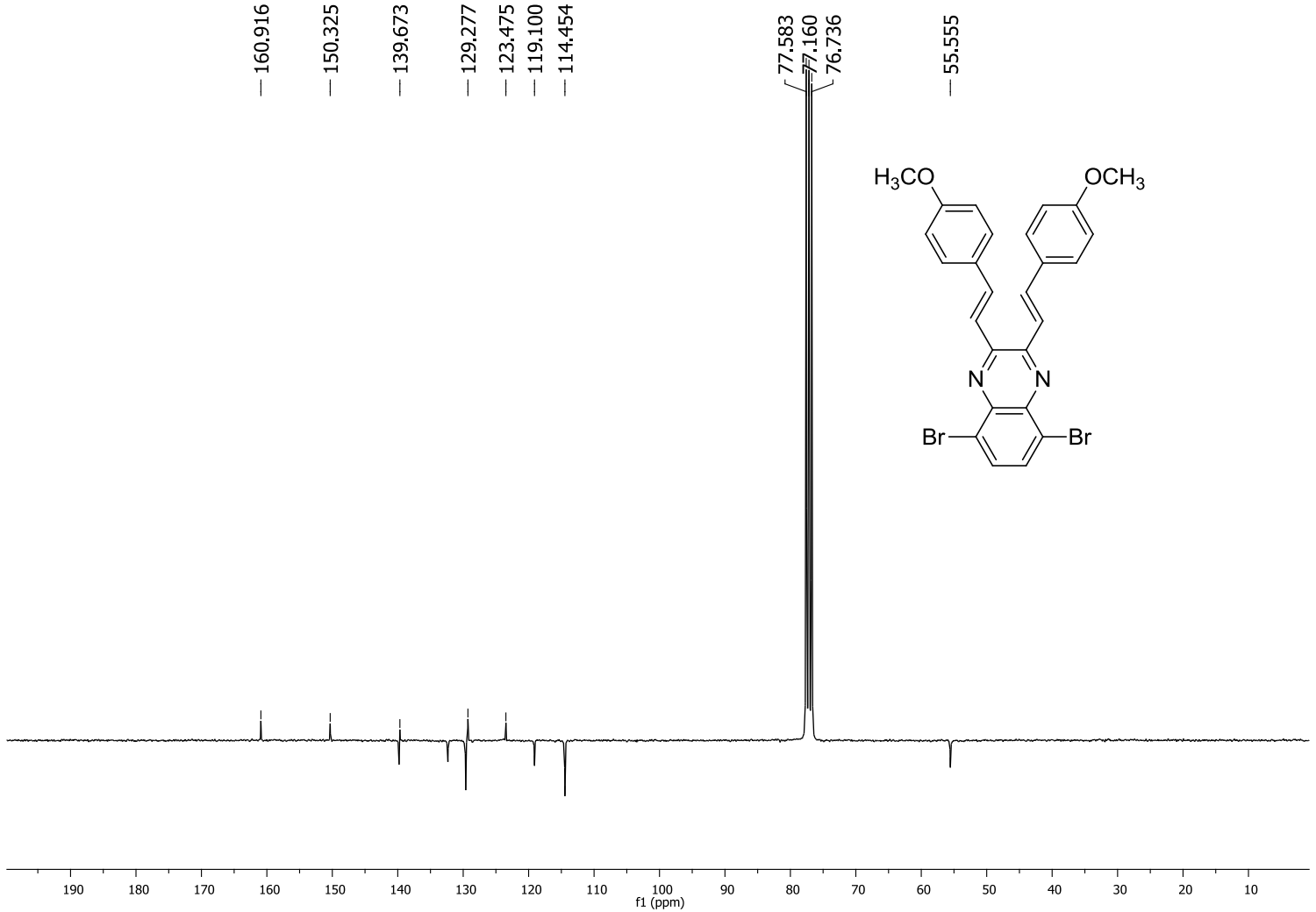

Fig. S13. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of **M3**

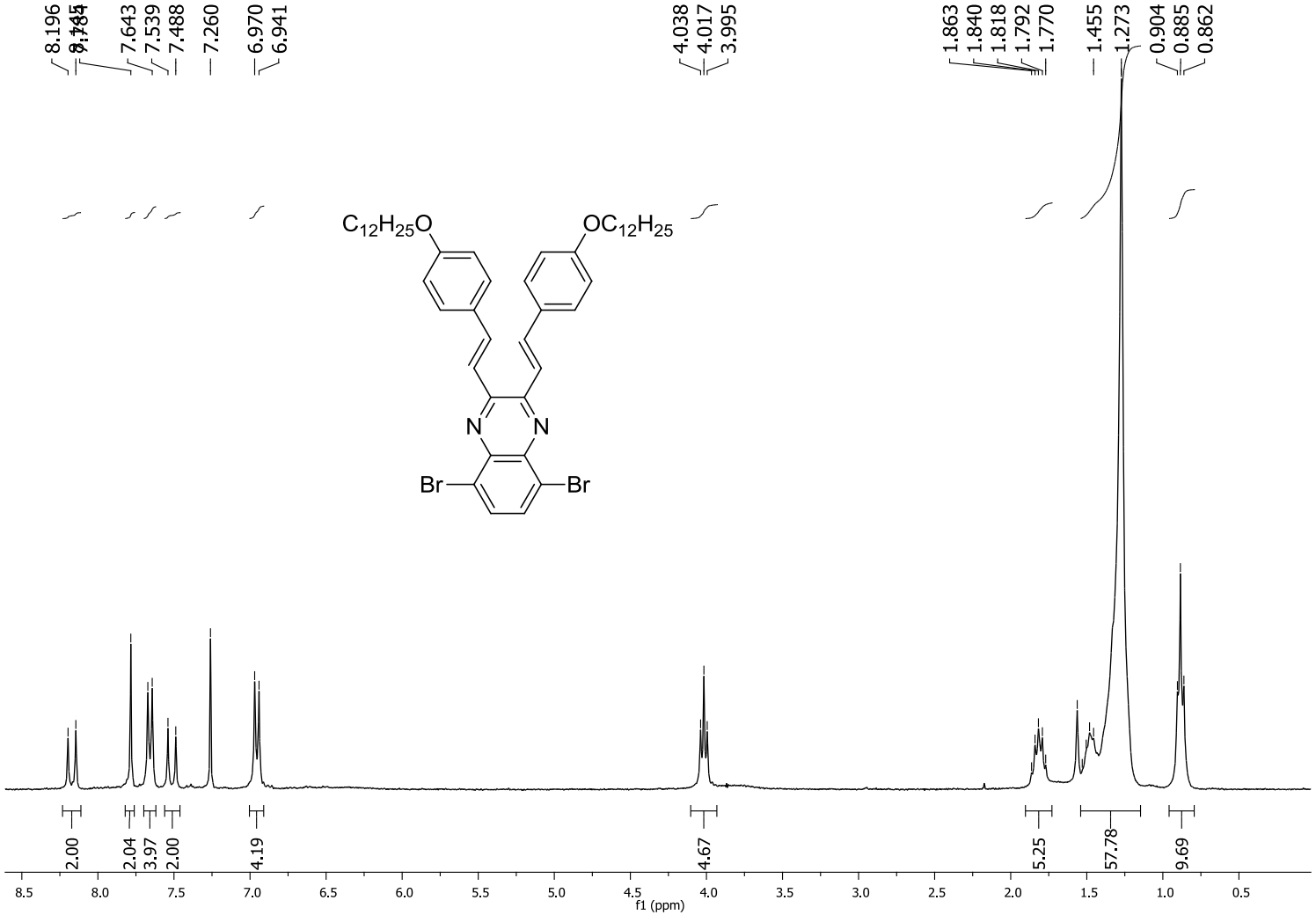

Fig. S14. ^{13}C NMR spectrum (75 MHz, $CDCl_3$) of **M3**

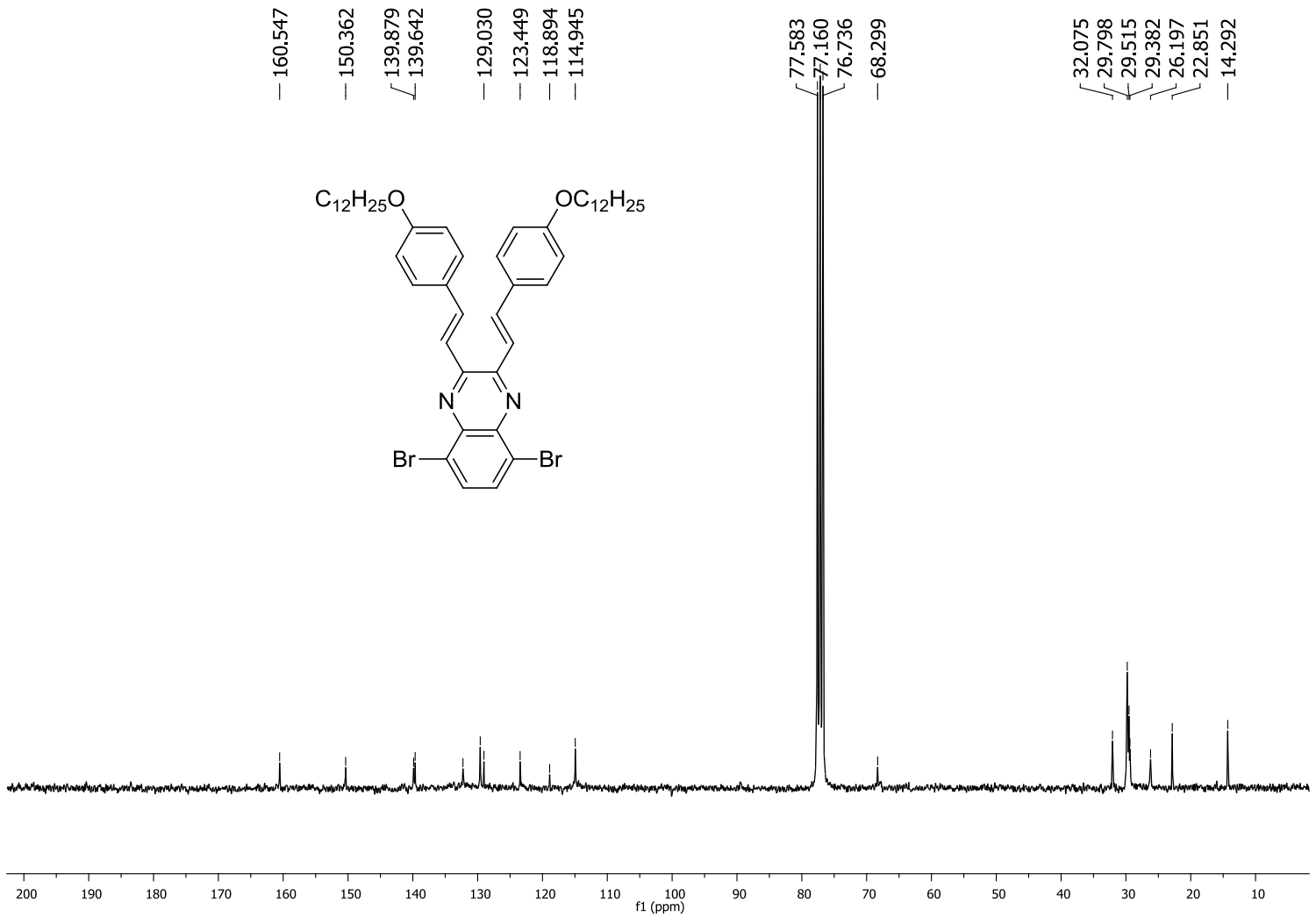

Fig. S15. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of **A4**

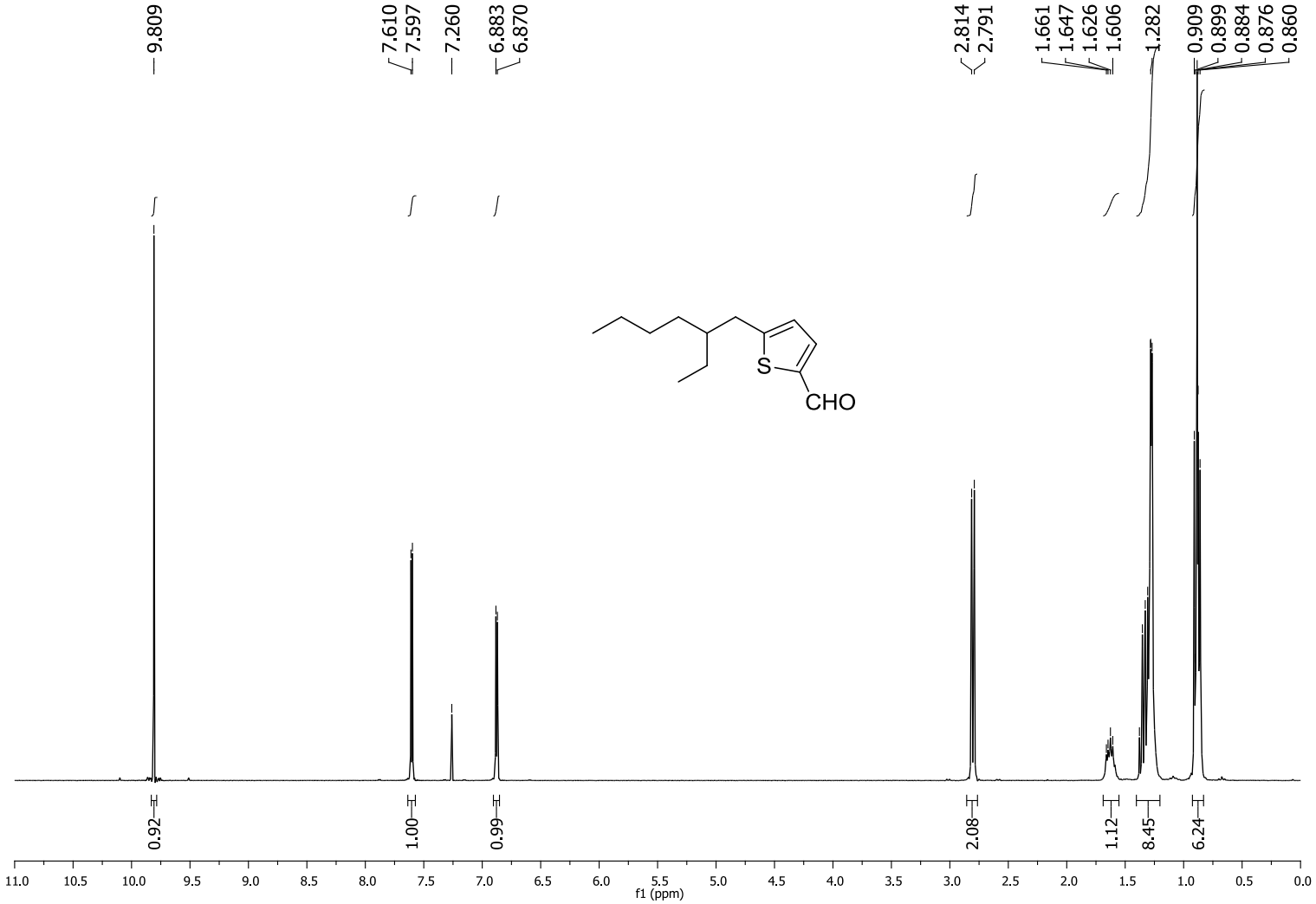

Fig. S16. ^{13}C NMR spectrum (75 MHz, $CDCl_3$) of **A4**

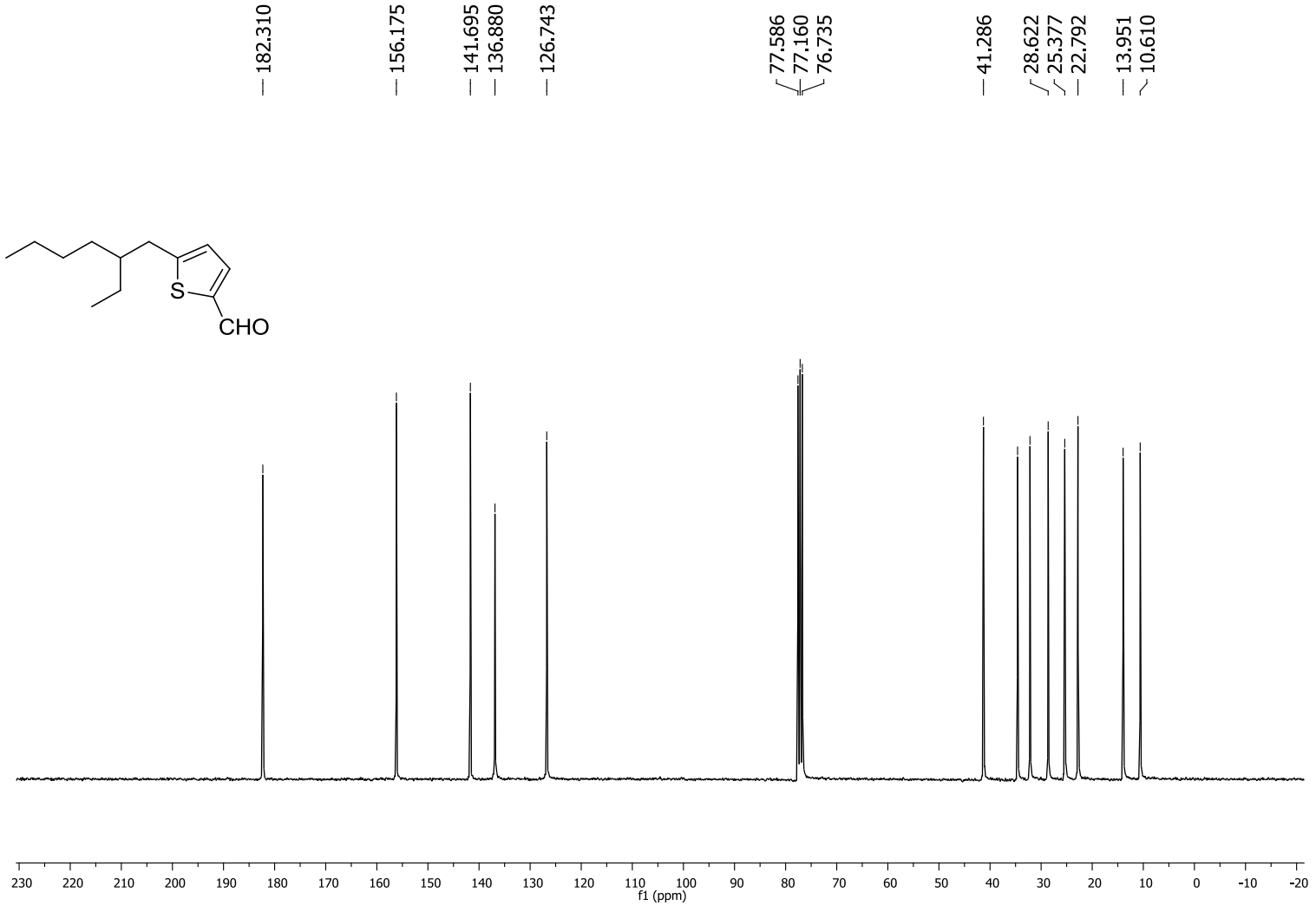

Fig. S17. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of **M4**

