Electronic Supplementary Information

Unsymmetrical and C_3-Symmetrical Partially Fluorinated Hexaarylbenzenes: Effect of Terminal Alkoxy Chain Length on Photophysical and Thermophysical Behavior

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NMR spectrum

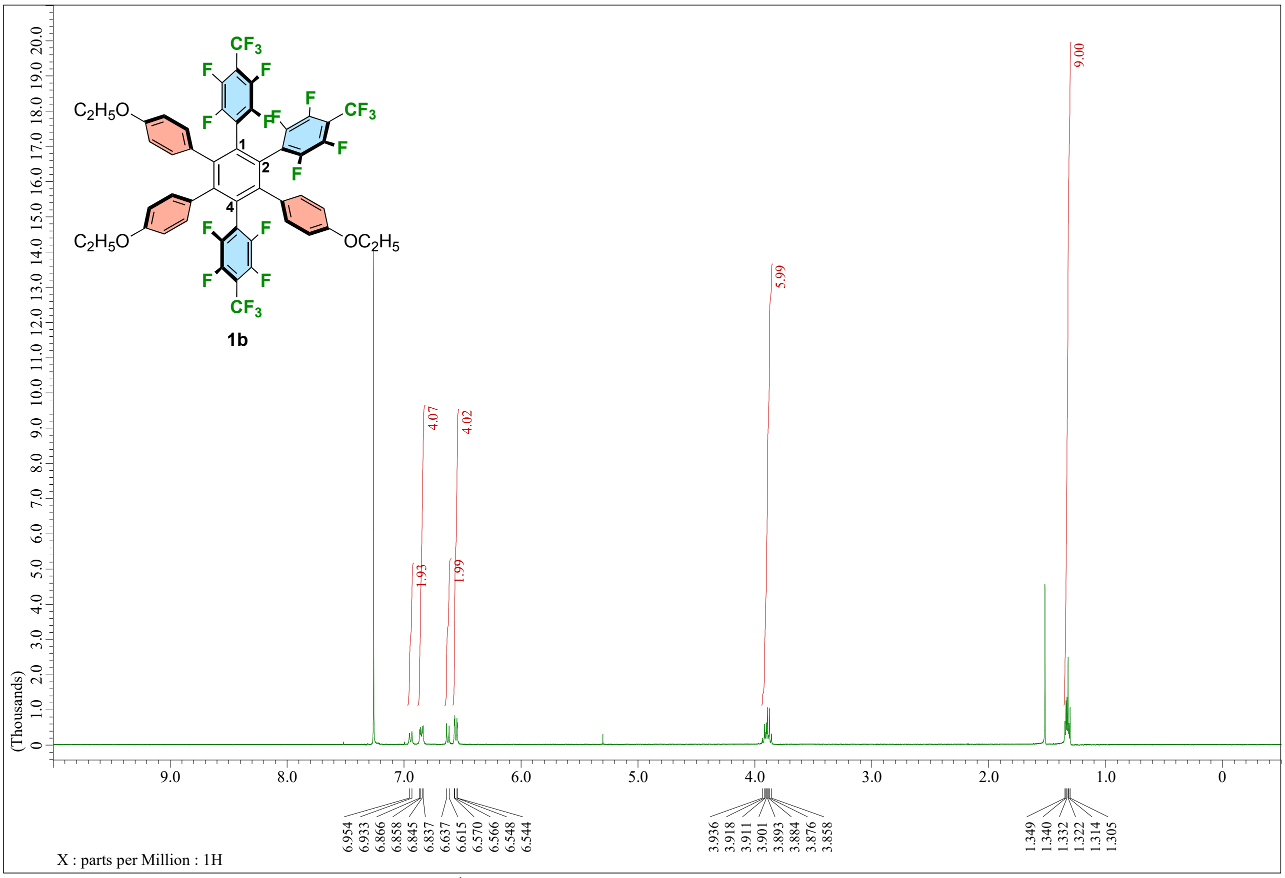

Figure S1. ^{1}H NMR spectrum of **1b** (400 MHz, $CDCl_3$)

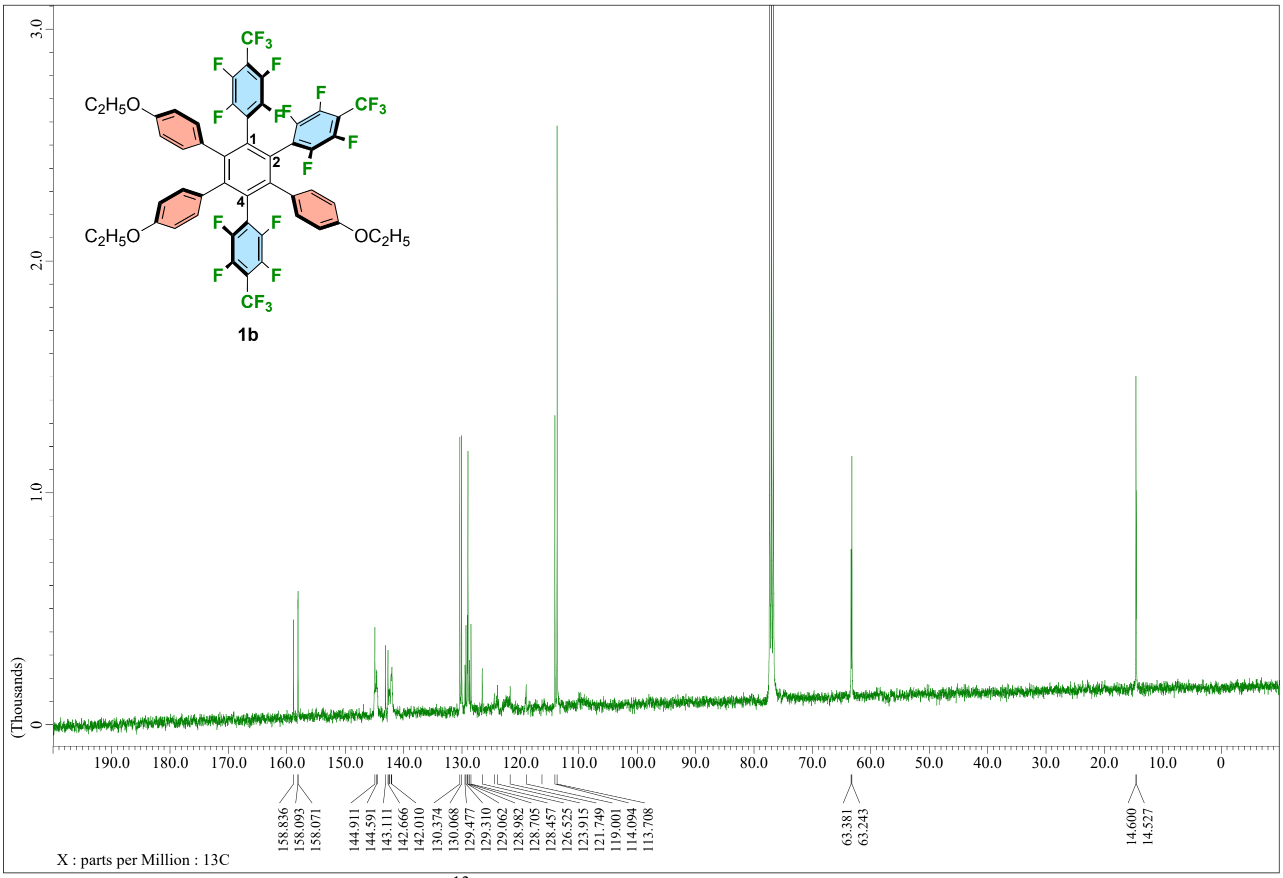

Figure S2. ^{13}C NMR spectrum of **1b** (100 MHz, $CDCl_3$)

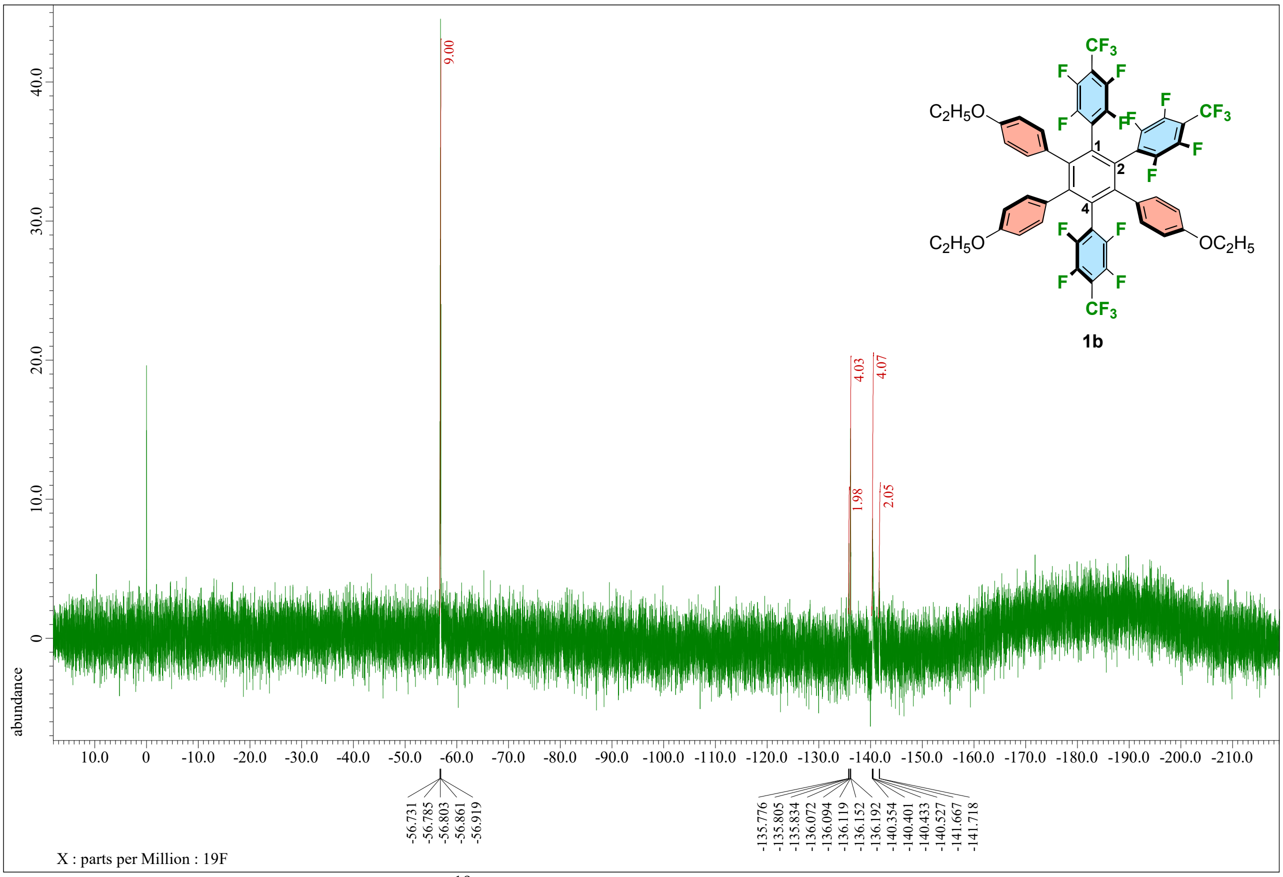

Figure S3. ^{19}F NMR spectrum of **1b** (376 MHz, $CDCl_3$)

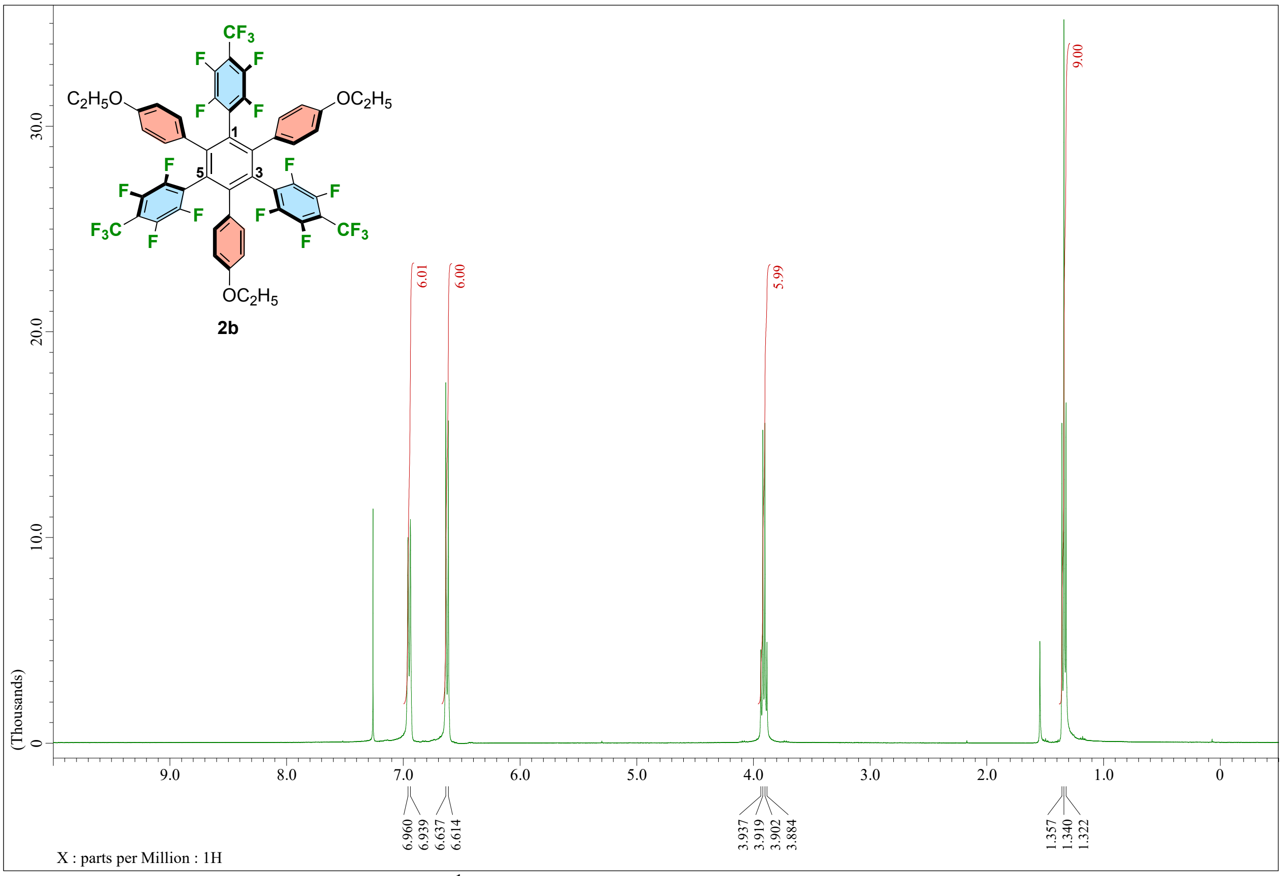

Figure S4. ^{1}H NMR spectrum of **2b** (400 MHz, $CDCl_3$)

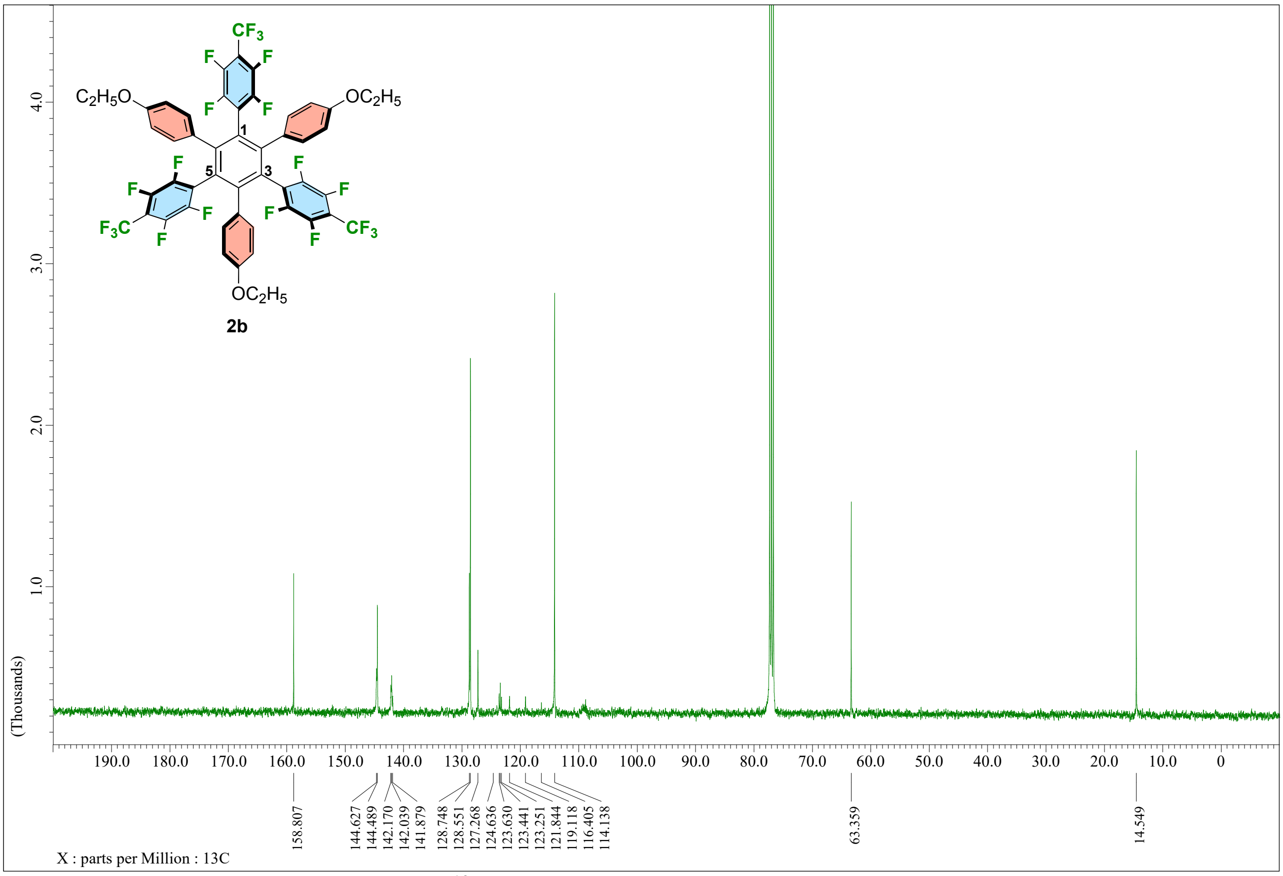

Figure S5. ^{13}C NMR spectrum of **2b** (100 MHz, $CDCl_3$)

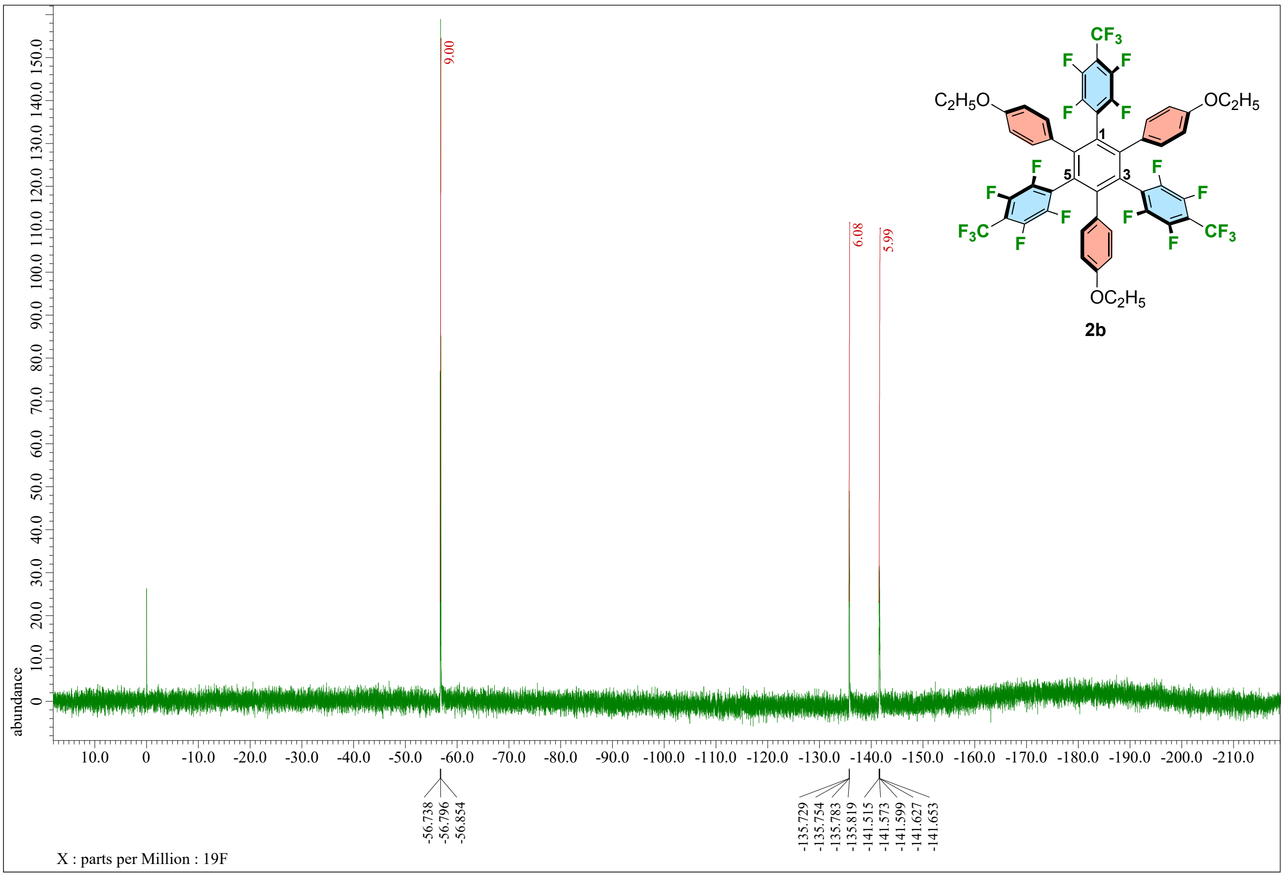

Figure S6. ^{19}F NMR spectrum of **2b** (376 MHz, $CDCl_3$)

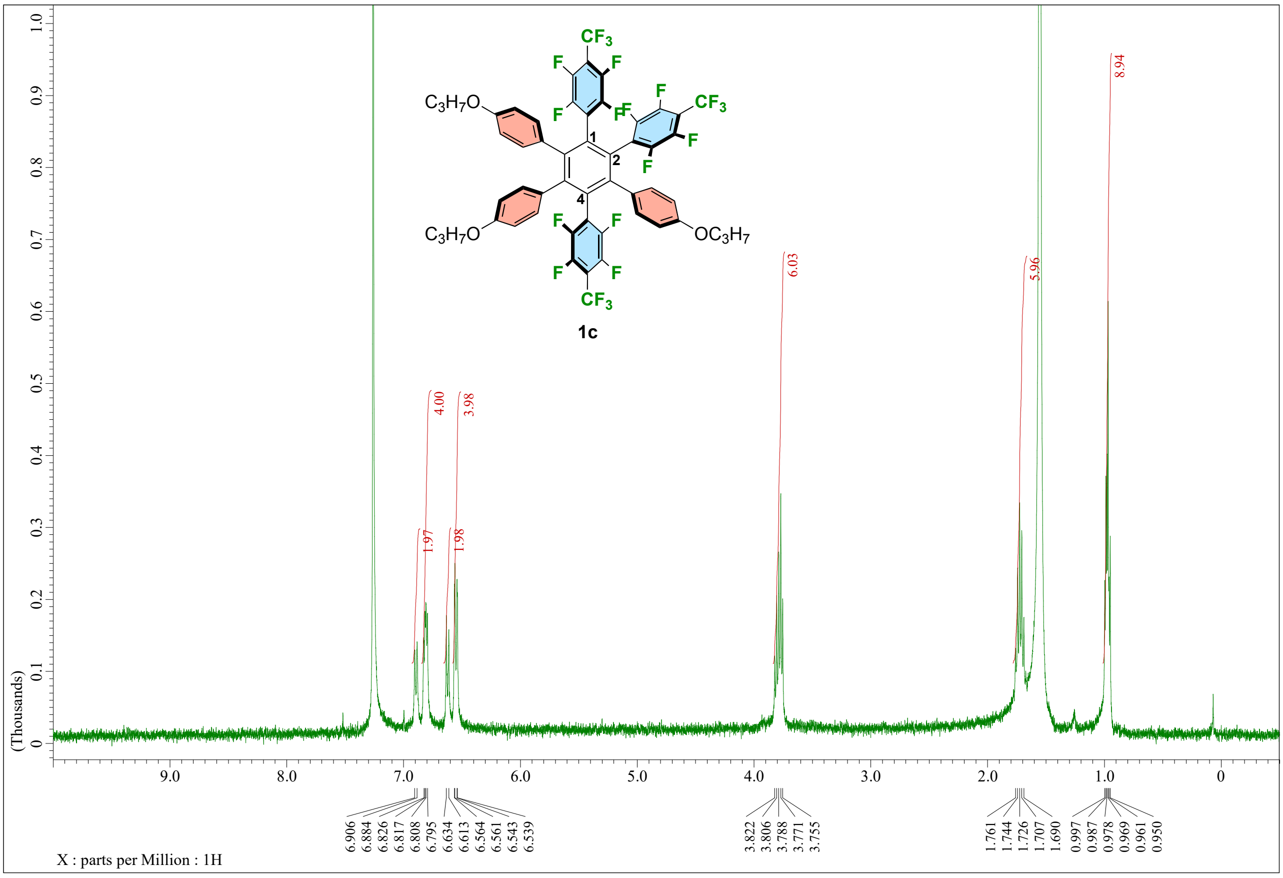

Figure S7. ^{1}H NMR spectrum of **1c** (400 MHz, $CDCl_3$)

