Supporting Information

Efficient and Simplified Strategy to Access Novel Polysulfamate Materials: from Laboratory Research to Industrial Production

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1. General information

All chemical reagents were purchased in analytical grade from commercial suppliers and unless otherwise noted, all commercial reagents were used without further purification. Merck F-254 silica gel plates were used for thin layer analytical chromatography (TLC). Column chromatography purification was carried out using EMD (Merck) Silica Gel 60 (40-63 am). ^{1}H, ^{13}C and ^{19}F NMR spectra were recorded with BRUKER Ascend 400 M & BRUKER Ascend 500 M at 25°C. The spectra were recorded in $CDCl_3$ or DMSO-d_6 as solvent. Multiplicity was described as follows: s (singlet); d (doublet); t (triplet); m (multiplet); dd (doublet of doublets), etc. and coupling constants (*J*) were given in Hz. Chemical shifts are reported in ppm relative to TMS as an internal standard. The peak around delta value of ^{1}H NMR 7.26 and 2.5 are corresponding to deuterated solvent chloroform and DMSO respectively, and the peaks around delta value of ^{1}H NMR (1.56 and 3.3) are corresponding to water contained in $CDCl_3$ and DMSO-d_6 respectively. The peak around delta values of ^{13}C NMR around 77.4 and 39.5 referenced to the appropriate NMR solvent residual peaks of $CDCl_3$ and DMSO-d_6 respectively. The molecular weight and polymer dispersity index were measured using a gel permeation chromatography (GPC) system (EliteHPLC P3100, China). Thermal properties were evaluated through differential scanning calorimetry (DSC) using a DSC 3500 Sirius instrument (Netzsch, Germany) and thermogravimetric analysis (TGA) using a TGA Q50 instrument (TA Instruments, USA). High-resolution mass spectrometric (HRMS) data were obtained on an Agilent 6210 time-of-flight HPLC/MS spectrometer (ESI-TOF).

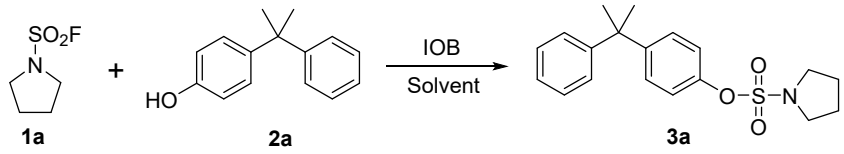
2. Nucleophilic construction of sulfamate bond

2.1 Conditions screening

Table S1 shows the conditions screening results of the reaction. Inspired by our previous work, the reaction of pyrrolidine-1-sulfonyl fluoride (**1a**) and 4-(2-phenylpropan-2-yl)phenol (**2a**) in the presence of Na_2CO_3 in DMF was employed to optimize the reaction conditions. When the reaction was carried out at rt for 1 h, the desired product 3a was obtained in trace. Increasing the reaction temperature leads to increased yields of **3a** (Table S1, entries 2-5). While the yield of 3a was decreased when the reaction temperature was 150°C (Table S1, entry 6), this might because the destruction of sulfamate bond and DMF at high temperature under alkaline conditions. Prolonging the reaction time to 2 h (Table S1, entry 7) also give a higher yield of **3a** while the yield of **3a** was decreased when the reaction time was prolonged to 4 h (Table S1,

entry 8). NMP and Sulfolane didn't give superior yields of 3a (Table S1, entries 9 and 10). When K_2CO_3 was applied, the yield of 3a was 95% (Table S1, entry 11), other IOB didn't show superior results (Table S1, entries 12-15). Then we got the optimal reaction conditions: the reaction was carried out in DMF (0.5 M) at 135℃ for 2 h in the presence of K_2CO_3.

Table S1 conditions screening of the sulfamate bond formation reaction[a]



1a 2a 3a

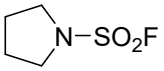
Entry	Temperature[b]	Solvent	IOB	R. T.	Yield[c]
1	rt	DMF	Na_2CO_3	1 h	trace[d]
2	50℃	DMF	Na_2CO_3	1 h	18%
3	80℃	DMF	Na_2CO_3	1 h	42%
4	120℃	DMF	Na_2CO_3	1 h	75%
5	135℃	DMF	Na_2CO_3	1 h	83%
6	150℃	DMF	Na_2CO_3	1 h	72%
7	135℃	DMF	Na_2CO_3	2 h	88%
8	135℃	DMF	Na_2CO_3	4 h	82%
9	135℃	NMP	Na_2CO_3	2 h	62%
10	135℃	Sulfolane	Na_2CO_3	2 h	85%
11	135℃	DMF	K_2CO_3	2 h	95%
12	135℃	DMF	Li_2CO_3	2 h	35%
13	135℃	DMF	$MgCO_3$	2 h	trace
14	135℃	DMF	$CaCO_3$	2 h	trace
15	135℃	DMF	NaOH	2 h	45%

[a]The reaction was carried out on 2 mmol scale in 4 mL solvent. 1.1 equiv. of IOB was applied for the formation of **3a**-**3d** and **3p**-**3s**, while 2.2 equiv. of IOB was applied for the formation of **3e**-**3o**. [b]External temperature. [c]Isolated yield. [d]Determined by HPLC. IOB, inorganic base. rt, room temperature. R. T., reaction time.

Note: we chose polar solvent including *N,N*-dimethylformamide (DMF), *N*-methylpyrrolidone (NMP) and sulfolane because these solvents exhibited better performance in our next polycondensation reaction.

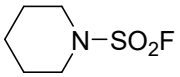
2.2 Synthesis of sulfamates

General procedure for synthesis of 1a and 1b: **1a** and **1b** were synthesized according to previous work,[3] also see section S3.2.1.



1a

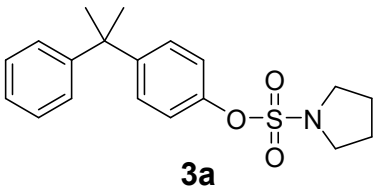
pyrrolidine-1-sulfonyl fluoride (**1a**), white solid, 95% yield. ^{1}H NMR (400 MHz, Chloroform-*d*) δ 3.49 (t, *J* = 6.9 Hz, 4H), 2.10-1.91 (m, 4H). ^{13}C NMR (100 MHz, Chloroform-*d*) δ 49.2, 25.6. ^{19}F NMR (376 MHz, Chloroform-*d*) δ 35.97.



1b

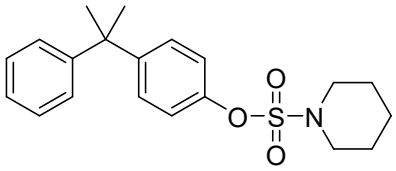
piperidine-1-sulfonyl fluoride (**1b**), white solid, 94% yield. ^{1}H NMR (400 MHz, Chloroform-*d*) δ 3.43 (*J* = 5.2 Hz, 4H), 1.74-1.68 (m, 4H), 1.65-1.61 (m, 2H). ^{13}C NMR (100 MHz, Chloroform-*d*) δ 48.0, 24.5, 23.1. ^{19}F NMR (376 MHz, Chloroform-*d*) δ 39.75.

General procedure for synthesis of 3a-3s: 2 mmol of alkylsulfamoyl fluorides (1.0 equiv.), 4 mL of DMF and K_2CO_3 (1.1 equiv. for the formation of **3a-3d** and **3p-3s** and 2.2 equiv. for the formation of **3e-3o**) were added to a 10 mL flask, then the flask was heated at 135℃ for 2 h. The reaction was quenched by water (10 mL). When the mixture was cooled to rt, the mixture was extracted with ethyl acetate and washed with brine. The combined organic layers were dried over Na_2SO_4. After filtration, the filtrate was concentrated under reduced pressure. The residue was purified by column chromatography (EtOAc-hexane elution: hexane/EtOAc (V/V) = 100:1~10:1) on silica gel to provide the sulfamates.



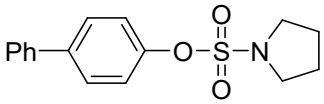
3a

4-(2-phenylpropan-2-yl)phenyl pyrrolidine-1-sulfonate (**3a**), white solid, 95% yield. 1H NMR (500 MHz, Chloroform-*d*) δ 7.28-7.16 (m, 9H), 3.43 (t, *J* = 6.7 Hz, 4H), 2.00-1.89 (m, 4H), 1.67 (s, 6H). ^{13}C NMR (125 MHz, Chloroform-*d*) δ 150.1, 149.3, 148.2, 128.2, 126.7, 125.8, 121.2, 49.2, 42.8, 30.8, 25.7. HRMS (ESI-TOF) m/z: $[M+H]^+$ Calcd for $C_{19}H_{24}NO_3S$ $[M+H]^+$: 346.1471, found 346.1473.



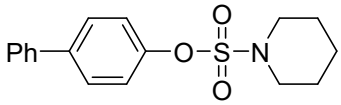
3b

4-(2-phenylpropan-2-yl)phenyl piperidine-1-sulfonate (**3b**), white solid, 96% yield. ^{1}H NMR (500 MHz, Chloroform-*d*) δ 7.21-7.07 (m, 9H), 3.28 (t, *J* = 5.5 Hz, 4H), 1.59 (s, 6H), 1.57-1.55 (m, 4H), 1.50-1.47 (m, 2H). ^{13}C NMR (126 MHz, Chloroform-*d*) δ 150.1, 149.2, 148.1, 128.1, 126.7, 125.8, 121.1, 47.9, 42.8, 30.8, 25.0, 23.5. HRMS (ESI-TOF) m/z: $[M+H]^+$ Calcd for $C_{20}H_{26}NO_3S$ $[M+H]^+$: 360.1628, found 360.1627.



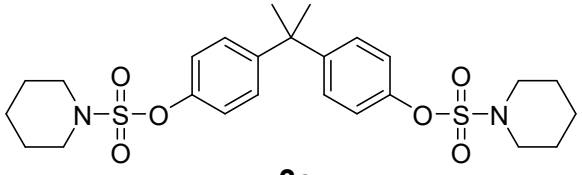
3c

[1,1'-biphenyl]-4-yl pyrrolidine-1-sulfonate (**3c**), white solid, 90% yield. ^{1}H NMR (400 MHz, Chloroform-*d*) δ 7.59 (d, *J* = 8.8 Hz, 2H), 7.56 (d, *J* = 7.2 Hz, 2H), 7.44 (t, *J* = 8.0 Hz, 2H), 7.37-7.34 (m, 3H), 3.48 (t, *J* = 6.8 Hz, 4H), 1.98-1.94 (m, 4H). ^{13}C NMR (100 MHz, Chloroform-*d*) δ 149.7, 140.0, 139.8, 128.9, 127.6, 127.1, 122.2, 49.3, 25.8. HRMS (ESI-TOF) m/z: $[M+H]^+$ Calcd for $C_{16}H_{18}NO_3S$ $[M+H]^+$: 304.1002, found 304.1003.



3d

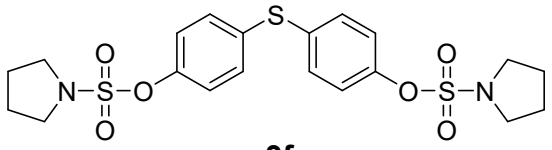
[1,1'-biphenyl]-4-yl piperidine-1-sulfonate (**3d**), white solid, 94% yield. ^{1}H NMR (400 MHz, Chloroform-*d*) δ 7.57 (d, *J* = 8.4 Hz, 2H), 7.54 (d, *J* = 7.2 Hz, 2H), 7.42 (t, *J* = 8.0 Hz, 2H), 7.35-7.32 (m, 3H), 3.49 (t, *J* = 5.6 Hz, 4H), 1.68-1.62 (m, 4H), 1.58-1.54 (m, 4H). ^{13}C NMR (100 MHz, Chloroform-*d*) δ 149.7, 140.0, 139.8, 128.9, 128.4, 127.6, 127.1, 122.1, 48.0, 25.0, 23.5. HRMS (ESI-TOF) m/z: $[M+H]^+$ Calcd for $C_{17}H_{20}NO_3S$ $[M+H]^+$: 318.1158, found 318.1155.



3e

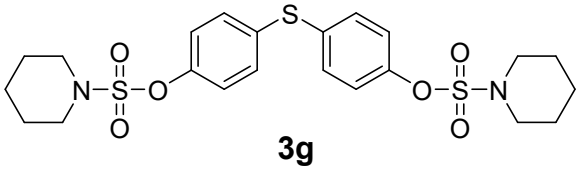
propane-2,2-diylbis(4,1-phenylene) bis(piperidine-1-sulfonate) (3e), white solid, 93% yield. ^{1}H NMR (500 MHz, Chloroform-*d*) δ 7.20 (d, *J* = 8.9 Hz, 4H), 7.16 (d, *J* = 8.8 Hz, 4H), 3.37 (t, *J* = 5.5 Hz, 8H), 1.69- 1.65 (m, 14H), 1.60-1.56 (m, 4H). ^{13}C NMR (125 MHz, Chloroform-*d*)

δ 148.6, 148.2, 128.1, 121.2, 47.9, 42.6, 30.9, 25.0, 23.5. HRMS (ESI-TOF) m/z: $[M+H]^+$ Calcd for $C_{25}H_{35}N_2O_6S_2$ $[M+H]^+$: 523.1931, found 523.1933.



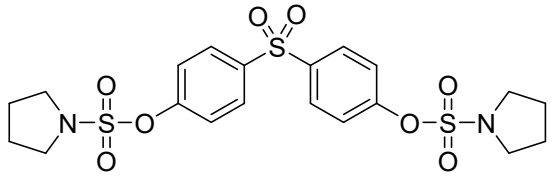
3f

thiobis(4,1-phenylene) bis(pyrrolidine-1-sulfonate) (3f), white solid, 92% yield. ^{1}H NMR (500 MHz, Chloroform-*d*) δ 7.33 (d, *J* = 8.5 Hz, 4H), 7.23 (d, *J* = 8.5 Hz, 4H), 3.46 (t, J = 5.5 Hz, 8H), 1.98-1.95 (m, 8H). ^{13}C NMR (125 MHz, Chloroform-*d*) δ 149.6, 133.7, 132.4, 122.8, 49.3, 25.7. HRMS (ESI-TOF) m/z: $[M+Na]^+$ Calcd for $C_{20}H_{24}N_2O_6S_3Na$ $[M+Na]^+$: 507.0689, found 507.0686.



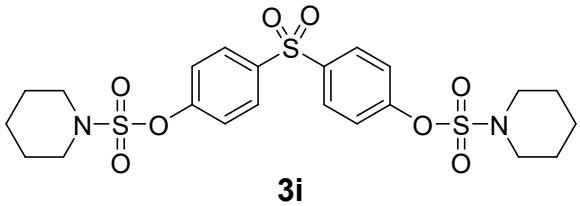
3g

thiobis(4,1-phenylene) bis(piperidine-1-sulfonate) (3g), white solid, 93% yield. ^{1}H NMR (500 MHz, Chloroform-*d*) δ 7.33 (d, *J* = 8.5 Hz, 4H), 7.22 (d, *J* = 8.5 Hz, 4H), 3.38 (t, *J* = 5.5 Hz, 8H), 1.70-1.66 (m, 8H), 1.61-1.58 (m, 4H). ^{13}C NMR (126 MHz, Chloroform-*d*) δ 149.6, 133.7, 132.4, 122.7, 48.0, 25.0, 23.4. HRMS (ESI-TOF) m/z: $[M+Na]^+$ Calcd for $C_{22}H_{28}N_2O_6S_3Na$ $[M+Na]^+$: 535.1002, found 535.1003.



3h

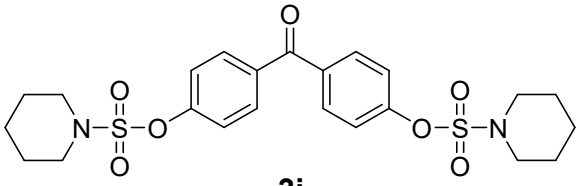
sulfonylbis(4,1-phenylene) bis(pyrrolidine-1-sulfonate) (3h), white solid, 95% yield. ^{1}H NMR (500 MHz, Chloroform-*d*) δ 7.96 (d, *J* = 8.5 Hz, 4H), 7.42 (d, *J* = 8.5 Hz, 4H), 3.48 (t, J = 5.5 Hz, 8H), 2.00-1.97 (m, 8H). ^{13}C NMR (125 MHz, Chloroform-*d*) δ 154.2, 139.0, 129.8, 122.5, 49.4, 25.7. HRMS (ESI-TOF) m/z: $[M+H]^+$ Calcd for $C_{20}H_{25}N_2O_8S_3$ $[M+H]^+$: 517.0768, found 517.0764.



3i

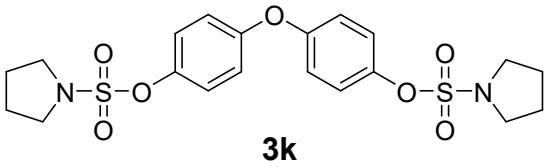
sulfonylbis(4,1-phenylene) bis(piperidine-1-sulfonate) (3i), white solid, 96% yield. ^{1}H NMR (500 MHz, Chloroform-*d*) δ 7.24 (d, *J* = 8.5 Hz, 4H), 7.16 (d, *J* = 8.5 Hz, 4H), 3.35 (t, *J* = 5.5

Hz, 8H), 1.64-1.63 (m, 8H), 1.57-1.53 (m, 4H). ^{13}C NMR (125 MHz, Chloroform-*d*) δ 148.0, 146.6, 128.4, 121.4, 47.9, 25.0, 23.5. HRMS (ESI-TOF) m/z: $[M+H]^+$ Calcd for $C_{22}H_{29}N_2O_8S_3$ $[M+H]^+$: 545.1081, found 545.1082.



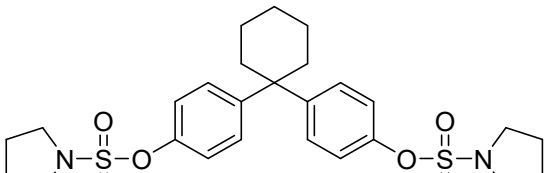
3j

carbonylbis(4,1-phenylene) bis(piperidine-1-sulfonate) (3j), white solid, 92% yield. ^{1}H NMR (500 MHz, Chloroform-*d*) δ 7.83 (d, *J* = 8.5 Hz, 4H), 7.40 (d, *J* = 8.5 Hz, 4H), 3.43 (t, *J* = 4.5 Hz, 8H), 1.72-1.69 (m, 8H), 1.63-1.60 (m, 4H). ^{13}C NMR (125 MHz, Chloroform-*d*) δ 194.0, 153.6, 135.3, 131.8, 121.5, 48.0, 24.9, 23.4. HRMS (ESI-TOF) m/z: $[M+H]^+$ Calcd for $C_{23}H_{29}N_2O_7S_2$ $[M+H]^+$: 509.1411, found 509.1411.



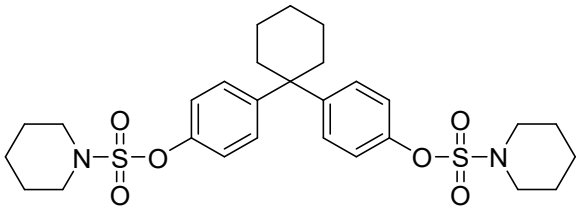
3k

oxybis(4,1-phenylene) bis(pyrrolidine-1-sulfonate) (3k), white solid, 91% yield. ^{1}H NMR (500 MHz, Chloroform-*d*) δ 7.24 (d, *J* = 8.5 Hz, 4H), 7.17 (d, *J* = 8.5 Hz, 4H), 3.42 (t, *J* = 6.5 Hz, 8H), 1.93-1.91 (m, 8H). ^{13}C NMR (125 MHz, Chloroform-*d*) δ 148.0, 146.7, 128.4, 121.5, 49.2, 25.7. HRMS (ESI-TOF) m/z: $[M+H]^+$ Calcd for $C_{20}H_{25}N_2O_7S_2$ $[M+H]^+$: 469.1098, found 469.1095.



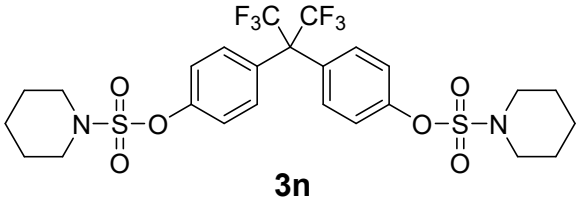
3l

cyclohexane-1,1-diylbis(4,1-phenylene) bis(pyrrolidine-1-sulfonate) (3l), white solid, 96% yield. ^{1}H NMR (500 MHz, Chloroform-*d*) δ 7.24 (d, *J* = 8.5 Hz, 4H), 7.17 (d, *J* = 8.5 Hz, 4H), 3.42 (t, *J* = 6.5 Hz, 8H), 2.24-2.22 (m, 4H), 1.93-1.91 (m, 8H), 1.55-1.49 (m, 6H). ^{13}C NMR (125 MHz, Chloroform-*d*) δ 148.0, 146.7, 128.4, 121.5, 49.2, 45.8, 37.2, 26.2, 25.7, 22.8. HRMS (ESI-TOF) m/z: $[M+H]^+$ Calcd for $C_{26}H_{35}N_2O_6S_2$ $[M+H]^+$: 535.1931, found 535.1932.



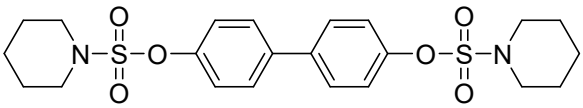
3m

cyclohexane-1,1-diylbis(4,1-phenylene) bis(piperidine-1-sulfonate) (3m), white solid, 95% yield. ^{1}H NMR (500 MHz, Chloroform-*d*) δ 7.24 (d, *J* = 8.5 Hz, 4H), 7.16 (d, *J* = 8.5 Hz, 4H), 3.35 (t, *J* = 5.5 Hz, 8H), 2.24-2.22 (m, 4H), 1.66-1.62 (m, 8H), 1.56-1.48 (m, 10H). ^{13}C NMR (125 MHz, Chloroform-*d*) δ 148.0, 146.6, 128.4, 121.4, 47.9, 45.8, 37.2, 26.2, 25.0, 23.4, 22.8. HRMS (ESI-TOF) m/z: $[M+H]^+$ Calcd for $C_{28}H_{39}N_2O_6S_2$ $[M+H]^+$: 563.2244, found 563.2245.



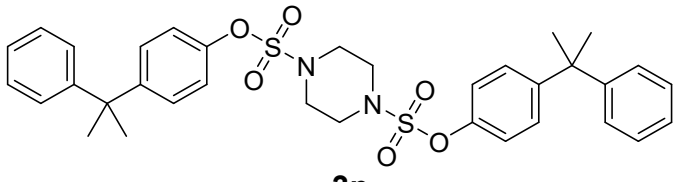
3n

(perfluoropropane-2,2-diyl)bis(4,1-phenylene) bis(piperidine-1-sulfonate) (3n), white solid, 92% yield. ^{1}H NMR (500 MHz, Chloroform-*d*) δ 7.32 (d, *J* = 8.5 Hz, 4H), 7.22 (d, *J* = 9.0 Hz, 4H), 3.33 (t, *J* = 5.5 Hz, 8H), 1.63-1.58 (m, 8H), 1.54-1.50 (m, 4H). ^{13}C NMR (125 MHz, Chloroform-*d*) δ 150.8, 131.7, 131.1, 123.9 (q, *J* = 286.6 Hz, 2C), 121.4, 64.2-63.5 (m, 1C), 48.0, 24.9, 23.3. HRMS (ESI-TOF) m/z: $[M+H]^+$ Calcd for $C_{25}H_{29}F_6N_2O_6S_2$ $[M+H]^+$: 631.1366, found 631.1367.



3o

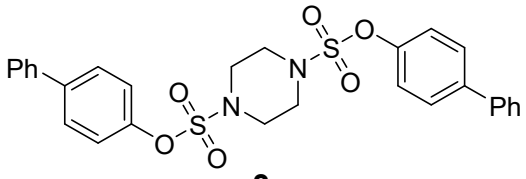
1,1'-biphenyl]-4,4'-diyl bis(pyrrolidine-1-sulfonate) (3o), white solid, 94% yield. ^{1}H NMR (500 MHz, Chloroform-*d*) δ 7.33 (d, *J* = 8.5 Hz, 4H), 7.22 (d, *J* = 8.5 Hz, 4H), 3.38 (t, *J* = 5.5 Hz, 8H), 1.70-1.65 (m, 8H), 1.61-1.58 (m, 4H). ^{13}C NMR (125 MHz, Chloroform-*d*) δ 149.6, 133.7, 132.4, 122.7, 48.0, 25.0, 23.4.



3p

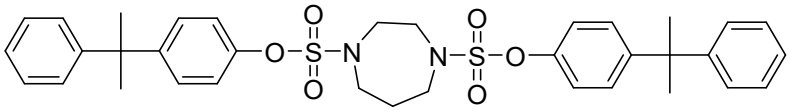
bis(4-(2-phenylpropan-2-yl)phenyl) piperazine-1,4-disulfonate (3p), white solid, 95% yield. ^{1}H NMR (500 MHz, Chloroform-*d*) δ 7.27-7.10 (m, 18H), 3.49 (t, *J* = 5.5 Hz, 8H), 1.67 (s, 12H). ^{13}C NMR (125 MHz, Chloroform-*d*) δ 149.9, 147.7 (2C), 128.3, 128.1, 126.7, 125.9,

121.2, 51.8, 48.7, 30.8, 28.1. HRMS (ESI-TOF) m/z: $[M+Na]^+$ Calcd for $C_{34}H_{38}N_2O_6S_2Na$ $[M+Na]^+$: 657.2064, found 657.2064.



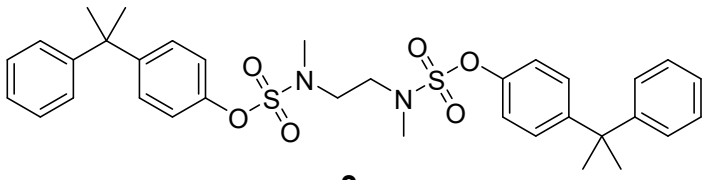
3q

di([1,1'-biphenyl]-4-yl) piperazine-1,4-disulfonate (3q), white solid, 92% yield. ^{1}H NMR (500 MHz, Chloroform-*d*) δ 7.58-7.55 (m, 4H), 7.54 (d, *J* = 7.2 Hz, 4H), 7.44 (t, *J* = 8.0 Hz, 4H), 7.37-7.34 (m, 6H), 3.45 (t, *J* = 5.5 Hz, 8H). ^{13}C NMR (125 MHz, Chloroform-*d*) δ 149.8, 140.1, 139.7, 128.9, 128.2, 127.7, 127.2, 122.2, 49.3. HRMS (ESI-TOF) m/z: $[M+Na]^+$ Calcd for $C_{28}H_{26}N_2O_6S_2Na$ $[M+Na]^+$: 573.1125, found 573.1123.



3r

bis(4-(2-phenylpropan-2-yl)phenyl) 1,4-diazepane-1,4-disulfonate (3r), white solid, 95% yield. ^{1}H NMR (400 MHz, Chloroform-*d*) δ 7.29-7.23 (m, 8H), 7.19 (d, *J* = 8.0 Hz, 6H), 7.13 (d, *J* = 8.8 Hz, 4H), 3.53-3.50 (m, 8H), 2.01 (q, *J* = 6.3 Hz, 2H), 1.67 (s, 12H). ^{13}C NMR (100 MHz, Chloroform-*d*) δ 153.3, 146.9, 128.9, 128.2, 127.5, 126.7, 125.9, 118.3, 51.8, 48.1, 45.1, 31.8, 28.7. HRMS (ESI-TOF) m/z: $[M+Na]^+$ Calcd for $C_{35}H_{40}N_2O_6S_2Na$ $[M+Na]^+$: 671.2220, found 671.2223.



3s

bis(4-(2-phenylpropan-2-yl)phenyl) ethane-1,2-diylbis(methylsulfamate) (3s), white solid, 92% yield. ^{1}H NMR (400 MHz, Chloroform-*d*) δ 7.29-7.17 (m, 14H), 7.14 (d, *J* = 8.8 Hz, 4H), 3.42 (t, *J* = 5.6 Hz, 4H), 2.99 (s, 6H), 1.66 (s, 12H). ^{13}C NMR (100 MHz, Chloroform-*d*) δ 150.0, 149.8, 147.8, 128.3, 127.4, 127.1, 125.9, 121.2, 50.7, 44.5, 39.1, 26.9. HRMS (ESI-TOF) m/z: $[M+H]^+$ Calcd for $C_{34}H_{41}N_2O_6S_2$ $[M+H]^+$: 637.2401, found 637.2403.

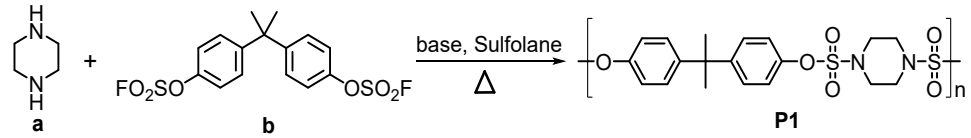
3. Laboratory synthesis of PSA

3.1 Conditions screening

Reaction of piperazine with propane-2,2-diylbis(4,1-phenylene) bis(sulfurofluoridate)[2].

The reaction of piperazine (**a**) and propane-2,2-diylbis(4,1-phenylene) bis(sulfurofluoridate) (**b**) were applied to verify the polycondensation of aryl fluorosulfates and aliphatic amines.

Table S2. Conditions screening for the reaction of **a** and **b**[a]



Entry	Base	Catalyst	T/°C	M_n^{PS}/kDa	PDI
1	Na_2CO_3	--	170	4.1	2.32
2	Na_2CO_3	DMAP (10%)	170	11.0	1.93
3	K_2CO_3	DMAP (10%)	170	7.1	2.12
4	Li_2CO_3	DMAP (10%)	170	14.8	1.89
5	$NaHCO_3$	DMAP (10%)	170	12.4	1.92
6	Na_3PO_4	DMAP (10%)	170	10.2	1.96
7	Na_2CO_3	DMAP (10%)	200	19.2	1.85
8	Li_2CO_3	DMAP (10%)	200	15.2	1.85
9	Na_2CO_3	DMAP (10%)	220	13.8	1.95

[a]The reaction was carried out with 2.5 mmol **a** (1.00 equiv) and **b** (1.01 equiv) in 5 mL of solvent in the presence of 2.2 equiv of base for 6 h. T, External temperature. M_n^{PS}, number-average molecular weight with polystyrene as standard. PDI, polydispersity index.

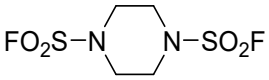
From the results above we found that the reaction of **a** and **b** resulted in a relative lower M_n of the **P1**, though catalyst (DMAP) was added and the reaction temperature was increased. Thus, in our study, PSAs were synthesized through the nucleophilic polycondensation between aryl phenols and alkylsulfamoyl fluorides.

3.2 Synthesis of PSAs from diverse building blocks

3.2.1 Synthesis of alkylsulfamoyl fluorides[3]

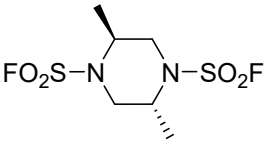
In a 500 mL round-bottom flask equipped with a stir bar, the secdary amines (100 mmol, 1 eq.) was dissolved in 100 mL dichloromethane (DCM). Triethylamine (300 mmol, 3 eq.) and DMAP (100 mmol, 1 eq.) were added and the resulting solution was stirred at room temperature for 5 mins. The flask was charged with gentle vacuum, then quickly filled with SO_2F_2 gas *via* a syringe attached balloon. The reaction was allowed stirring at room temperature until the full conversion of starting compound to target bisfluorosulfate, monitored by TLC. DCM was then evaporated away on rotary evaporator, the resulting crude product was dissolved in 100 mL

ethyl acetate (EtOAc). It was subsequently washed with 50 mL aqueous HCl (1.0 M, 3 times), 50 mL saturated aqueous solution of $NaHCO_3$, then 50 mL saturated brine. The organic phase was dried over anhydrous Na_2SO_4. After filtration, the removal of EtOAc gave alkylsulfamoyl fluorides as white solid, which was further purified through column chromatography (silica gel 200-300 mesh size) using *n*-hexanes/EtOAc = 50:1-10:1 as eluent.



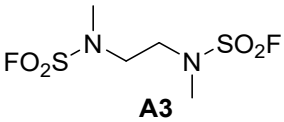
A1

piperazine-1,4-disulfonyl difluoride (A1), white solid, 96% yield. ^{1}H NMR (400 MHz, Chloroform-*d*) δ 3.65 (t, *J* = 1.2 Hz, 8H). ^{13}C NMR (100 MHz, DMSO-d_6) δ 46.1. ^{19}F NMR (376 MHz, DMSO-d_6) δ 42.57.



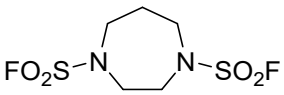
A2

(2S,5R)-2,5-dimethylpiperazine-1,4-disulfonyl difluoride (A2), white solid, 92% yield.^{1}H NMR (500 MHz, Chloroform-*d*) δ 4.25-4.20 (m, 2H), 3.54-3.51 (m, 4H), 1.37 (d, *J* = 6.9 Hz, 6H).^{13}C NMR (125 MHz, Chloroform-*d*) δ 49.3, 44.4, 12.6. ^{19}F NMR (376 MHz, Chloroform-*d*) δ 48.53.



A3

ethane-1,2-diylbis(methylsulfamoyl fluoride) (A3), white solid, 96% yield. ^{1}H NMR (400 MHz, Chloroform-*d*) δ 3.60 (t, *J* = 1.2 Hz, 4H), 3.14 (s, 6H). ^{13}C NMR (100 MHz, Chloroform-*d*) δ 47.7, 35.7. ^{19}F NMR (376 MHz, Chloroform-*d*) δ 49.84.



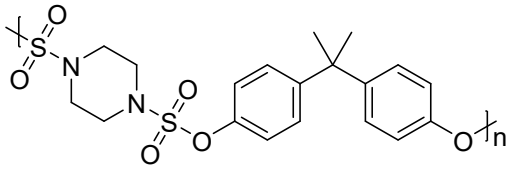
A4

1,4-diazepane-1,4-disulfonyl difluoride (A4), white solid, 94% yield. ^{1}H NMR (400 MHz, Chloroform-*d*) δ 3.77-3.70 (m, 8H), 2.19-2.12 (m, 2H). ^{13}C NMR (100 MHz, DMSO-d_6) δ 45.9, 43.8, 22.7. ^{19}F NMR (376 MHz, Chloroform-*d*) δ 49.85 (d, *J* = 6.7 Hz).

3.2.2 Synthesis of PSAs[4,5]

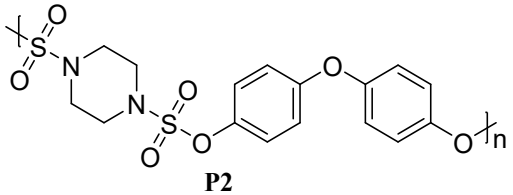
General procedure: Aryl phenols (2.50 mmol, 1.0 eq) and alkylsulfamoyl fluorides (2.55mol, 1.02eq) were combined in a 25 mL glass vial equipped with magnetic stir bar. Sulfolane (5.0 mL) was added, and the vial was placed into a pre-heated 150℃ oil bath with stirring. After 2

min, commercially available anhydrous K_2CO_3 (2.2 eq) was added in one portion. The reaction was run for 6 hours, during which course the reaction mixture turned highly viscous while the moisture appeared. At the end of the reaction, it was allowed to cool to 70℃ and the mixture was slowly poured into 50 mL of cold water under vigorous stirring. Polymers precipitated as white fiber or powder once the sulfolane solution touched the water. The polymers were collected via filtration and then refluxed in water for 1 h to remove the salts and sulfolane. Finally, the polymers were dried at 40℃ for 12 hours in vacuo. Molecular weight and polymer distribution were determined on GPC. The thermal properties were determined by DSC and TGA analysis.



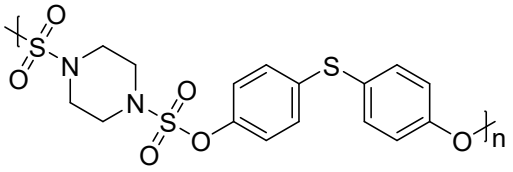
P1

P1, White fiber, 95% yield. ^{1}H NMR (500 MHz, DMSO-d_6) δ 7.26-7.20 (m, 8H), 3.41 (s, 8H), 1.58 (s, 6H). ^{13}C NMR (125 MHz, DMSO-d_6) δ 149.3, 147.9, 128.6, 121.8, 46.2, 42.7, 30.8. M_n^{PS} = 155 kDa, PDI = 1.65, T_g (DSC) = 147.2℃, T_d (5% weight loss, TGA) = 339.5℃



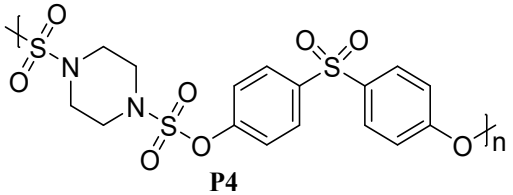
P2

P2, White fiber, 96% yield. ^{1}H NMR (400 MHz, DMSO-d_6) δ 7.37 (d, J = 8.4 Hz, 4H), 7.10 (d, J = 8.6 Hz, 4H), 3.45 (s, 8H). ^{13}C NMR (100 MHz, DMSO-d_6) δ 155.4, 145.6, 124.1, 120.5, 46.4. M_n^{PS} = 110 kDa, PDI = 1.56, T_g (DSC) = 129.9℃, T_d (5% weight loss, TGA) = 341.3℃.



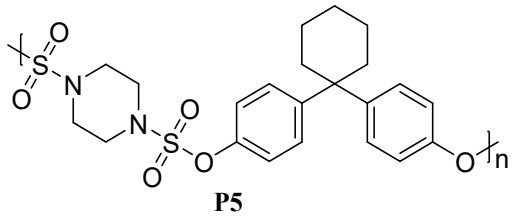
P3

P3, White fiber, 96% yield. ^{1}H NMR (400 MHz, DMSO-d_6) δ 7.42 (d, J = 8.6 Hz, 4H), 7.36 (d, J = 8.4 Hz, 4H), 3.45 (s, 8H). ^{13}C NMR (100 MHz, DMSO-d_6) δ 149.3, 133.8, 132.9, 123.6, 46.4. M_n^{PS} = 90 kDa, PDI = 1.41, T_g (DSC) = 128.3℃, T_d (5% weight loss, TGA) = 336.3℃.



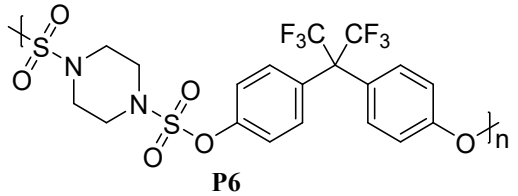
P4

P4, White fiber, 95% yield. ^{1}H NMR (400 MHz, DMSO-d_6) δ 8.11 (d, J = 8.8 Hz, 4H), 7.60 (d, J = 8.5 Hz, 4H), 3.50 (s, 8H). ^{13}C NMR (100 MHz, DMSO-d_6) δ 153.7, 139.5, 130.6, 123.5, 46.3. M_n^{PS} = 13 kDa, PDI = 1.36, T_g (DSC) = 174.9℃, T_d (5% weight loss, TGA) = 322.6℃.



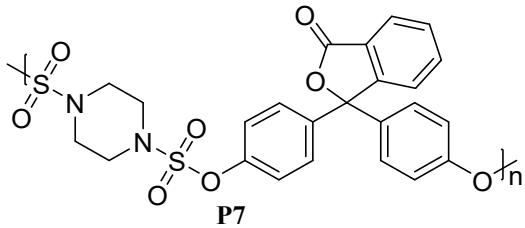
P5

P5, White fiber, 97% yield. ^{1}H NMR (400 MHz, DMSO-d_6) δ 7.34 (d, J = 8.5 Hz, 4H), 7.21 (d, J = 8.4 Hz, 4H), 3.38 (s, 8H), 2.22-2.17 (m, 4H), 1.40-1.36 (m, 6H). ^{13}C NMR (100 MHz, DMSO-d_6) δ 147.6, 147.3, 129.0, 121.9, 46.2, 45.8, 36.6, 26.0, 22.8. M_n^{PS} = 60 kDa, PDI = 1.34, T_g (DSC) = 215.1℃, T_d (5% weight loss, TGA) = 356.6℃.



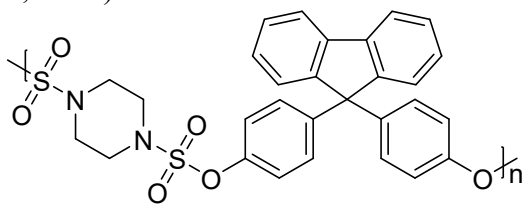
P6

P6, White fiber, 96% yield. ^{1}H NMR (500 MHz, DMSO-d_6) δ 7.54 (d, J = 8.9 Hz, 4H), 7.49 (d, J = 8.5 Hz, 4H), 3.56 (s, 8H). ^{13}C NMR (125 MHz, DMSO-d_6) δ 150.6, 132.1, 131.1, 125.3 (q, J = 3.5 Hz, 1C), 123.1-122.7 (m, 1C), 122.5, 46.3. M_n^{PS} = 67 kDa, PDI = 1.71, T_g (DSC) = 152.9℃, T_d (5% weight loss, TGA) = 374.9℃.



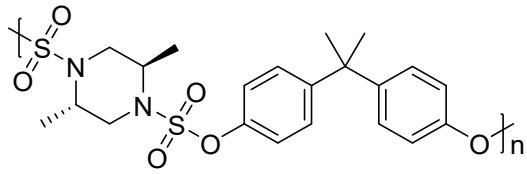
P7

P7, White fiber, 95% yield. ^{1}H NMR (400 MHz, DMSO-d_6) δ 7.90 (t, J = 9.0 Hz, 2H), 7.81 (t, J = 7.6 Hz,1H), 7.65 (t, J = 7.4 Hz, 1H), 7.38 (d, J = 8.7 Hz, 4H), 7.33 (d, J = 8.5 Hz, 4H), 3.41 (s, 8H). ^{13}C NMR (100 MHz, DMSO-d_6) δ 168.9, 151.2, 150.0, 139.6, 135.8, 130.8, 129.1, 126.3, 125.0, 124.6, 122.6, 122.0, 121.1, 90.2, 46.3. M_n^{PS} = 45 kDa, PDI = 1.27, T_g (DSC) = 221.2℃, T_d (5% weight loss, TGA) = 359.1℃.



P8

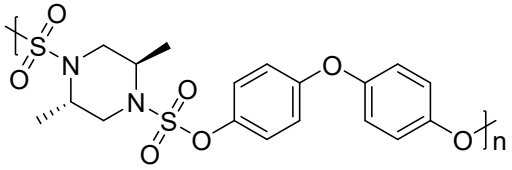
P8, White fiber, 97% yield. ^{1}H NMR (400 MHz, DMSO-d_6) δ 7.85 (d, J = 7.6 Hz, 2H), 7.38-7.32 (m, 4H), 7.25-7.12 (m, 10H), 3.34 (s, 8H). ^{13}C NMR (100 MHz, DMSO-d_6) δ 150.2, 148.7, 144.7, 139.9, 129.6, 128.6, 126.3, 122.1, 121.2, 64.4, 46.1. M_n^{PS} = 140 kDa, PDI = 1.69, T_g (DSC) = 234.8℃, T_d (5% weight loss, TGA) = 360.5℃.



P9

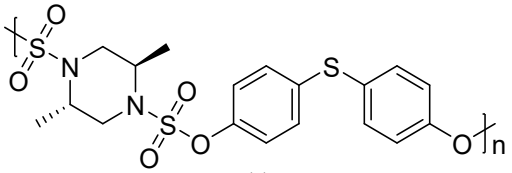
P9, White fiber, 97% yield. ^{1}H NMR (400 MHz, DMSO-d_6) δ 7.27 (d, J = 8.3 Hz, 4H), 7.20 (d, J = 8.4 Hz, 4H), 4.23-4.13 (m, 2H), 3.50-3.43(m, 4H), 1.61 (s, 6H), 1.10 (d, J = 6.5 Hz, 6H).

^{13}C NMR (100 MHz, DMSO-d_6) δ 149.3, 148.0, 128.6, 121.6, 50.1, 45.6, 42.7, 30.8, 13.6. M_n^{PS} = 42 kDa, PDI = 1.50, T_g (DSC) = 153.9℃, T_d (5% weight loss, TGA) = 344.6℃.



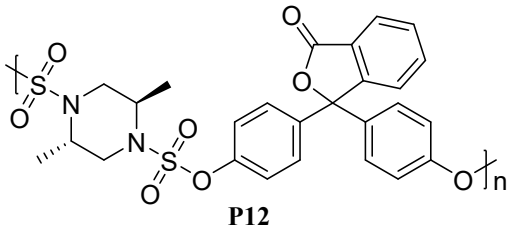
P10

P10, White fiber, 95% yield. ^{1}H NMR (500 MHz, DMSO-d_6) δ 7.33 (d, J = 8.5 Hz, 4H), 7.10 (d, J = 8.4 Hz, 4H), 4.21- 4.17 (m, 2H), 3.55-3.44 (m, 4H), 1.22-1.19 (m, 6H). ^{13}C NMR (125 MHz, DMSO-d_6) δ 155.4, 145.7, 124.0, 120.4, 50.2, 45.7, 13.8. M_n^{PS} = 85 kDa, PDI = 1.64, T_g (DSC) = 136.7℃, T_d (5% weight loss, TGA) = 329.7℃.



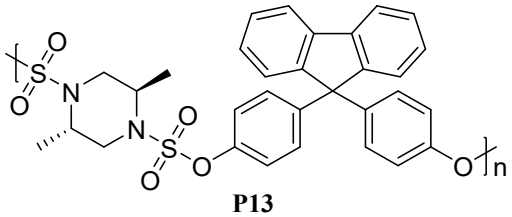
P11

P11, White fiber, 92% yield.^{1}H NMR (400 MHz, DMSO-d_6) δ 7.42 (d, J = 8.2 Hz, 4H), 7.32 (d, J = 8.4 Hz, 4H), 4.21-4.15 (m, 2H), 3.56-3.44 (m, 4H), 1.19 (d, J =6.8 Hz, 6H). ^{13}C NMR (100 MHz, DMSO-d_6) δ 149.5, 133.8, 133.0, 123.4, 50.2, 45.7, 13.7. M_n^{PS} = 34 kDa, PDI = 1.57, T_g (DSC) = 126.5℃, T_d (5% weight loss, TGA) = 327.2℃.



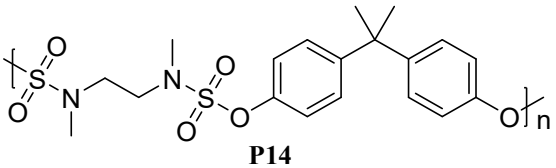
P12

P12, White fiber, 95% yield. 1H NMR (400 MHz, DMSO-d6) δ 8.00-7.95 (m, 2H), 7.91 (d, J = 7.6 Hz, 1H), 7.72 (t, J = 7.5 Hz, 1H), 7.47 (d, J = 8.5 Hz, 4H), 7.38 (d, J = 8.5 Hz, 4H), 4.22-4.19 (m, 2H), 3.58-3.54 (m, 4H), 1.17 (d, J =5.2 Hz, 6H). ^{13}C NMR (125 MHz, DMSO-d_6) δ 168.9, 164.3, 151.2, 150.1, 139.6, 135.8, 130.8, 129.0, 126.3, 125.0, 124.6, 122.4, 90.2, 50.2, 45.7, 13.6. M_n^{PS} = 96 kDa, PDI = 1.50, T_g (DSC) = 224.2℃, T_d (5% weight loss, TGA) = 309.7℃.



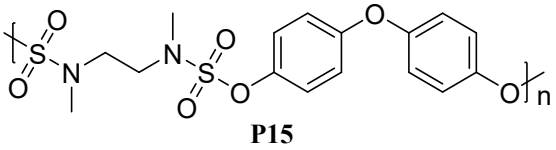
P13

P13, White fiber, 97% yield. ^{1}H NMR (400 MHz, DMSO-d_6) δ 7.88 (d, J = 7.7 Hz, 2H), 7.41-7.34 (m, 4H), 7.31-7.16 (m, 10H), 4.10-4.05 (m, 2H), 3.48-3.45 (m, 4H), 1.06-1.01 (m, 6H). ^{13}C NMR (100 MHz, DMSO-d_6) δ 150.3, 148.9, 144.6, 139.9, 129.7, 128.6, 126.3, 122.1, 121.2, 64.5, 50.1, 45.6, 13.5. M_n^{PS} = 35 kDa, PDI = 1.50, T_g (DSC) = 232.6℃, T_d (5% weight loss, TGA) = 346.8℃.



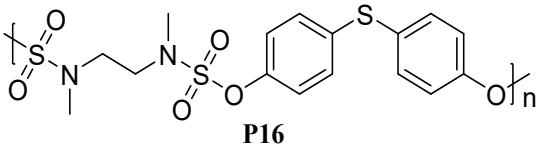
P14

P14, White fiber, 95% yield. ^{1}H NMR (500 MHz, DMSO-d_6) δ 7.24 (d, J = 8.5 Hz, 4H), 7.18 (d, J = 8.1 Hz, 4H), 3.33 (s, 4H), 2.88 (s, 6H), 1.58 (s, 6H). ^{13}C NMR (125 MHz, DMSO-d_6) δ 149.2, 148.0, 128.5, 121.9, 48.4, 42.6, 36.1, 30.8. M_n^{PS} = 64 kDa, PDI = 1.46, T_g (DSC) = 88.6℃, T_d (5% weight loss, TGA) = 337.3℃.



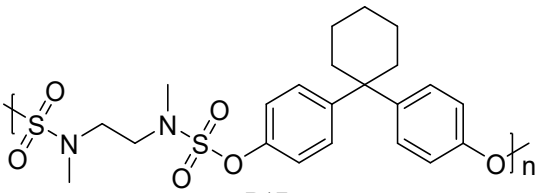
P15

P15, White fiber, 95% yield. ^{1}H NMR (400 MHz, DMSO-d_6) δ 7.32 (d, J = 7.7 Hz, 4H), 7.10 (d, J = 7.8 Hz, 4H), 3.47-3.44 (m, 4H), 2.93 (s, 6H). ^{13}C NMR (100 MHz, DMSO-d_6) δ 155.4, 145.7, 124.2, 120.4, 48.6, 36.3. M_n^{PS} = 81 kDa, PDI = 1.53, T_g (DSC) = 74.4℃, T_d (5% weight loss, TGA) = 290.8℃.



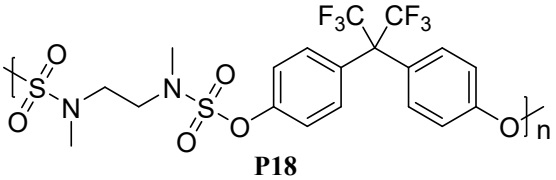
P16

P16, White fiber, 96% yield. ^{1}H NMR (500 MHz, DMSO-d_6) δ 7.41 (d, J = 8.0 Hz, 4H), 7.33 (d, J = 8.0 Hz, 4H), 3.45-3.42 (m, 4H), 2.94 (s,6H). ^{13}C NMR (125 MHz, DMSO-d_6) δ 149.4, 133.7, 132.8, 123.7, 48.6, 36.2. M_n^{PS} = 63 kDa, PDI = 1.61, T_g (DSC) = 72.3℃, T_d (5% weight loss, TGA) = 308.7℃.



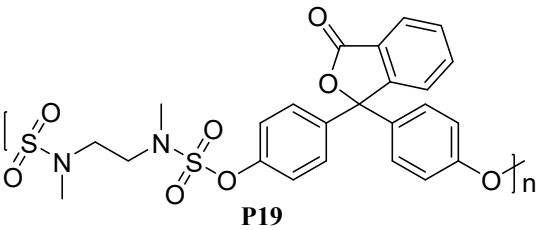
P17

P17, White fiber, 98% yield. ^{1}H NMR (500 MHz, DMSO-d_6) δ 7.35 (d, J = 8.4 Hz, 4H), 7.19 (d, J = 8.3 Hz, 4H), 3.31 (s, 4H), 2.86 (s, 6H), 2.21 (s, 4H), 1.40 (s, 6H). ^{13}C NMR (125 MHz, DMSO-d_6) δ 147.7, 147.2, 128.9, 122.1, 48.4, 45.8, 36.7, 36.2, 26.0, 22.9. M_n^{PS} = 103 kDa, PDI = 1.61, T_g (DSC) = 102.2℃, T_d (5% weight loss, TGA) = 341.7℃.



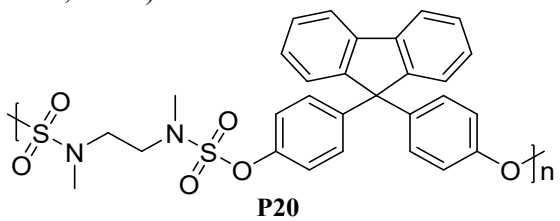
P18

P18, White fiber, 96% yield. ^{1}H NMR (500 MHz, DMSO-d_6) δ 7.45 (s, 8H), 3.46 (s, 4H), 2.97 (s, 6H). ^{13}C NMR (125 MHz, DMSO-d_6) δ 150.69, 132.0, 125.3 (q, J = 3.5 Hz, 1C), 123.1-122.8 (m, 1C), 122.7, 122.6, 48.7, 36.2. M_n^{PS} = 120 kDa, PDI = 1.57, T_g (DSC) = 96.5℃, T_d (5% weight loss, TGA) = 335.7℃.



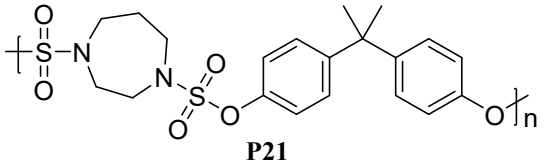
P19

P19, White fiber, 98% yield. ^{1}H NMR (400 MHz, DMSO-d_6) δ 7.97-7.92 (m, 2H), 7.86 (t, J = 7.7 Hz, 1H), 7.69 (t, J = 7.5 Hz, 1H), 7.42 (d, J = 8.6 Hz, 4H), 7.35 (d, J = 8.4 Hz, 4H), 3.46-3.43 (m, 6H), 2.91 (s, 6H). ^{13}C NMR (125 MHz, DMSO-d_6) δ 168.9, 151.3, 150.1, 139.5, 135.8, 130.8, 129.0, 126.3, 125.0, 124.6, 122.7, 90.3, 48.5, 36.2. M_n^{PS} = 47 kDa, PDI = 1.41, T_g (DSC) = 141.9℃, T_d (5% weight loss, TGA) = 351.9℃.



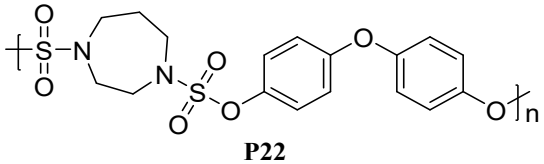
P20

P20, White fiber, 96% yield. ^{1}H NMR (500 MHz, DMSO-d_6) δ 7.92 (d, J = 7.6 Hz, 2H), 7.44-7.37 (m, 4H), 7.29 (t, J = 7.4 Hz, 2H), 7.21-7.17 (m, 8H), 3.49-3.41 (m, 4H), 2.87 (s, 6H). ^{13}C NMR (125 MHz, DMSO-d_6) δ 150.3, 148.9, 144.6, 139.9, 129.6, 128.6, 126.4, 122.3, 64.5, 48.4, 36.1. M_n^{PS} = 72 kDa, PDI = 1.45, T_g (DSC) = 171.2℃, T_d (5% weight loss, TGA) = 351.7℃.



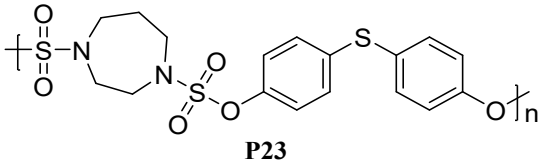
P21

P21, White fiber, 98% yield. ^{1}H NMR (500 MHz, DMSO-d_6) δ 7.32 (d, J = 8.4 Hz, 4H), 7.25 (d, J = 8.4 Hz, 4H), 3.55-3.49 (m, 8H), 1.86-1.82 (m, 2H), 1.67 (s, 6H). ^{13}C NMR (100 MHz, DMSO-d_6) δ 149.2, 147.91, 128.5, 121.9, 49.9, 48.4, 42.7, 30.8, 28.9. M_n^{PS} = 64 kDa, PDI = 1.52, T_g (DSC) = 112.0℃, T_d (5% weight loss, TGA) = 342.8℃.



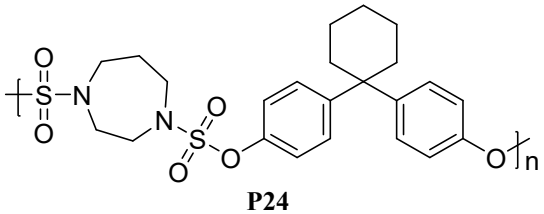
P22

P22, White fiber, 98% yield. ^{1}H NMR (500 MHz, DMSO-d_6) δ 7.34 (d, J = 8.5 Hz, 4H), 7.10 (d, J = 8.6 Hz, 4H), 3.51-3.46 (m, 8H), 1.86-1.81 (m, 2H). ^{13}C NMR (125 MHz, DMSO-d_6) δ 155.4, 145.6, 124.3, 120.4, 50.0, 48.5, 29.0. M_n^{PS} = 44 kDa, PDI = 1.51, T_g (DSC) = 97.8℃, T_d (5% weight loss, TGA) = 317.4℃.



P23

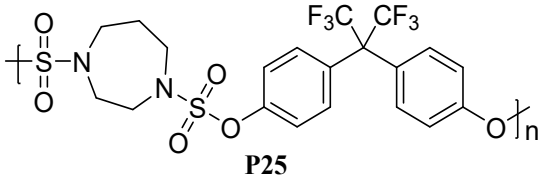
P23, White fiber, 95% yield. ^{1}H NMR (400 MHz, DMSO-d_6) δ 7.48-7.45 (m, 4H), 7.38 (d, J = 8.4 Hz, 4H), 3.59-3.51 (m, 8H), 1.94-1.86 (m, 2H). ^{13}C NMR (125 MHz, DMSO-d_6) δ 155.5, 145.7,124.4, 120.3, 50.2, 48.7, 29.1. M_n^{PS} = 37 kDa, PDI = 1.71, T_g (DSC) = 94.2℃, T_d (5% weight loss, TGA) = 337.2℃.



P24

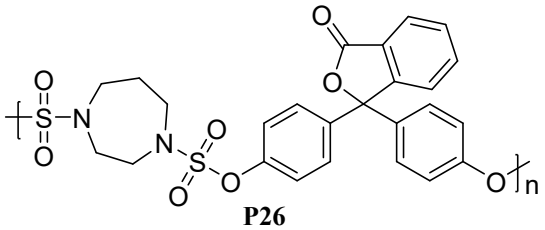
P24, White fiber, 95% yield. ^{1}H NMR (500 MHz, DMSO-d_6) δ 7.33 (d, J = 8.3 Hz, 4H), 7.18 (d, J = 8.2 Hz, 4H), 3.47-3.43 (m, 8H), 2.20 (s, 4H), 1.74-1.70 (m, 2H), 1.43-1.38 (m, 6H). ^{13}C

NMR (125 MHz, DMSO-d_6) δ 158.2, 147.7, 128.9, 122.0, 49.8, 48.4, 45.8, 36.7, 28.8,26.0, 22.6. M_n^{PS} = 37 kDa, PDI = 1.51, T_g (DSC) = 127.4℃, T_d (5% weight loss, TGA) = 328.0℃.



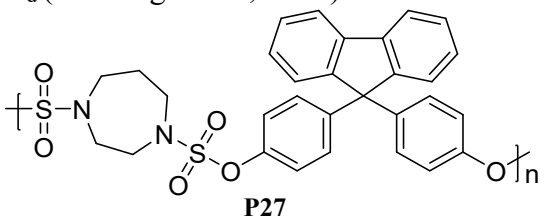
P25

P25, White fiber, 94% yield. ^{1}H NMR (400 MHz, DMSO-d_6) δ 7.48-7.45 (m, 8H), 3.62-3.54 (m, 8H), 1.90-1.84 (m, 2H). ^{13}C NMR (100 MHz, DMSO-d_6) δ 150.6, 132.1, 131.1, 125.7 (q, J = 3.5 Hz, 1C), 122.7, 122.6, 49.8, 48.5, 28.8. M_n^{PS} = 66 kDa, PDI = 1.44, T_g (DSC) = 122.2℃, T_d (5% weight loss, TGA) = 336.2℃.



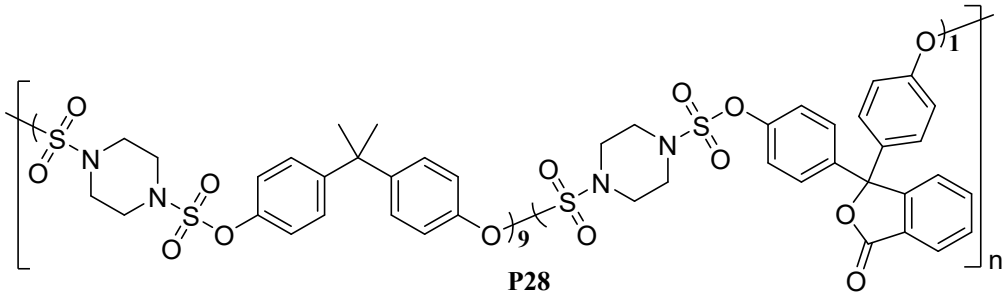
P26

P26, White fiber, 97% yield. ^{1}H NMR (400 MHz, DMSO-d_6) δ 7.96-7.91 (m, 2H), 7.88-7.82 (m, 1H), 7.69 (t, J = 7.4 Hz, 1H), 7.41 (d, J = 8.5 Hz, 4H), 7.34 (d, J = 8.7 Hz, 4H), 3.52-3.45 (m, 8H), 1.81 (q, J = 6.3Hz, 2H). ^{13}C NMR (100 MHz, DMSO-d_6) δ 168.9, 151.3, 150.1, 139.6, 135.8, 130.8, 129.0, 126.3, 125.0, 124.6, 122.8, 90.3, 49.8, 48.5, 28.9. M_n^{PS} = 40 kDa, PDI = 1.38, T_g (DSC) = 148.2℃, T_d (5% weight loss, TGA) = 347.2℃.



P27

P27, White fiber, 95% yield. ^{1}H NMR (400 MHz, DMSO-d_6) δ 7.90 (d, J = 7.6 Hz, 2H), 7.42-7.35 (m, 4H), 7.27 (t, J = 7.1 Hz, 2H), 7.19-7.13 (m, 8H), 3.48-3.44 (m, 8H), 1.74-1.70 (m, 2H). ^{13}C NMR (125 MHz, DMSO-d_6) δ 150.3, 148.8, 144.6, 139.9, 129.6, 128.6, 126.4, 122.3, 121.2, 64.5, 49.8. M_n^{PS} = 32 kDa, PDI = 1.59, T_g (DSC) = 184.4℃, T_d (5% weight loss, TGA) = 350.8℃.



P28

P28, White fiber, 98% yield. ^{1}H NMR (400 MHz, DMSO-d_6) δ 7.31-7.21 (m, 84H), 3.41 (s, 80H), 1.59 (s, 54H). ^{13}C NMR (125 MHz, DMSO-d_6) δ 150.3, 149.3, 149.1, 148.3, 147.8, 142.7, 129.4, 129.0, 128.6, 121.9, 121.8, 121.7, 121.1, 121.0, 46.2, 42.6, 30.7. M_n^{PS} = 167 kDa, PDI = 1.60, T_g (DSC) = 148.6℃, T_d (5% weight loss, TGA) = 357.0℃.