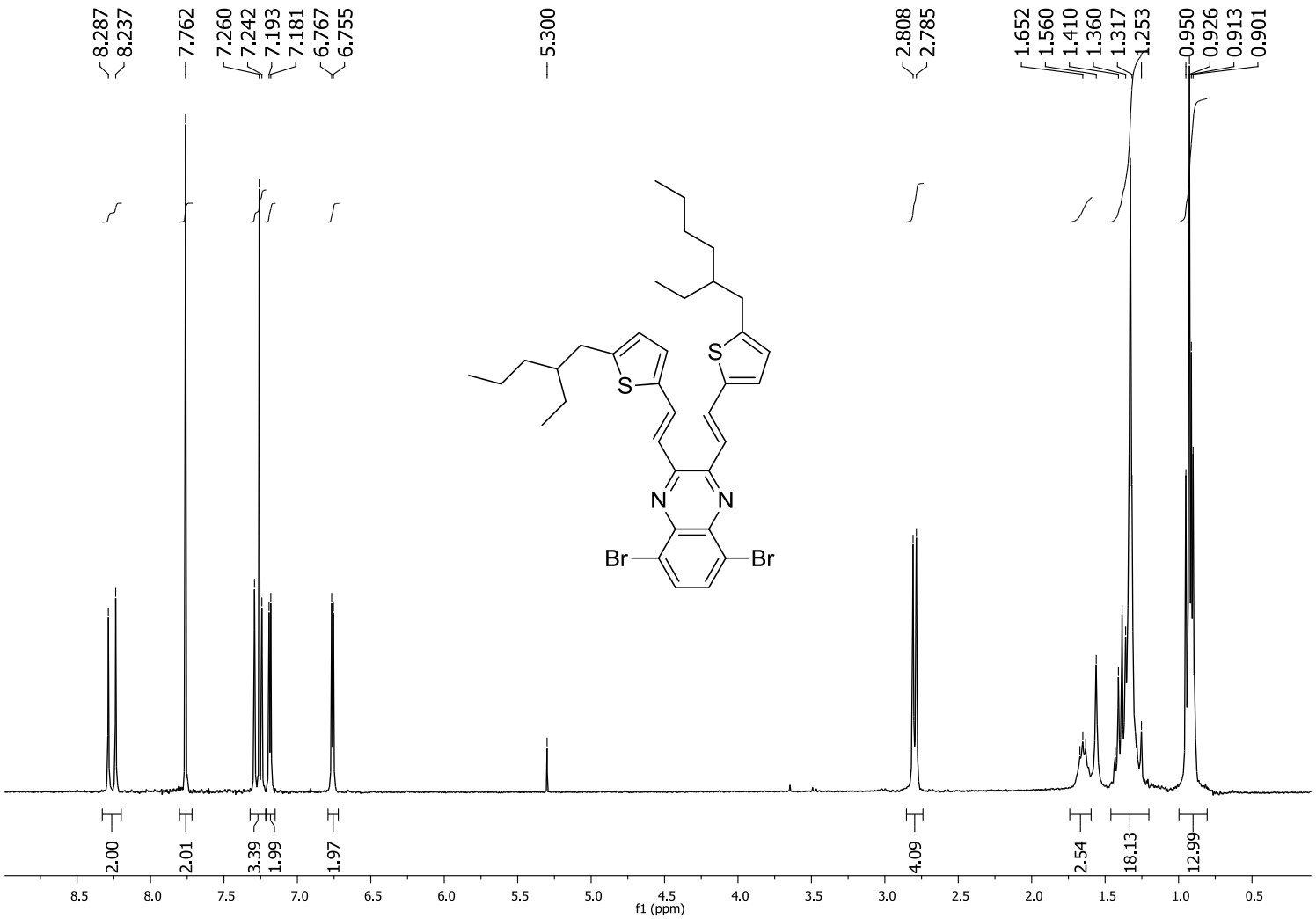

Fig. S18. ^{13}C NMR spectrum (75 MHz, $CDCl_3$) of **M4**

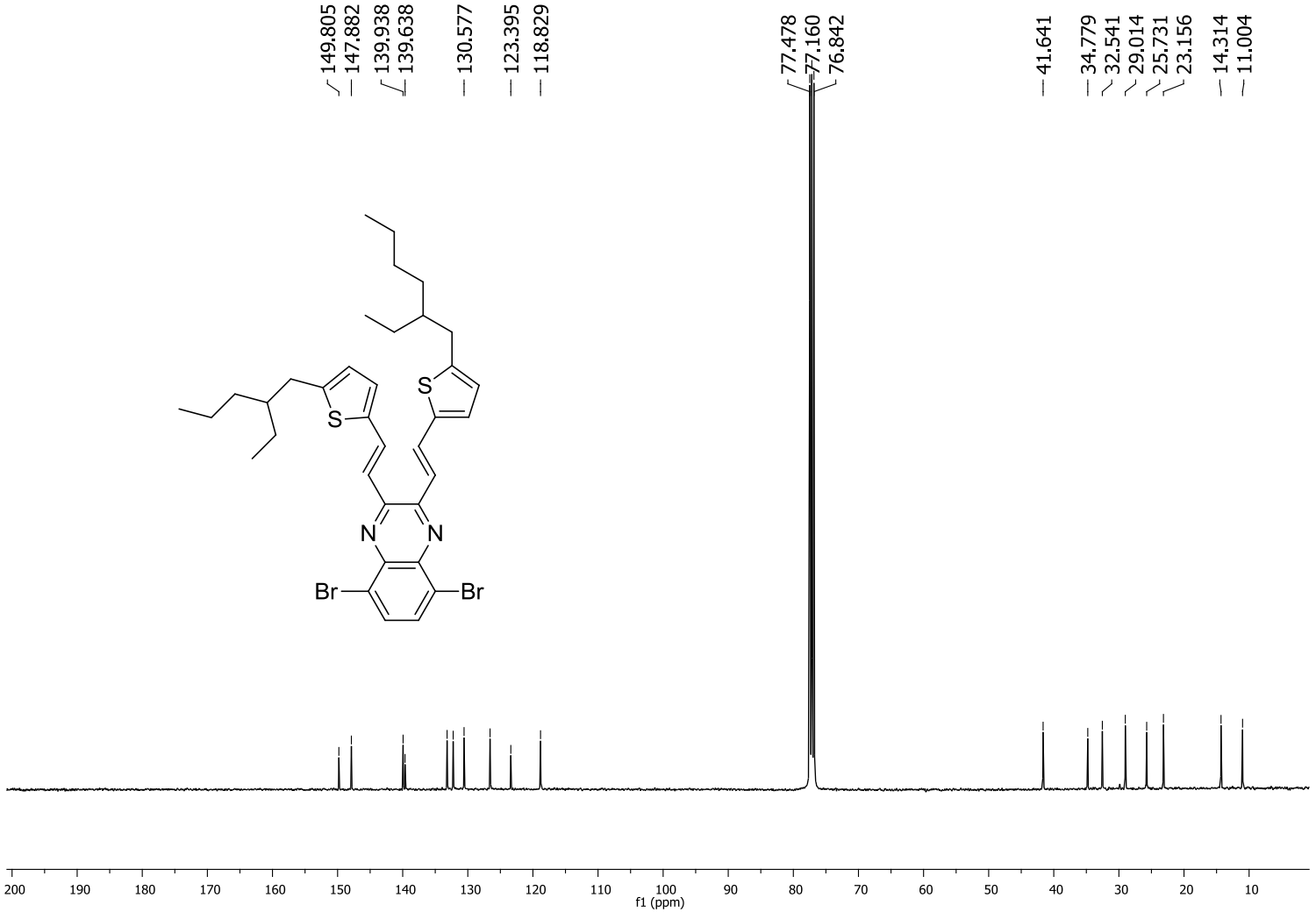

Fig. S19. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of **M5**

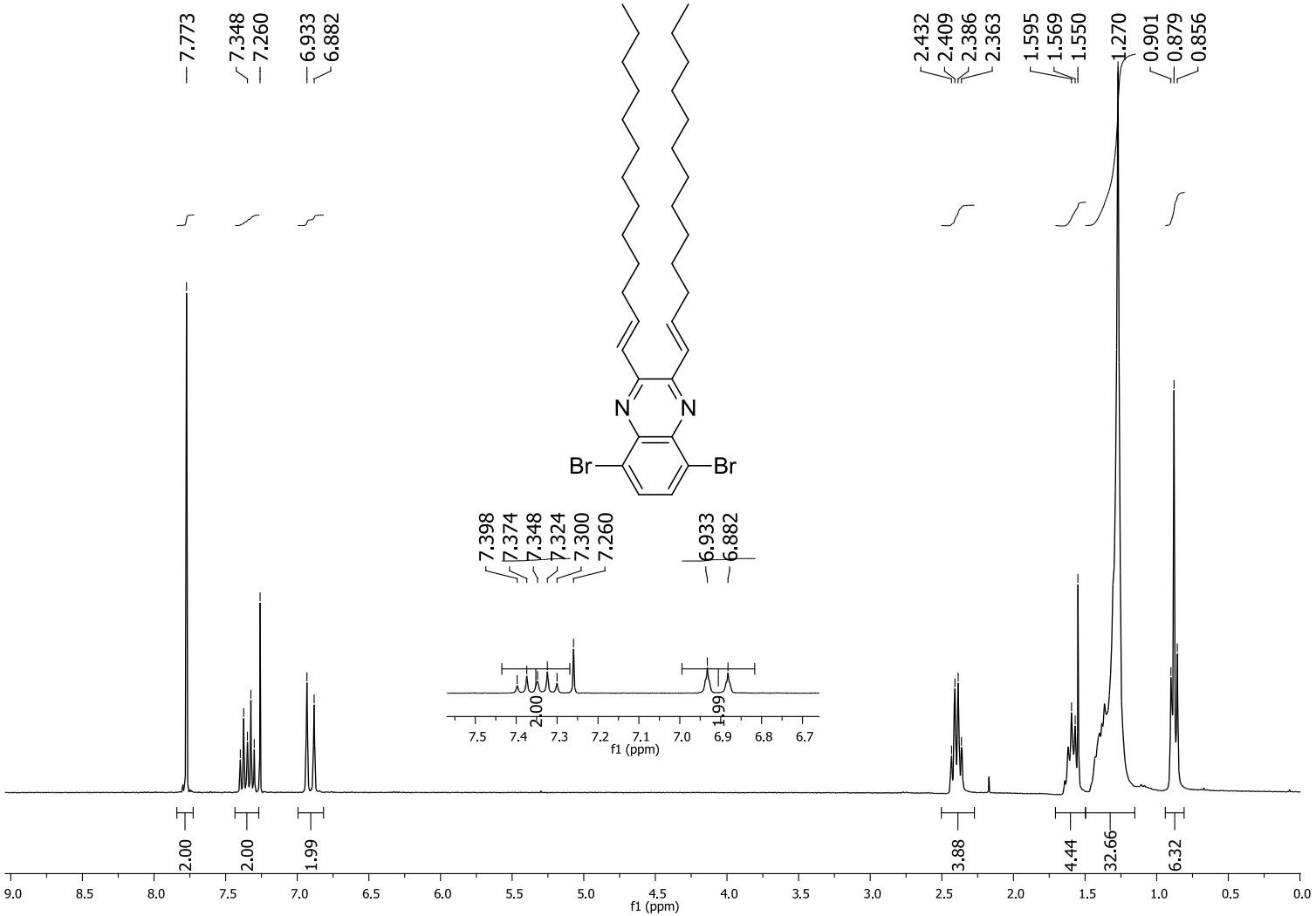

Fig. S20. ^{13}C NMR spectrum (75 MHz, $CDCl_3$) of **M5**

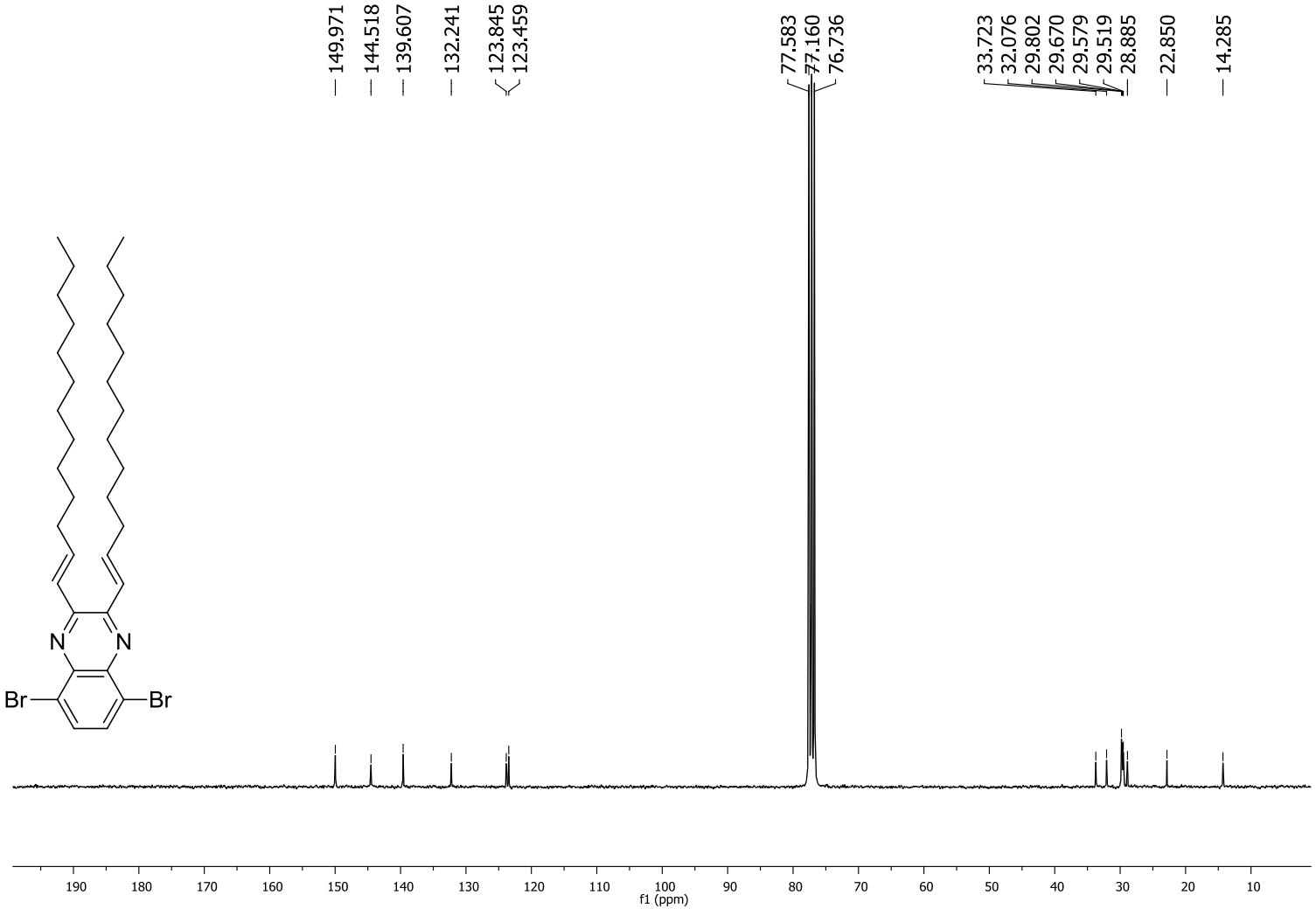

Fig. S21. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of **M6**

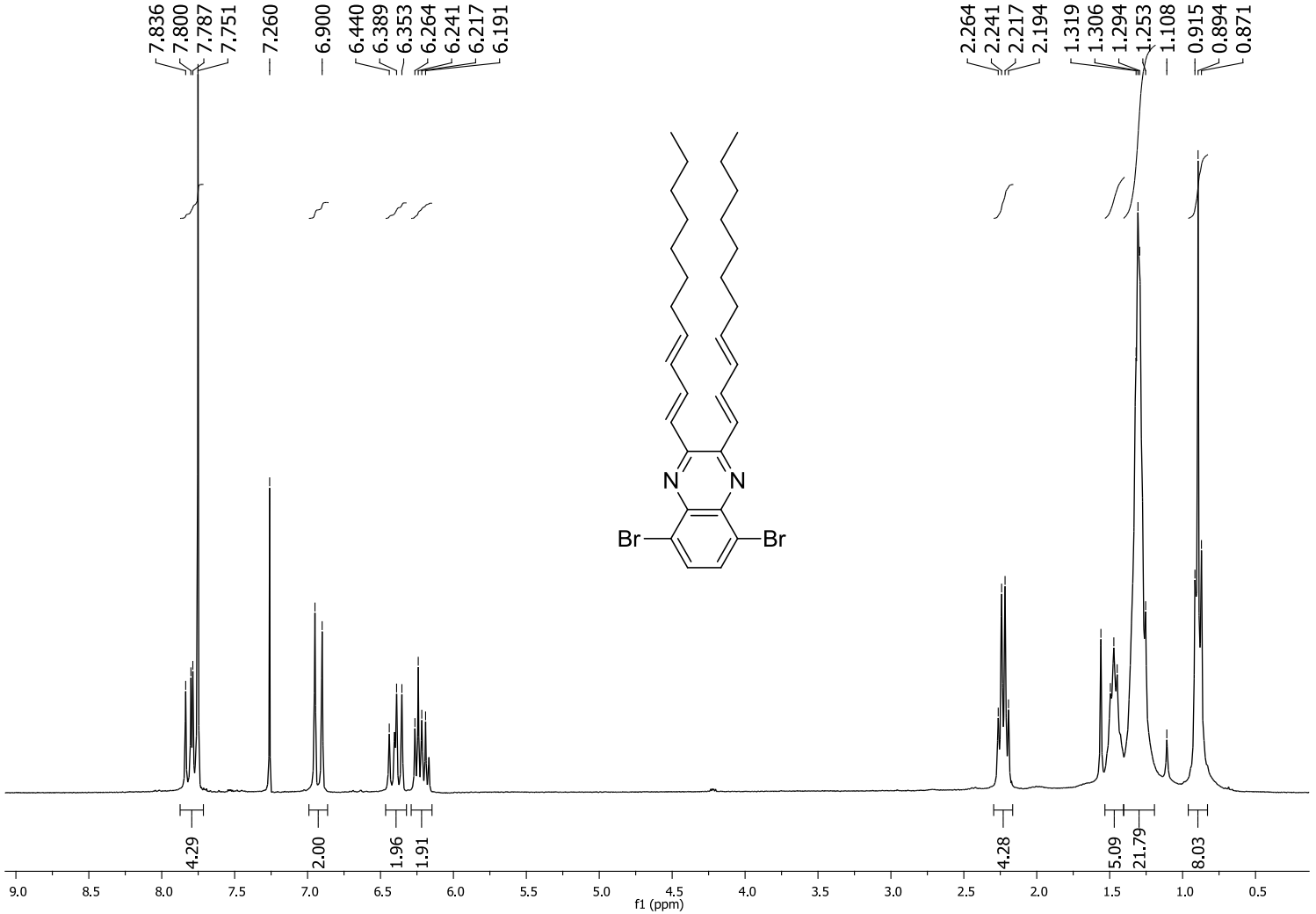

Fig. S22. ^{13}C NMR spectrum (75 MHz, $CDCl_3$) of **M6**

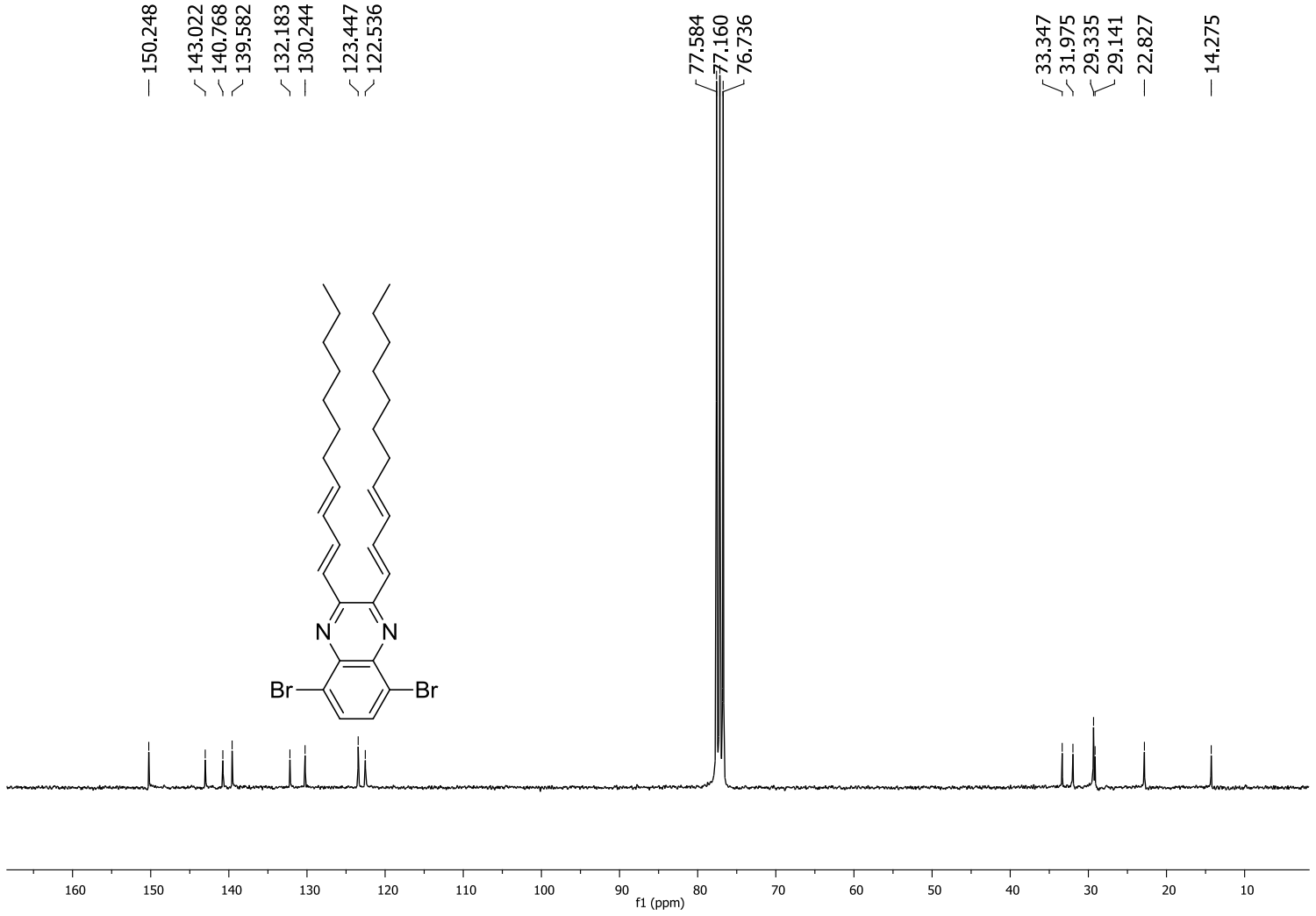

