Electronic Supplementary Information (ESI)

The effect of acceptor structure on emission colour tuning in organic semiconductors with D-π-A-π-D structures

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NMR Spectra

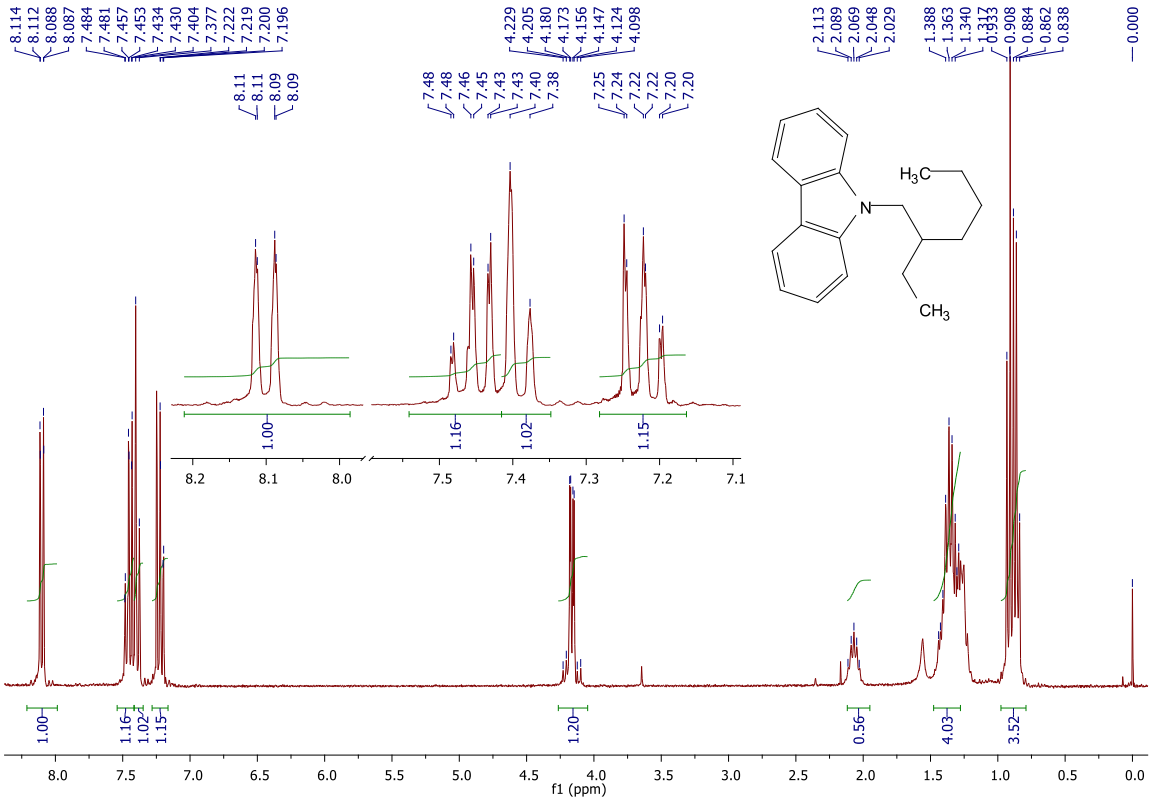

Figure S1. ^{1}H-NMR of compound **2** in $CDCl_3$

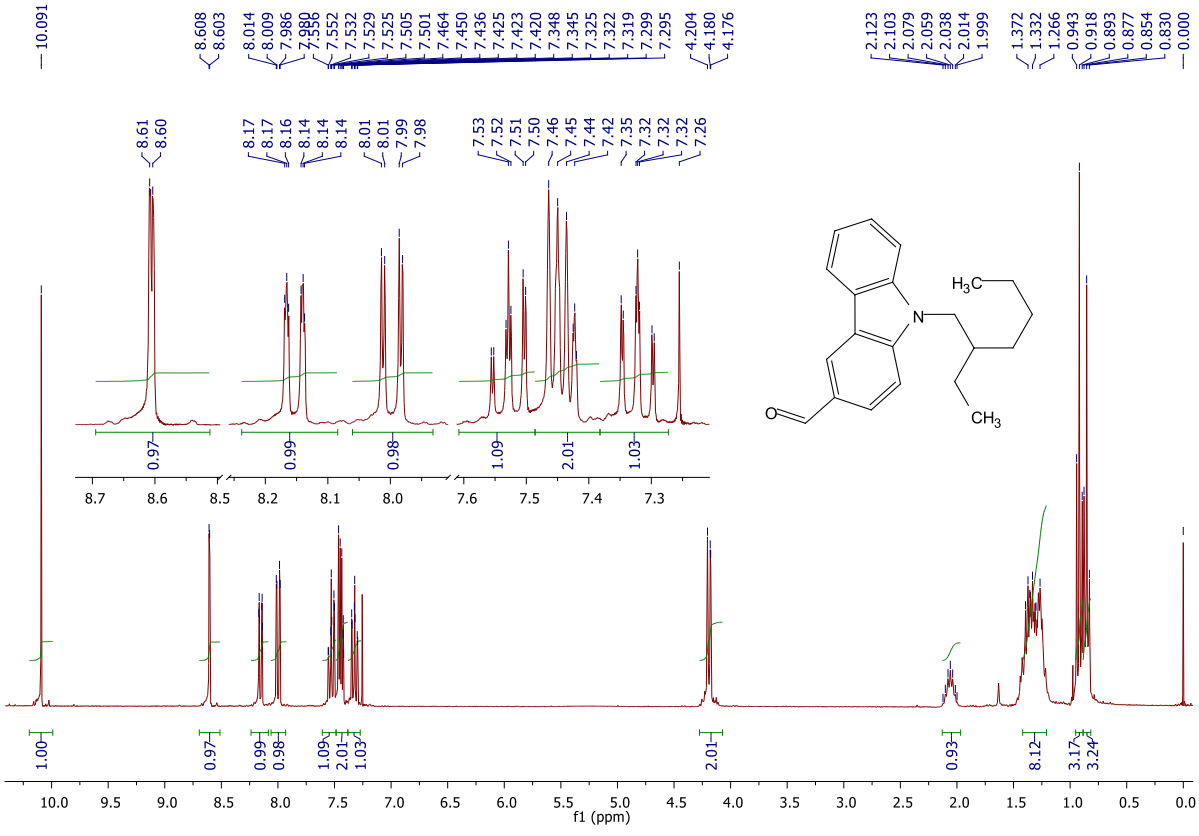