3.3. Hundred gram-scale synthesis of P1

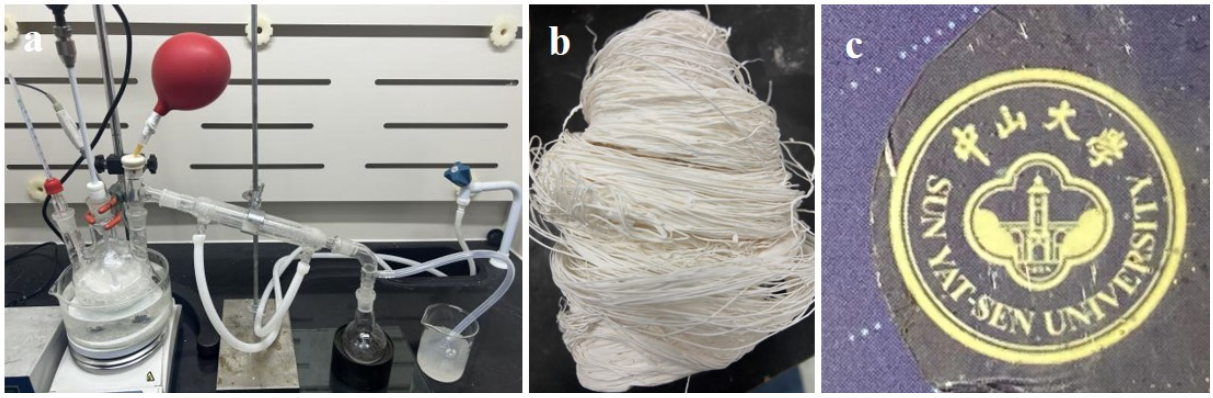


Fig. S1 Hundred gram-scale synthesis of P1

The scaled-up reaction was carried out under the optimal reaction conditions with 0.25 mol of A1 (62.5 g) and B1 (57.1 g) in 250 mL sulfolane. Mechanical agitation was applied for the vast and viscous reaction mixture (Fig. S1a), in a 500 mL glass vial equipped with a distillation apparatus to collect the produced water and a balloon to collect the produced CO2. The vial was placed into a pre-heated 150°C oil bath. After 2 min, commercially available anhydrous K2CO3 (2.2 eq.) was added in one portion. The reaction was run for 6 h, during which course the reaction mixture turned highly viscous as moisture appeared, and the balloon was inflated as well. At the end of the reaction, it was allowed to cool to 70°C, and the mixture was slowly poured into 500 mL of water under vigorous stirring. Polymers precipitated as white fibers once the sulfolane solution touched the water (Fig. S1b). The polymer P1 was collected via filtration and pulverized, then refluxed in water for 1 h to remove the salts and sulfolane. Finally, the polymers were dried at 40 °C for12 hours in vacuo. In addition, P1 could be prepared as transparent and flexible thin sample (Fig. S1c).

4. Characterization of the polymers

4.1 Molecular weight and polymer dispersity index of polymers

The molecular weight and polymer dispersity index were measured using a gel permeation chromatography (GPC) system (EliteHPLC P3100, China) equipped with an Agilent PL1100-6500 column and a SHIMADZU RID-20A detector. During the test, the column temperature was maintained at 40°C. The GPC analysis was conducted using chromatographic-grade N, N-dimethylformamide (DMF) as the solvent, with a sample concentration of 1.5 mg/mL, a flow rate of 1.0 mL/min, and an injection volume of 20 μL. Polystyrene standards from the American Polymer Standards Corporation were used for calibration.

4.2 Thermal properties of polymers

Thermogravimetric analysis (TGA) was conducted using a TGA Q50 instrument (TA Instruments, USA) to evaluate the thermal stability of the polymer. Approximately 5–10 mg of each sample was heated from 30°C to 600°C at a heating rate of 10°C/min under a nitrogen flow of 20 mL/min. The temperature corresponding to 5% weight loss (Td, 5% weight loss) was used as the criterion for assessing the polymer's thermal stability (Fig. S2).

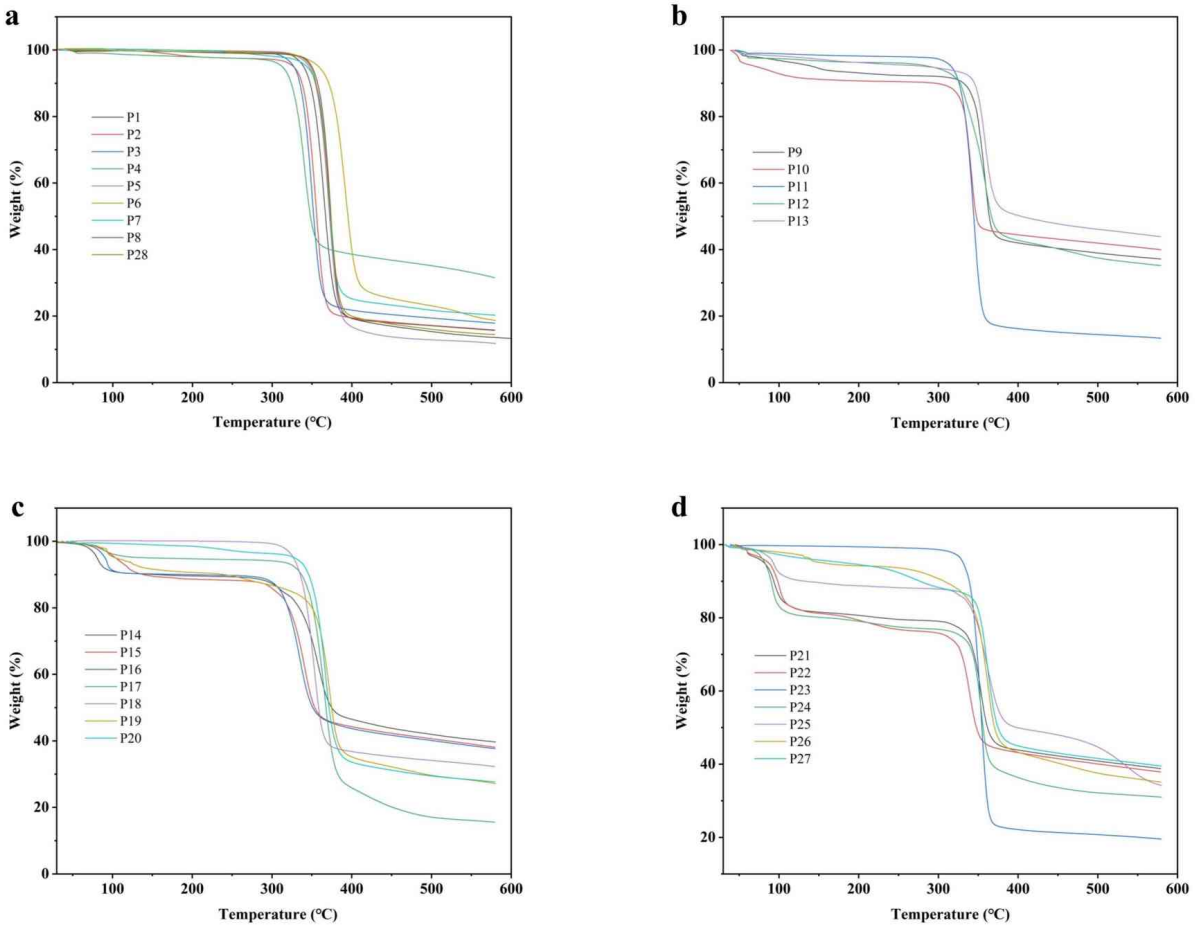


Fig. S2 The thermal gravity analysis (TGA) curves of PSAs

Differential scanning calorimetry (DSC) was conducted using a DSC 3500 instrument (Netzsch, Germany) to investigate the thermal properties of the samples. Approximately 5–10 mg of each sample was analyzed. The procedure included an initial heating from 25°C to 250°C at 10°C/min, followed by cooling to 25°C at the same rate, and a subsequent reheating to 250°C under a nitrogen flow of 40 mL/min. The second heating scan was utilized to evaluate the material's intrinsic thermal properties and the reversibility of changes observed in the first scan, as the initial heating removed the effects of thermal history and physical aging. Data analysis was performed using Netzsch Universal Analysis software.

4.3 Mechanical properties of polymers

Flexural and tensile specimens were molded using a plastics injection machine (UN-120SK, Yizumi, China), and tests were conducted using a universal testing machine (LD23.104, Lishi (Shanghai) Instruments Co., Ltd., China) at room temperature. Tensile test specimens were dumbbell-shaped (specimen type 1A) with an initial grip distance of 115 mm, a narrow portion width of 10 mm, and a thickness of 4 mm, in accordance with ISO 527-2:2012. Tensile tests were performed at a speed of 10 mm/min. Flexural test specimens measured 80 × 10 × 4 mm, and flexural properties were evaluated using the same testing machine, following ISO 178:2010, with a crosshead speed of 2 mm/min. Izod impact strength was measured at room temperature using a 2.75 J pendulum in accordance with ASTM D256. For each test, five specimens were analyzed, and the mean values of the results are presented in the results section.

Table S3. Mechanical properties of **P1**

Tensile strength (MPa)	Elastic modulus (MPa)	Flexural strength (MPa)	Flexural modulus (MPa)	Breaking elongation (%)	Notch impact strength (kJ/m^2)
75	3500	94	3531	3-5	3

P1 with $M_n{}^{PS}$ = 155 kDa was applied.

Table S4. Mechanical properties of **P1** with different molecular weights

polymer	Tensile strength (MPa)	Elastic modulus (MPa)	Flexural strength (MPa)	Flexural modulus (MPa)
P1	75	3500	94	3531
P1-1	72.4	3332	92.8	3398

P1 with $M_n{}^{PS}$ = 155 kDa, P1-1 with $M_n{}^{PS}$ = 67 kDa was applied.

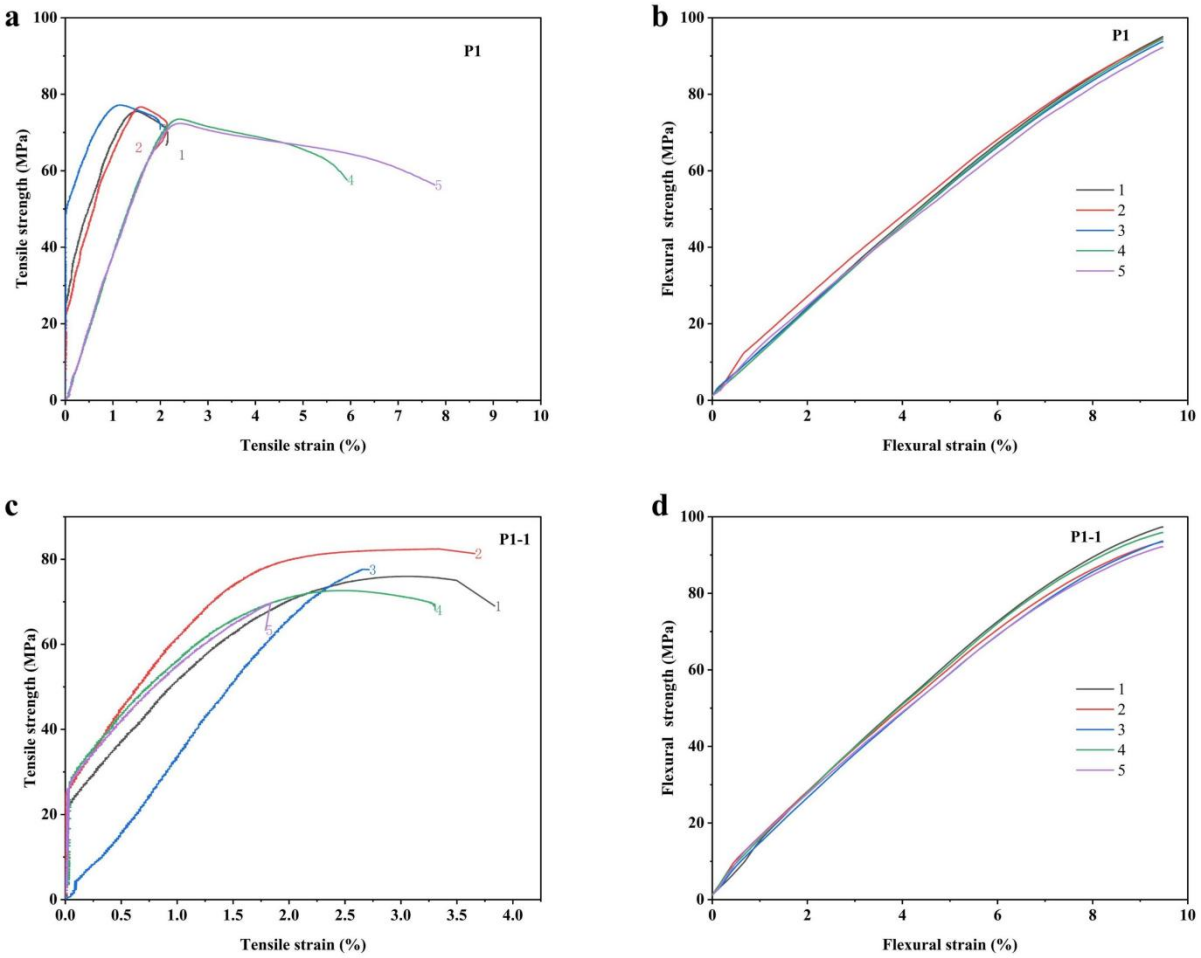


Fig. S3 The tensile and flexural tests of P1 with different molecular weights (P1 with M_n^{PS} = 155 kDa, P1-1 with M_n^{PS} = 67 kDa**)**

Table S5. Mechanical properties of **P9** with different molecular weights

polymer	Tensile strength (MPa)	Elastic modulus (MPa)	Flexural strength (MPa)	Flexural modulus (MPa)
P9	77	3600	98	3560
P9-1	79	3760	98	3576

P9 with M_n^{PS} = 42 kDa, P9-1 with M_n^{PS} = 71 kDa was applied.

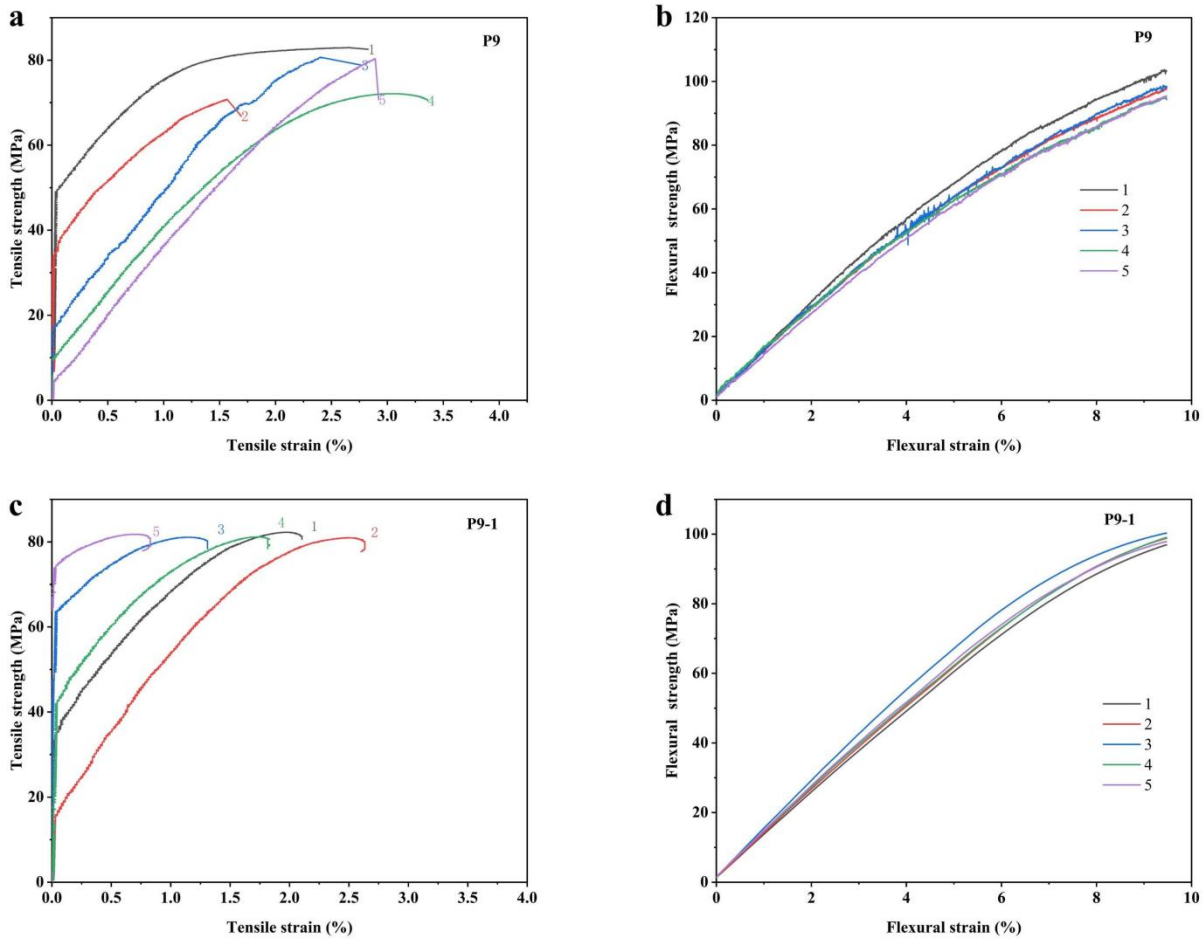


Fig. S4 The tensile and flexural tests of P9 with different molecular weights (P9 with M_n^{PS} = 42 kDa, P9-1 with M_n^{PS} = 71 kDa**)**

Table S6. Mechanical properties of **P14** with different molecular weights

polymer	Tensile strength (MPa)	Elastic modulus (MPa)	Flexural strength (MPa)	Flexural modulus (MPa)
P14	55	2300	75	2500
P14-1	60	2760	82	2975

P14 with M_n^{PS} = 64 kDa, P14-1 with M_n^{PS} = 183 kDa was applied.

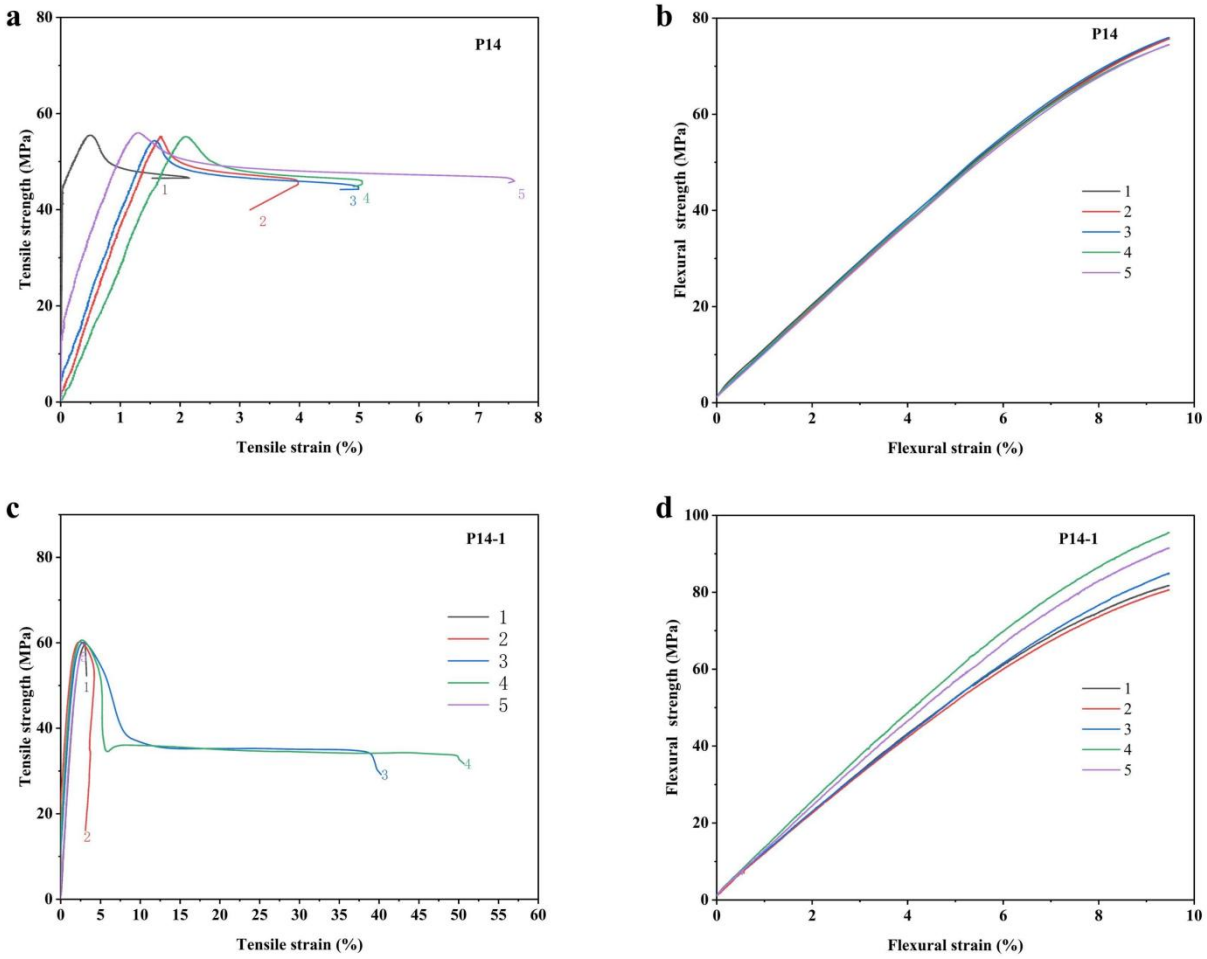


Fig. S5 The tensile and flexural tests of P14 with different molecular weights (P14 with M_n ^{PS} = 64 kDa, P14-1 with M_n ^{PS} = 183 kDa**)**

Table S7. Mechanical properties of **P21** with different molecular weights

polymer	Tensile strength (MPa)	Elastic modulus (MPa)	Flexural strength (MPa)	Flexural modulus (MPa)
P21	71	3500	91	3500
P21-1	73	3620	92	3525

P21 with M_n ^{PS} = 64 kDa, P21-1 with M_n ^{PS} = 119 kDa was applied.

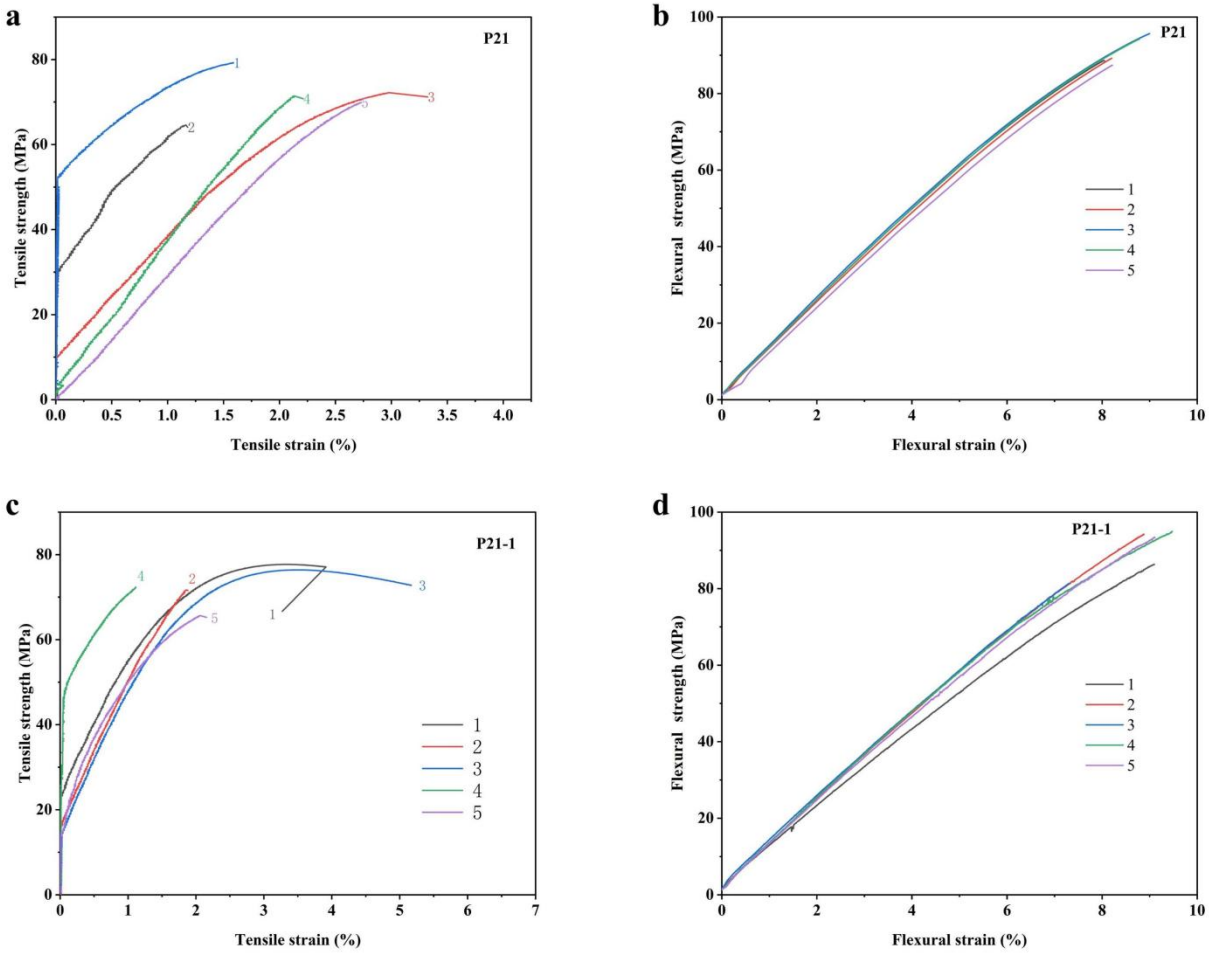


Fig. S6 The tensile and flexural tests of P21 with different molecular weights (P21 with M_n ^{PS} = 64 kDa, P21-1 with M_n ^{PS} = 119 kDa**)**

Table S8. Mechanical properties of **PA 6**

polymer	Tensile strength (MPa)	Elastic modulus (MPa)	Flexural strength (MPa)	Flexural modulus (MPa)
PA 6	60	2300	65	2340

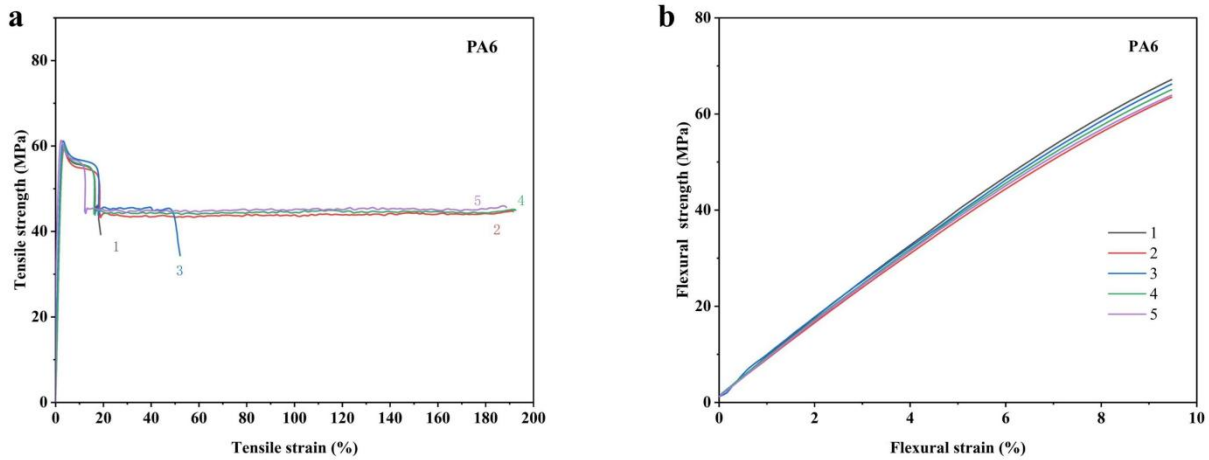


Fig. S7 The tensile and flexural tests of PA 6

4.4 Solvent-stability of P1

Table S9. Solvent-stability of **P1**

Entry	Reagents (solvents)	Reagents concentration (%)	Weight change (%)	Notes
1	water	100	0.5	stable
2	MeOH	100	0.1	stable
3	EtOH	100	0.1	stable
4	*n*-butanol	100	0.1	stable
5	HCl	20	0.2	stable
6	HNO_3	68	0.1	stable
7	HNO_3	40	0.1	stable
8	HNO_3	20	0.2	stable
9	KOH	35	0.1	stable
10	KOH	20	0.2	stable
11	Acetone/H_2O	5	0.2	stable
12	Acetic acid	99.5	0.1	stable
13	*n*-hexane	100	0.1	stable
14	*n*-heptane	100	0.2	stable
15	ethylene glycol	100	0.1	stable
16	Hydrofluoric acid	48	0.2	stable

Note: The solvent stability experiments were measured by placing 5.4±0.2 g of **P1** (thicker samples after processing, 80*10*4 mm) into 200 ml solvent for 7days at 25℃. Each group was run for 5 times and we took the average. **P1** with M_n^{PS} = 150 kDa was applied.

5. Industrial production of PSA

5.1 Industrial produciton of P1

The 100 kg-scale **P1** was produced in Inner Mongolia Tuwei new material Technology Co., LTD. Generally, under N_2 atmosphere, **A1** (70.78 kg) and BPA (64 kg) were dissolved in sulfolane (450 kg) in 1000 L steel reactor. And K_2CO_3 (85.23 kg) was added (within 30 min) to the reaction mixture when the temperature was raised to 170°C. The moisture was removed by N_2 and collected by condensing. After reaction, the crude produt **P1** was post-processed including granulating, washing, removing of salts, solvent recovery and drying. The obtained **P1** was used without other modifations of processing (Fig. S8).

Fig. S8 Industrial products of P1

5.2 Mechanical properties of industrial products of P1

Table S10. Mechanical properties of industrial products of **P1**

polymer	Tensile strength (MPa)	Elastic modulus (MPa)	Flexural strength (MPa)	Flexural modulus (MPa)
P1	72	3300	92	3400

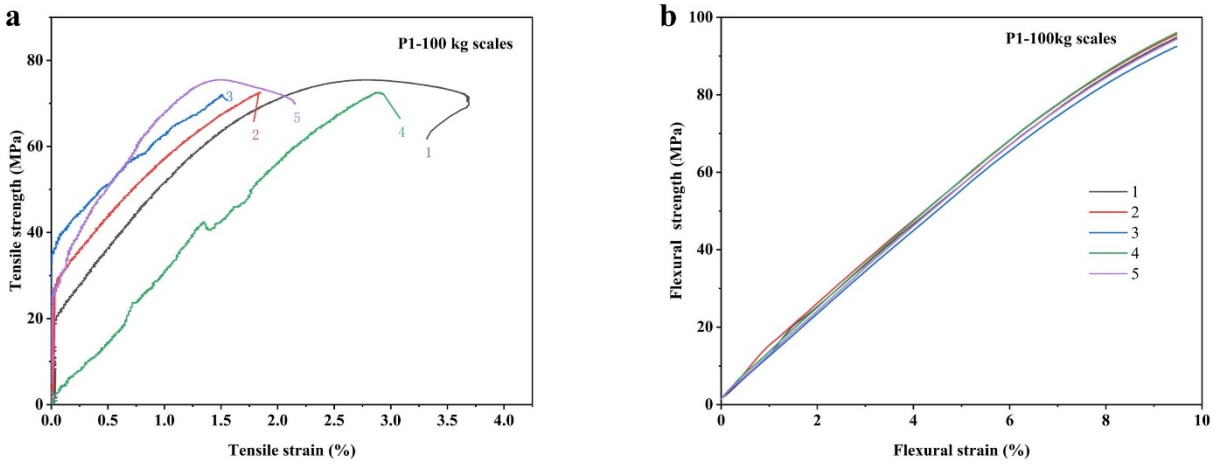


Fig. S9 The tensile and flexural tests of industrial products of P1 (M_n^{PS} = 110 kDa, PDI = 1.61)

6. References

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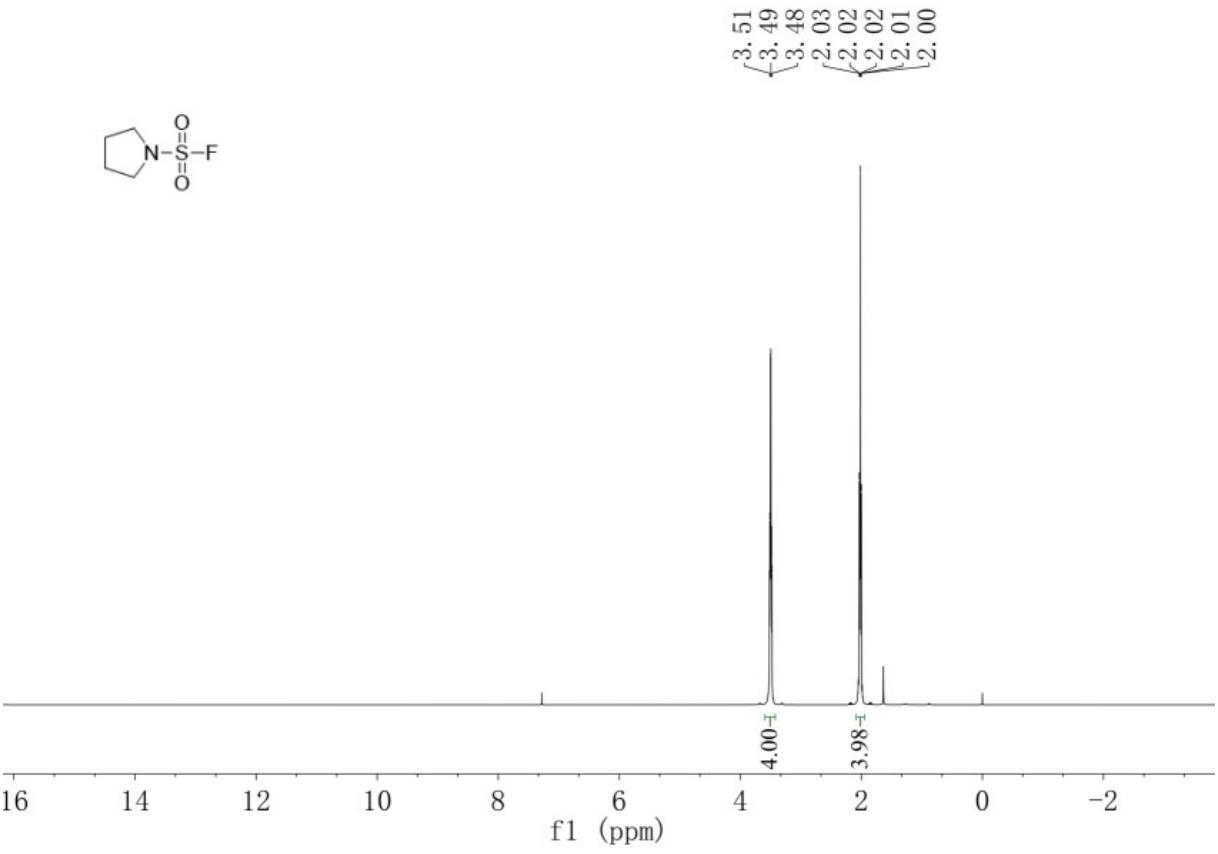
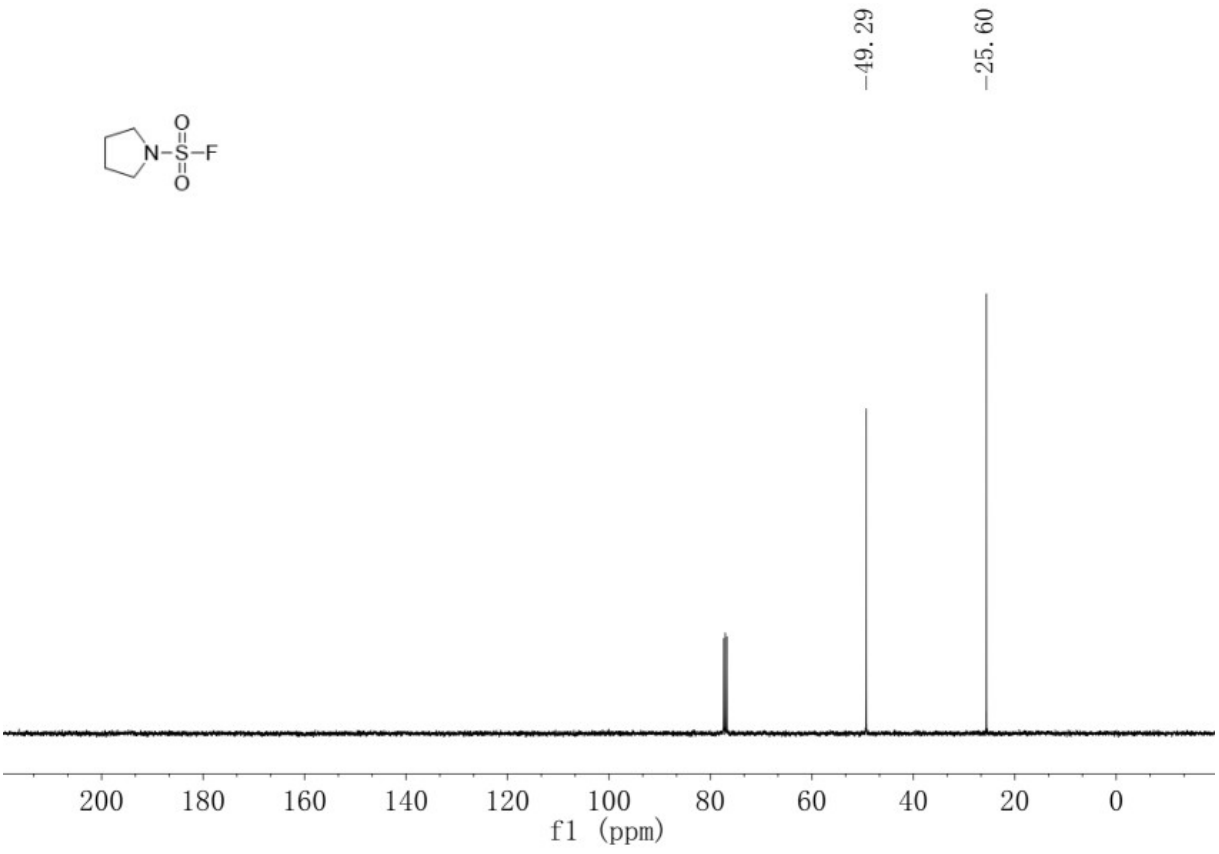
7. Copies of the NMR spectra and DSC curve of new compounds

7.1 Copies of the NMR spectra of monomers

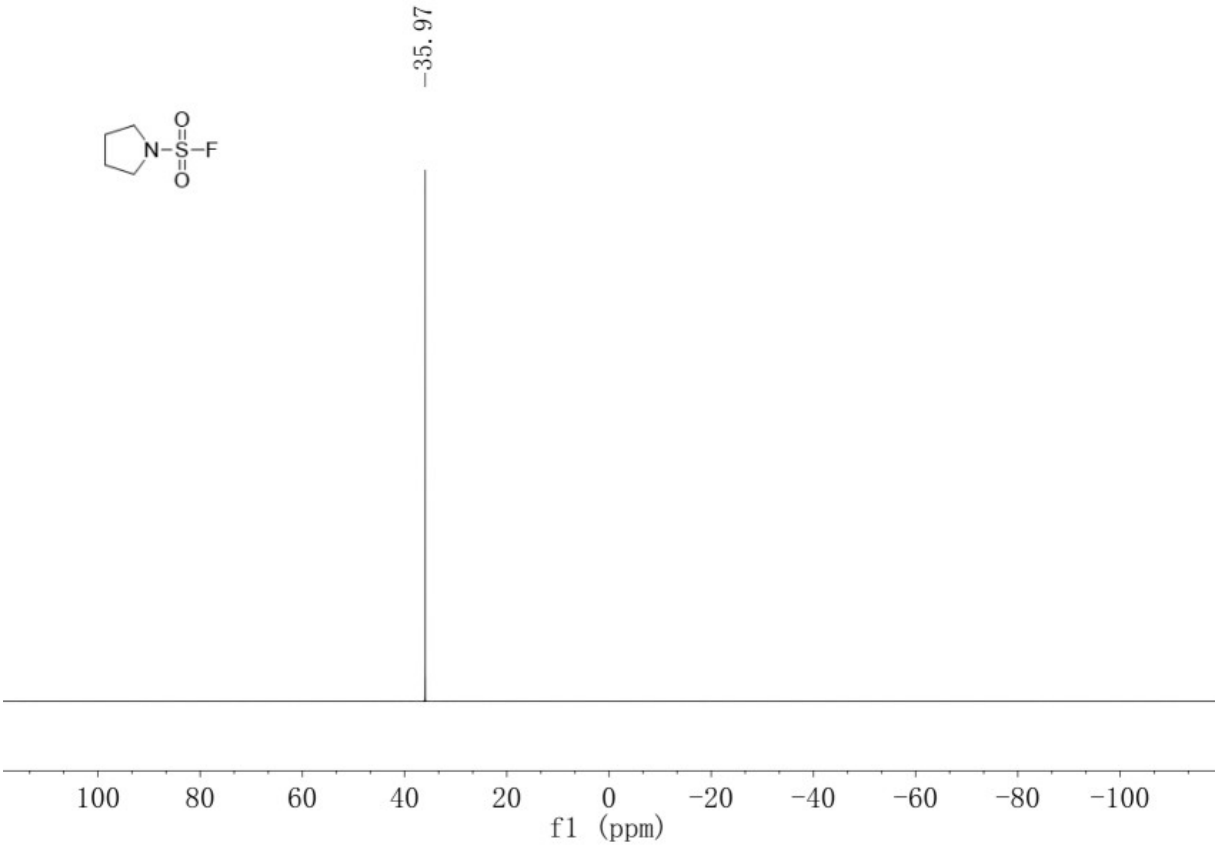
^{1}H NMR of 1a



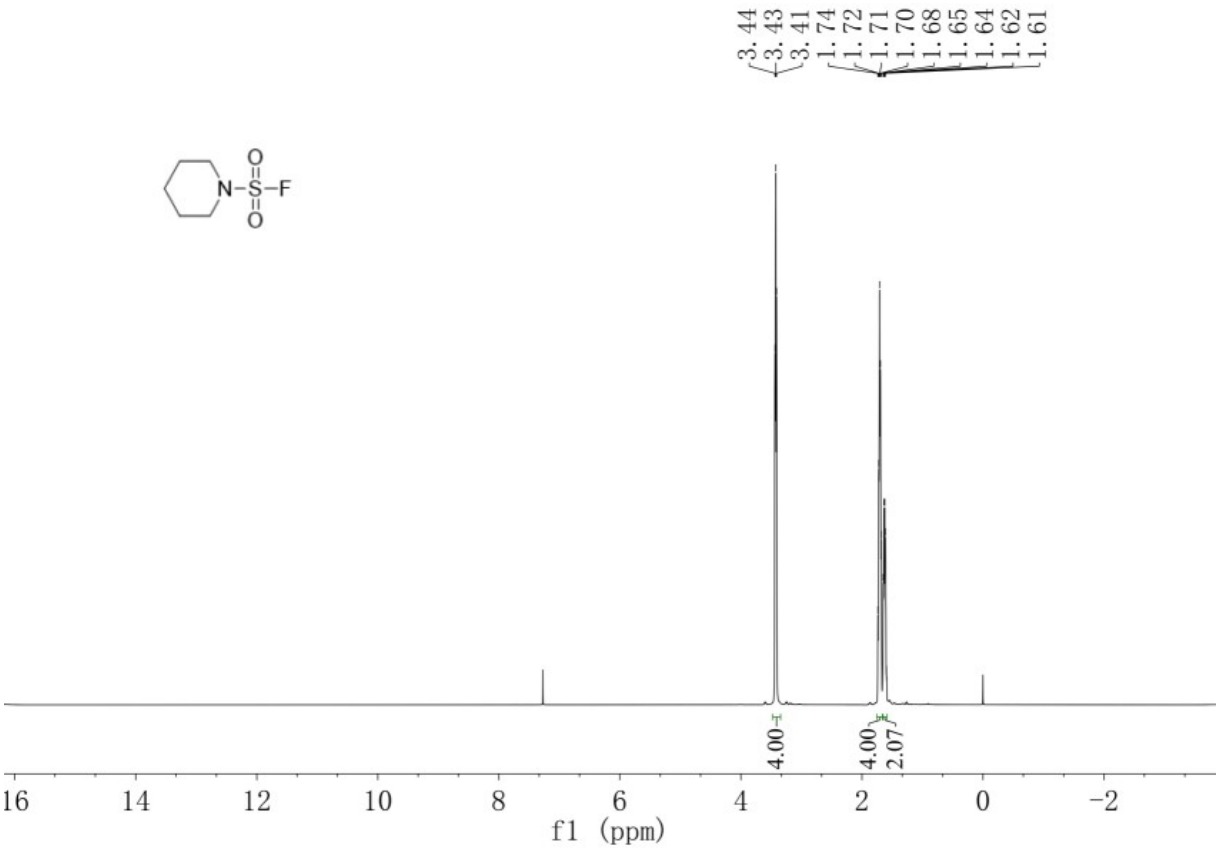
^{13}C NMR of 1a



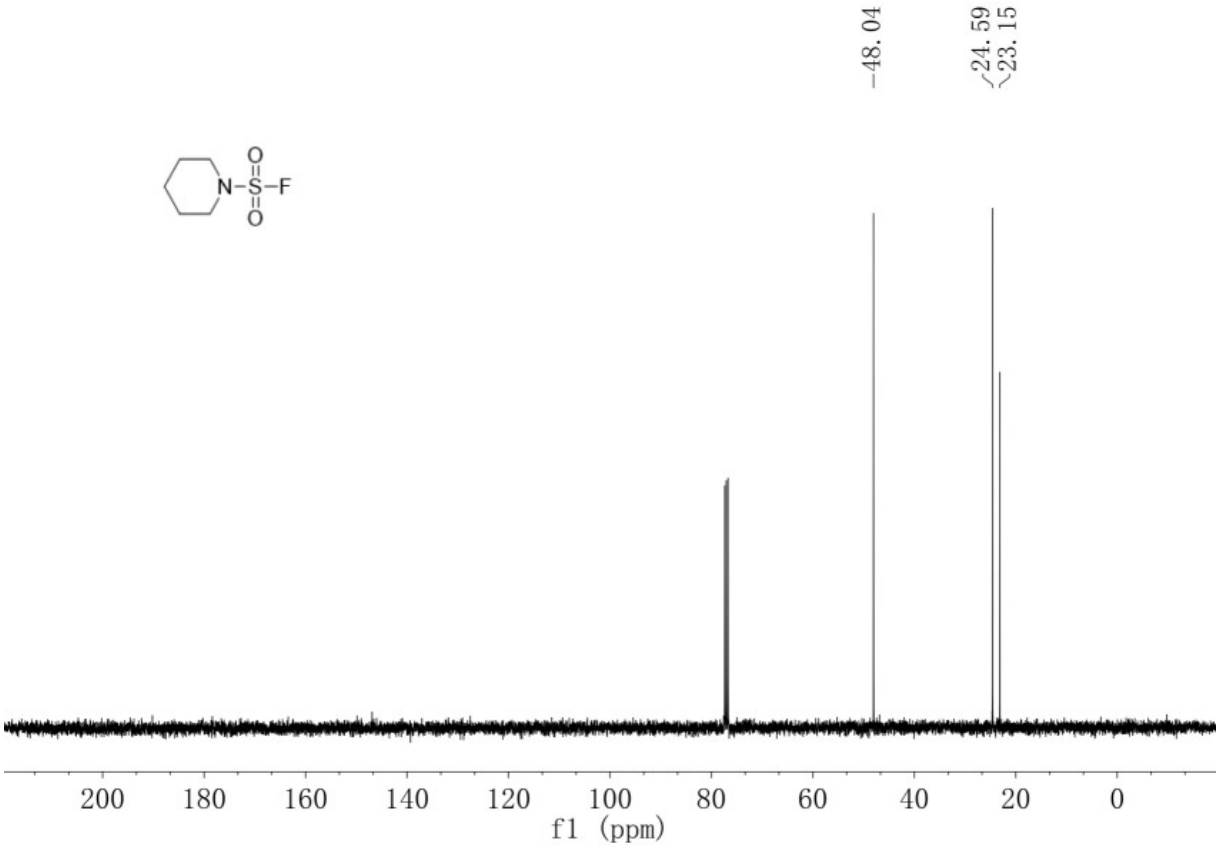
^{19}F NMR of 1a



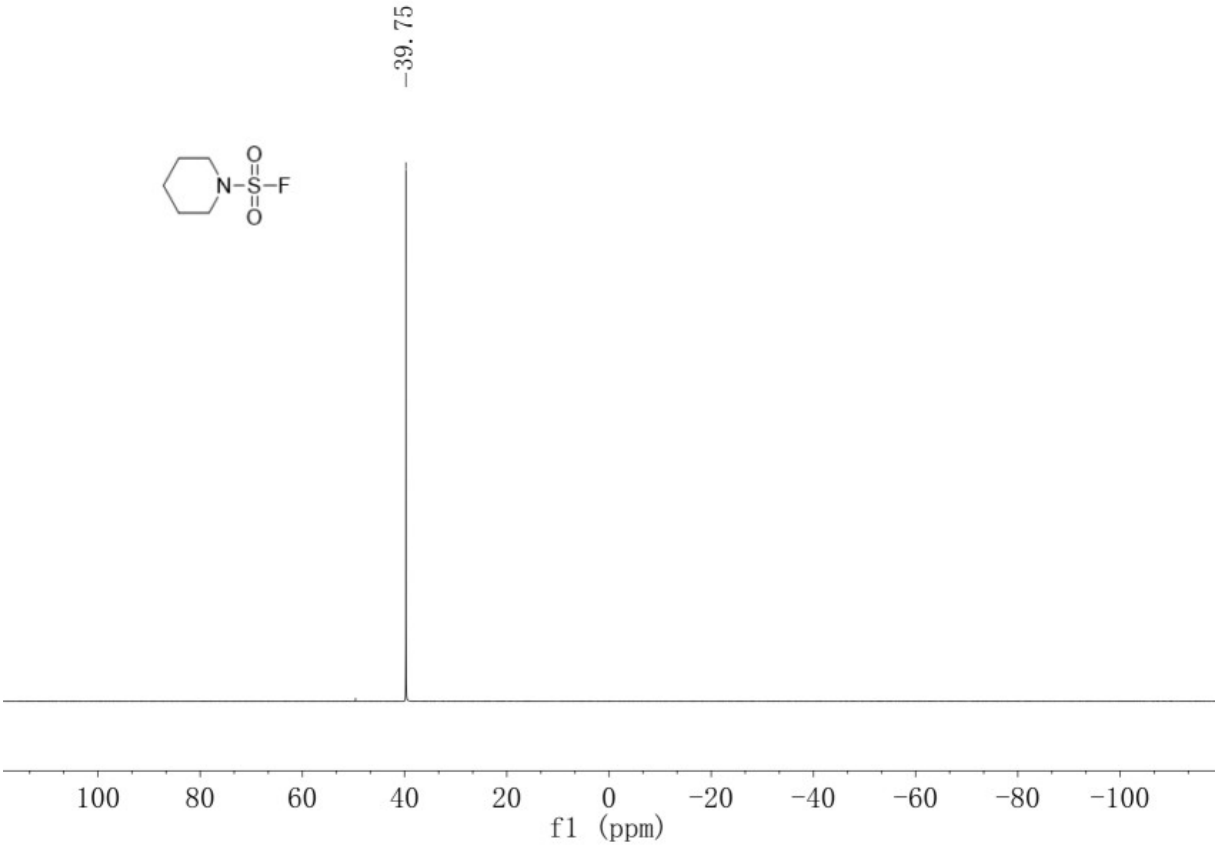
^{1}H NMR of 1b


3.44
3.43
3.41
1.74
1.72
1.71
1.70
1.68
1.65
1.64
1.62
1.61
O
N–S–F
O
4.00
4.00
2.07
16
14
12
10
8
6
4
2
0
−2
f1 (ppm)

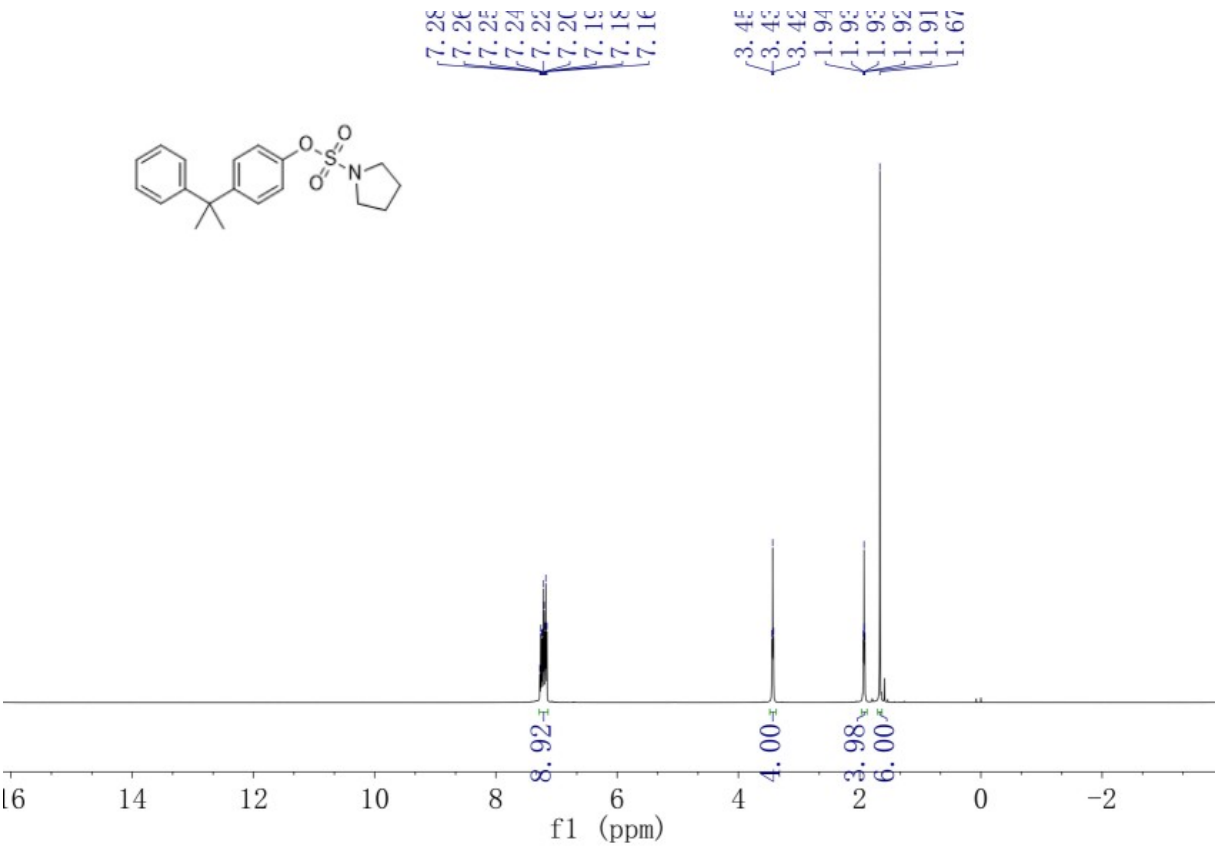
^{13}C NMR of 1b


48.04
24.59
23.15
O
N–S–F
O
200
180
160
140
120
100
80
60
40
20
0
f1 (ppm)

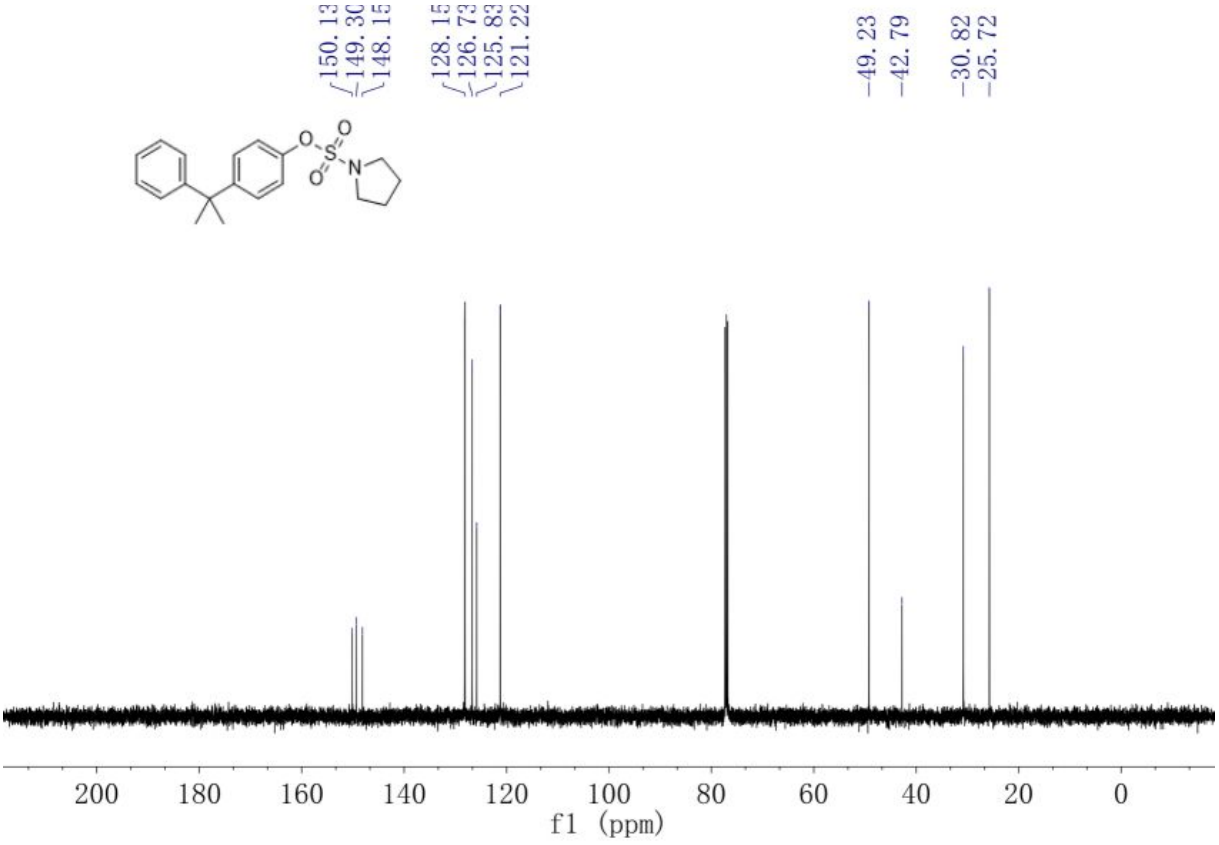
^{19}F NMR of 1b



^{1}H NMR of 3a



^{13}C NMR of 3a



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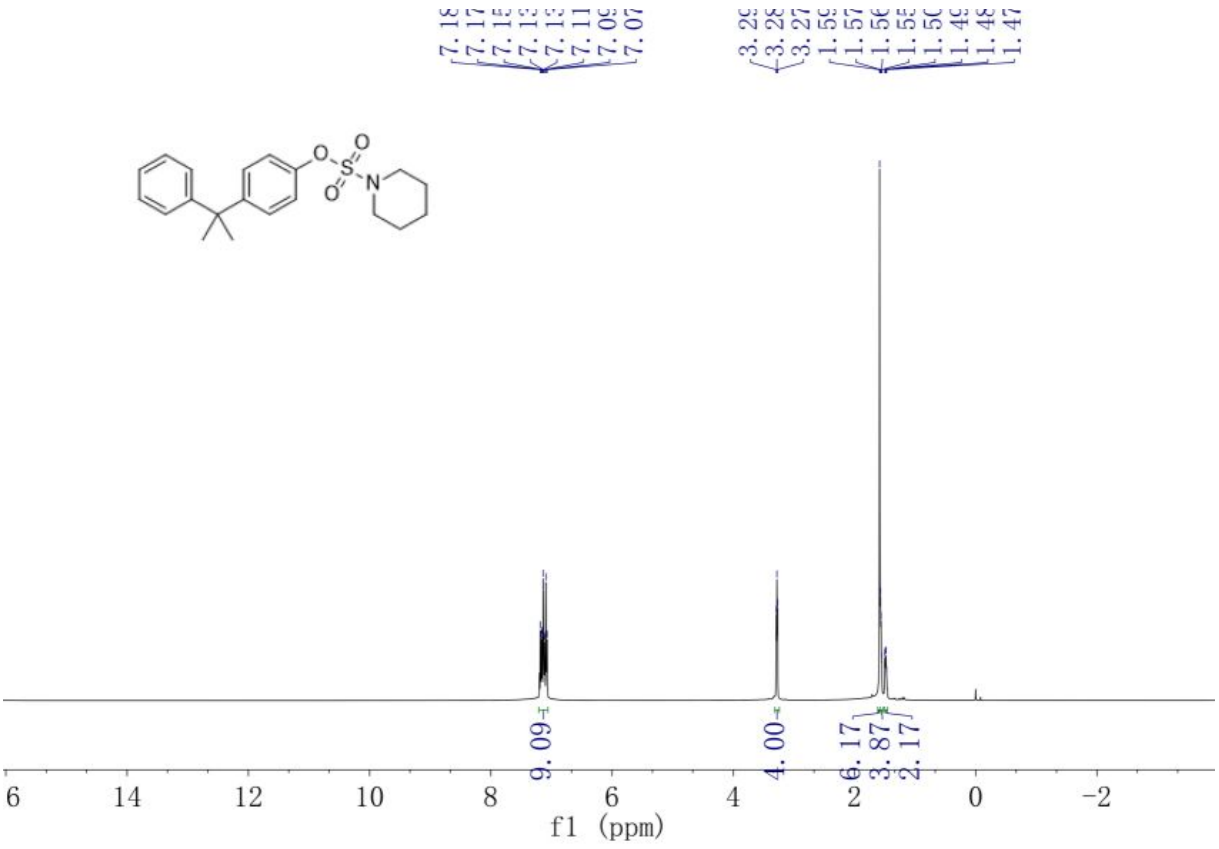