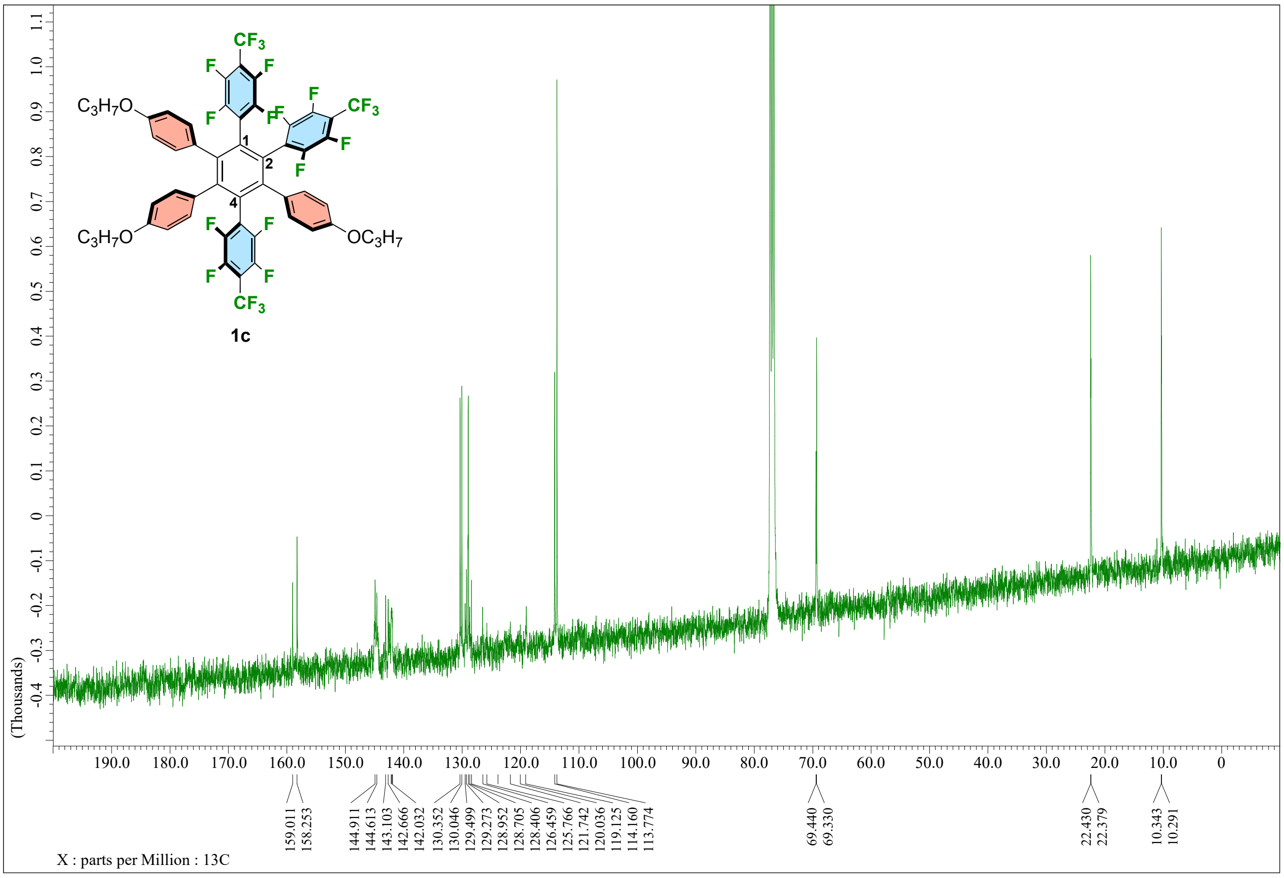

Figure S8. ^{13}C NMR spectrum of **1c** (100 MHz, $CDCl_3$)

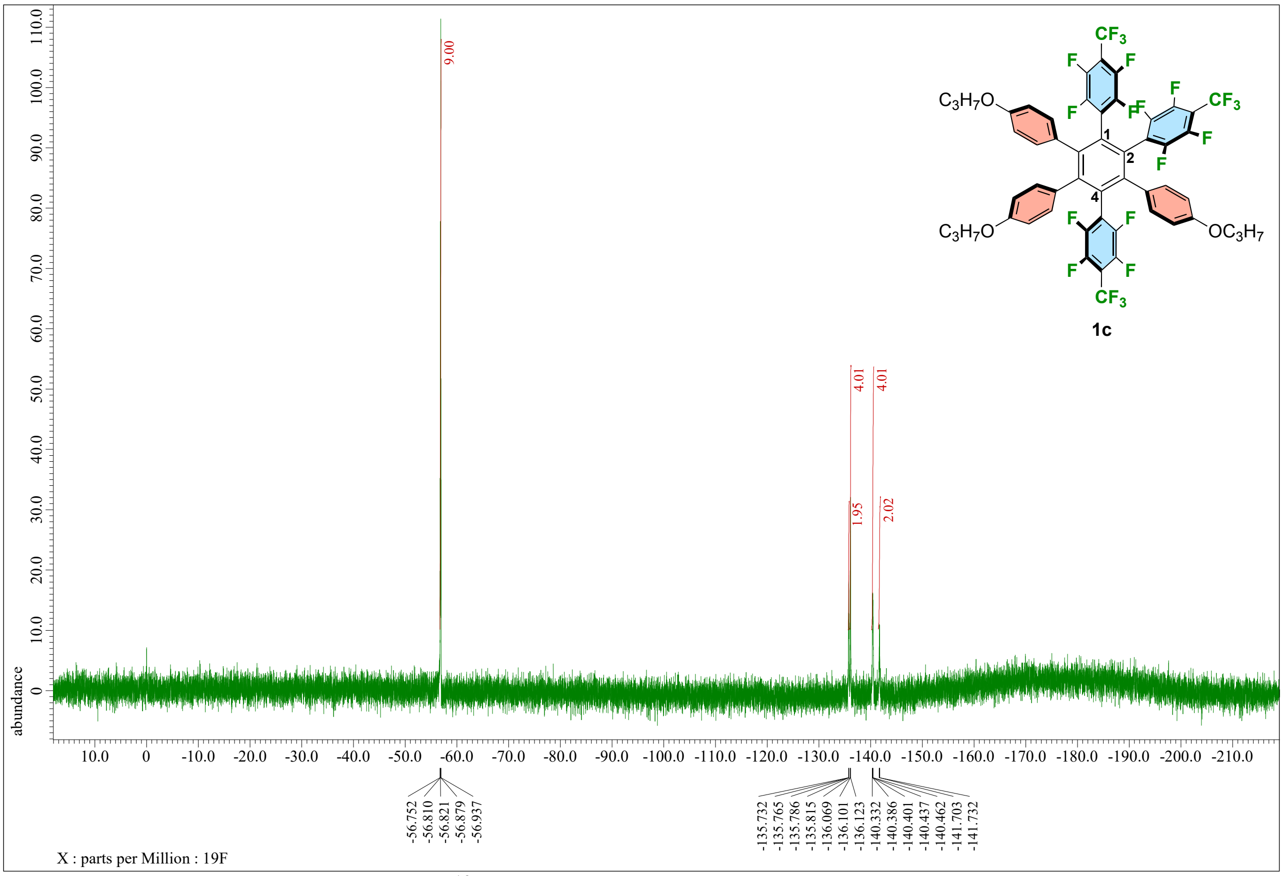

Figure S9. ^{19}F NMR spectrum of **1c** (376 MHz, $CDCl_3$)

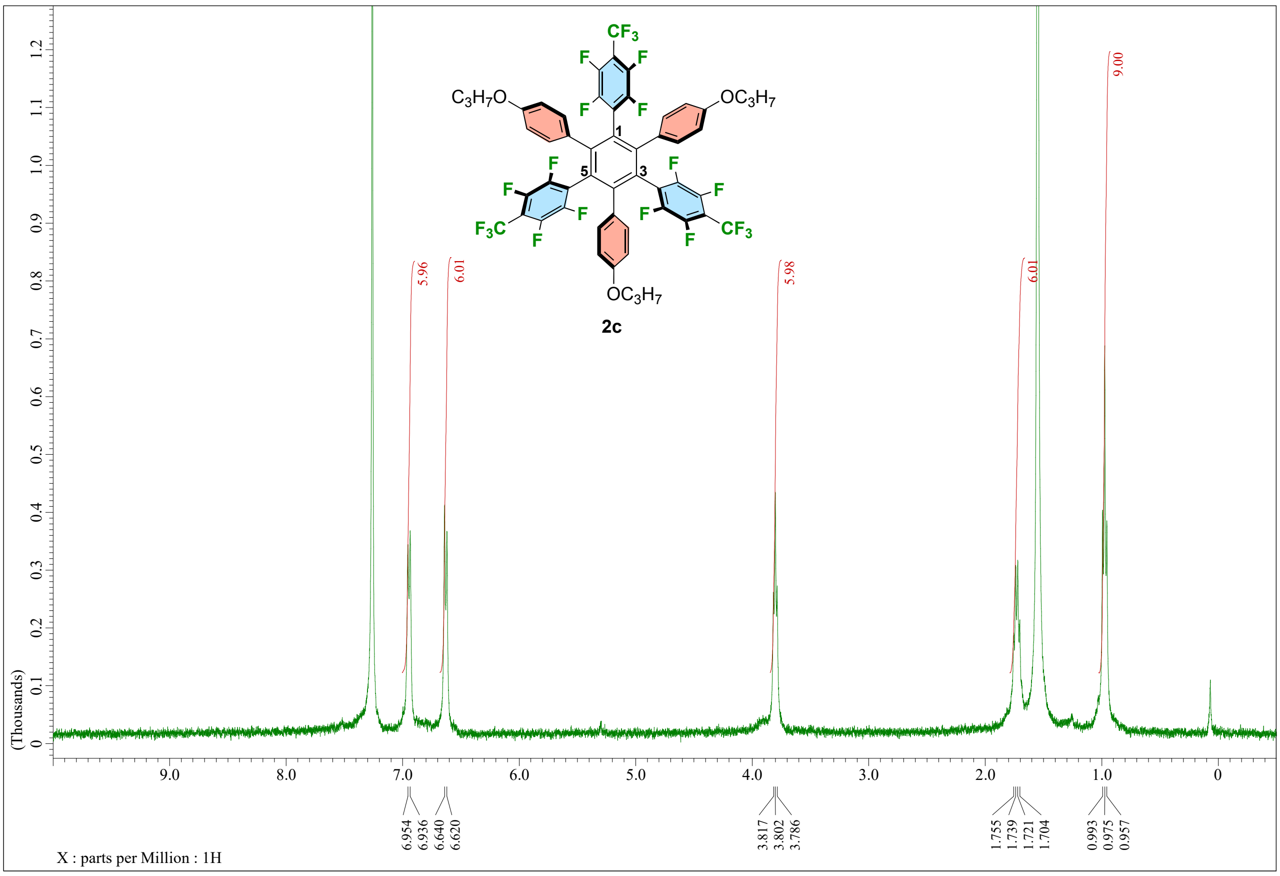

Figure S10. ^{1}H NMR spectrum of **2c** (400 MHz, $CDCl_3$)

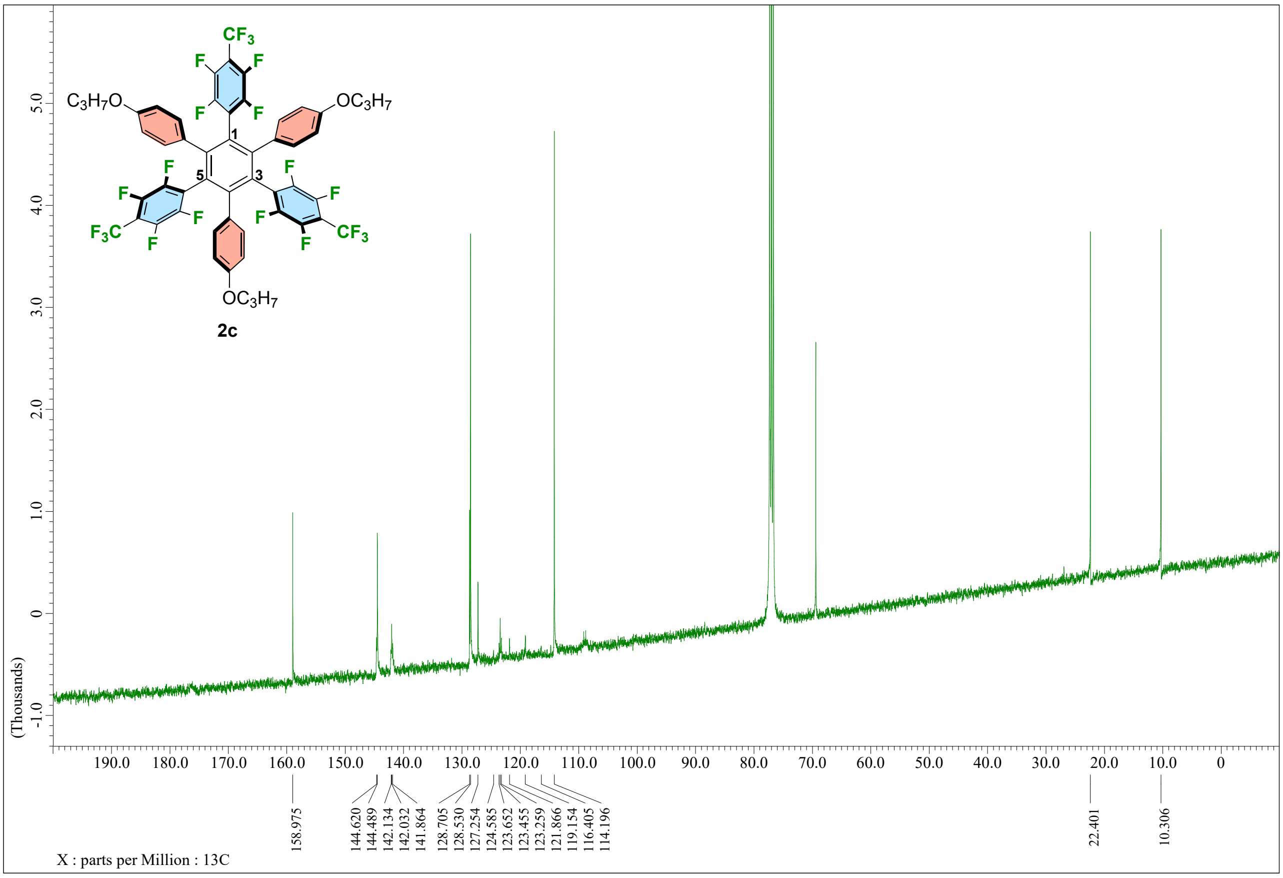

Figure S11. ^{13}C NMR spectrum of **2c** (100 MHz, $CDCl_3$)

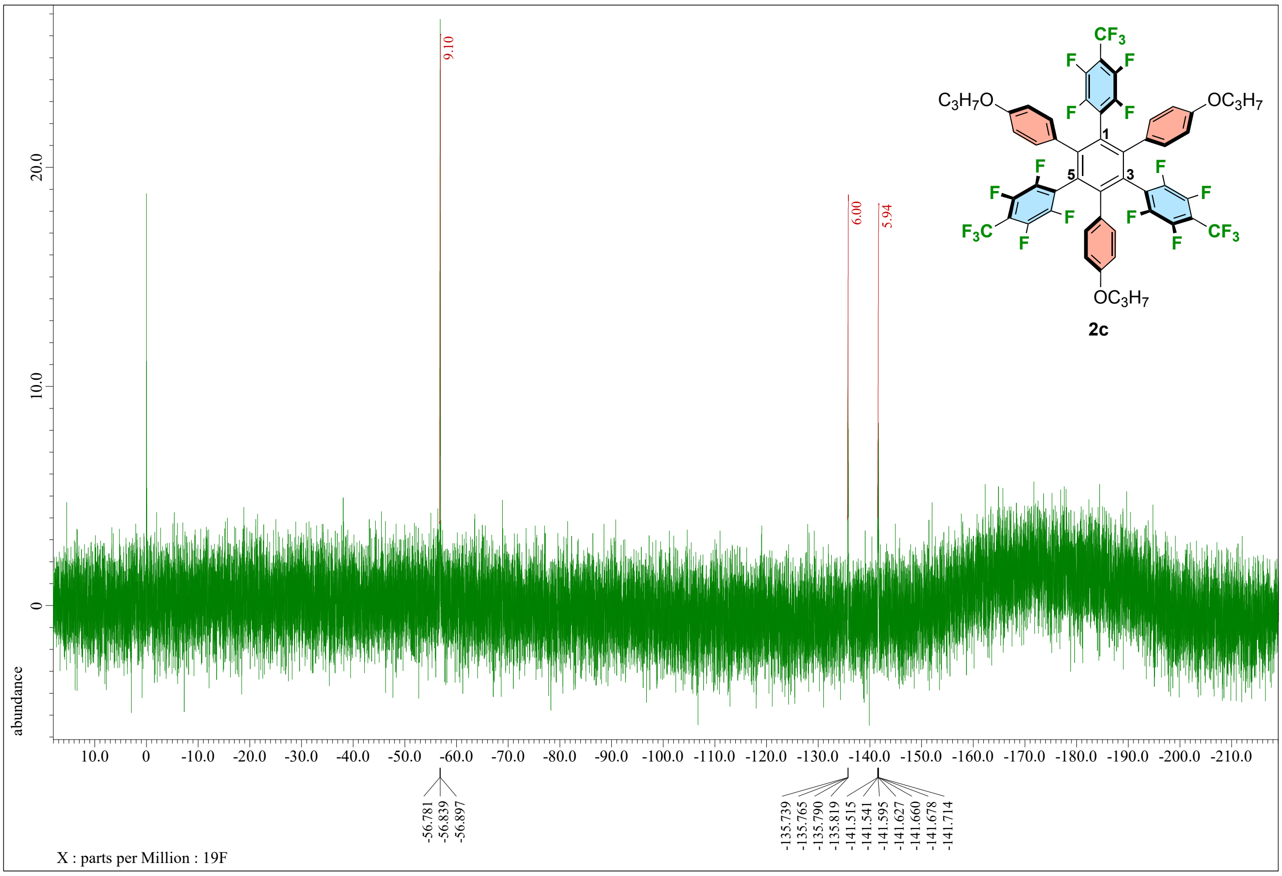

Figure S12. ^{19}F NMR spectrum of **2c** (376 MHz, $CDCl_3$)

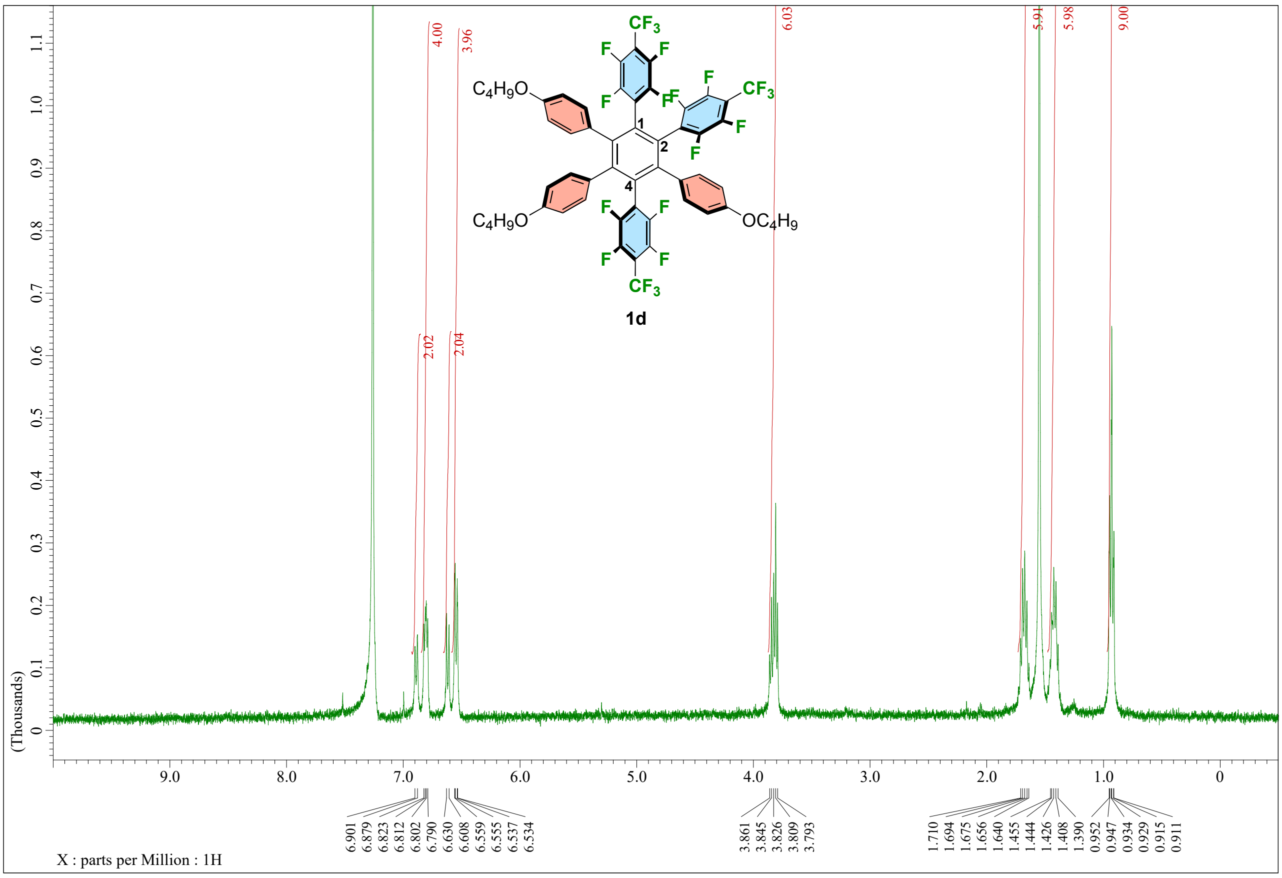

Figure S13. [1]H NMR spectrum of **1d** (400 MHz, $CDCl_3$)