Figure S2. ^{1}H-NMR of compound **3** in $CDCl_3$

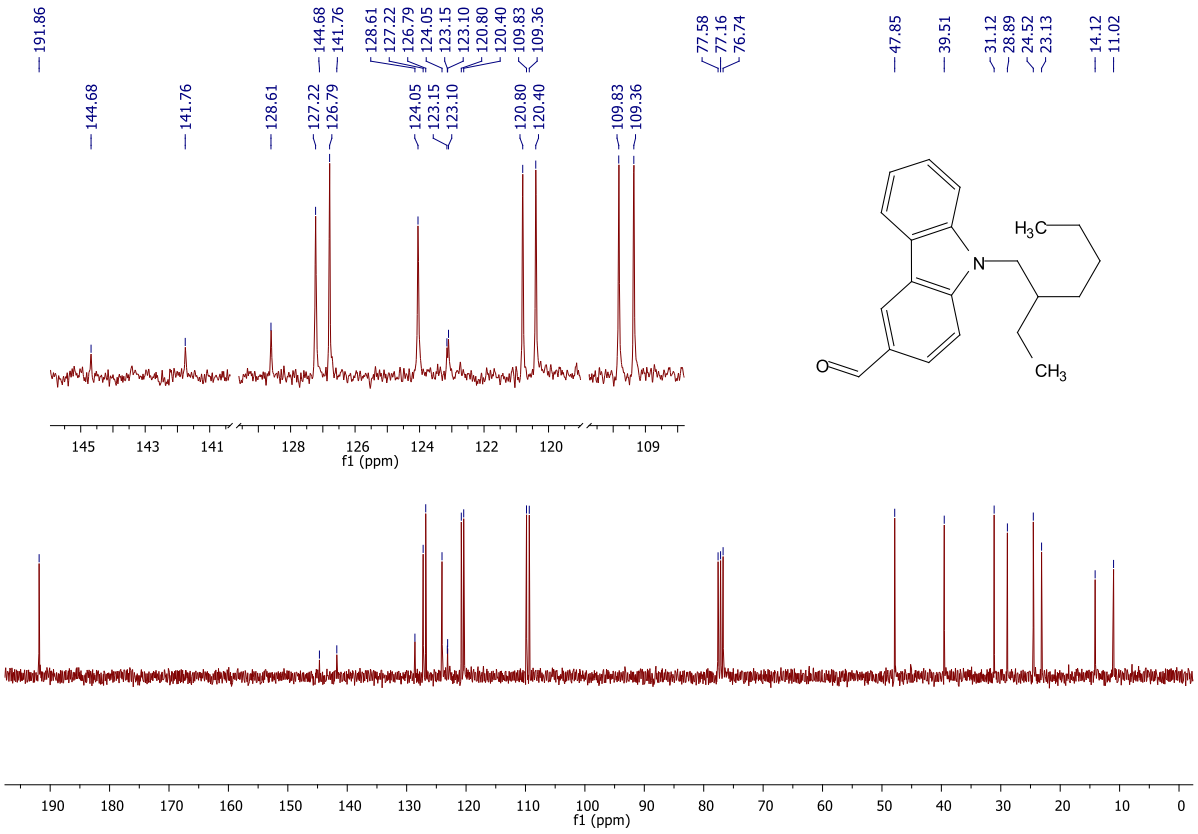

Figure S3. ^{13}C-NMR of compound **3** in $CDCl_3$

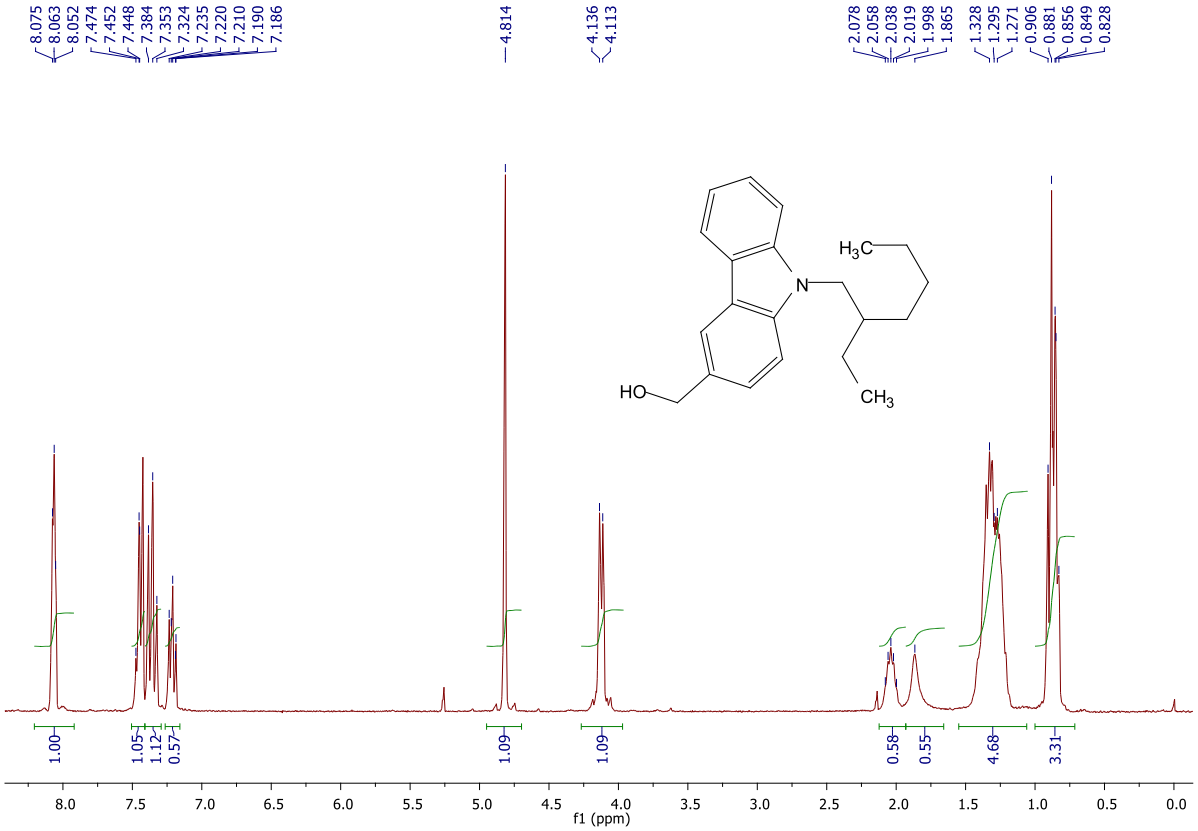

Figure S4. ^{1}H-NMR of compound **4** in $CDCl_3$

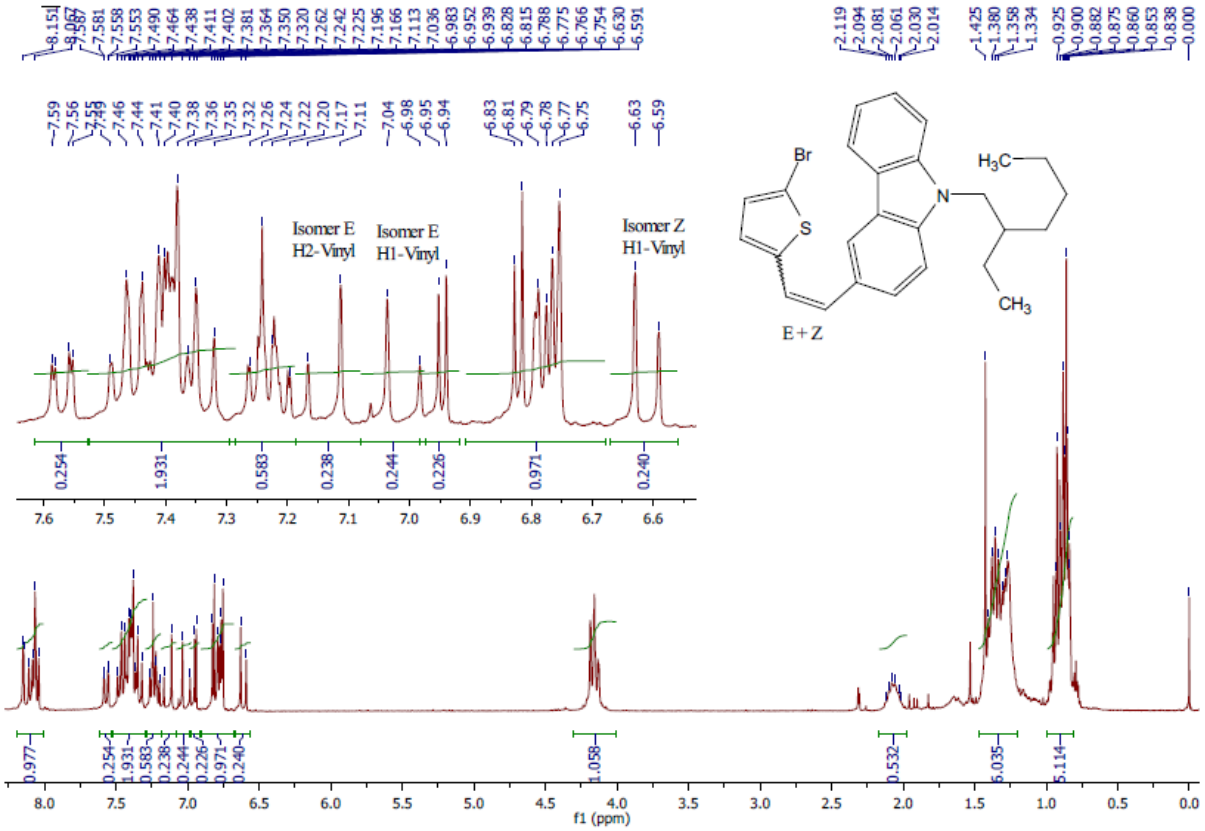
Isomer E
H2-Vinyl
Isomer E
H1-Vinyl
Isomer Z
H1-Vinyl
Br
S
N
H3C
CH3
E+Z
f1 (ppm)