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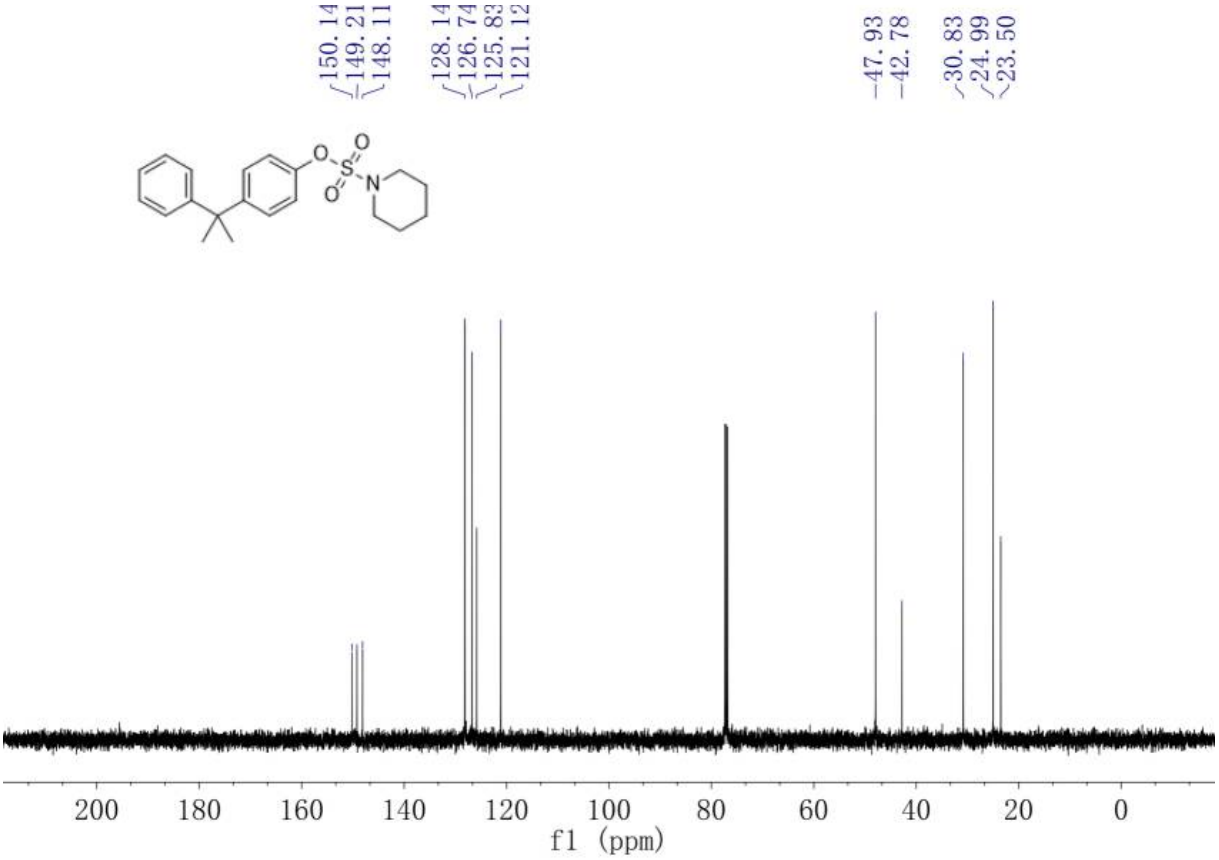
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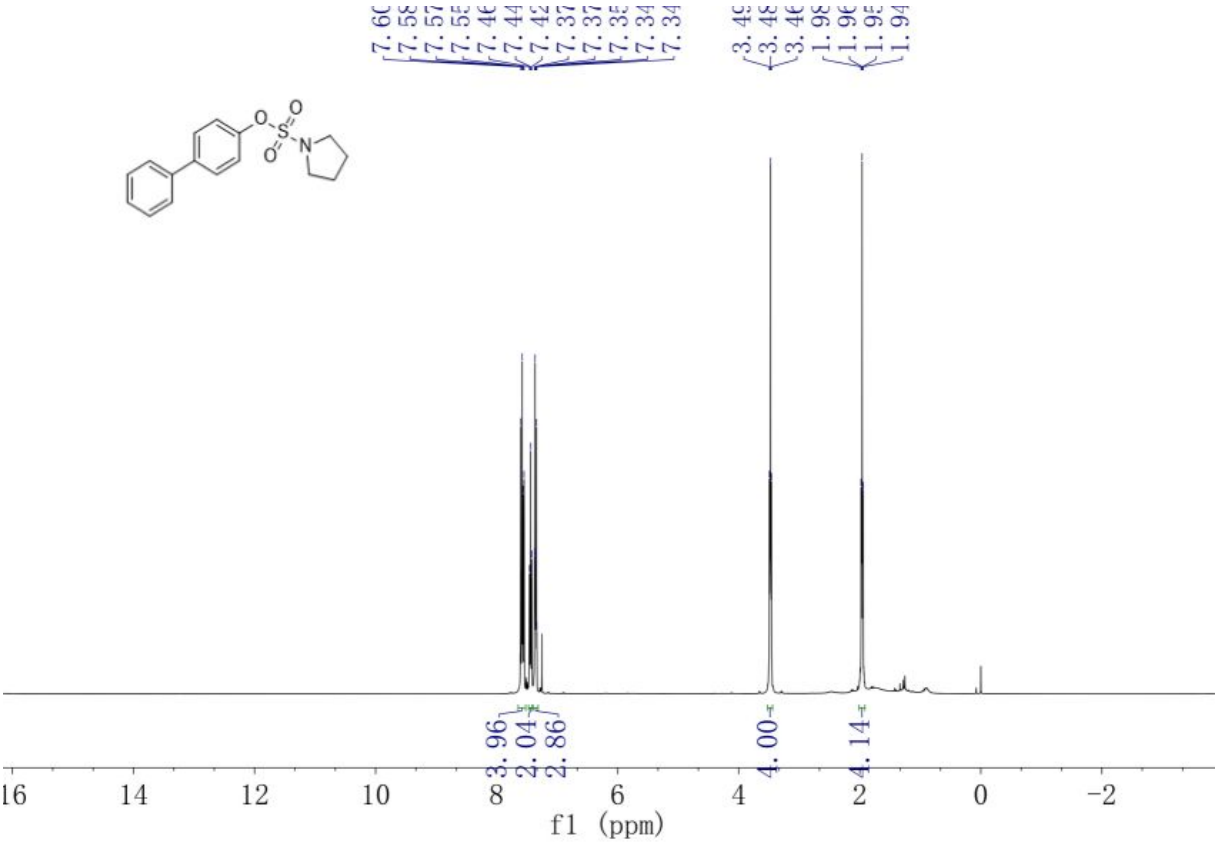
149.21
148.11
128.14
126.74
125.83
121.12
47.93
42.78
30.83
24.99
23.50
200
180
160
140
120
100
80
60
40
20
0
f1 (ppm)

^{1}H NMR of 3c


3.96
2.04
2.86
4.00
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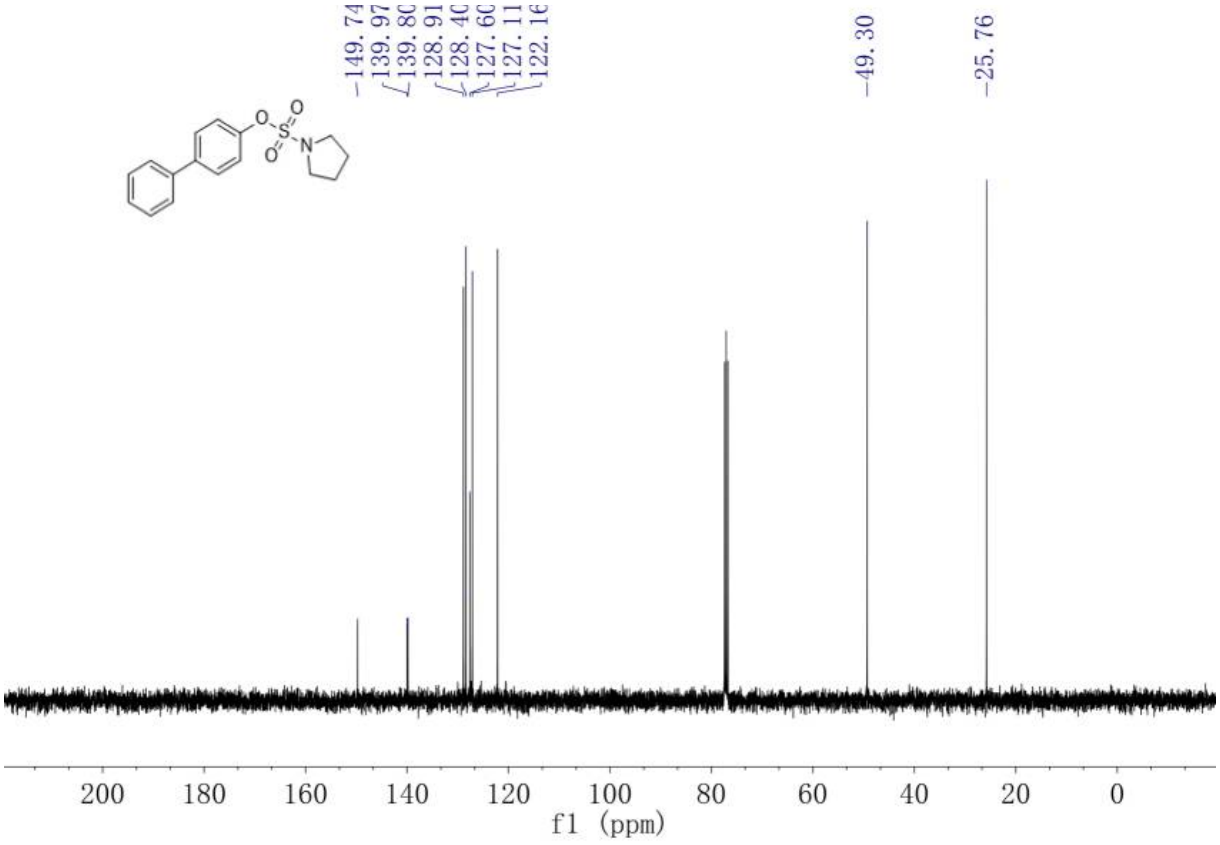
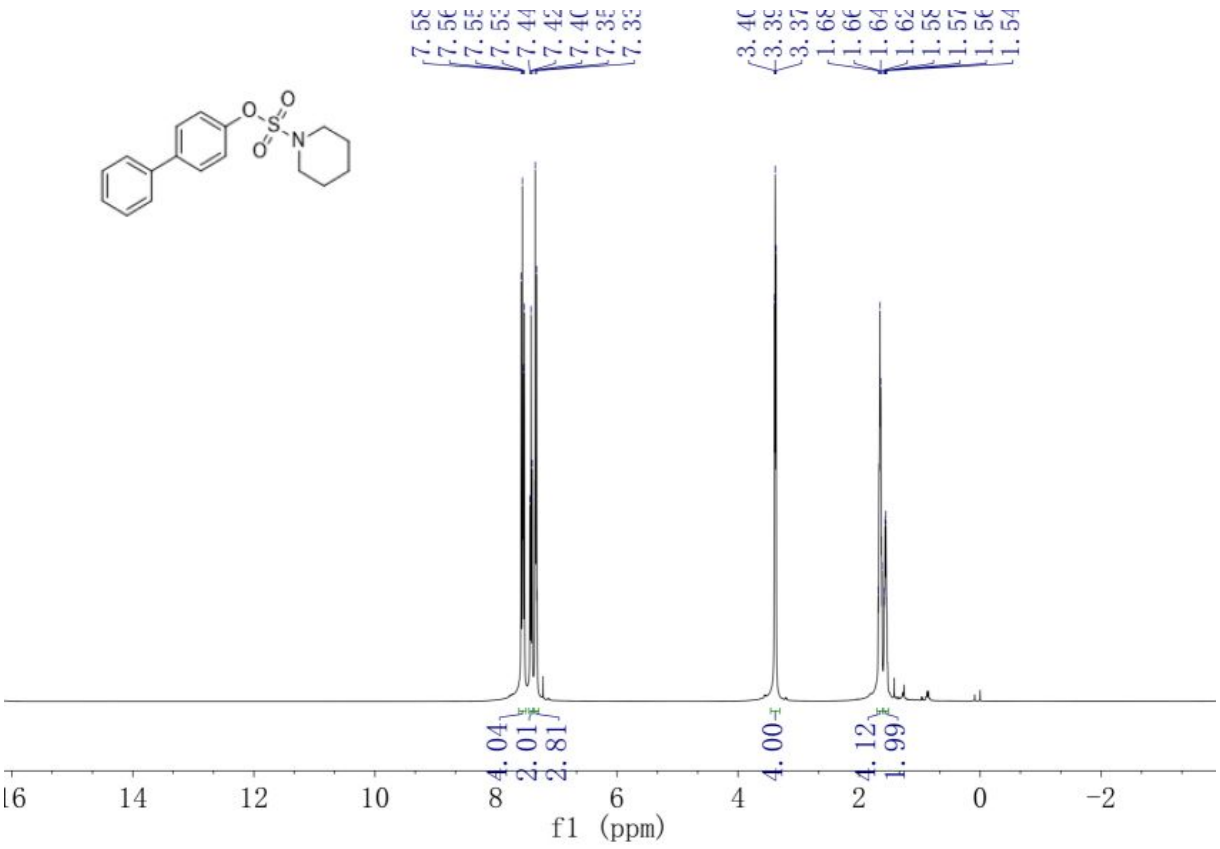
16
14
12
10
8
6
4
2
0
−2
f1 (ppm)

^{13}C NMR of 3c



^{1}H NMR of 3d



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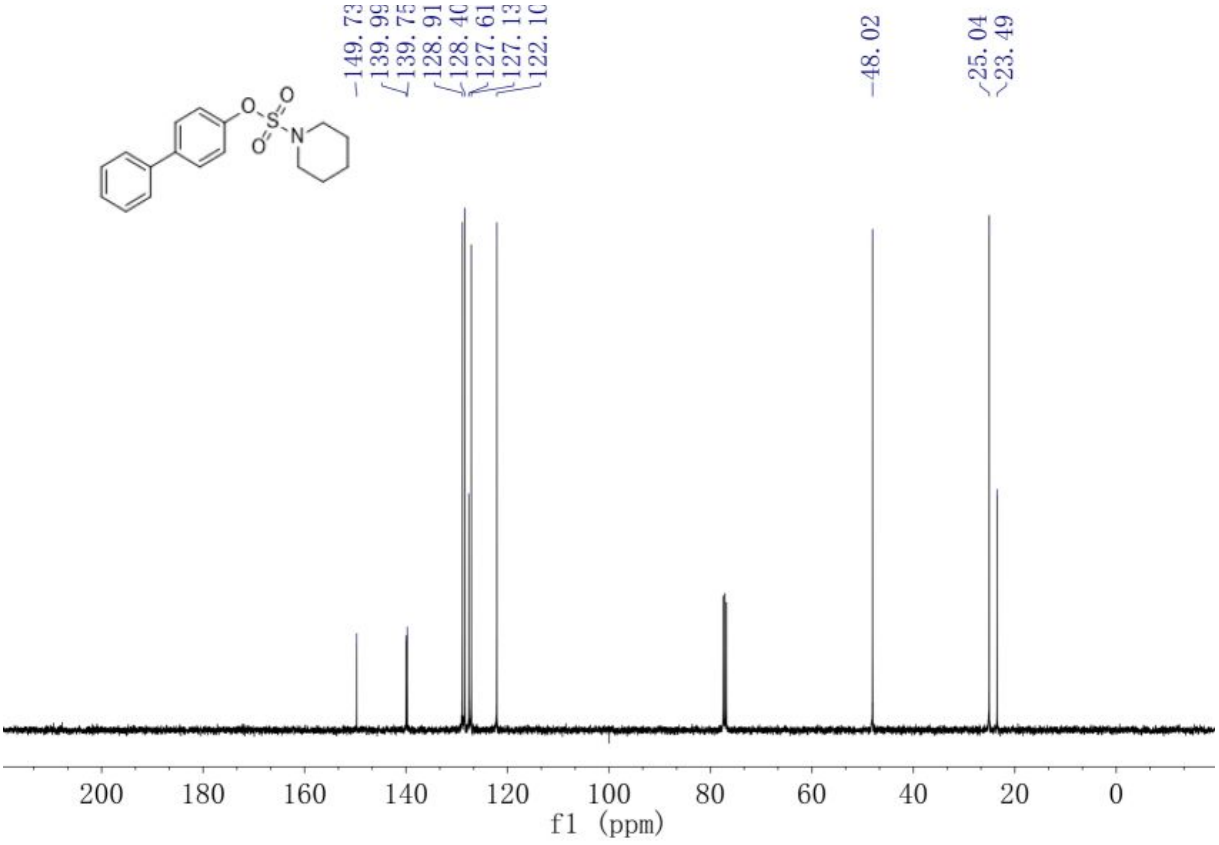

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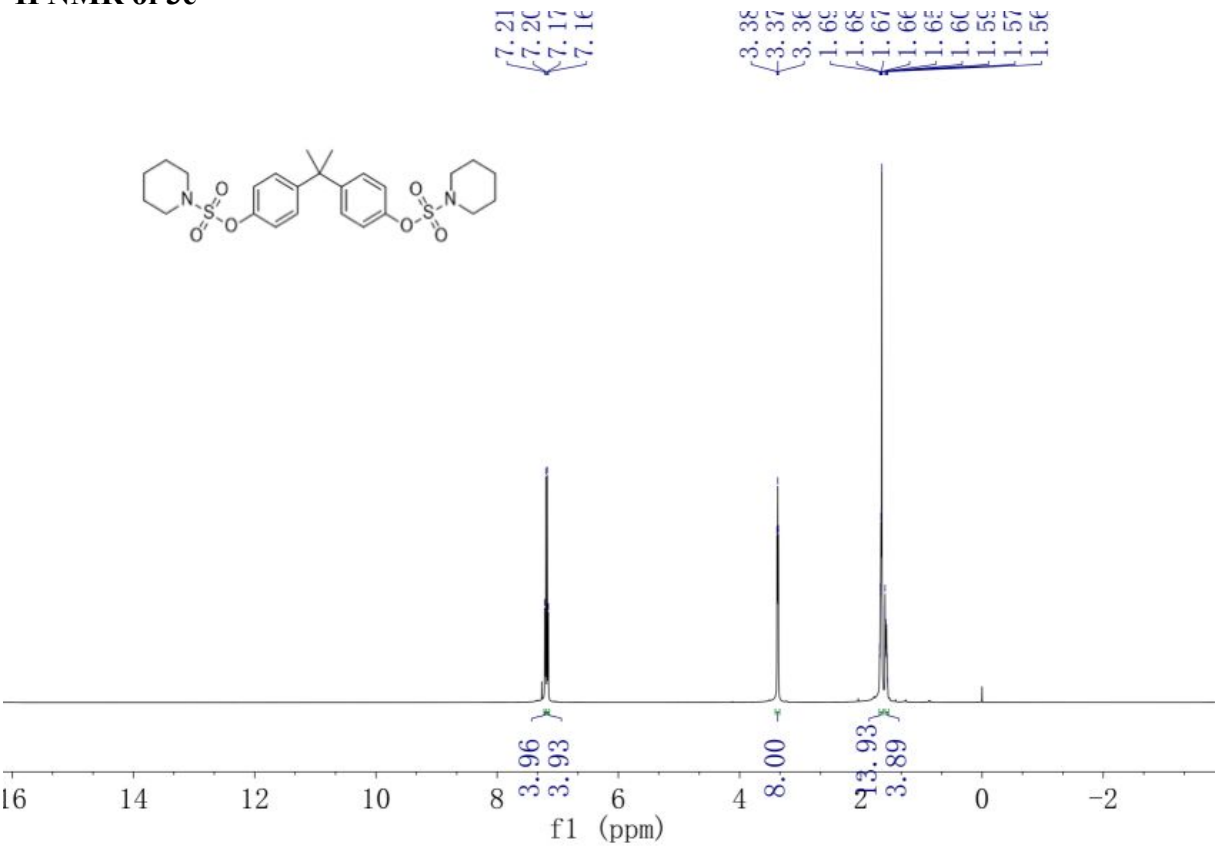

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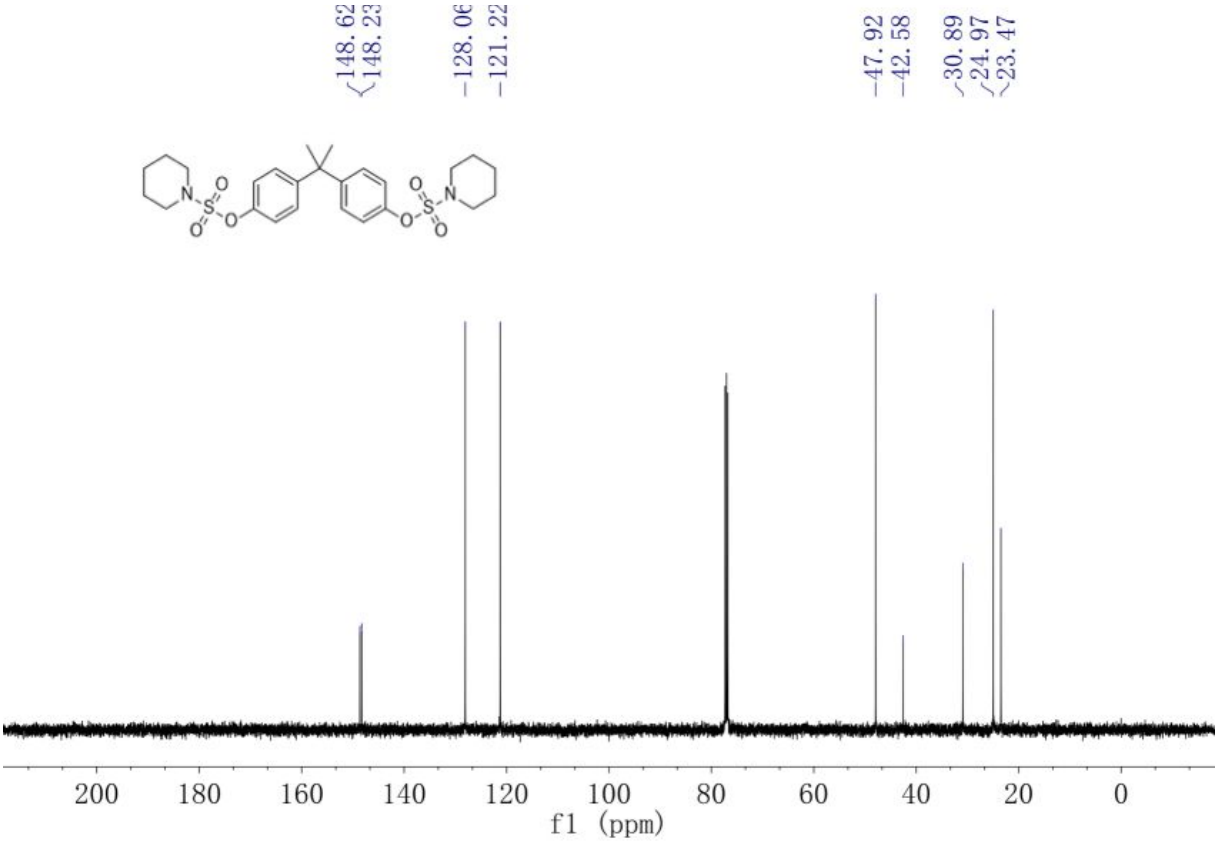
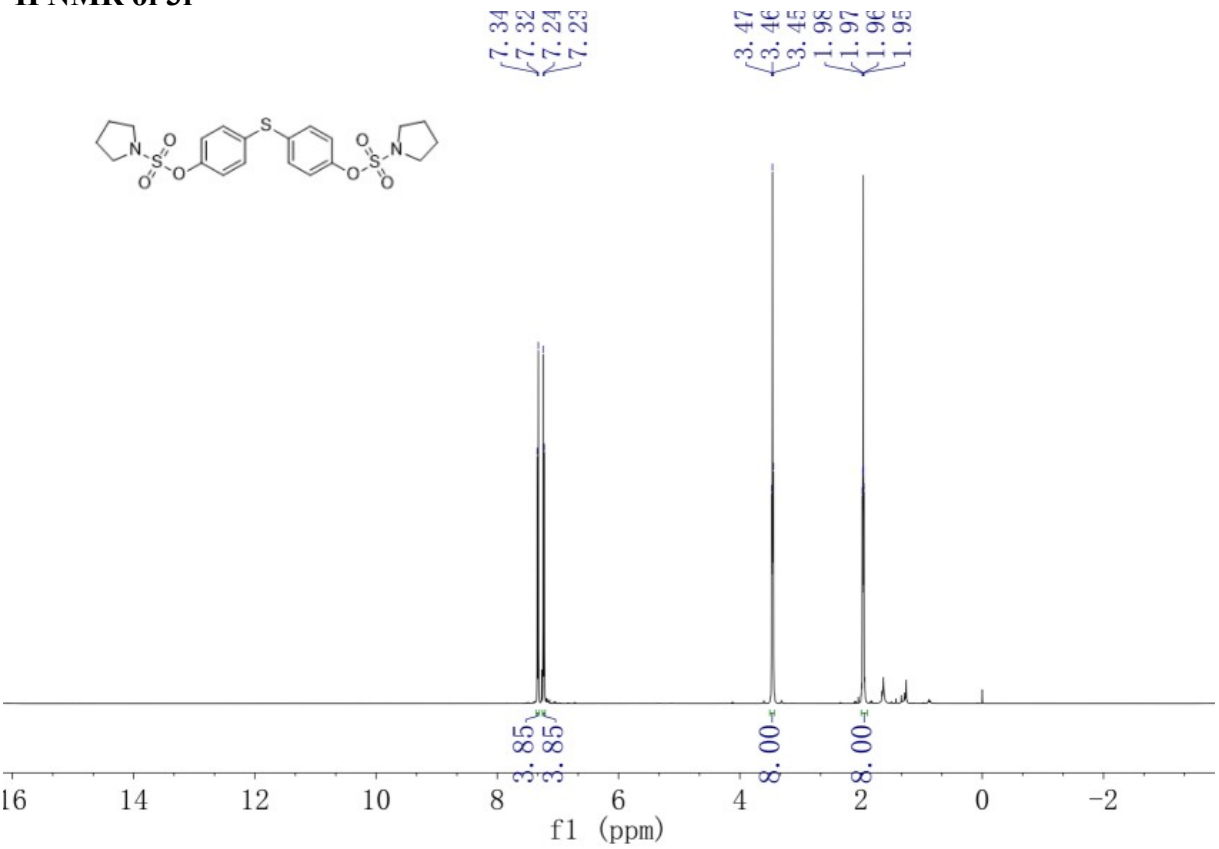


^{1}H NMR of 3f



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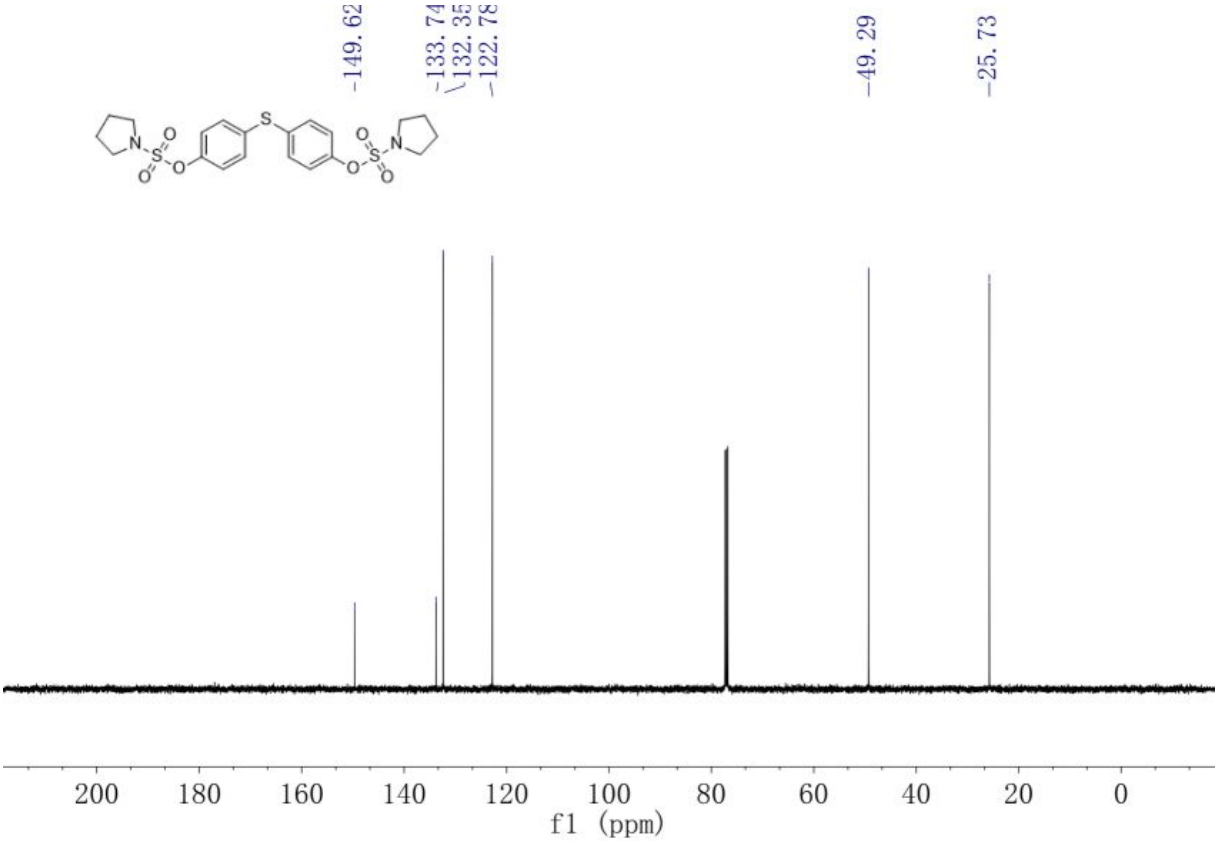

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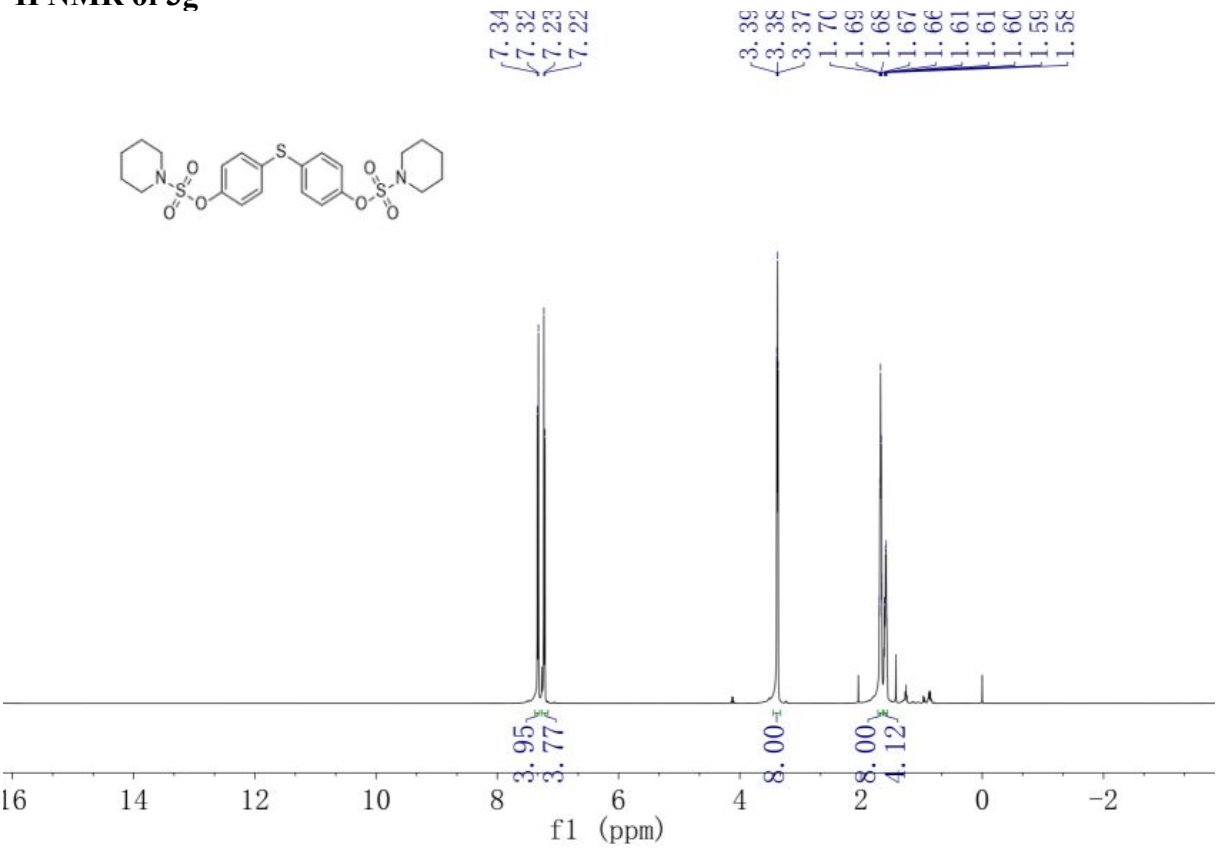

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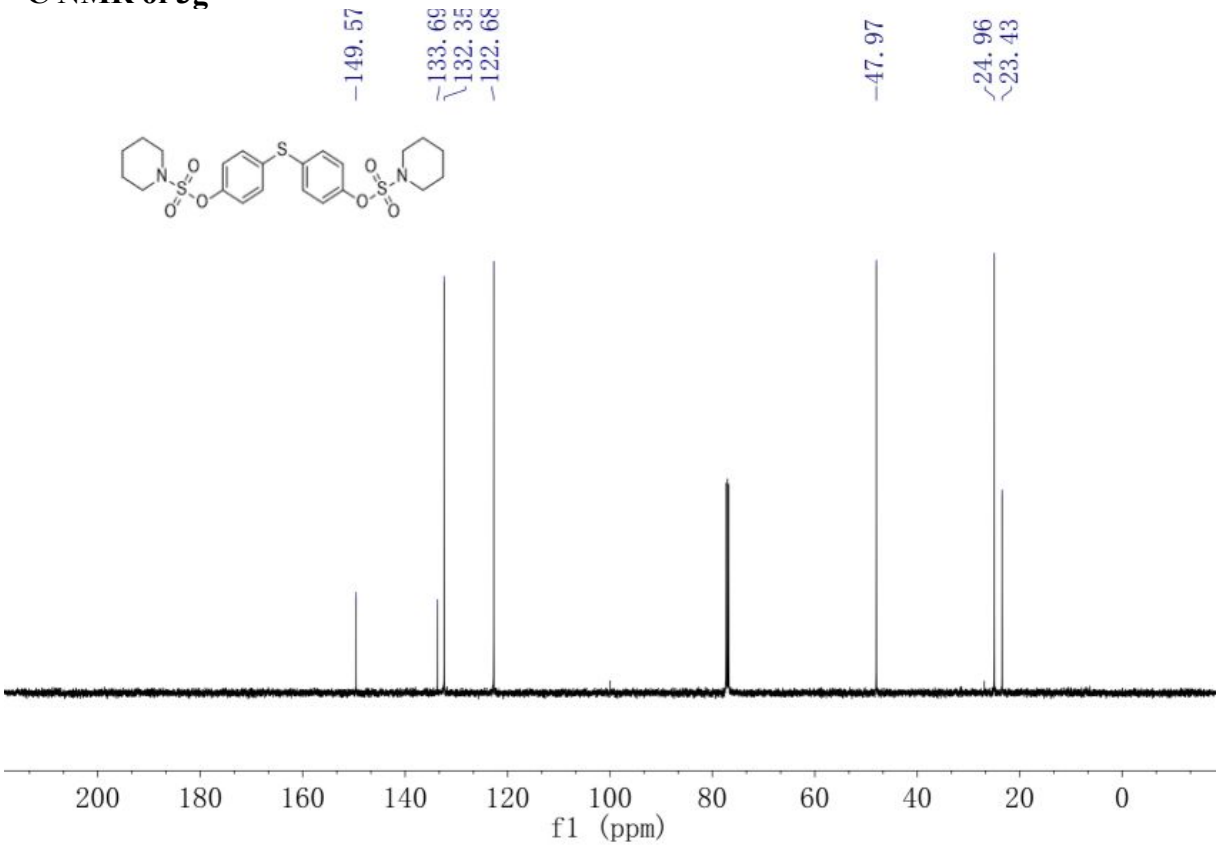

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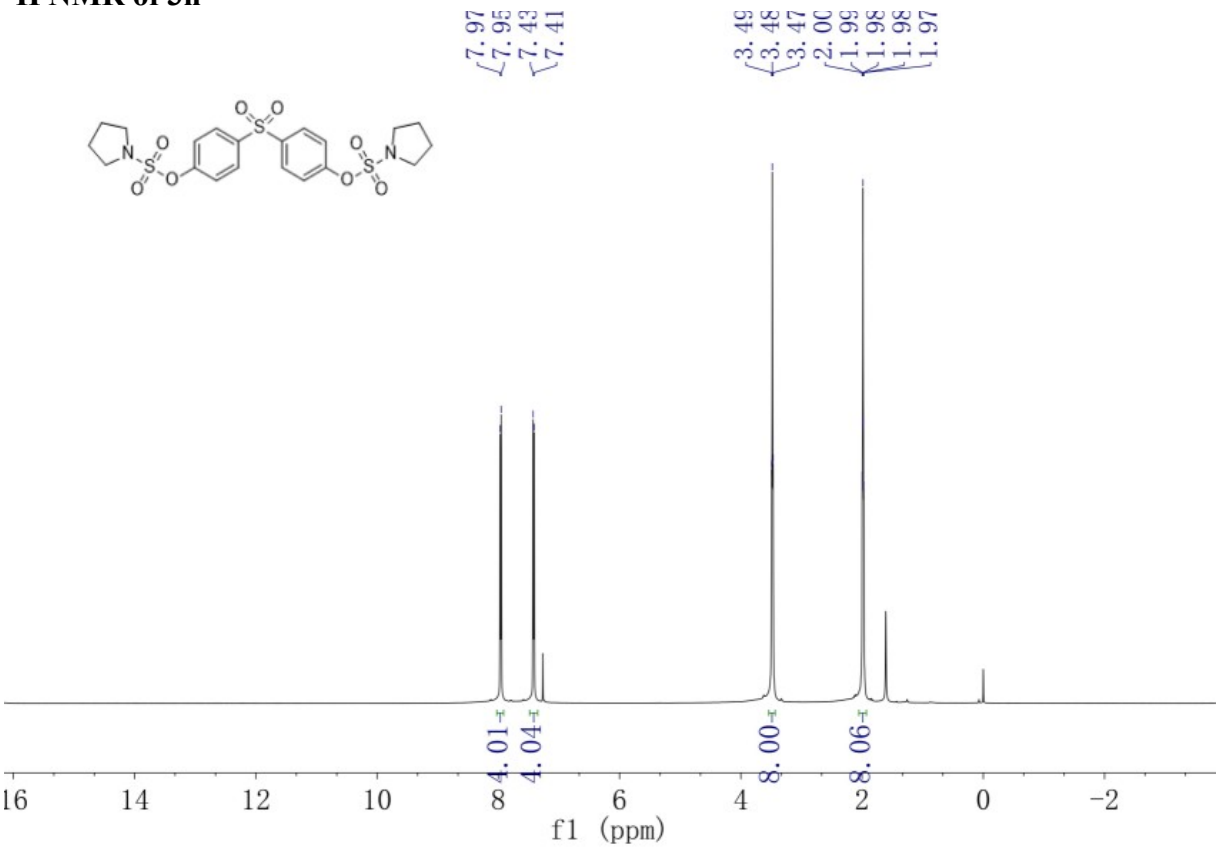
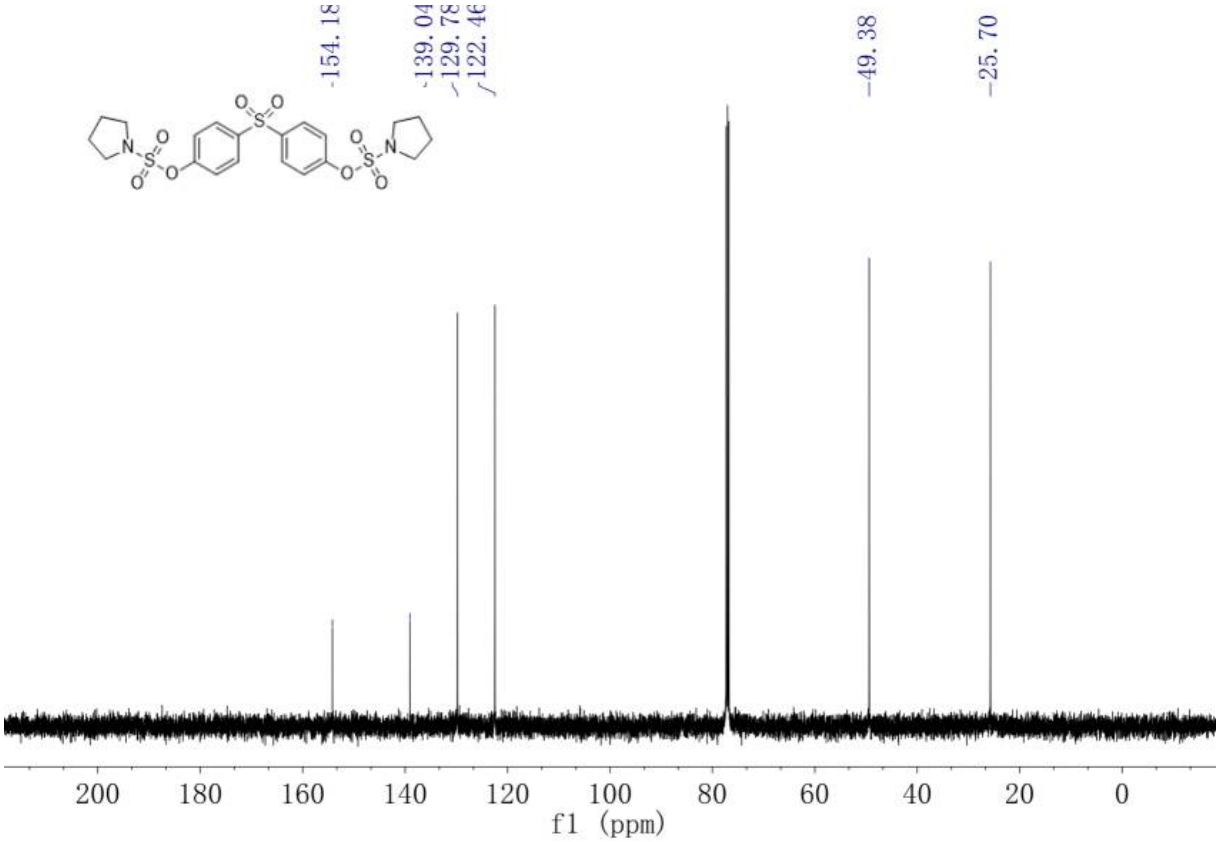
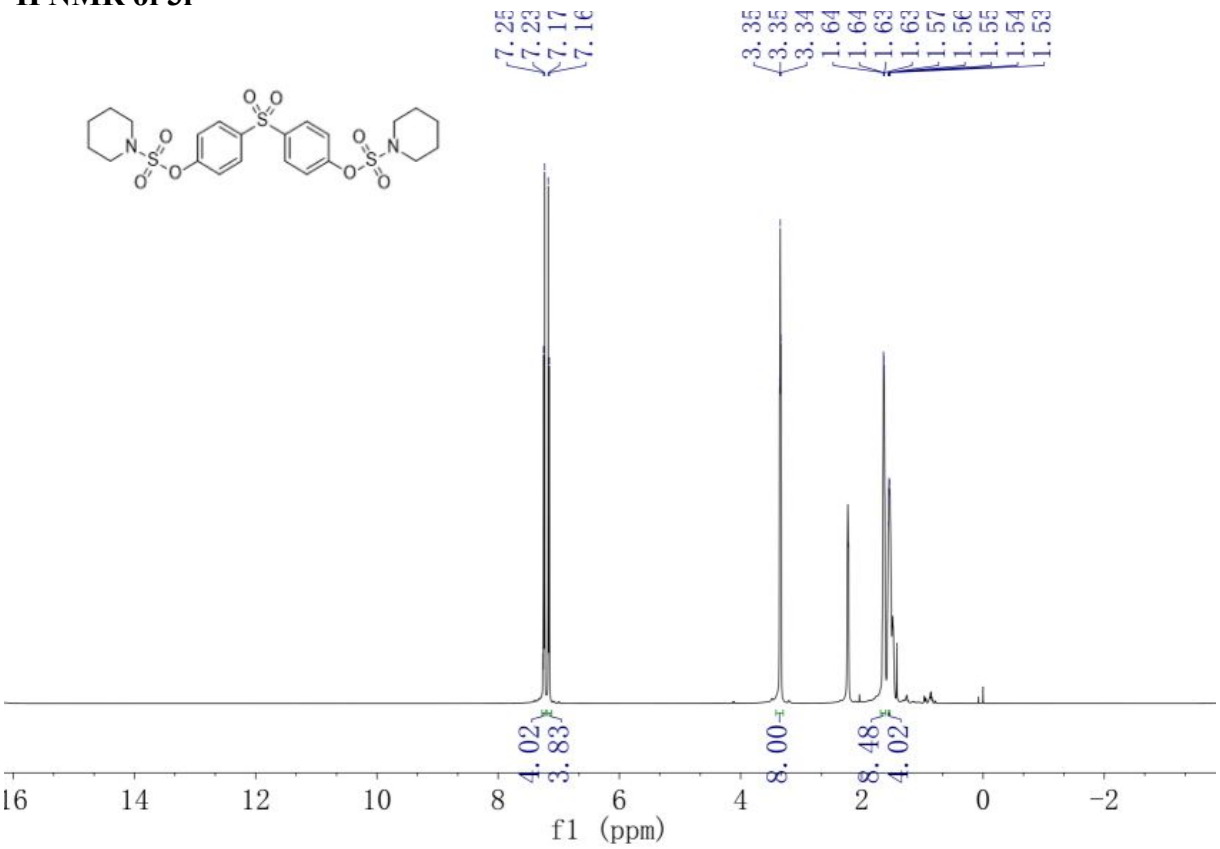


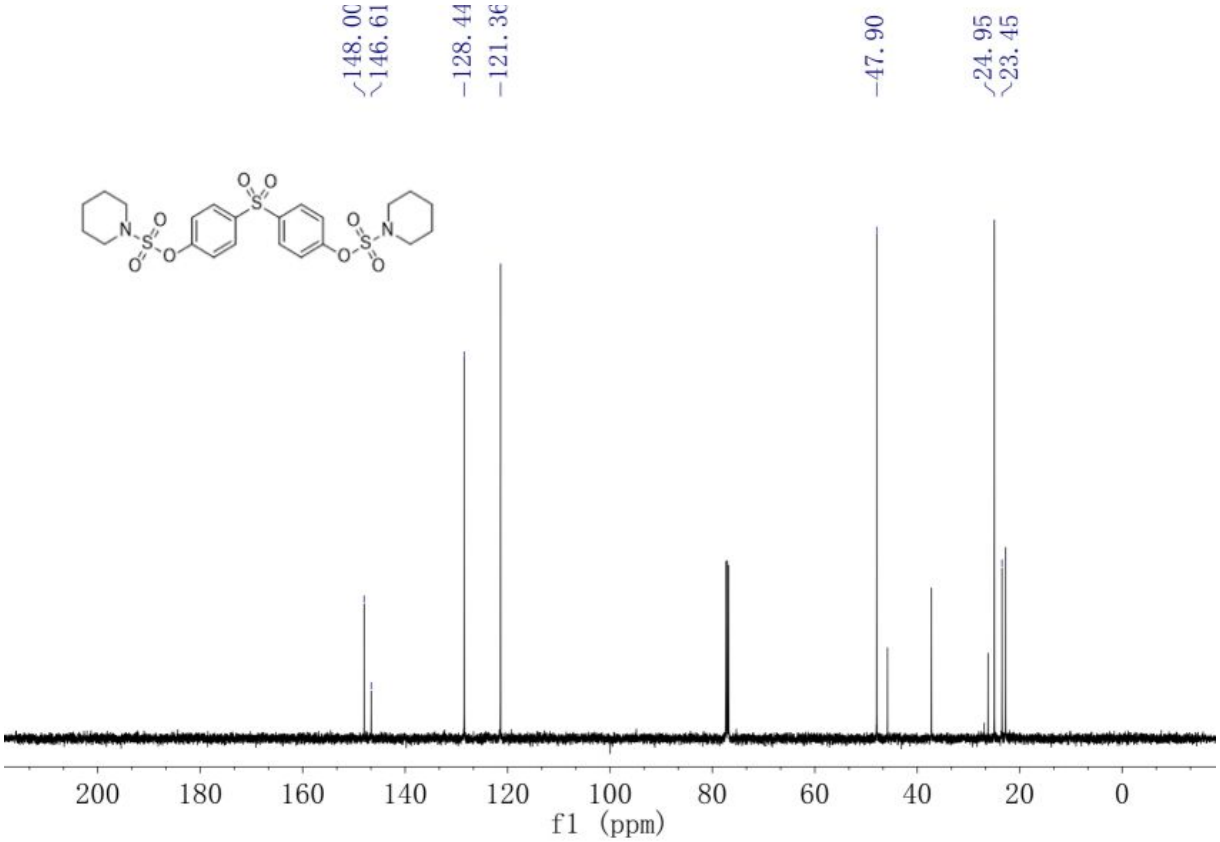
^{13}C NMR of 3h



^{1}H NMR of 3i



^{13}C NMR of 3i



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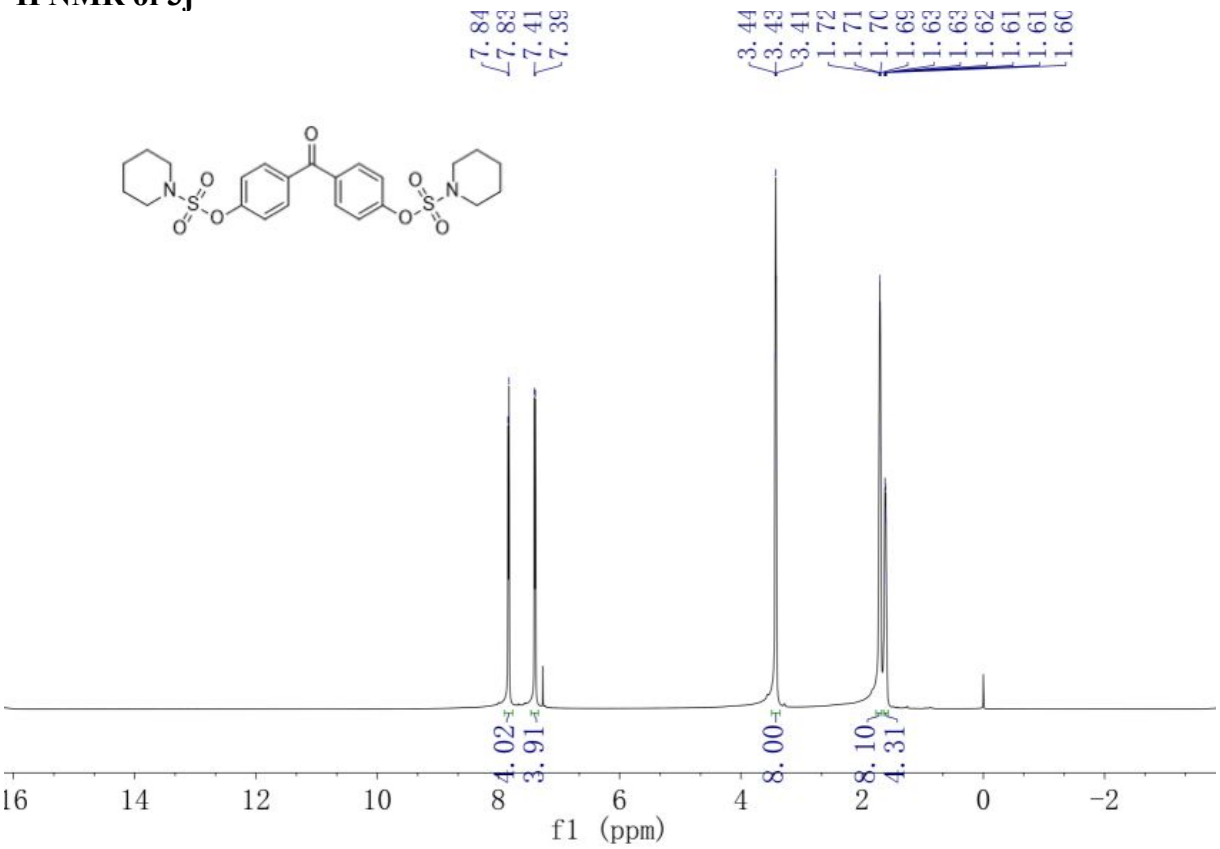

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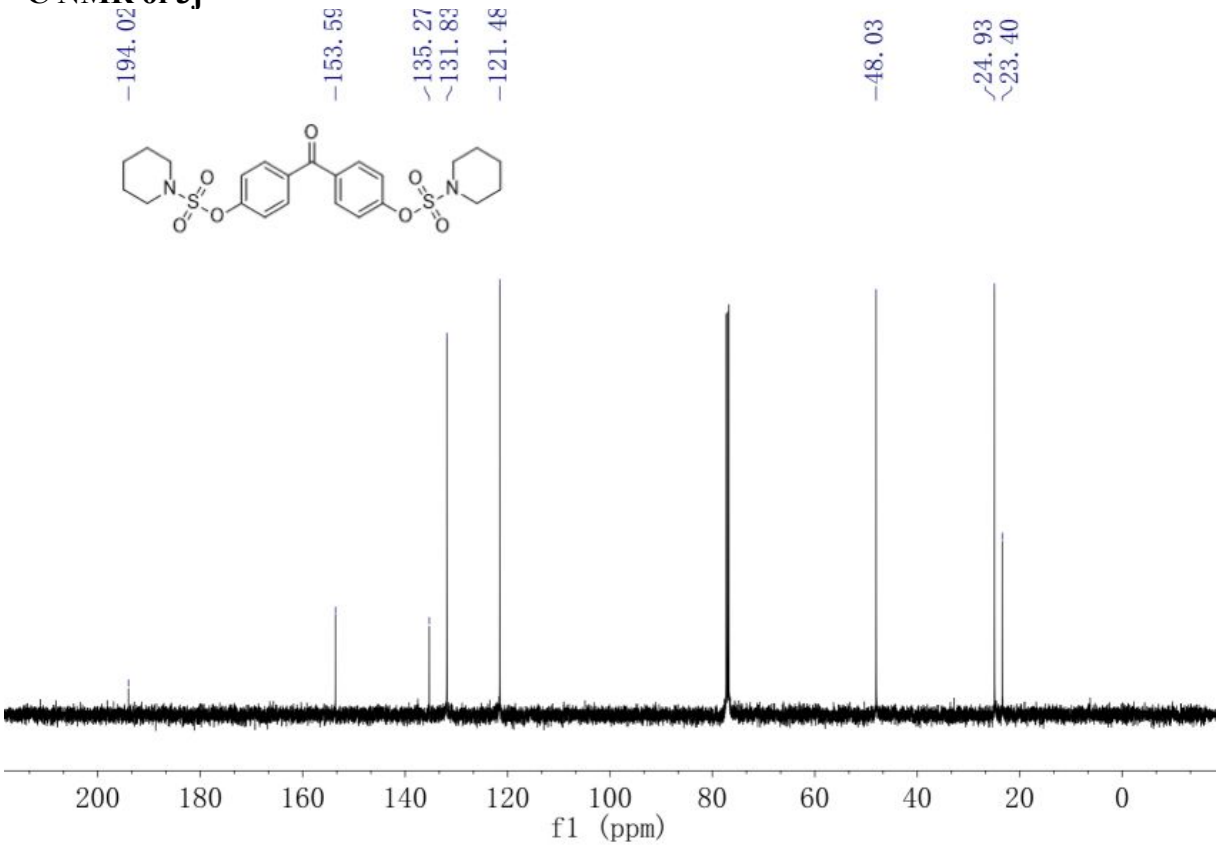

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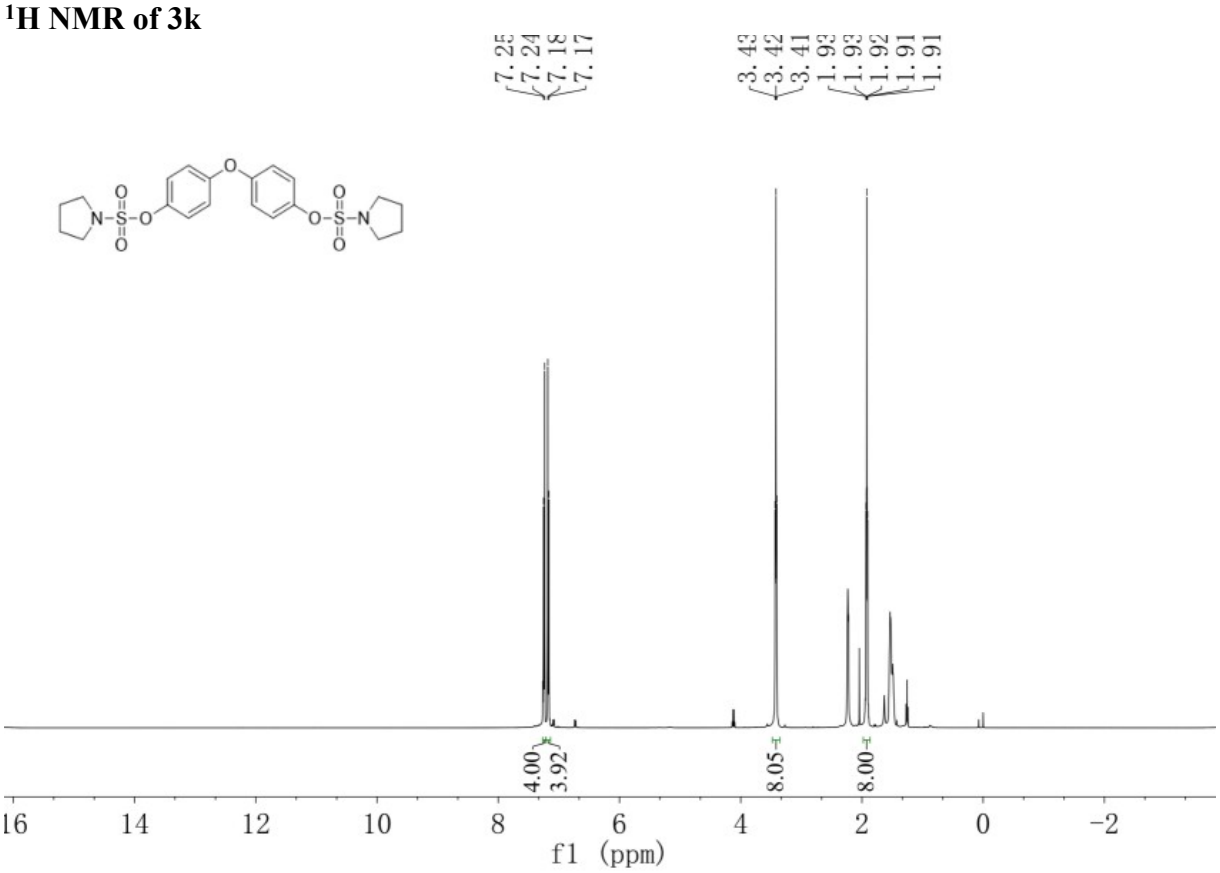

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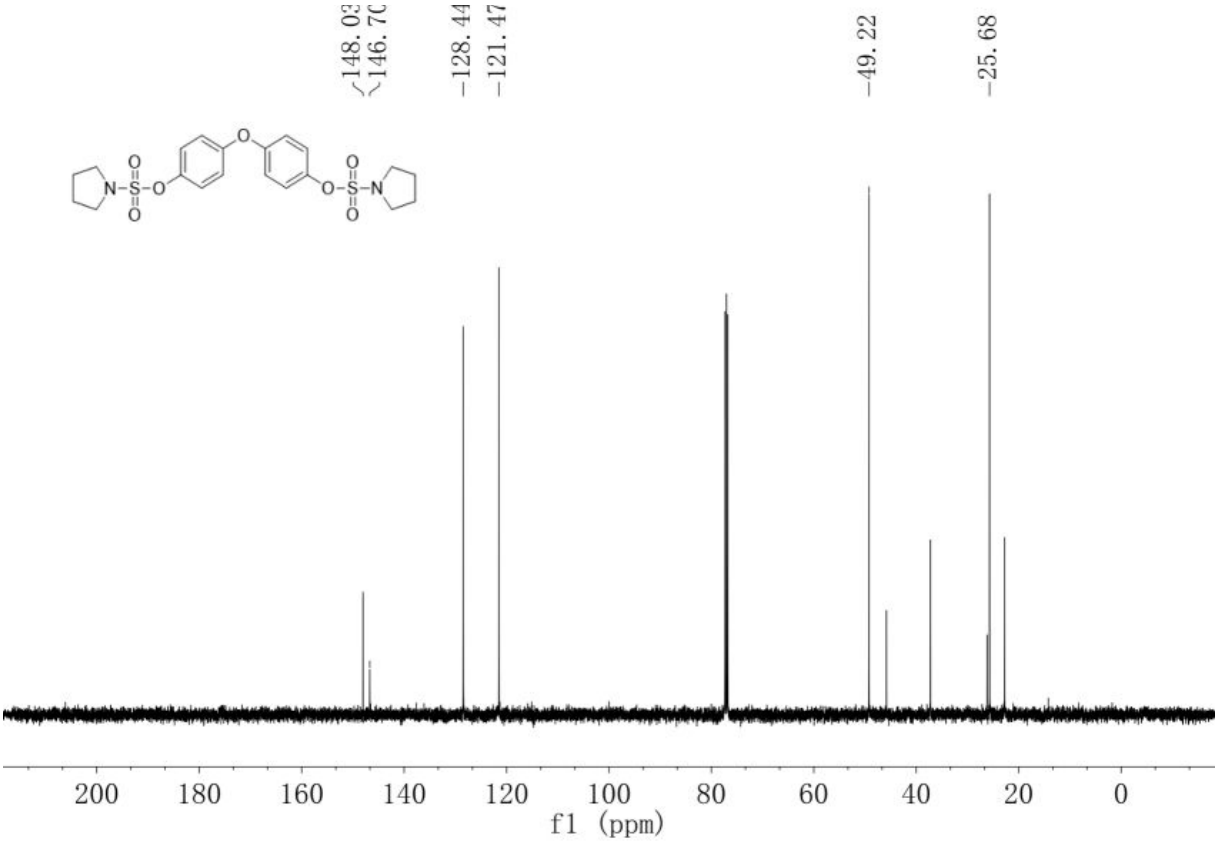

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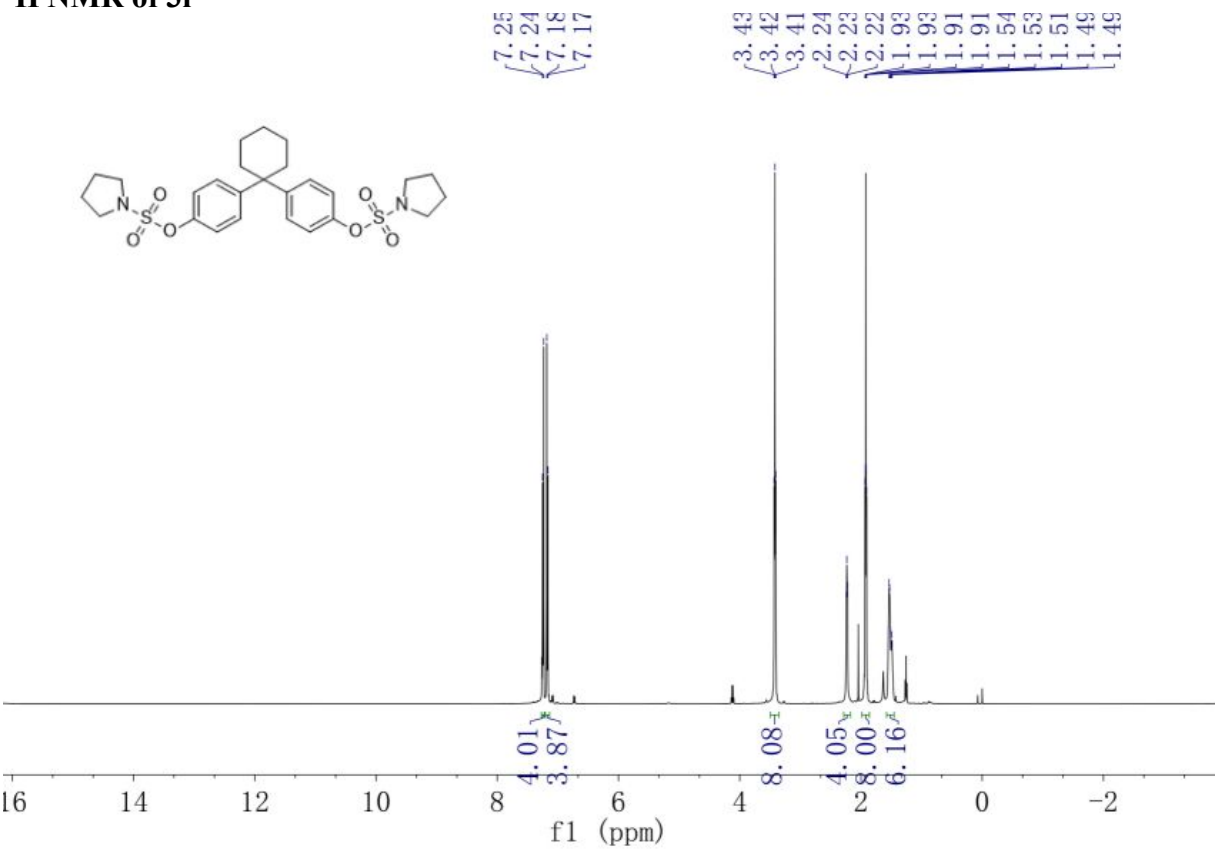