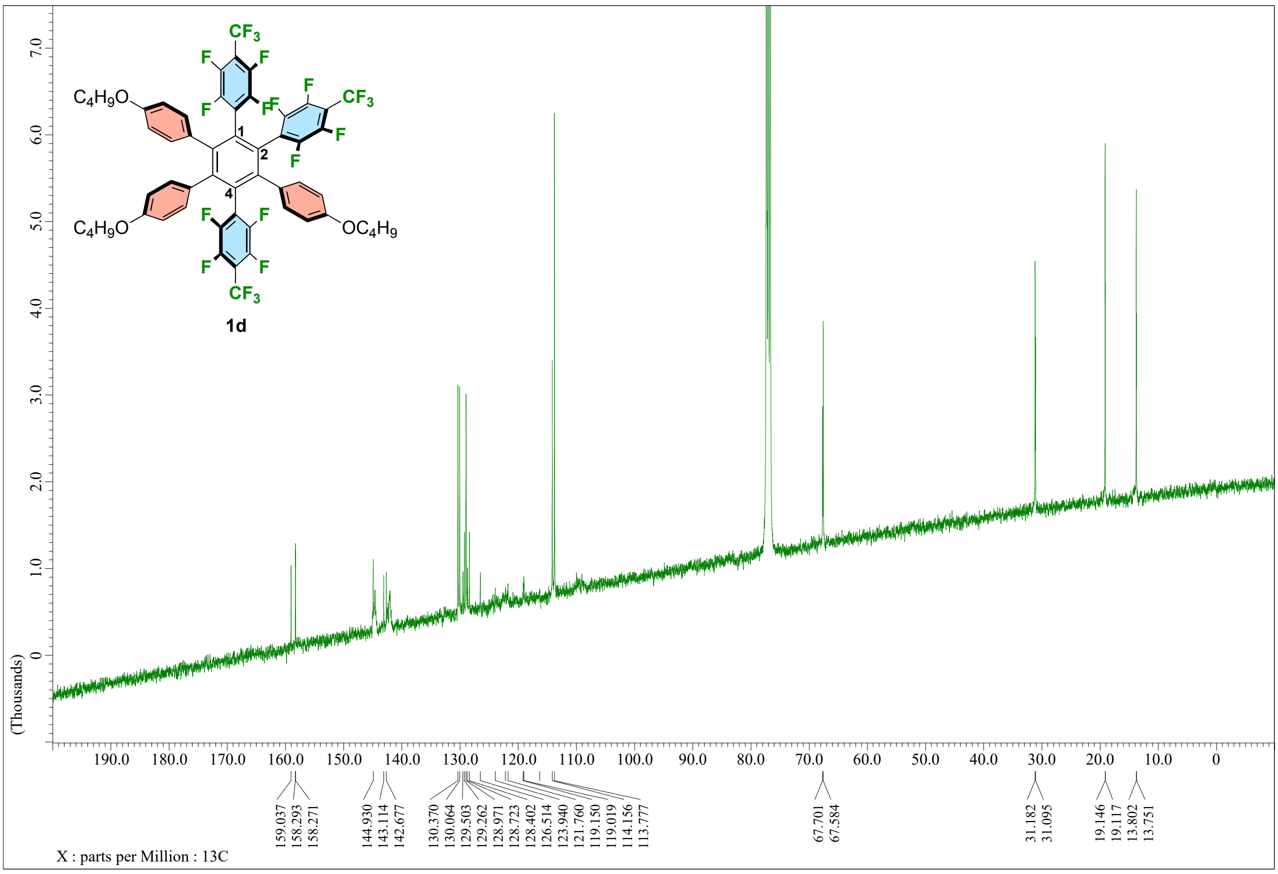

Figure S14. [13]C NMR spectrum of **1d** (100 MHz, $CDCl_3$)

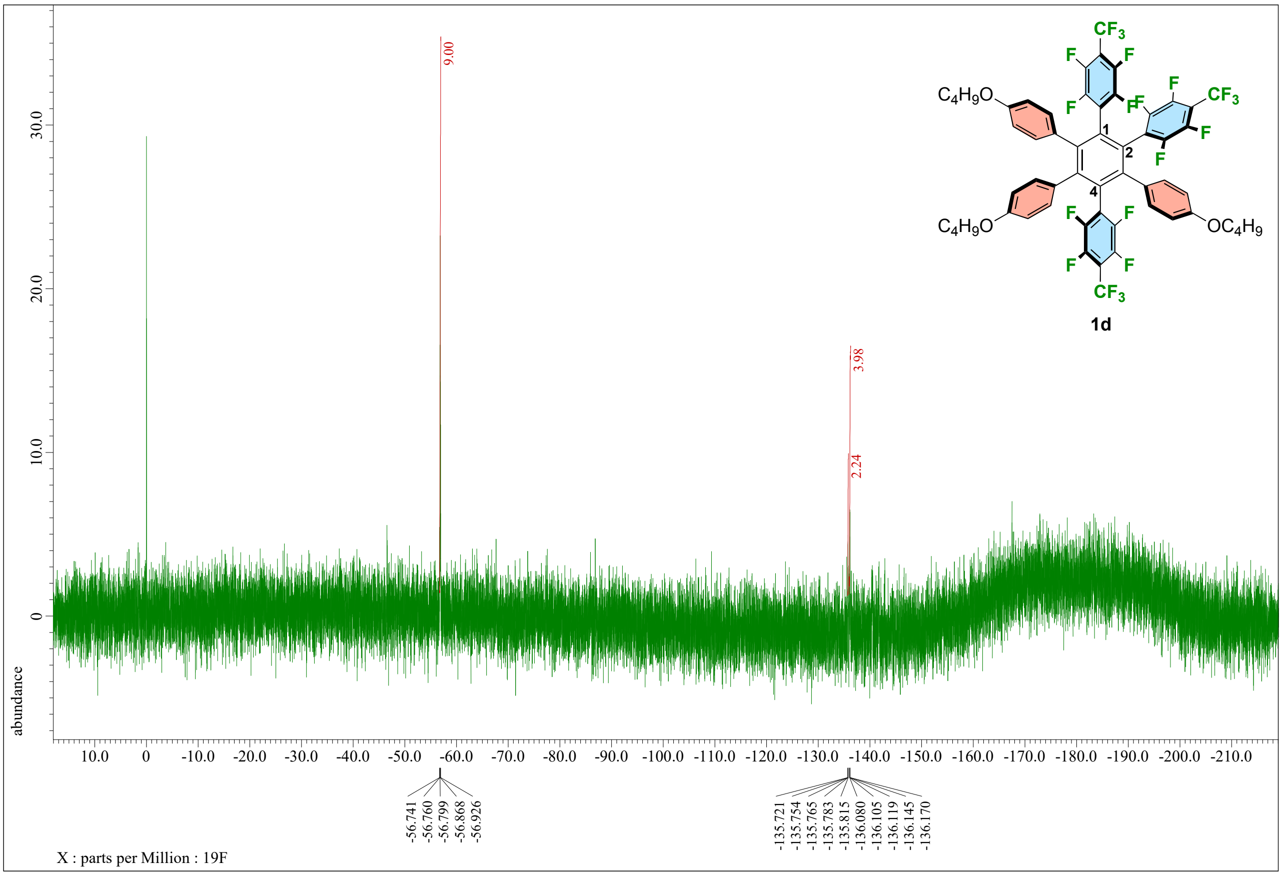

Figure S15. ^{19}F NMR spectrum of **1d** (376 MHz, $CDCl_3$)

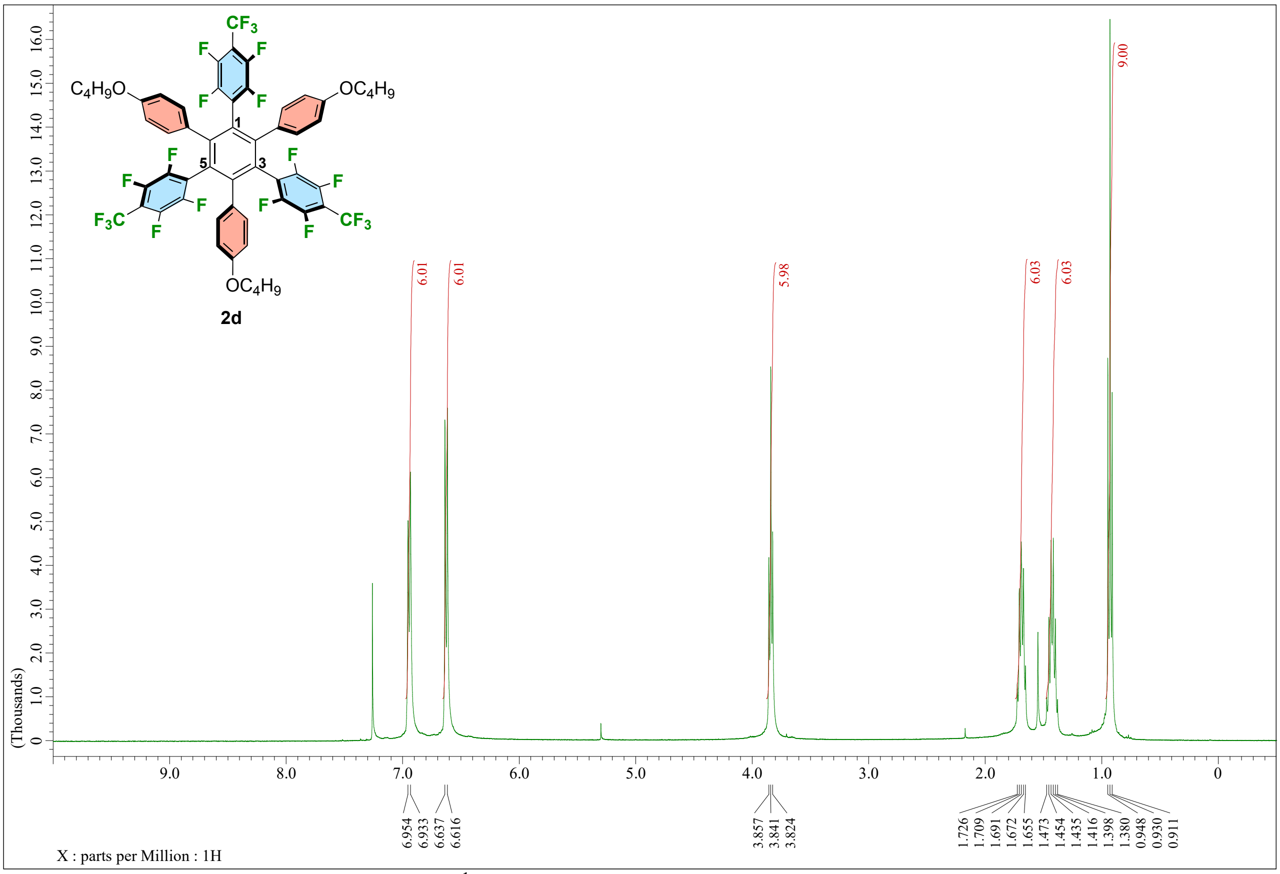

Figure S16. ^{1}H NMR spectrum of **2d** (400 MHz, $CDCl_3$)

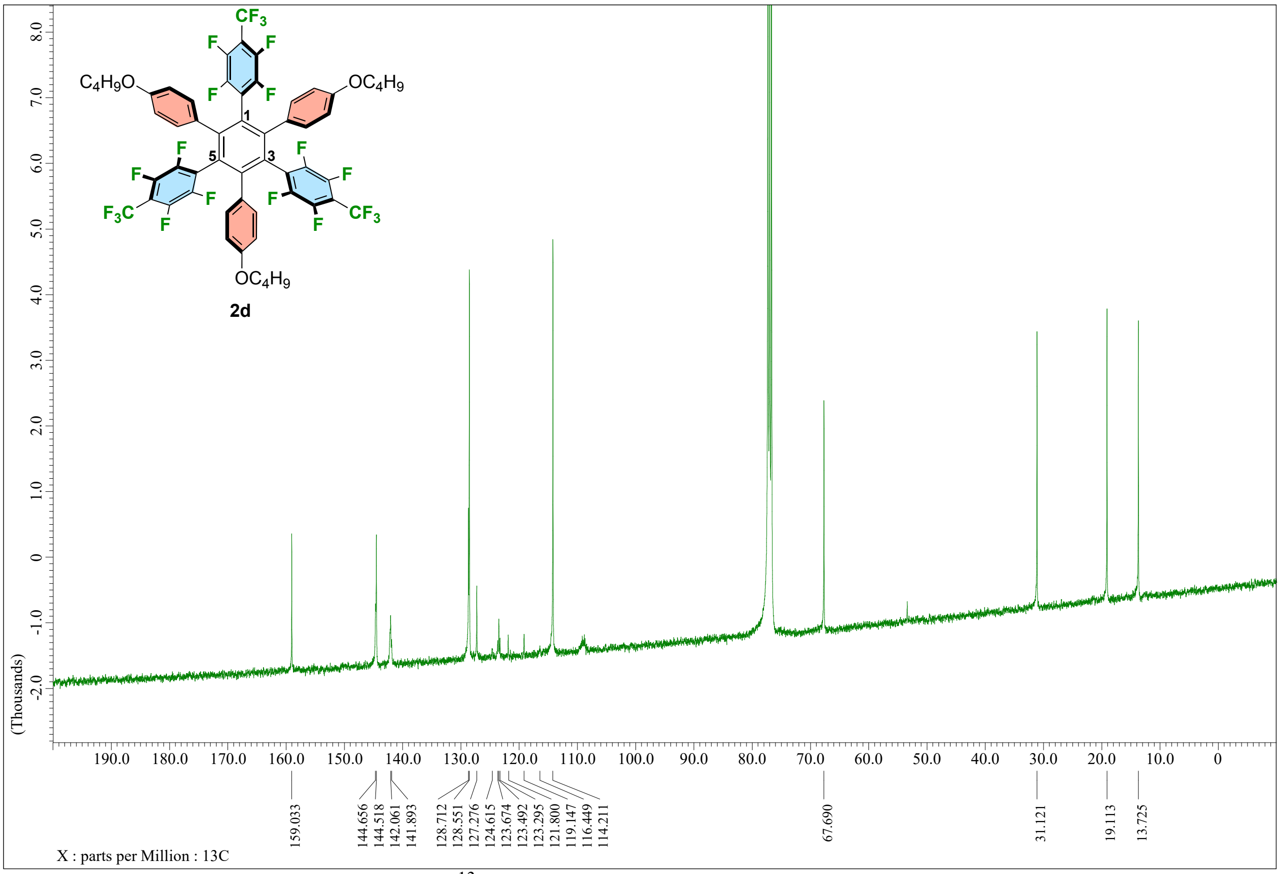

Figure S17. ^{13}C NMR spectrum of **2d** (100 MHz, CDCl$_3$)

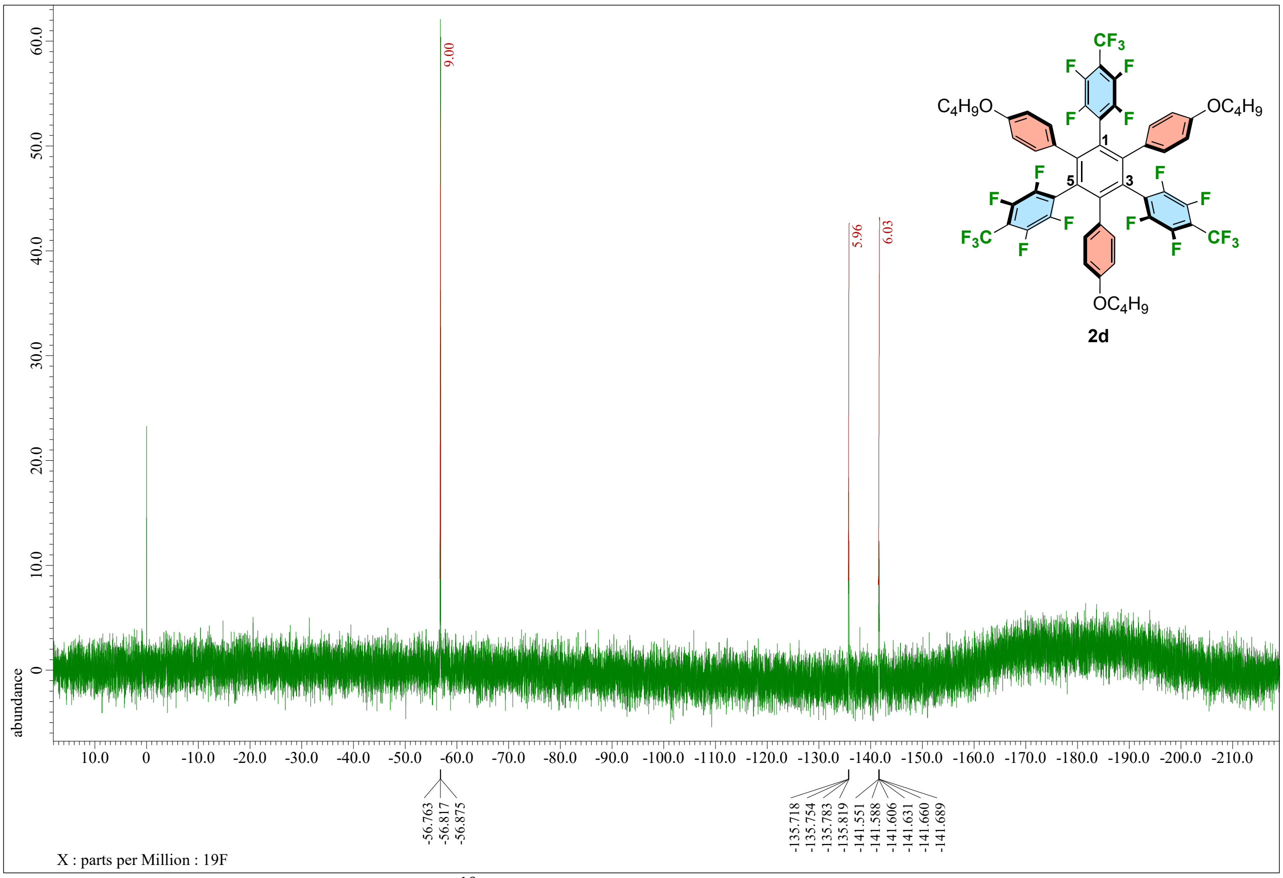

Figure S18. ^{19}F NMR spectrum of **2d** (376 MHz, CDCl$_3$)

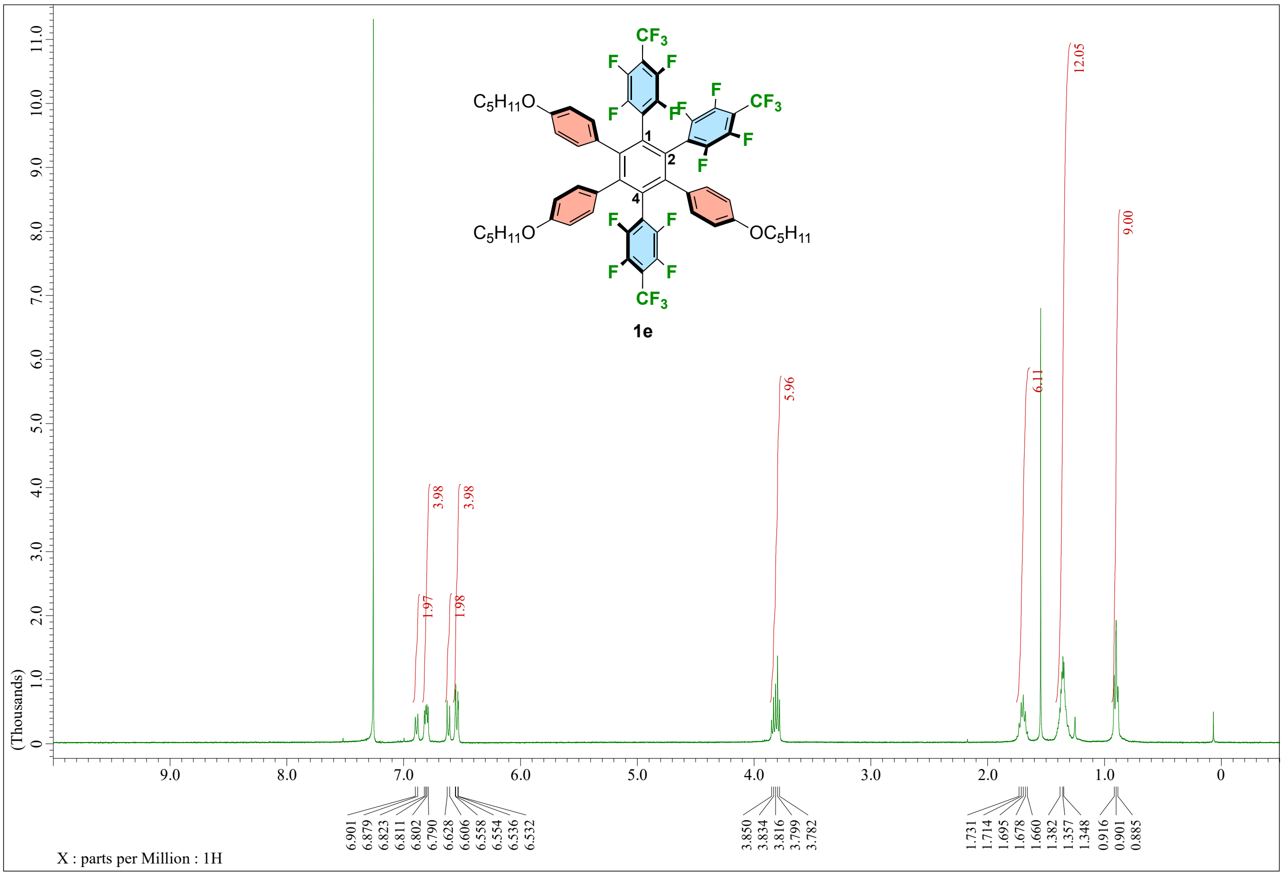

Figure S19. ^{1}H NMR spectrum of **1e** (400 MHz, $CDCl_3$)

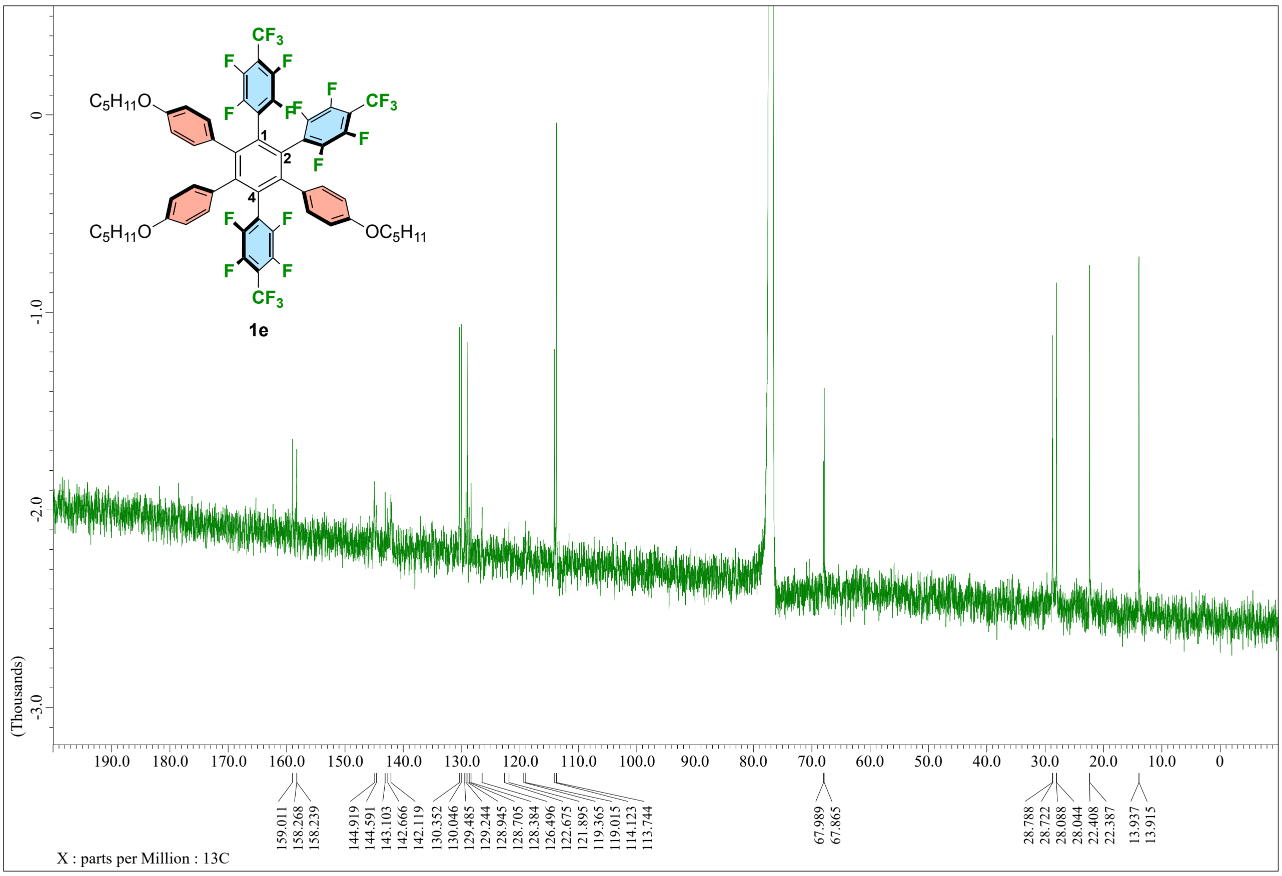

Figure S20. ^{13}C NMR spectrum of **1e** (100 MHz, $CDCl_3$)