Fig. S23. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of **T1**

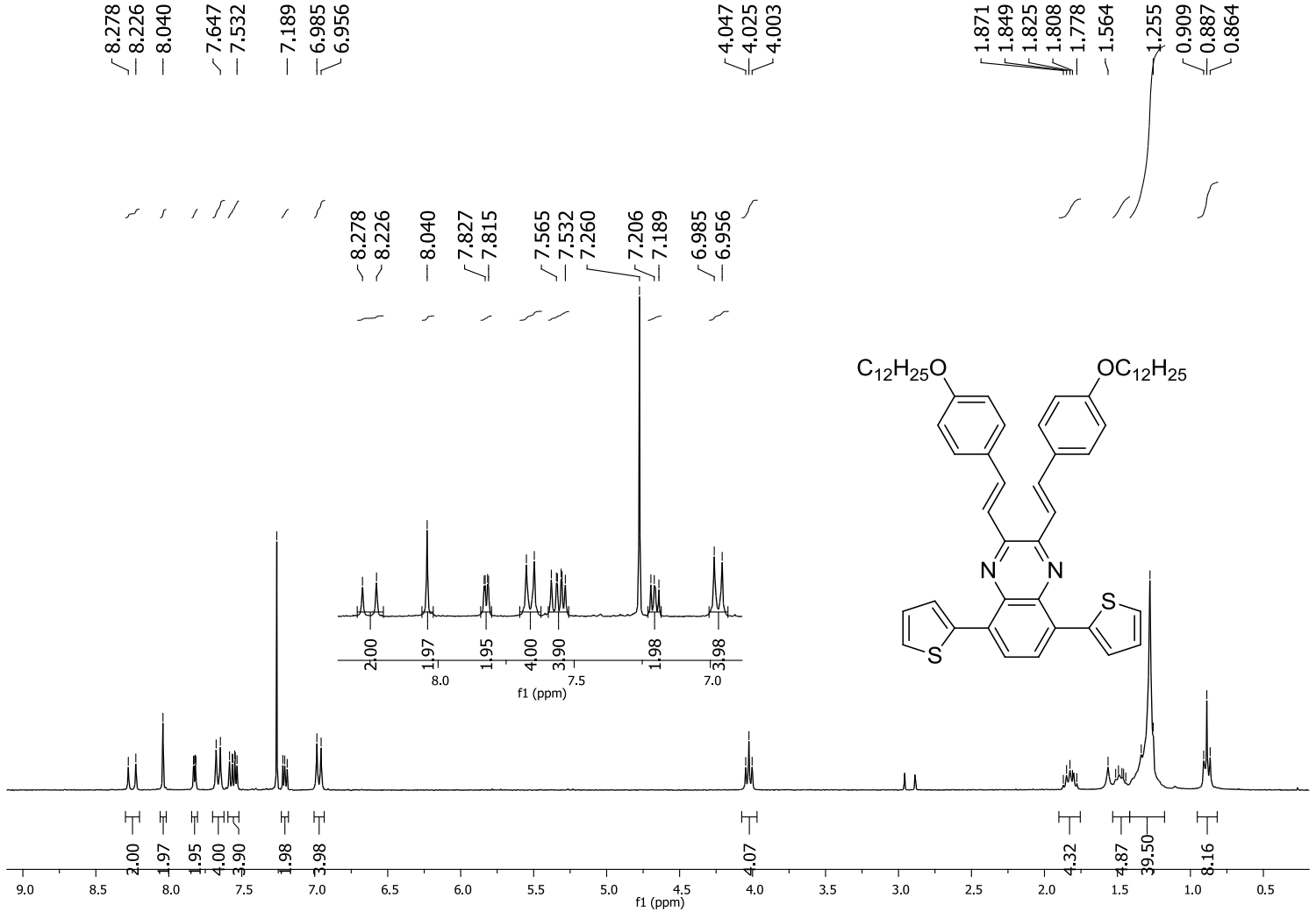

Fig. S24. APT spectrum (75 MHz, $CDCl_3$) of **T1**

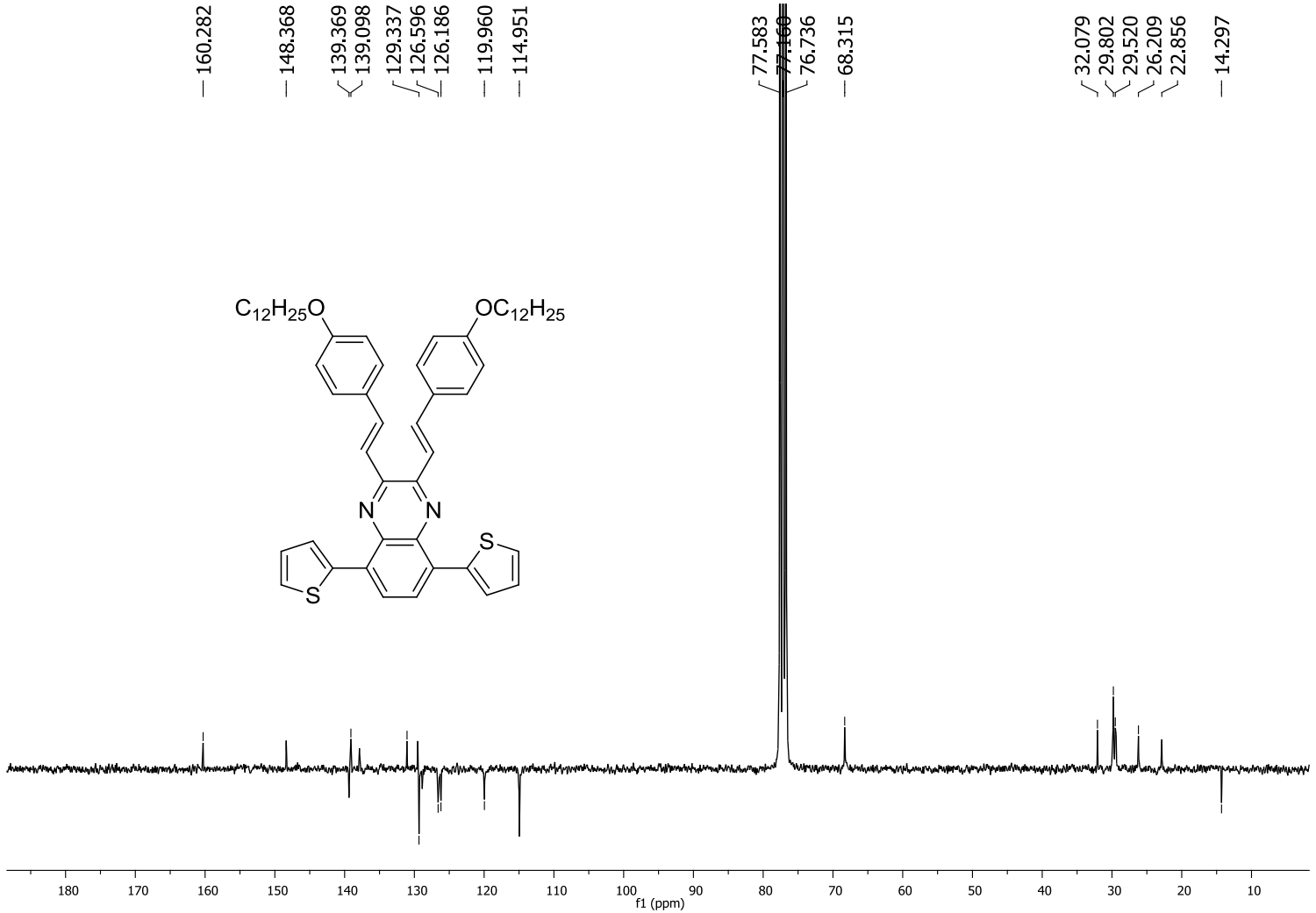

Fig. S25. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of **T2**

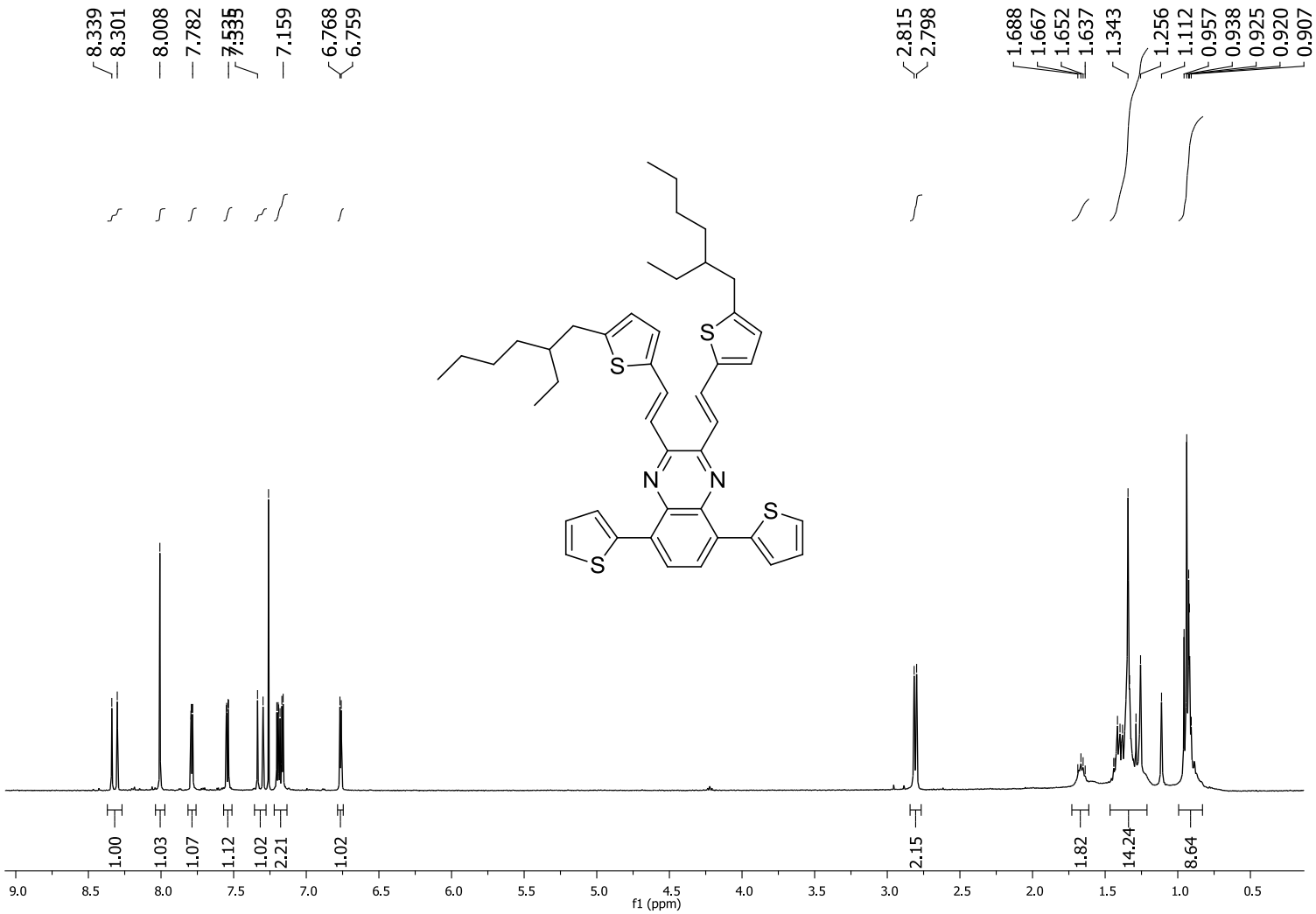

Fig. S26. ^{13}C NMR spectrum (75 MHz, $CDCl_3$) of **T2**

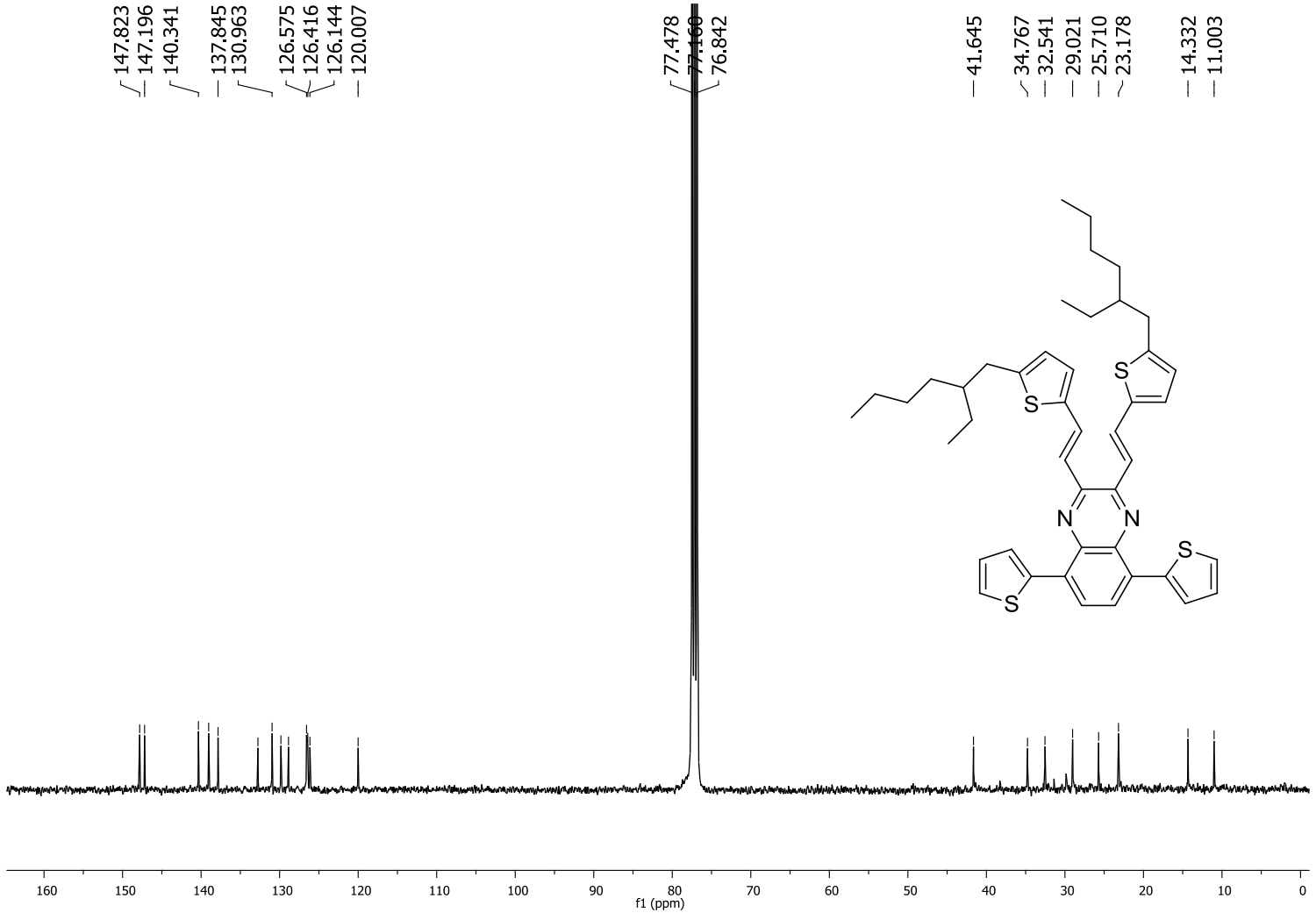

Fig. S27. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of **T3**

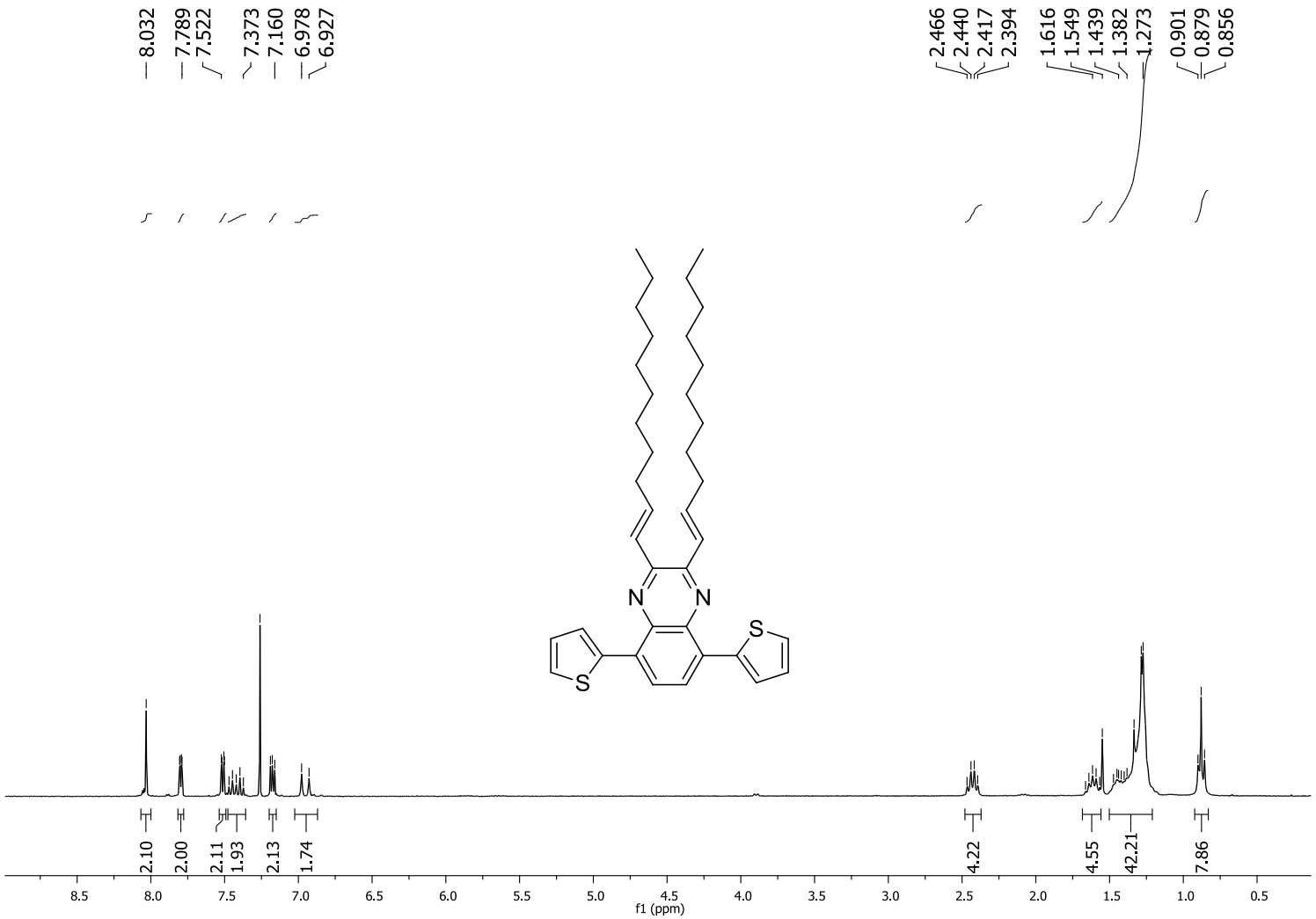