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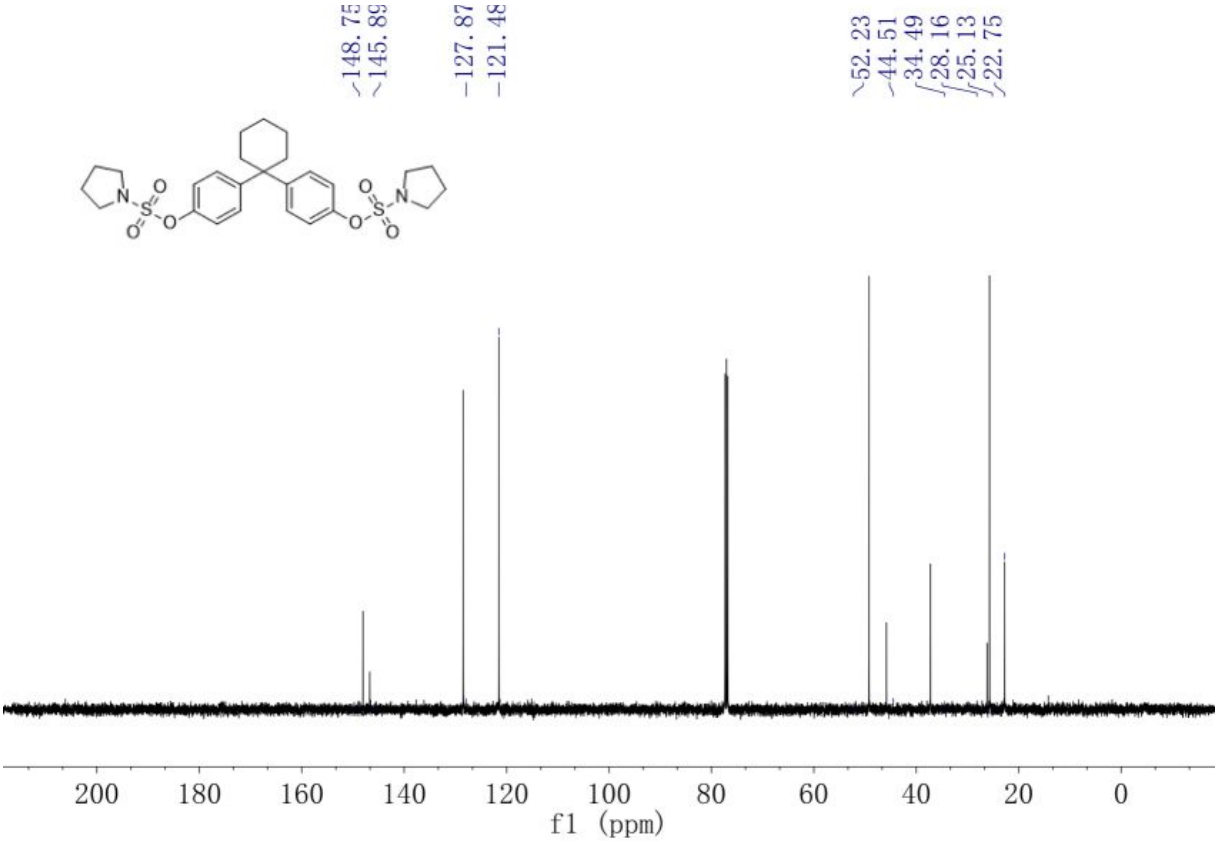

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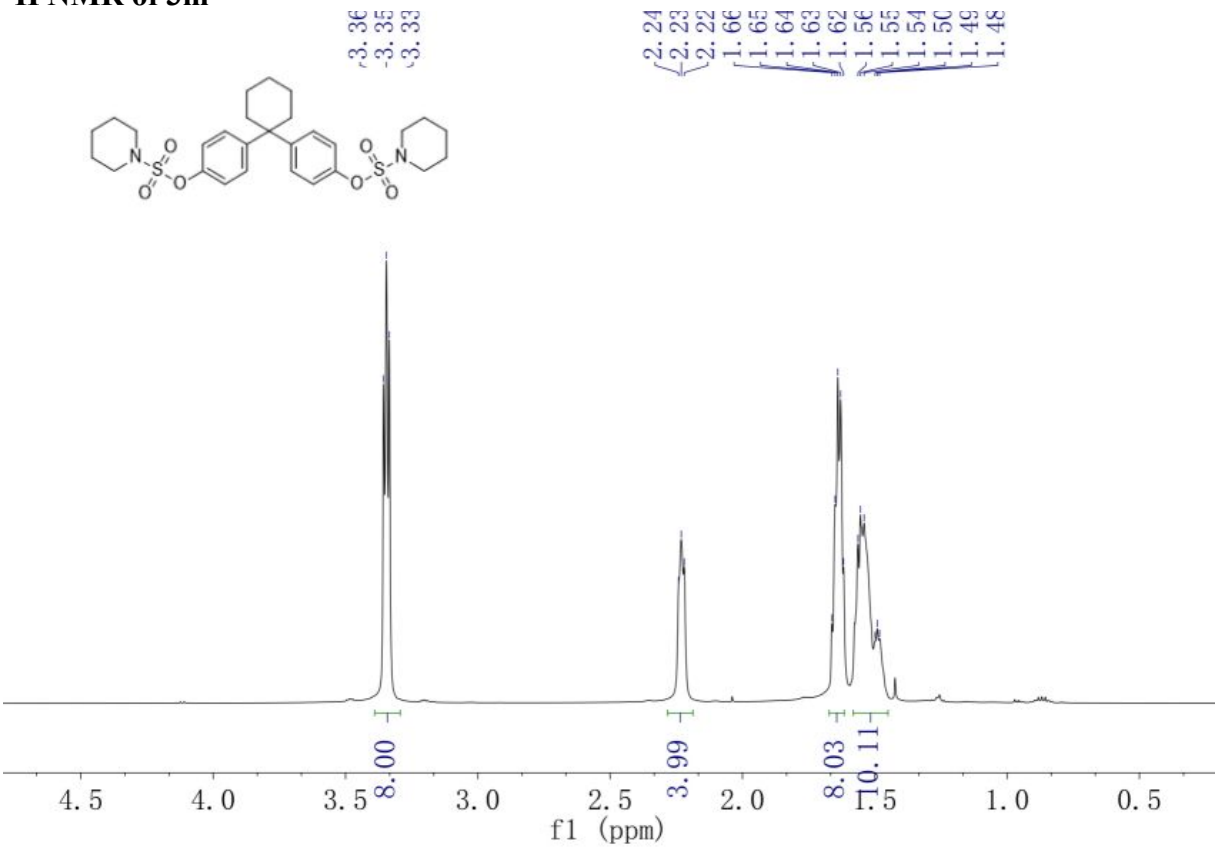

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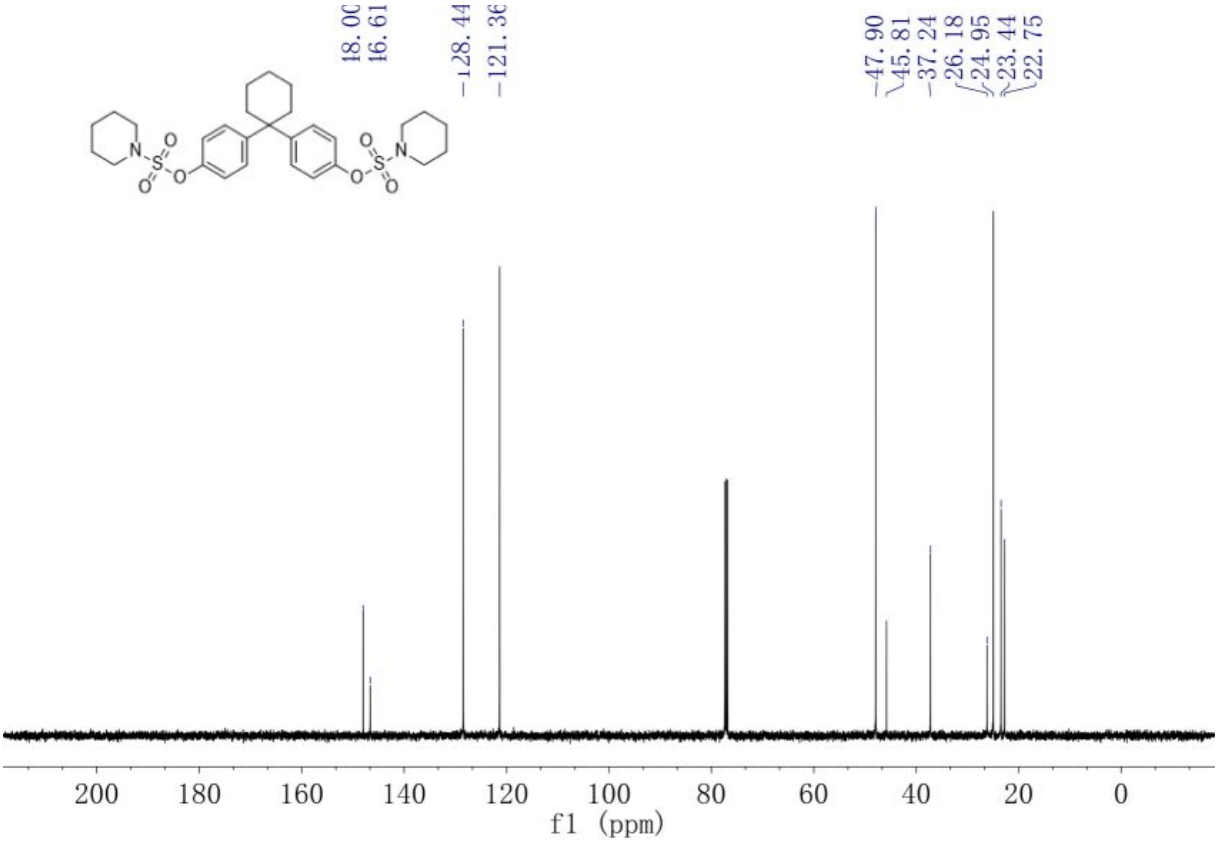

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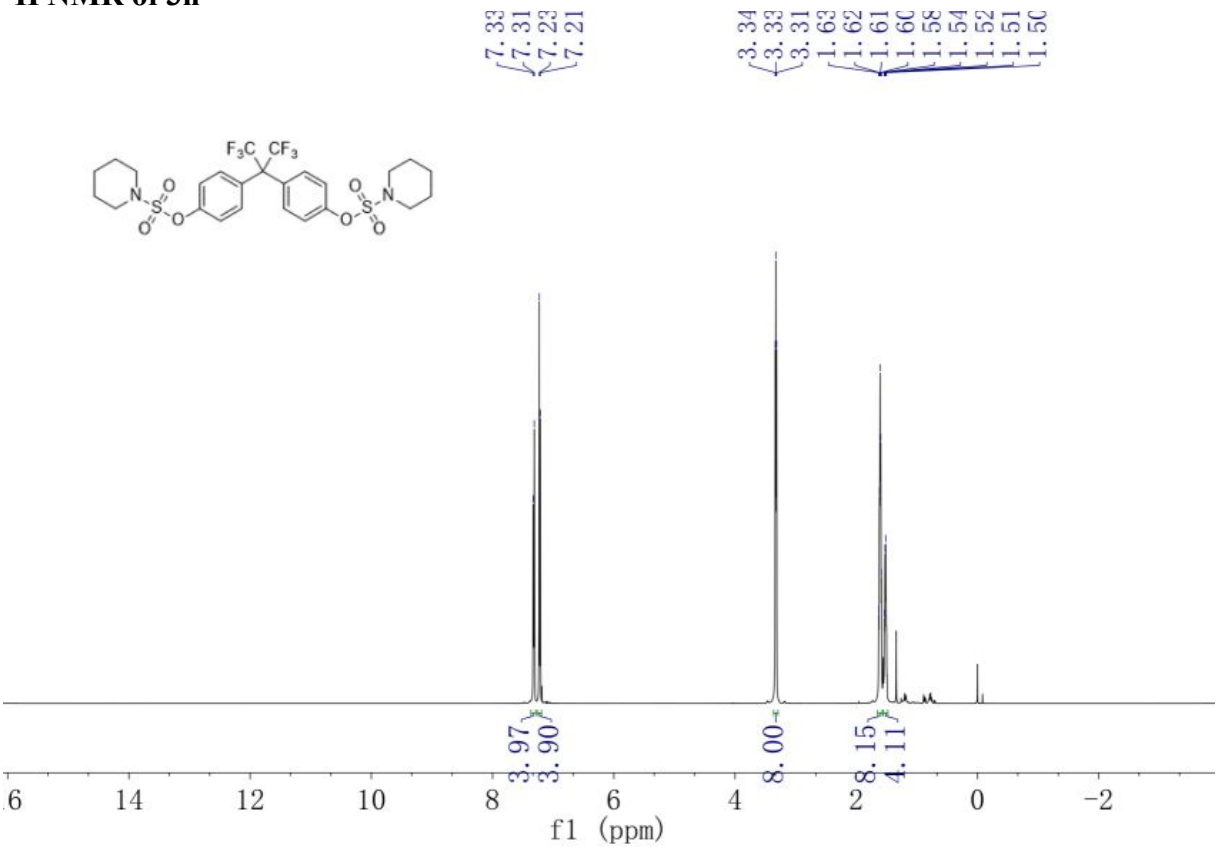

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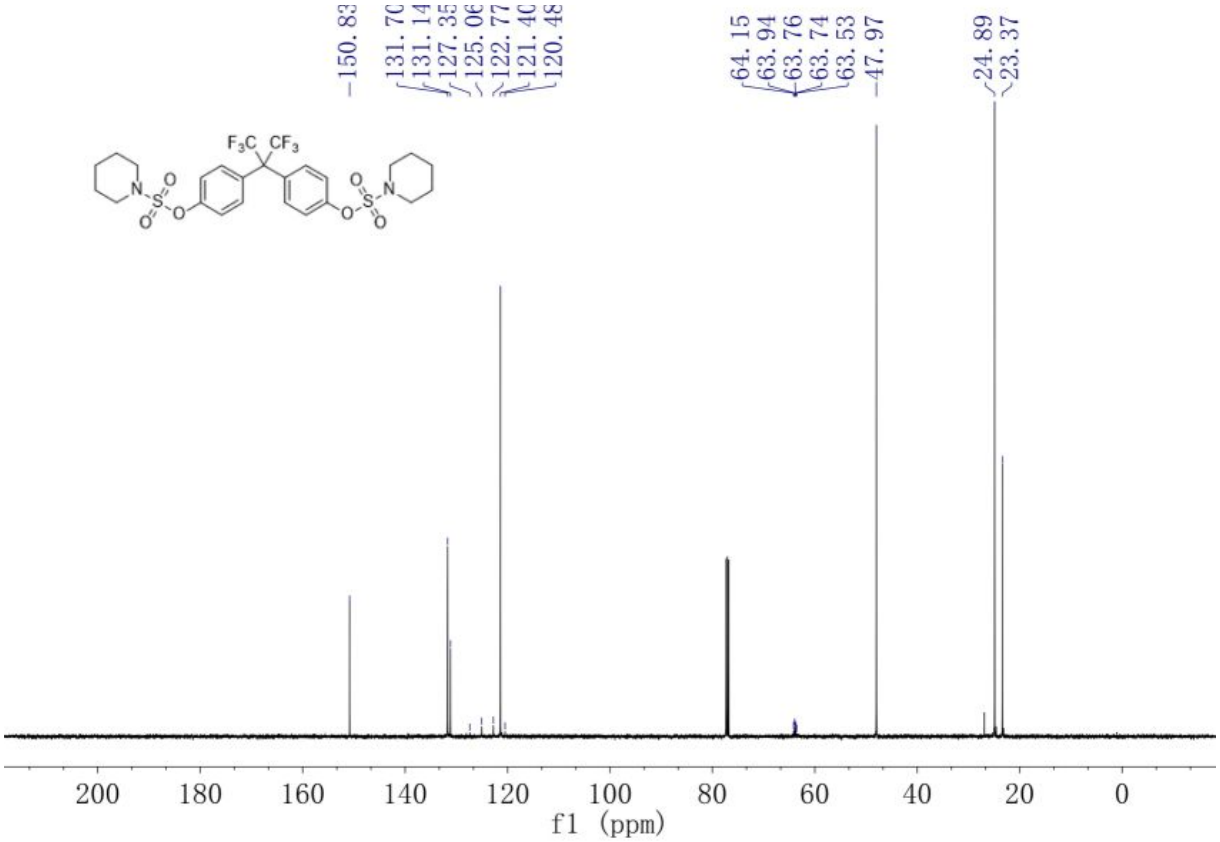

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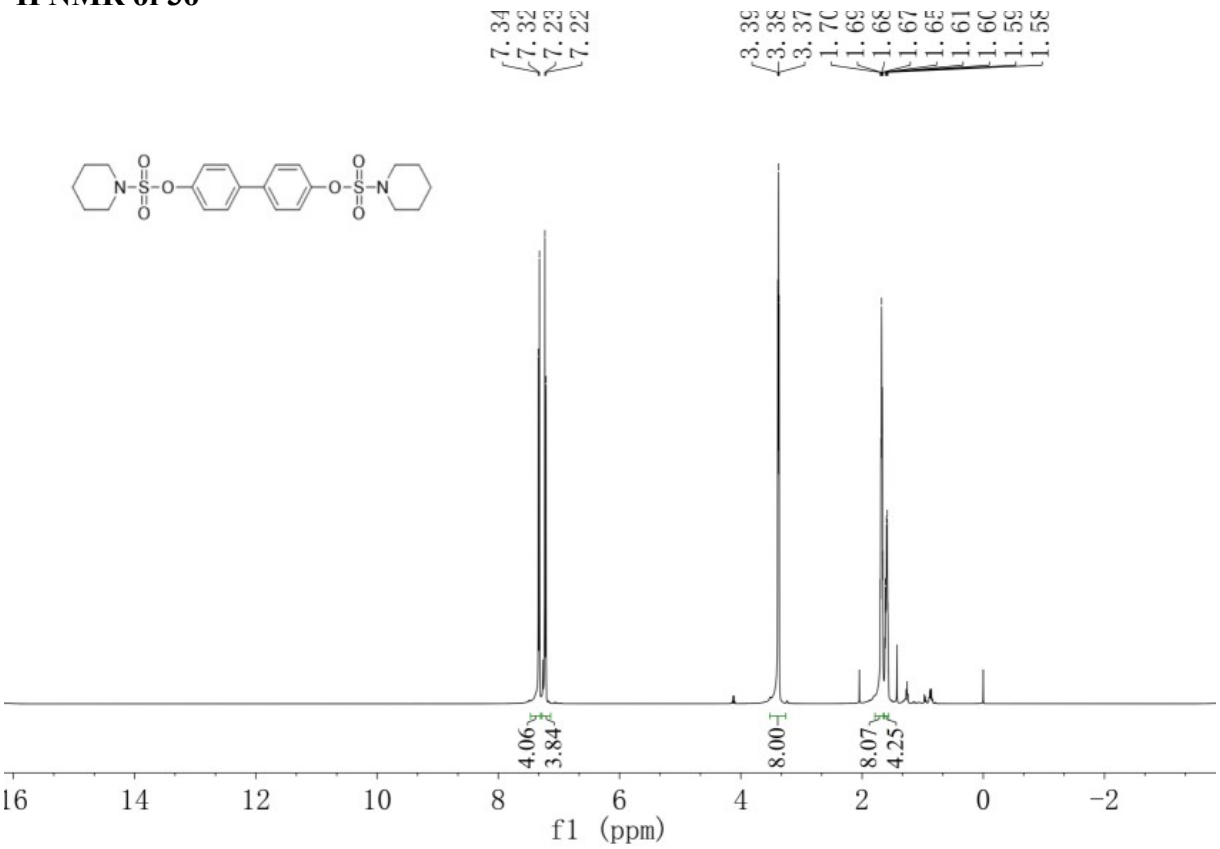

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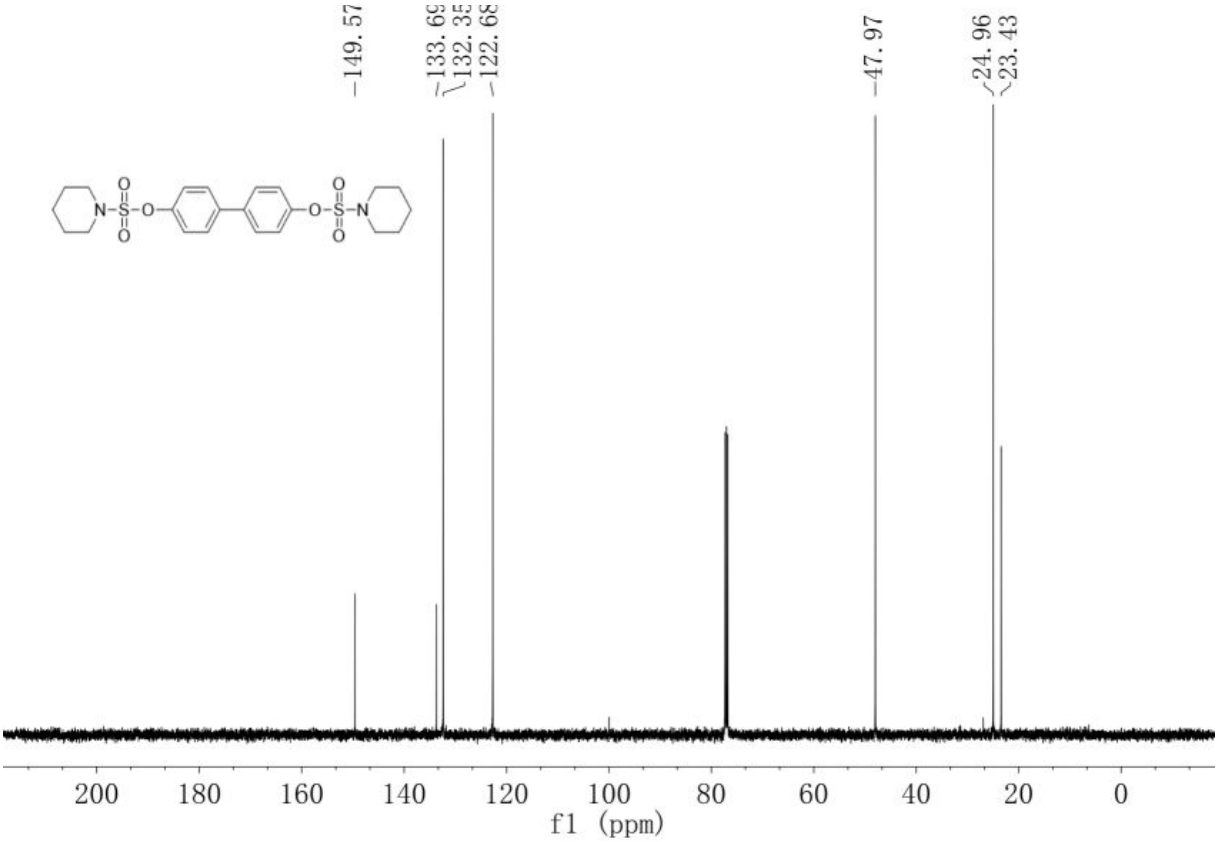
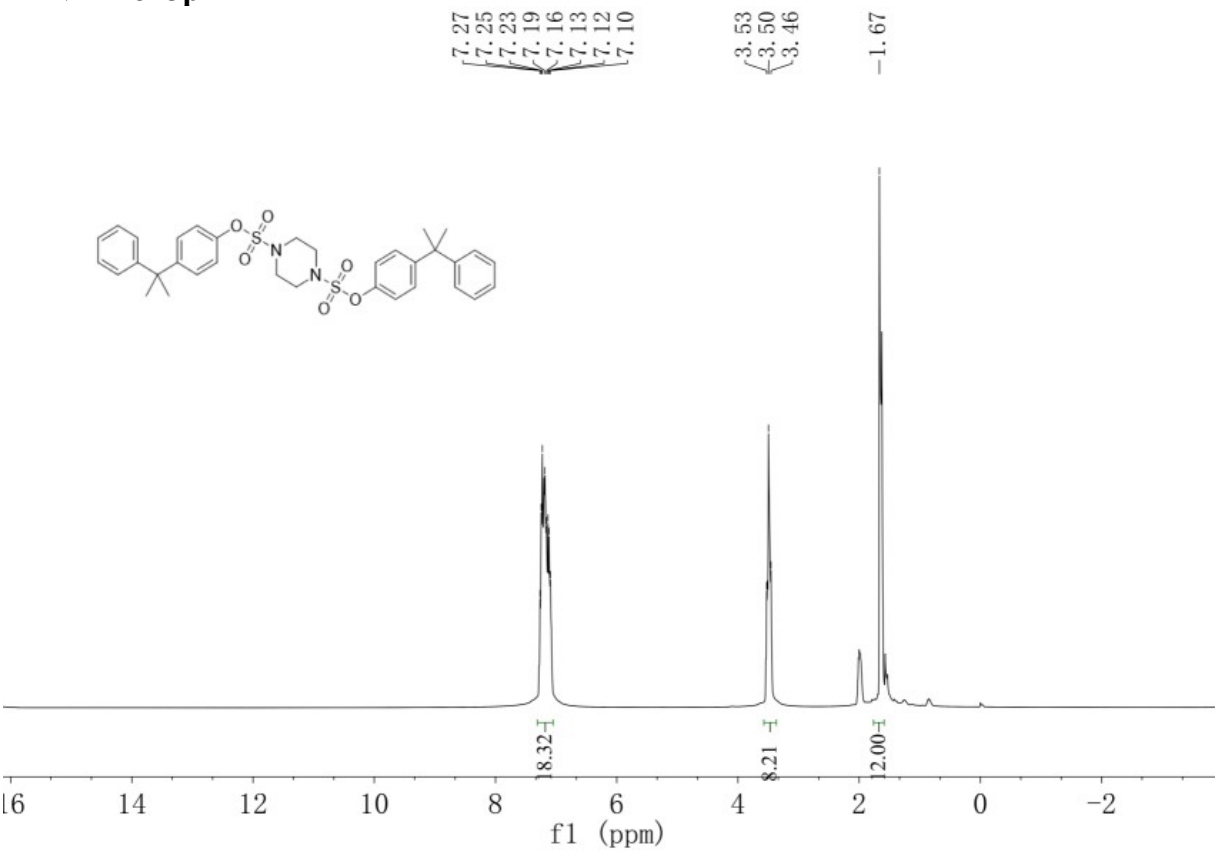


^{1}H NMR of 3p



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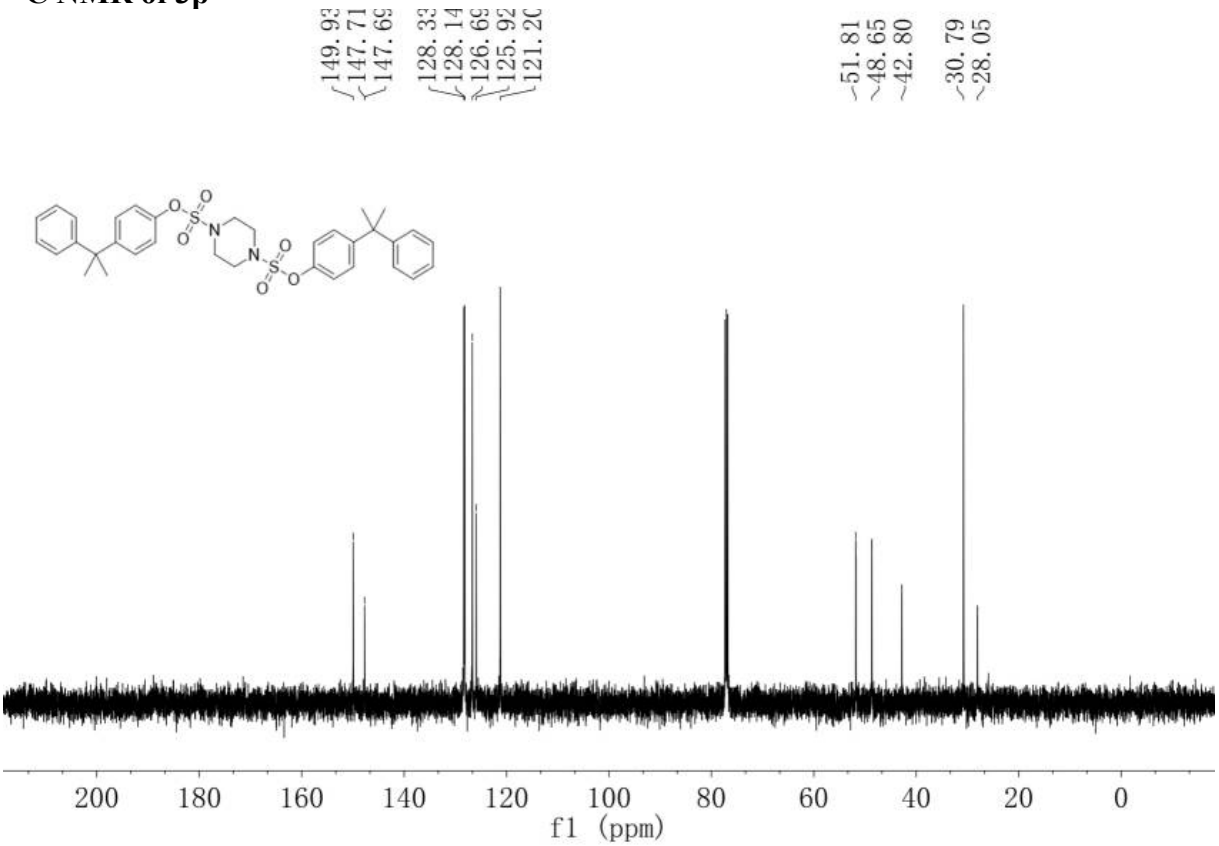

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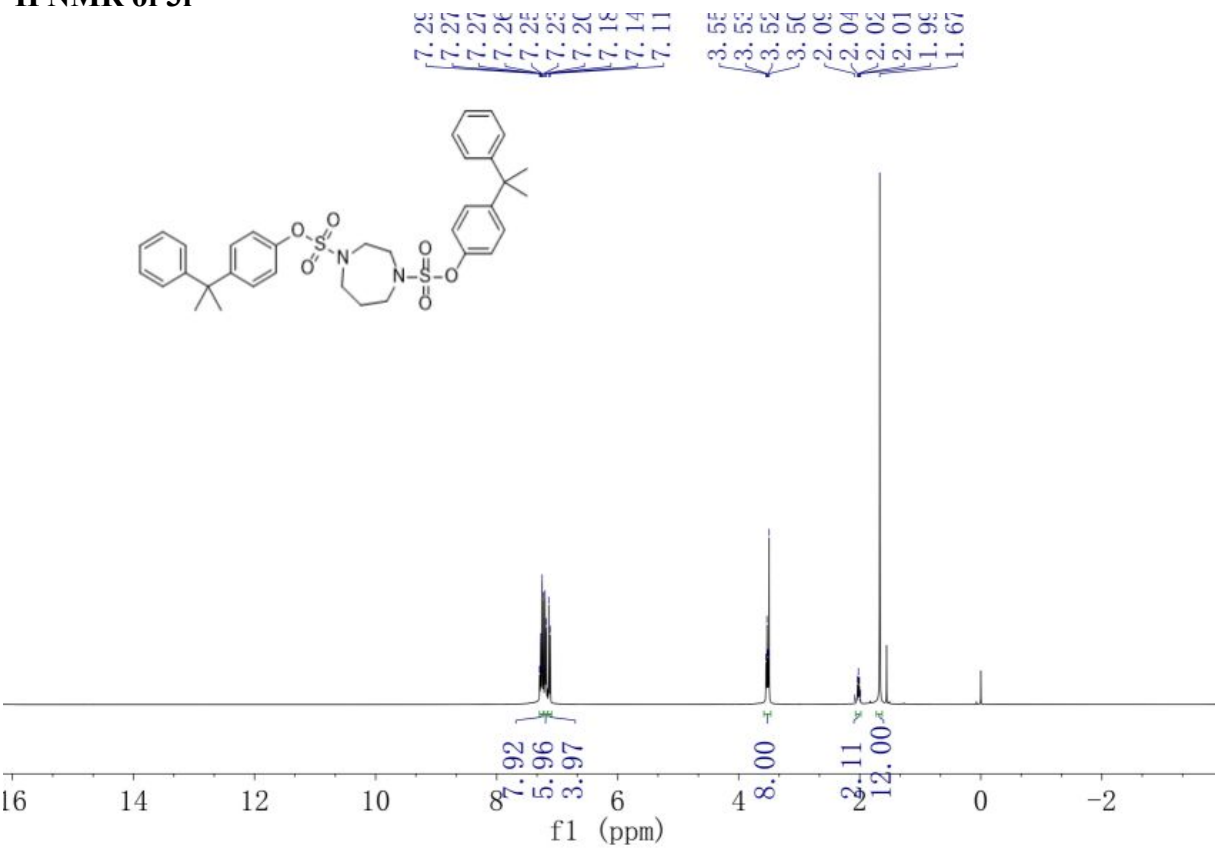
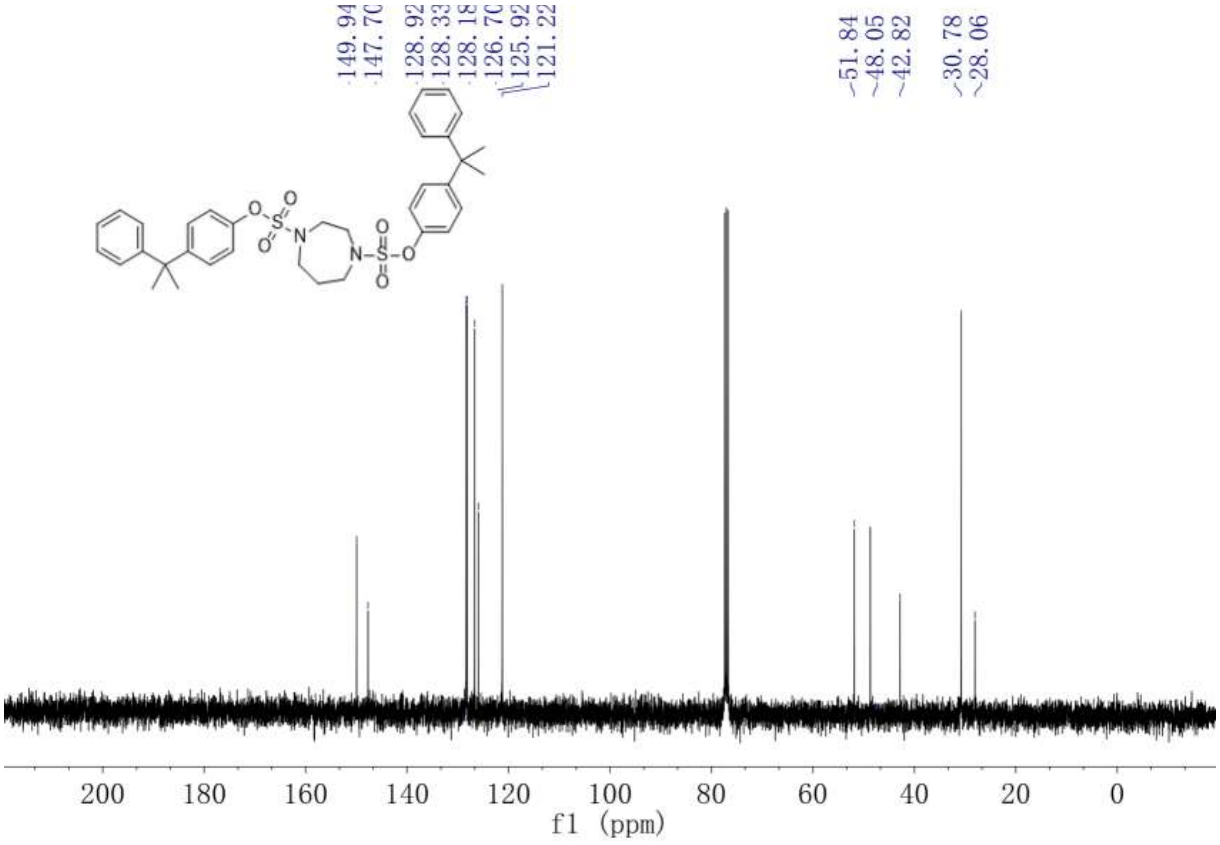


^{13}C NMR of 3r



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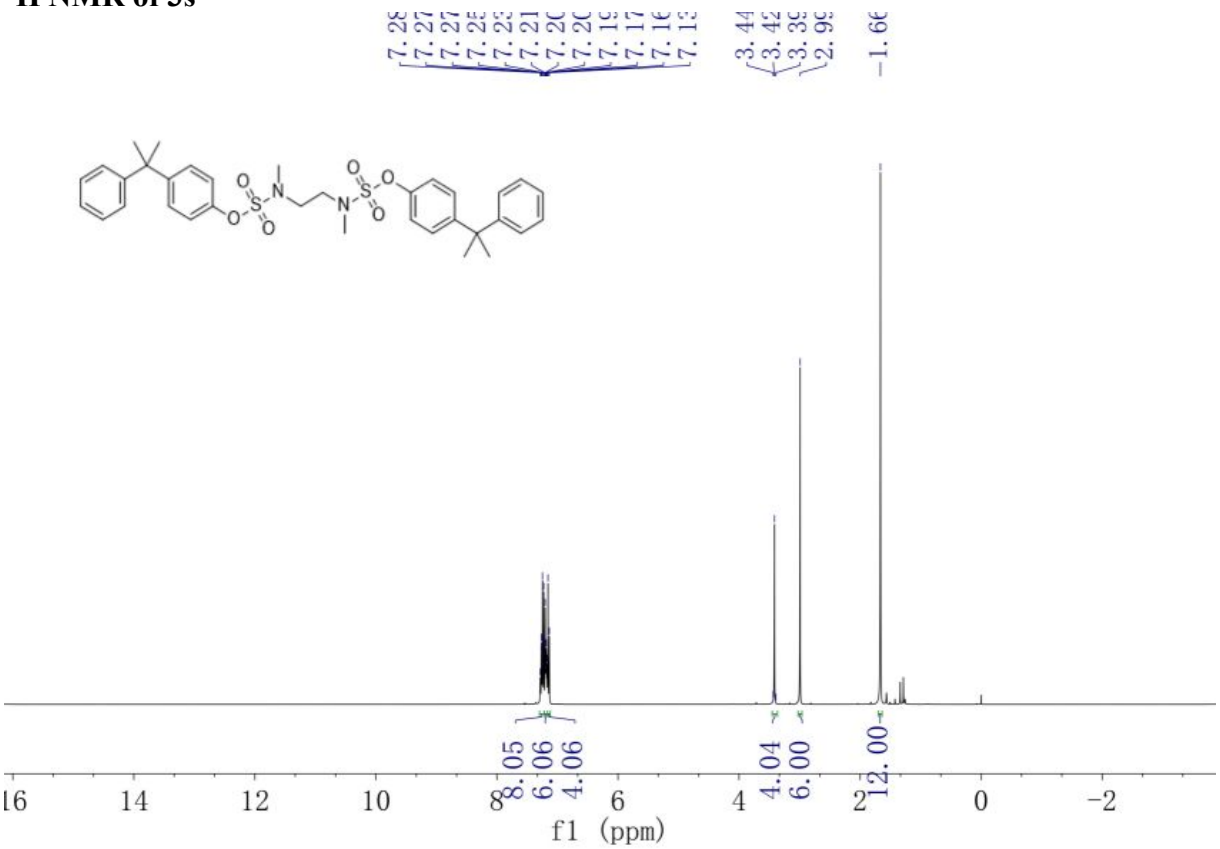

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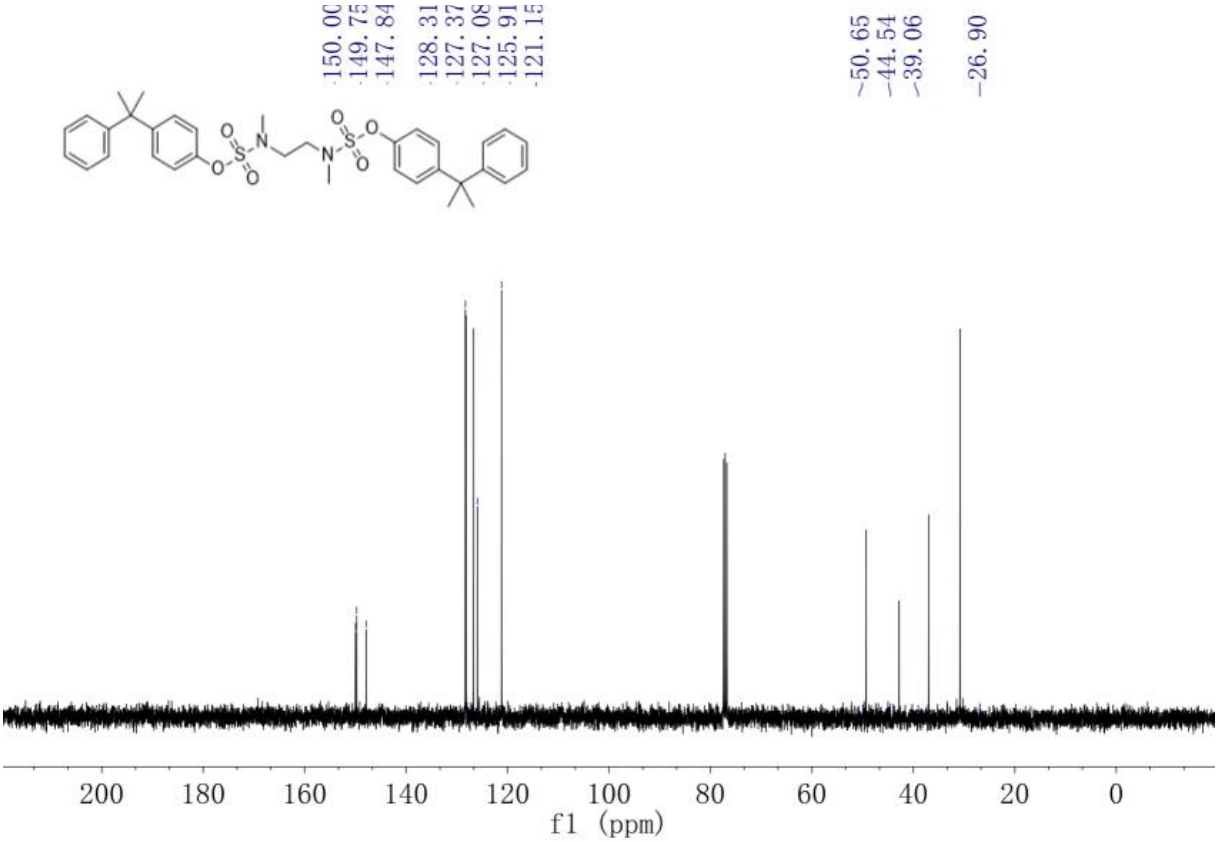

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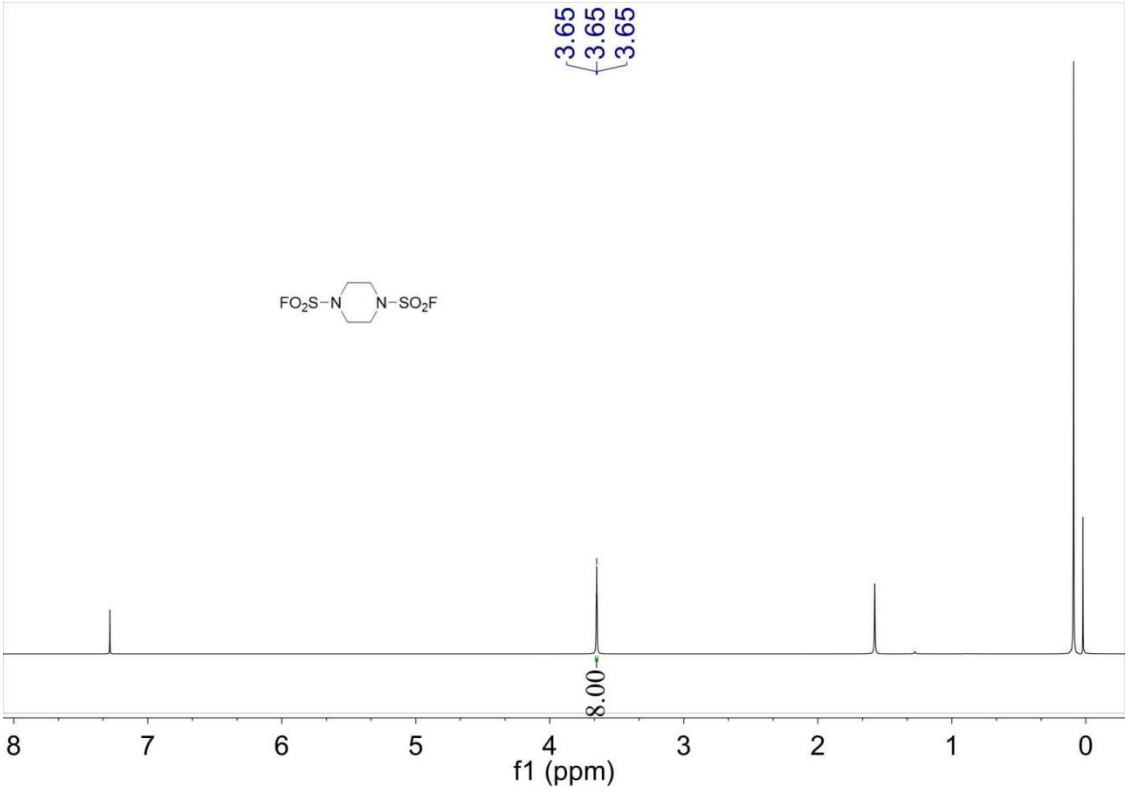

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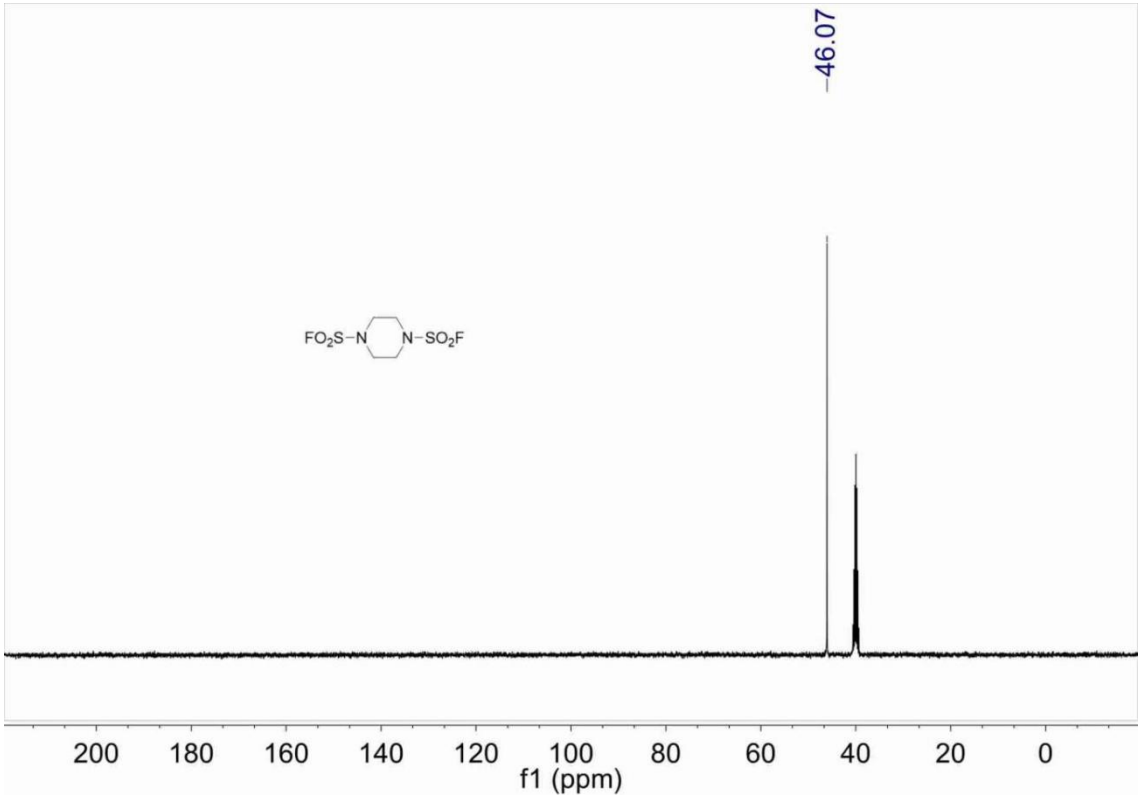
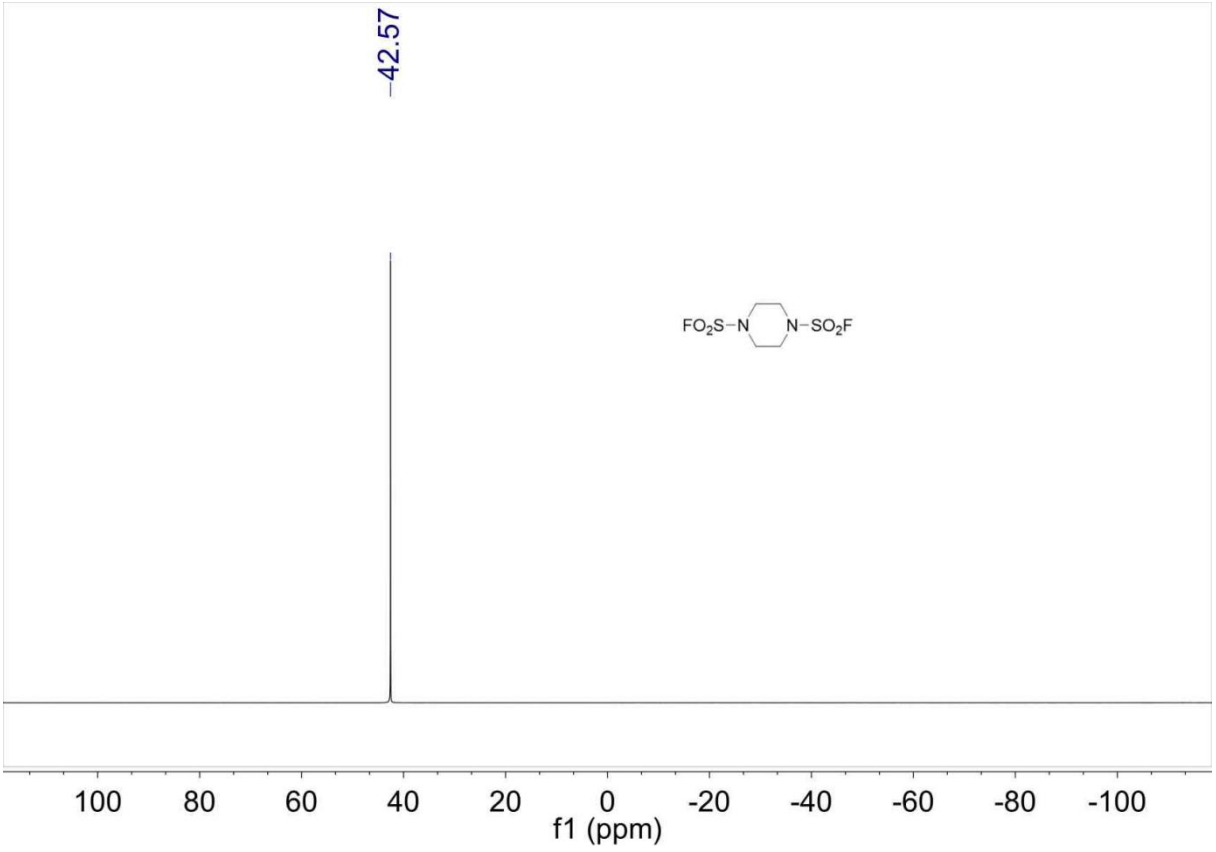
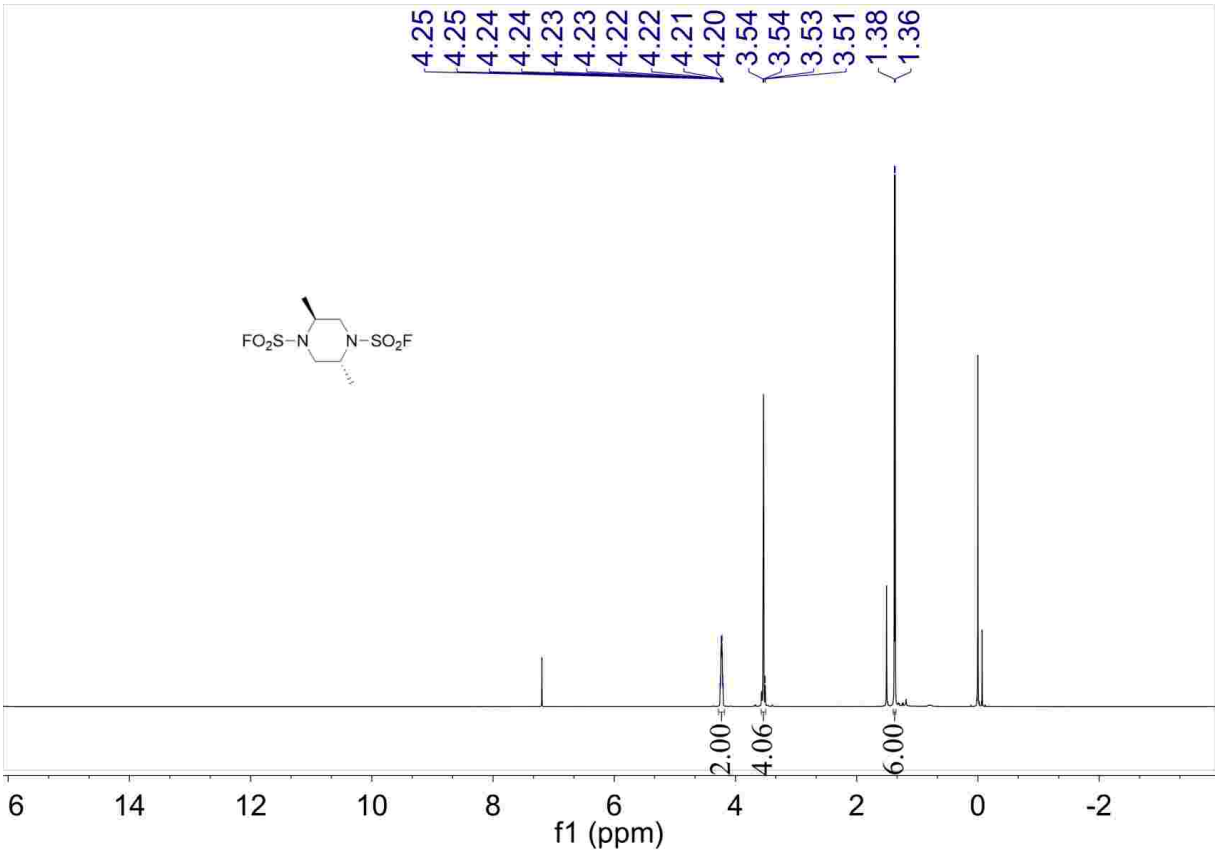