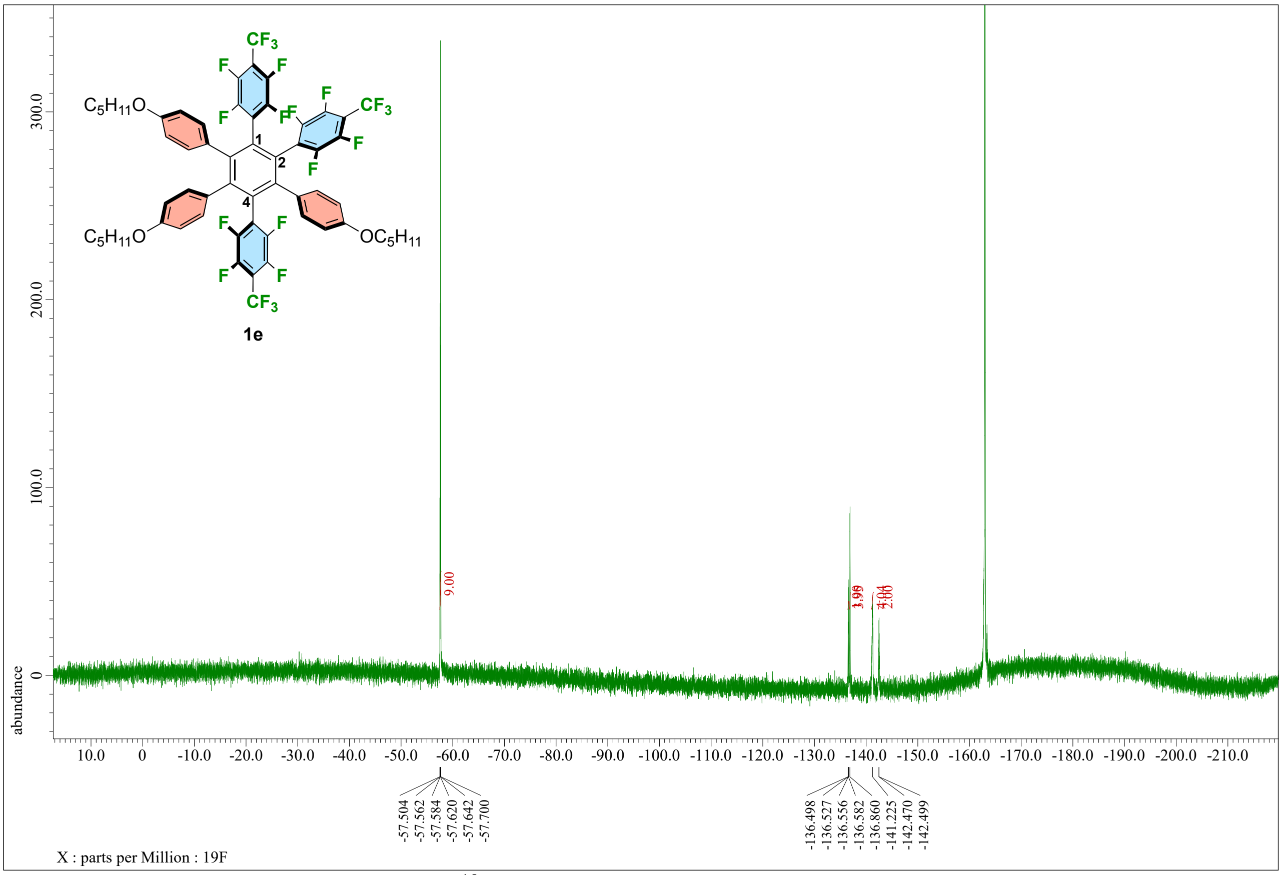

Figure S21. ^{19}F NMR spectrum of **1e** (376 MHz, $CDCl_3$)

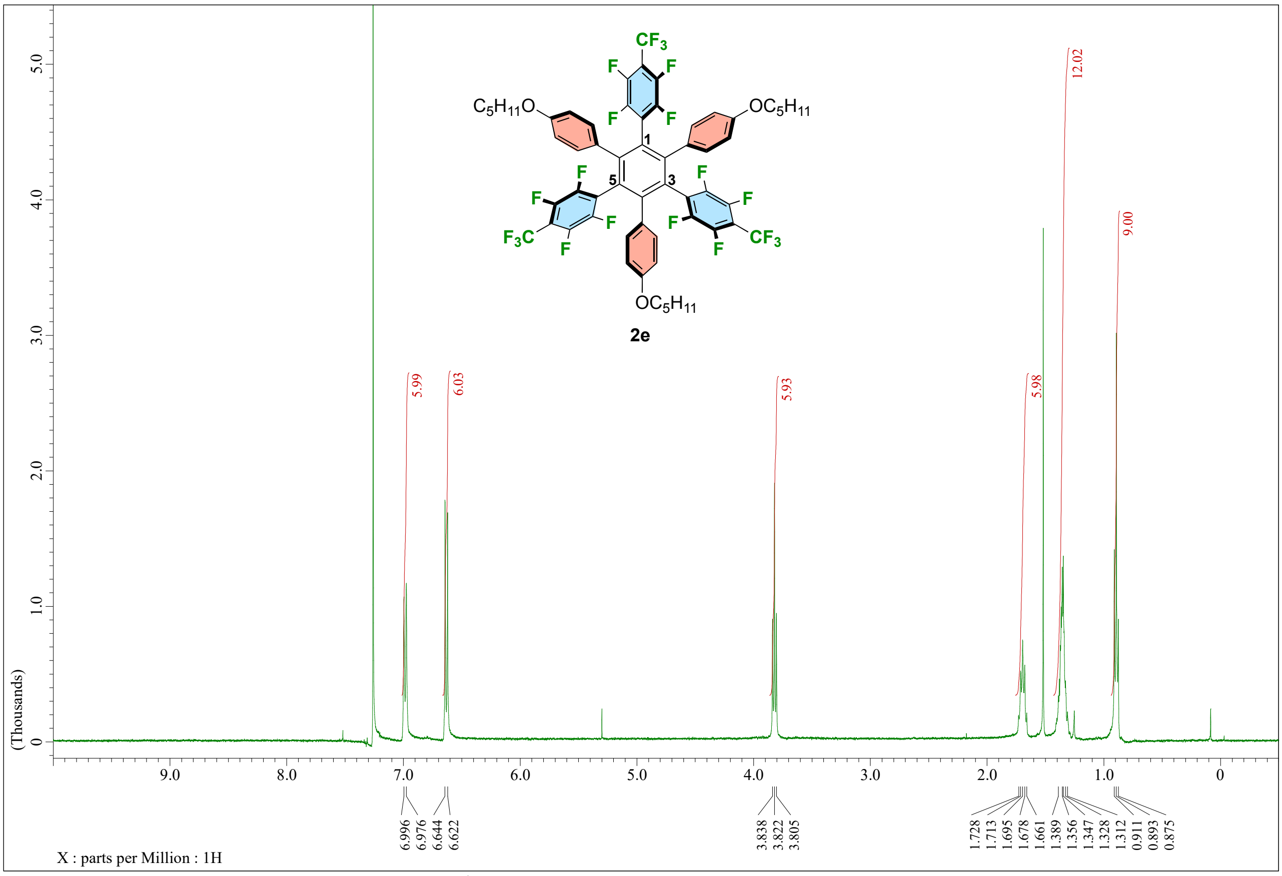

Figure S22. ^{1}H NMR spectrum of **2e** (400 MHz, $CDCl_3$)

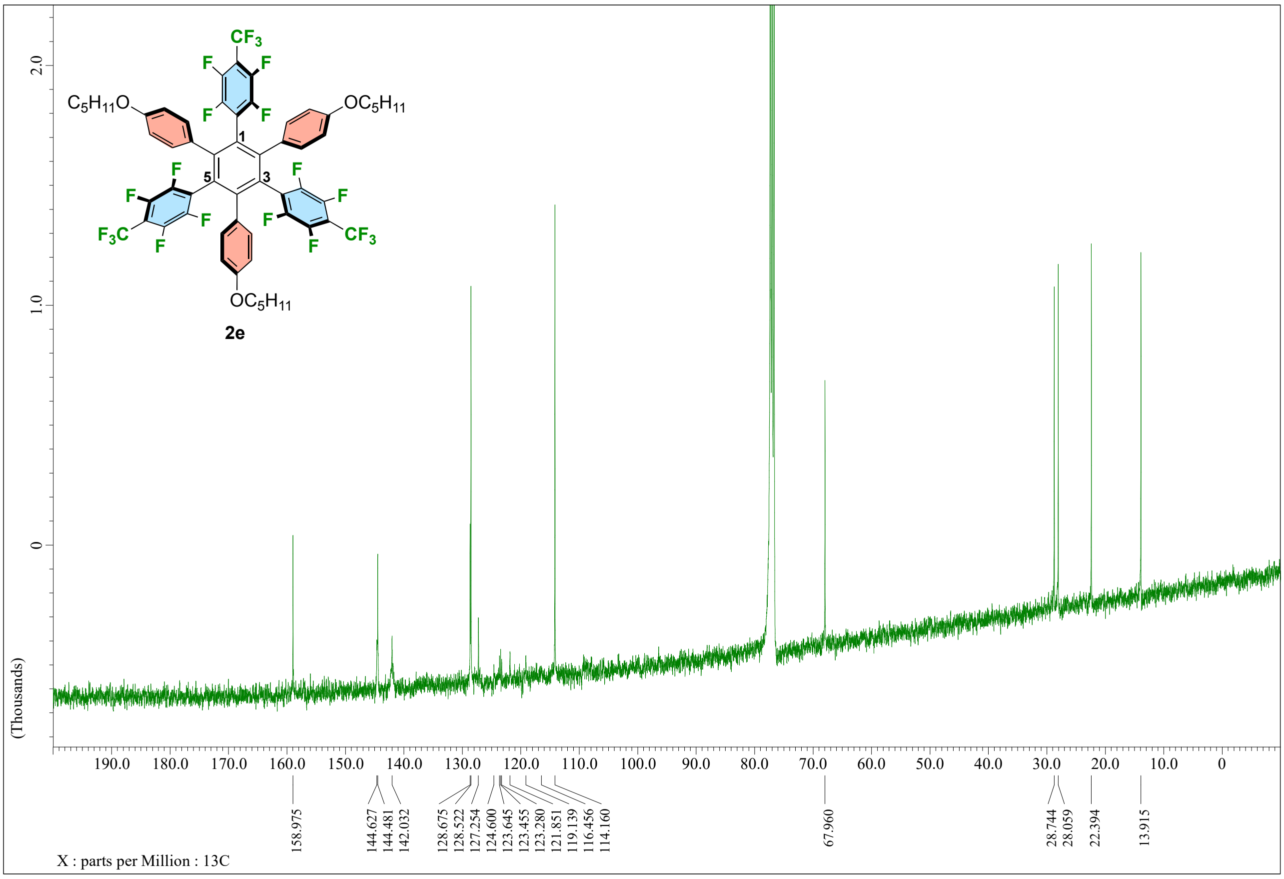

Figure S23. ^{13}C NMR spectrum of **2e** (100 MHz, $CDCl_3$)

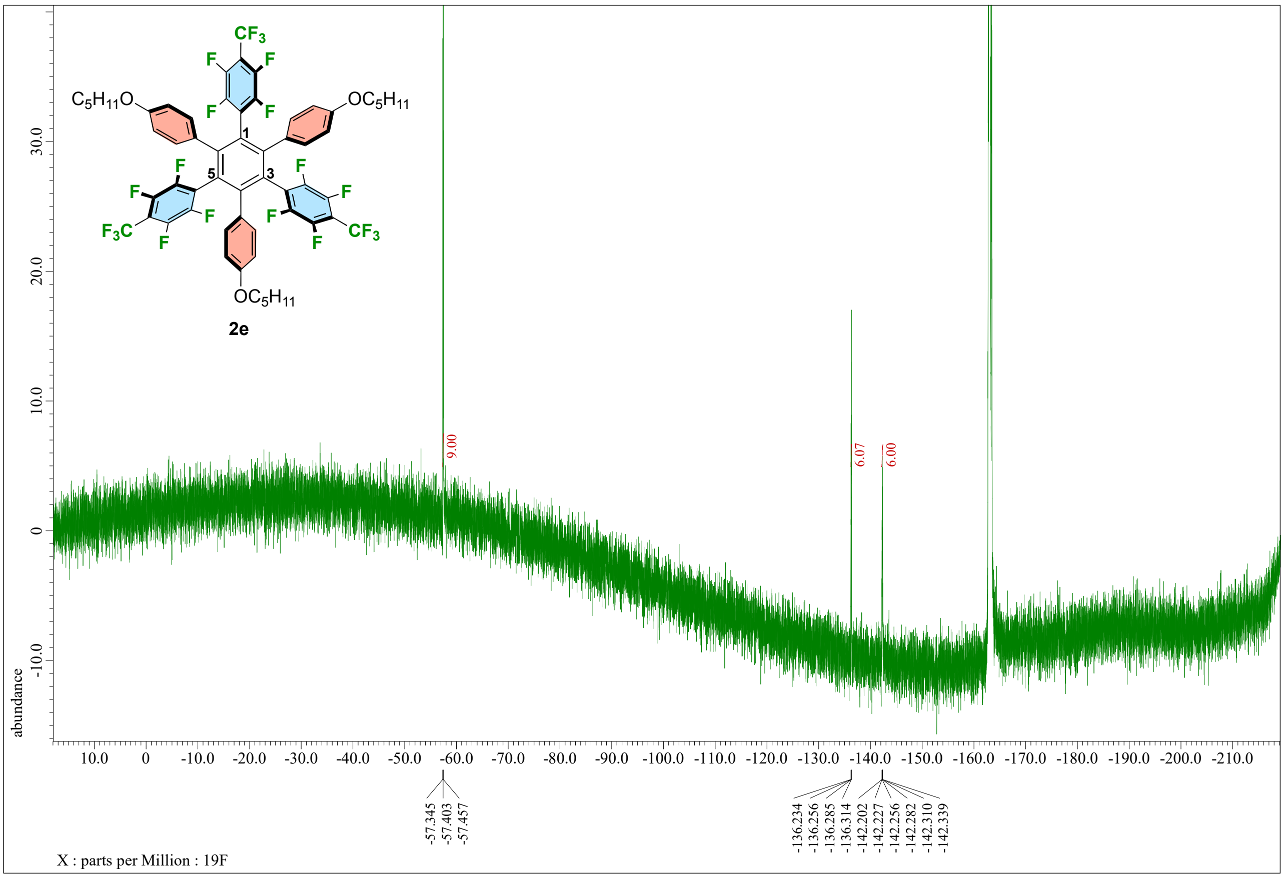

Figure S24. ^{19}F NMR spectrum of **2e** (376 MHz, $CDCl_3$)

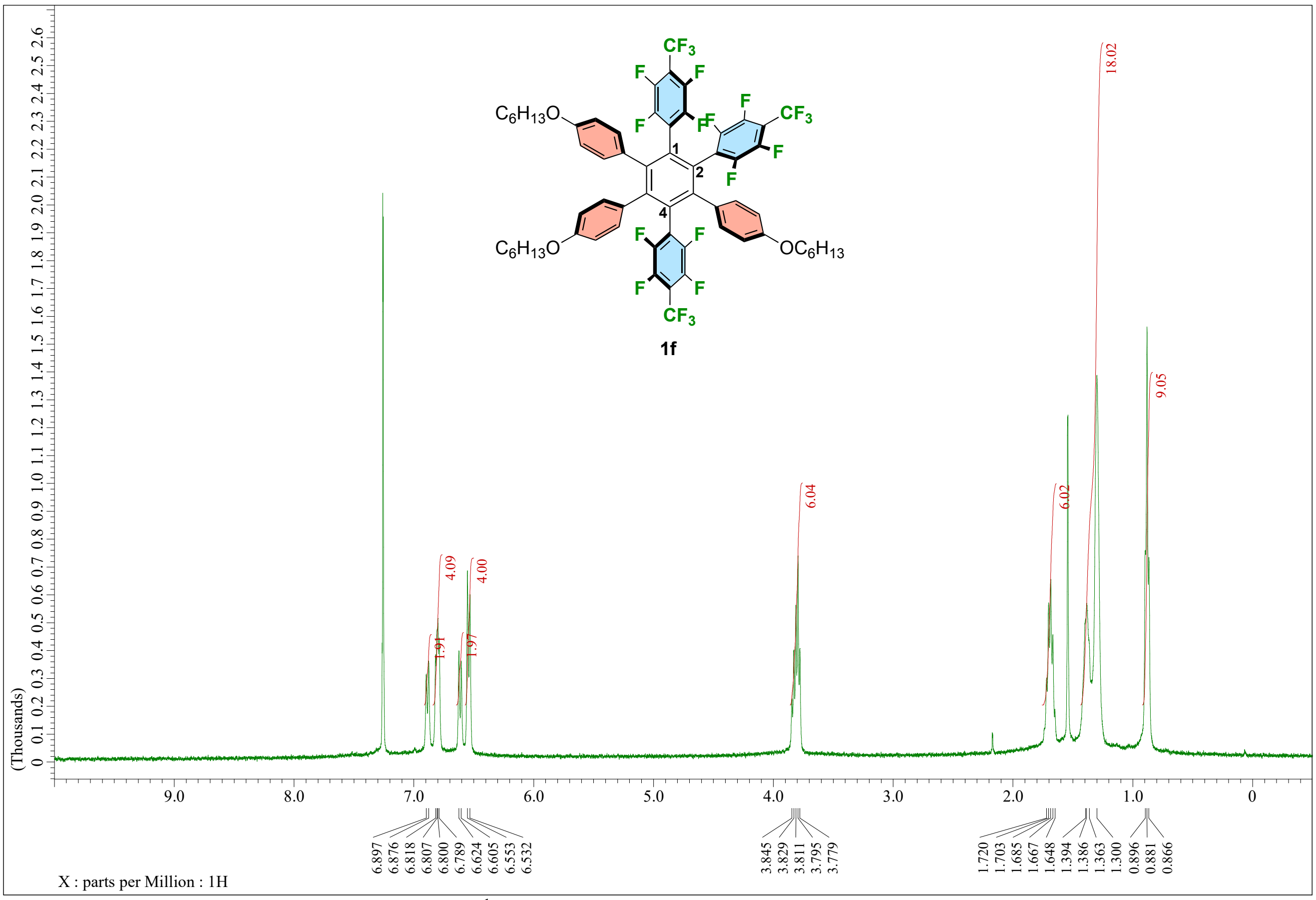

Figure S25. ^{1}H NMR spectrum of **1f** (400 MHz, $CDCl_3$)

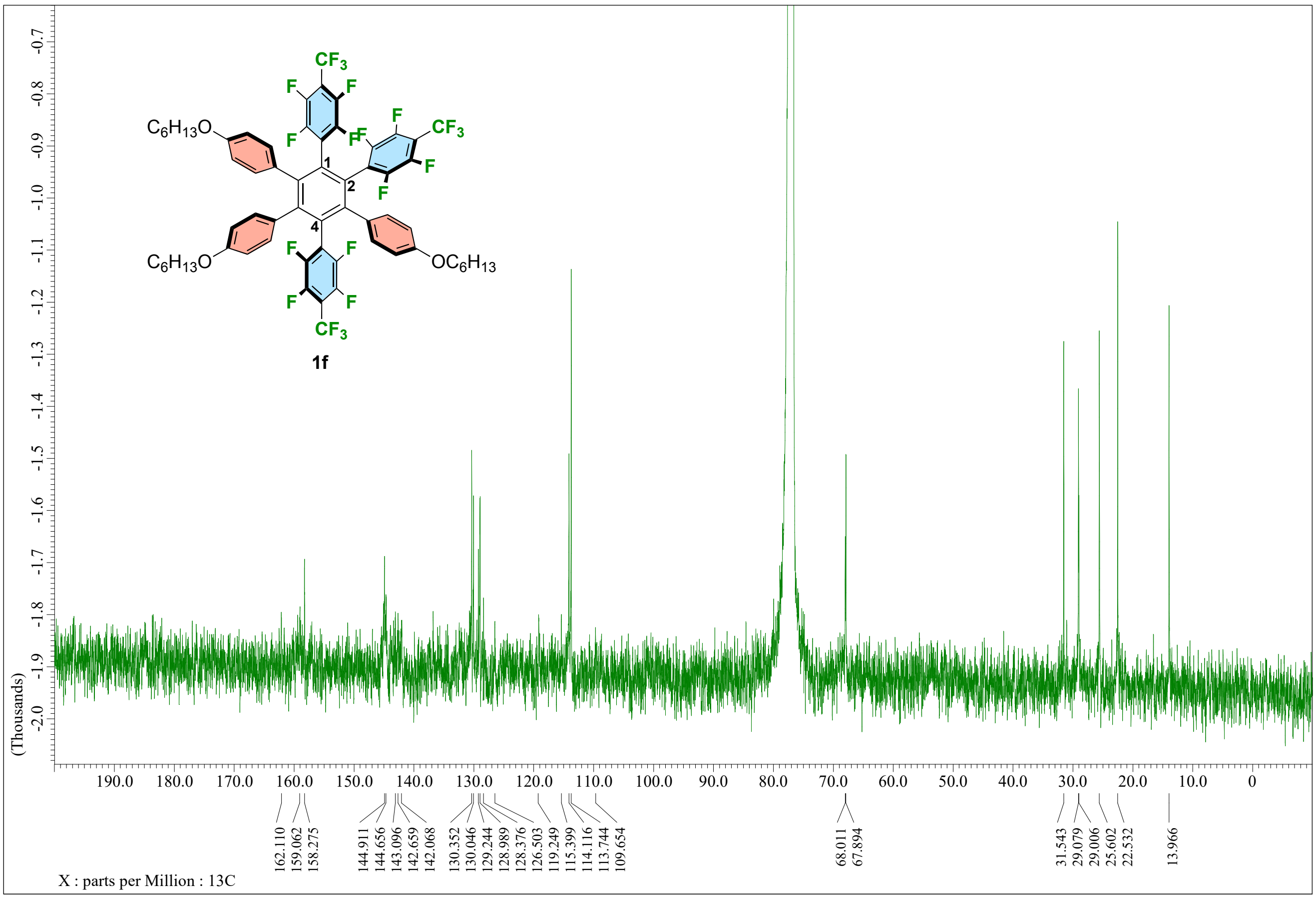

Figure S26. ^{13}C NMR spectrum of **1f** (100 MHz, $CDCl_3$)