Fig. S28. APT spectrum (75 MHz, $CDCl_3$) of **T3**

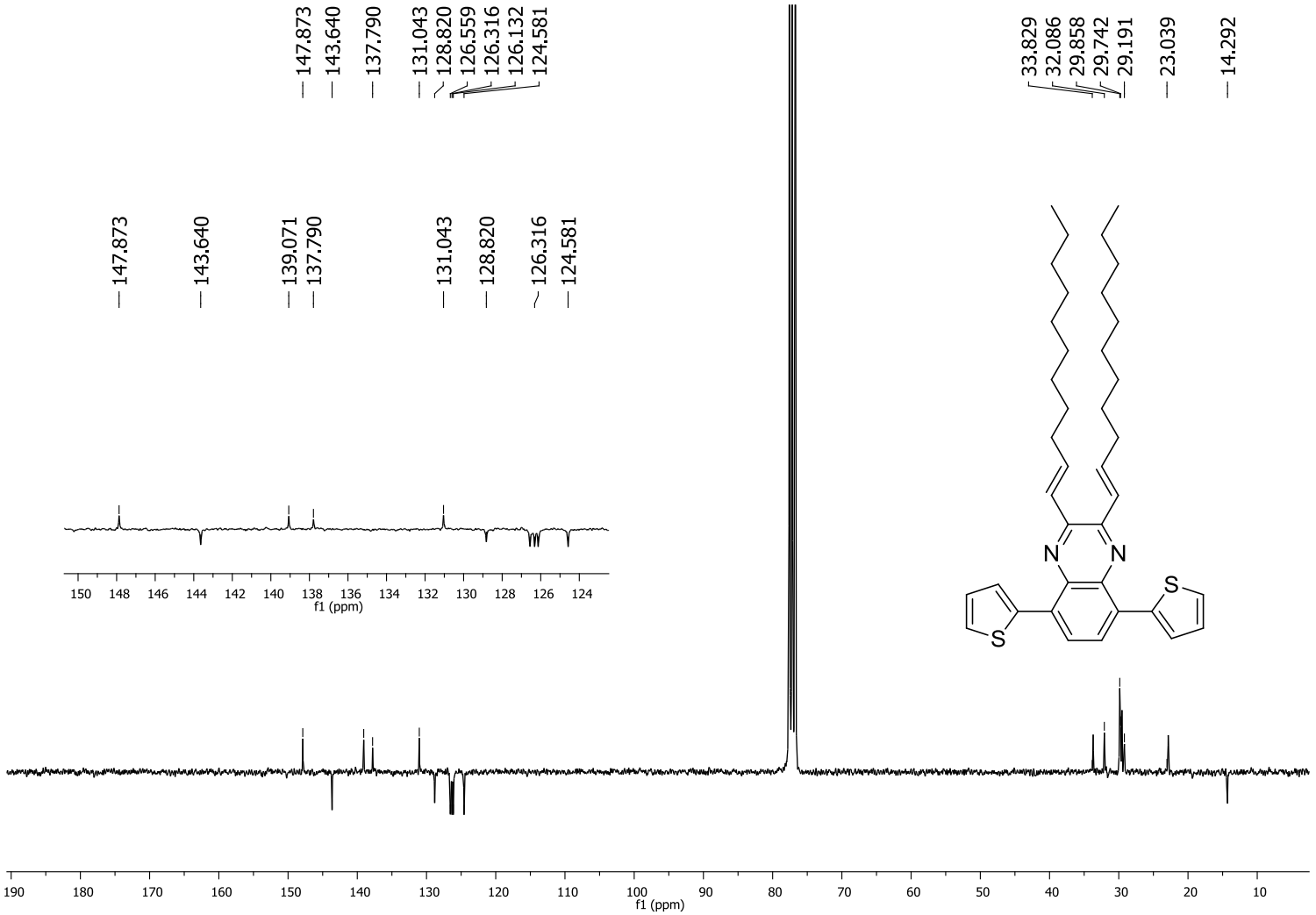

Fig. S29. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of **T4**

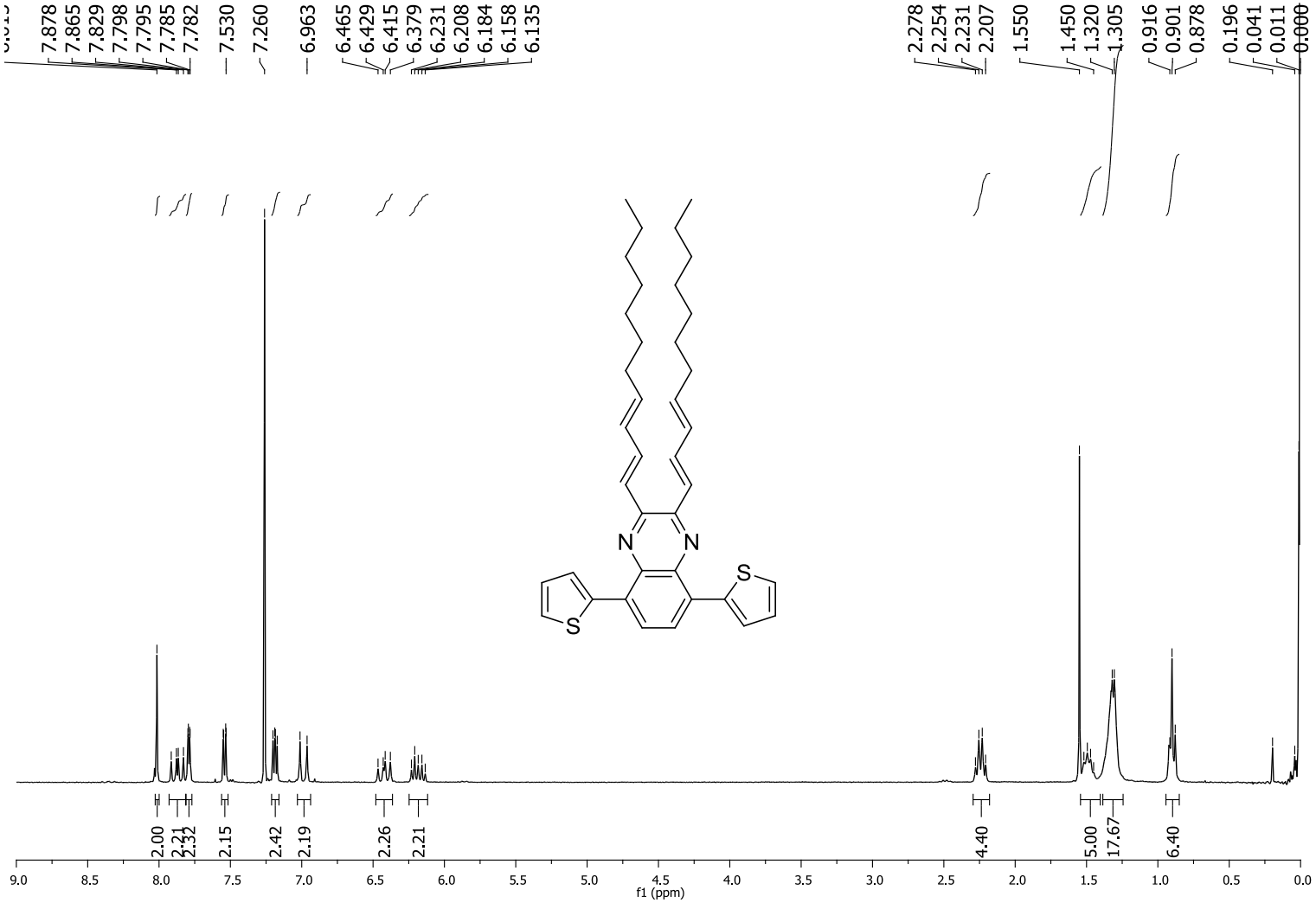

Fig. S30. ^{13}C NMR spectrum (75 MHz, $CDCl_3$) of **T4**

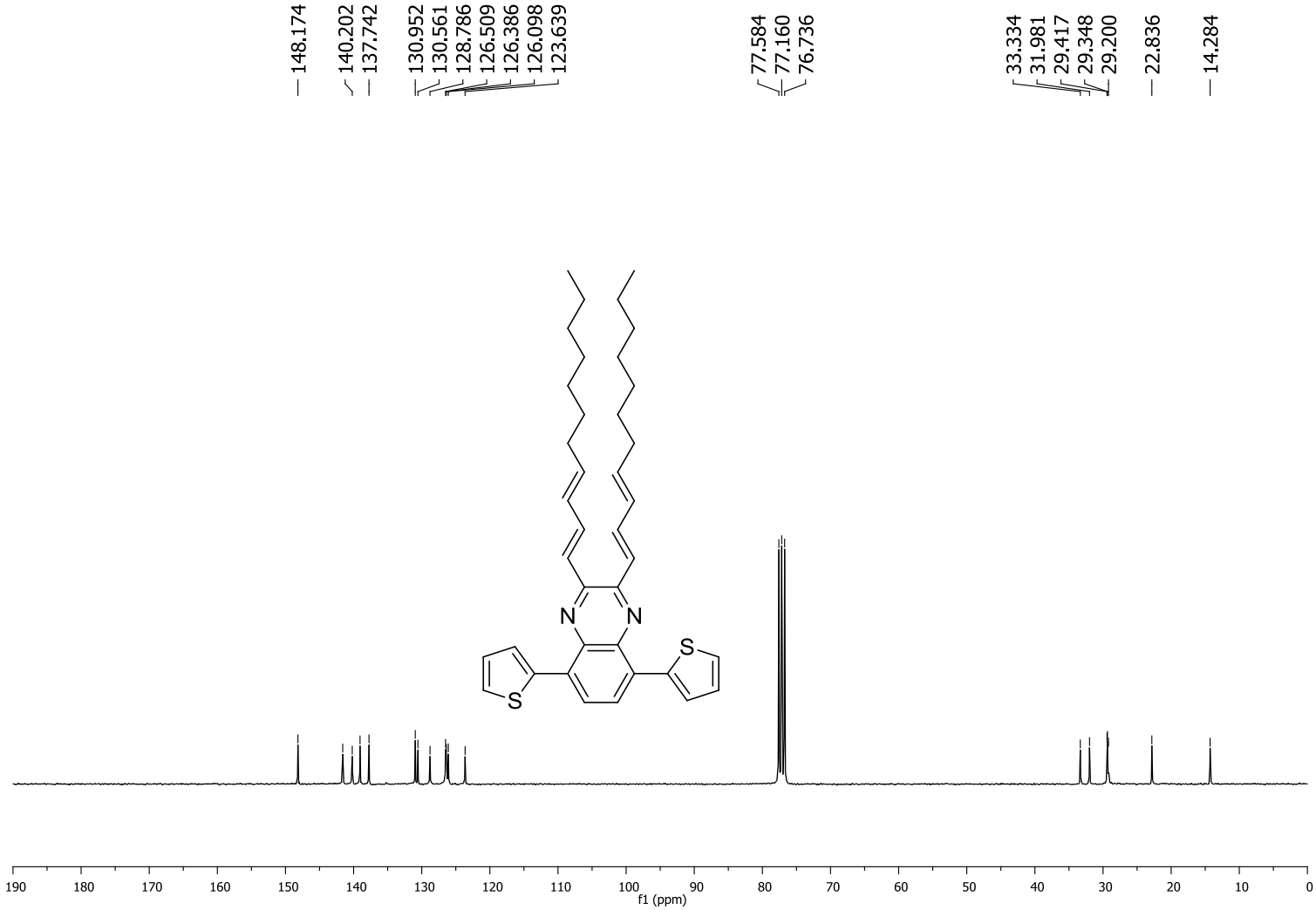

Fig. S31. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of **7**

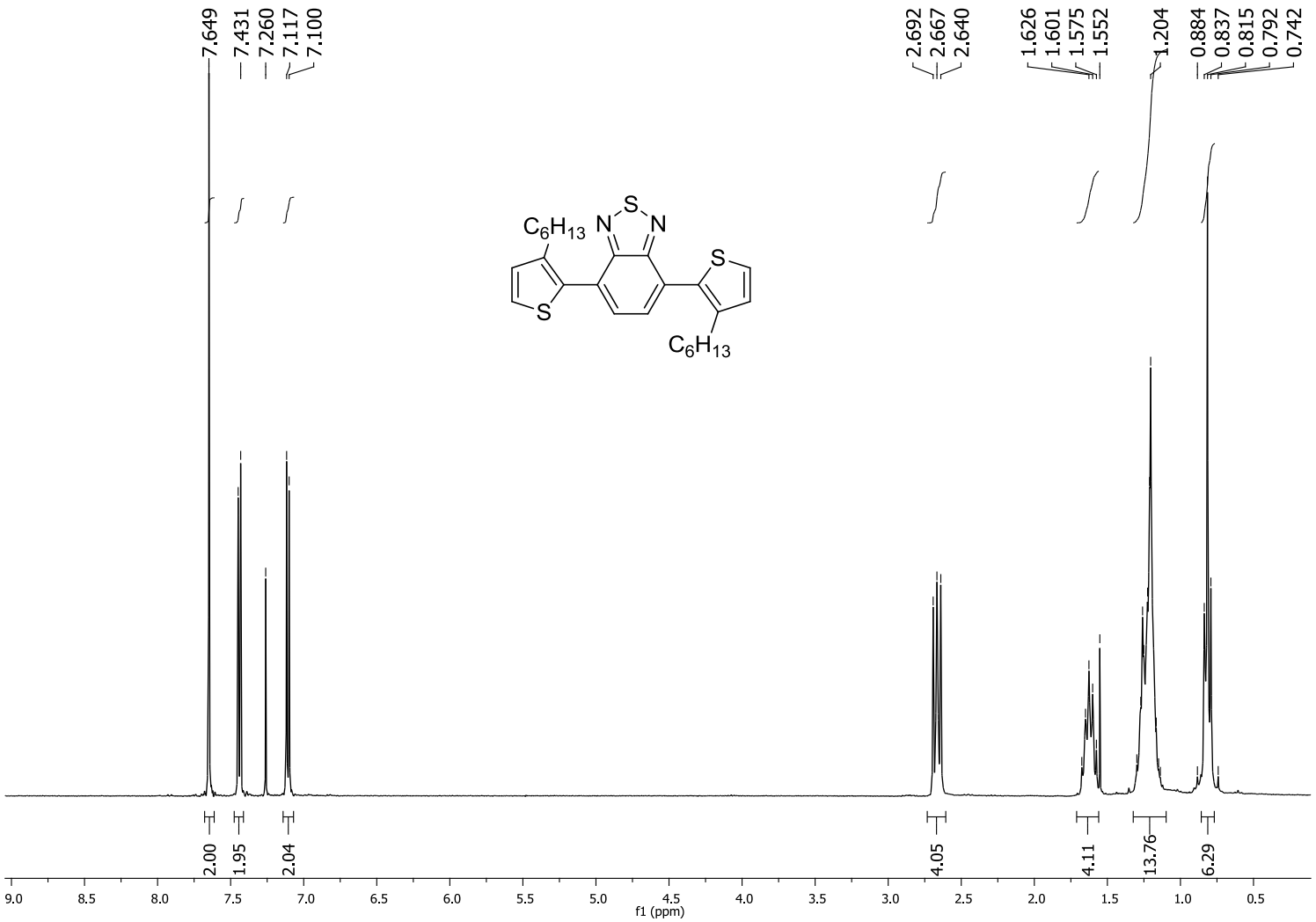

Fig. S32. ^{13}C NMR spectrum (75 MHz, $CDCl_3$) of **7**

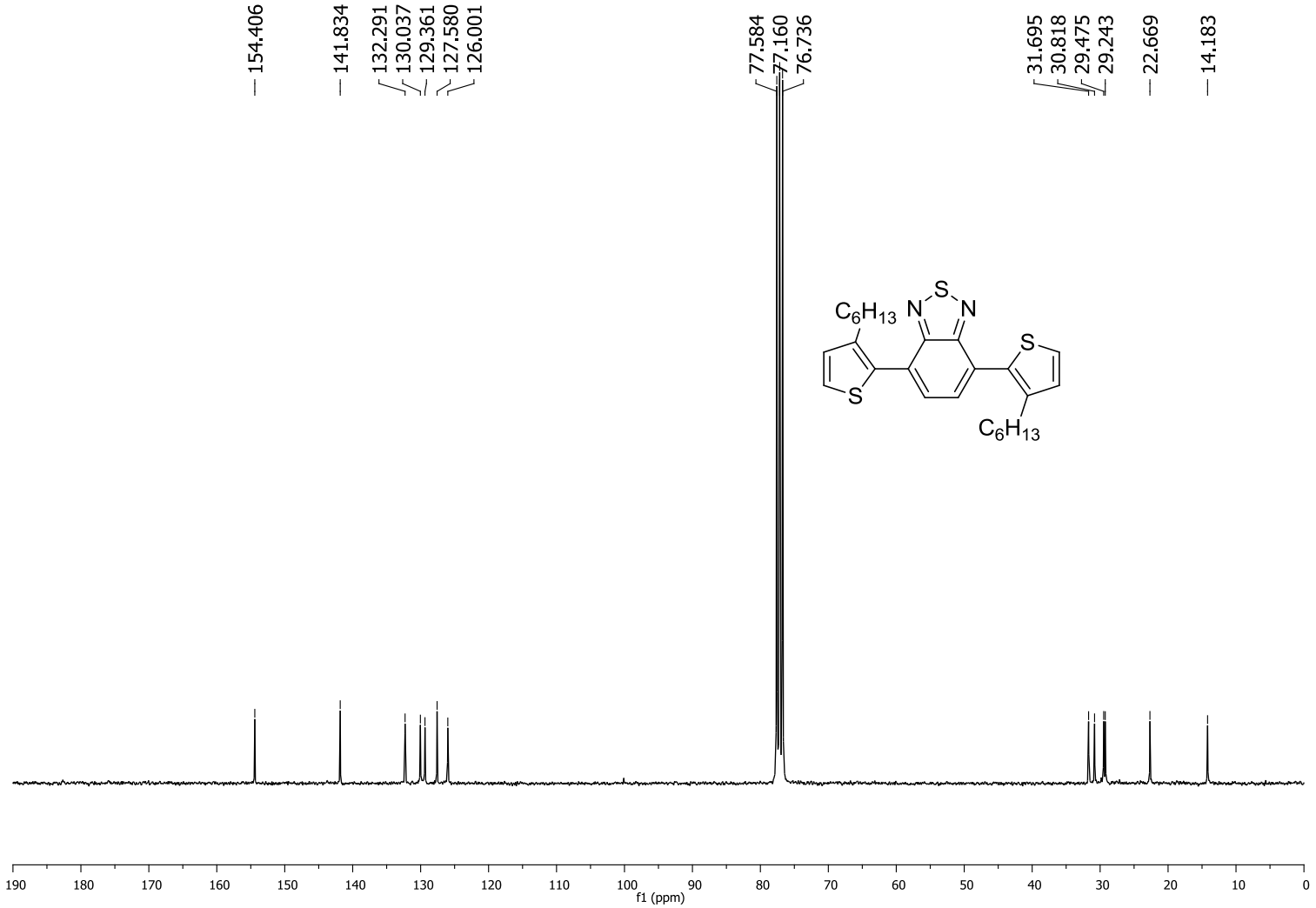