Figure S5. ^{1}H-NMR of mixture of compounds **6** in $CDCl_3$

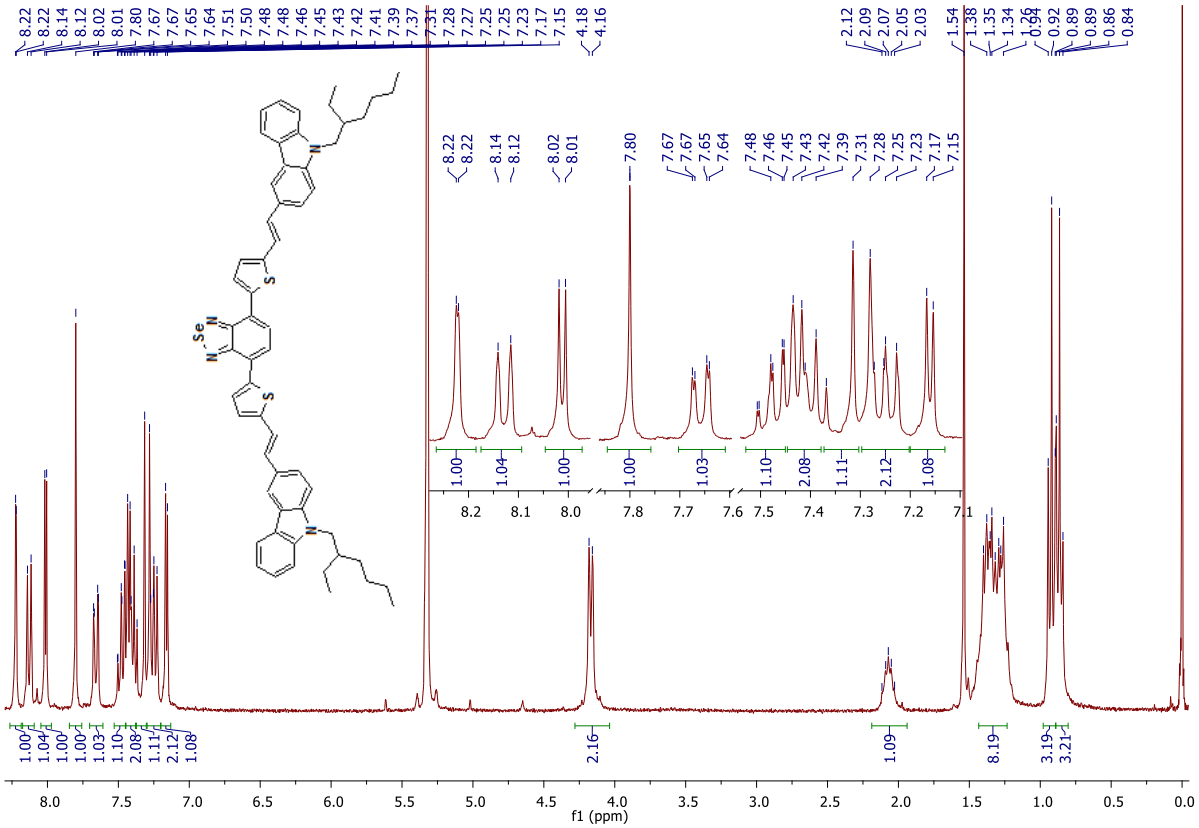

Figure S6. ^{1}H-NMR of compound **C4** in CD_2Cl_2

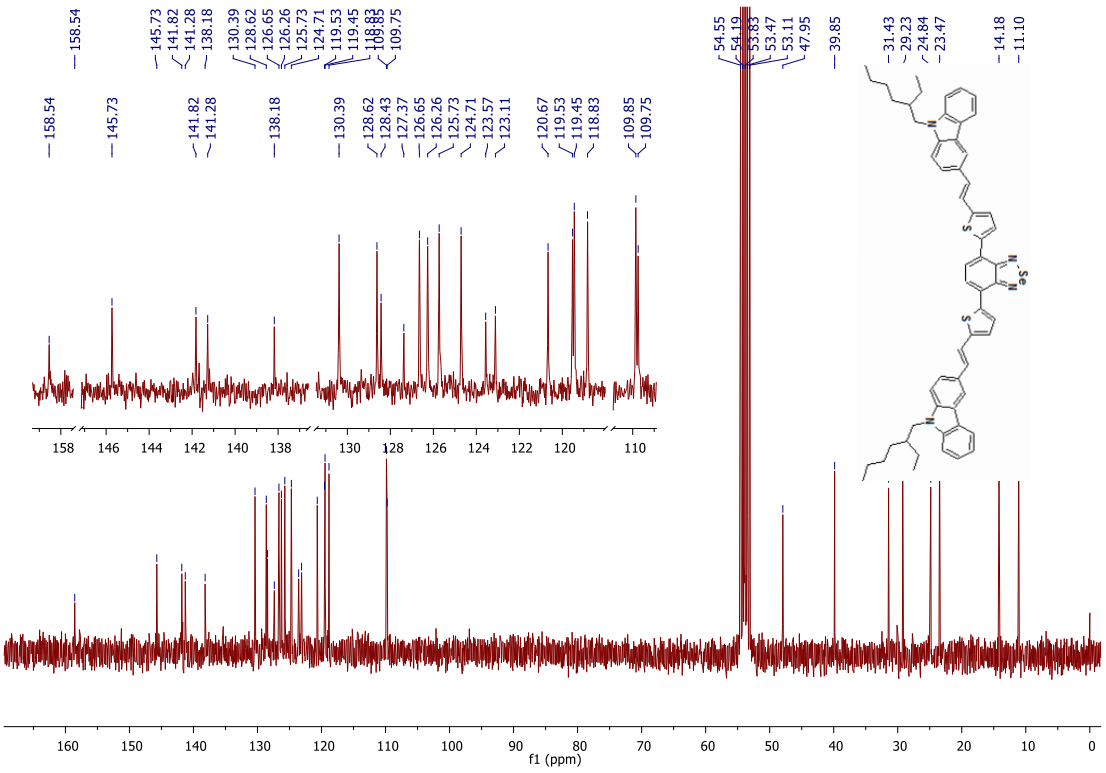

Figure 7. ^{13}C-NMR of compound **C4** in CD_2Cl_2

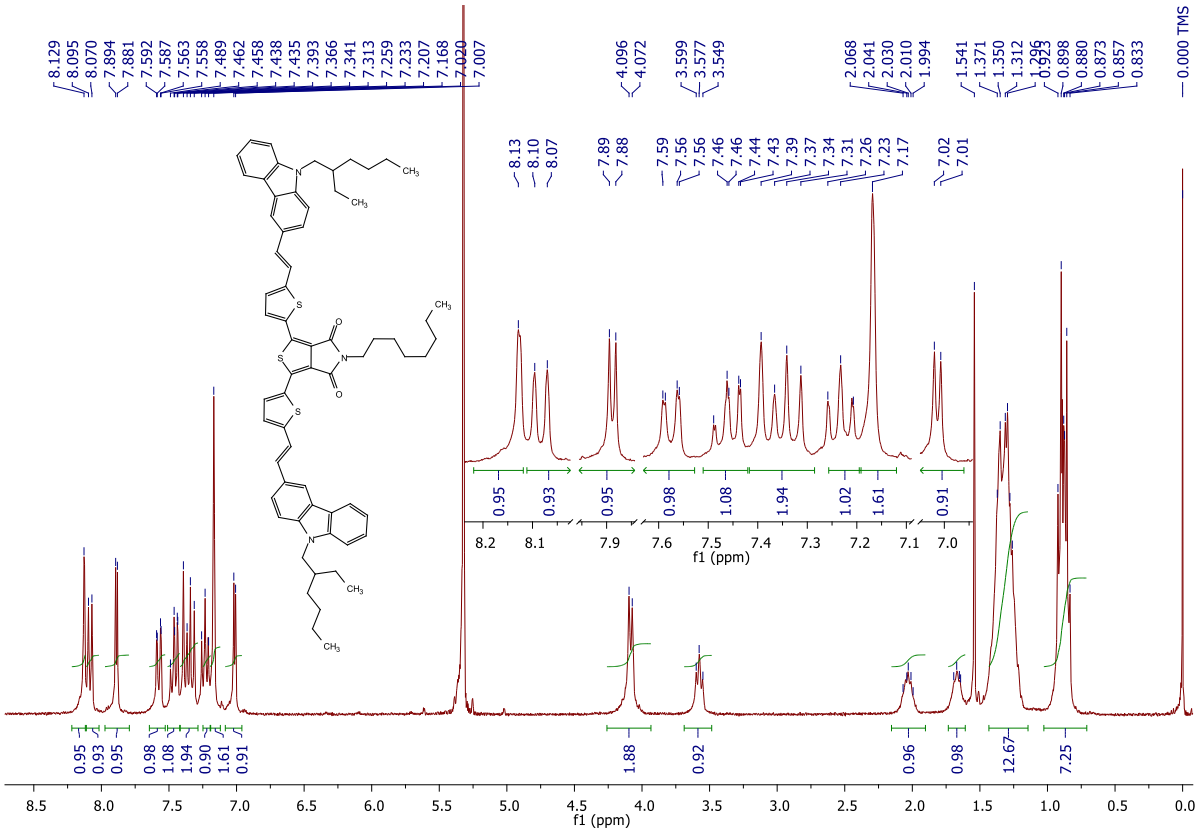