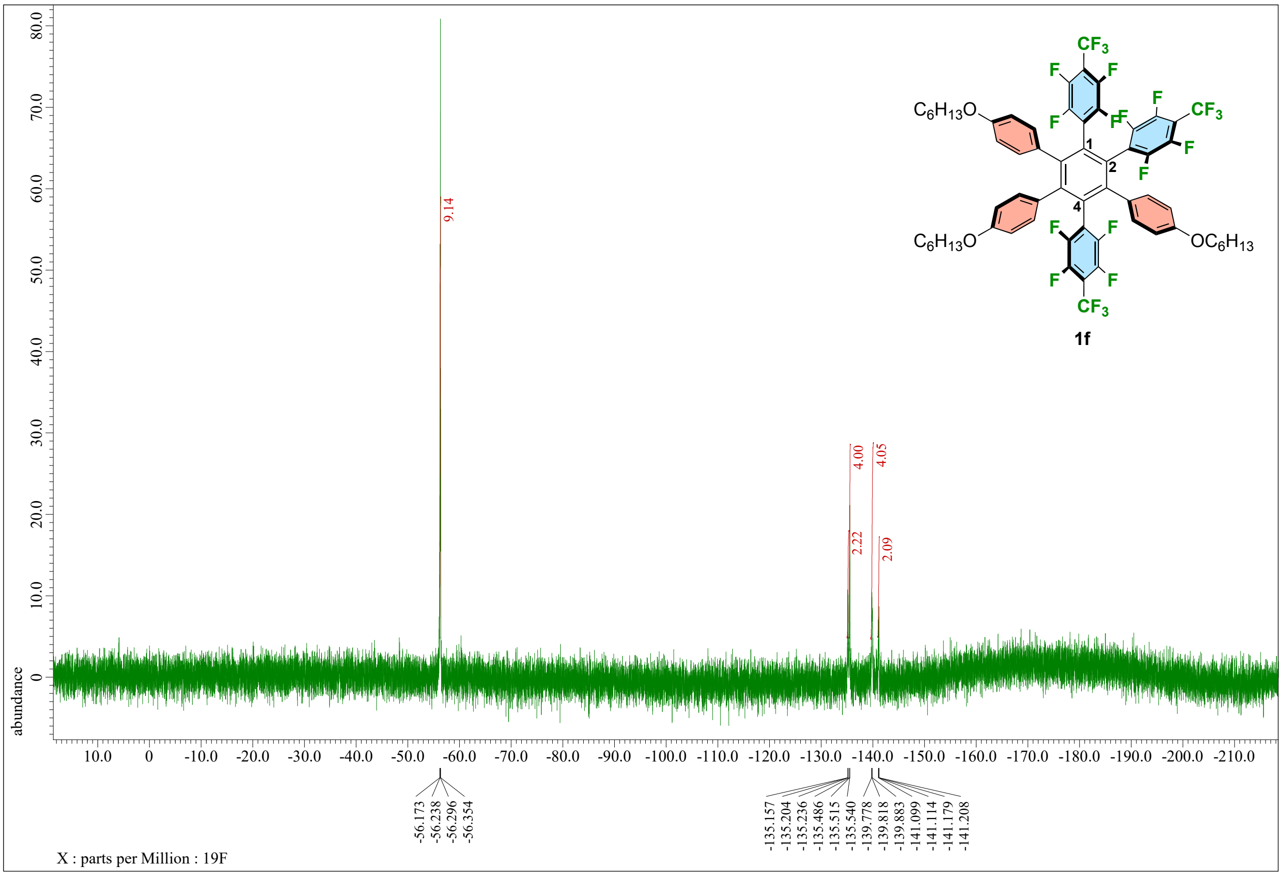

Figure S27. ^{19}F NMR spectrum of **1f** (376 MHz, $CDCl_3$)

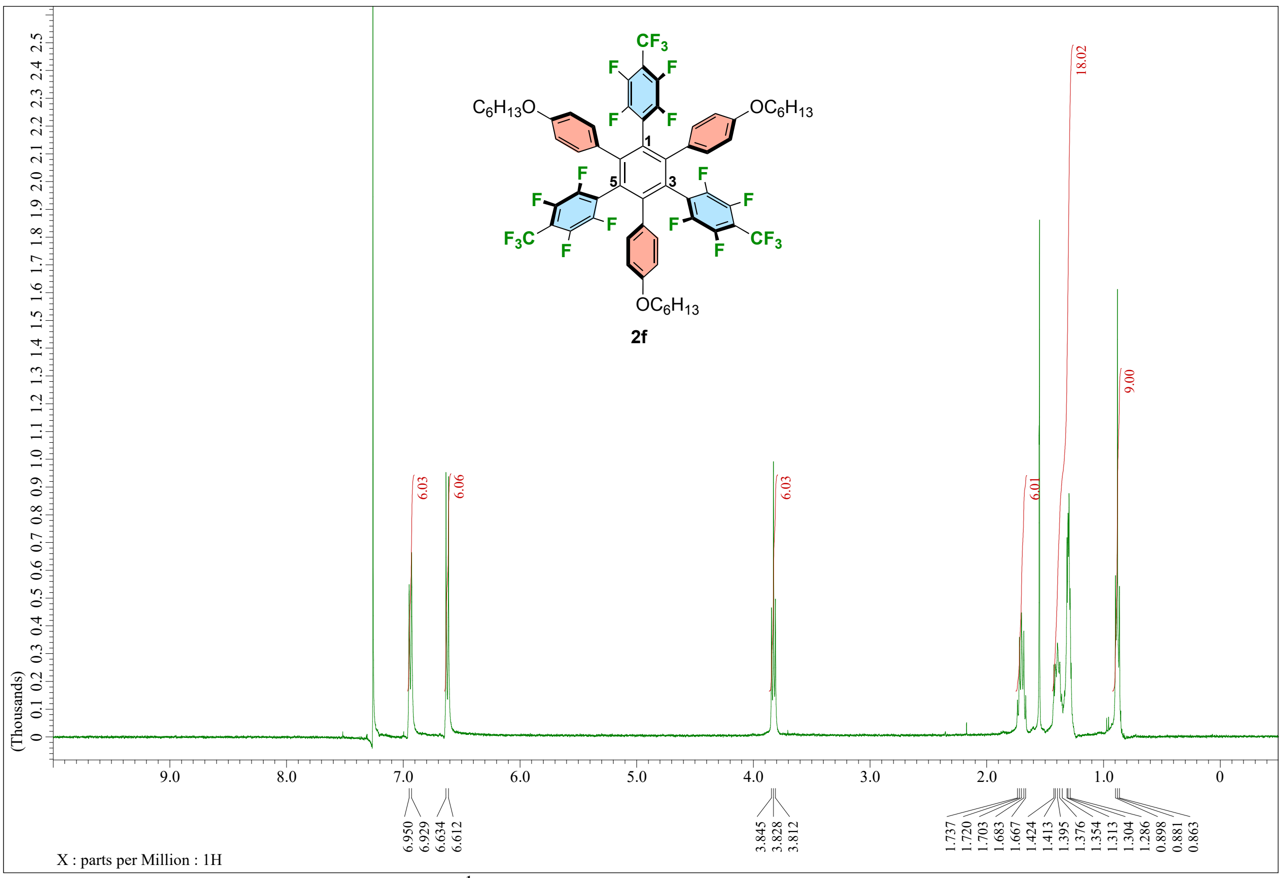

Figure S28. ^{1}H NMR spectrum of **2f** (400 MHz, $CDCl_3$)

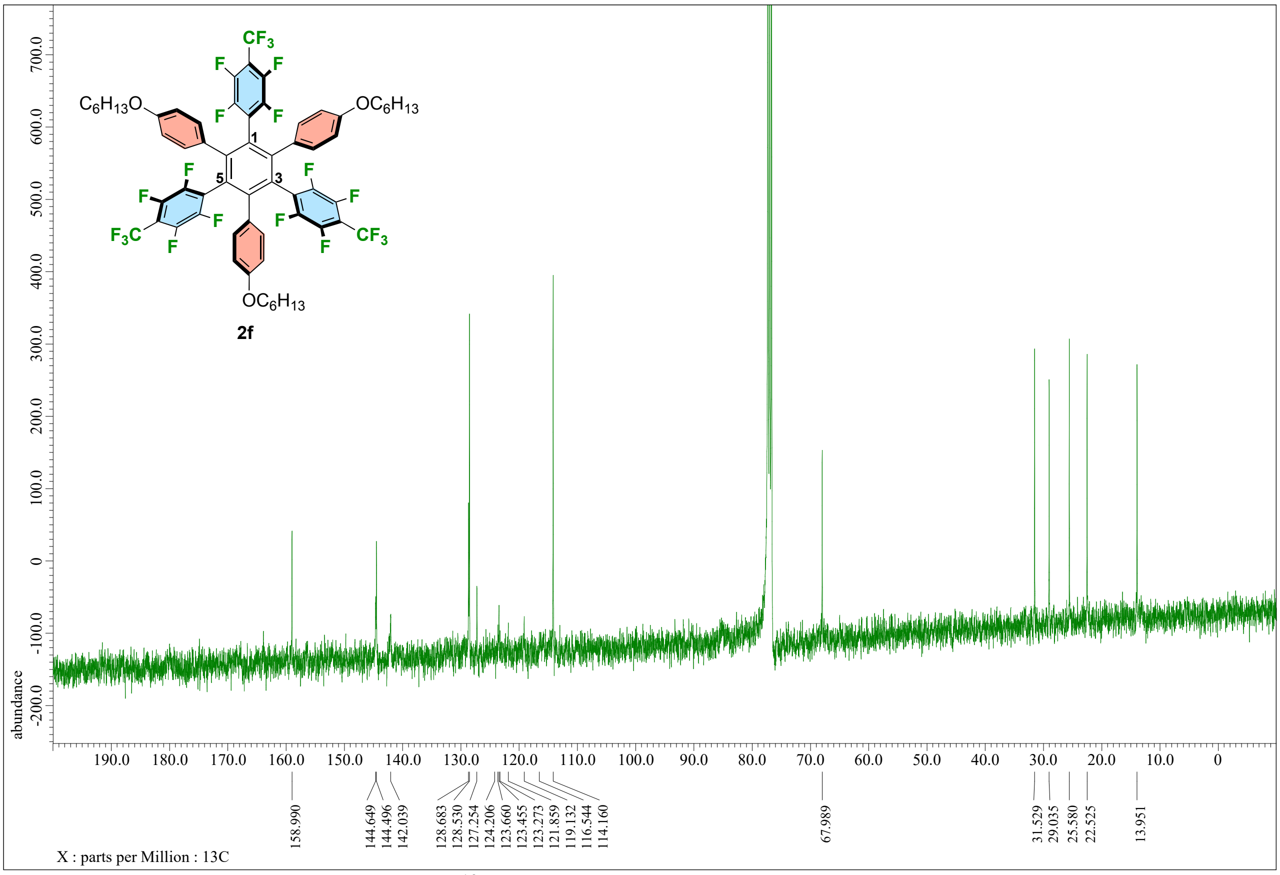

Figure S29. ^{13}C NMR spectrum of **2f** (100 MHz, $CDCl_3$)

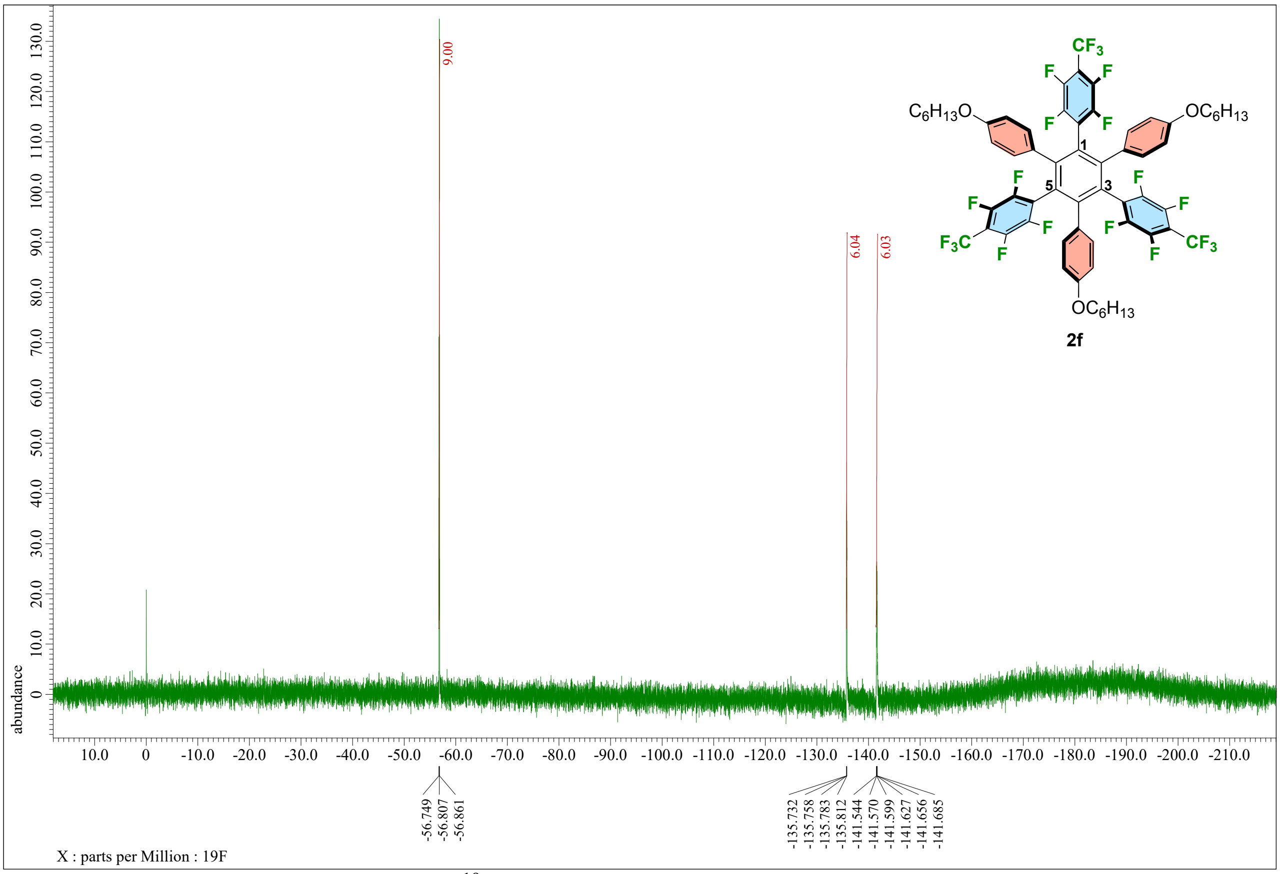

Figure S30. ^{19}F NMR spectrum of **2f** (376 MHz, $CDCl_3$)

Phase transition behavior

The phase transition behaviors were observed via polarizing optical microscopy (POM) using a BX53 microscope (Olympus, Tokyo, Japan) equipped with a heating and cooling stage (10.002 L, Linkam Scientific Instruments, Redhill, UK). The phase sequences and transition enthalpies were determined using DSC (Shimadzu DSC-60 Plus) at heating and cooling rates of 5.0 °C min^{-1} or 10 °C min^{-1} under an N_2 atmosphere.

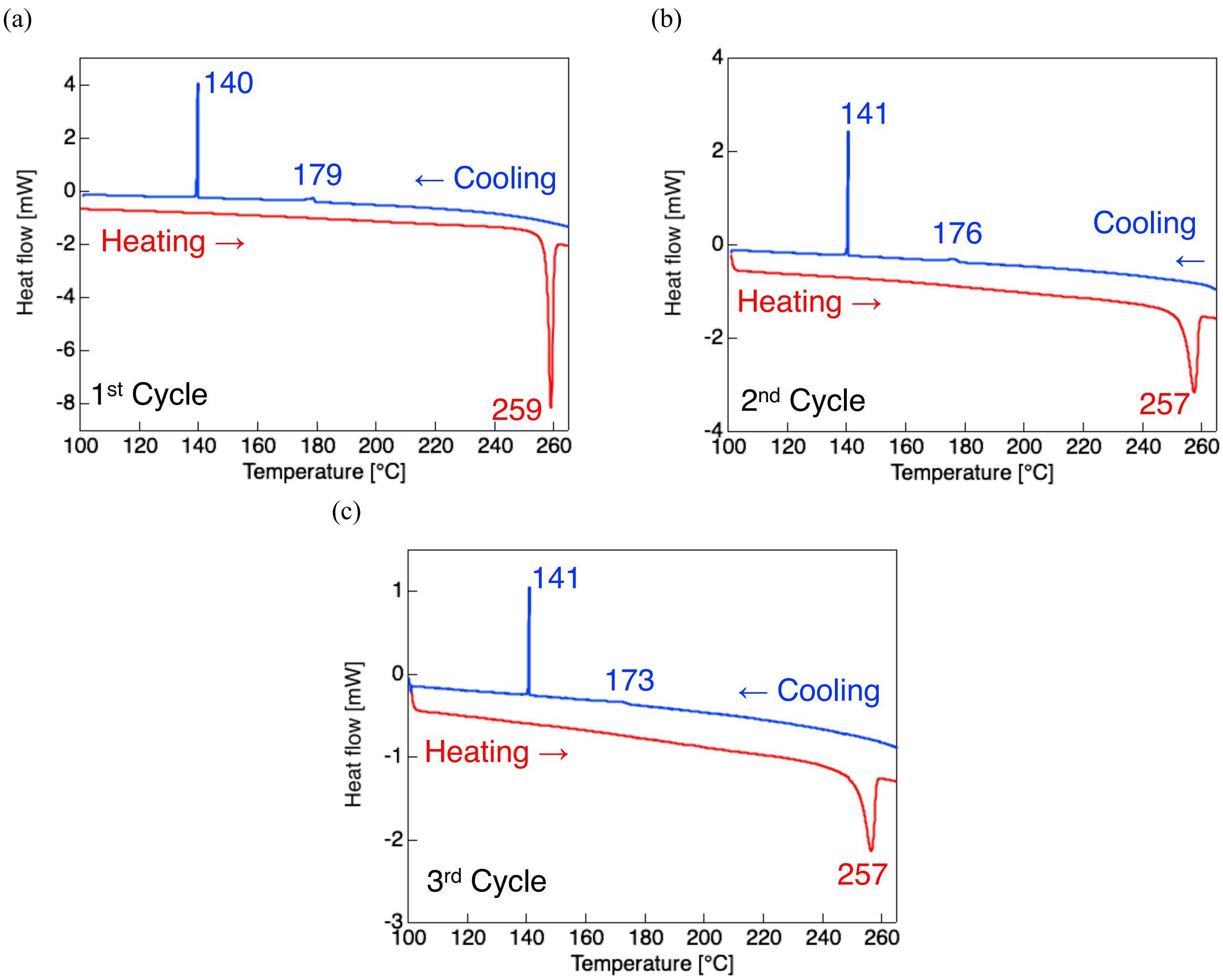

Figure S31. DSC thermograms of **1b** on (a) the 1st heating and cooling cycle, (b) the 2nd cycle and (c) 3rd cycle.

Table S1. Phase transition data of **1b**.

Process	Phase transition	Temperature [°C]	ΔH [kJ mol^{-1}]	ΔS [J mol^{-1} K^{-1}]
1st Heating	Cr-Iso	259	46.42	87.27
1st Cooling	Iso-Col	179	−4.54	−10.06
	Col-Cr	140	−15.44	−37.41
2nd Heating	Cr-Iso	257	28.61	53.94
2nd Cooling	Iso-Col	176	−2.85	−6.34
	Col-Cr	141	−9.92	−23.99
3rd Heating	Cr-Iso	257	18.58	35.10
3rd Cooling	Iso-Col	173	−0.47	−1.05
	Col-Cr	141	−5.60	−13.52

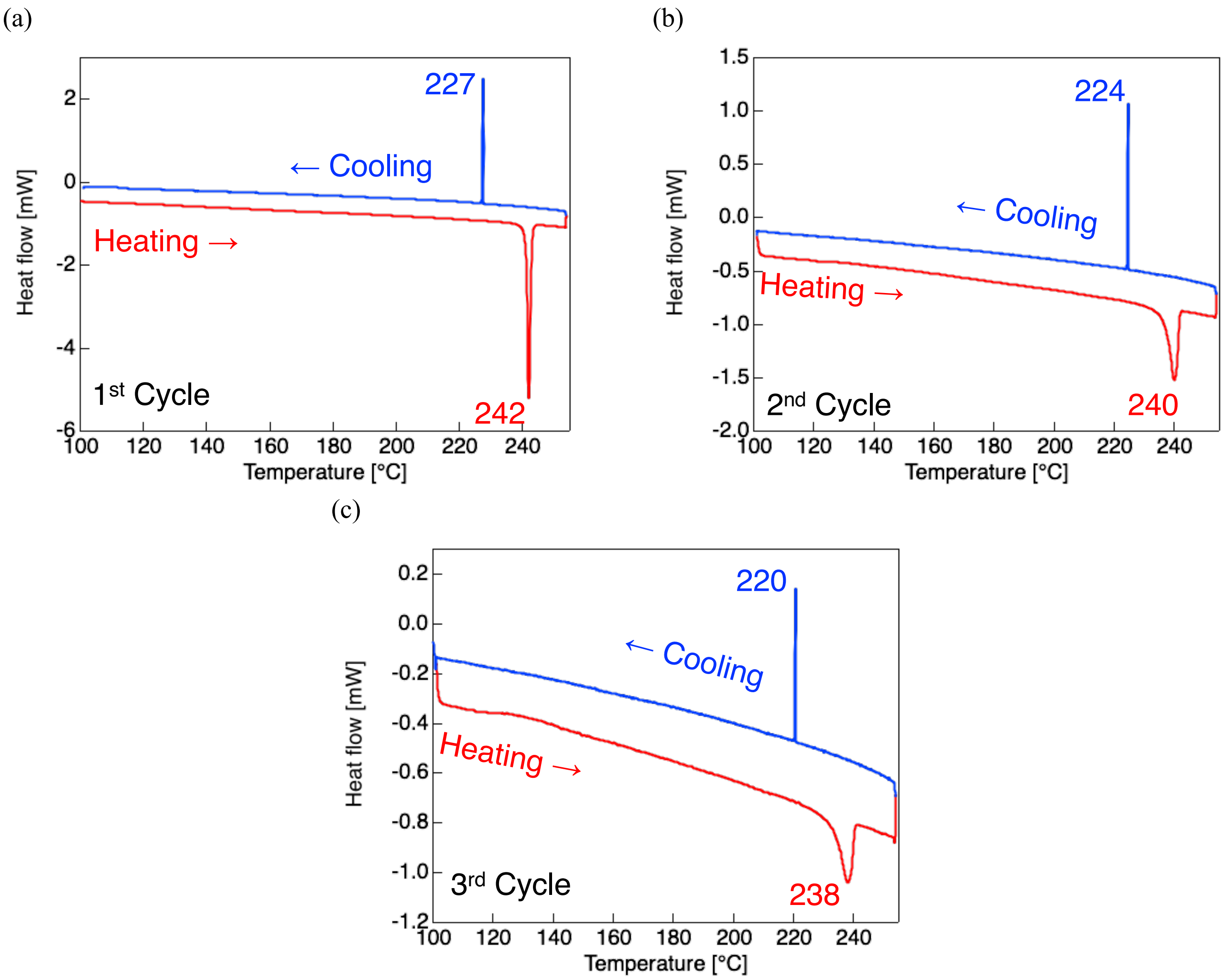

Figure S32. DSC thermograms of **2b** on (a) the 1st heating and cooling cycle, (b) the 2nd cycle and (c) 3rd cycle.

Table S2. Phase transition data of **2b**.