Fig. S33. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of **8**

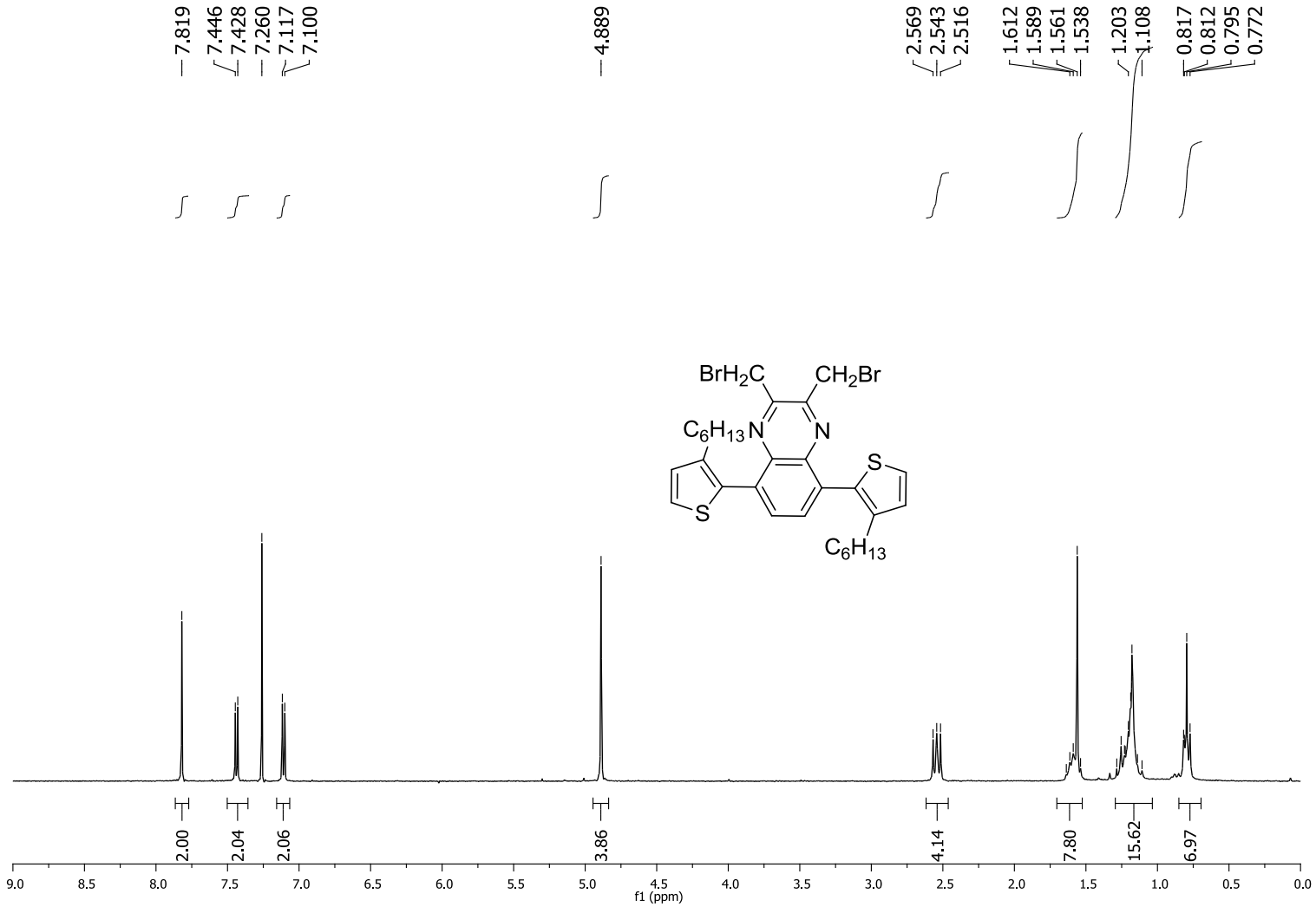

Fig. S34. ^{13}C NMR spectrum (75 MHz, $CDCl_3$) of **8**

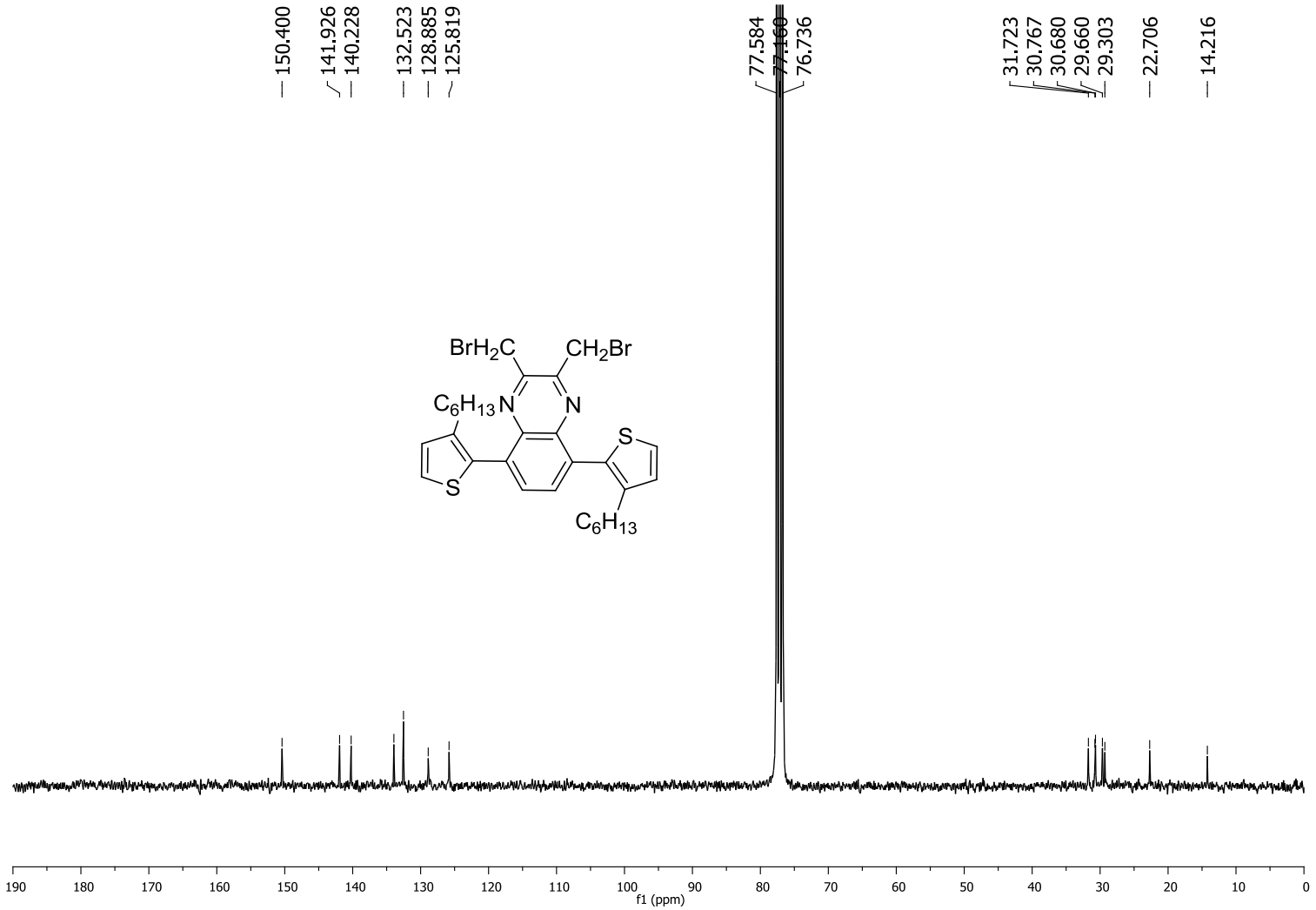

Fig. S35. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of **9**

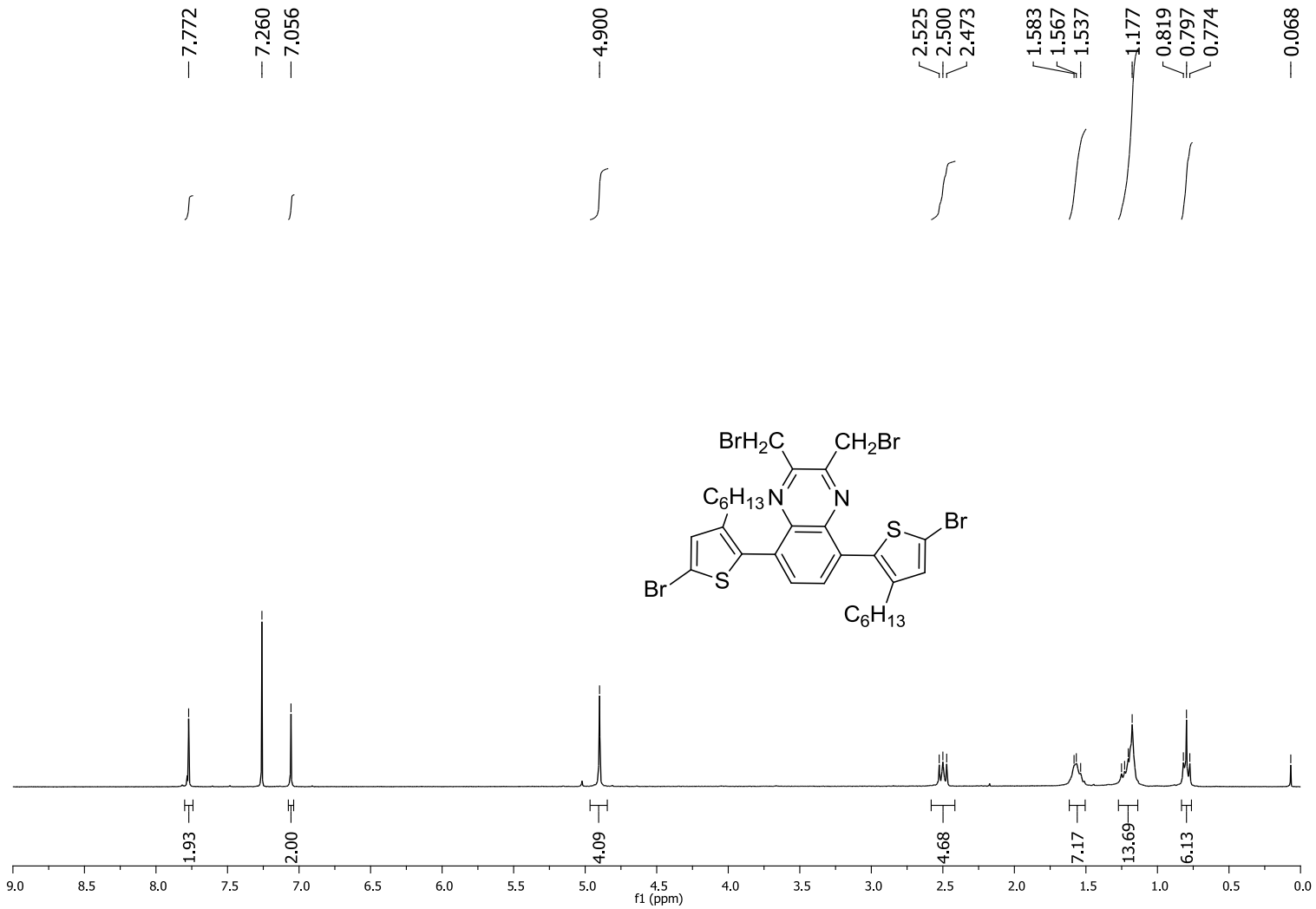

Fig. S36. ^{13}C NMR spectrum (75 MHz, $CDCl_3$) of **9**

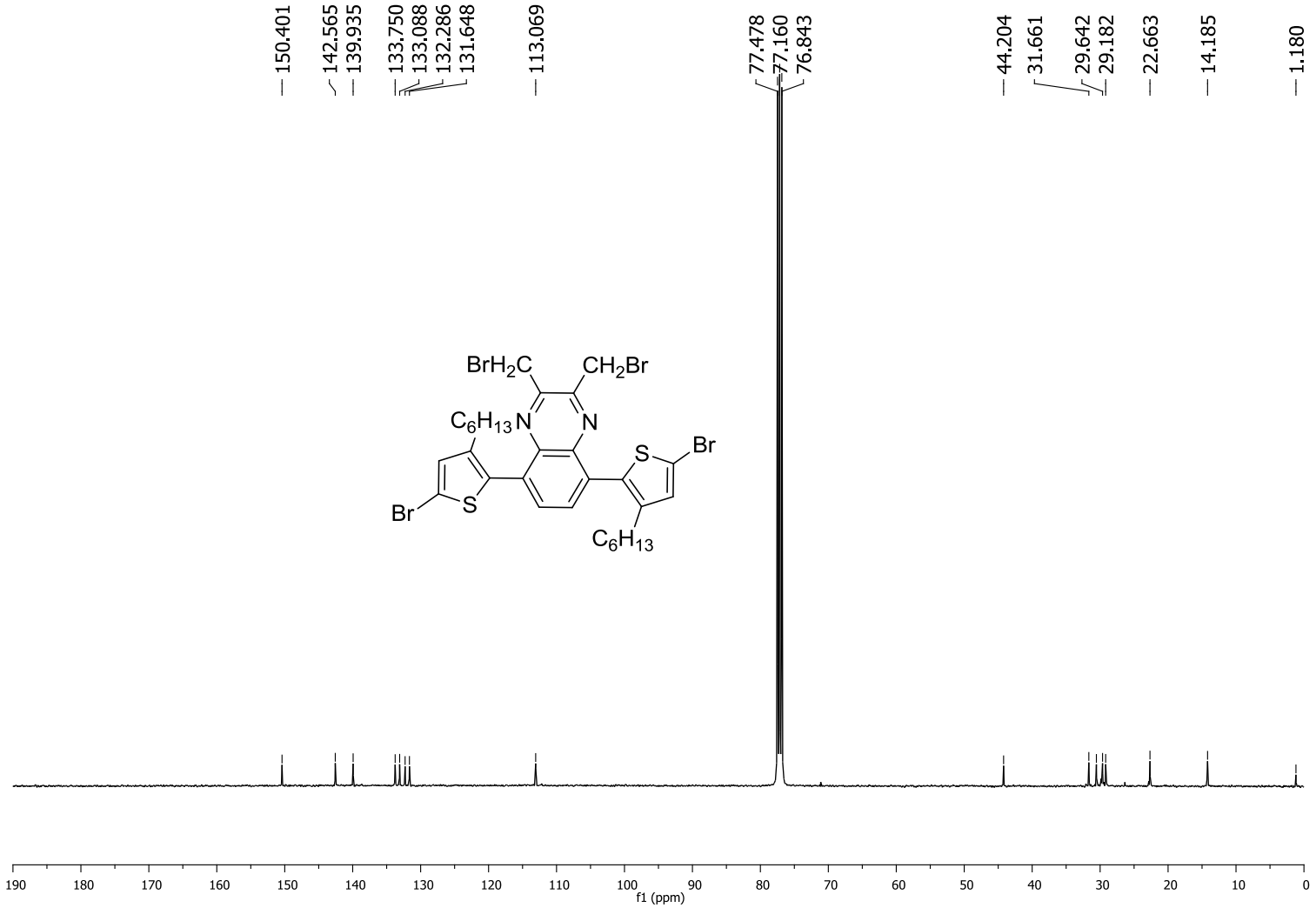

Fig. S37. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of **T5**

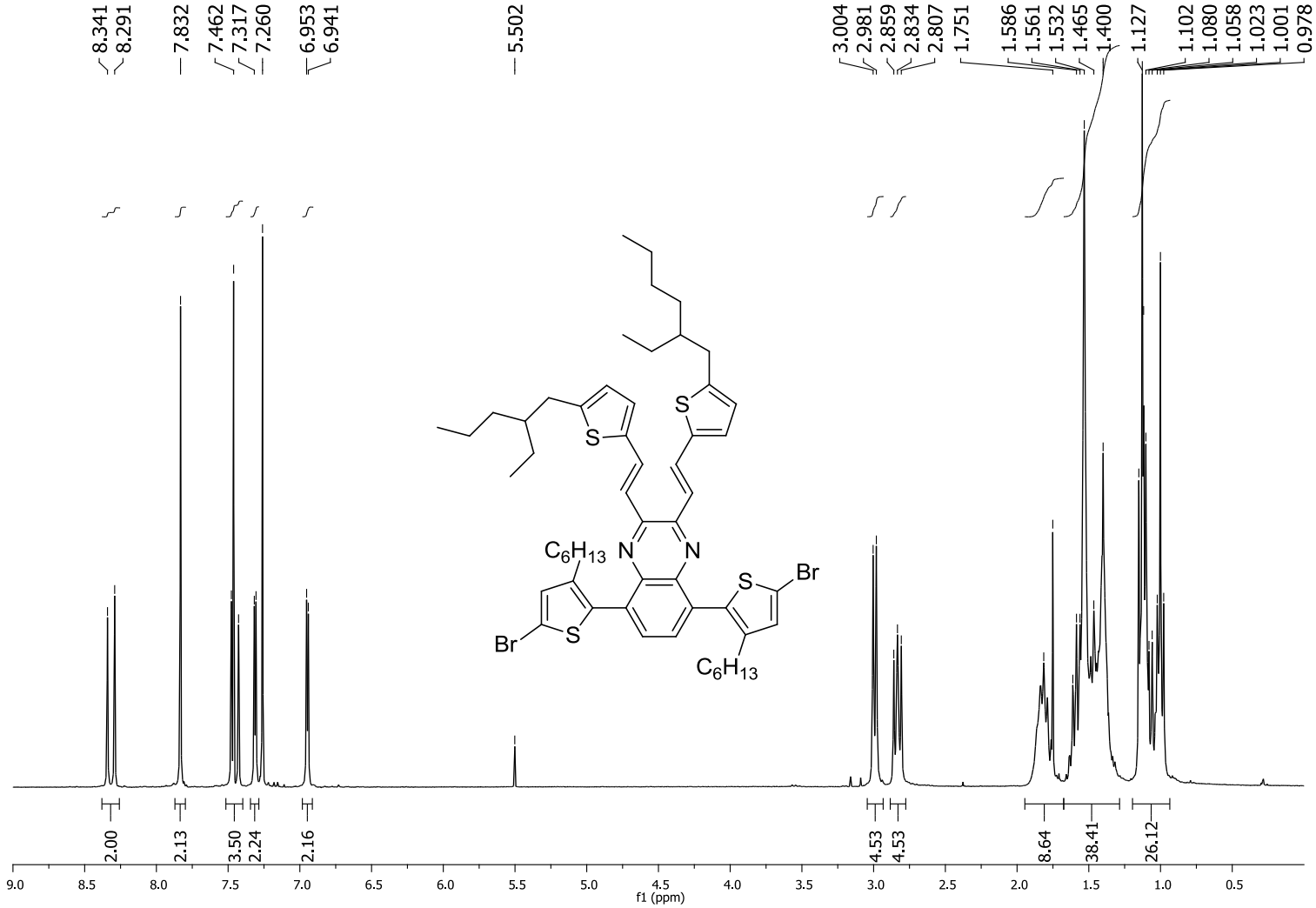

Fig. S38. APT spectrum (75 MHz, $CDCl_3$) of **T5**