Figure S8. ^{1}H-NMR of compound **C1** in CD_2Cl_2

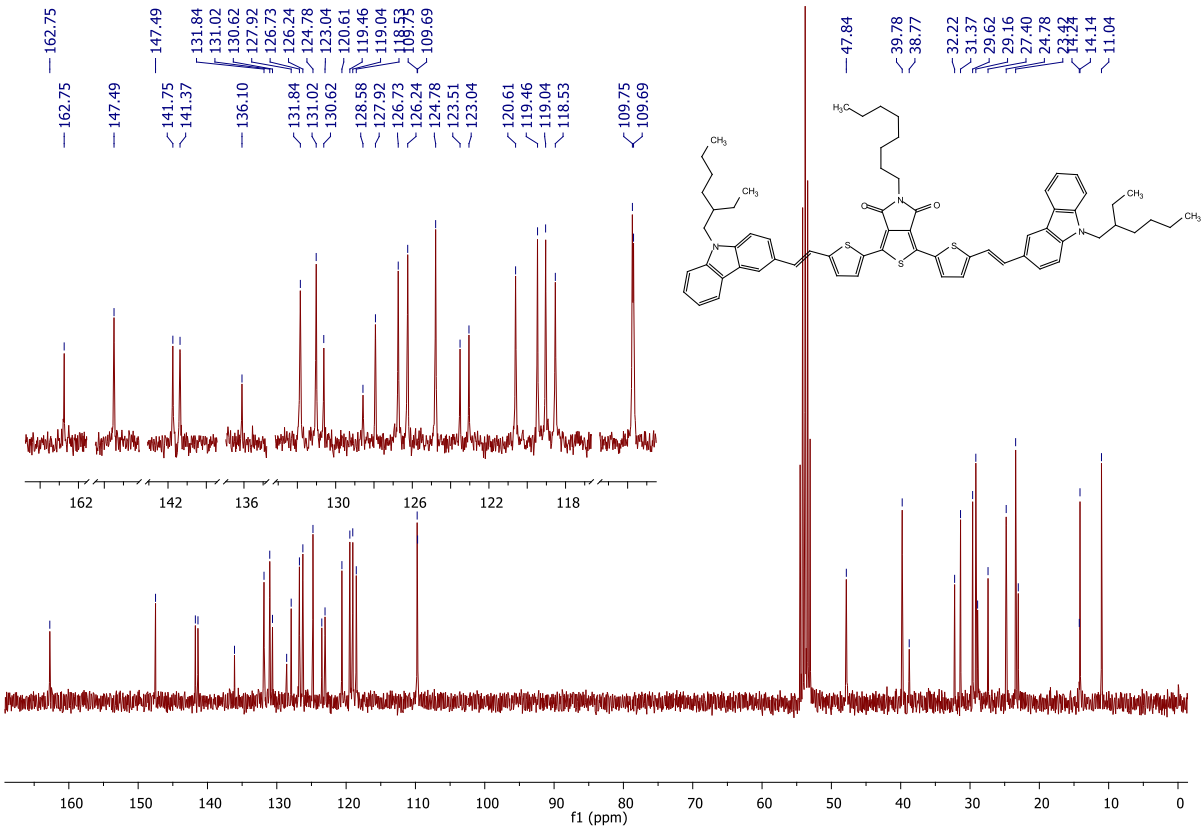

Figure S9. ^{13}C-NMR of compound **C1** in CD_2Cl_2

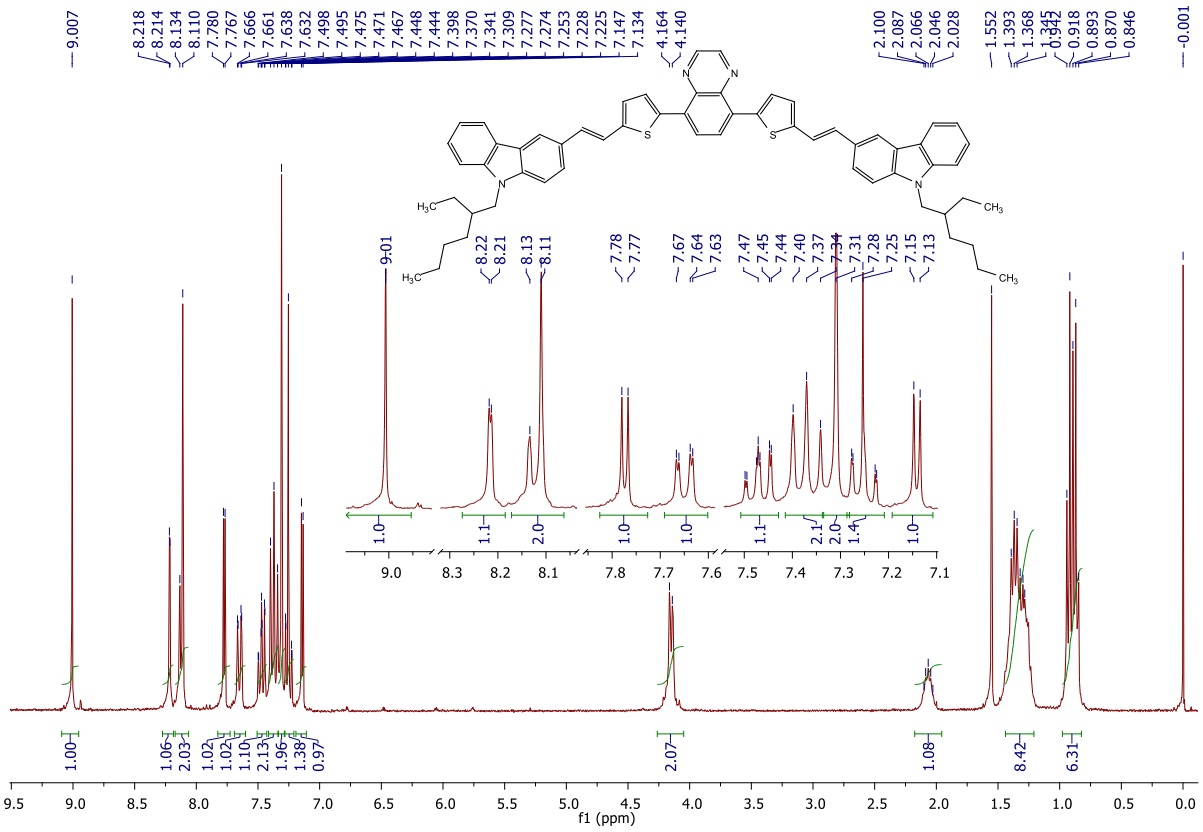

Figure S10. ^{1}H-NMR of compound **C2** in $CDCl_3$

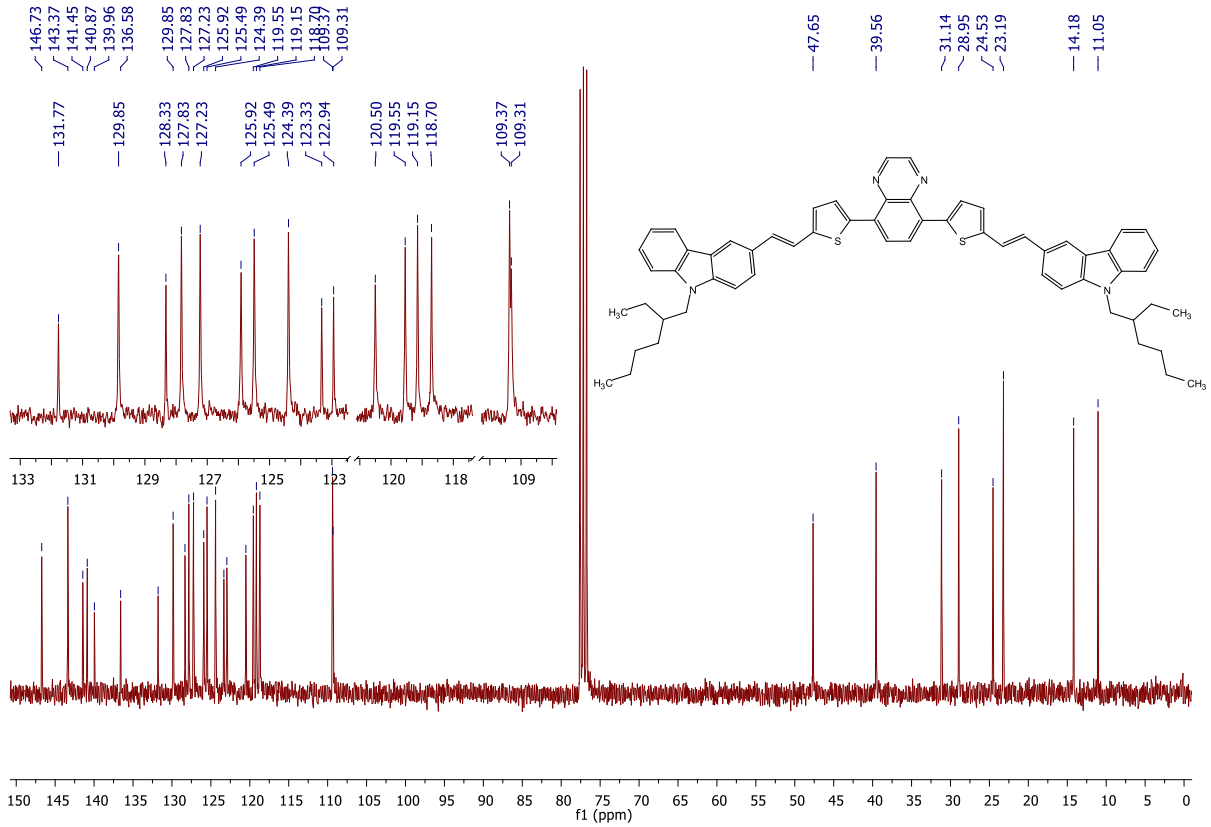