Process	Phase transition	Temperature [°C]	ΔH [kJ mol^{-1}]	ΔS [J mol^{-1} K^{-1}]
1st Heating	Cr-Iso	242	47.37	91.99
1st Cooling	Iso-Cr	227	−17.67	−35.31
2nd Heating	Cr-Iso	240	23.43	45.68
2nd Cooling	Iso-Cr	224	−9.14	−18.37
3rd Heating	Cr-Iso	238	12.42	24.30
3rd Cooling	Iso-Cr	220	−3.90	−7.90

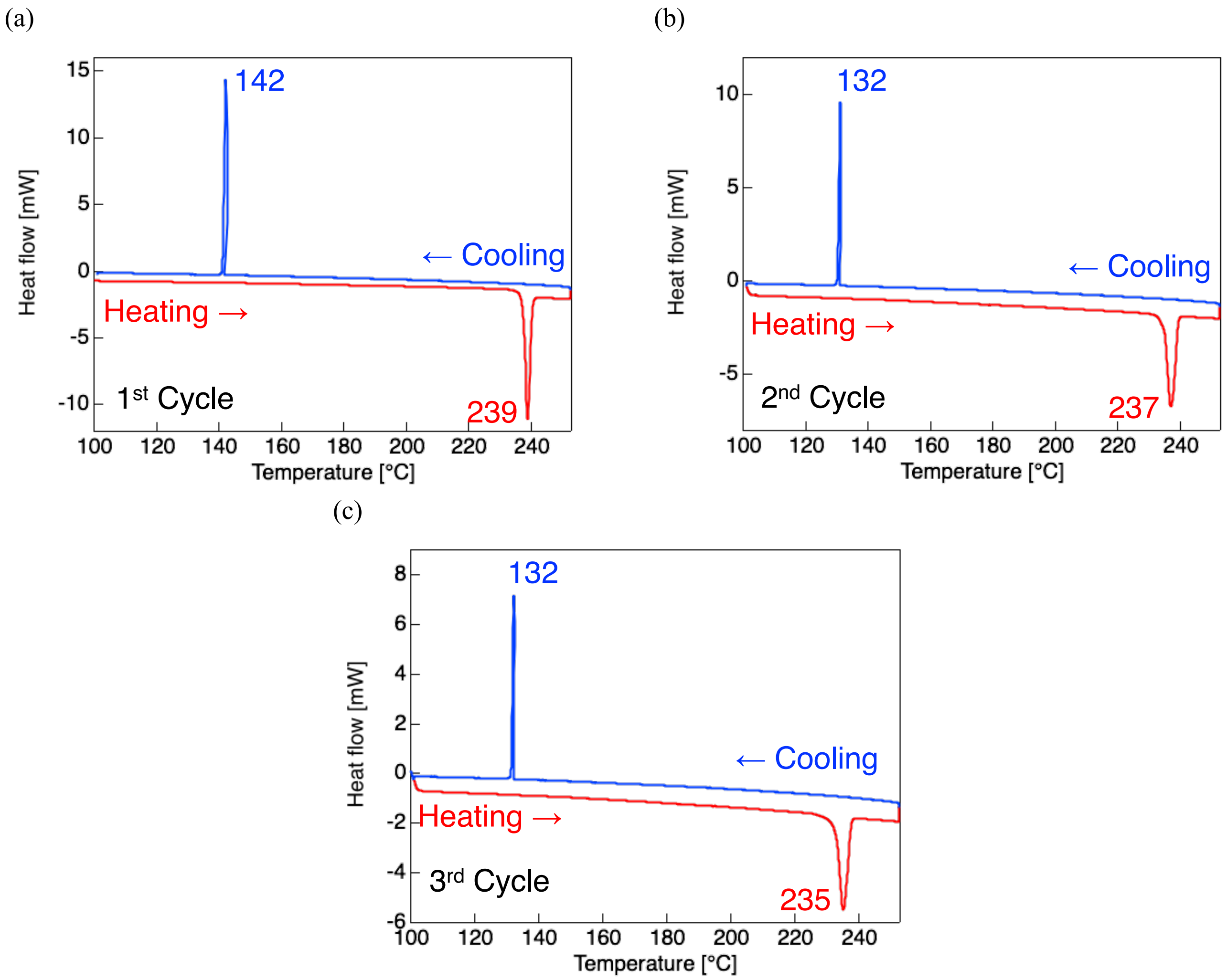

Figure S33. DSC thermograms of **1c** on (a) the 1st heating and cooling cycle, (b) the 2nd cycle and (c) 3rd cycle.

Table S3. Phase transition data of **1c**.

Process	Phase transition	Temperature [°C]	ΔH [kJ mol^{-1}]	ΔS [J mol^{-1} K^{-1}]
1st Heating	Cr-Iso	239	56.78	110.91
1st Cooling	Iso-Cr	142	−38.35	−92.35
2nd Heating	Cr-Iso	237	52.12	102.18
2nd Cooling	Iso-Cr	132	−31.30	−77.46
3rd Heating	Cr-Iso	235	42.84	84.30
3rd Cooling	Iso-Cr	132	−27.44	−67.71

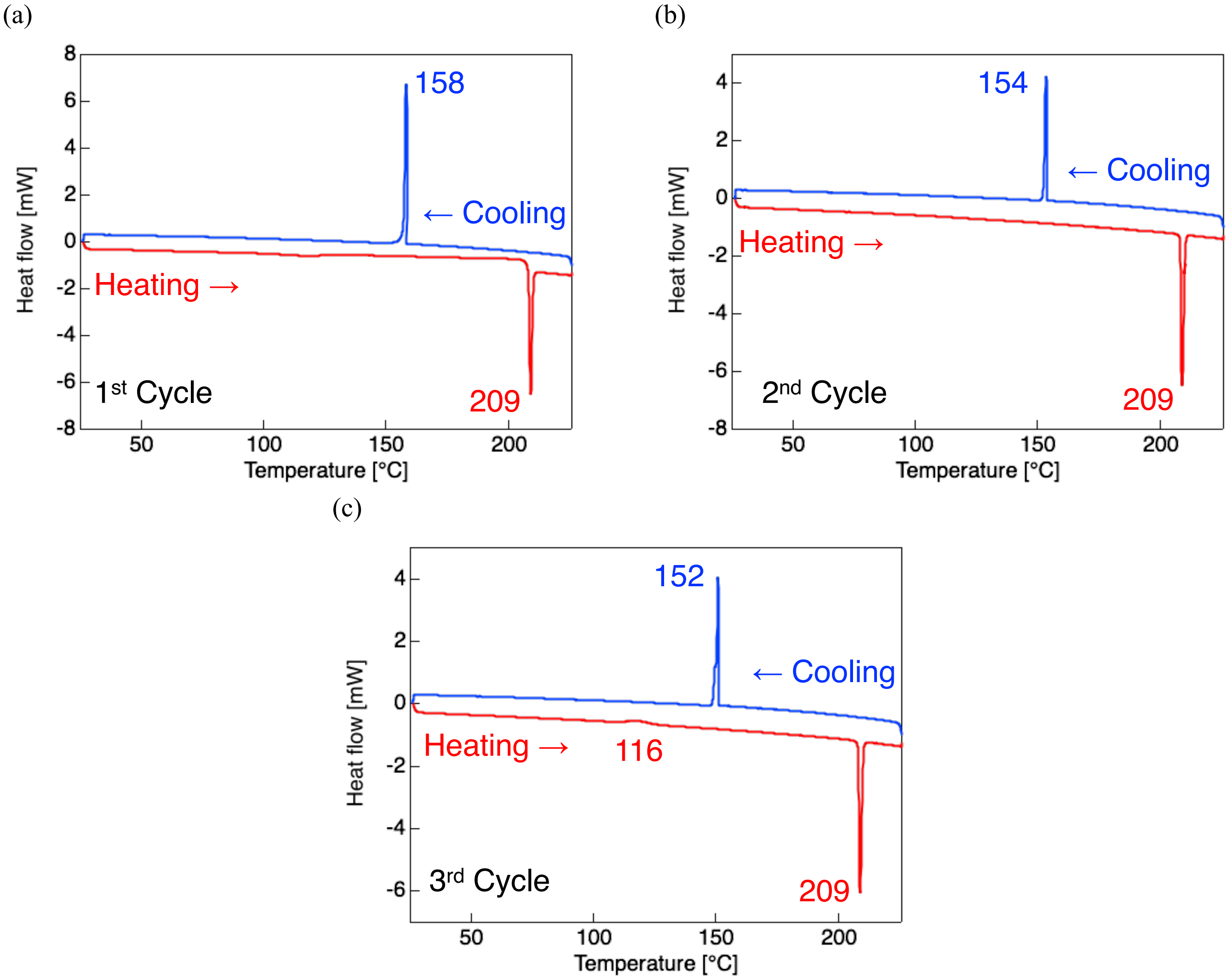

Figure S34. DSC thermograms of **2c** on (a) the 1st heating and cooling cycle, (b) the 2nd cycle and (c) 3rd cycle.

Table S4. Phase transition data of **2c**.

Process	Phase transition	Temperature [°C]	ΔH [kJ mol^{-1}]	ΔS [J mol^{-1} K^{-1}]
1st Heating	Cr-Iso	209	43.46	90.13
1st Cooling	Iso-Cr	158	−37.08	−86.00
2nd Heating	Cr-Iso	209	43.37	89.96
2nd Cooling	Iso-Cr	154	−29.26	−68.53
3rd Heating	Cr-Cr	116	−5.44	−13.98
	Cr-Iso	209	39.27	81.47
3rd Cooling	Iso-Cr	152	−26.67	−62.74

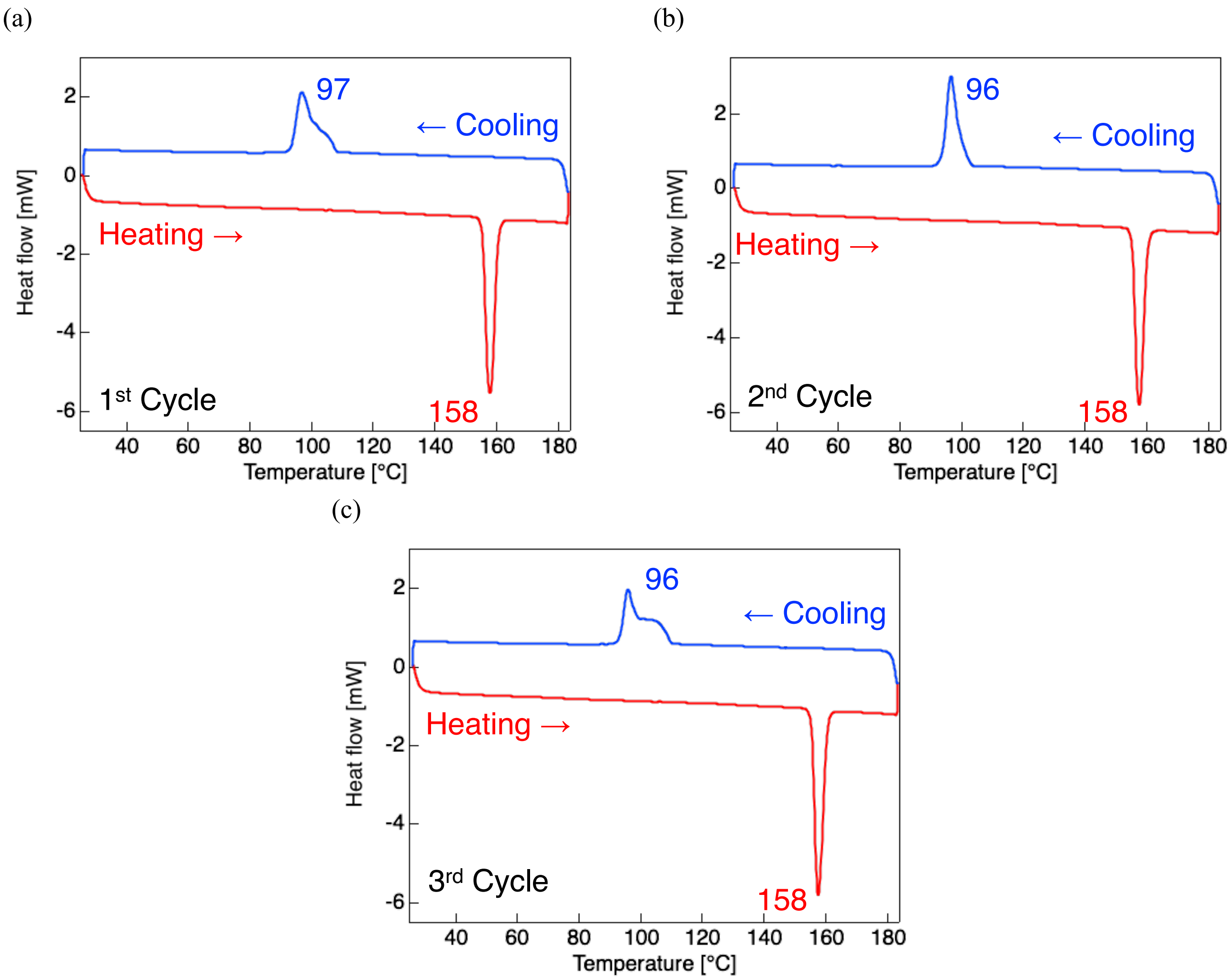

Figure S35. DSC thermograms of **1d** on (a) the 1st heating and cooling cycle, (b) the 2nd cycle and (c) 3rd cycle.

Table S5. Phase transition data of **1d**.

Process	Phase transition	Temperature [°C]	ΔH [kJ mol^{-1}]	ΔS [J mol^{-1} K^{-1}]
1st Heating	Cr-Iso	158	45.10	104.69
1st Cooling	Iso-Cr	97	−33.45	−90.46
2nd Heating	Cr-Iso	158	45.36	105.35
2nd Cooling	Iso-Cr	96	−32.71	−88.56
3rd Heating	Cr-Iso	158	45.18	104.95
3rd Cooling	Iso-Cr	96	−33.56	−90.97

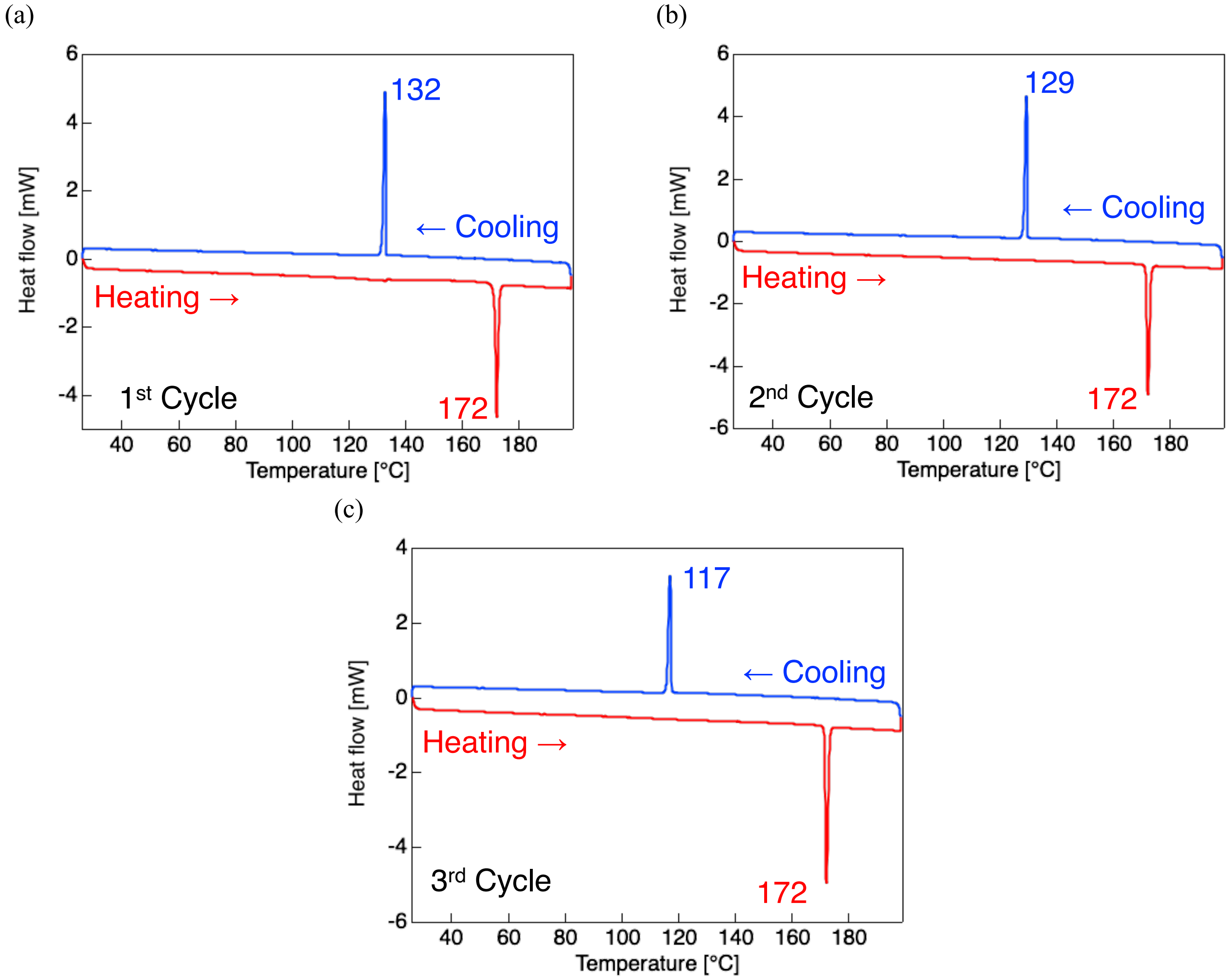

Figure S36. DSC thermograms of **2d** on (a) the 1st heating and cooling cycle, (b) the 2nd cycle and (c) 3rd cycle.

Table S6. Phase transition data of **2d**.

Process	Phase transition	Temperature [°C]	ΔH [kJ mol^{-1}]	ΔS [J mol^{-1} K^{-1}]
1st Heating	Cr-Iso	172	25.27	56.78
1st Cooling	Iso-Cr	132	−20.77	−51.21
2nd Heating	Cr-Iso	172	25.70	57.75
2nd Cooling	Iso-Cr	129	−20.24	−50.34
3rd Heating	Cr-Iso	172	25.62	57.57
3rd Cooling	Iso-Cr	117	−18.27	−46.85

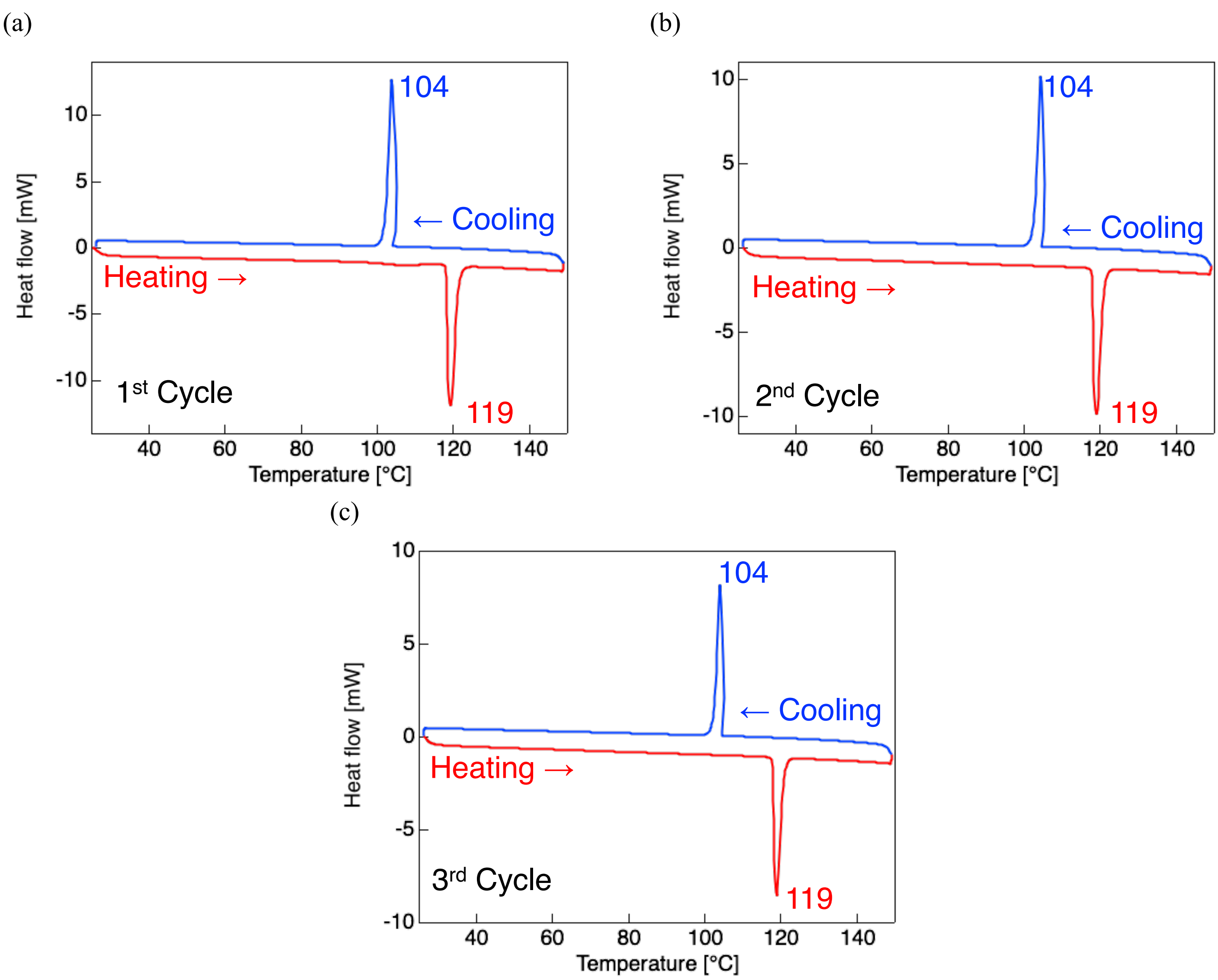

Figure S37. DSC thermograms of **1e** on (a) the 1st heating and cooling cycle, (b) the 2nd cycle and (c) 3rd cycle.

Table S7. Phase transition data of **1e**.

Process	Phase transition	Temperature [°C]	ΔH [kJ mol^{-1}]	ΔS [J mol^{-1} K^{-1}]
1st Heating	Cr-Iso	119	70.01	178.47
1st Cooling	Iso-Cr	104	−54.90	−145.76
2nd Heating	Cr-Iso	119	55.99	142.86
2nd Cooling	Iso-Cr	104	−44.22	−117.26
3rd Heating	Cr-Iso	119	44.73	114.14
3rd Cooling	Iso-Cr	104	−34.73	−92.13

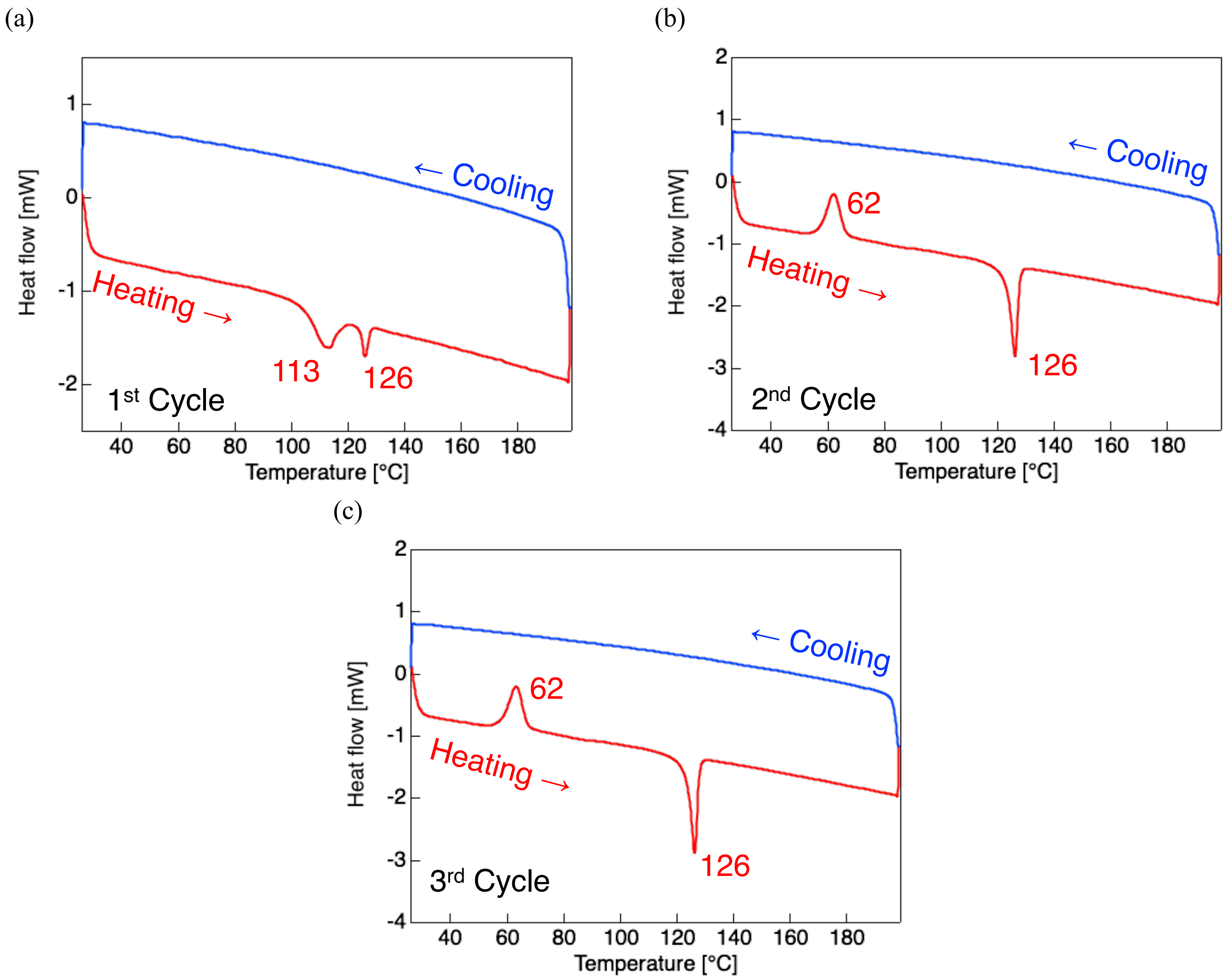

Figure S38. DSC thermograms of **2e** on (a) the 1st heating and cooling cycle, (b) the 2nd cycle and (c) 3rd cycle.