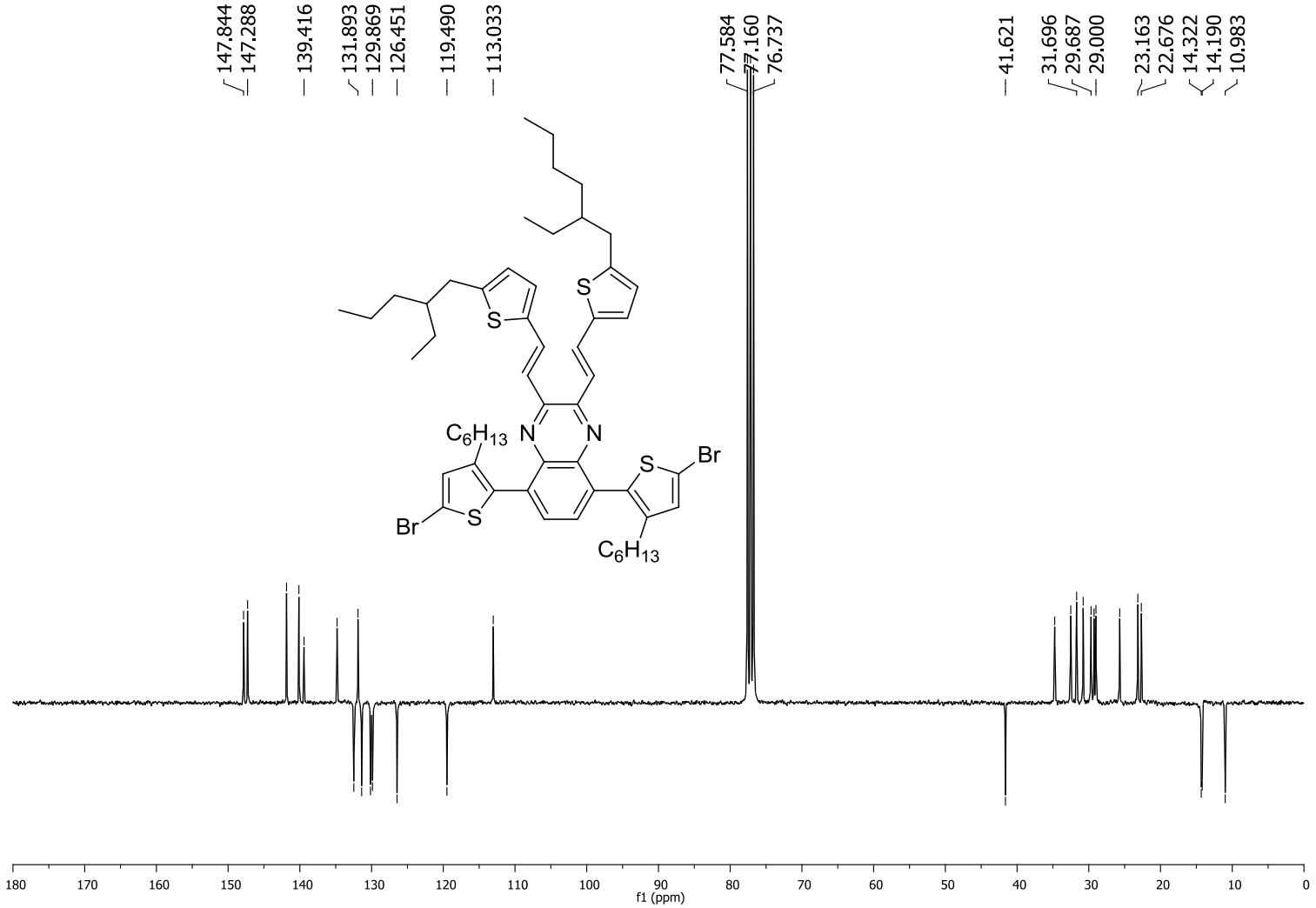

Table S1 UV-Vis and PL data of all quinoxaline derivatives (**Q1**–**Q4**), monomers (**M1**–**M6**) and triads (**T1**–**T5**)

Product	λ_{max} (log ε) UV-vis ($CHCl_3$, nm)	λ_{max} (nm) (film)	Onset (nm)	E_g (opt) (eV)	λ_{max} (nm) PL ($CHCl_3$, nm)	Side chain
Q1	268 (4.554)/ 333 (3.753)	224/280/349	426	2.91	/[a]	CH_2Br
Q2	254 (4.402)/ 285 (4.348)/ 358 (4.085)	260/277/363	410	3.02	/[a]	Ph
Q3	262 (4.238)/ 316 (4.355)/ 401 (4.085)	328/419	472	2.63	461	Th
Q4	270 (4.068)/ 324 (4.314)/ 420 (4.100)	240/321/410	477	2.60	472	2EH-Th