Figure S11. ^{13}C-NMR of compound **C2** in $CDCl_3$

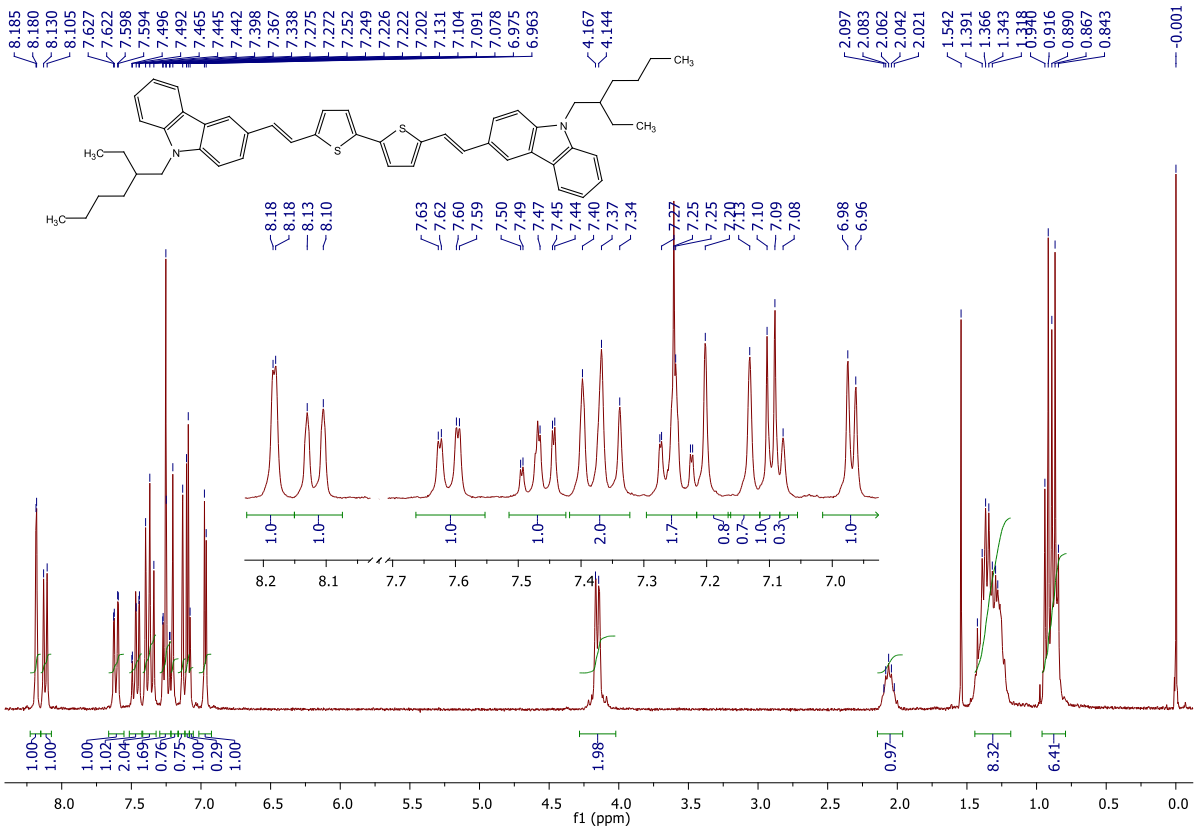

Figure S12. ^{1}H-NMR of compound **C5** in $CDCl_3$

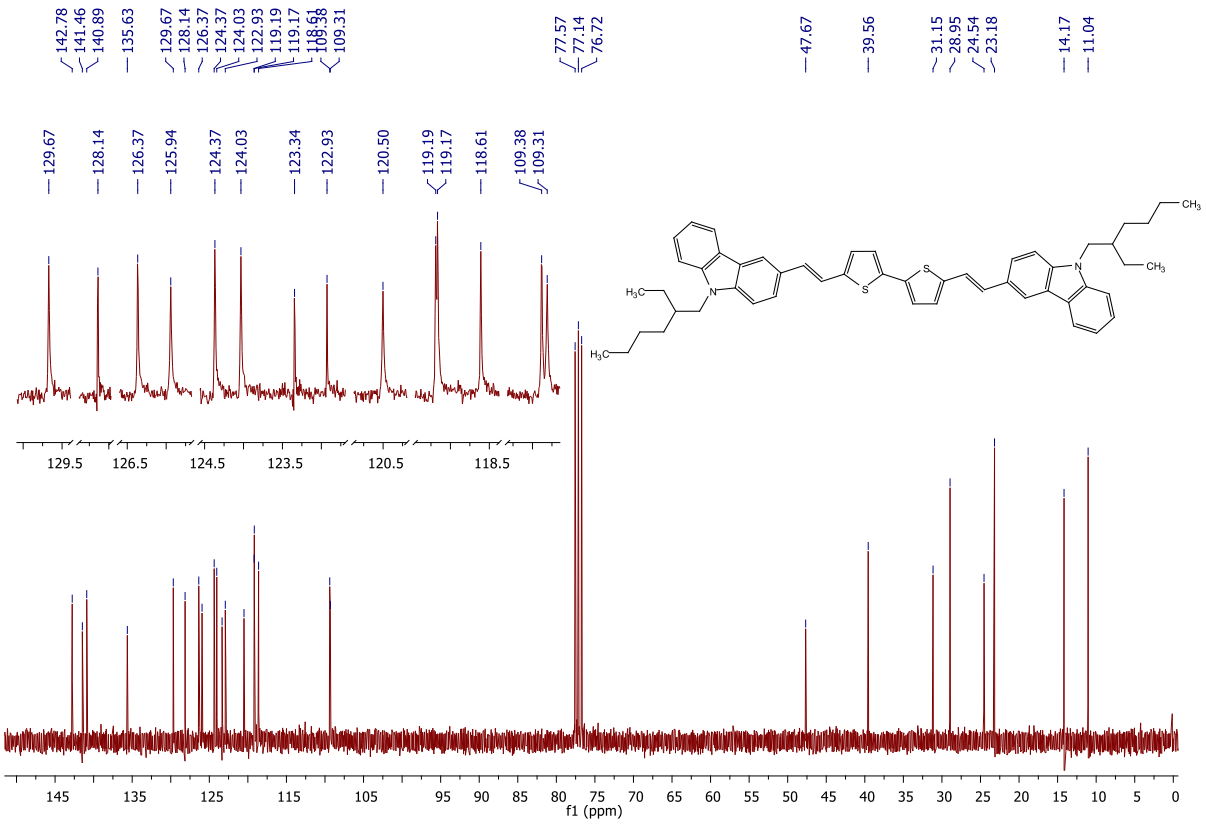

Figure S13. ^{13}C-NMR of compound **C5** in $CDCl_3$

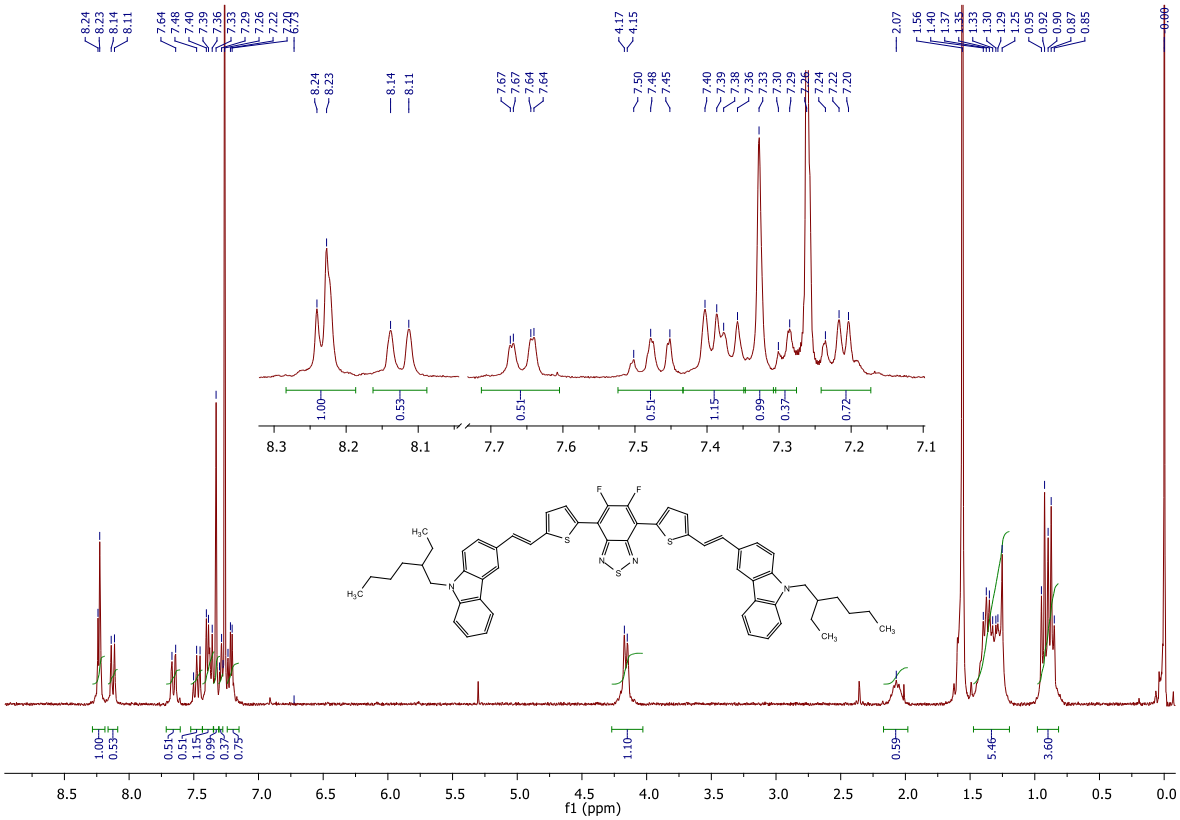