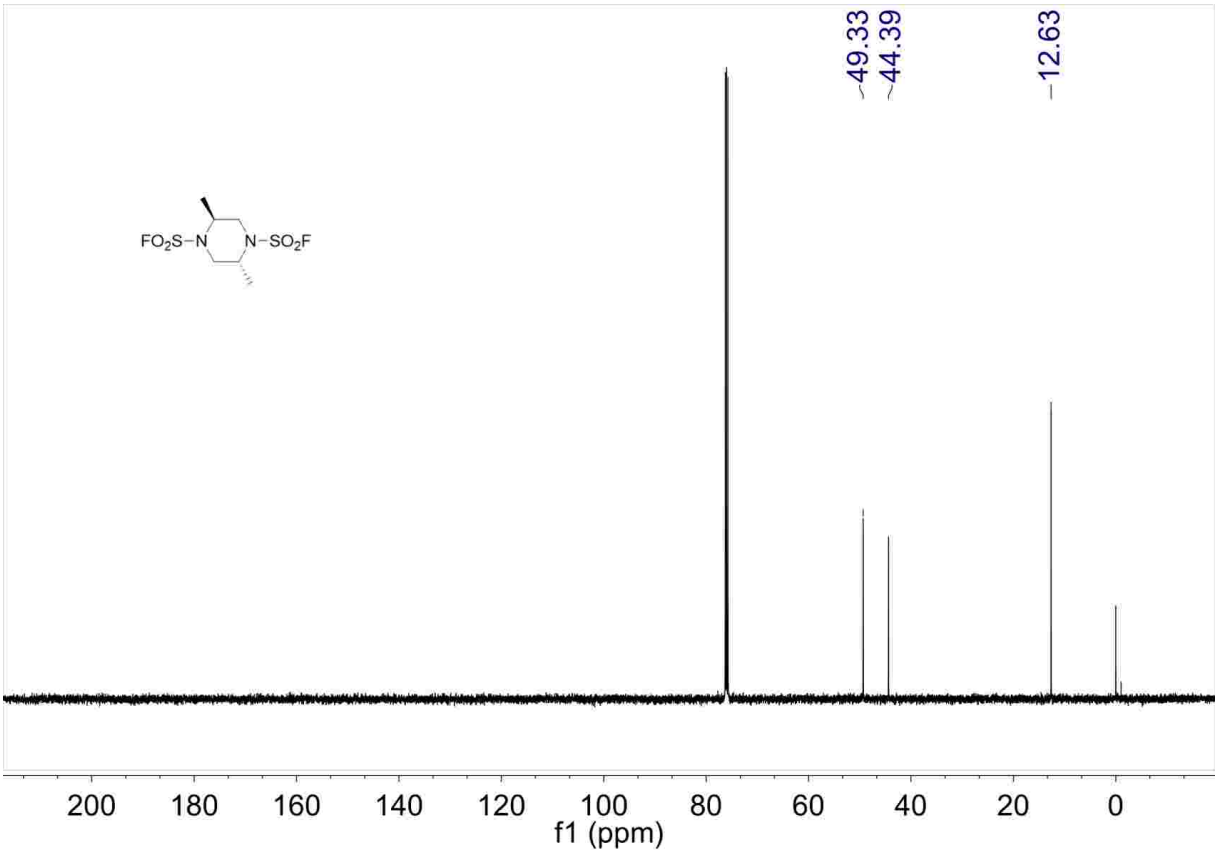
^{19}F NMR of A1



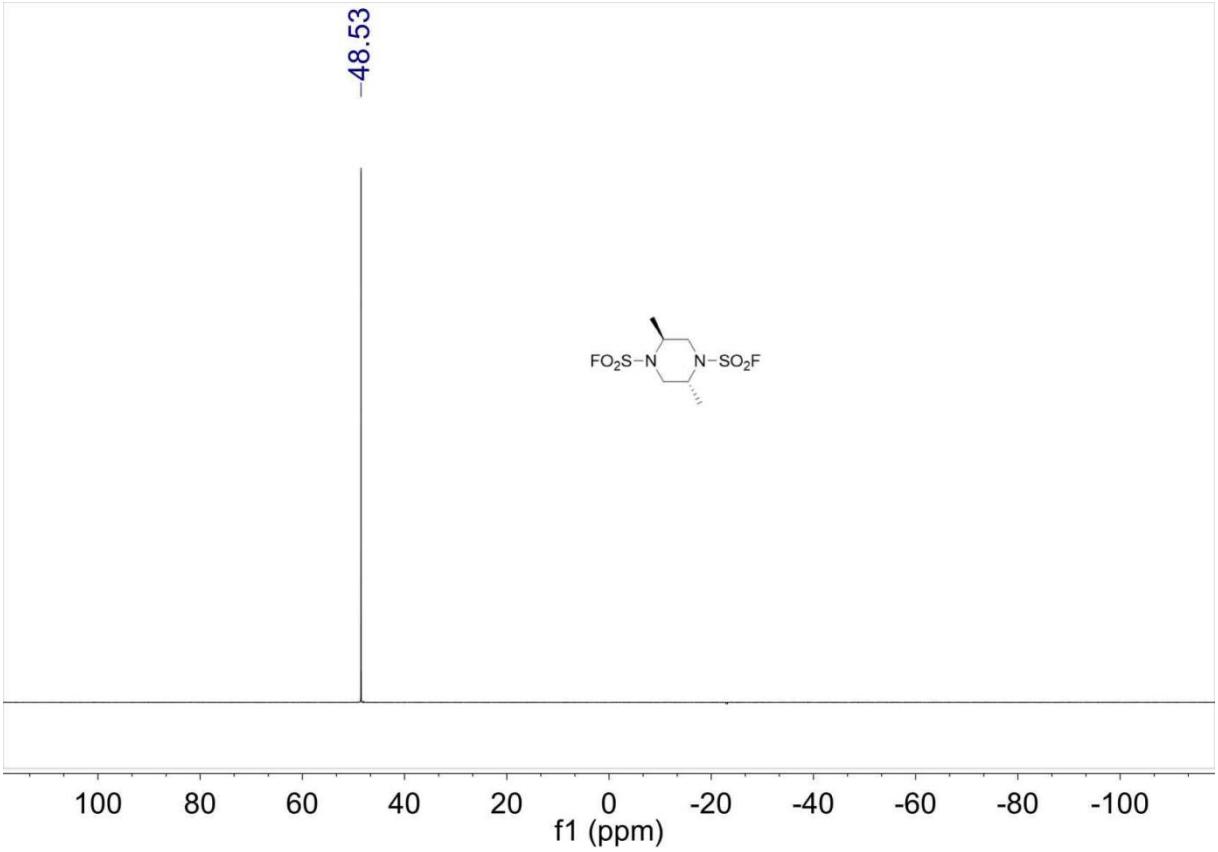
^{1}H NMR of A2



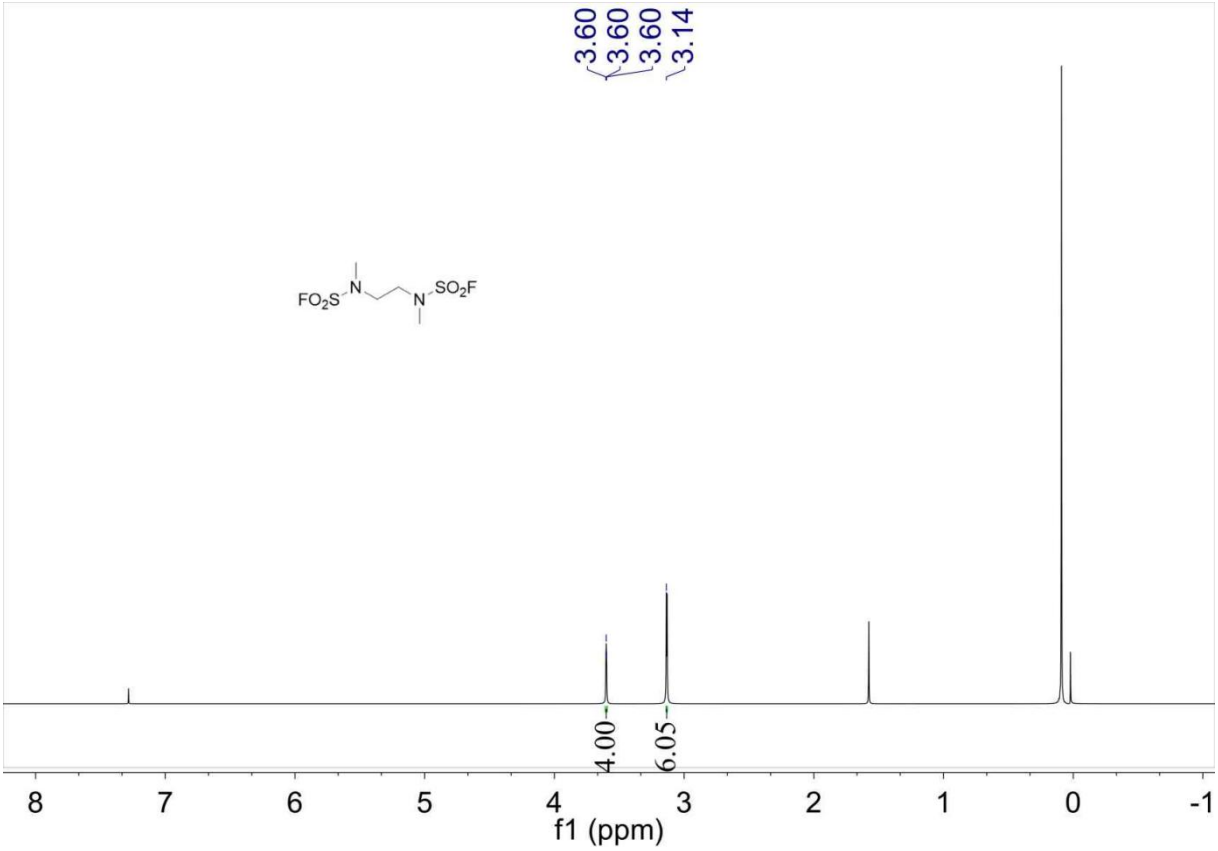
^{13}C NMR of A2



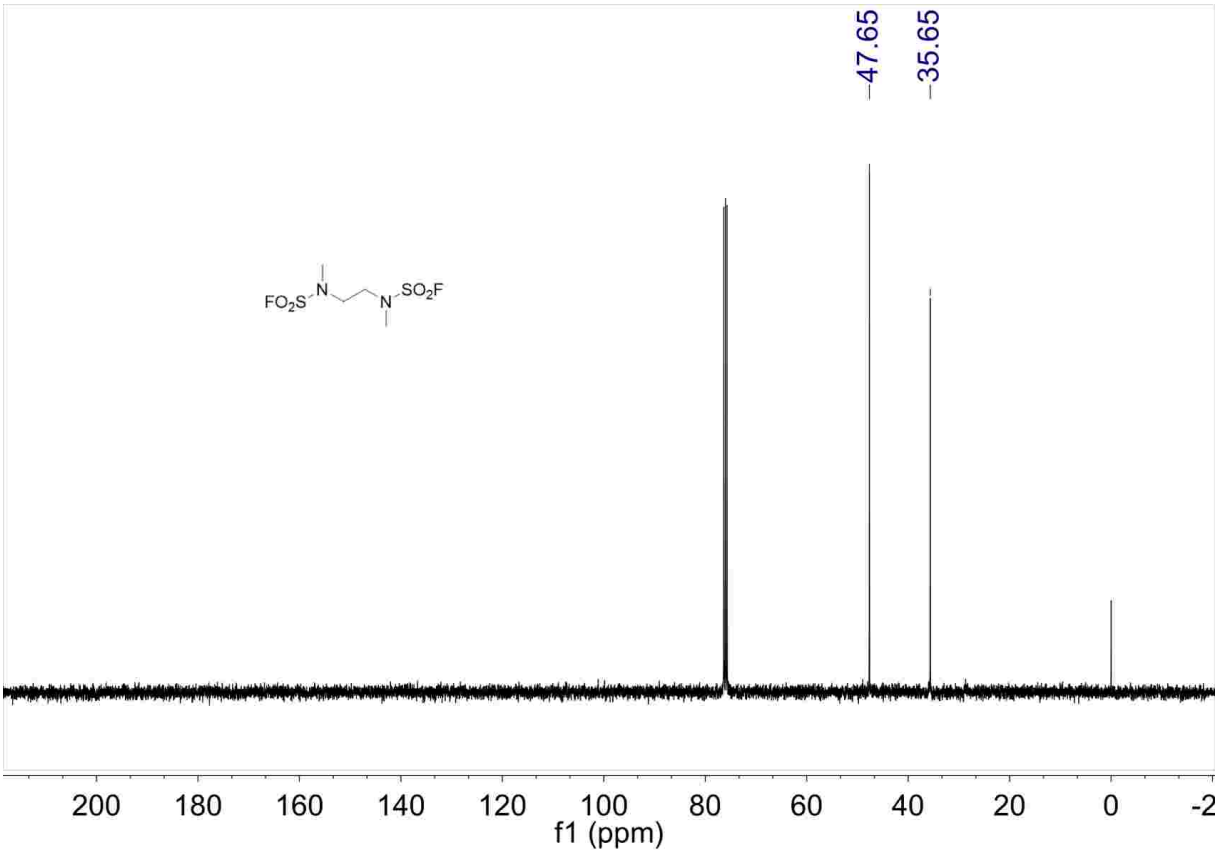
^{19}F NMR of A2



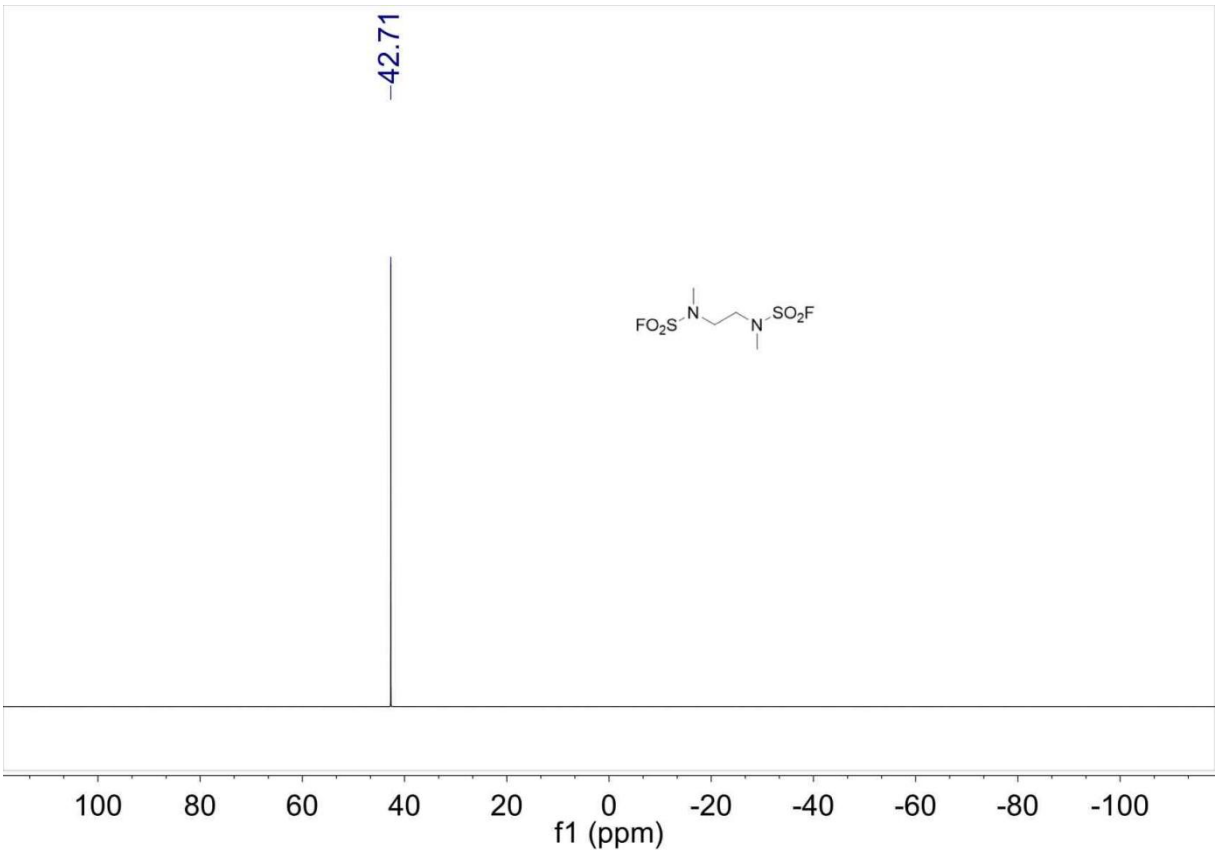
^{1}H NMR of A3



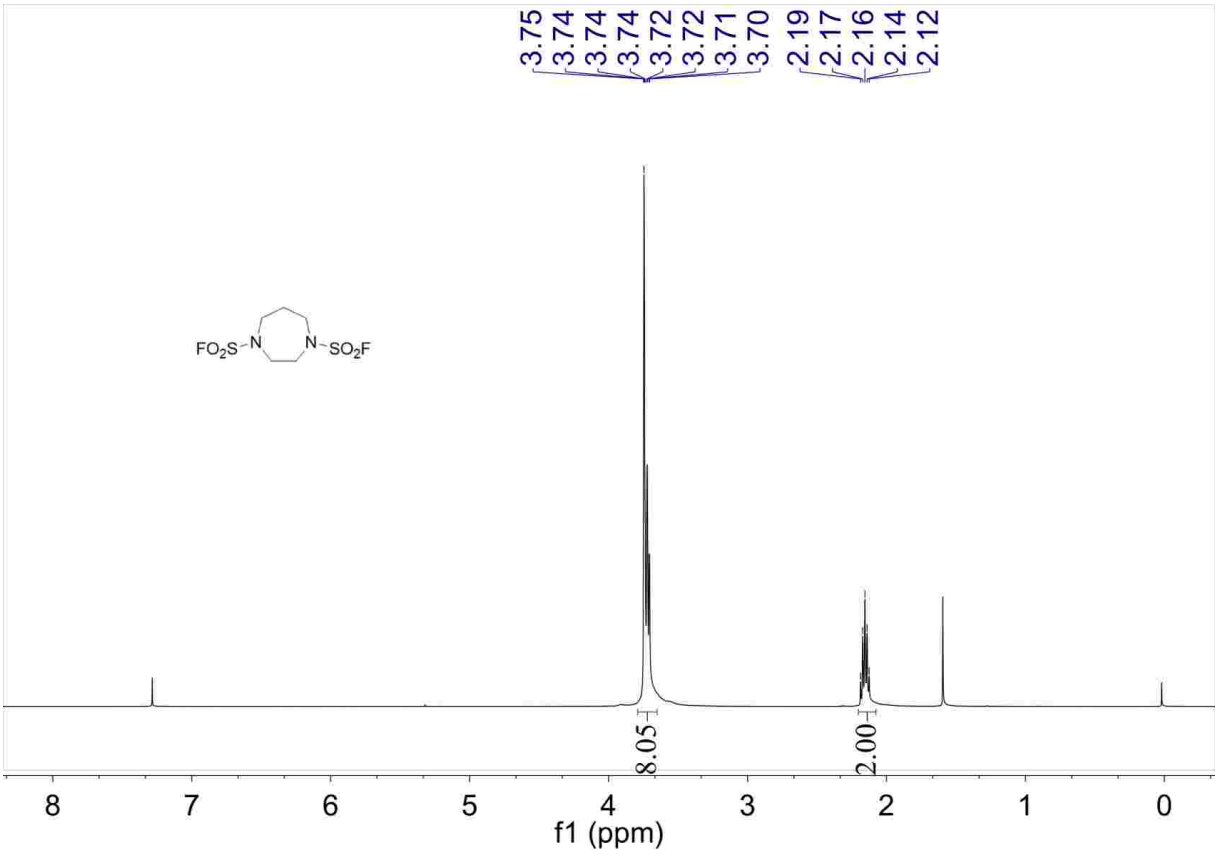
^{13}C NMR of A3



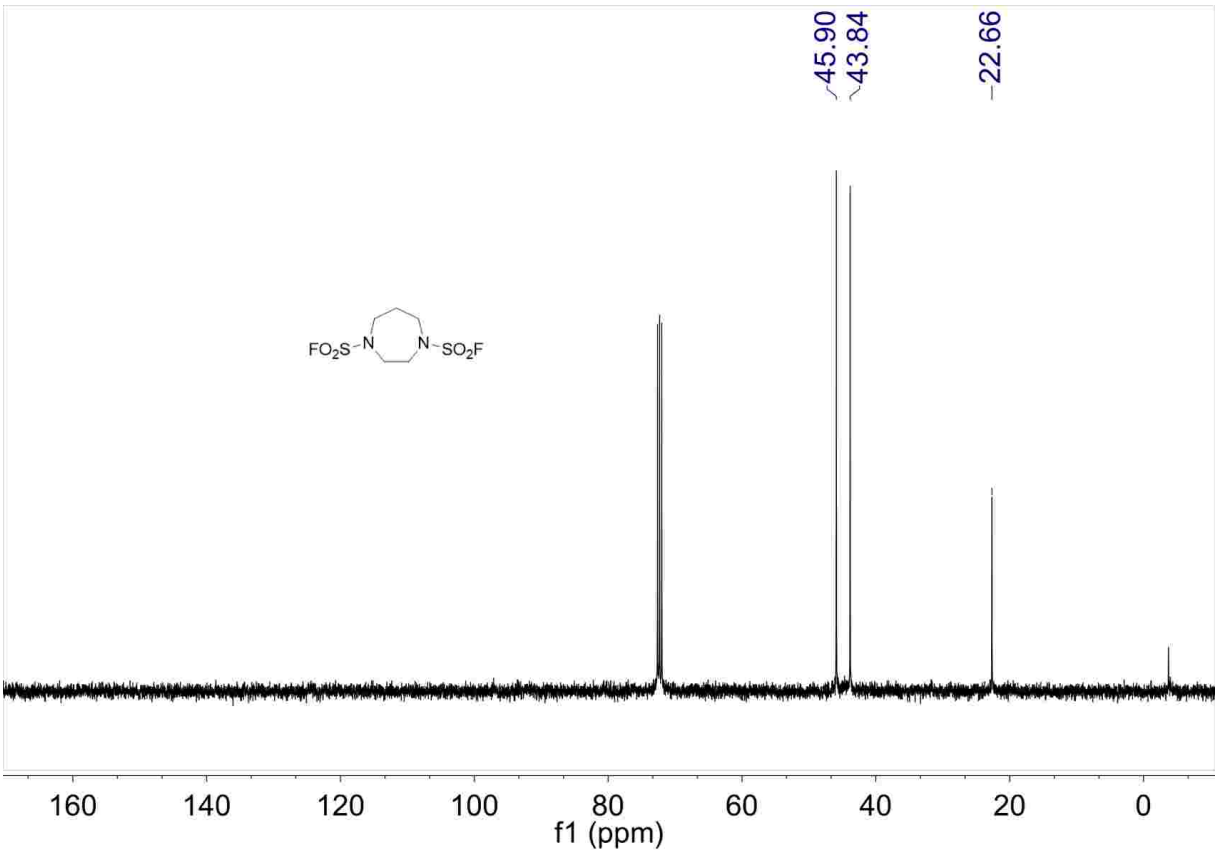
^{19}F NMR of A3



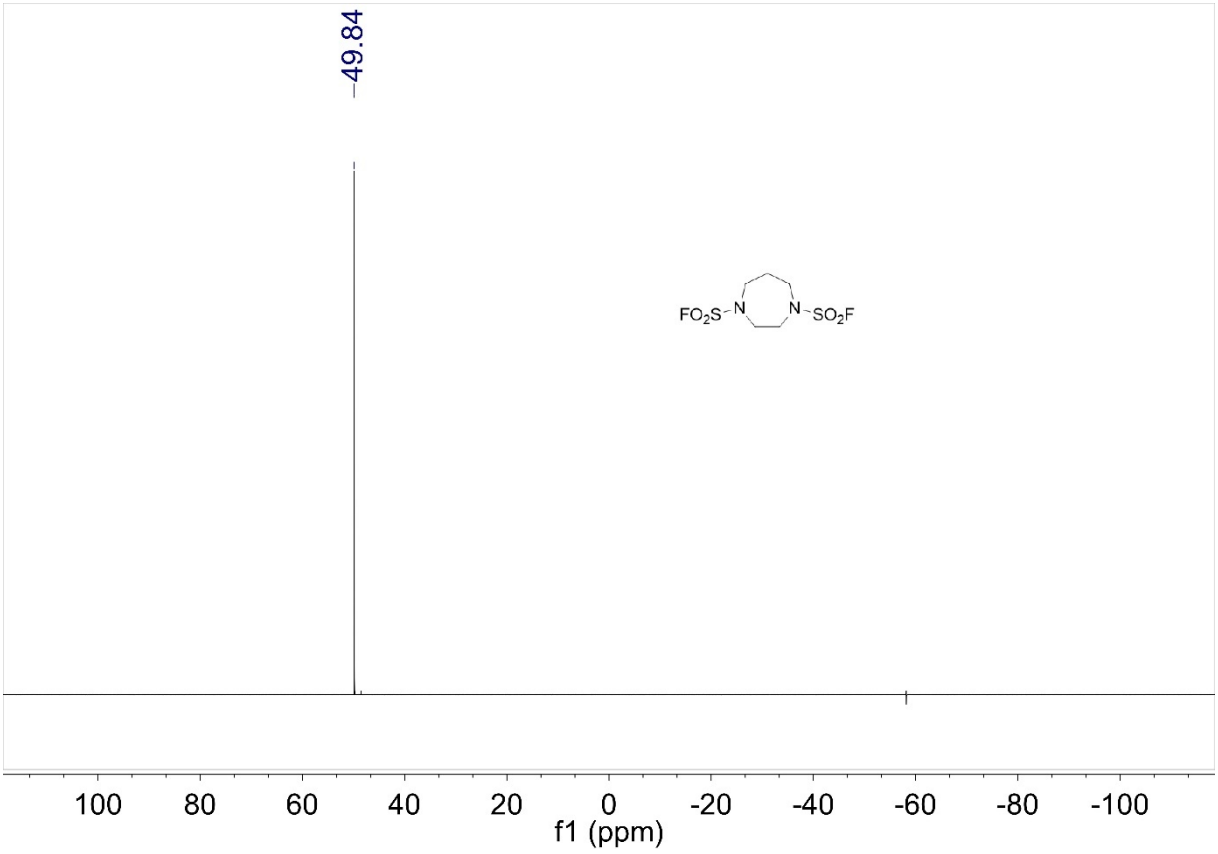
^{1}H NMR of A4



^{13}C NMR of A4

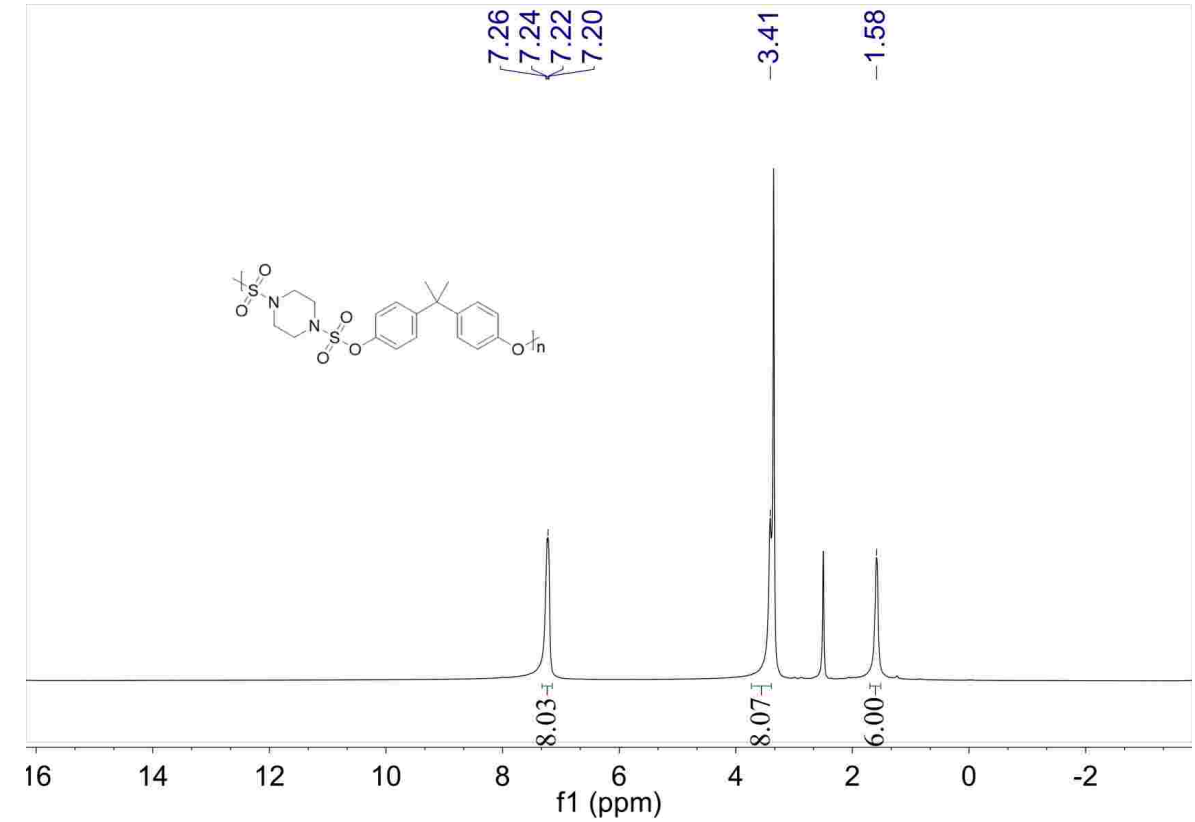


^{19}F NMR of A4

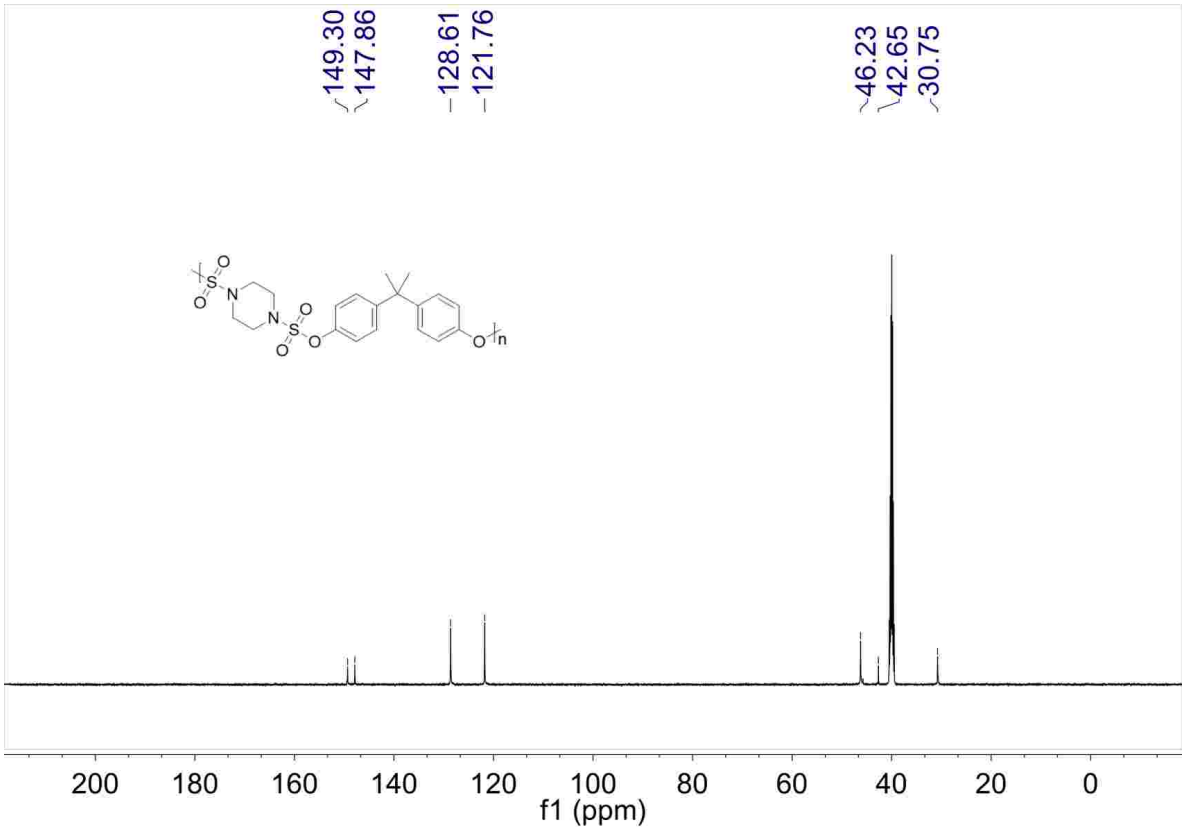


7.2 Copies of the NMR spectra of polymers

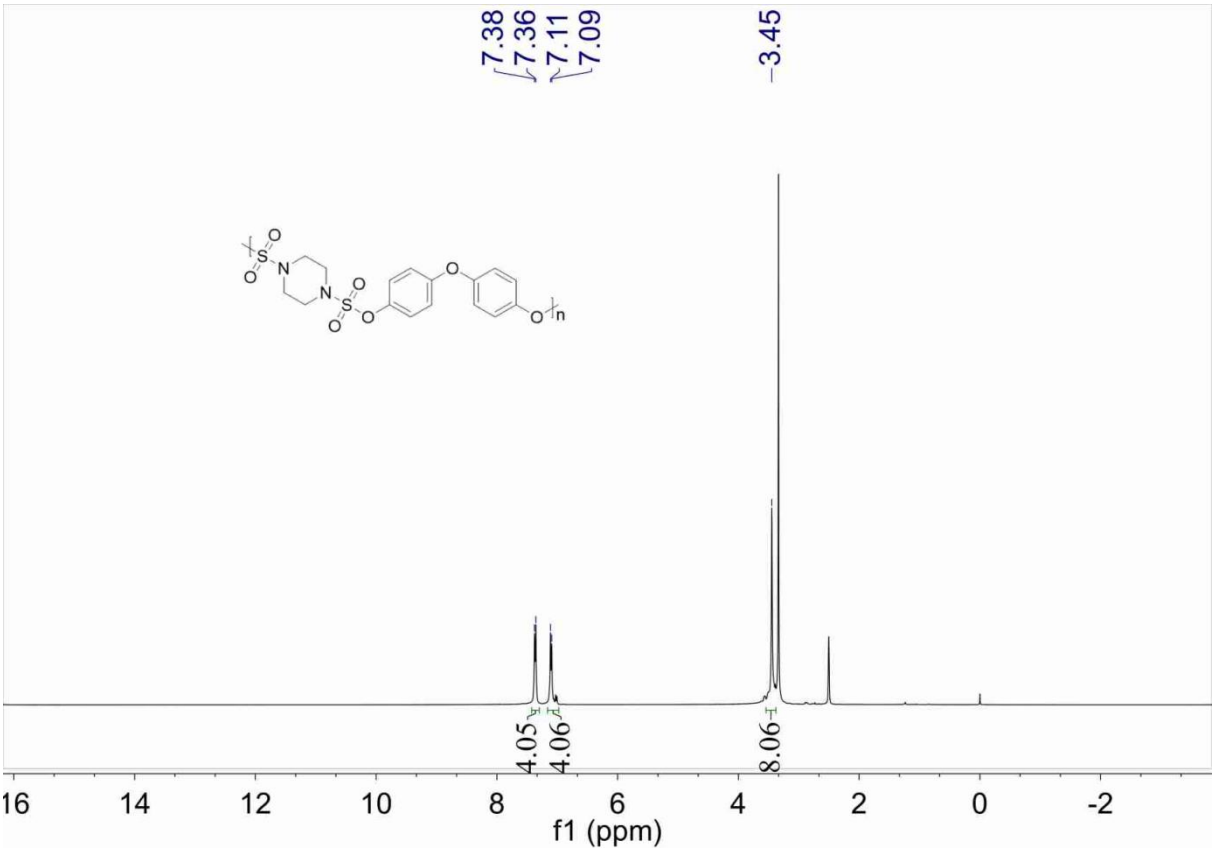
^{1}H NMR of P1



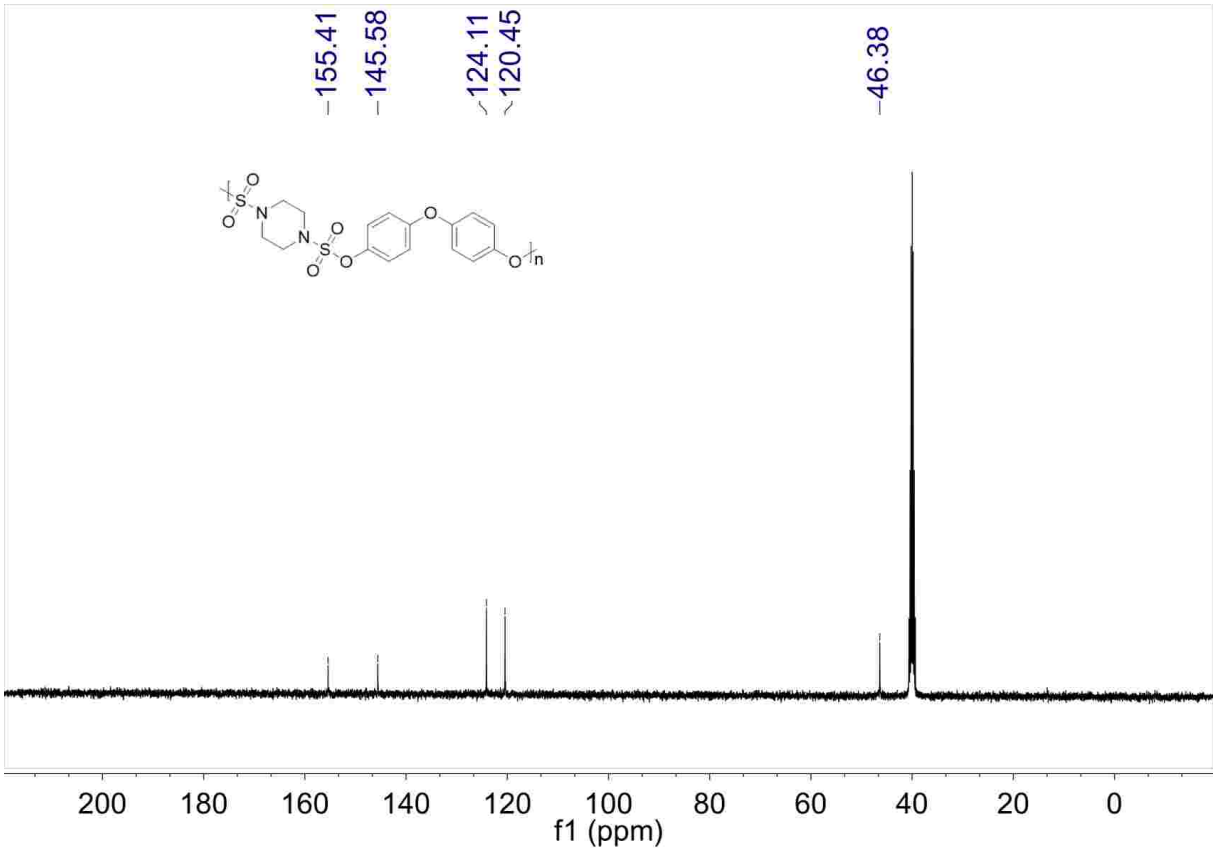
^{13}C NMR of P1



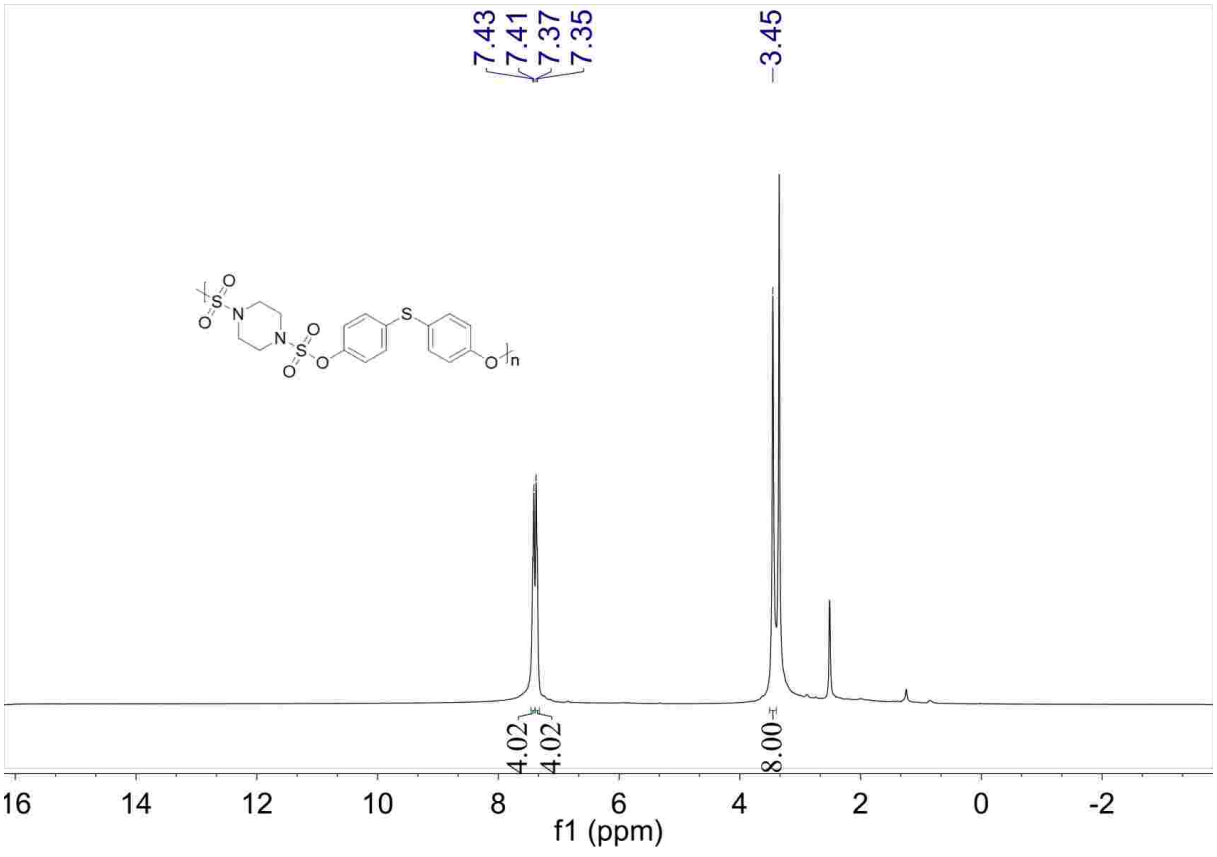
^{1}H NMR of P2



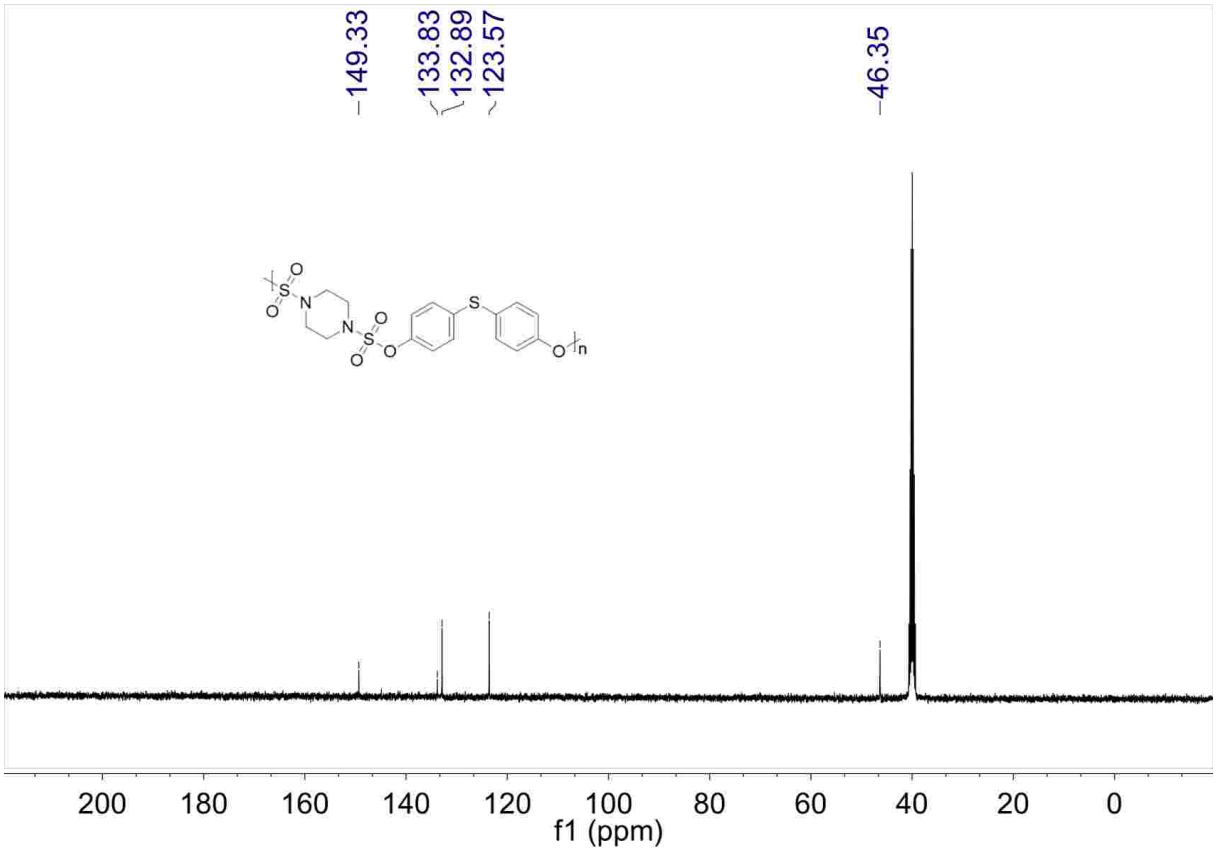
^{13}C NMR of P2



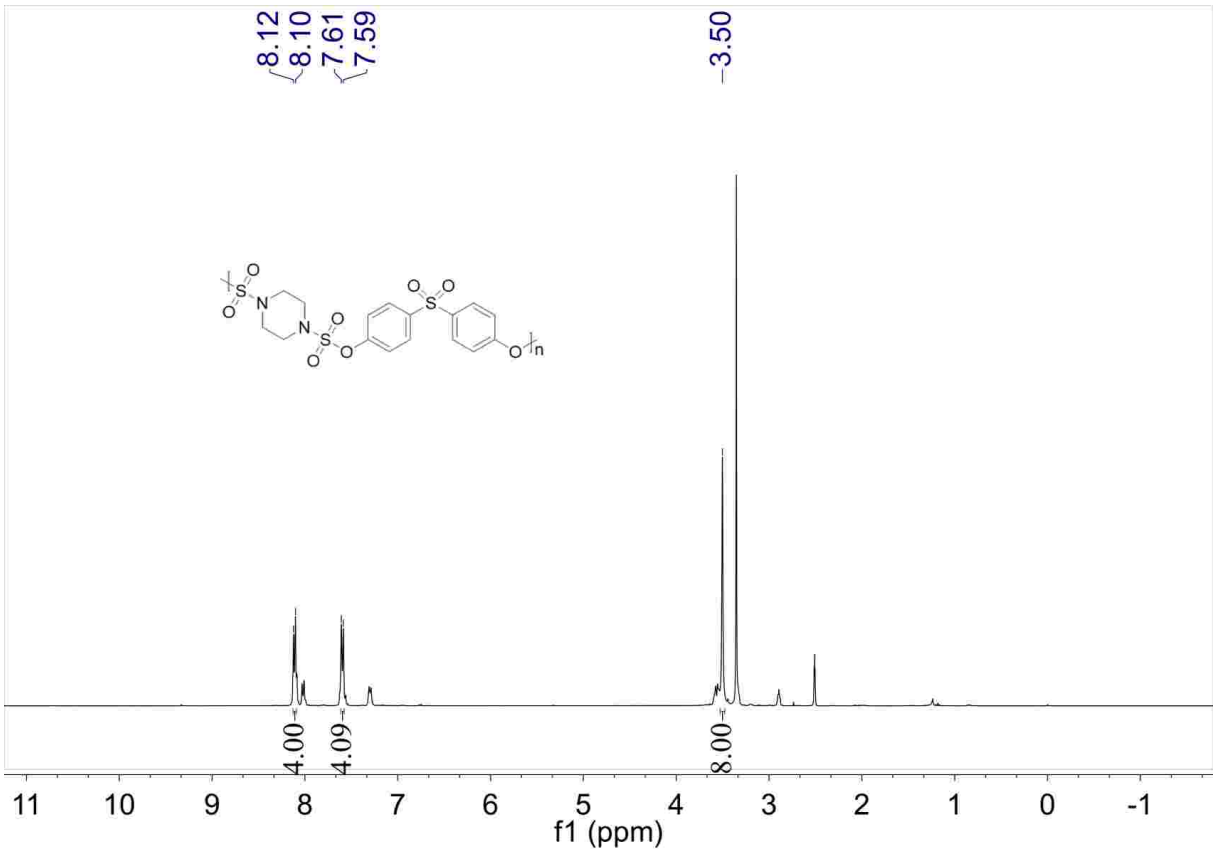
^{1}H NMR of P3



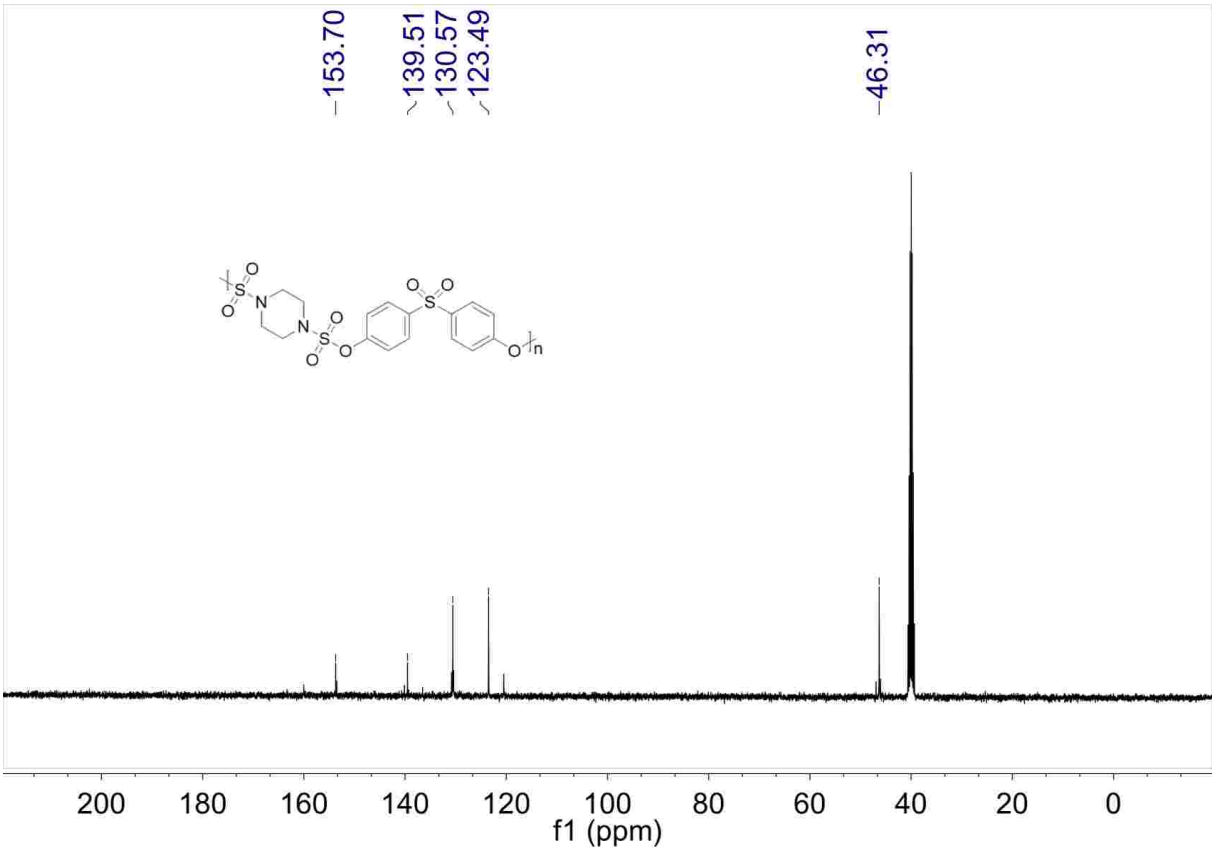
^{13}C NMR of P3



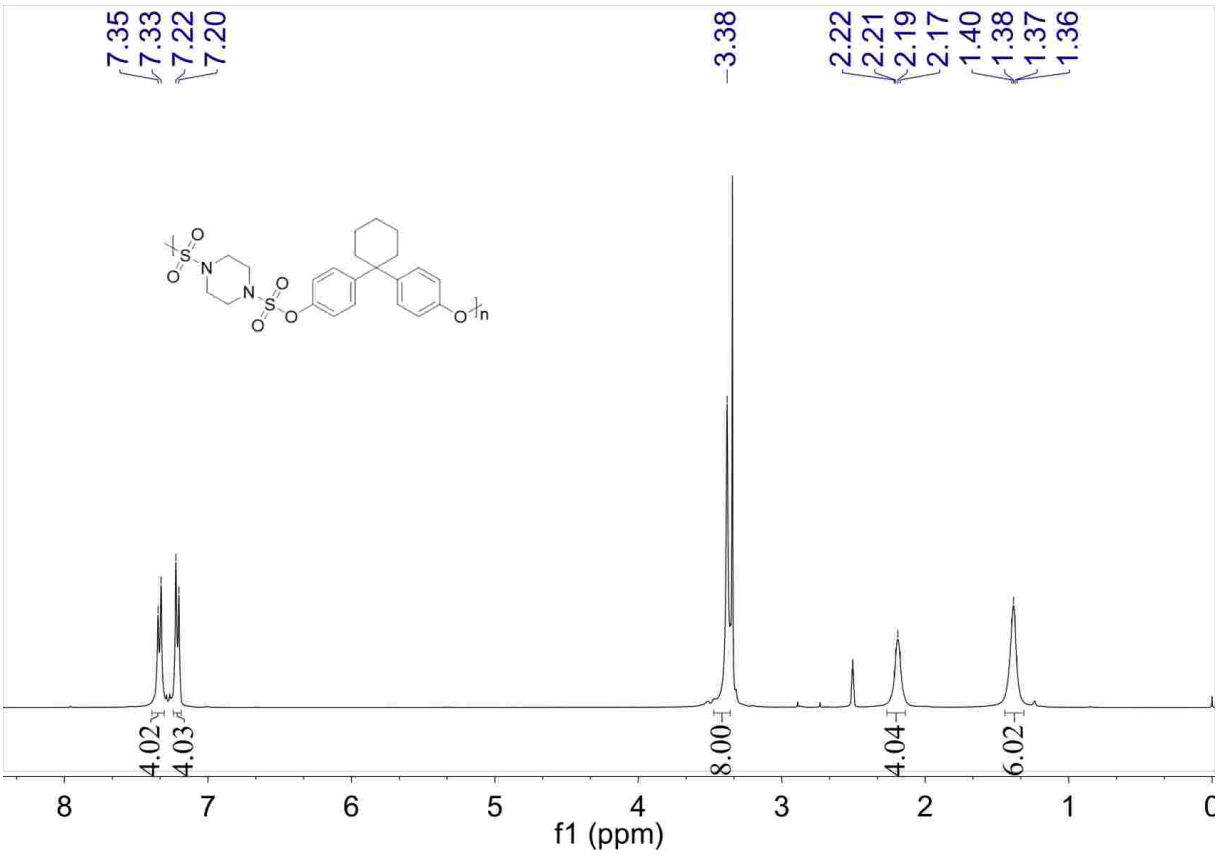
^{1}H NMR of P4



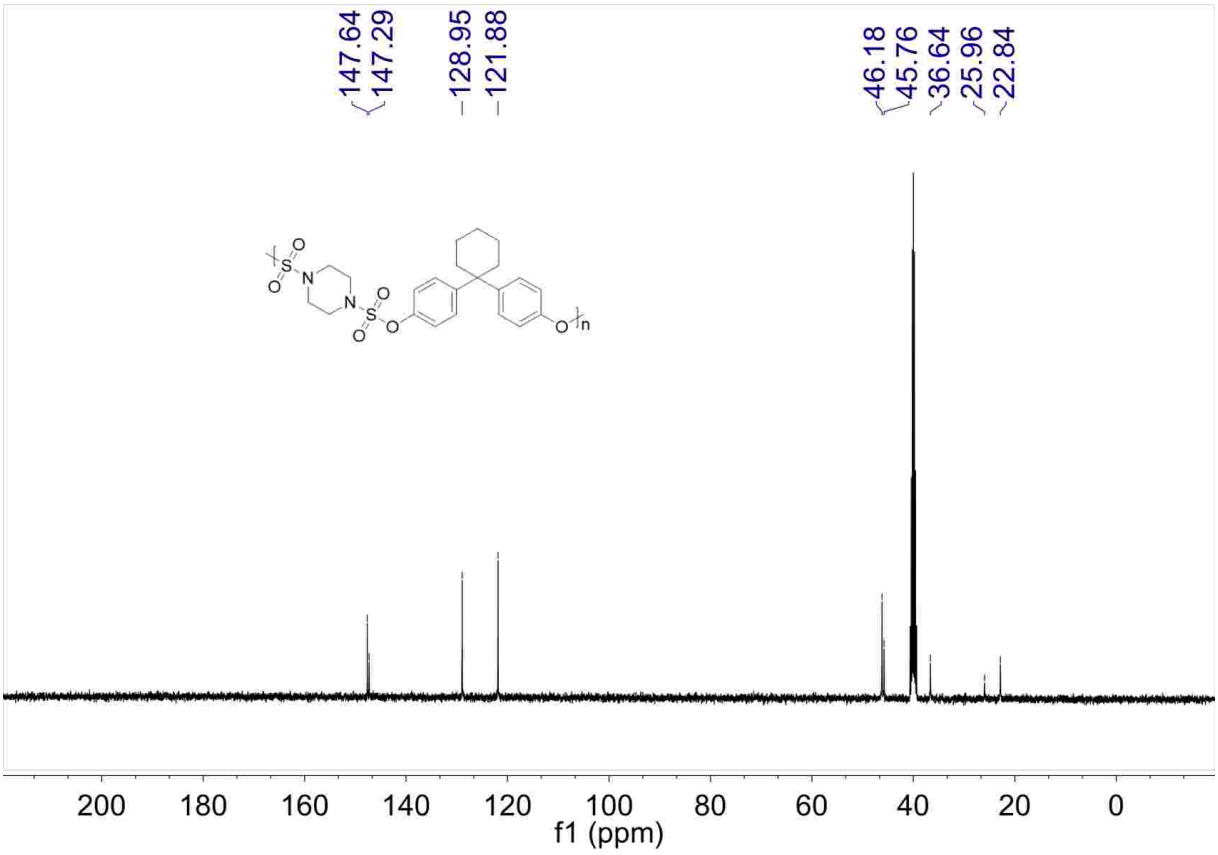
^{13}C NMR of P4



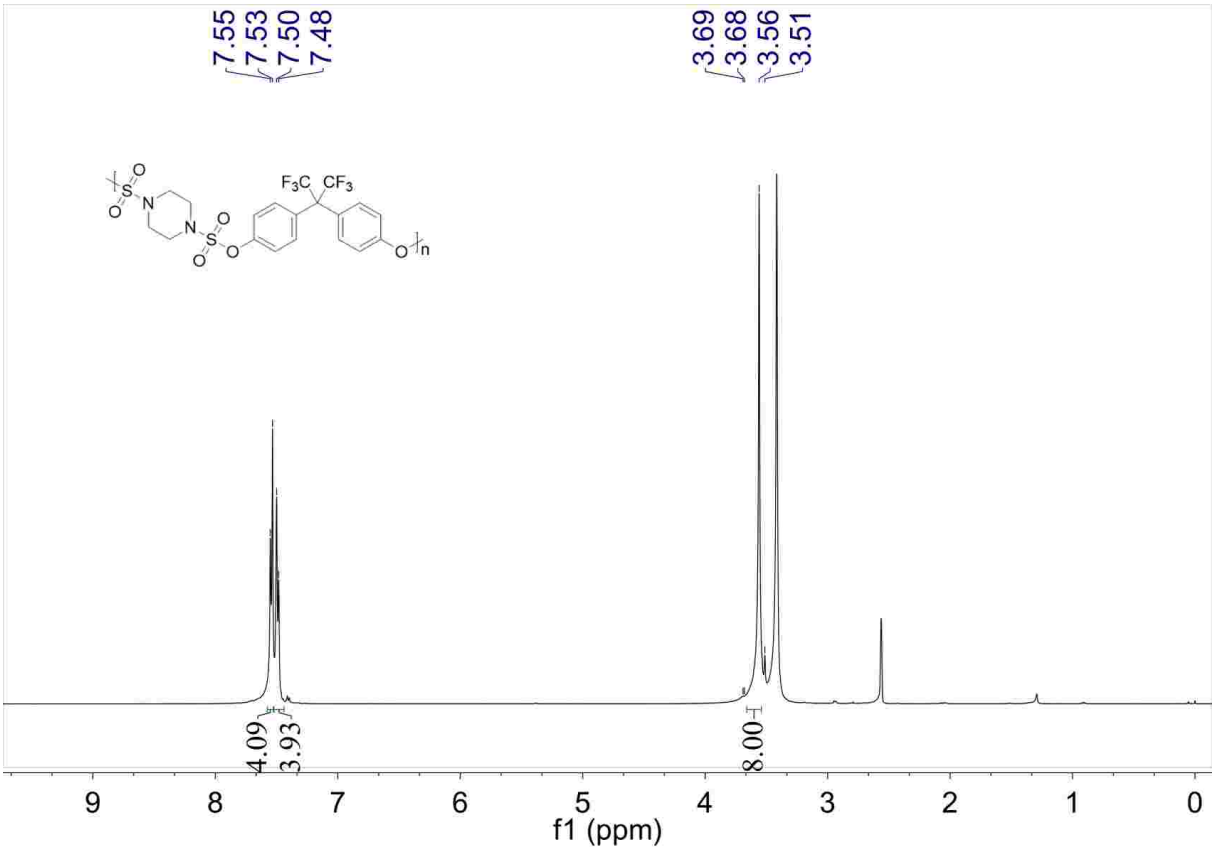
^{1}H NMR of P5



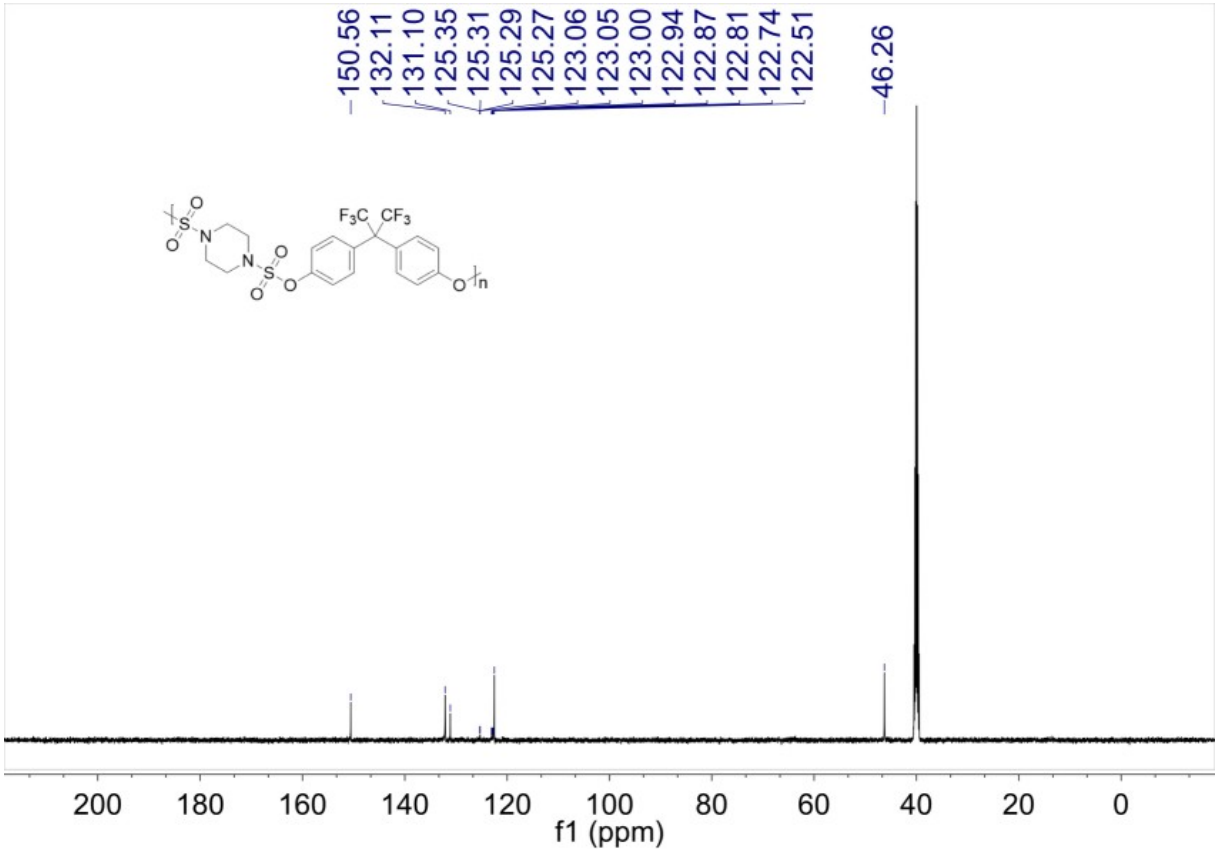
^{13}C NMR of P5



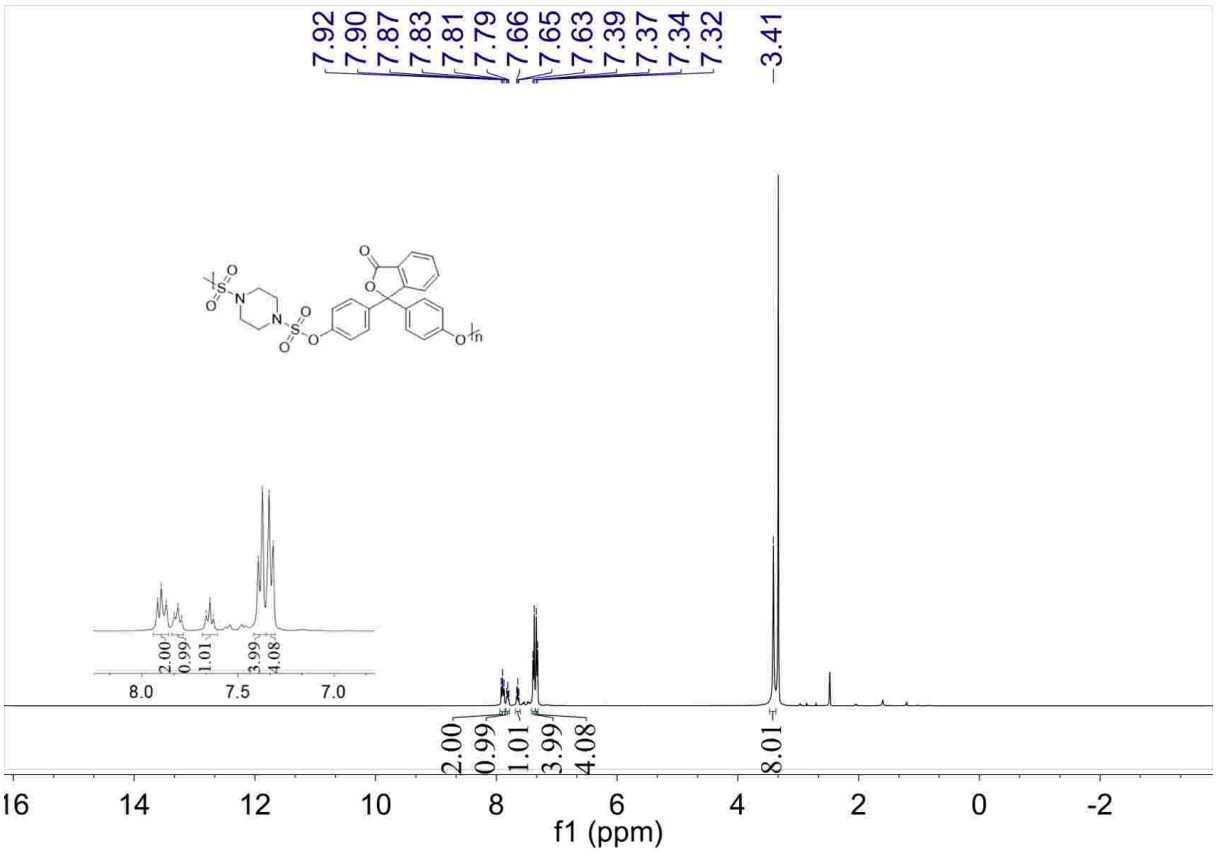
^{1}H NMR of P6



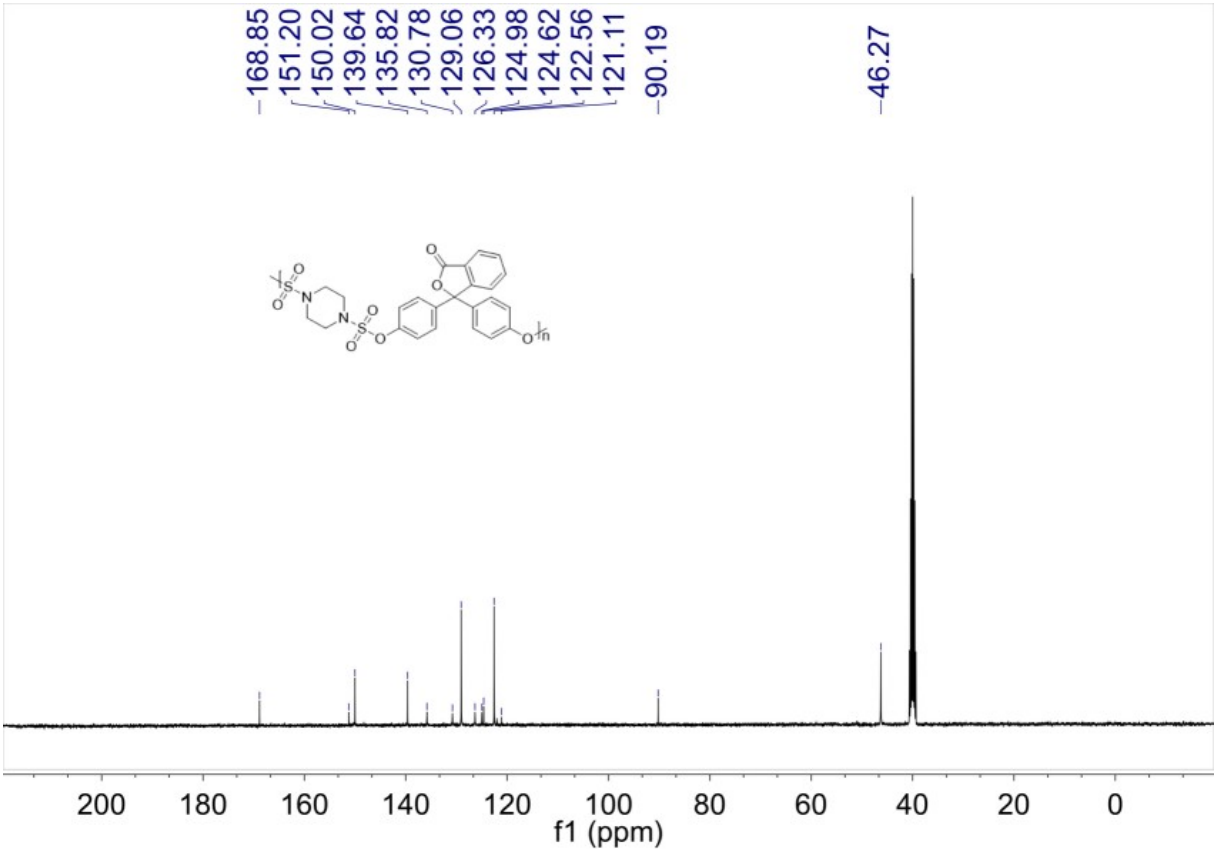
^{13}C NMR of P6



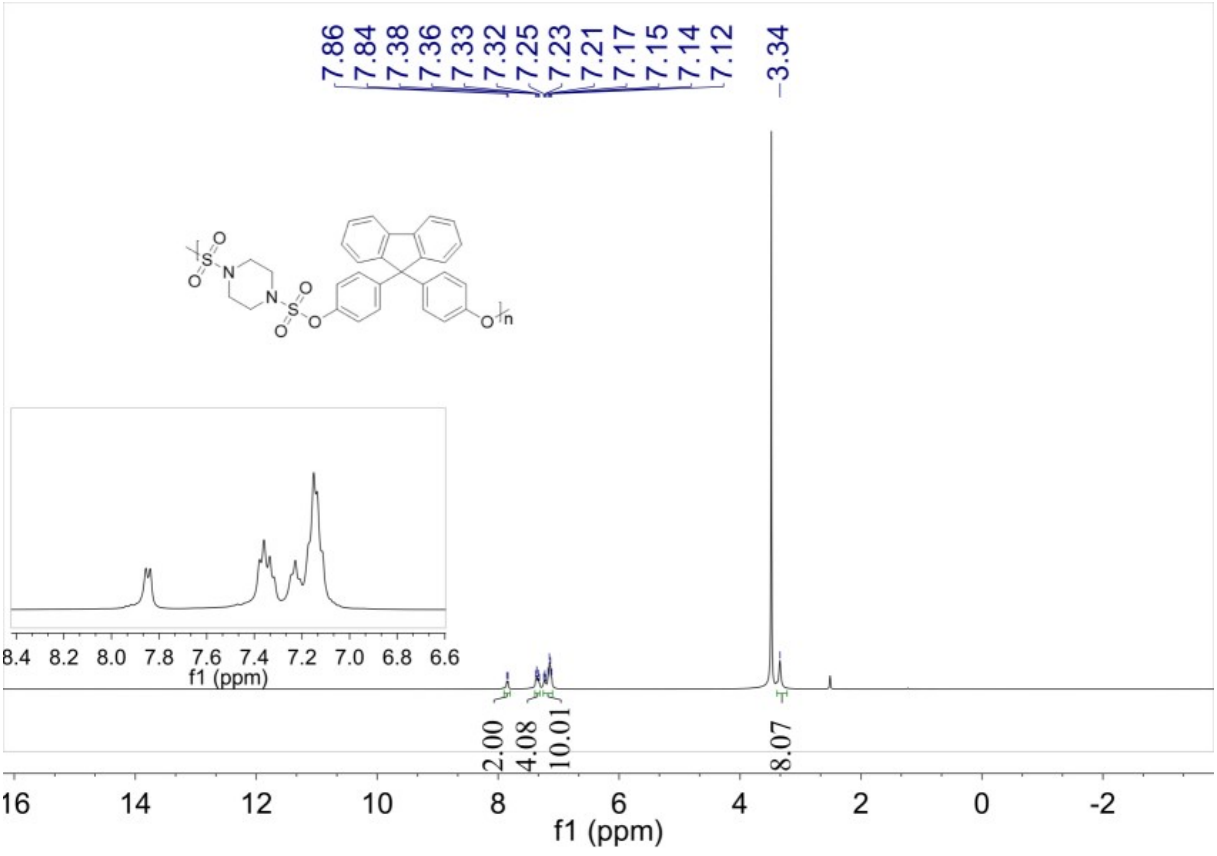