M1	292 (4.382)/ 341 (4.857)/ 431 (4.528)	220/257/350			495	Th*
M2	290 (4.300)/ 336 (4.661)/ 428 (4.331)	343/443	544	2.28	501	MeO-Ph*
M3	292 (4.271)/ 338 (4.636)/ 431 (4.315)	224/345/451	512	2.42	383/498	C_{12}OPh*
M4	296 (3.782)/ 345 (4.091)/ 415 (3.949)/ 448 (3.867)	298/351/456	530	2.34	475	2EH-Th*
M5	284 (4.280)/ 376 (3.780)	238/283/370	430	2.88	414	C_{11}*
M6	319 (4.065)/ 408 (3.363)	223/316/407	487	2.55	463	C_7**
T1	363 (4.304)/ 442 (3.931)	314/368/460	575	2.16	578	C_{12}OPh*
T2	310 (3.957)/ 380 (4.000)/ 454 (3.708)	325/390/478	596	2.08	580	2EH-Th*
T3	311 (4.463)/ 410 (3.902)	264/322/427	606	2.05	552	C_{11}*
T4	309 (4.384)/ 433 (3.622)	309/453	604	2.05	568	C_7**
T5	290 (4.541)/ 364 (4.357)	296/383/457	554	2.24	553	2EH-Th*

[a] Not measured; * Ethenyl linker; ** Butadienyl linker.

Fig. S39. UV-Vis absorption spectra (in film) of all quinoxaline derivatives (**Q1**–**Q4**), monomers (**M1**–**M6**) and triads (**T1**–**T5**)

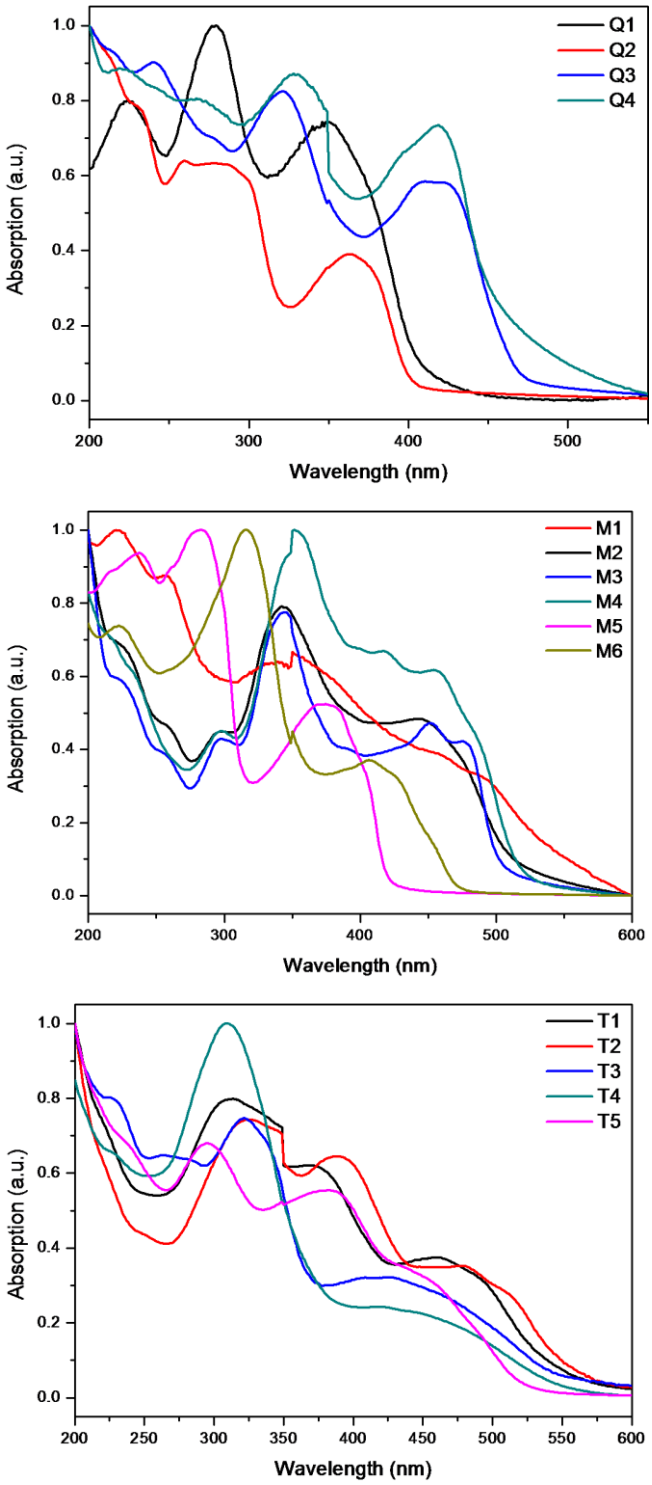

Fig. S40. PL spectra (normalized, in $CHCl_3$ solution) of quinoxaline triads **T1**–**T5**