Figure S14. ^{1}H-NMR of compound **C3** in $CDCl_3$

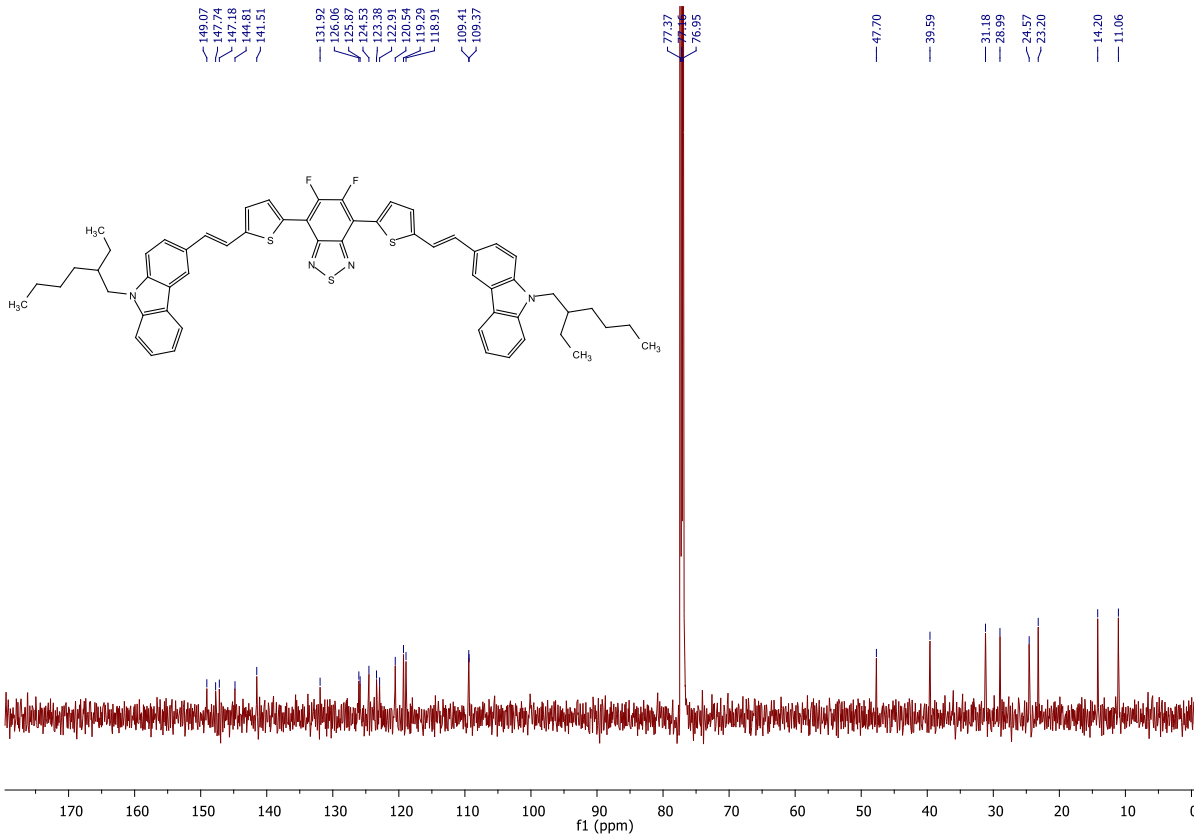

Figure S15. ^{13}C-NMR of compound **C3** in $CDCl_3$

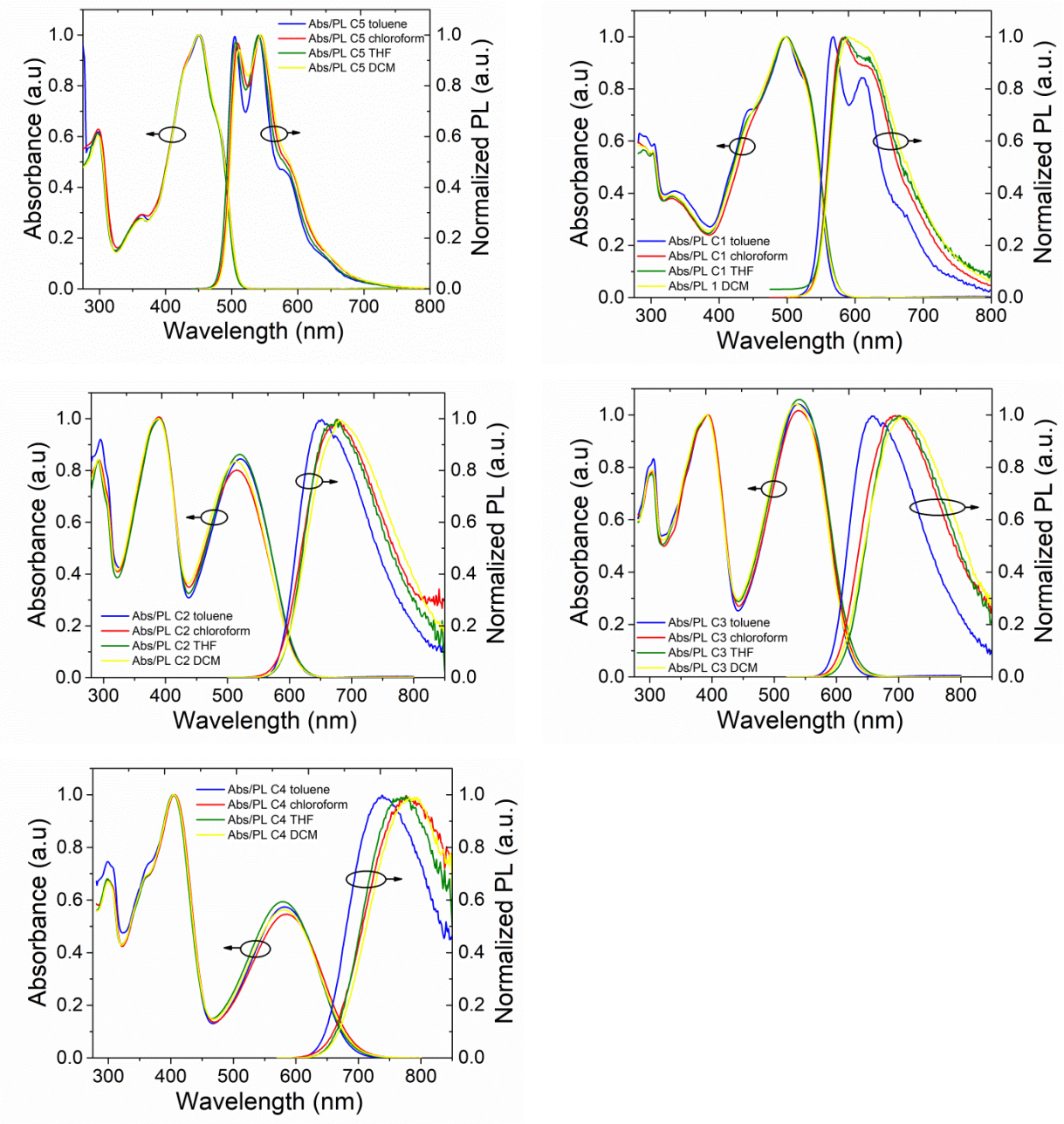

Figure S16. UV-Vis and photoluminescence spectra spectra of studied compounds, measured in different solvents.