^{1}H NMR of P7



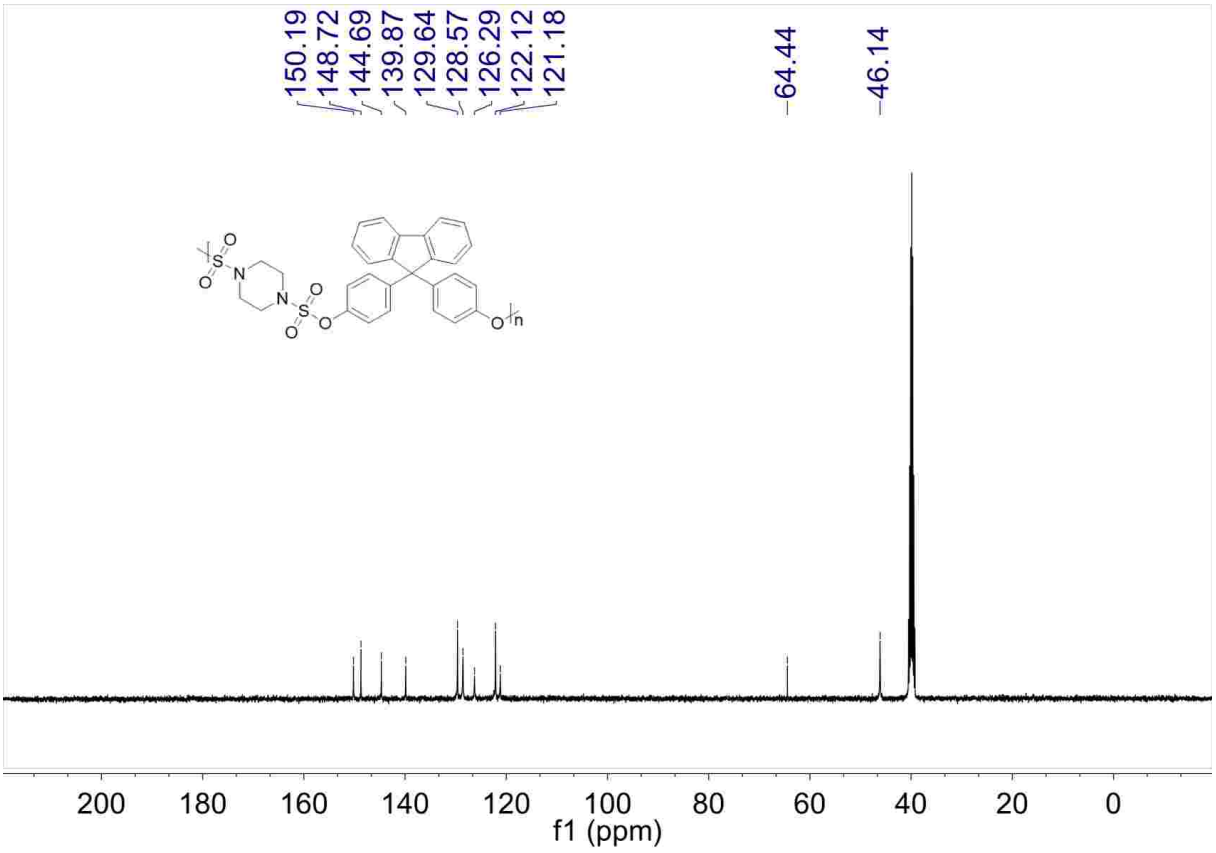
^{13}C NMR of P7



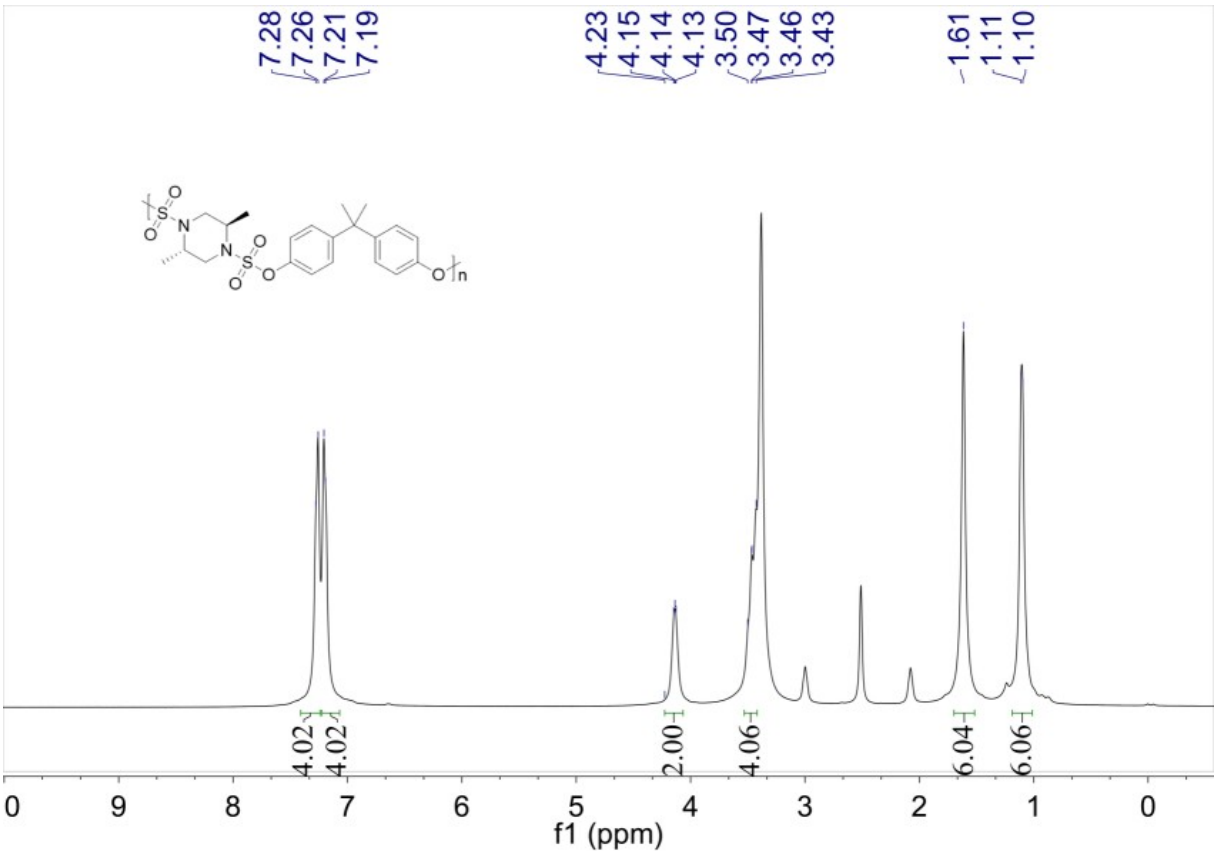
^{1}H NMR of P8



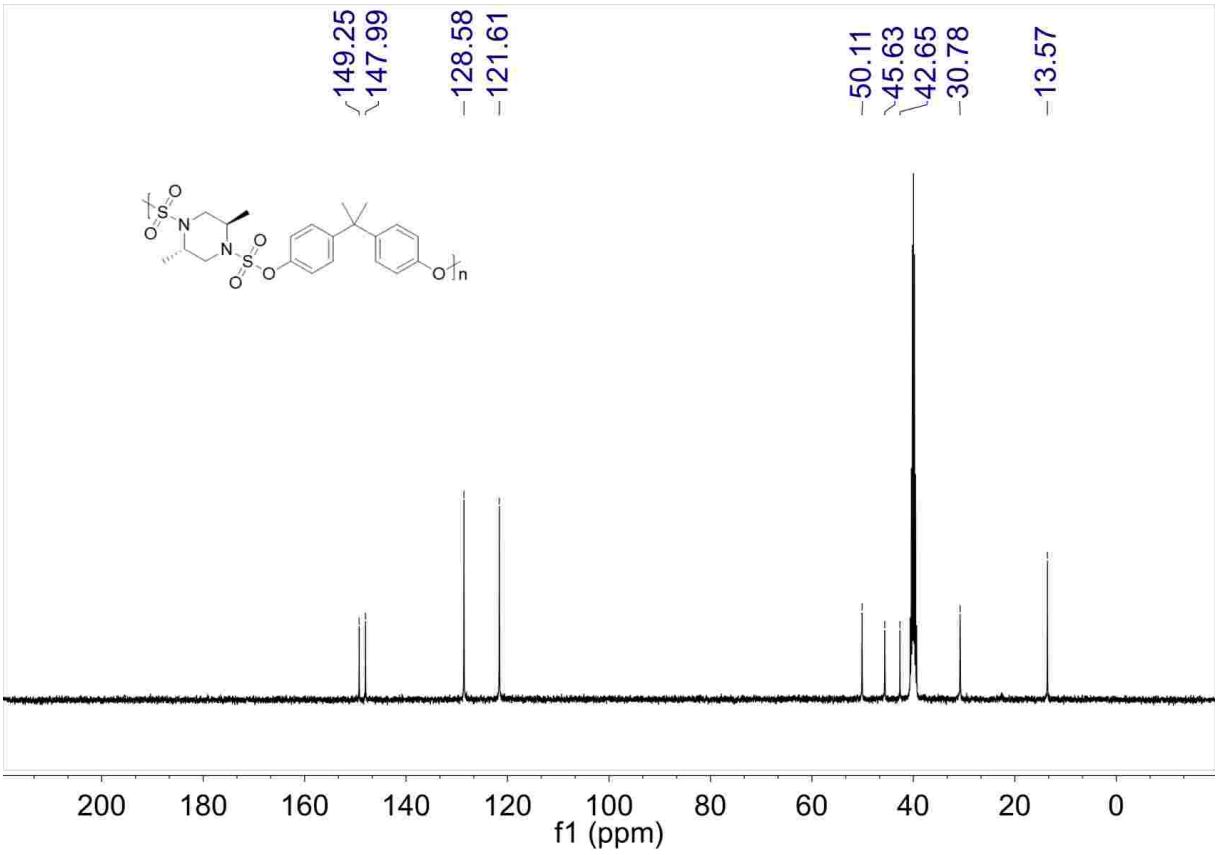
^{13}C NMR of P8



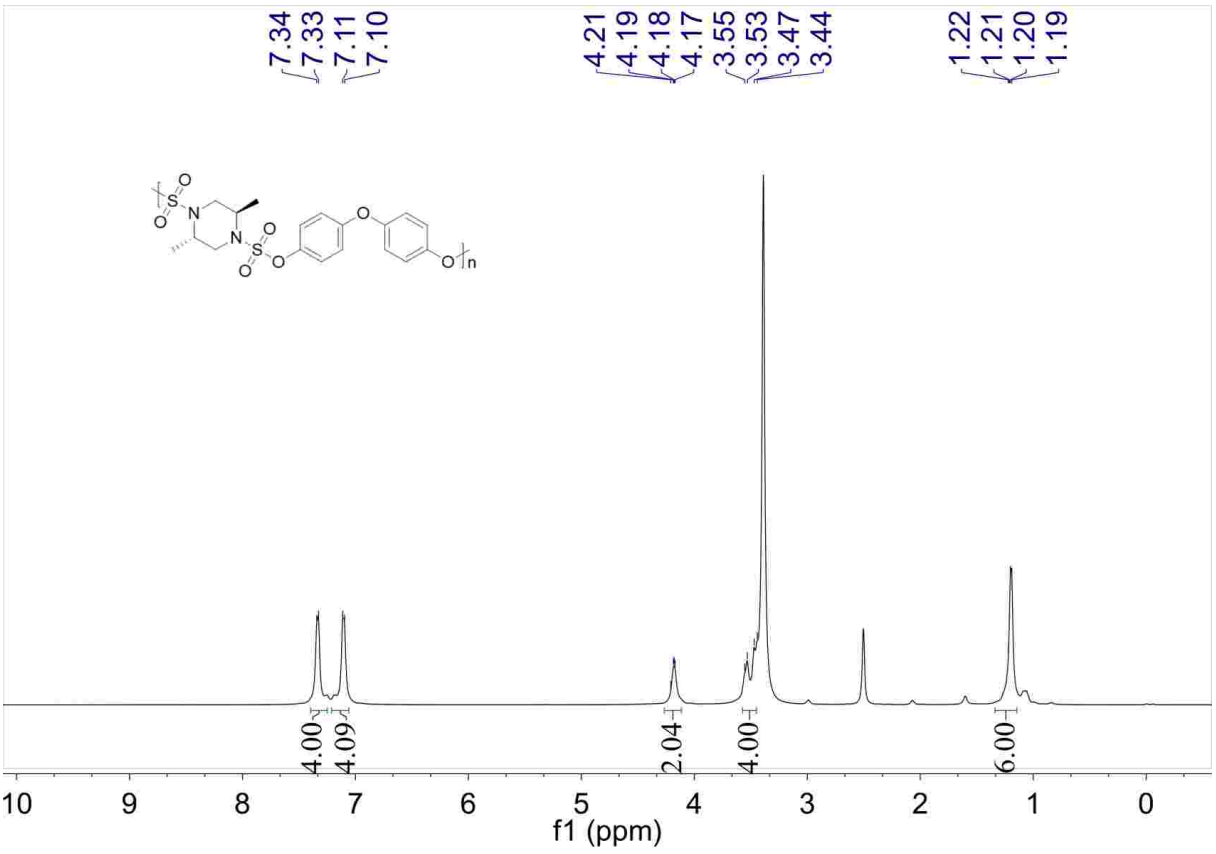
^{1}H NMR of P9



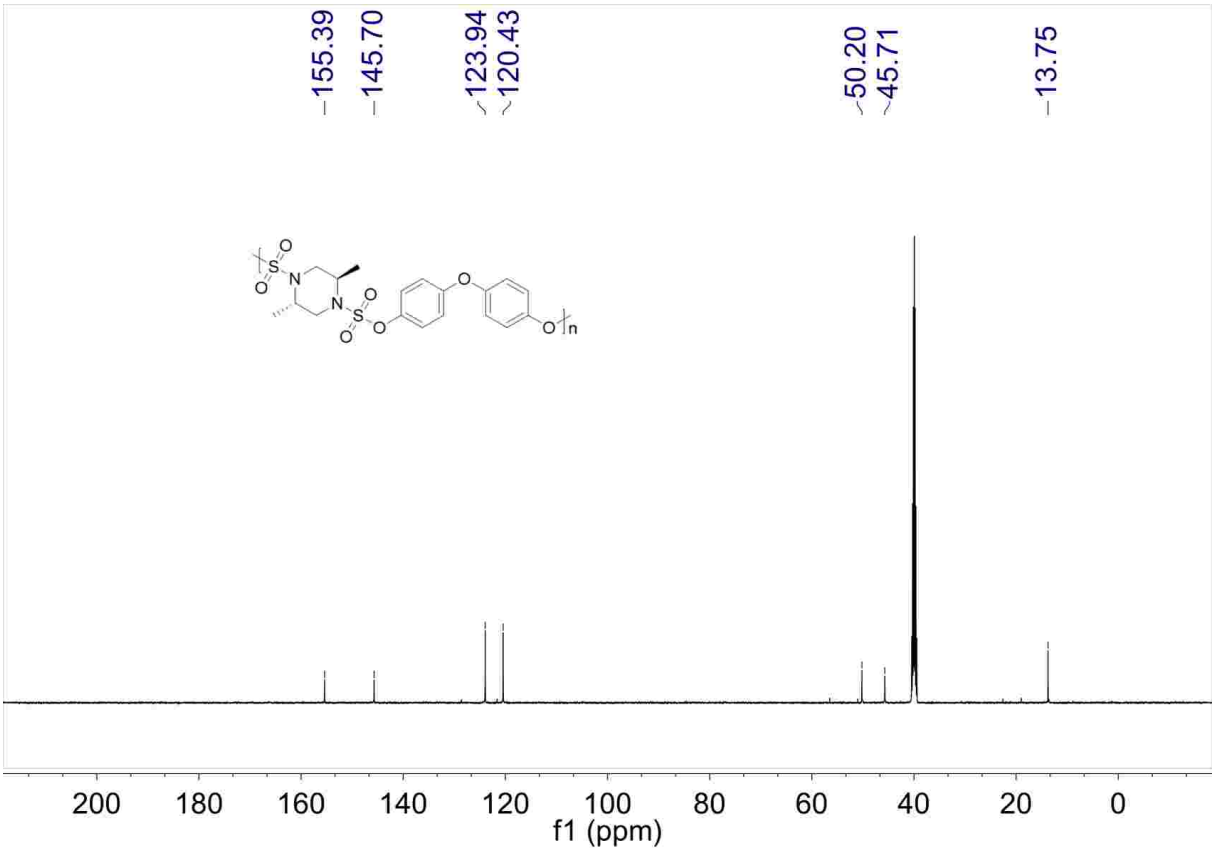
^{13}C NMR of P9



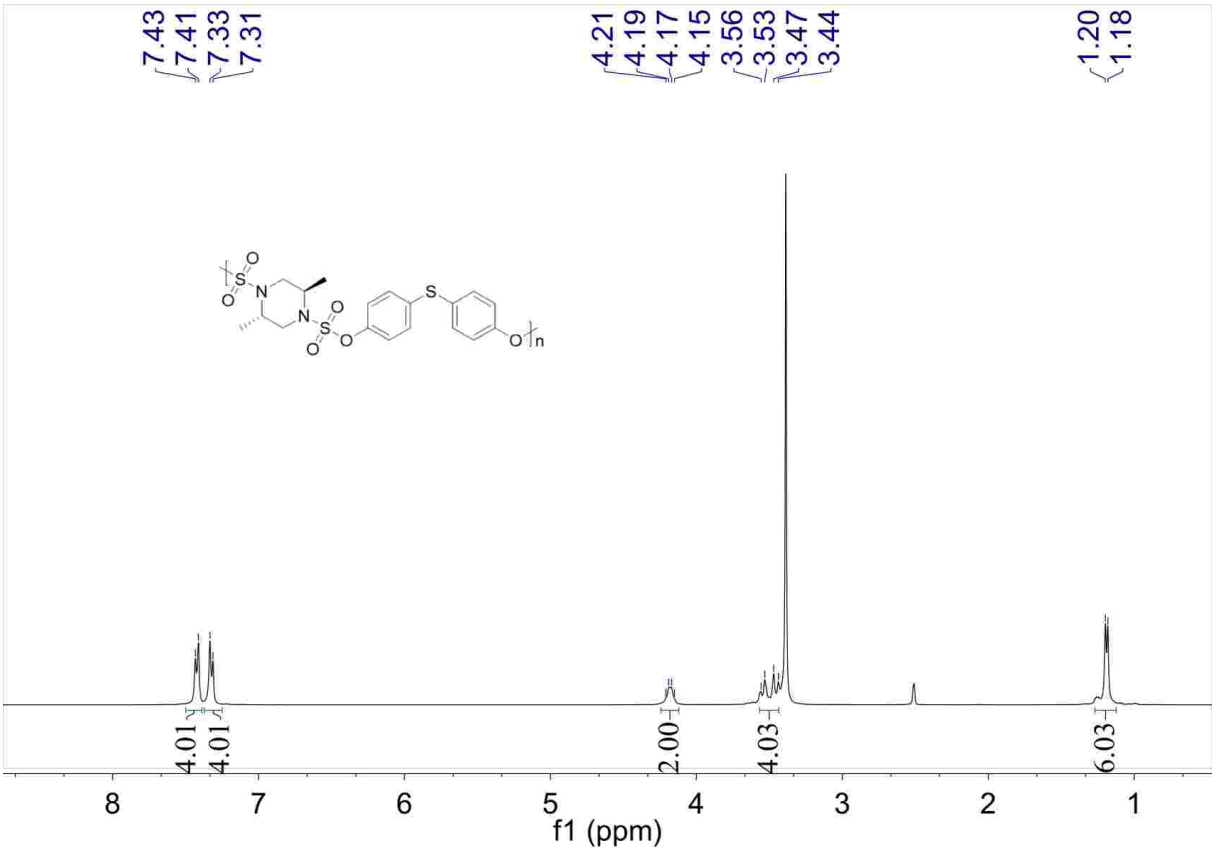
^{1}H NMR of P10



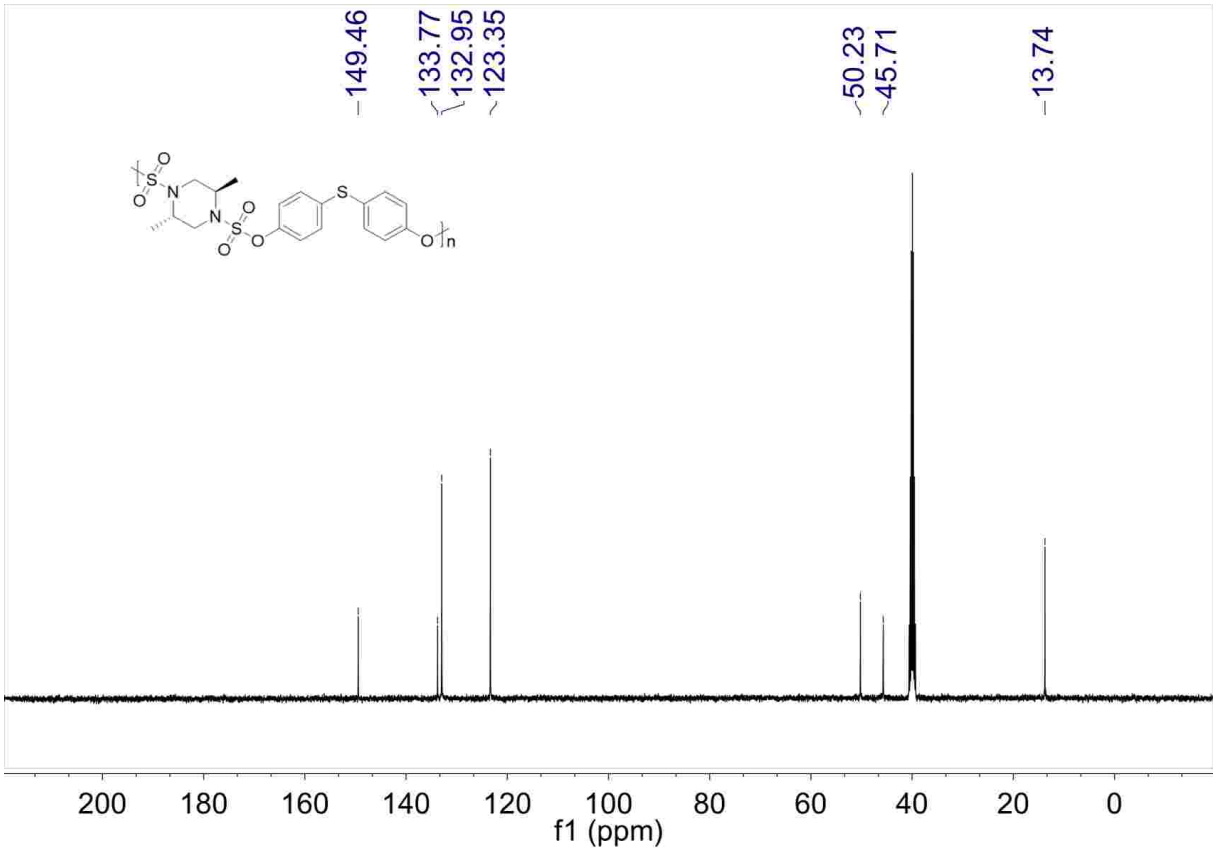
^{13}C NMR of P10



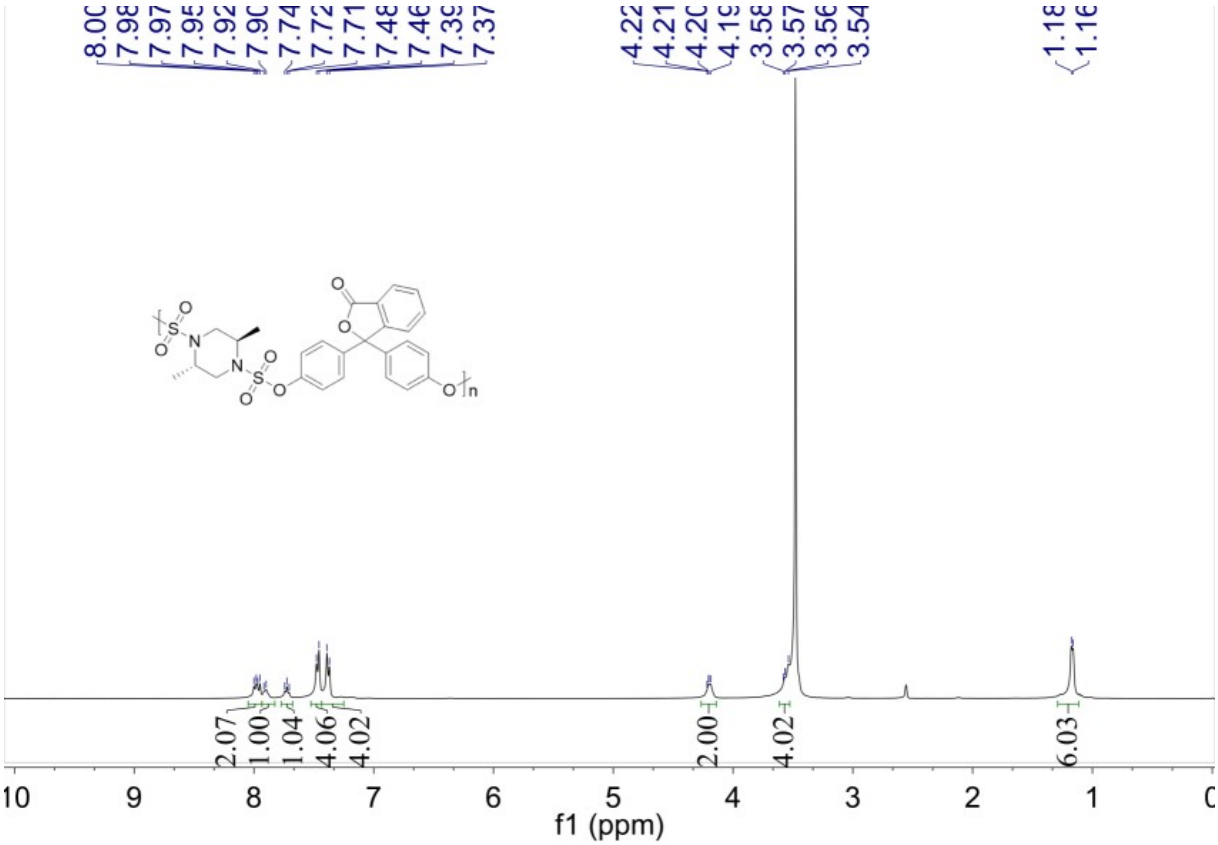
^{1}H NMR of P11



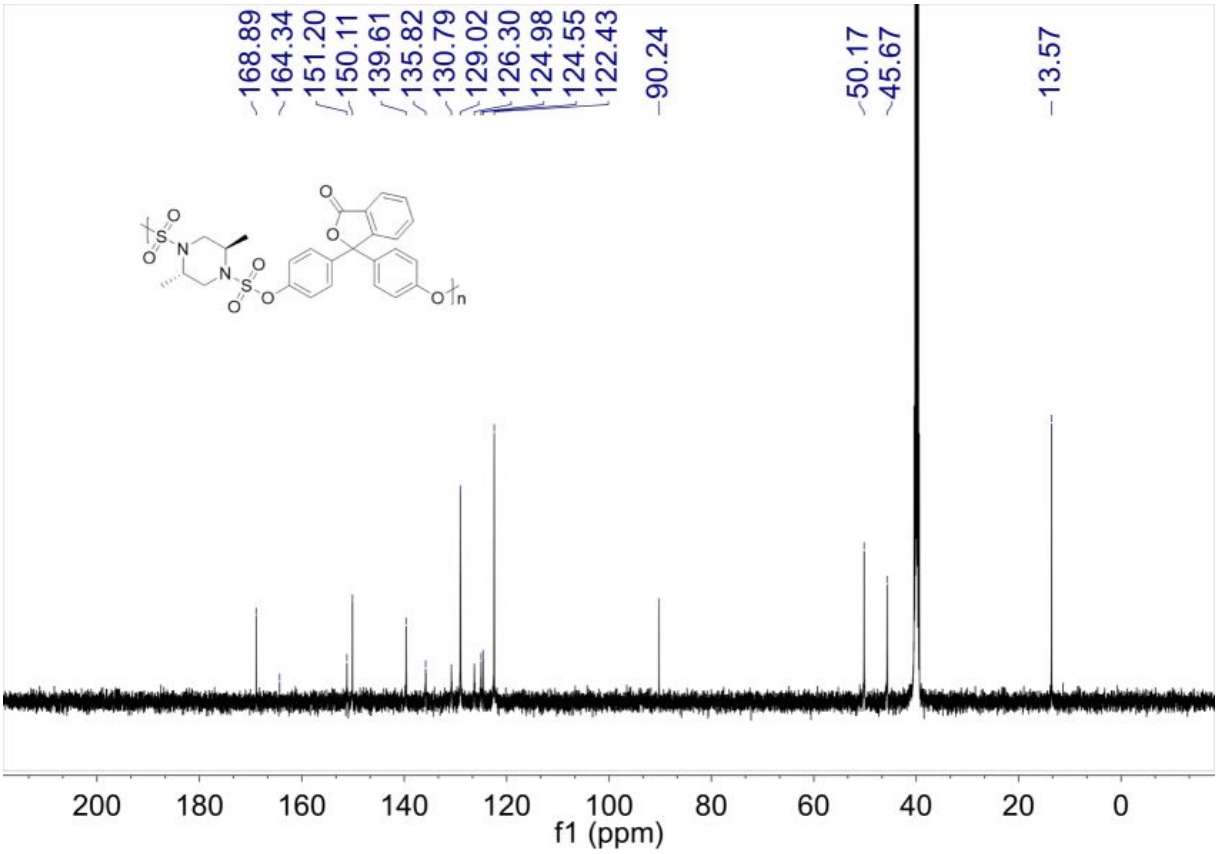
^{13}C NMR of P11



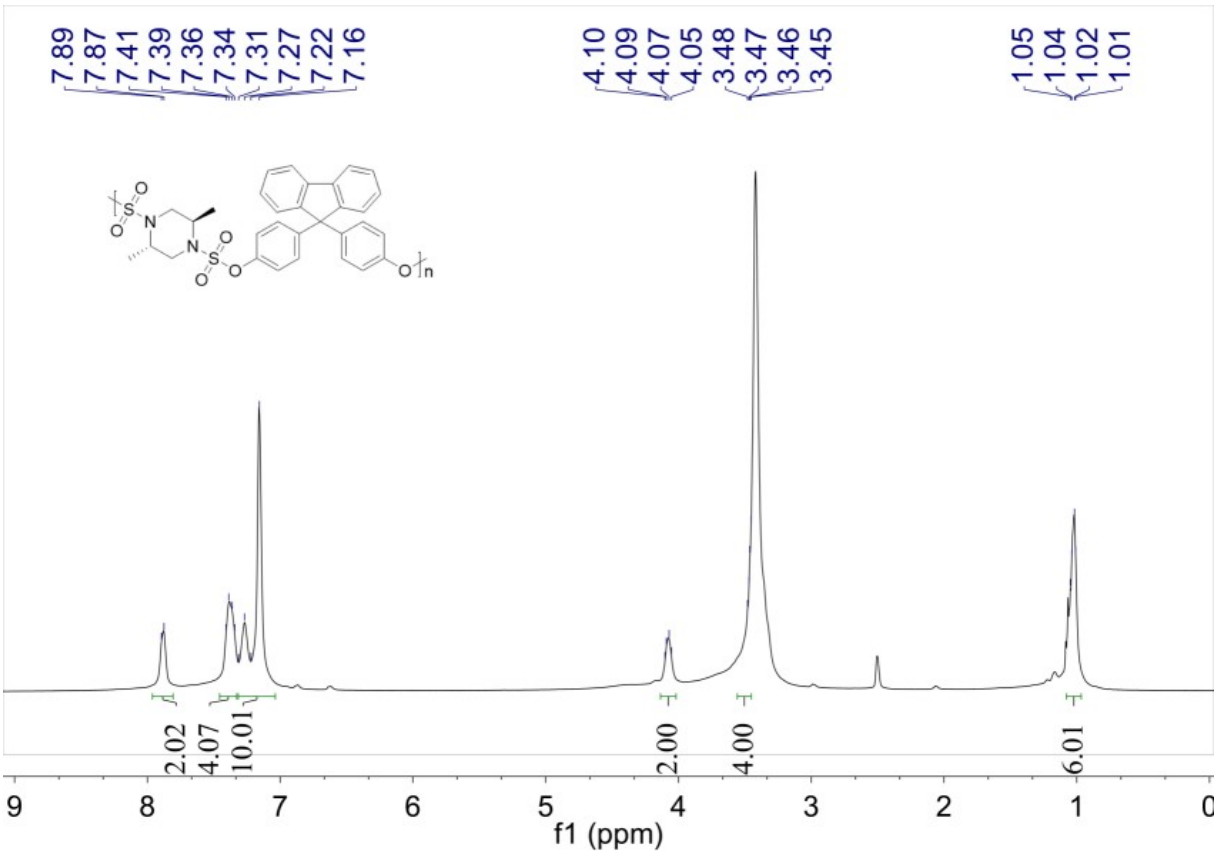
^{1}H NMR of P12



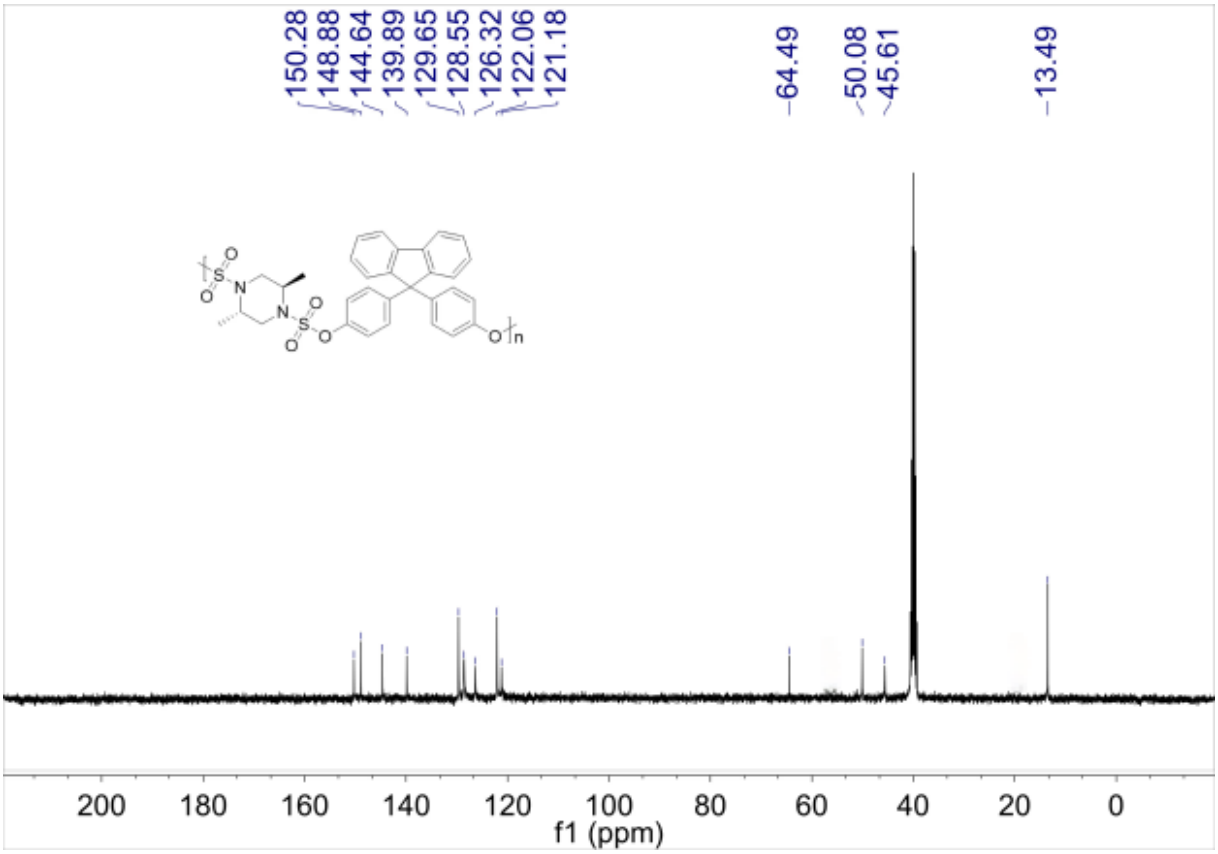
^{13}C NMR of P12



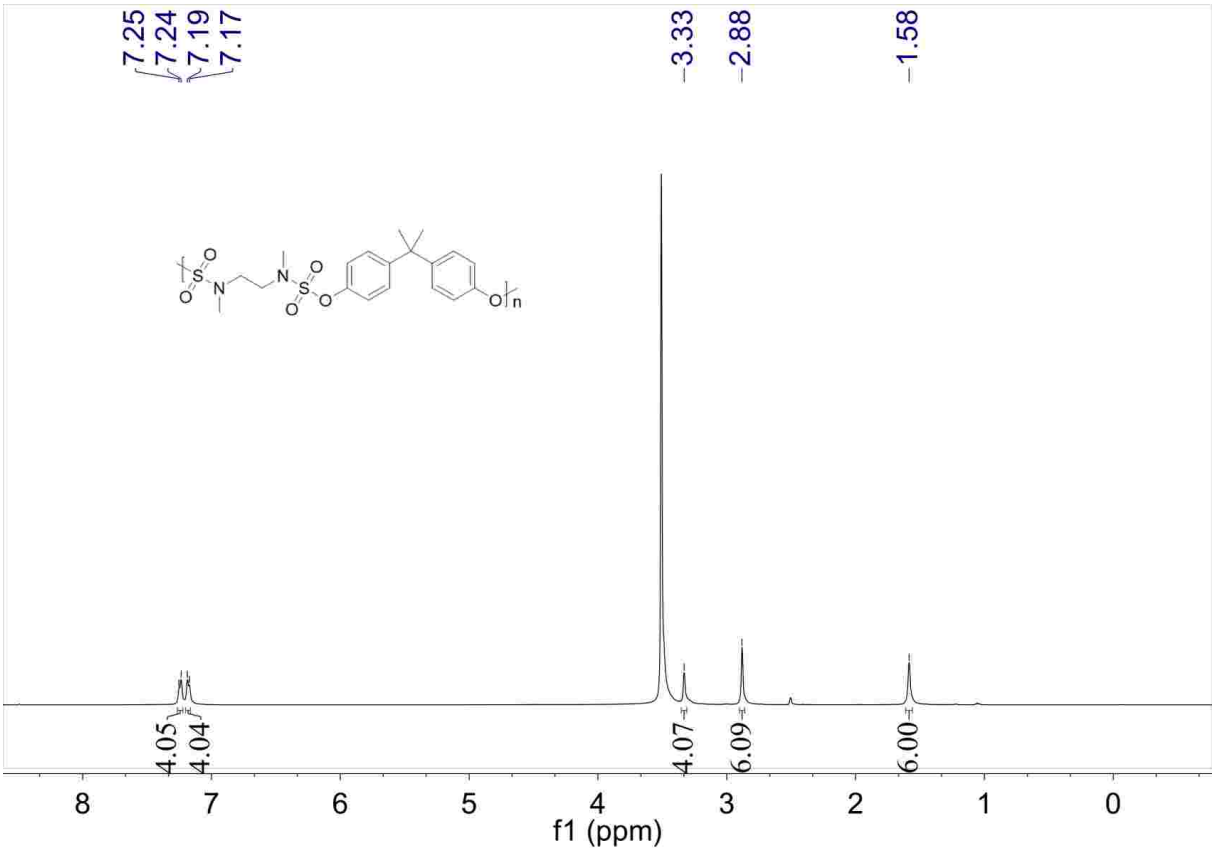
^{1}H NMR of P13



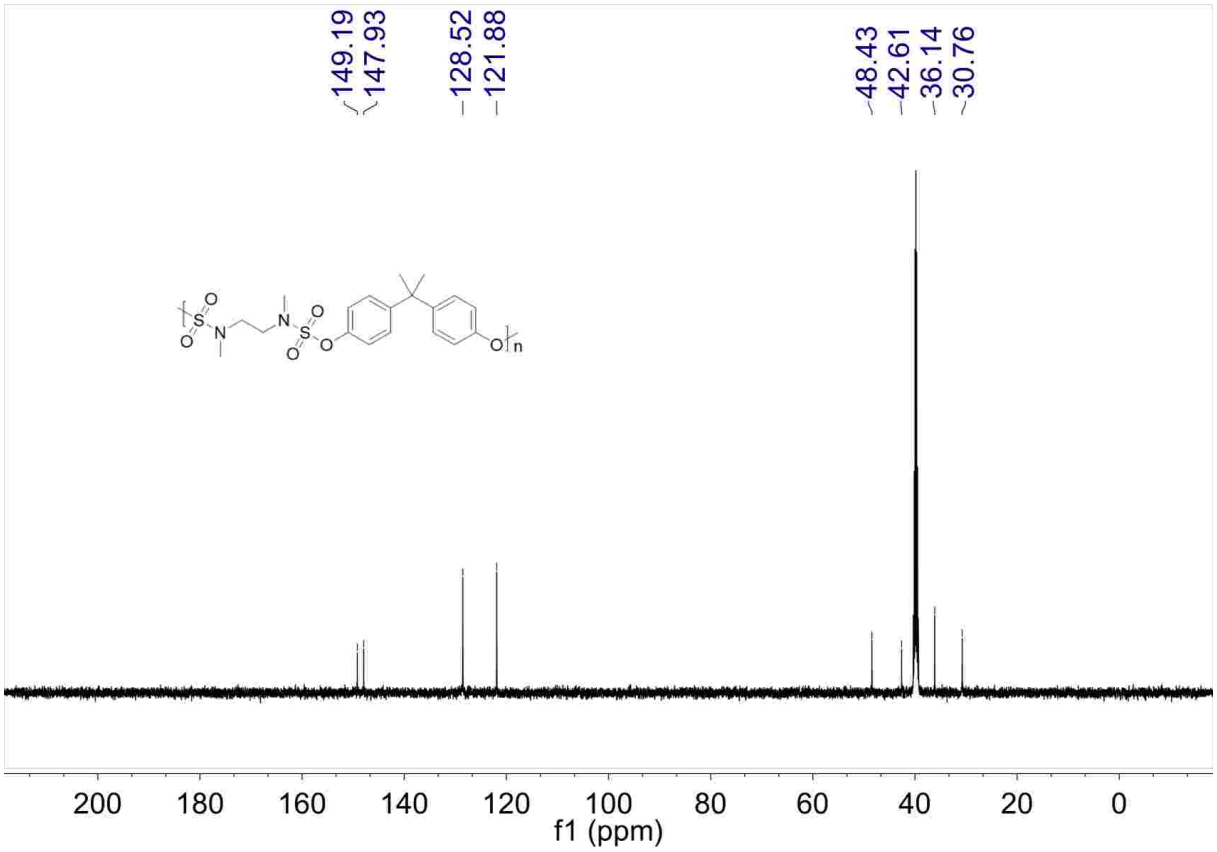
^{13}C NMR of P13



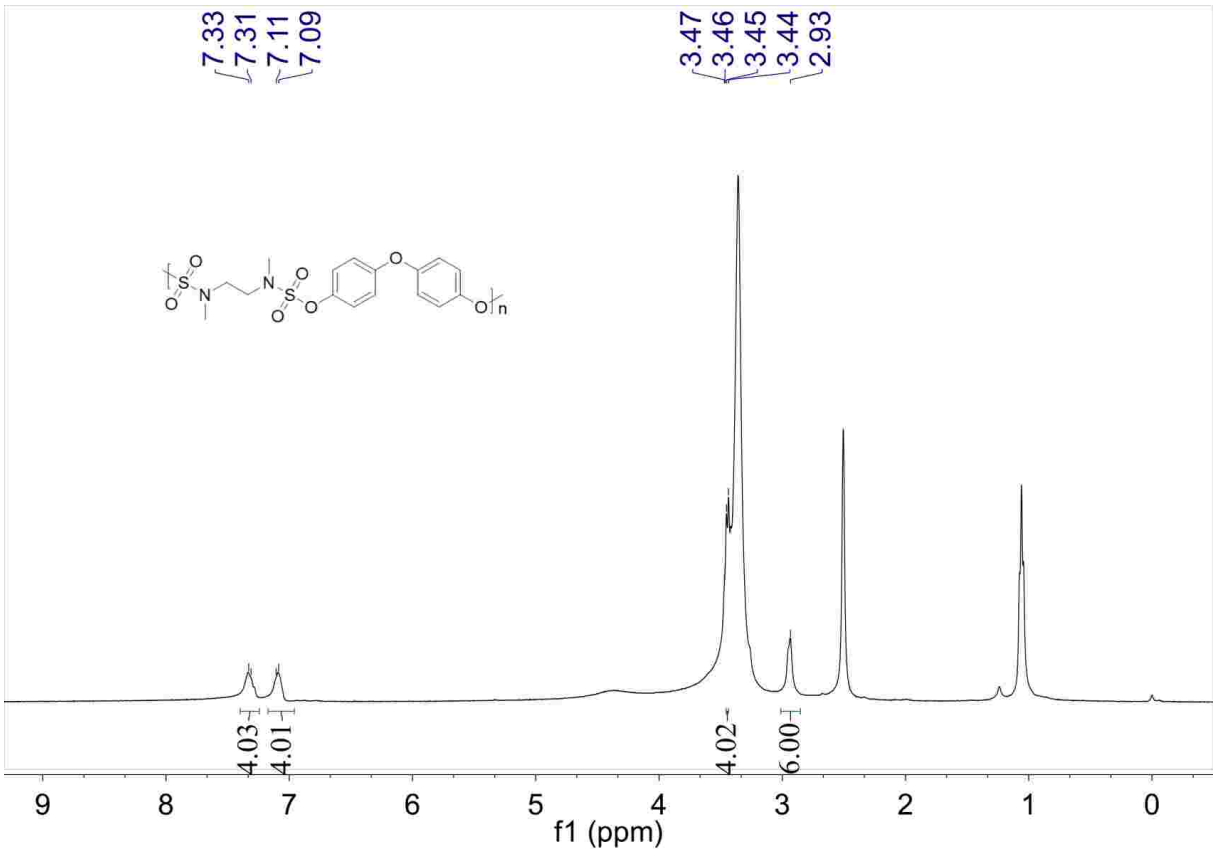
^{1}H NMR of P14



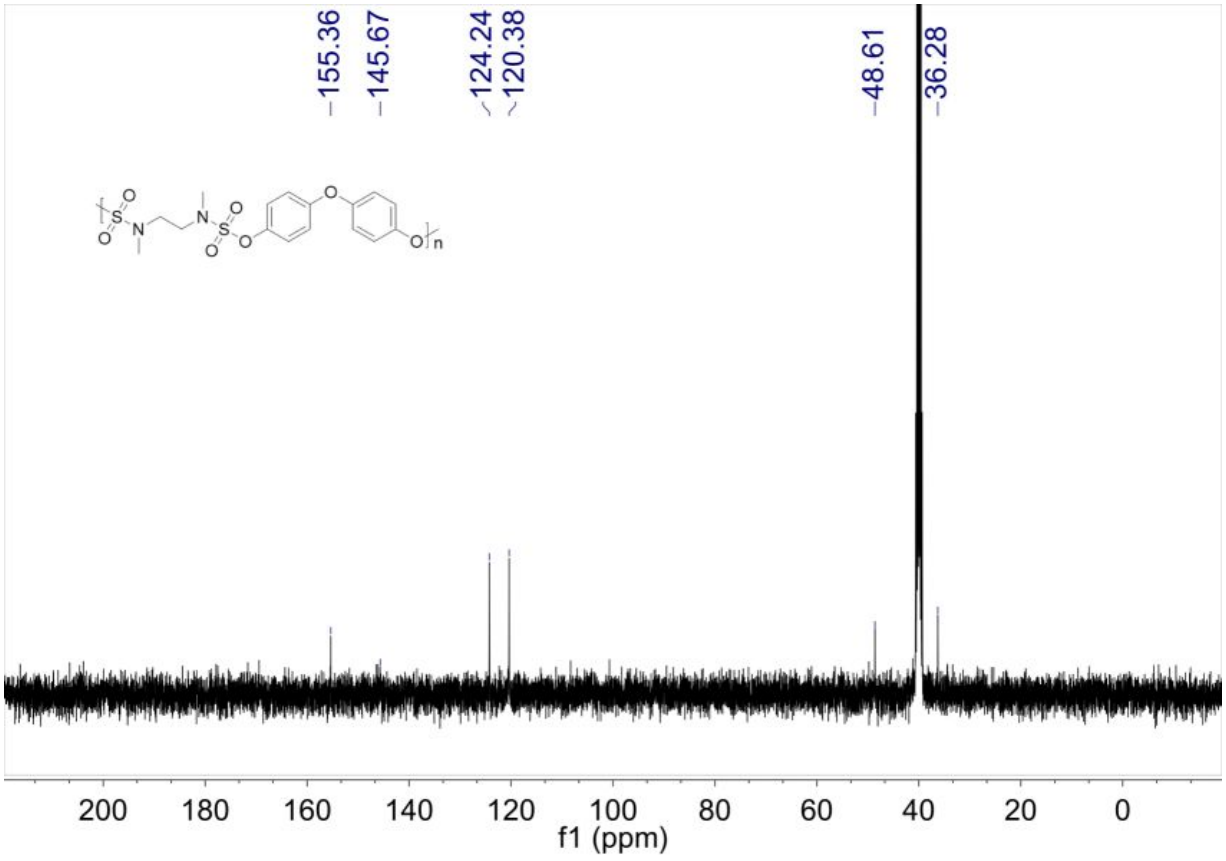
^{13}C NMR of P14



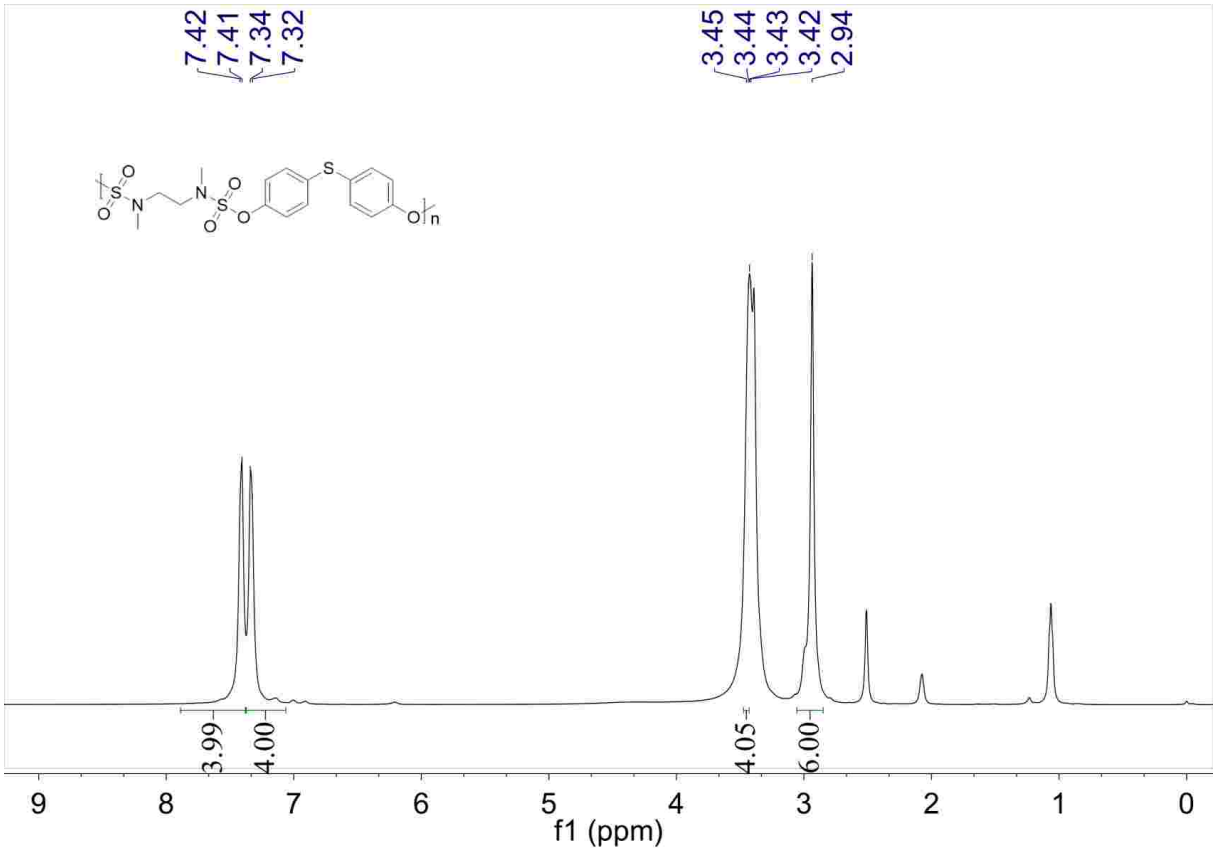
^{1}H NMR of P15



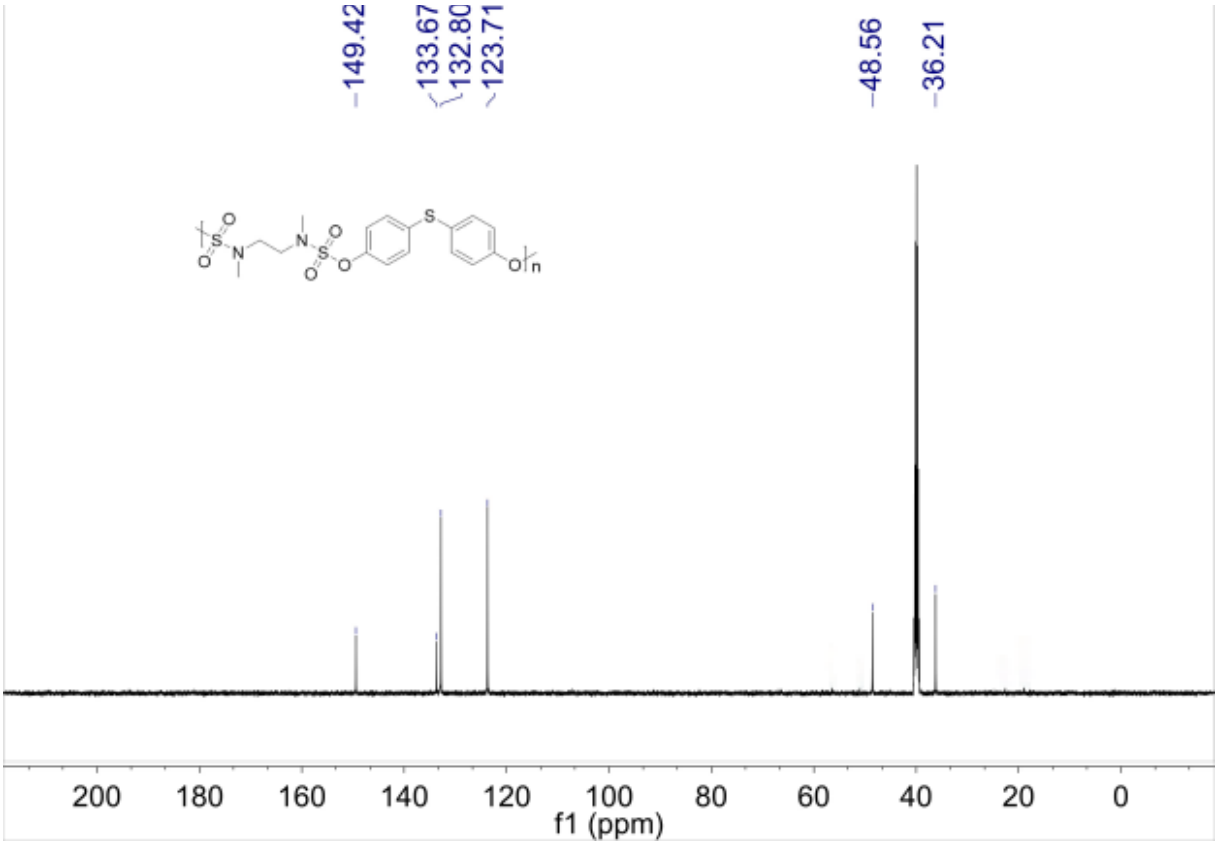
^{13}C NMR of P15



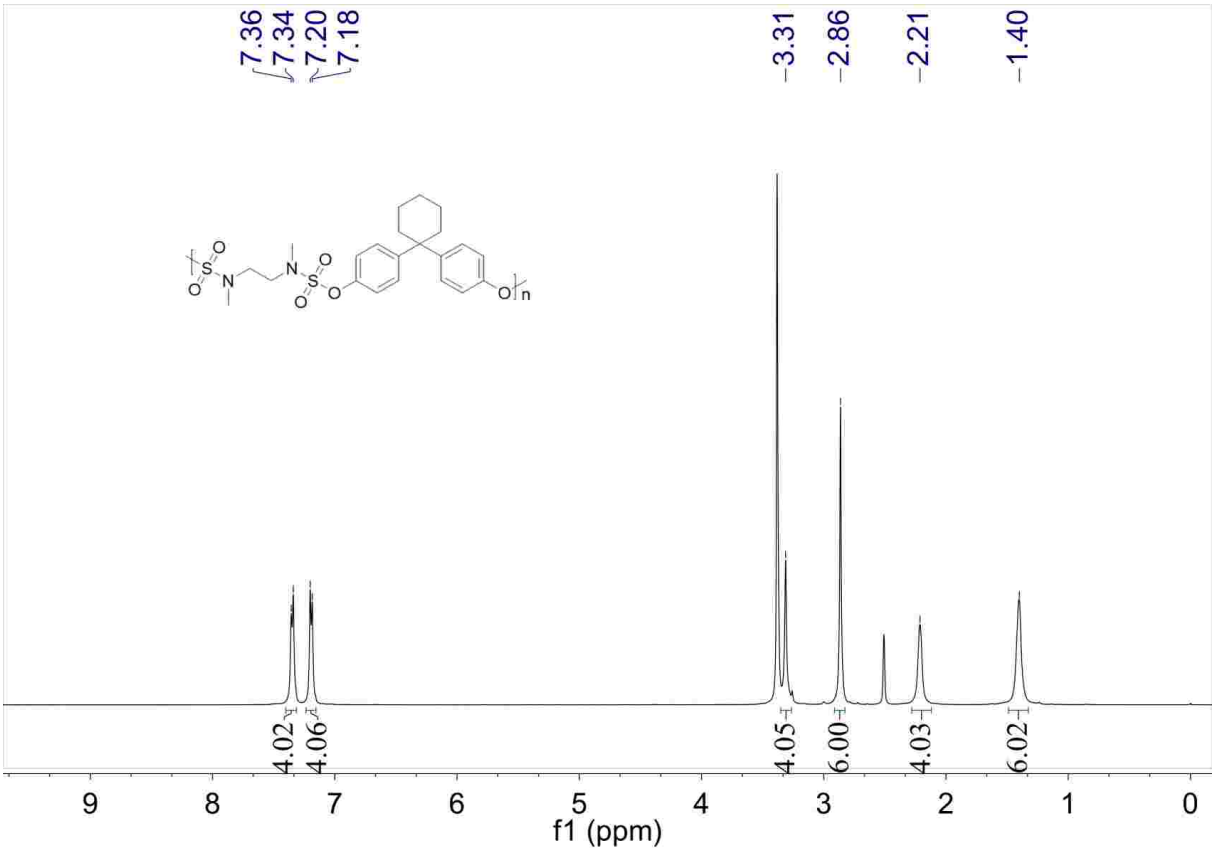
^{1}H NMR of P16



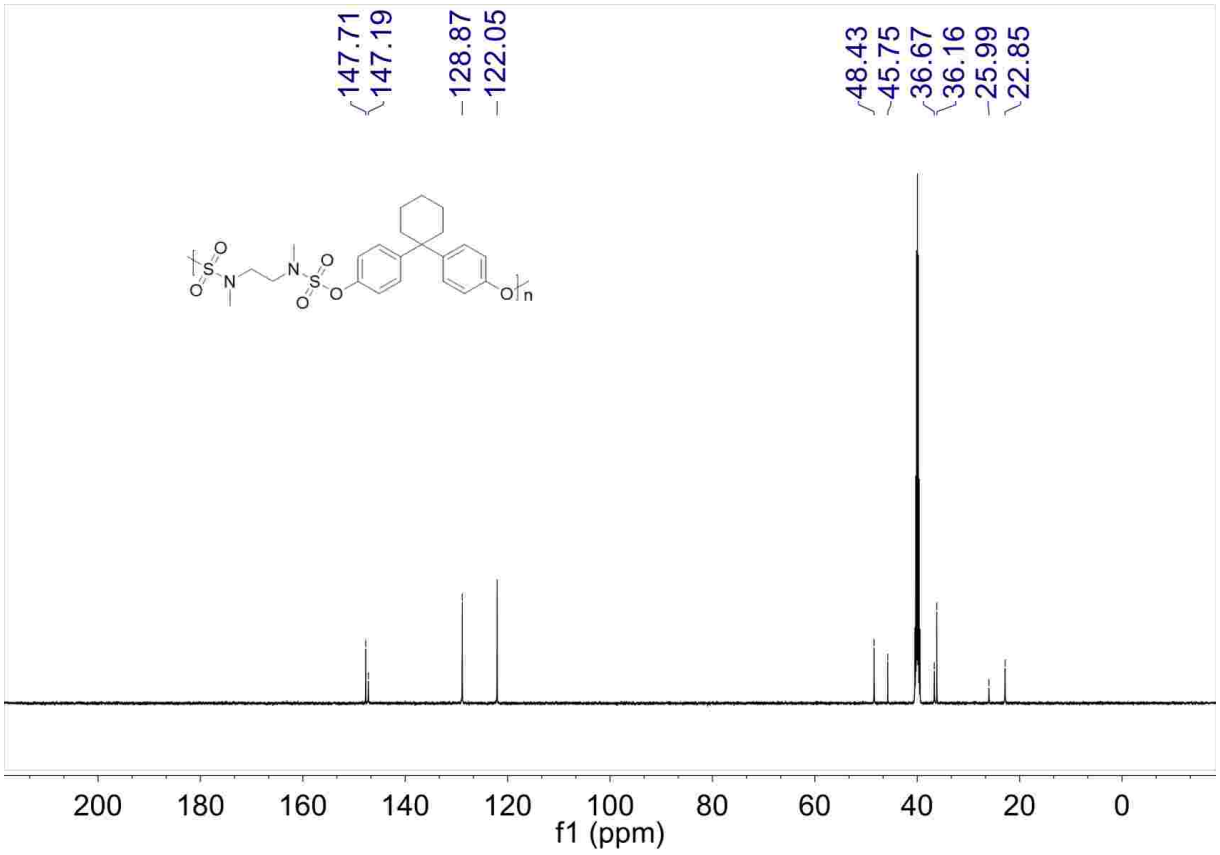
^{13}C NMR of P16



^{1}H NMR of P17



^{13}C NMR of P17



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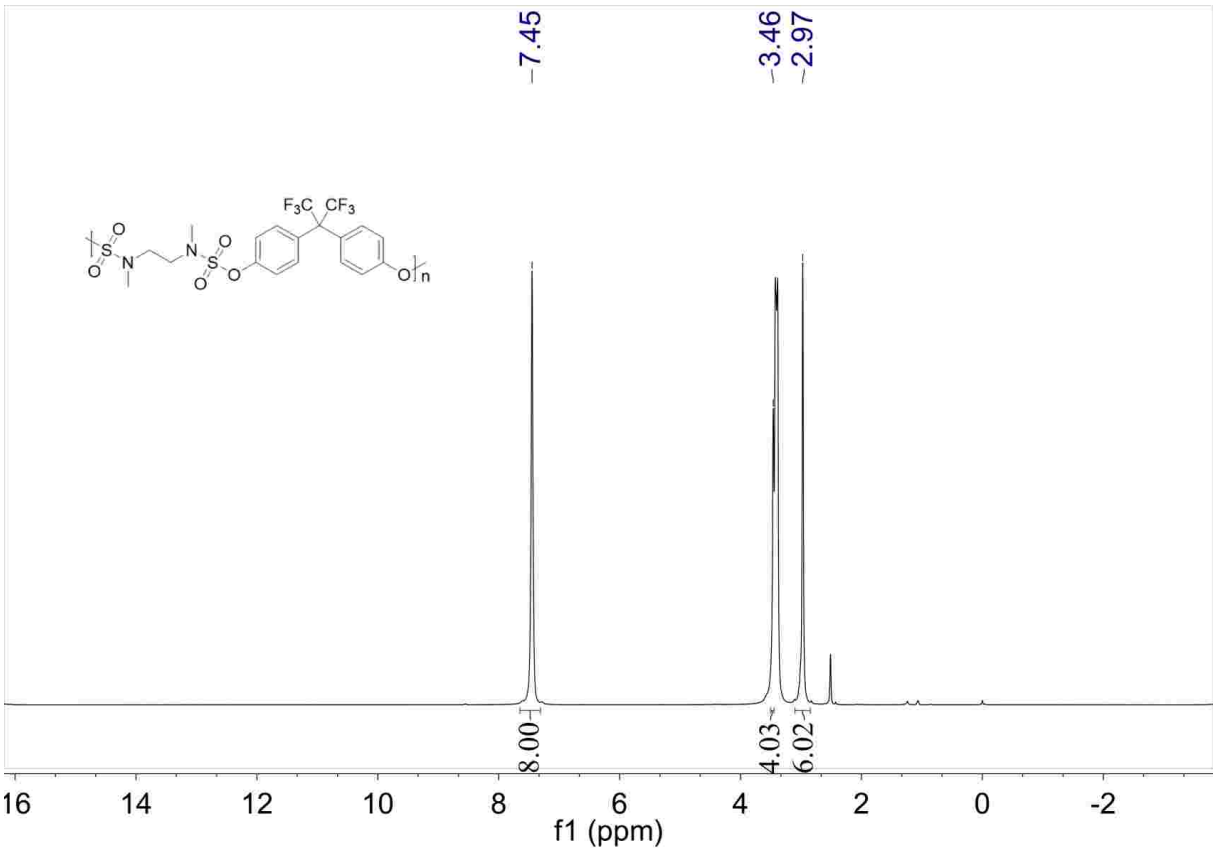
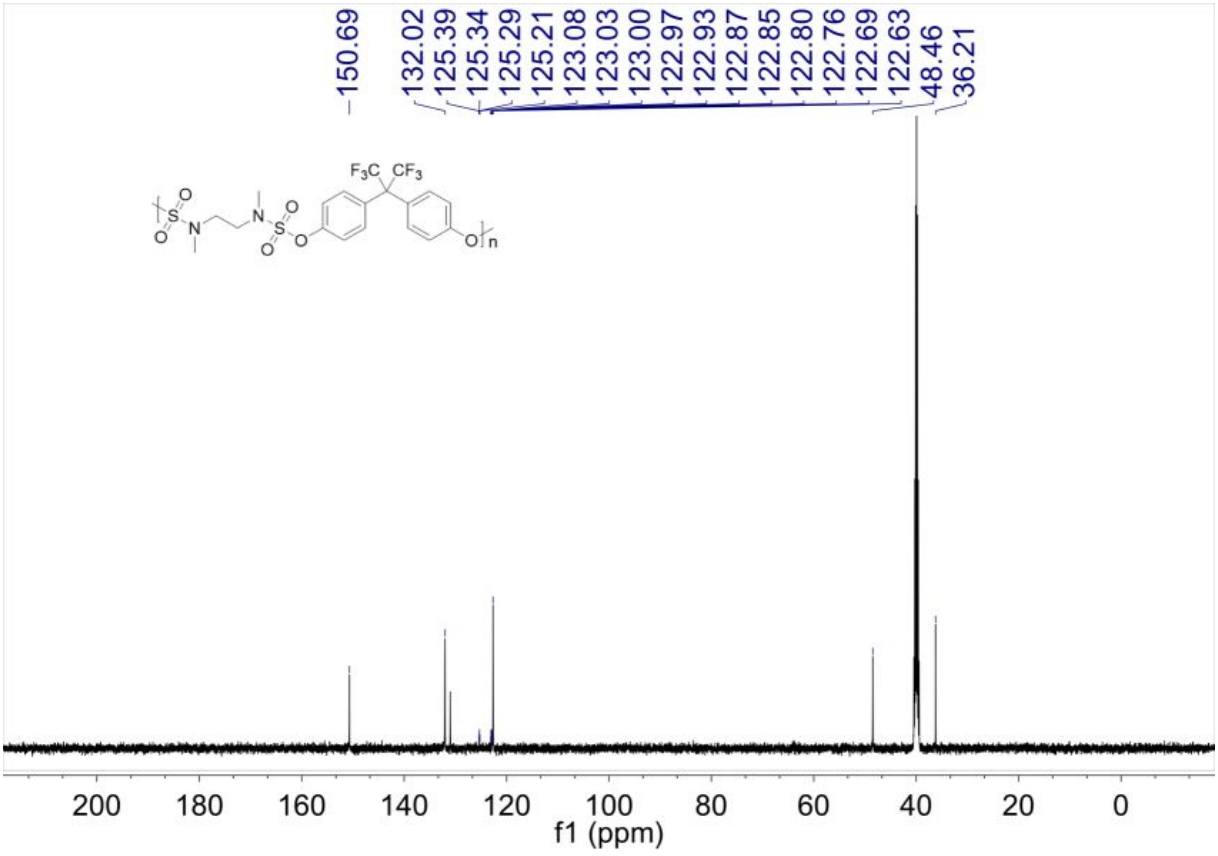
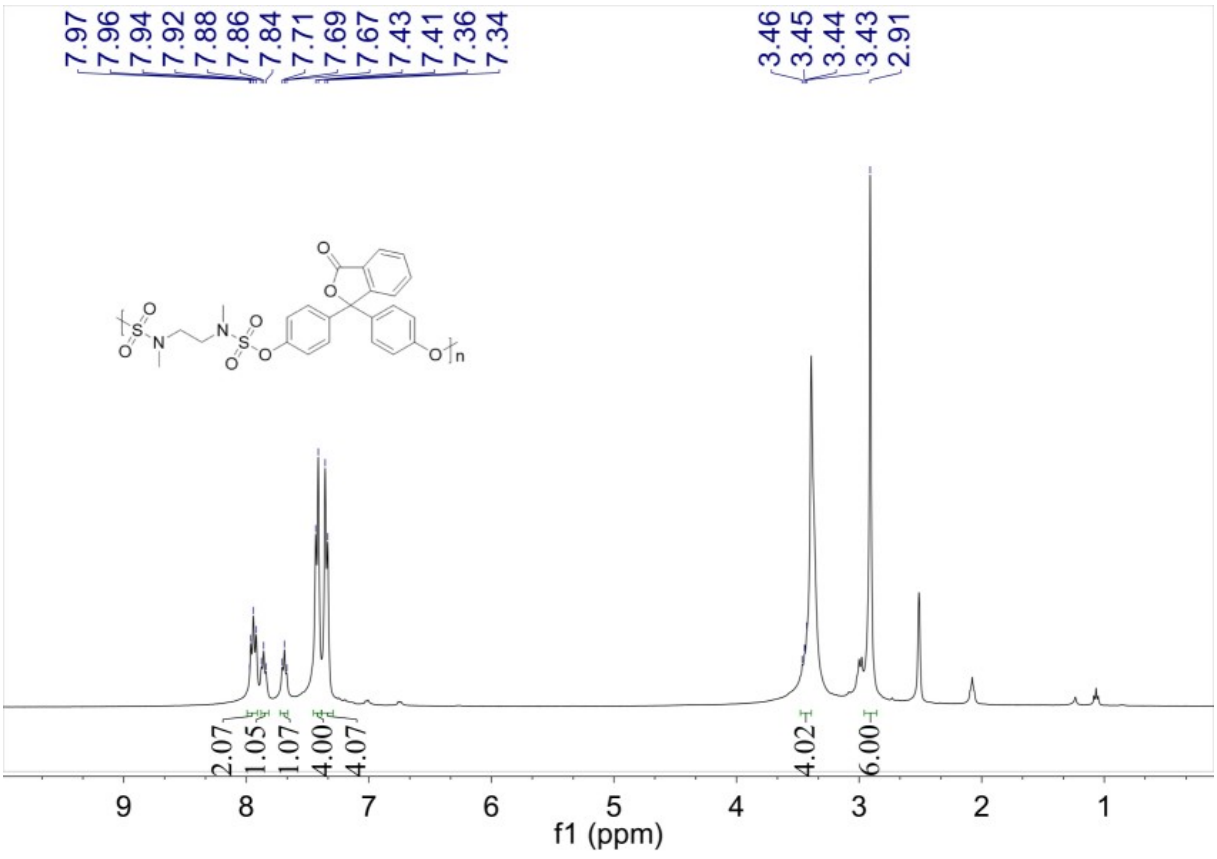