Table S8. Phase transition data of **2e**.

Process	Phase transition	Temperature [°C]	ΔH [kJ mol^{-1}]	ΔS [J mol^{-1} K^{-1}]
1st Heating	Cr-Cr	113	11.38	29.44
	Cr-Iso	126	3.02	7.57
1st Cooling	Iso-G			
2nd Heating	G-Cr	62	−14.99	−44.75
	Cr-Iso	126	20.30	50.88
2nd Cooling	Iso-G			
3rd Heating	G-Cr	63	−14.87	−44.24
	Cr-Iso	126	20.63	51.68
3rd Cooling	Iso-G			

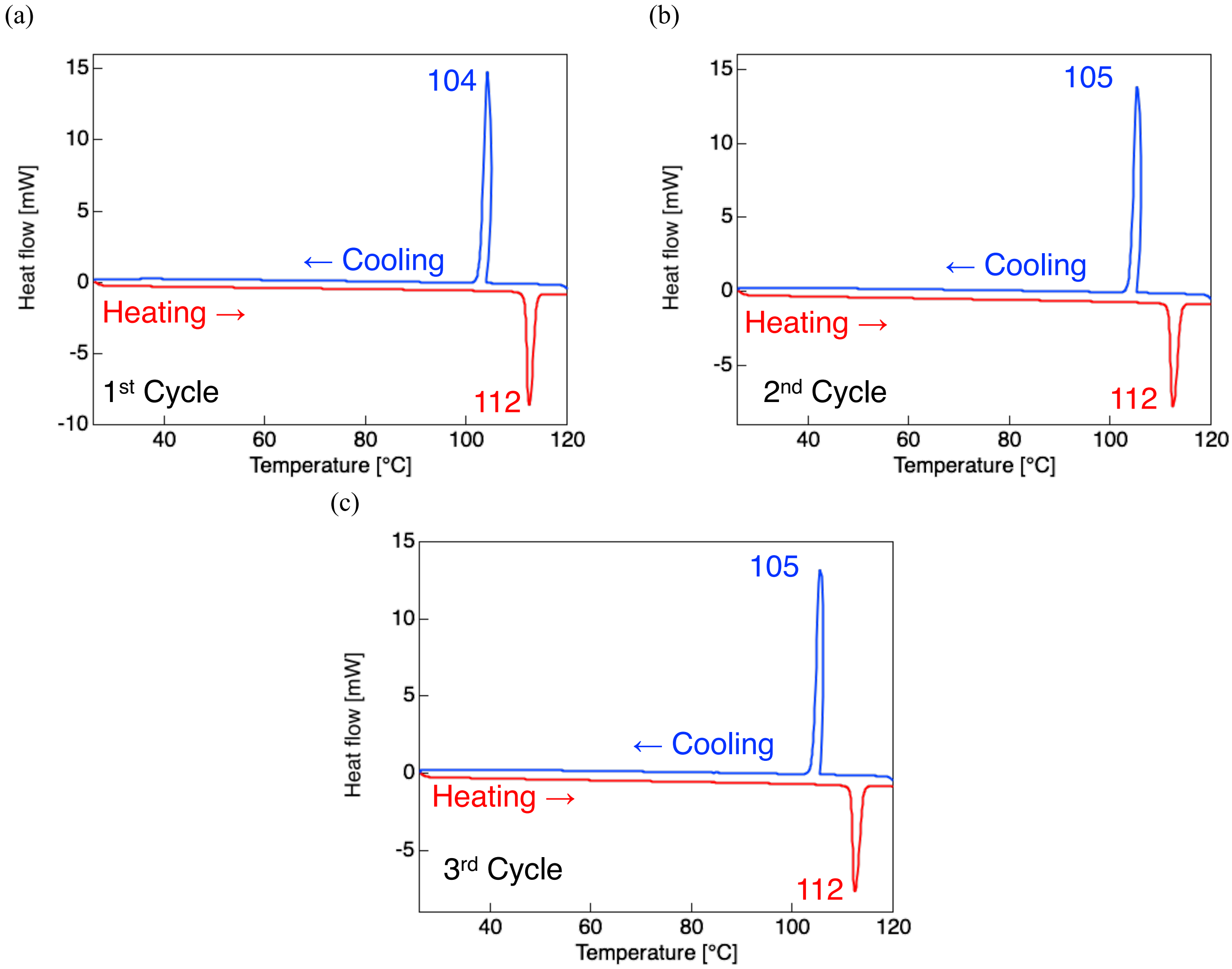

Figure S39. DSC thermograms of **1f** on (a) the 1st heating and cooling cycle, (b) the 2nd cycle and (c) 3rd cycle.

Table S9. Phase transition data of **1f**.

Process	Phase transition	Temperature [°C]	ΔH [kJ mol^{-1}]	ΔS [J mol^{-1} K^{-1}]
1st Heating	Cr-Iso	112	62.59	162.38
1st Cooling	Iso-Cr	104	−60.77	−161.12
2nd Heating	Cr-Iso	112	60.67	157.74
2nd Cooling	Iso-Cr	105	−59.59	−157.52
3rd Heating	Cr-Iso	112	59.60	154.94
3rd Cooling	Iso-Cr	105	−58.23	−153.84

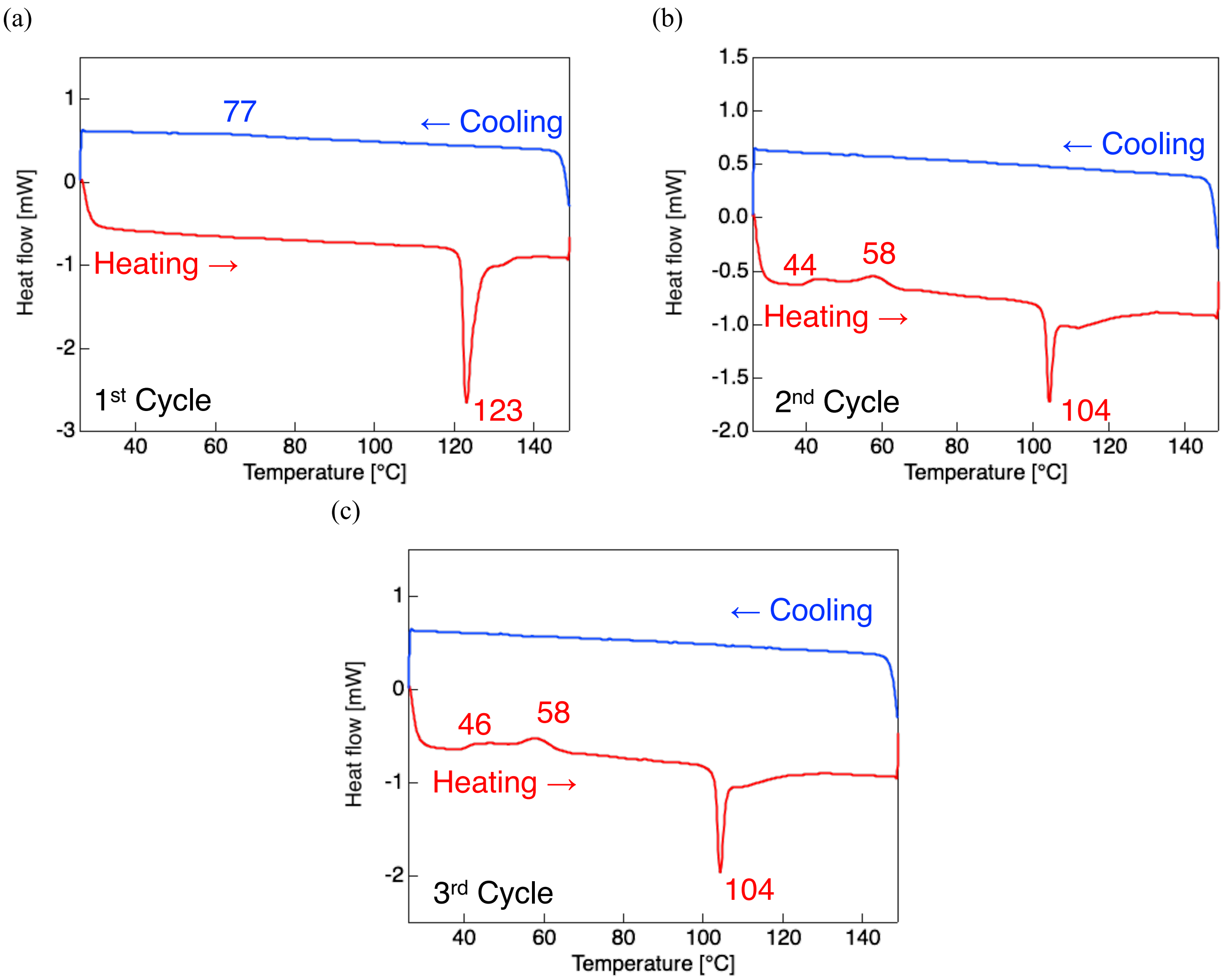

Figure S40. DSC thermograms of **2f** on (a) the 1st heating and cooling cycle, (b) the 2nd cycle and (c) 3rd cycle.

Table S10. Phase transition data of **2f**.

Process	Phase transition	Temperature [°C]	ΔH [kJ mol^{-1}]	ΔS [J mol^{-1} K^{-1}]
1st Heating	Cr-Iso	123	34.50	87.09
1st Cooling	Iso-G	77		
2nd Heating	G-Cr	44	−1.22	−3.84
	Cr-Cr	58	−8.12	−24.54
	Cr-Iso	104	24.61	65.24
2nd Cooling	Iso-G			
3rd Heating	G-Cr	46	−1.44	−4.52
	Cr-Cr	58	−3.25	−9.82
	Cr-Iso	104	24.90	65.98
3rd Cooling	Iso-G			

Photophysical behavior

Ultraviolet-visible light (UV-vis) absorption spectroscopy was conducted using a V-750 absorption spectrometer (JASCO, Tokyo, Japan), and PL spectroscopy of the solution and crystalline samples was performed using an RF-6000 spectrofluorophotometer (Shimadzu, Kyoto, Japan). The absolute quantum yields of the solution and crystalline samples were measured using a Quantaurus-QY absolute PL quantum yield spectrometer (C11347-01, Hamamatsu Photonics, Hamamatsu, Japan).

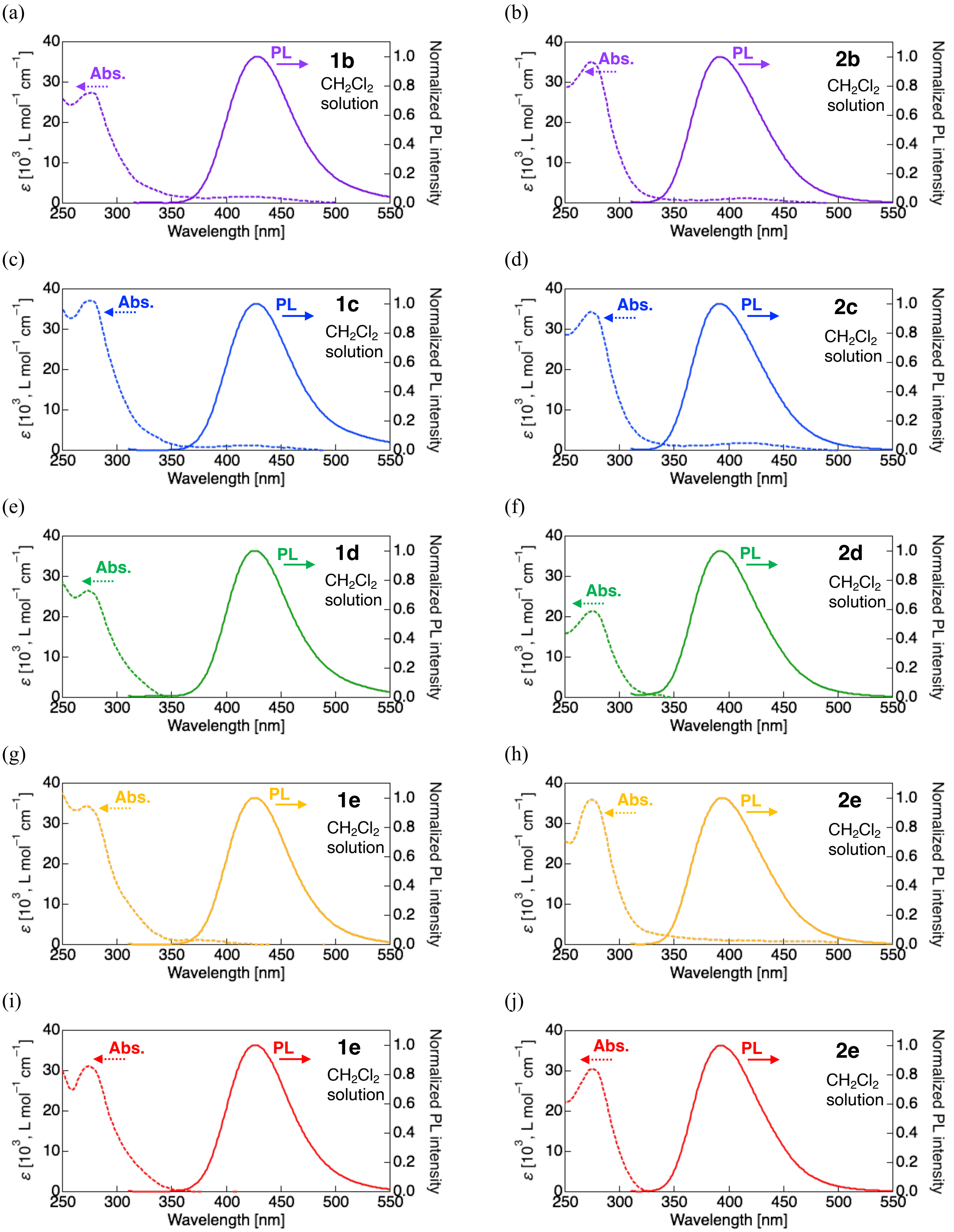

Figure S41. Absorption and PL spectra of (a) **1b**, (b) **2b**, (c) **1c**, (d) **2c**, (e) **1d**, (f) **2d**, (g) **1e**, (h) **2e**, (i) **1f**, (j) **2f** in CH_2Cl_2 solution (Concentration: 1.0×10^{-5} mol L^{-1}).

PL lifetime measurement

PL lifetimes were measured using a Quantaurus-Tau fluorescence lifetime spectrometer (C11367-34, Hamamatsu Photonics, Japan).

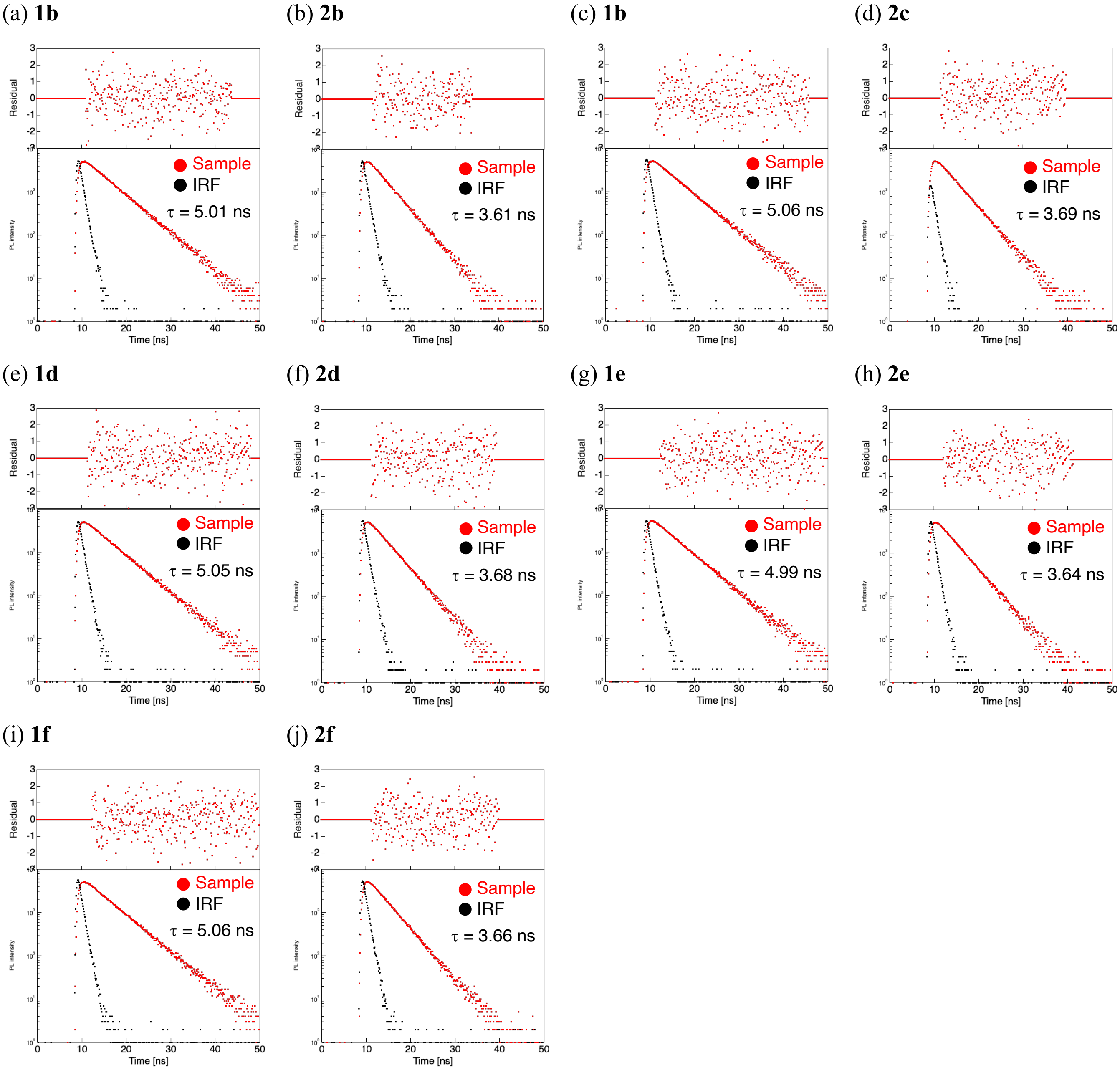

Figure S42. PL decay profile and residual from a single exponential fit for (a) **1b**, (b) **2b**, (c) **1c**, (d) **2c**, (e) **1d**, (f) **2d**, (g) **1e**, (h) **2e**, (i) **1f**, (j) **2f** in CH_2Cl_2 solution (Concentration: 1.0×10^{-5} mol L^{-1}).

Crystalline state

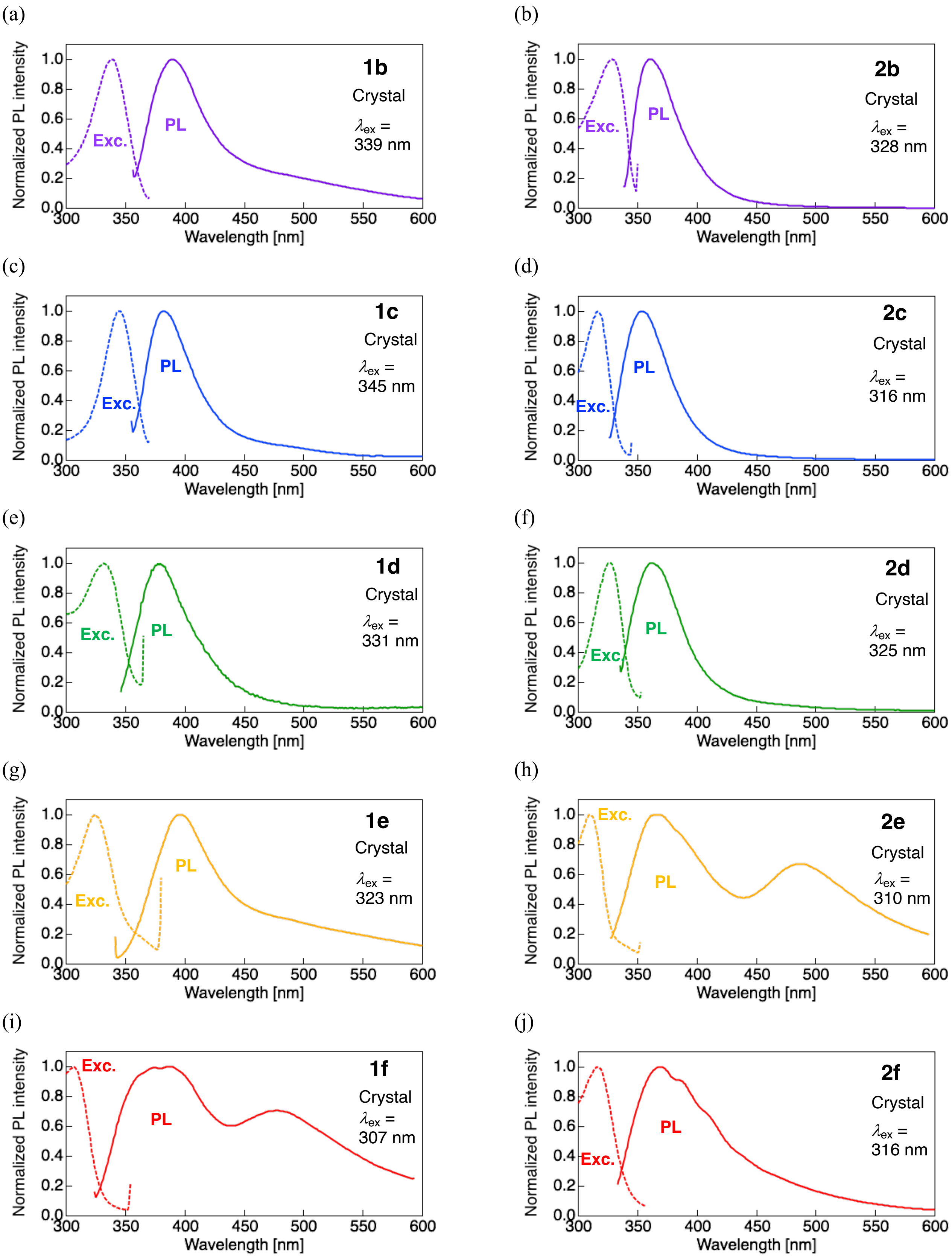

Figure S43. Excitation and PL spectra of (a) **1b**, (b) **2b**, (c) **1c**, (d) **2c**, (e) **1d**, (f) **2d**, (g) **1e**, (h) **2e**, (i) **1f**, (j) **2f** in crystalline state.

Powder X-ray diffraction

Powder X-ray diffraction patterns were measured using an X-ray diffractometer (Rigaku MiniFlex600) equipped with an X-ray tube (Cu*K*α, l = 1.54 Å) and semiconductor detector (D/teX Ultra2). The sample powder was mounted on a silicon non-reflecting plate, and the plate was set on a benchtop stage (Anton Paar, BTS-500).

(a) (b)

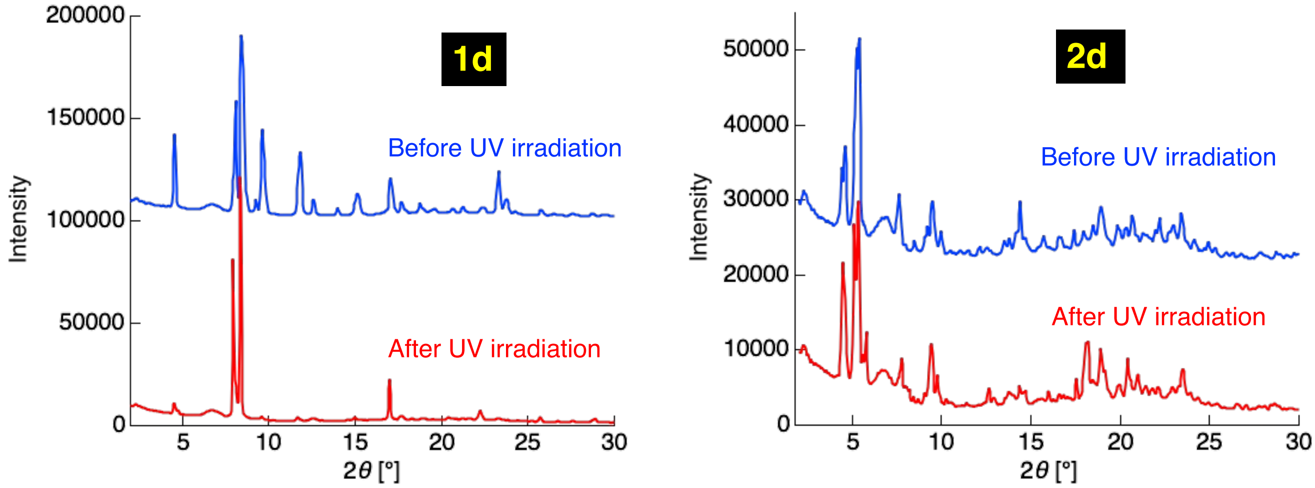

Figure S44. Powder X-ray diffraction pattern of (a) **1d** and (b) **2d** before and after UV irradiation.