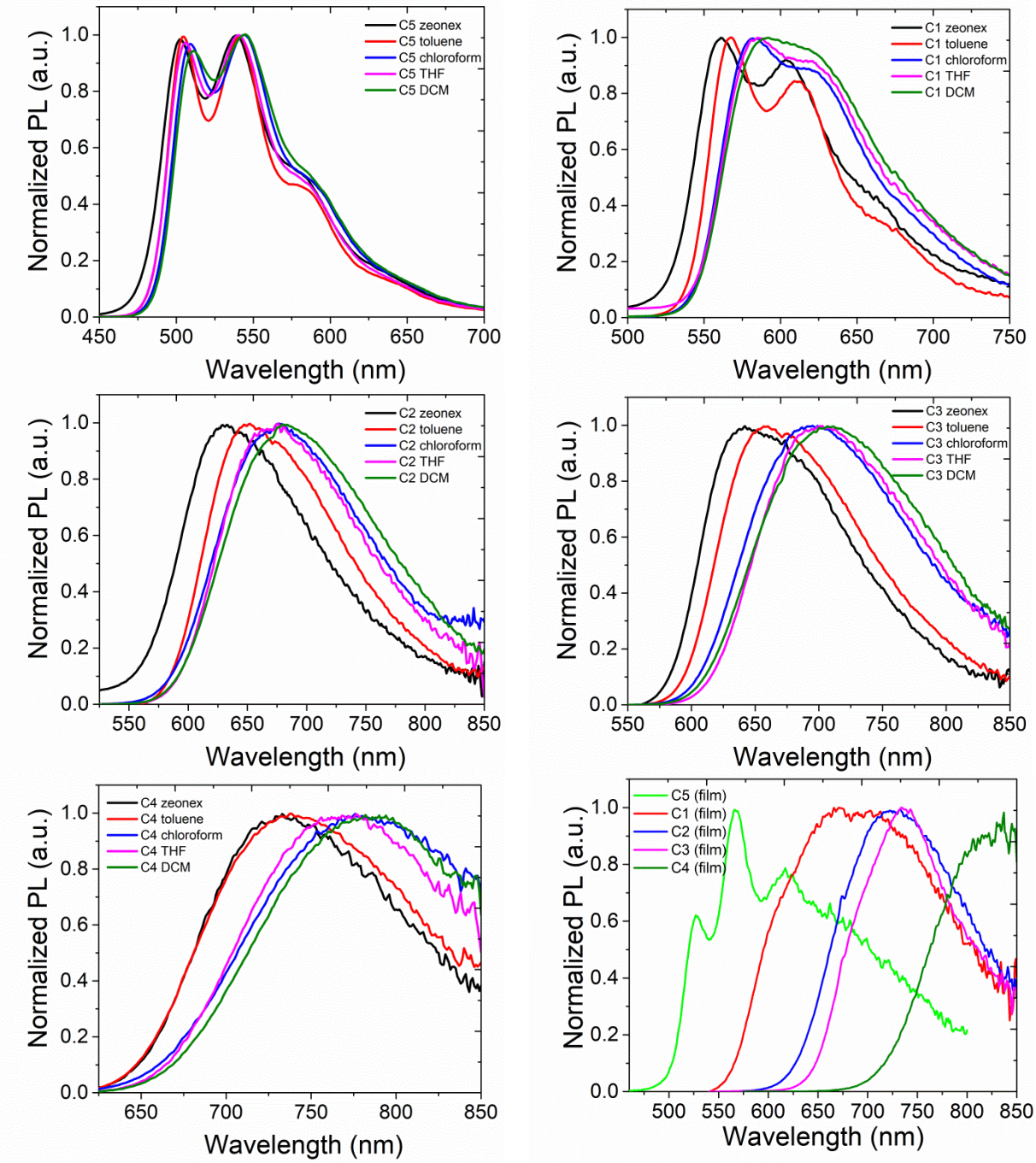

Figure S17. Photoluminescence spectra of emitters in the different solvents, 1 wt% in zeonex matrix and in pristine films.

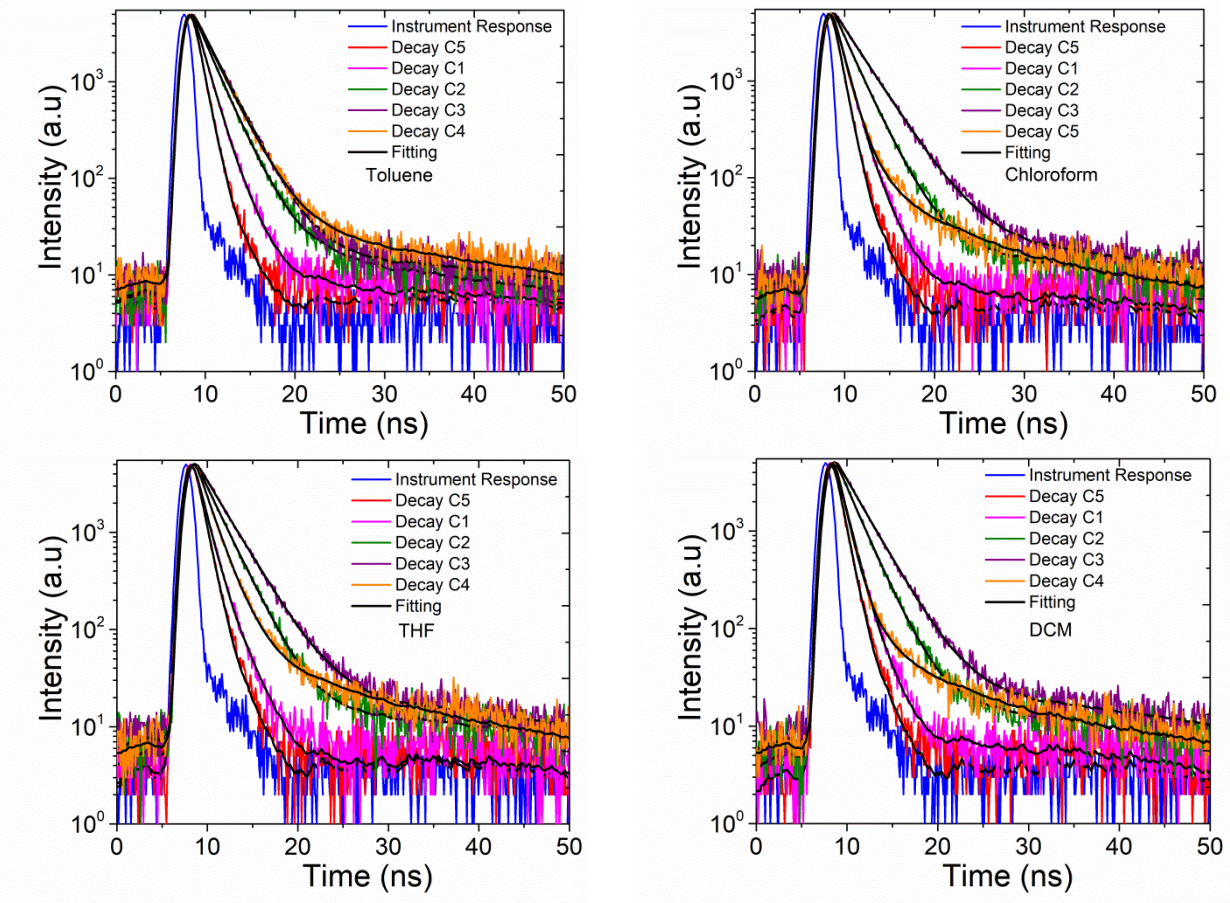

Figure S18. Photoluminescence decay curves of studied compounds in the different solutions (10^{-5} M in toluene, chloroform, THF, DCM) at the maximum emission.