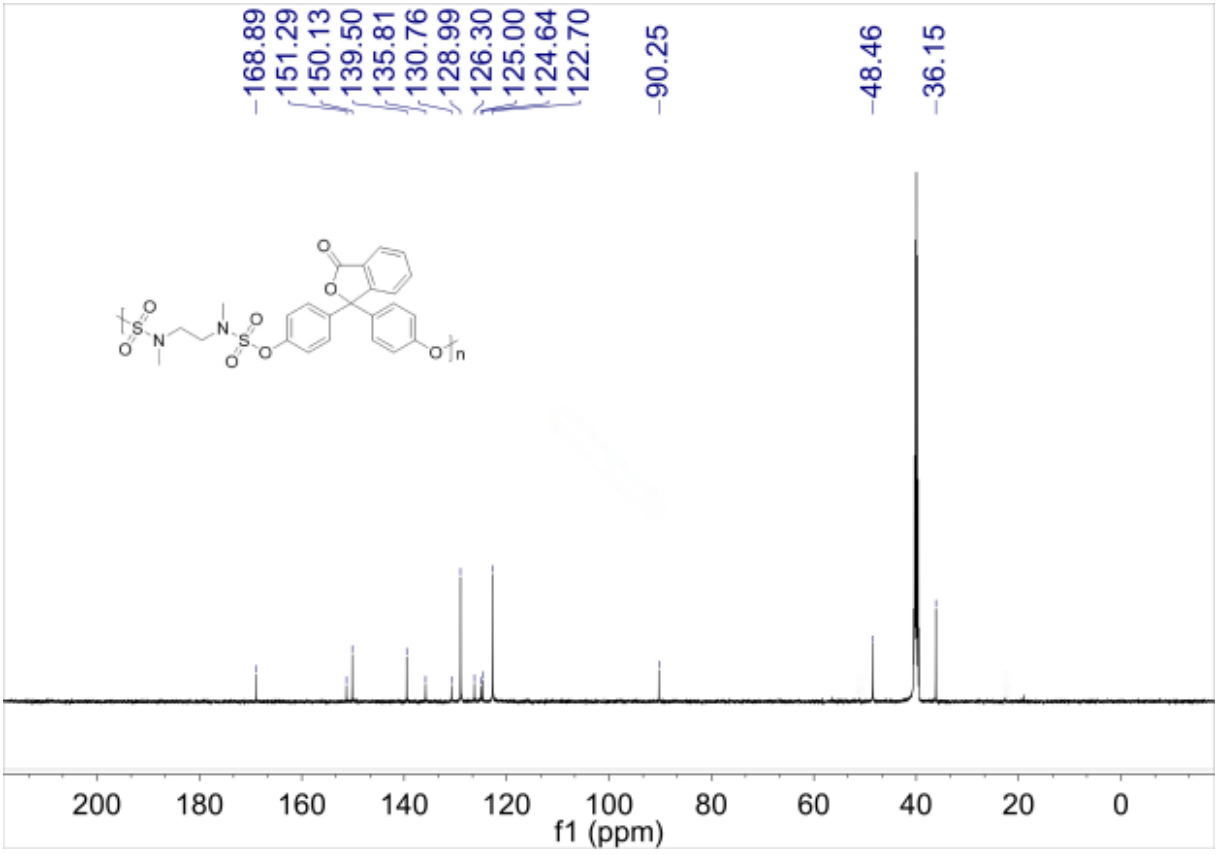
^{13}C NMR of P18



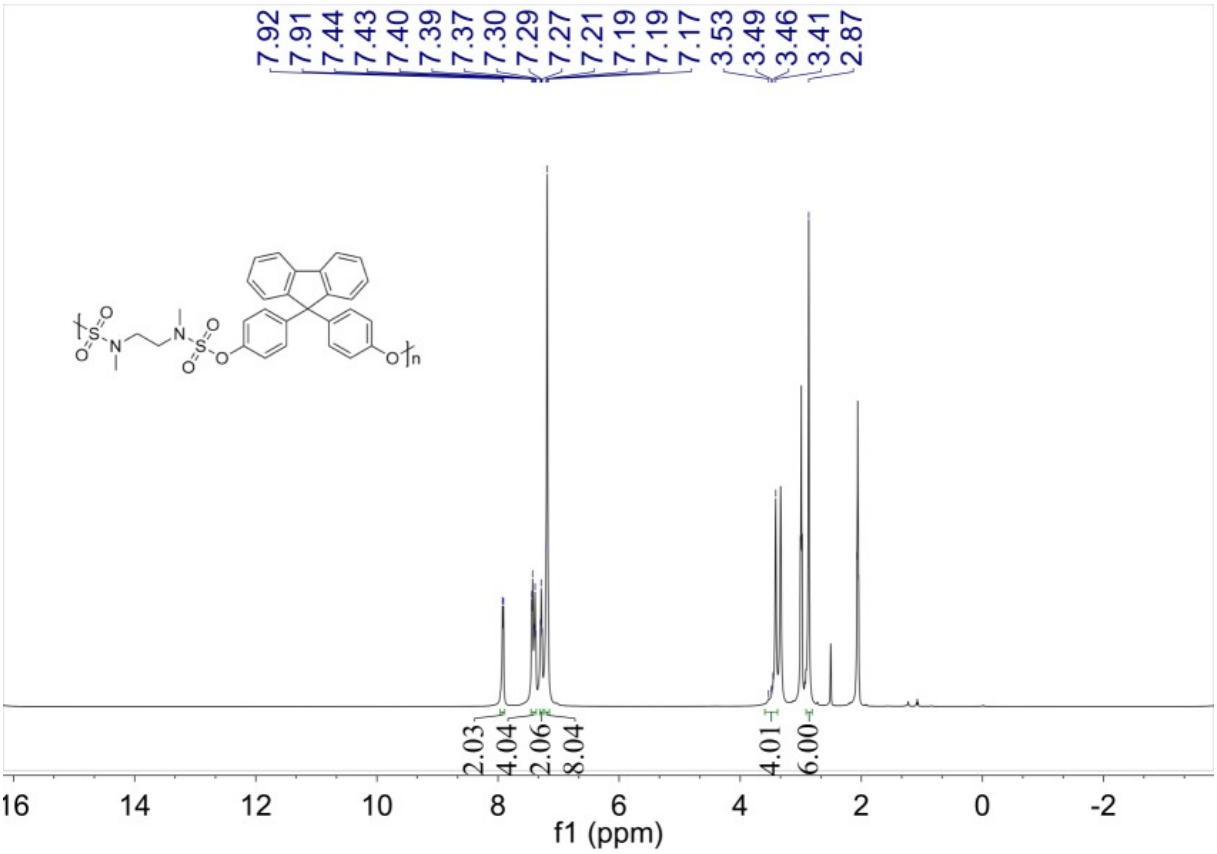
^{1}H NMR of P19



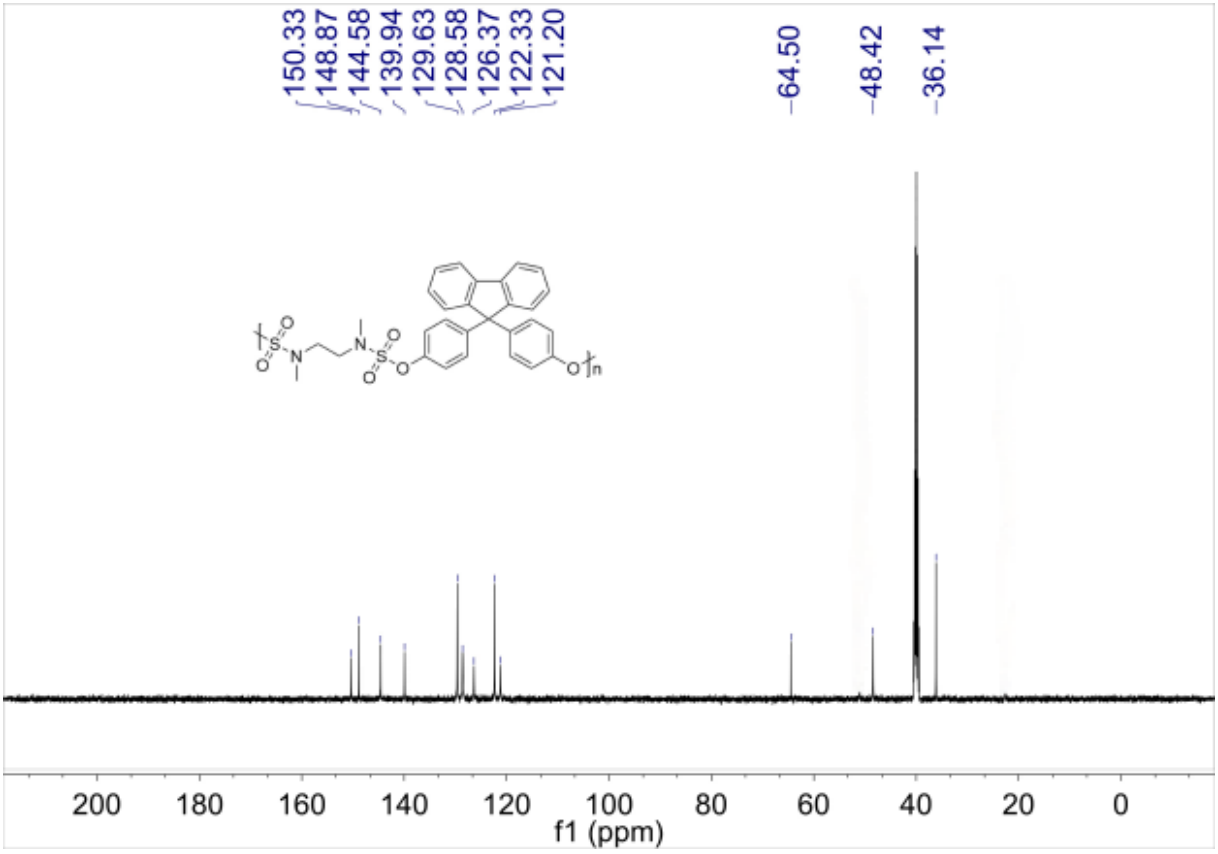
^{13}C NMR of P19



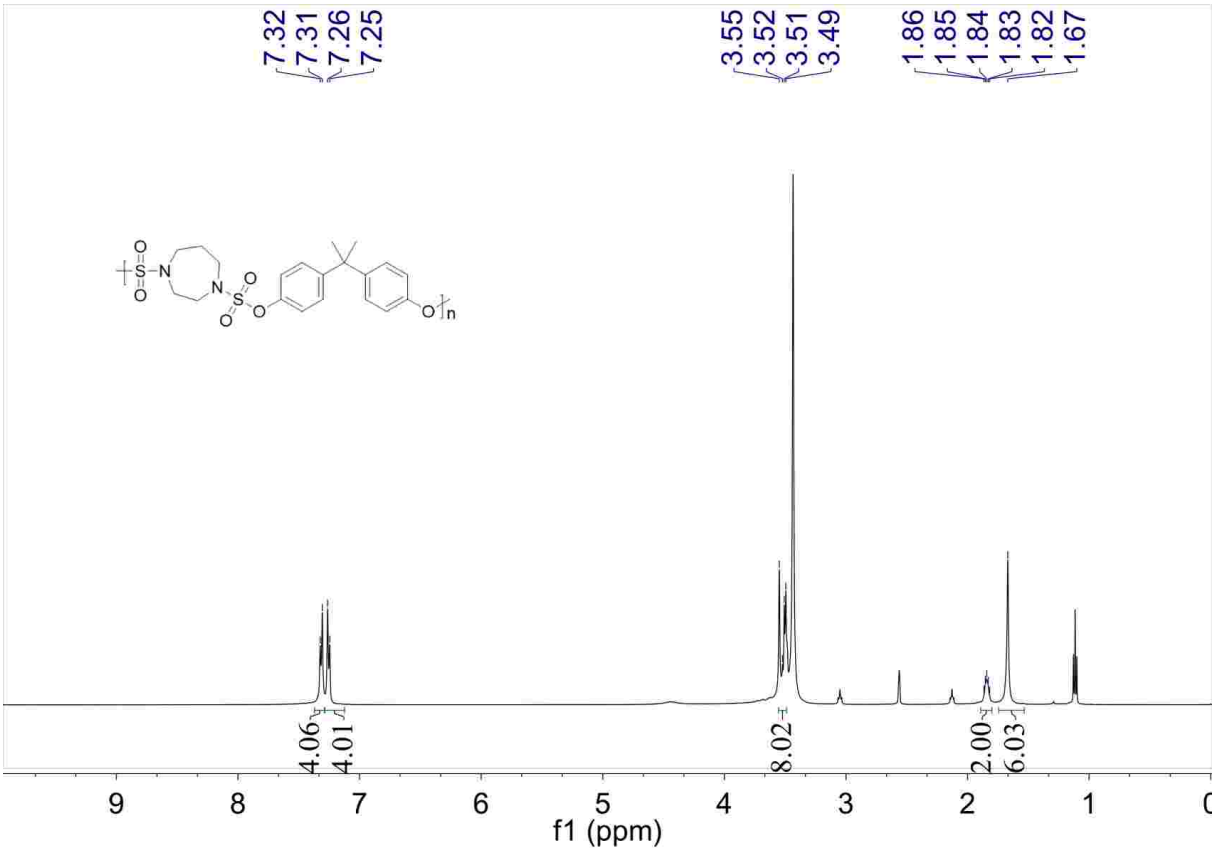
^{1}H NMR of P20



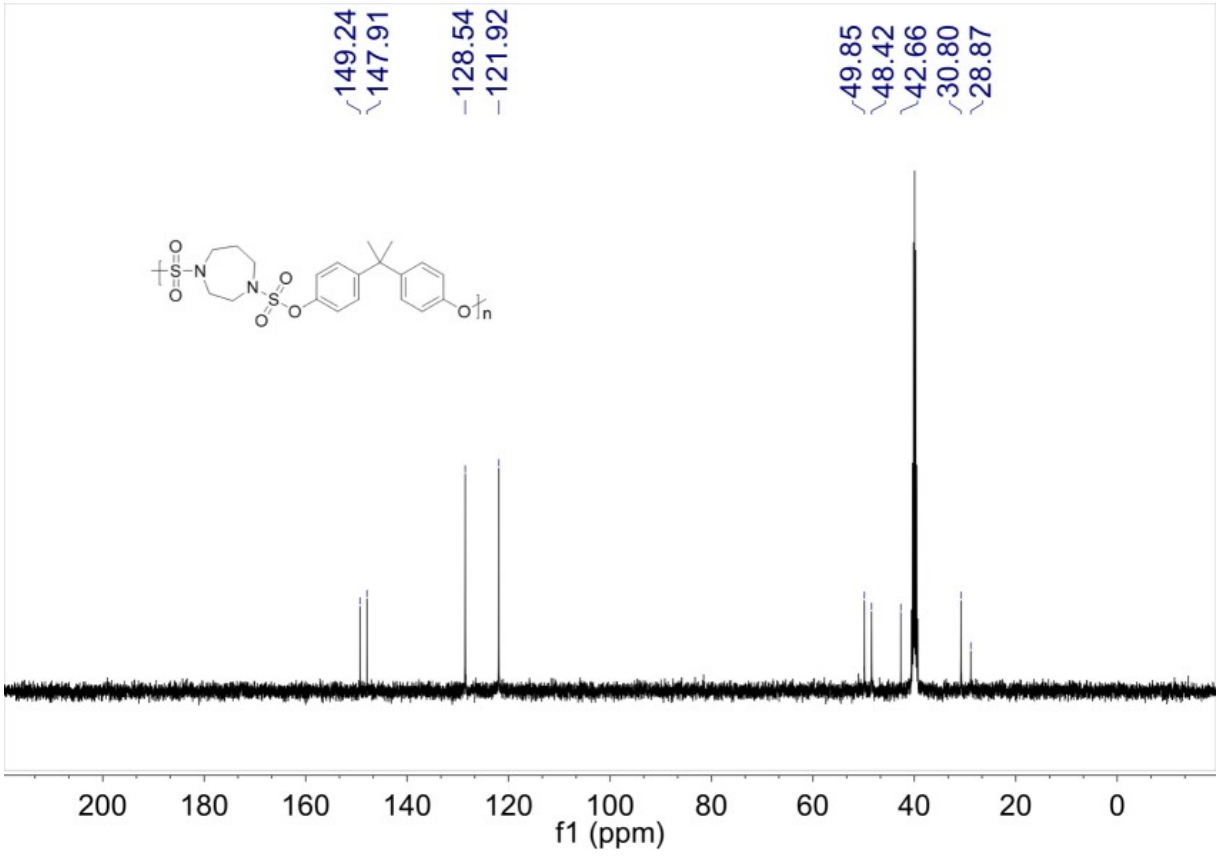
^{13}C NMR of P20



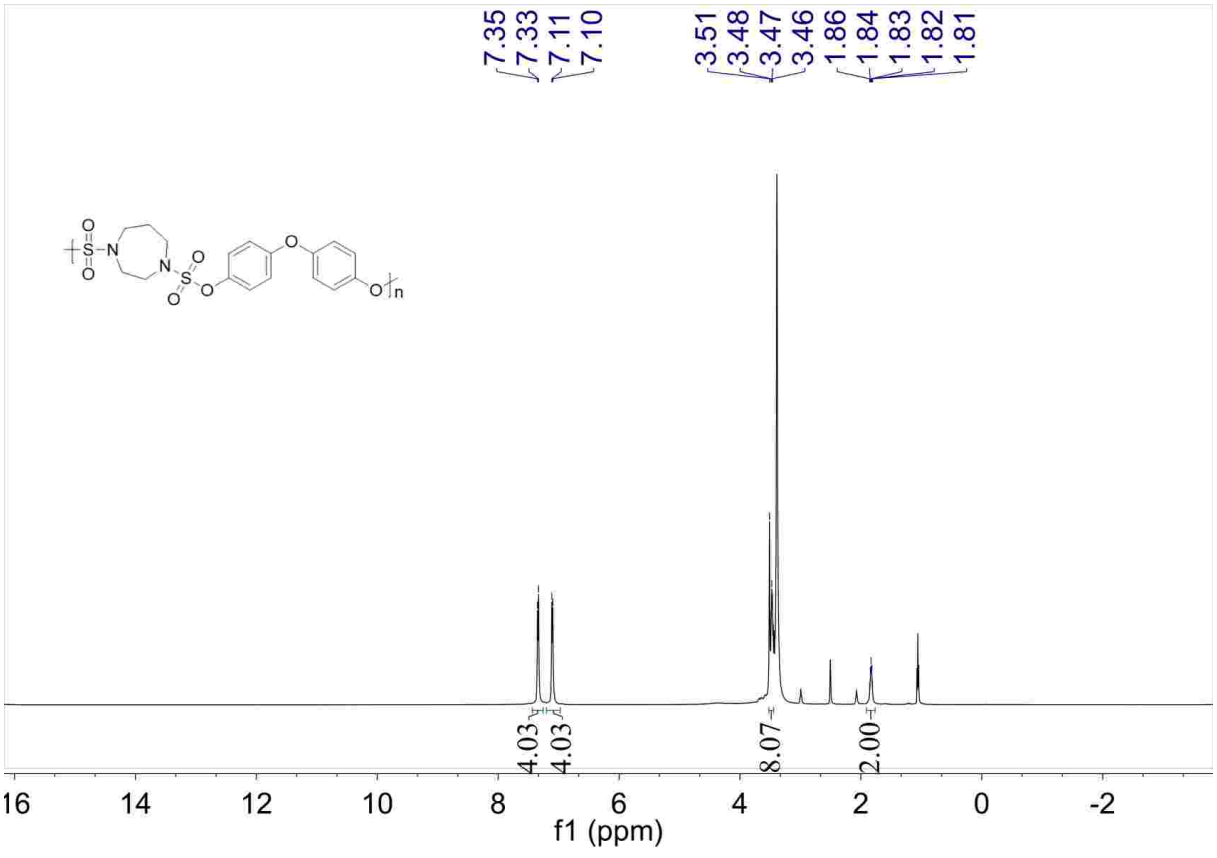
^{1}H NMR of P21



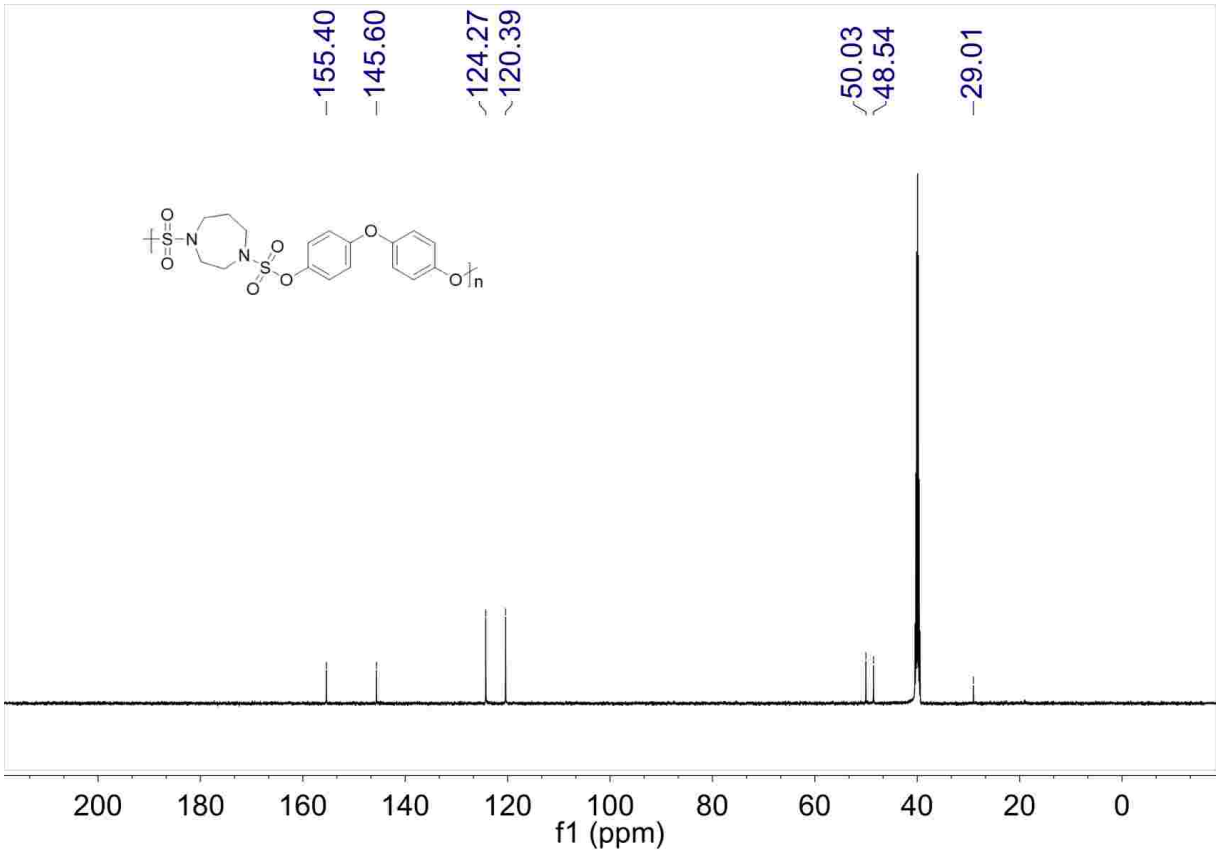
^{13}C NMR of P21



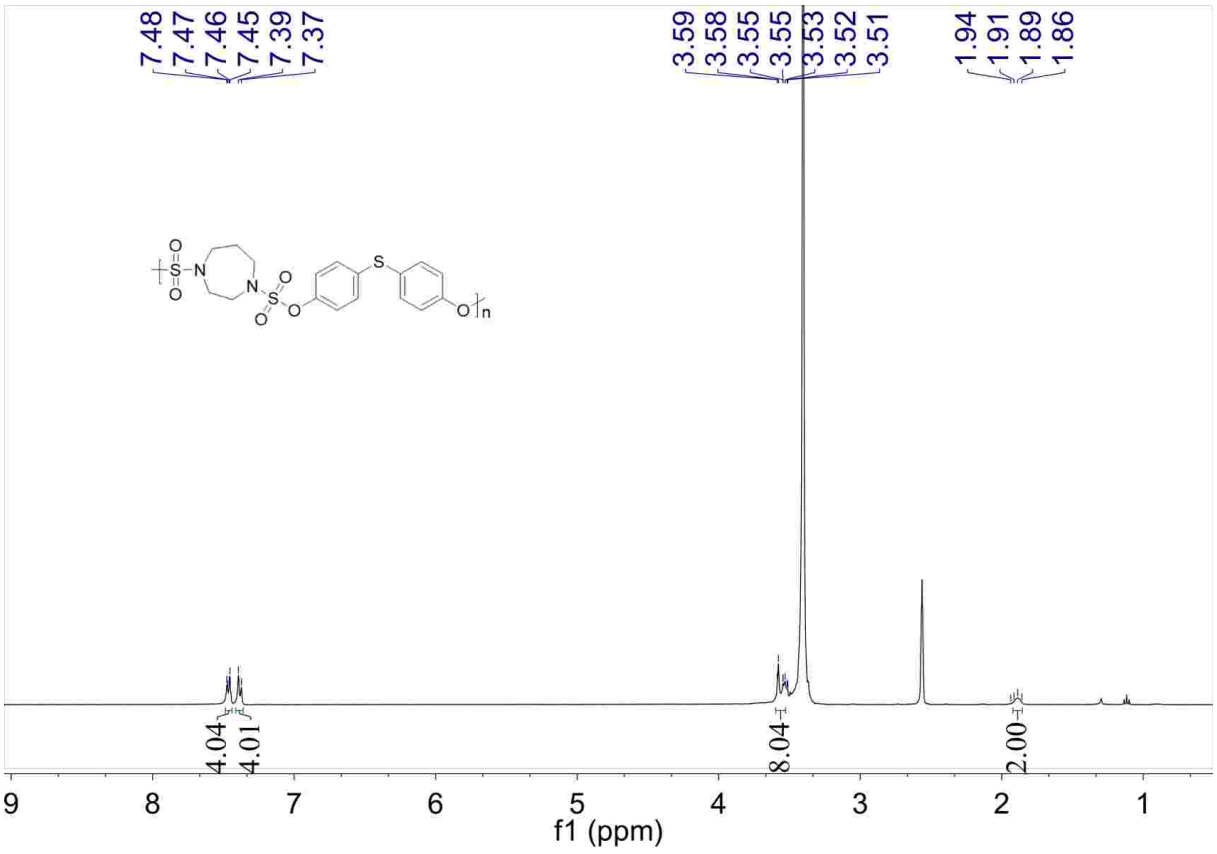
^{1}H NMR of P22



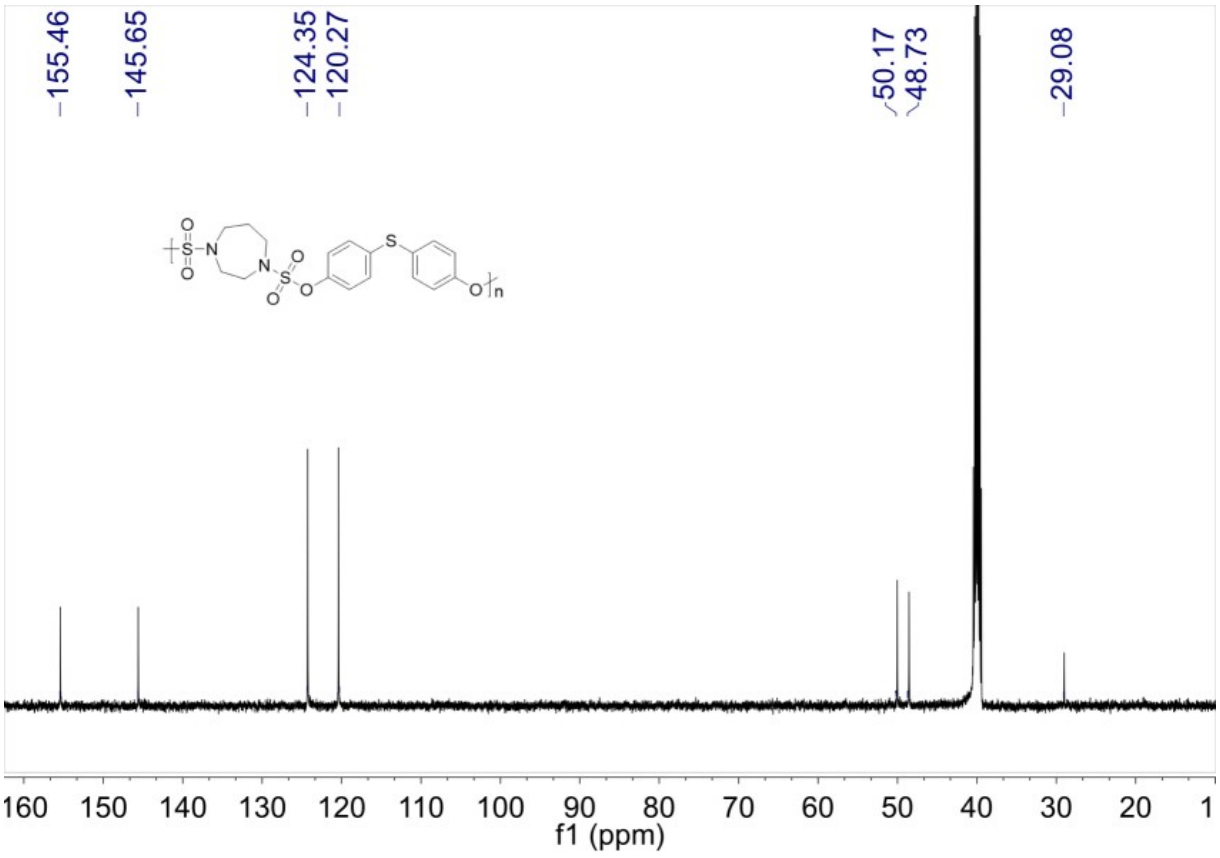
^{13}C NMR of P22



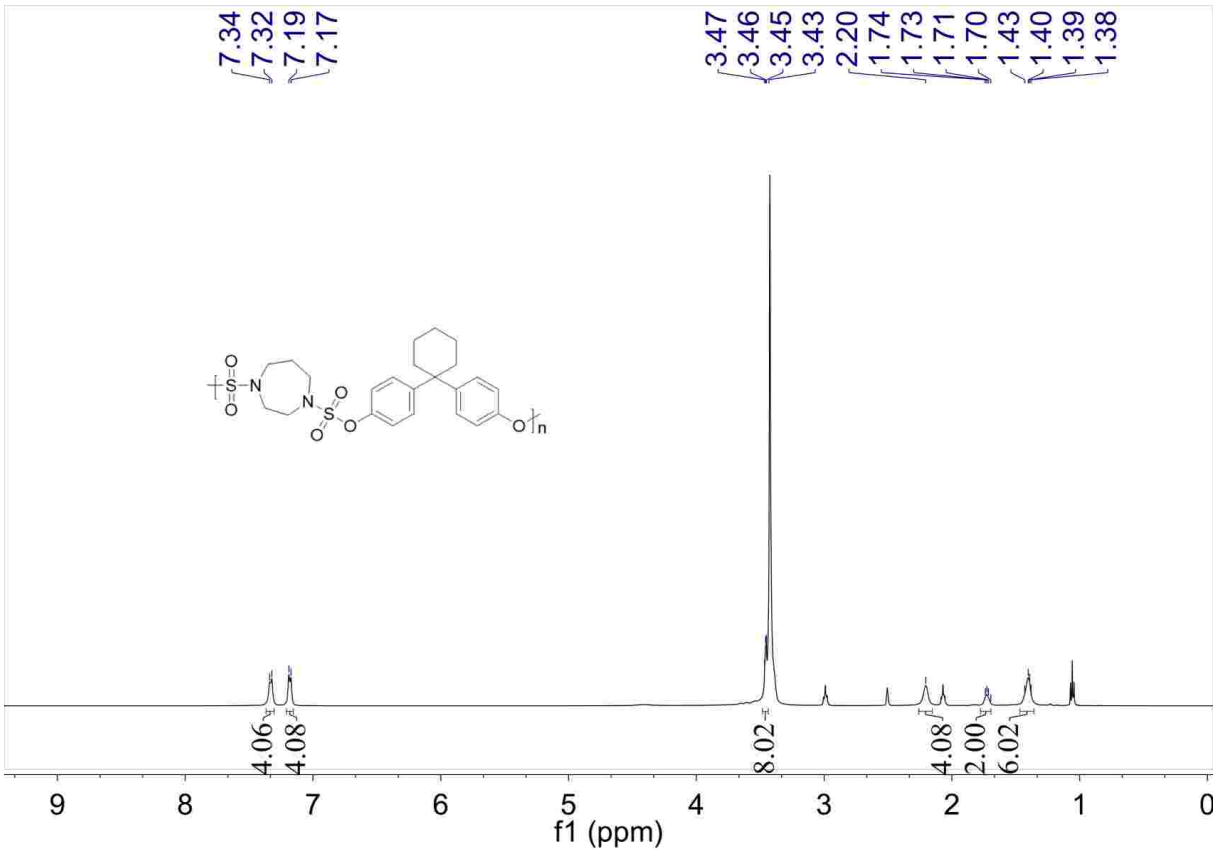
^{1}H NMR of P23



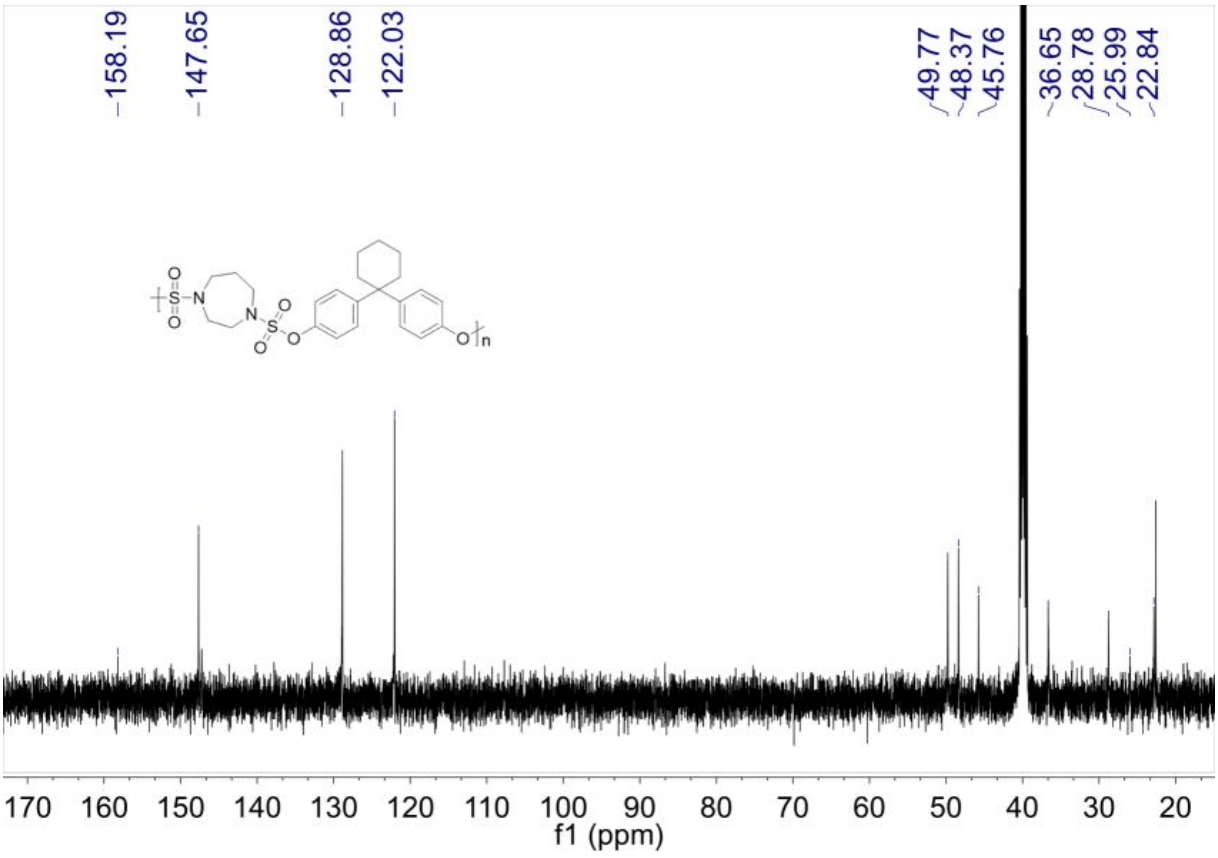
^{13}C NMR of P23



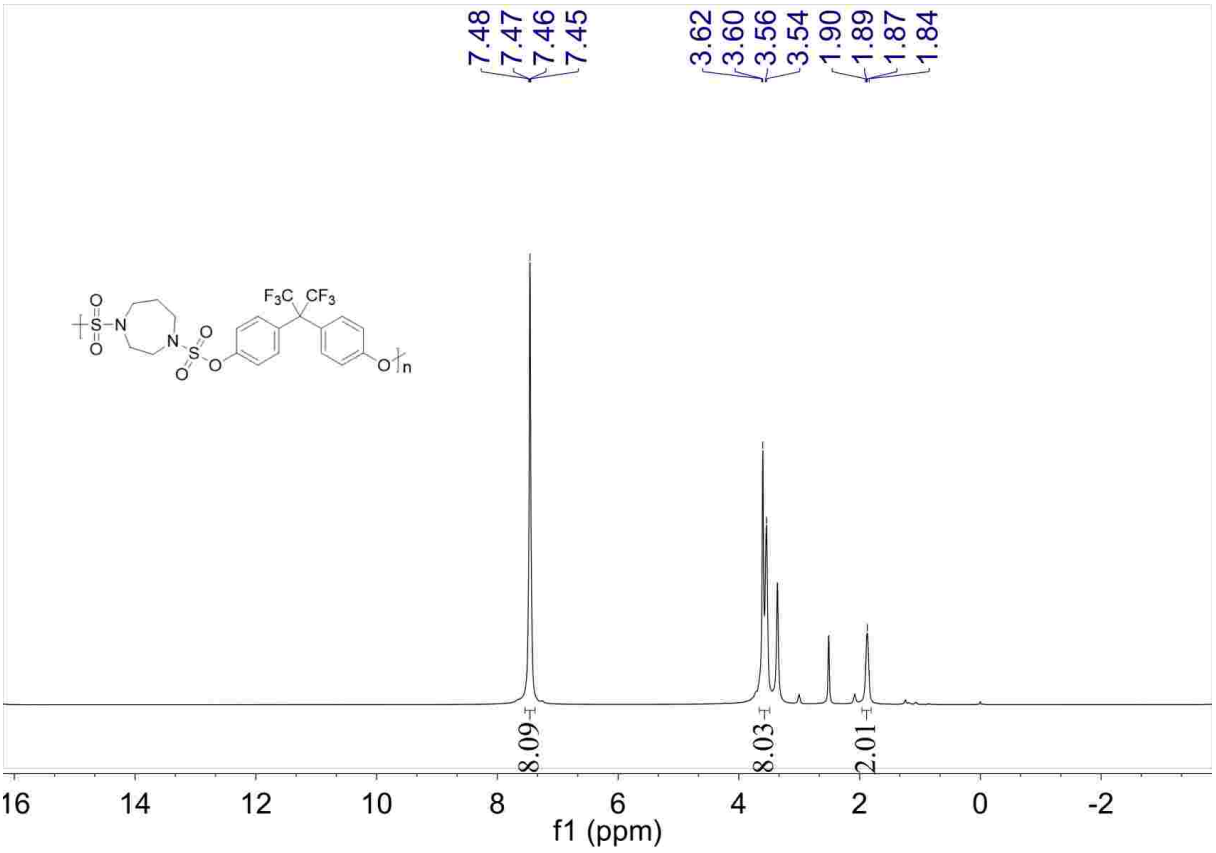
^{1}H NMR of P24



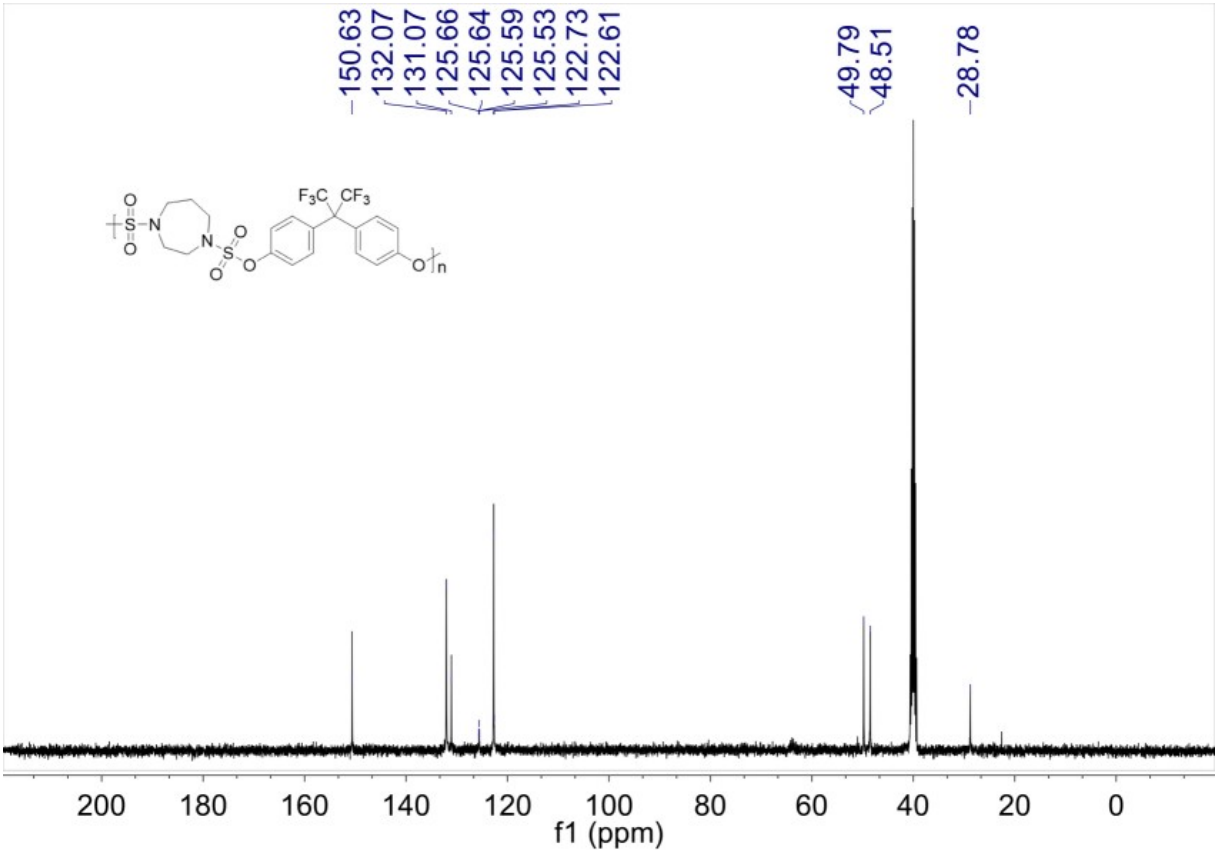
^{13}C NMR of P24



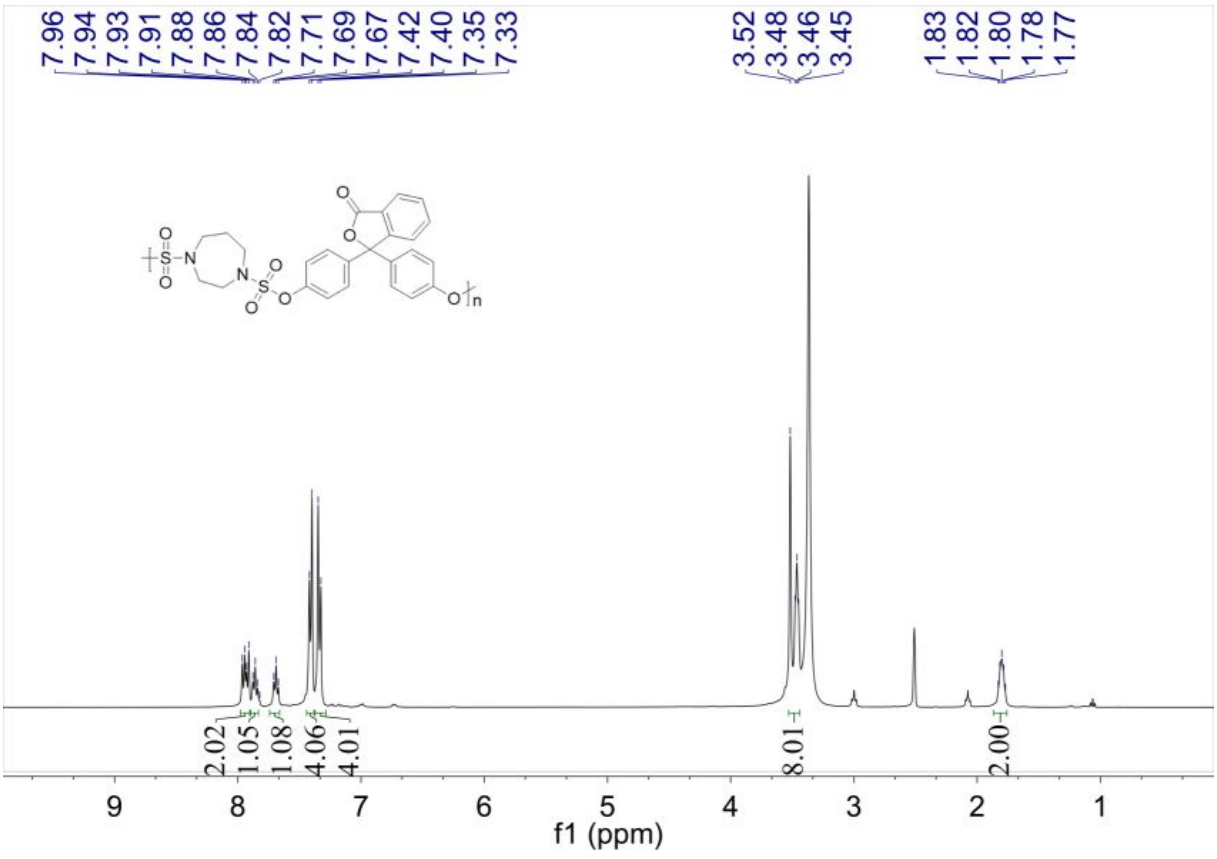
^{1}H NMR of P25



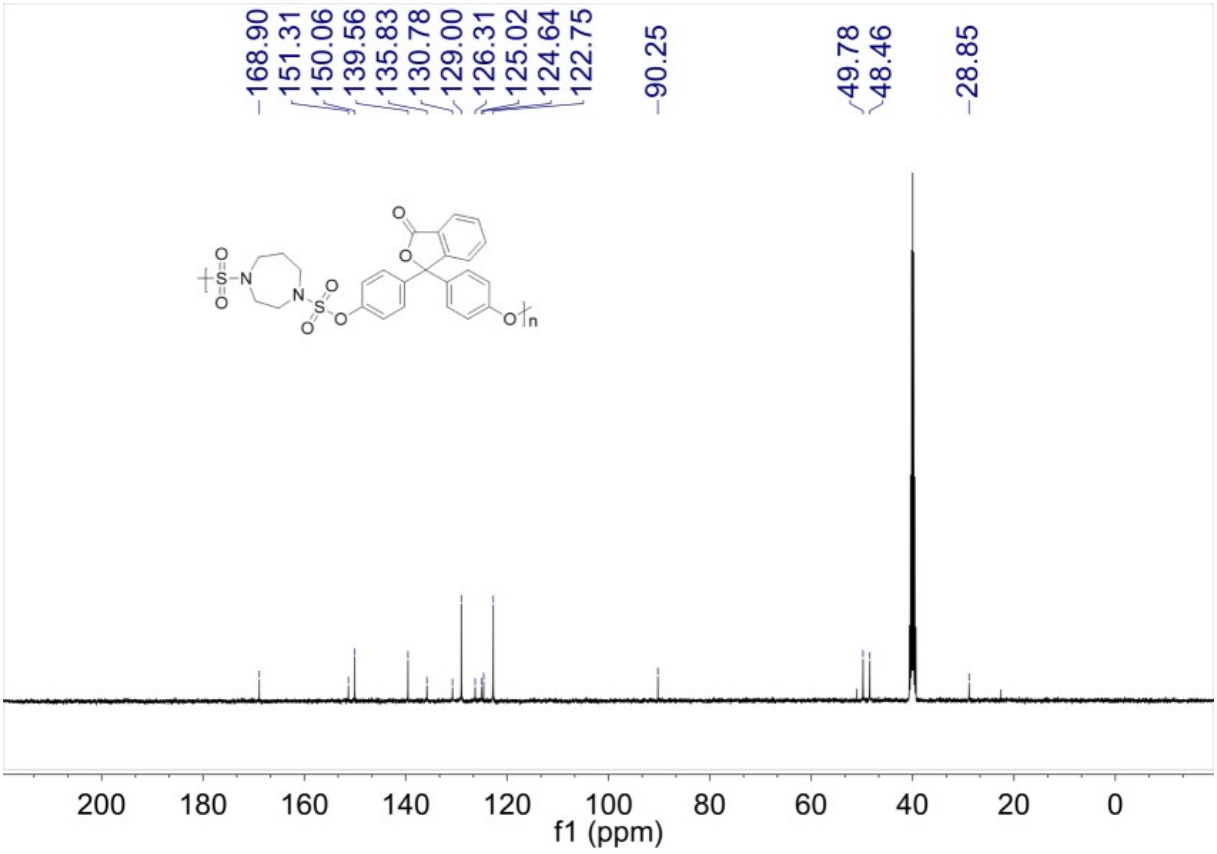
^{13}C NMR of P25



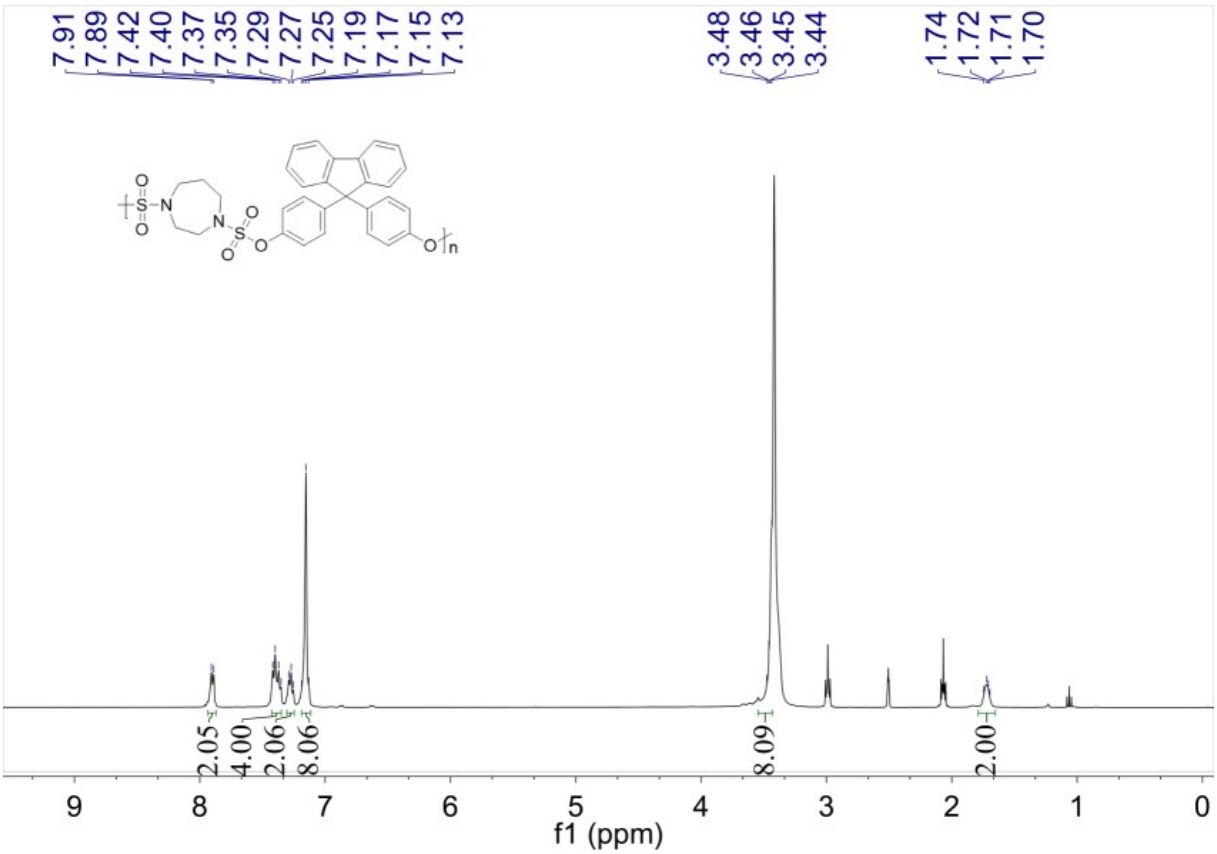
^{1}H NMR of P26



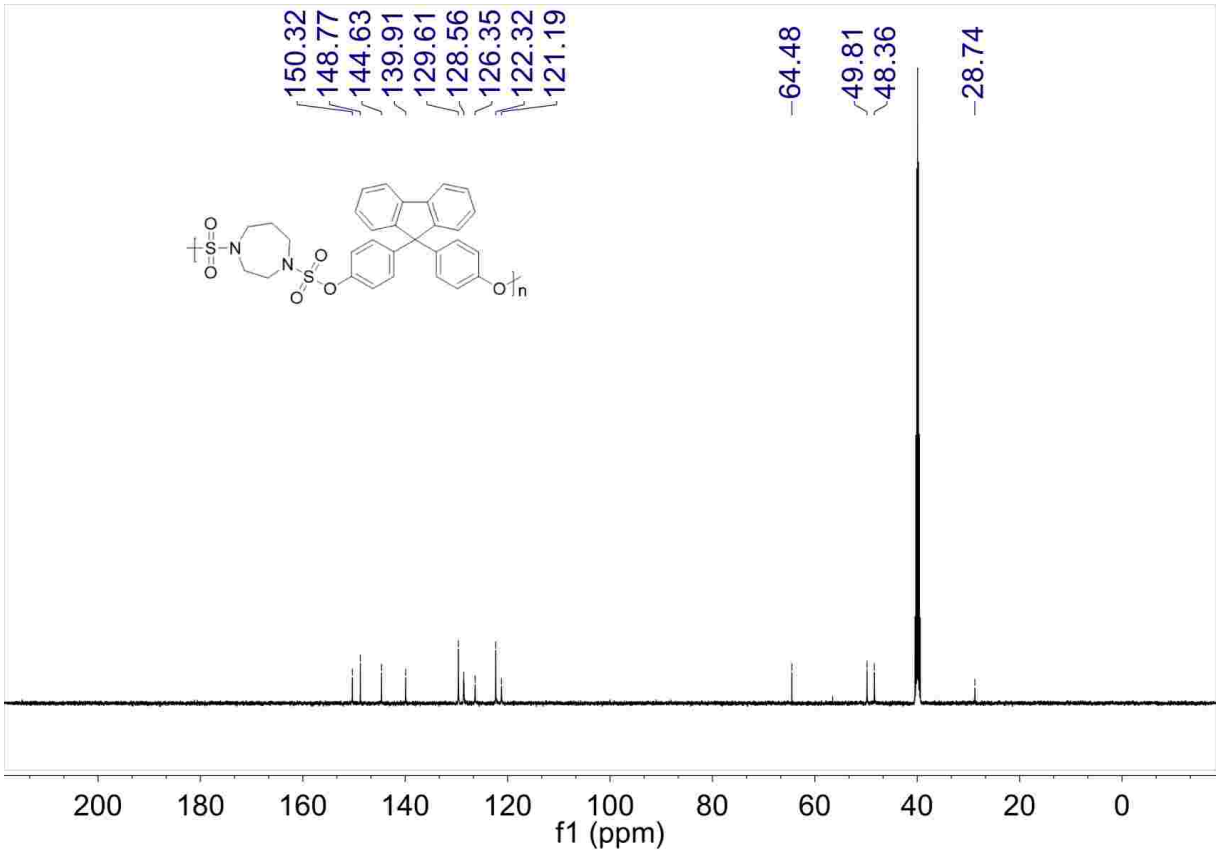
^{13}C NMR of P26



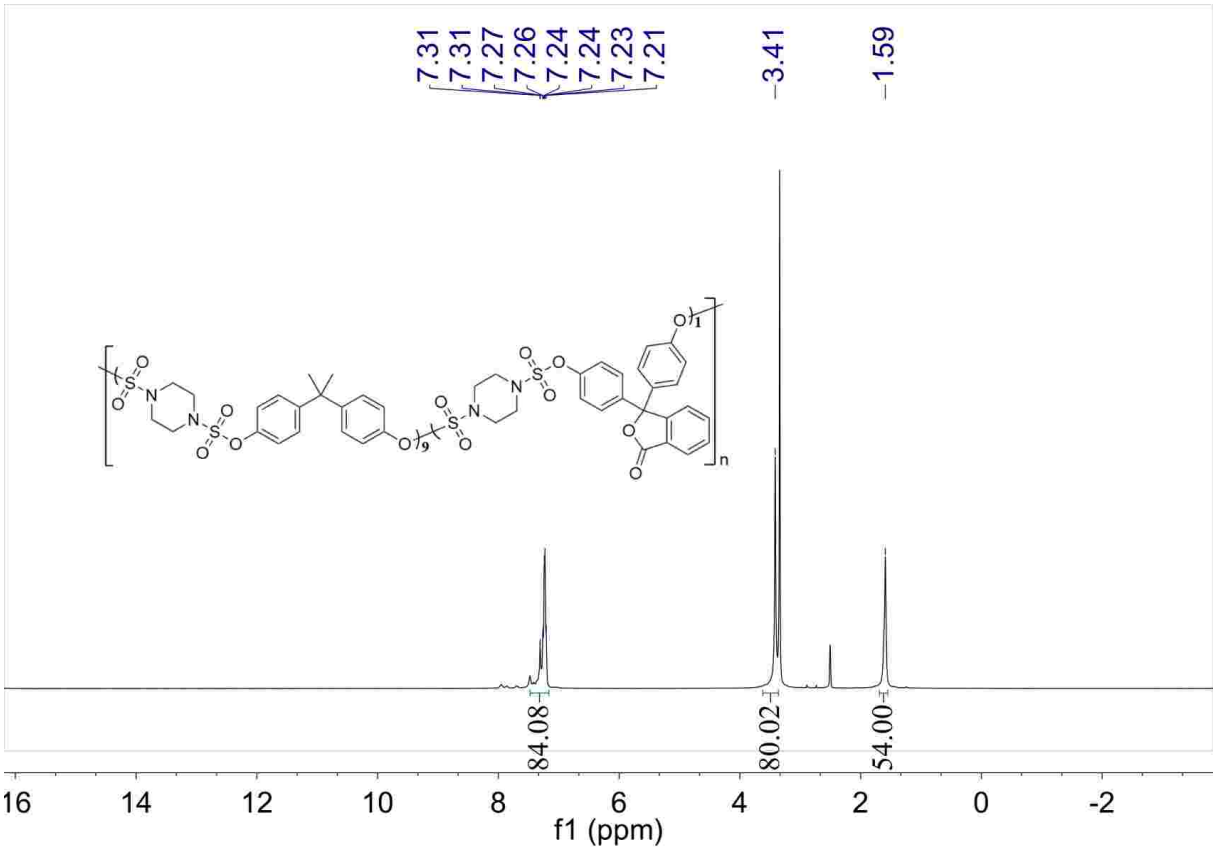
^{1}H NMR of P27



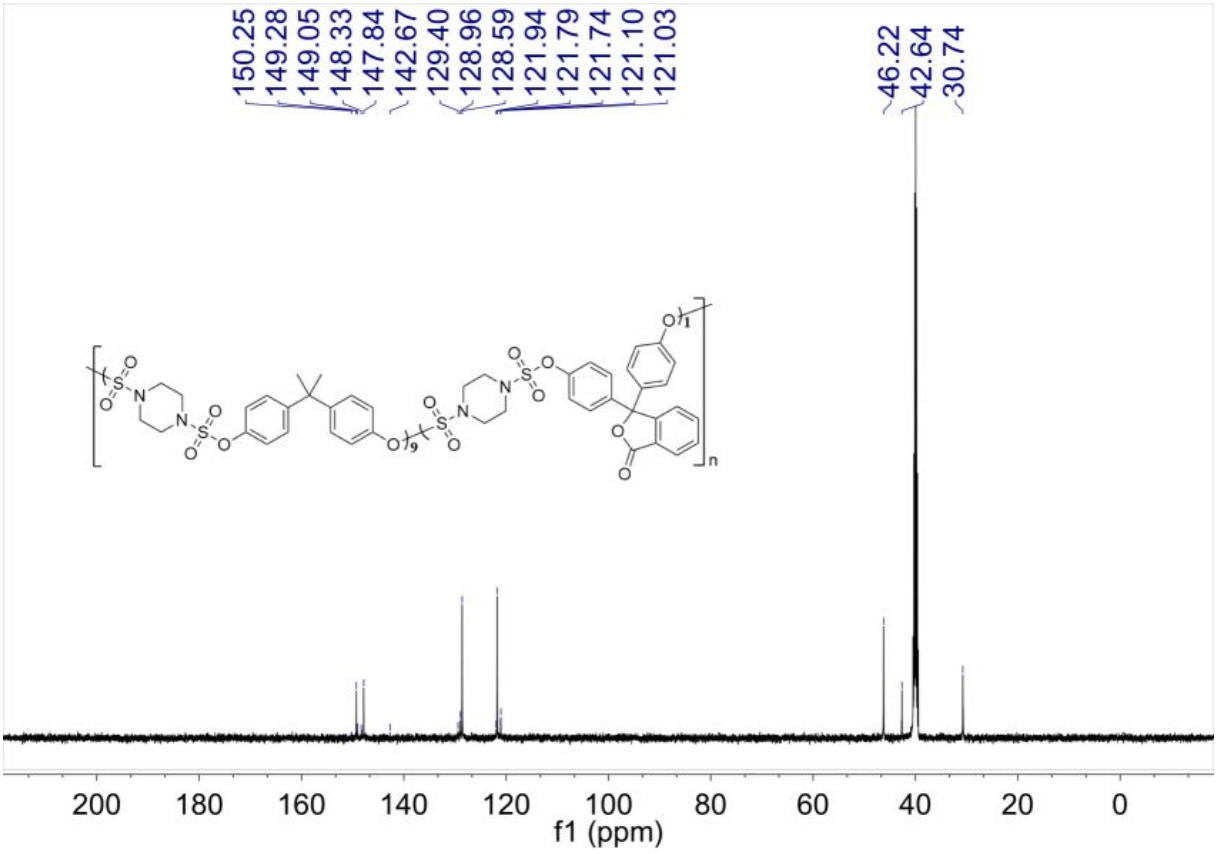
^{13}C NMR of P27



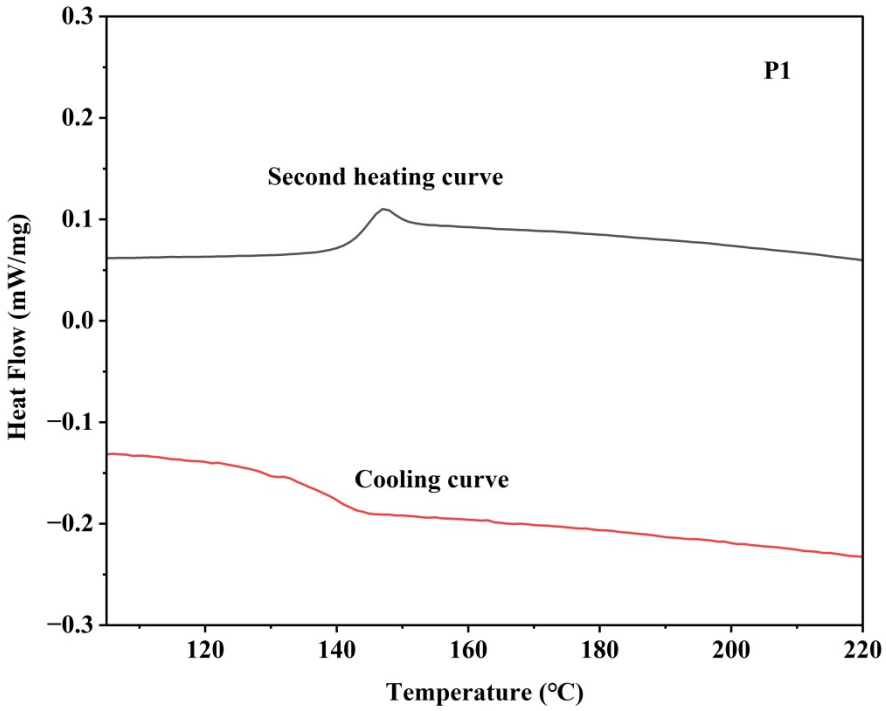
^{1}H NMR of P28

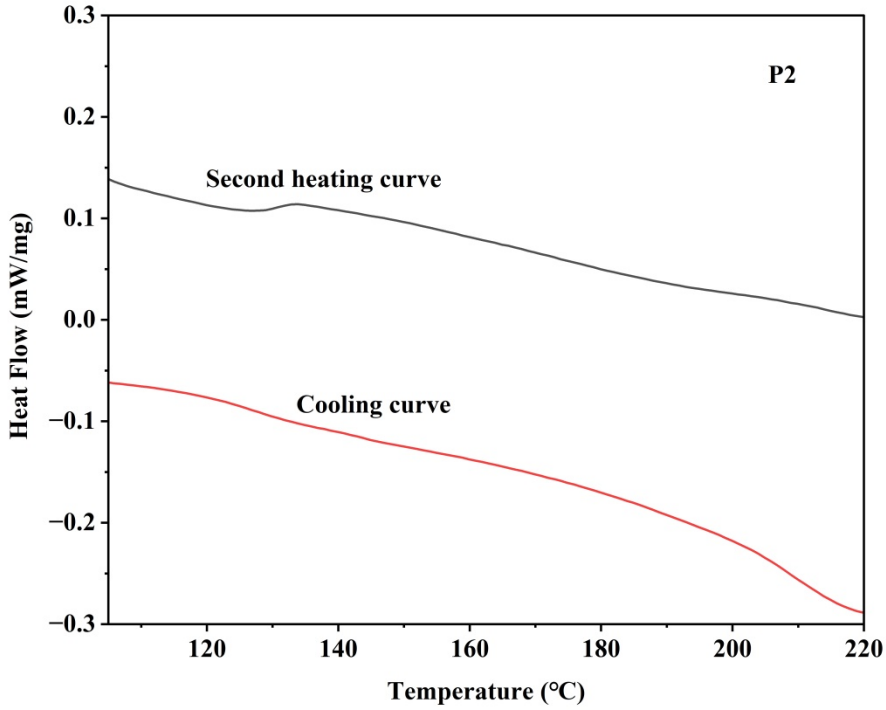


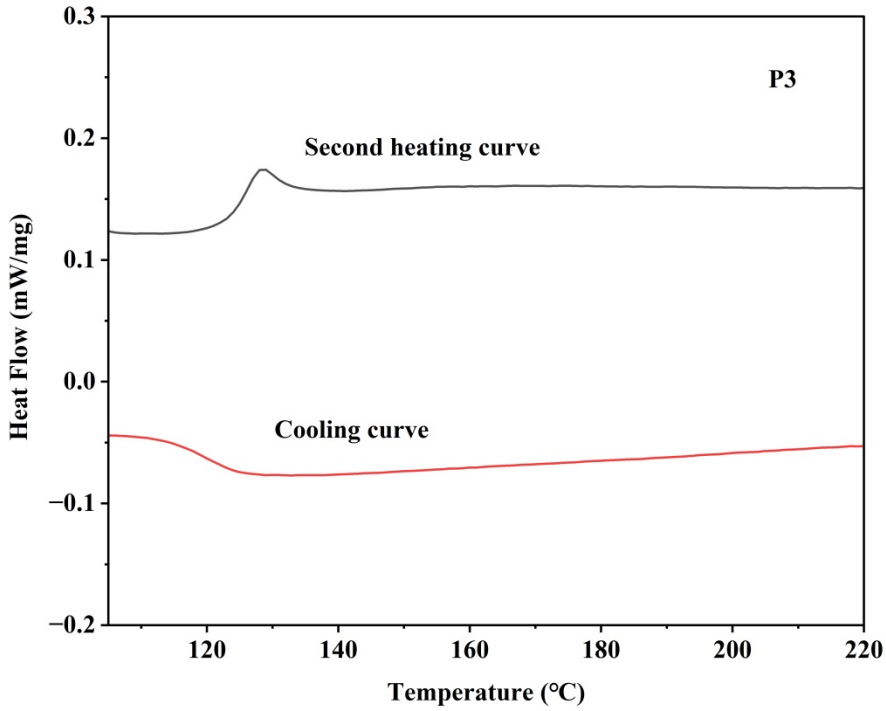
^{13}C NMR of P28

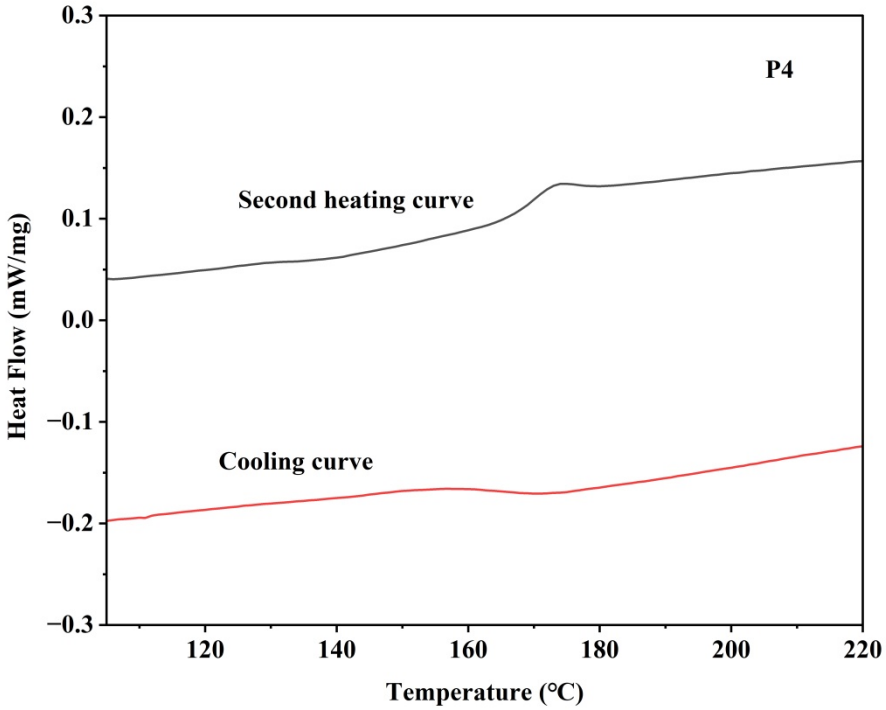


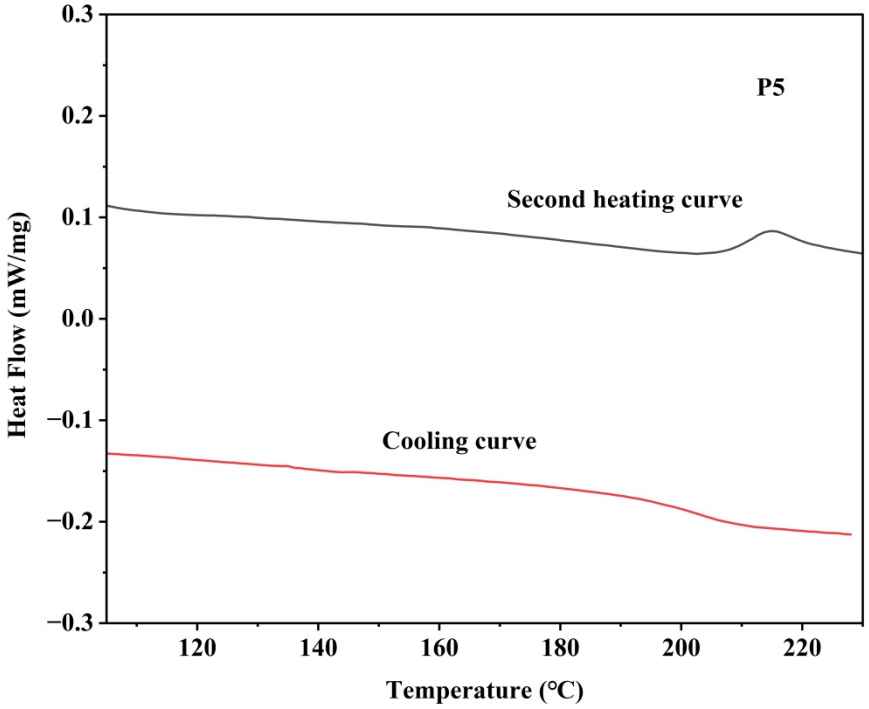
7.3 Copies of the DSC curves of polymers

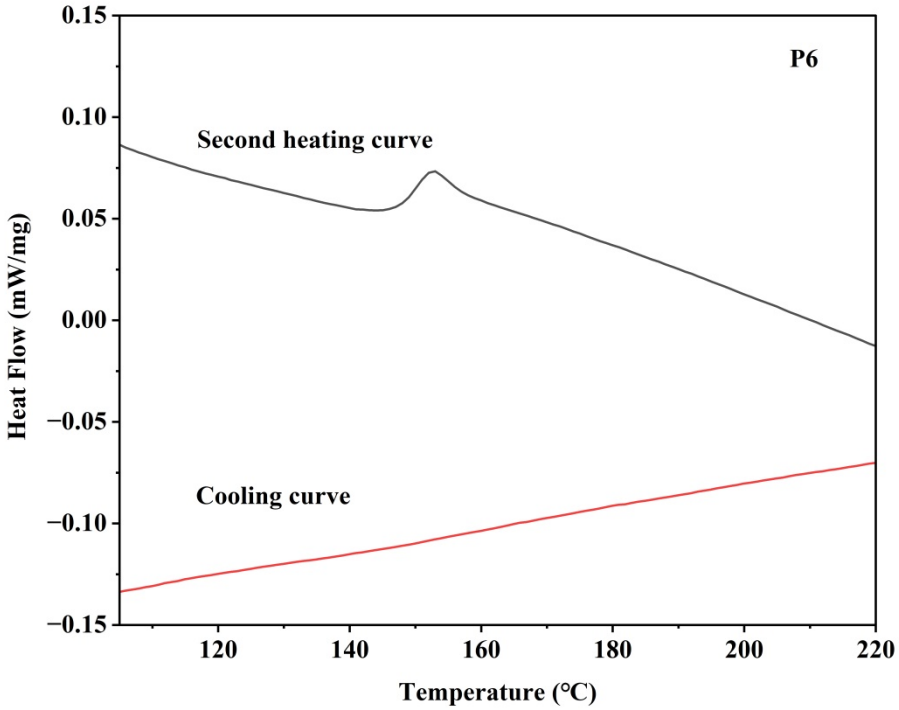

P1
Second heating curve
Cooling curve
Heat Flow (mW/mg)
Temperature (°C)
0.3
0.2
0.1
0.0
−0.1
−0.2
−0.3
120
140
160
180
200
220

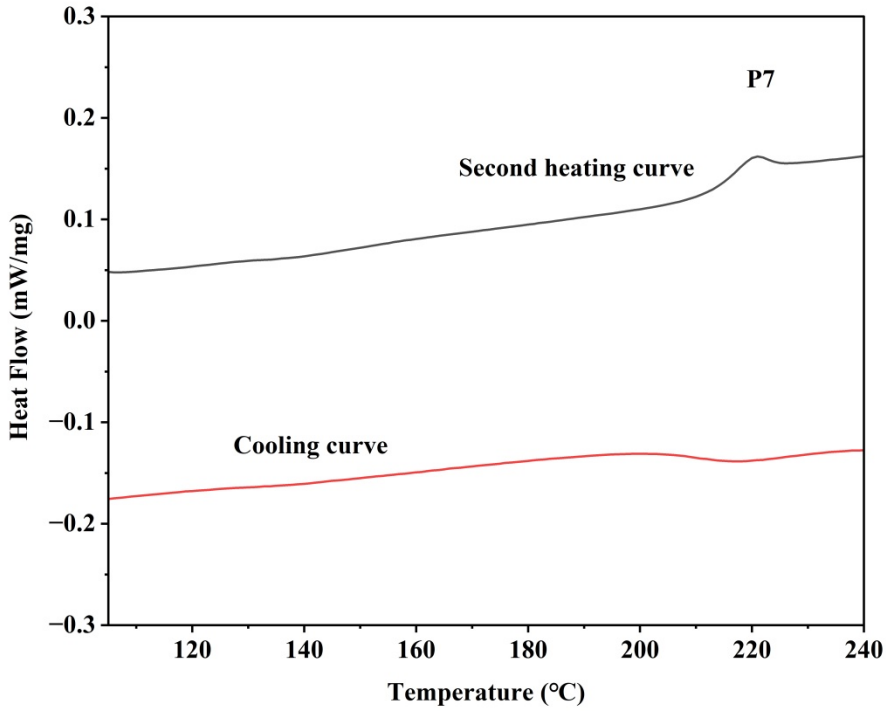

P2
Second heating curve
Cooling curve
Heat Flow (mW/mg)
Temperature (°C)
0.3
0.2
0.1
0.0
−0.1
−0.2
−0.3
120
140
160
180
200
220

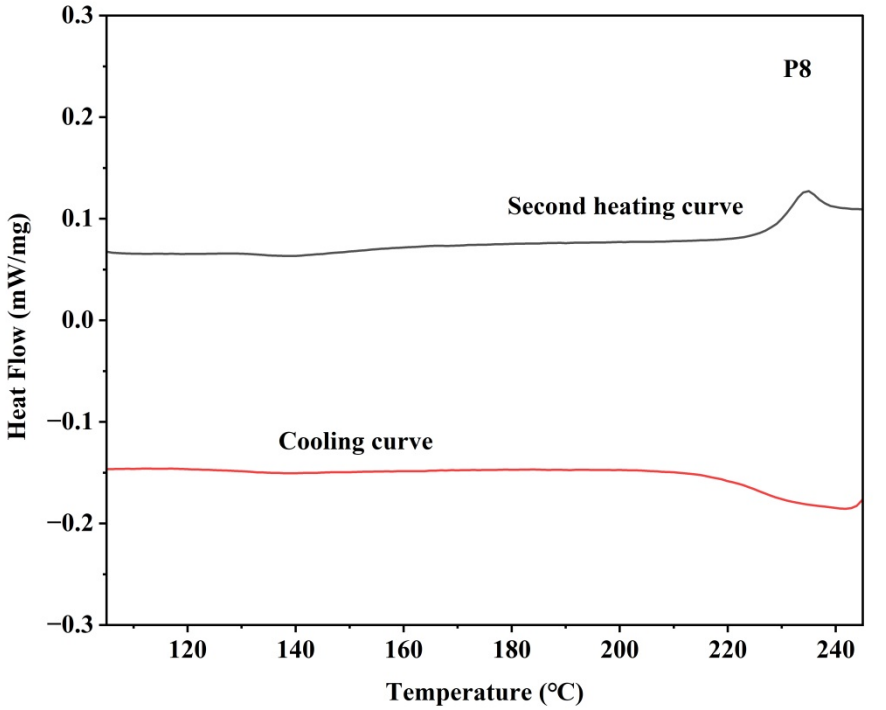

P3
Second heating curve
Cooling curve
Heat Flow (mW/mg)
Temperature (°C)
0.3
0.2
0.1
0.0
−0.1
−0.2
120
140
160
180
200
220

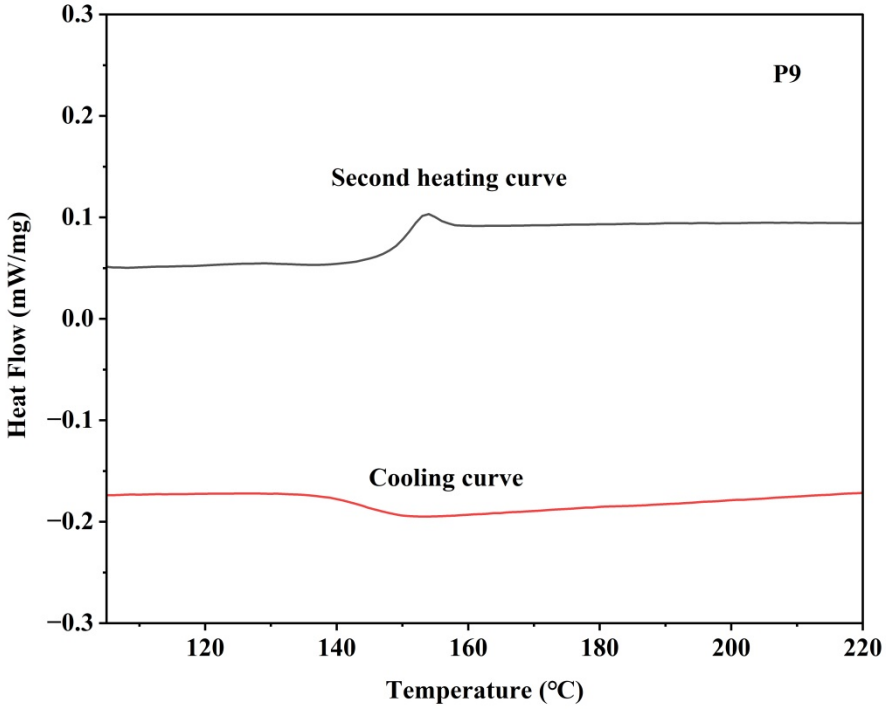

P4
Second heating curve
Cooling curve
Heat Flow (mW/mg)
Temperature (°C)
0.3
0.2
0.1
0.0
−0.1
−0.2
−0.3
120
140
160
180
200
220

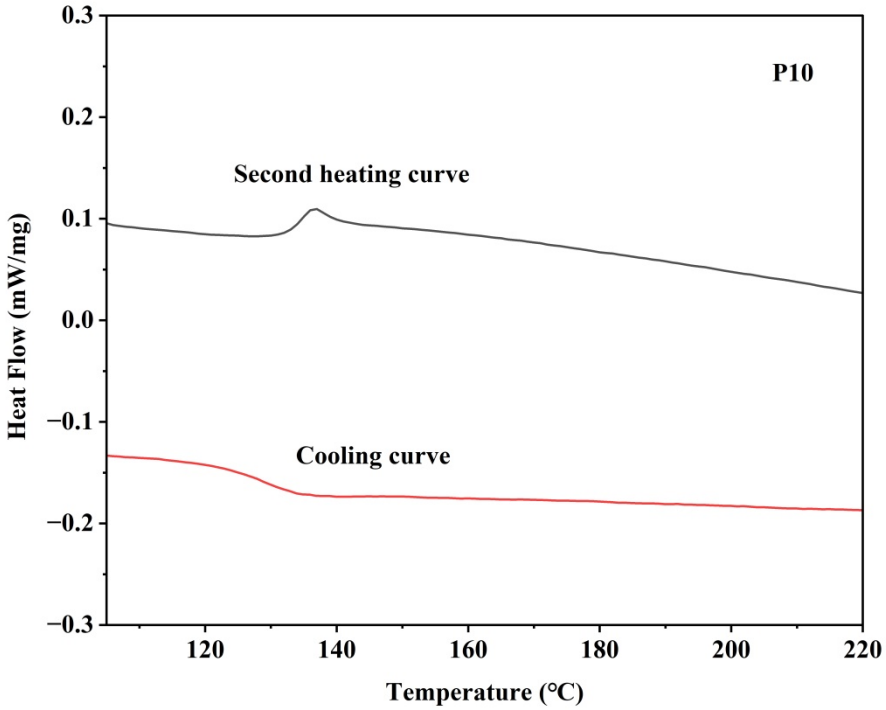

P5
Second heating curve
Cooling curve
Heat Flow (mW/mg)
Temperature (°C)
0.3
0.2
0.1
0.0
−0.1
−0.2
−0.3
120
140
160
180
200
220

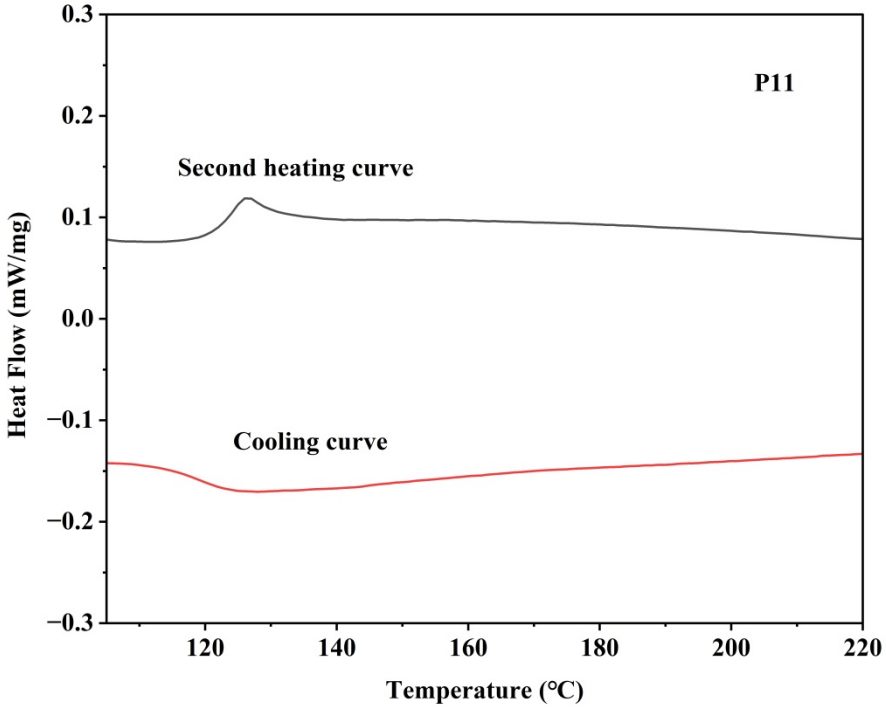

P6
Second heating curve
Cooling curve
Heat Flow (mW/mg)
Temperature (°C)
0.15
0.10
0.05
0.00
−0.05
−0.10
−0.15
120
140
160
180
200
220

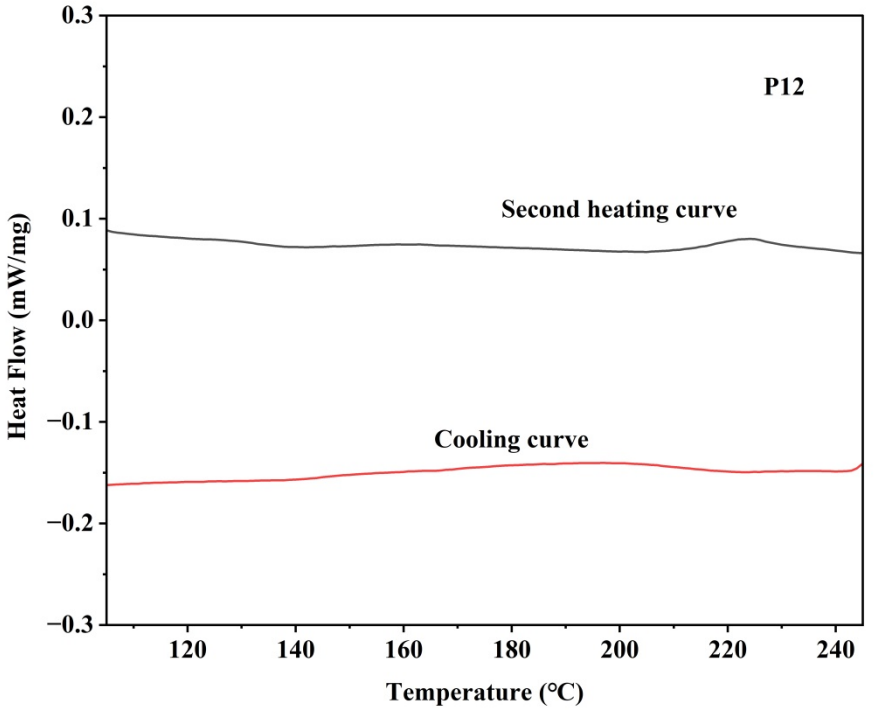

P7
Second heating curve