PL lifetime measurement

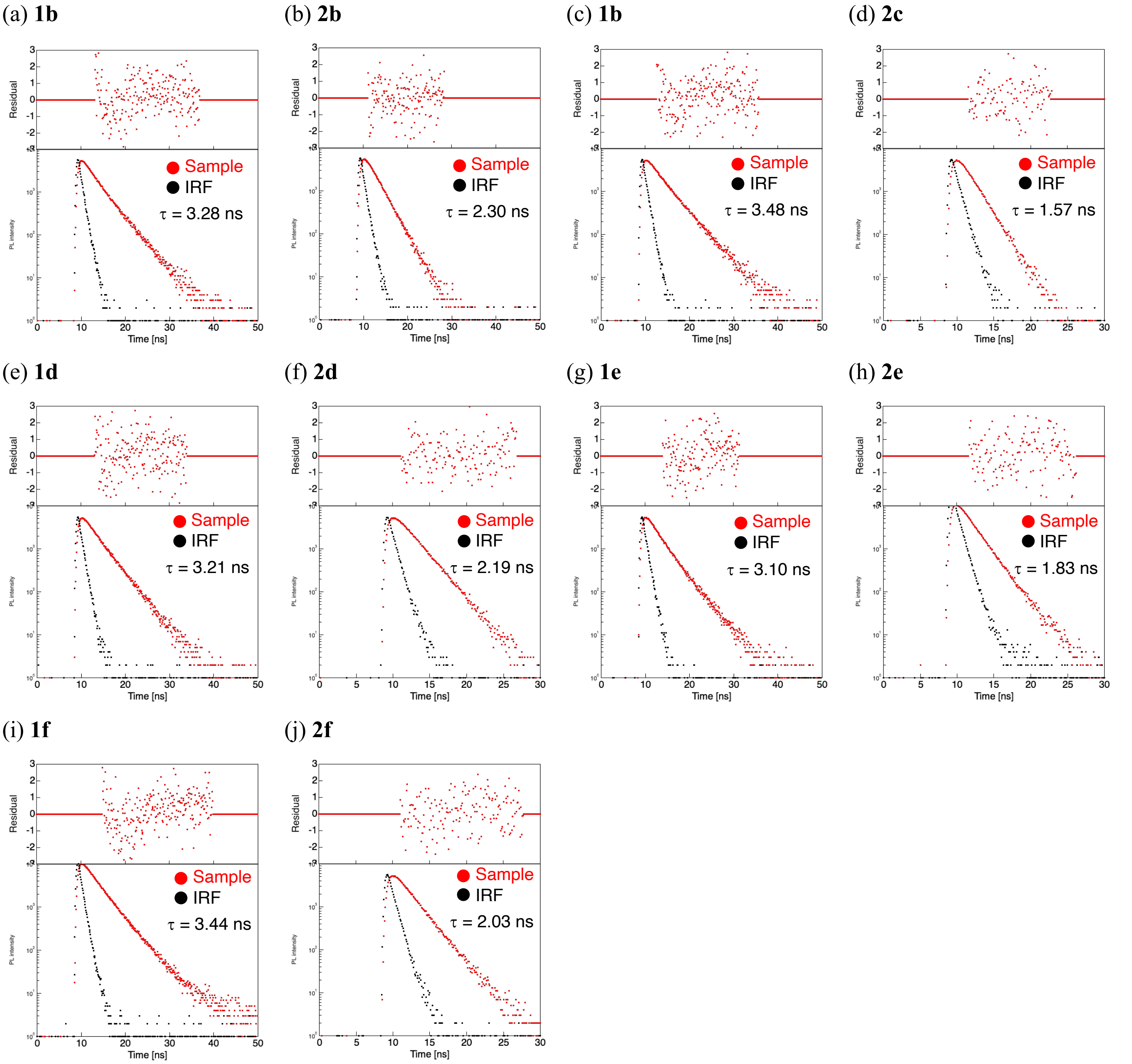

Figure S45. PL decay profile and residual from a single exponential fit for (a) **1b**, (b) **2b**, (c) **1c**, (d) **2c**, (e) **1d**, (f) **2d**, (g) **1e**, (h) **2e**, (i) **1f**, (j) **2f** in crystal.

Theoretical study

Density functional theory (DFT) calculations were conducted using the Gaussian 16 (Rev. B.01) suite of programs (Gaussian, Wallingford, CT, USA), and geometry optimizations were performed at the M06-2X/6-311++G(d,p)//M06-2X/6-31+G(d,p) level of theory with an implicit solvation model, i.e., the conductor-like polarizable continuum model (CPCM), for CH_2Cl_2. Vertical electronic transitions were calculated using time-dependent DFT at the same level of theory, and geometry optimization at the S1 excited state was also performed at the same level of theory.

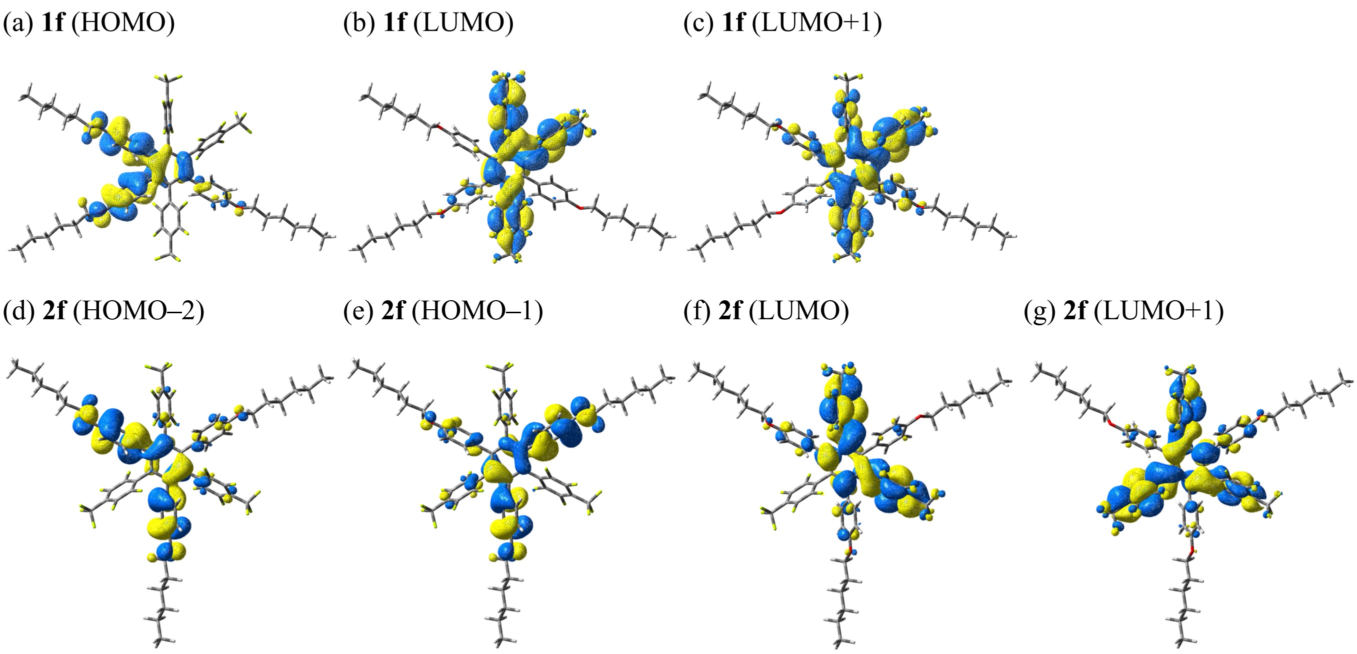

Figure S46. Molecular orbital distributions of (a) HOMO, (b) LUMO, and (c) LUMO+1 for **1b** and (d) HOMO–2, (e) HOMO–1, (f) LUMO, and (g) LUMO+1 for **2b**.

Table S11. Theoretical electronic transition calculated by TD-DFT method.

Com-pound	Theoretical electronic transition (Proportion, %)	λ_{calcd} [nm]	f
1f	HOMO → LUMO+1 (48.1%)	275.1	0.4475
2f	HOMO–1 → LUMO+1 (24.2%) HOMO–2 → LUMO (23.9%)	269.4	0.7058

Table S12. Cartesian coordinates of optimized geometry for **1f**.

No.	Atom No.	Type	Coordinates (Angstroms) x	y	z
1	6	0	1.330122	-1.055474	0.218047
2	6	0	0.009391	-1.523349	0.190865
3	6	0	-1.07188	-0.633492	0.110122
4	6	0	-0.813969	0.748407	0.036744
5	6	0	0.513765	1.203911	0.06023
6	6	0	1.598426	0.318068	0.153289
7	6	0	-0.244717	-2.990876	0.235482
8	6	0	0.048271	-3.749209	1.365867
9	6	0	-0.780668	-3.666165	-0.854643
10	6	0	-0.192159	-5.11122	1.404716
11	6	0	-1.027569	-5.033837	-0.826857
12	6	0	-0.73542	-5.78088	0.310217
13	6	0	-2.467444	-1.157075	0.102262
14	6	0	-2.972672	-1.856832	1.207023
15	6	0	-3.297417	-0.968058	-1.002137
16	6	0	-4.267834	-2.352827	1.204444
17	6	0	-4.600753	-1.464348	-1.024354
18	6	0	-5.089528	-2.1616	0.085465
19	6	0	-1.933209	1.727463	-0.070303
20	6	0	-2.858188	1.872215	0.962739
21	6	0	-2.075646	2.525644	-1.213977
22	6	0	-3.902314	2.793328	0.877969
23	1	0	-2.763517	1.261229	1.856459
24	6	0	-3.111506	3.441656	-1.31811
25	1	0	-1.375264	2.416566	-2.038663
26	6	0	-4.030108	3.583534	-0.269038
27	1	0	-4.598062	2.883063	1.703051
28	1	0	-3.229693	4.056783	-2.204079
29	6	0	0.782693	2.668468	-0.010839
30	6	0	0.436825	3.522824	1.032401
31	6	0	1.385293	3.244014	-1.121825
32	6	0	0.677591	4.883251	0.959882
33	6	0	1.633742	4.608902	-1.205882
34	6	0	1.279112	5.455112	-0.160033
35	6	0	2.999502	0.823085	0.180186
36	6	0	3.45391	1.621223	1.24064
37	6	0	3.887139	0.514201	-0.850076
38	6	0	4.756212	2.093644	1.265448
39	1	0	2.783327	1.858061	2.063036
40	6	0	5.201151	0.983556	-0.842357
41	1	0	3.548419	-0.089306	-1.68871
42	6	0	5.638487	1.778443	0.221747
43	1	0	5.115537	2.705333	2.086354
44	1	0	5.859819	0.729116	-1.663385
45	6	0	2.454951	-2.024944	0.32753
46	6	0	3.259487	-2.076936	1.463955
47	6	0	2.747235	-2.922768	-0.691623
48	6	0	4.304341	-2.978445	1.564104
49	6	0	3.792769	-3.83425	-0.601297
50	6	0	4.592167	-3.875144	0.536209
51	8	0	-5.006682	4.506661	-0.455399
52	8	0	6.890369	2.286323	0.330887
53	6	0	7.828452	2.000466	-0.704757
54	1	0	7.441976	2.374744	-1.662308
55	9	0	-0.122661	3.029982	2.140229
56	9	0	0.331841	5.658644	1.989929
57	9	0	2.208125	5.06699	-2.317154
58	9	0	1.721247	2.479578	-2.165026
59	9	0	2.016418	-2.913804	-1.811642
60	9	0	3.995908	-4.648272	-1.635308
61	9	0	3.021046	-1.257552	2.488478
62	9	0	5.043348	-2.99154	2.674852
63	6	0	1.502498	6.945864	-0.158543
64	9	0	0.341375	7.604148	-0.006802
65	9	0	2.068717	7.385875	-1.283762
66	9	0	2.295455	7.311553	0.862187
67	9	0	6.893608	-4.150608	0.918406
68	9	0	5.926759	-5.641056	-0.309381
69	9	0	5.559777	-5.590474	1.817593
70	6	0	5.747418	-4.824865	0.730596
71	8	0	-6.338825	-2.683766	0.170244
72	1	0	-2.922558	-0.429076	-1.868096
73	1	0	-5.214198	-1.303447	-1.902262
74	1	0	-4.66505	-2.889361	2.059796
75	1	0	-2.348501	-2.000864	2.085807
76	1	0	7.96497	0.913695	-0.785879
77	9	0	-1.061487	-3.001096	-1.976167
78	9	0	-1.53956	-5.592386	-1.921869
79	9	0	0.098565	-5.789691	2.516086
80	9	0	0.55911	-3.156442	2.449874

81	6	0	-0.965148	-7.266048	0.435674
82	9	0	0.18484	-7.906551	0.701654
83	9	0	-1.807327	-7.535821	1.446432
84	9	0	-1.479269	-7.805718	-0.670654
85	6	0	-7.216239	-2.519969	-0.94156
86	1	0	-7.366274	-1.449361	-1.136069
87	1	0	-6.766432	-2.975385	-1.834133
88	6	0	-5.960907	4.698914	0.586495
89	1	0	-6.492604	3.756614	0.775785
90	1	0	-5.44238	4.996058	1.508059
91	6	0	-8.531086	-3.193153	-0.601479
92	1	0	-8.937514	-2.739125	0.310238
93	1	0	-8.341884	-4.250724	-0.381706
94	6	0	-9.541675	-3.069971	-1.740843
95	1	0	-9.718709	-2.008446	-1.961252
96	1	0	-9.121142	-3.51319	-2.653774
97	6	0	-10.873611	-3.746216	-1.421299
98	1	0	-10.697627	-4.808284	-1.20086
99	1	0	-11.294968	-3.304853	-0.507392
100	6	0	-11.892327	-3.628741	-2.553632
101	1	0	-12.066614	-2.567356	-2.772117
102	1	0	-11.46848	-4.068096	-3.465743
103	6	0	-13.218484	-4.310375	-2.222495
104	1	0	-13.670563	-3.868084	-1.328428
105	1	0	-13.935065	-4.216098	-3.043232
106	1	0	-13.069051	-5.377508	-2.027014
107	6	0	-6.926352	5.779811	0.142637
108	1	0	-7.40527	5.466727	-0.792874
109	1	0	-6.360919	6.694639	-0.071559
110	6	0	-7.988874	6.060477	1.204302
111	1	0	-8.54254	5.137206	1.422934
112	1	0	-7.500574	6.36177	2.141065
113	6	0	-8.973056	7.148167	0.778136
114	1	0	-8.419866	8.071454	0.556605
115	1	0	-9.463523	6.84756	-0.158158
116	6	0	-10.038025	7.439952	1.833892
117	1	0	-10.588572	6.516435	2.054511
118	1	0	-9.545686	7.738735	2.768226
119	6	0	-11.015083	8.529263	1.396115
120	1	0	-11.536335	8.238192	0.478011
121	1	0	-11.769382	8.724774	2.163444
122	1	0	-10.487183	9.467692	1.196184
123	6	0	9.135948	2.681112	-0.35187
124	1	0	8.957841	3.757698	-0.243501
125	1	0	9.479956	2.308578	0.620435
126	6	0	10.20638	2.433977	-1.413879
127	1	0	10.370603	1.353509	-1.525038
128	1	0	9.848656	2.79784	-2.386731
129	6	0	11.533643	3.112686	-1.080543
130	1	0	11.370458	4.193554	-0.968043
131	1	0	11.892872	2.74973	-0.107513
132	6	0	12.610924	2.872997	-2.136865
133	1	0	12.771952	1.792996	-2.247832
134	1	0	12.249099	3.234459	-3.108007
135	6	0	13.932268	3.557627	-1.792985
136	1	0	14.690953	3.375259	-2.559226
137	1	0	13.797359	4.640761	-1.703841
138	1	0	14.323347	3.19101	-0.838007

Table S13. Cartesian coordinates of optimized geometry for **2f**.

No.	Atom No.	Type	Coordinates (Angstroms) x	y	z
1	6	0	0.516384	-1.29239	0.331027
2	6	0	-0.875356	-1.112976	0.335063
3	6	0	-1.387198	0.193514	0.335
4	6	0	-0.536265	1.309132	0.330306
5	6	0	0.851078	1.098925	0.326629
6	6	0	1.391926	-0.195927	0.328669
7	6	0	-1.791813	-2.287648	0.34157
8	6	0	-1.812365	-3.172456	1.429747
9	6	0	-2.64694	-2.531272	-0.732898
10	6	0	-2.664909	-4.264944	1.439896
11	1	0	-1.165668	-2.990531	2.284613
12	6	0	-3.509343	-3.627967	-0.740527
13	1	0	-2.633334	-1.8663	-1.593053
14	6	0	-3.519133	-4.499983	0.352815
15	1	0	-2.690622	-4.94837	2.28215
16	1	0	-4.153913	-3.789298	-1.595577
17	6	0	-2.862615	0.399356	0.339195
18	6	0	-3.642194	0.053158	1.439583
19	6	0	-3.525076	0.940429	-0.755108
20	6	0	-5.013408	0.237053	1.438589
21	6	0	-4.90168	1.132074	-0.767343
22	6	0	-5.671952	0.778837	0.336048
23	6	0	-1.095191	2.69021	0.332331
24	6	0	-1.843206	3.157188	1.423145
25	6	0	-0.884025	3.546825	-0.747762
26	6	0	-2.359187	4.443262	1.43087
27	1	0	-2.004847	2.510862	2.282372
28	6	0	-1.399097	4.843457	-0.757977
29	1	0	-0.321334	3.196974	-1.609823
30	6	0	-2.140063	5.295167	0.338689
31	1	0	-2.931101	4.813125	2.275415
32	1	0	-1.220413	5.47816	-1.617007
33	6	0	1.767484	2.273474	0.316802
34	6	0	1.863096	3.132295	1.408398
35	6	0	2.561991	2.56575	-0.784384
36	6	0	2.708945	4.227058	1.392961
37	6	0	3.417802	3.660586	-0.810728
38	6	0	3.503653	4.514256	0.284439
39	6	0	2.867622	-0.400449	0.332521
40	6	0	3.643985	0.026648	1.419983
41	6	0	3.506749	-1.018462	-0.741922
42	6	0	5.016612	-0.16245	1.429494
43	1	0	3.162711	0.495113	2.275039
44	6	0	4.888306	-1.213755	-0.750253
45	1	0	2.924406	-1.34101	-1.601582
46	6	0	5.647942	-0.78423	0.342483
47	1	0	5.621166	0.158486	2.271295
48	1	0	5.351004	-1.690878	-1.605218
49	6	0	1.073959	-2.673787	0.326016
50	6	0	1.772424	-3.182174	1.417802
51	6	0	0.921608	-3.514302	-0.769235
52	6	0	2.289485	-4.46547	1.409016
53	6	0	1.434288	-4.805997	-0.789166
54	6	0	2.131167	-5.304159	0.307082
55	8	0	-4.315966	-5.592054	0.450491
56	8	0	-2.68227	6.53357	0.435737
57	8	0	6.992286	-0.92585	0.440756
58	6	0	-5.207509	-5.876138	-0.625955
59	1	0	-4.631618	-6.020947	-1.54991
60	1	0	-5.889251	-5.027265	-0.770669
61	6	0	-2.477422	7.447874	-0.63957
62	1	0	-1.400301	7.604919	-0.786379
63	1	0	-2.896666	7.027301	-1.563462
64	6	0	7.68591	-1.562779	-0.630392
65	1	0	7.529323	-0.995357	-1.557648
66	1	0	7.288893	-2.576984	-0.772076
67	9	0	-5.445157	1.651418	-1.867294
68	9	0	-2.836093	1.271579	-1.850915
69	9	0	-3.06486	-0.451072	2.53311
70	9	0	-5.714489	-0.105462	2.521573
71	9	0	1.14231	2.895765	2.507388
72	9	0	2.76611	5.017715	2.466883
73	9	0	4.132907	3.861715	-1.916632
74	9	0	2.498316	1.793206	-1.872659
75	9	0	0.281436	-3.077072	-1.85741
76	9	0	1.241117	-5.53233	-1.88918
77	9	0	1.937119	-2.433099	2.510948
78	9	0	2.94642	-4.907228	2.483694
79	6	0	-7.167821	0.945461	0.418537
80	6	0	4.395906	5.727647	0.349372

81	6	0	2.723943	-6.688146	0.381944
82	9	0	-7.695489	1.448347	-0.699216
83	9	0	-7.504363	1.764835	1.428314
84	9	0	-7.768708	-0.232601	0.653849
85	9	0	3.673259	6.844097	0.539581
86	9	0	5.116732	5.900874	-0.760211
87	9	0	5.254625	5.637143	1.378206
88	9	0	4.050848	-6.631002	0.583463
89	9	0	2.517082	-7.40105	-0.726887
90	9	0	2.201781	-7.378745	1.408877
91	6	0	9.157674	-1.608262	-0.270963
92	1	0	9.514472	-0.584948	-0.103684
93	1	0	9.275482	-2.152483	0.673742
94	6	0	9.98731	-2.277608	-1.365599
95	1	0	9.613402	-3.295953	-1.538502
96	1	0	9.857372	-1.731924	-2.310108
97	6	0	11.474166	-2.339788	-1.020896
98	1	0	11.849135	-1.321863	-0.845441
99	1	0	11.605028	-2.886172	-0.076486
100	6	0	12.314502	-3.005772	-2.10902
101	1	0	11.936592	-4.021175	-2.284464
102	1	0	12.182701	-2.458215	-3.051075
103	6	0	13.798208	-3.063739	-1.750905
104	1	0	14.384144	-3.542355	-2.540581
105	1	0	14.200547	-2.056994	-1.596227
106	1	0	13.953235	-3.629991	-0.82643
107	6	0	-3.165843	8.750028	-0.282014
108	1	0	-4.231926	8.554441	-0.115448
109	1	0	-2.751919	9.122547	0.662642
110	6	0	-2.9929	9.80114	-1.377387
111	1	0	-1.922692	9.985085	-1.543379
112	1	0	-3.394498	9.414686	-2.324034
113	6	0	-3.683587	11.121113	-1.039694
114	1	0	-4.754789	10.93876	-0.875885
115	1	0	-3.285475	11.5068	-0.09084
116	6	0	-3.513194	12.181772	-2.125819
117	1	0	-2.442709	12.362315	-2.28742
118	1	0	-3.909127	11.793658	-3.073058
119	6	0	-4.209616	13.495613	-1.77688
120	1	0	-4.076937	14.242614	-2.564525
121	1	0	-5.284755	13.340814	-1.637401
122	1	0	-3.809757	13.912644	-0.846552
123	6	0	-5.981109	-7.131102	-0.273909
124	1	0	-5.271891	-7.949988	-0.10396
125	1	0	-6.51836	-6.965037	0.6675
126	6	0	-6.966628	-7.514715	-1.376746
127	1	0	-7.664395	-6.684228	-1.55038
128	1	0	-6.42198	-7.667744	-2.31839
129	6	0	-7.760396	-8.776855	-1.044486
130	1	0	-7.063728	-9.608268	-0.868593
131	1	0	-8.306887	-8.624947	-0.103313
132	6	0	-8.747093	-9.169816	-2.142546
133	1	0	-9.440728	-8.337428	-2.317577
134	1	0	-8.199052	-9.31998	-3.081566
135	6	0	-9.534967	-10.432485	-1.799192
136	1	0	-10.235413	-10.698369	-2.595856
137	1	0	-8.86095	-11.281957	-1.646111
138	1	0	-10.110206	-10.293547	-0.877718