Table S1. The fluorescence lifetime of the red emitters in diluted solutions obtained from photoluminescence decay curves at the maximum emission

	Toluene			Chloroform			THF			DCM		
	τ_1 ns (%)	τ_2 ns (%)	χ^2	τ_1 ns (%)	τ_2 ns (%)	χ^2	τ_1 ns (%)	τ_2 ns (%)	χ^2	τ_1 ns (%)	τ_2 ns (%)	χ^2
C5	0.9(100)	-	1.28	0.8(100)	-	1.42	0.9(100)	-	1.32	0.9	-	1.36
C1	1.3 (97)	6.1 (3)	1.28	1.2 (98)	5.7 (2)	1.29	1.1 (91)	2.3 (9)	1.52	1.1 (98)	14.9 (2)	1.25
C2	1.9 (95)	8.3 (5)	1.29	2.1 (96)	9.8 (4)	1.21	2.1 (97)	18.5 (3)	1.33	1.9 (97)	13.8 (3)	1.29
C3	2.3 (97)	16.6 (3)	1.28	2.9 (96)	14.2 (4)	1.28	2.7 (97)	15.7 (3)	1.28	2.5 (97)	16.2 (3)	1.21
C4	2.2 (95)	11.2 (5)	1.14	1.1 (91)	8.2 (9)	1.48	1.5 (93)	9.7 (7)	1.27	1.0 (92)	8.6 (8)	1.27

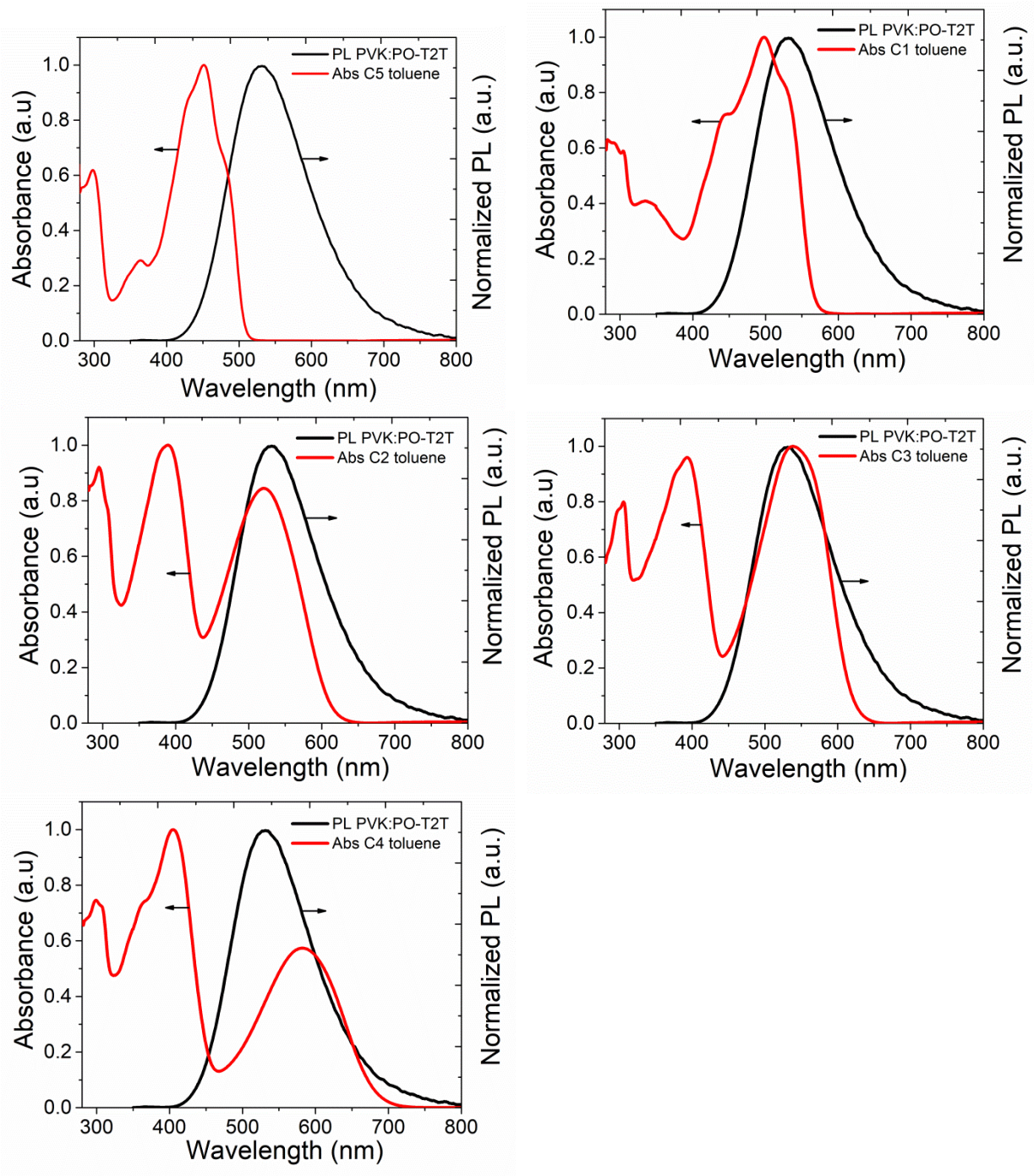

Figure S19. Normalized absorption spectra of the emitters in toluene solution and photoluminescence spectrum of PVK:PO-T2T in film.

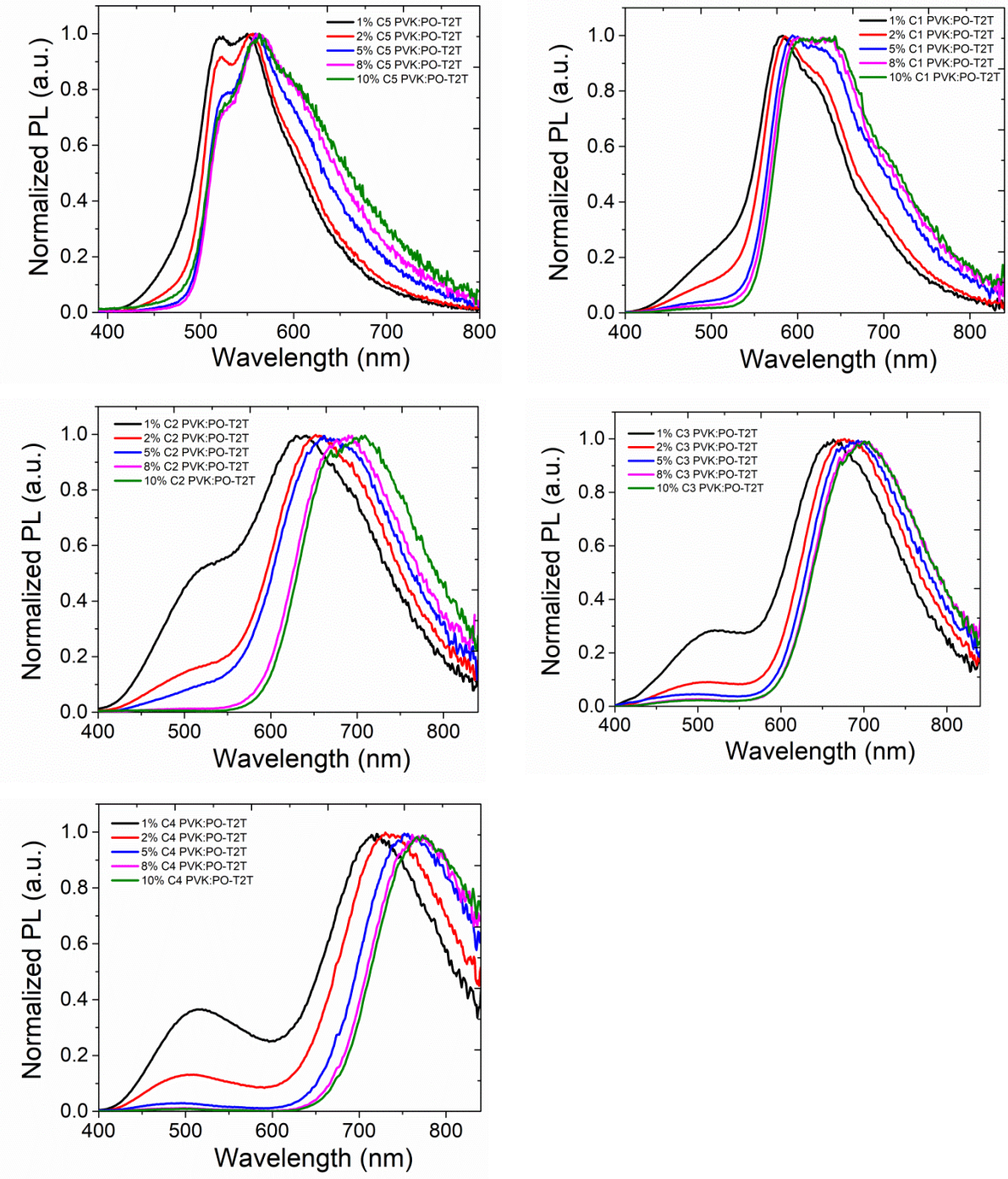

Figure S20. Normalized photoluminescence spectra of thin layers: PVK:PO-T2T doped with 1, 2, 5, 8, 10 wt% of studied molecules.