Cooling curve
Heat Flow (mW/mg)
Temperature (°C)
0.3
0.2
0.1
0.0
−0.1
−0.2
−0.3
120
140
160
180
200
220
240

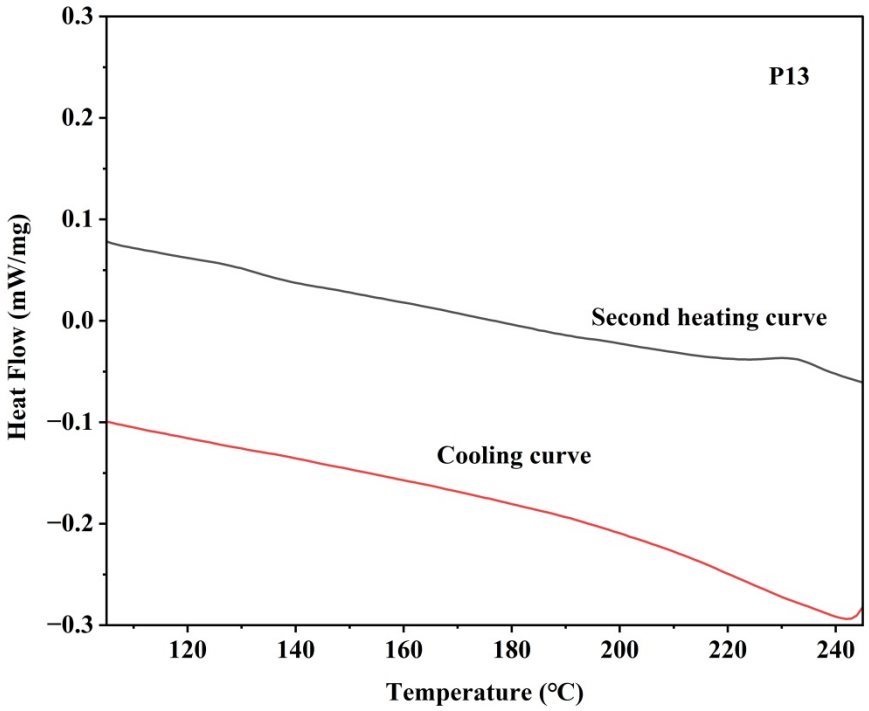

P8
Second heating curve
Cooling curve
Heat Flow (mW/mg)
Temperature (°C)
0.3
0.2
0.1
0.0
−0.1
−0.2
−0.3
120
140
160
180
200
220
240

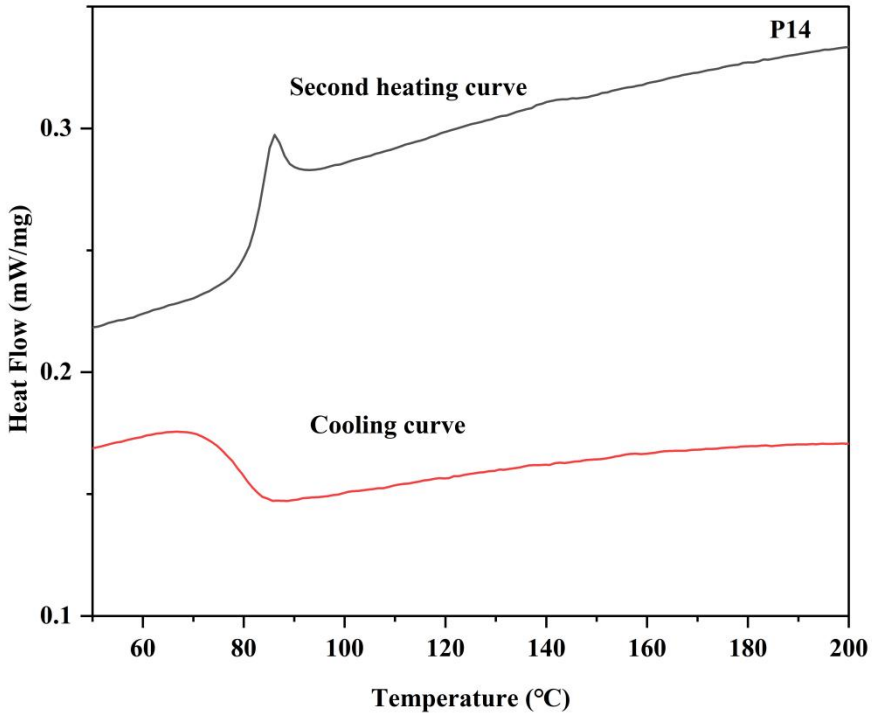

P9
Second heating curve
Cooling curve
Heat Flow (mW/mg)
Temperature (°C)
0.3
0.2
0.1
0.0
−0.1
−0.2
−0.3
120
140
160
180
200
220

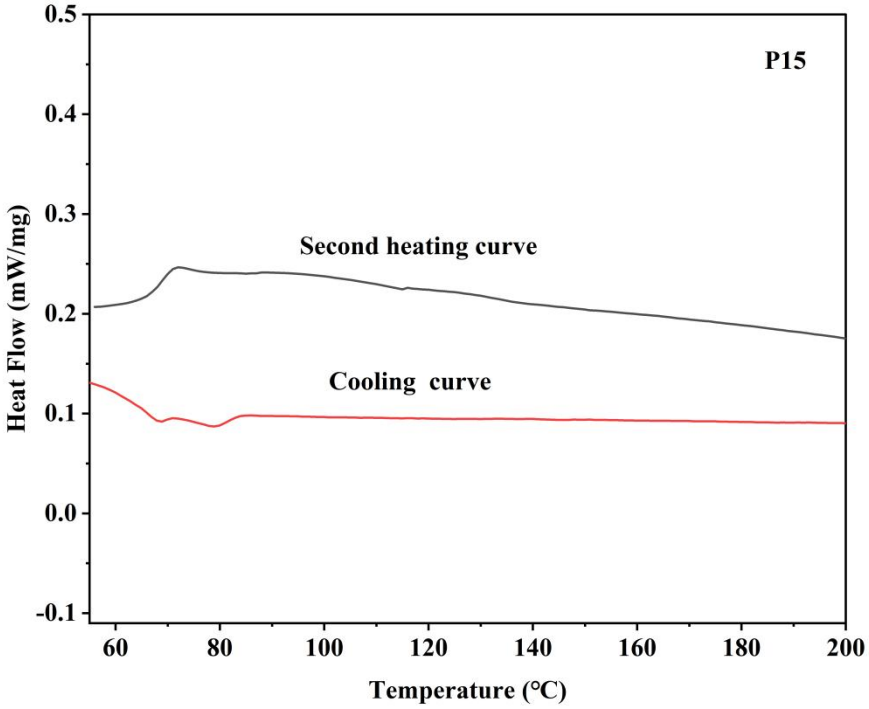

P10
Second heating curve
Cooling curve
Heat Flow (mW/mg)
Temperature (°C)
0.3
0.2
0.1
0.0
−0.1
−0.2
−0.3
120
140
160
180
200
220

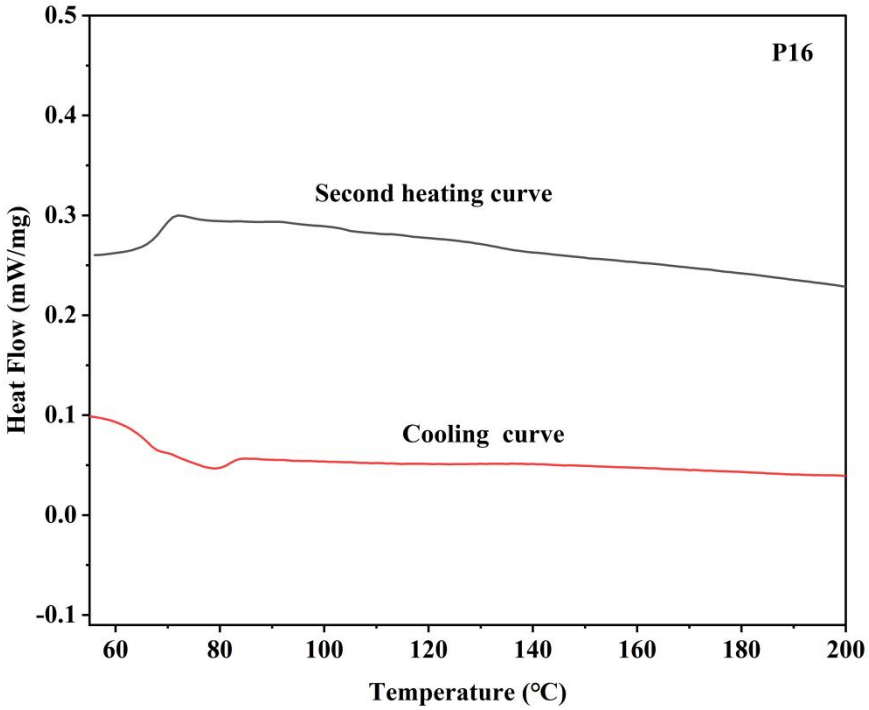

P11
Second heating curve
Cooling curve
Heat Flow (mW/mg)
Temperature (°C)
0.3
0.2
0.1
0.0
−0.1
−0.2
−0.3
120
140
160
180
200
220

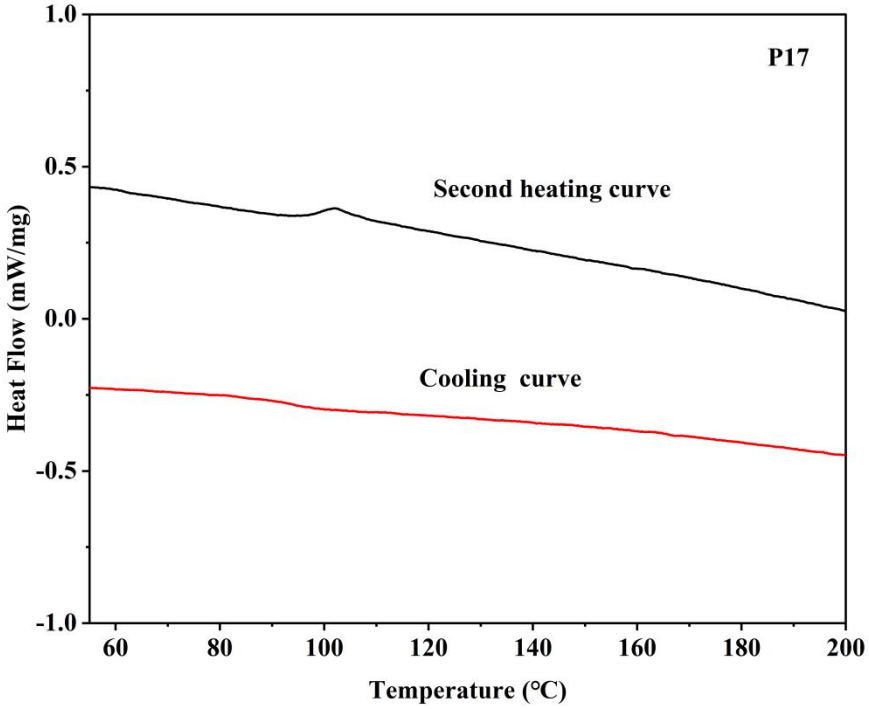

P12
Second heating curve
Cooling curve
Heat Flow (mW/mg)
Temperature (°C)
0.3
0.2
0.1
0.0
−0.1
−0.2
−0.3
120
140
160
180
200
220
240

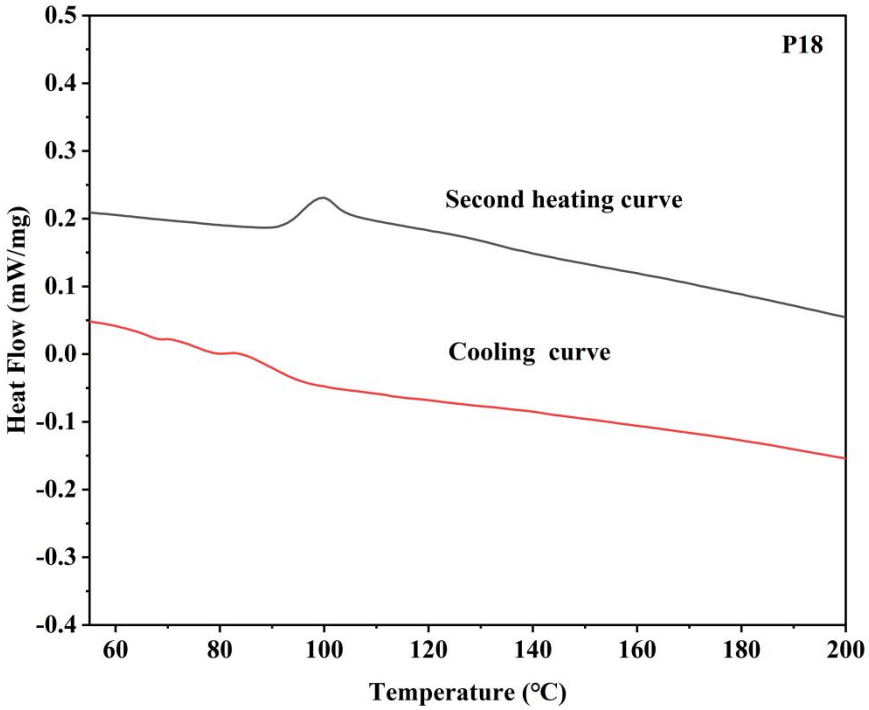

P13
Second heating curve
Cooling curve
Heat Flow (mW/mg)
Temperature (°C)
0.3
0.2
0.1
0.0
−0.1
−0.2
−0.3
120
140
160
180
200
220
240

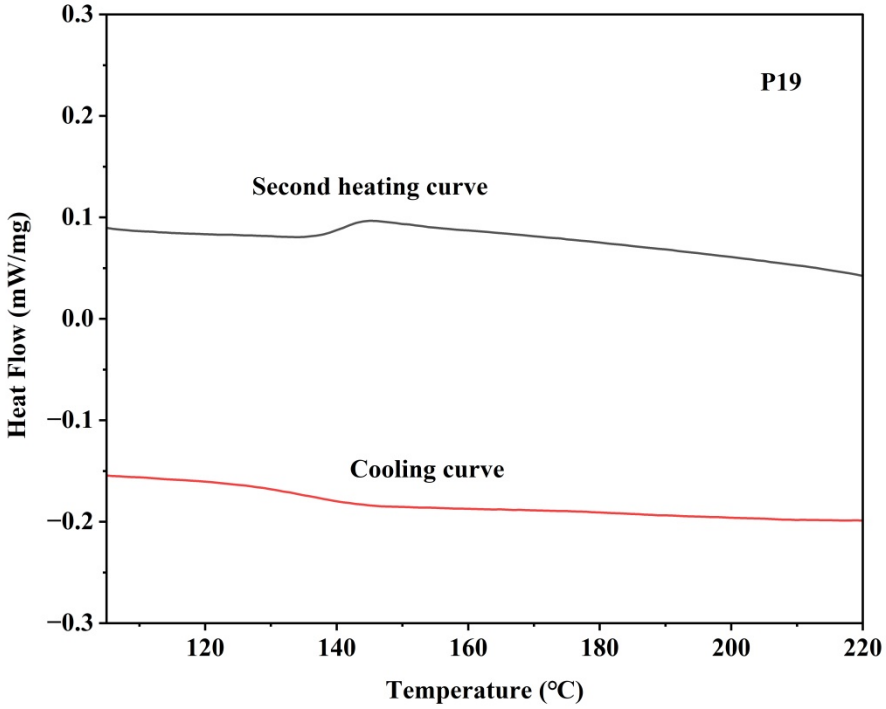

P14
Second heating curve
Cooling curve
Heat Flow (mW/mg)
Temperature (°C)
0.3
0.2
0.1
60
80
100
120
140
160
180
200

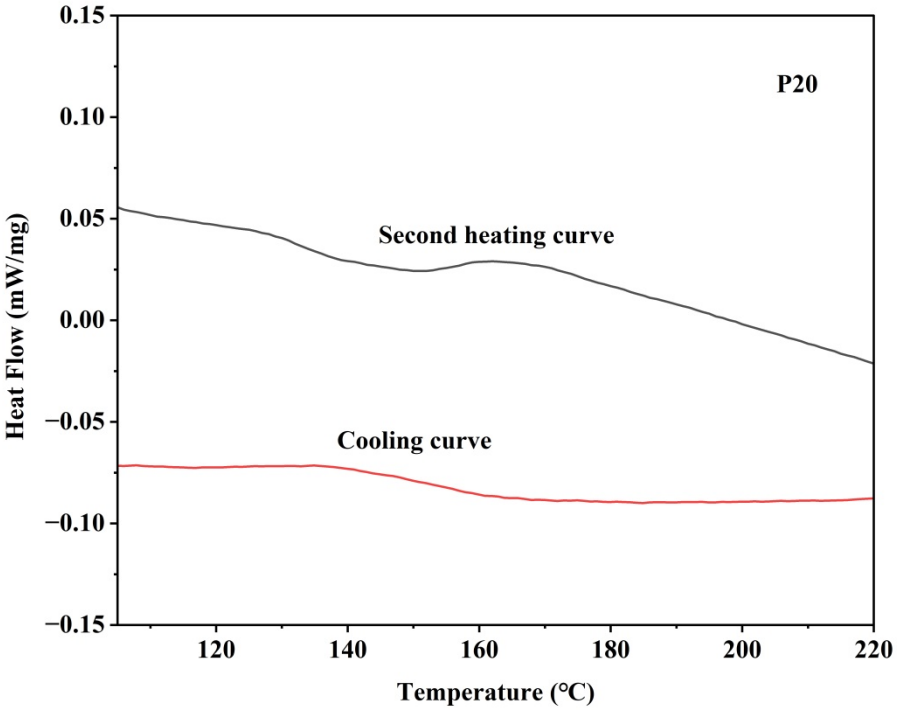

P15
Second heating curve
Cooling curve
Heat Flow (mW/mg)
Temperature (°C)
0.5
0.4
0.3
0.2
0.1
0.0
-0.1
60
80
100
120
140
160
180
200

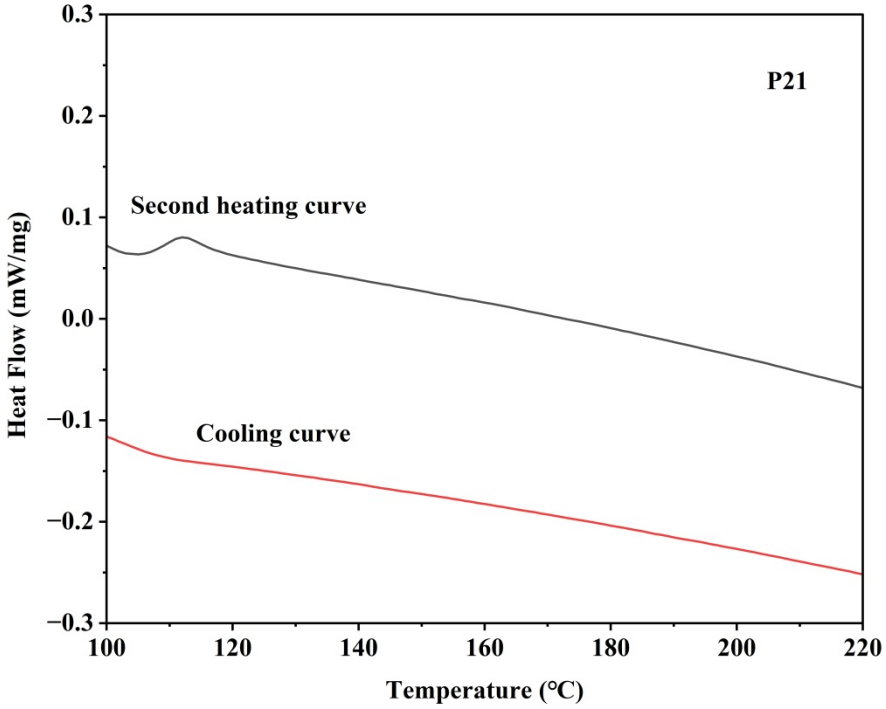

P16
Second heating curve
Cooling curve
Heat Flow (mW/mg)
Temperature (°C)
0.5
0.4
0.3
0.2
0.1
0.0
-0.1
60
80
100
120
140
160
180
200

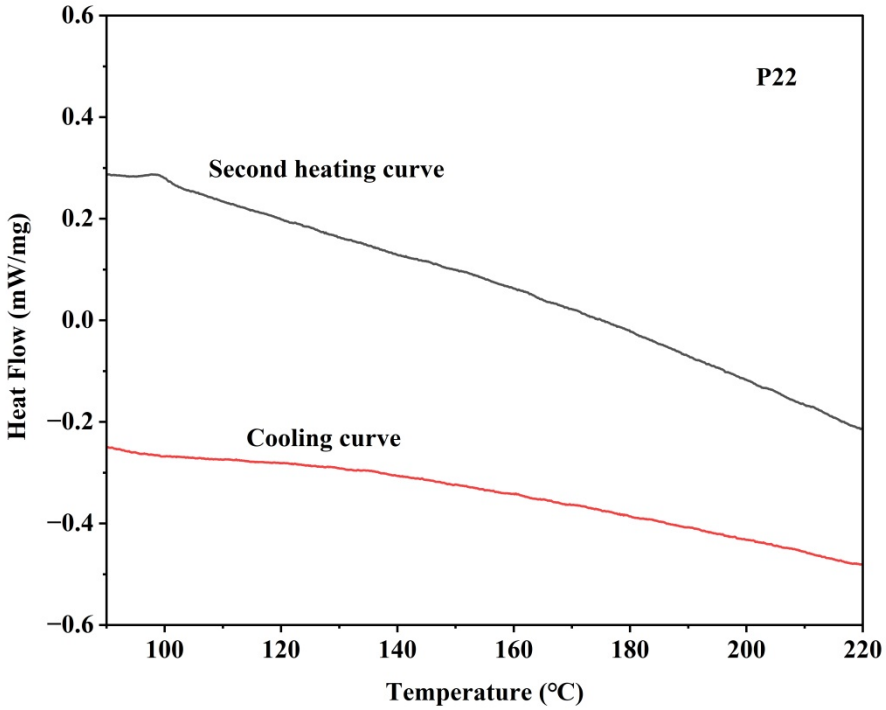

P17
Second heating curve
Cooling curve
Heat Flow (mW/mg)
Temperature (°C)
1.0
0.5
0.0
-0.5
-1.0
60
80
100
120
140
160
180
200

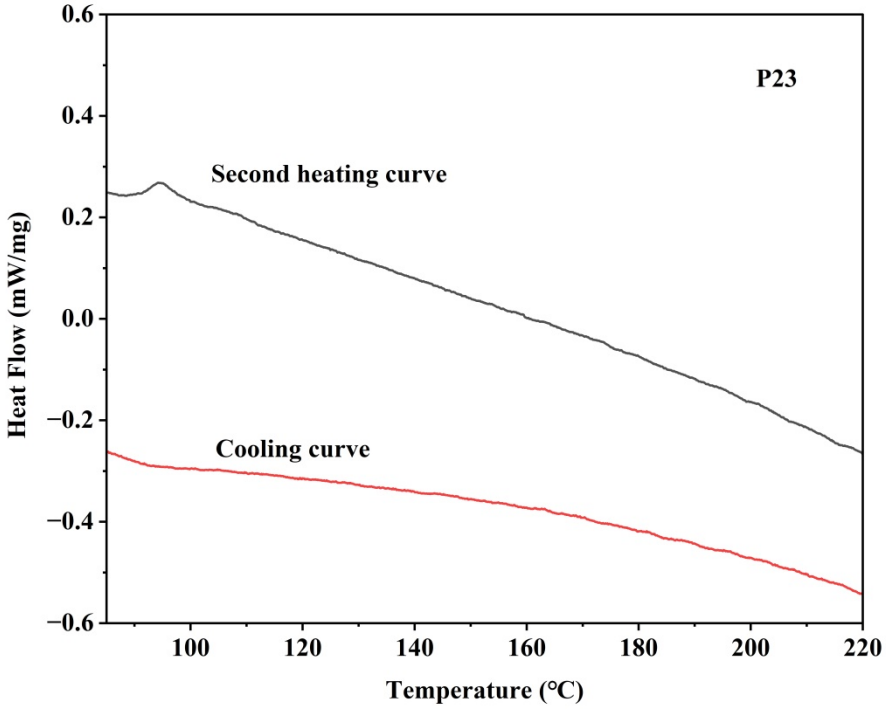

P18
Second heating curve
Cooling curve
Heat Flow (mW/mg)
Temperature (°C)
0.5
0.4
0.3
0.2
0.1
0.0
-0.1
-0.2
-0.3
-0.4
60
80
100
120
140
160
180
200

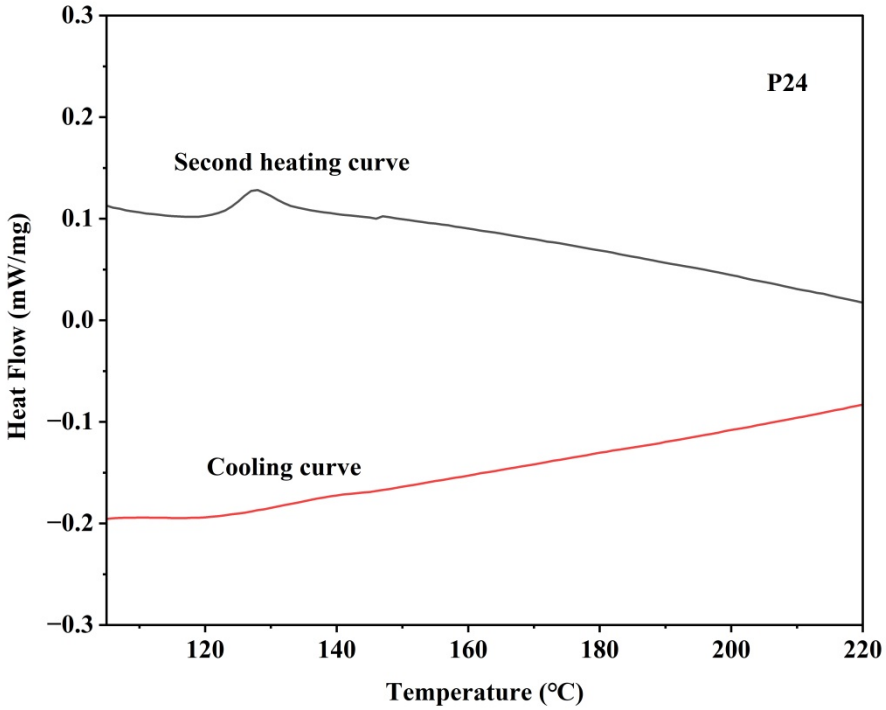

P19
Second heating curve
Cooling curve
Heat Flow (mW/mg)
Temperature (°C)
0.3
0.2
0.1
0.0
−0.1
−0.2
−0.3
120
140
160
180
200
220

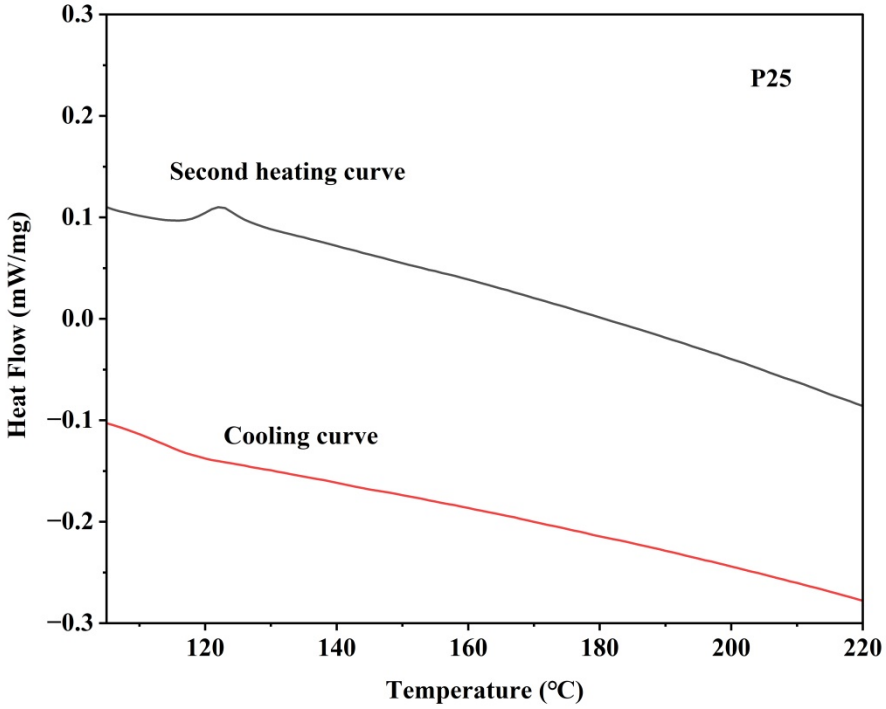

P20
Second heating curve
Cooling curve
Heat Flow (mW/mg)
Temperature (°C)
0.15
0.10
0.05
0.00
−0.05
−0.10
−0.15
120
140
160
180
200
220

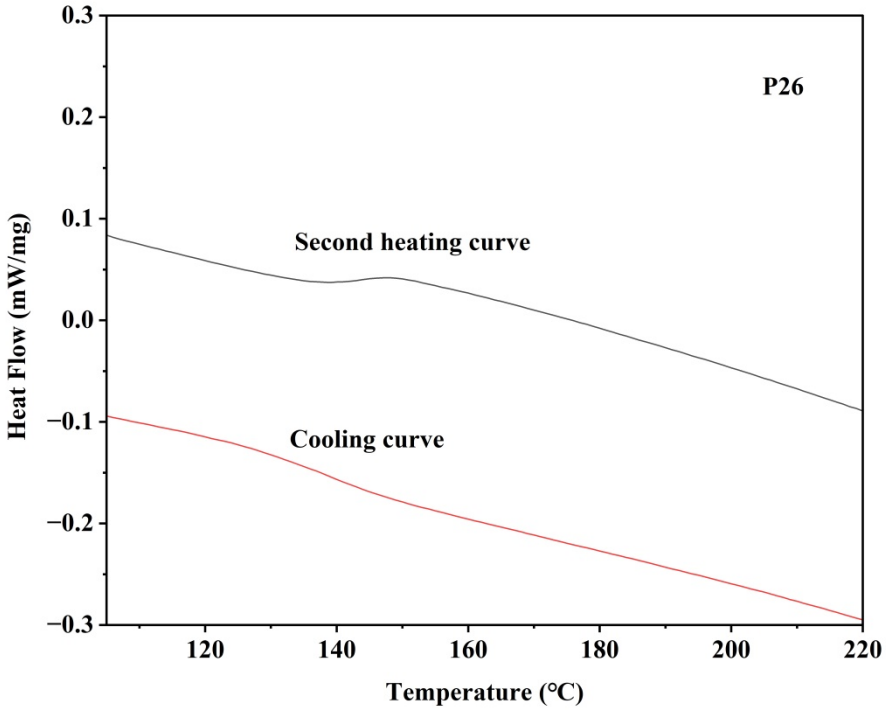

P21
Second heating curve
Cooling curve
Heat Flow (mW/mg)
Temperature (°C)
0.3
0.2
0.1
0.0
−0.1
−0.2
−0.3
100
120
140
160
180
200
220

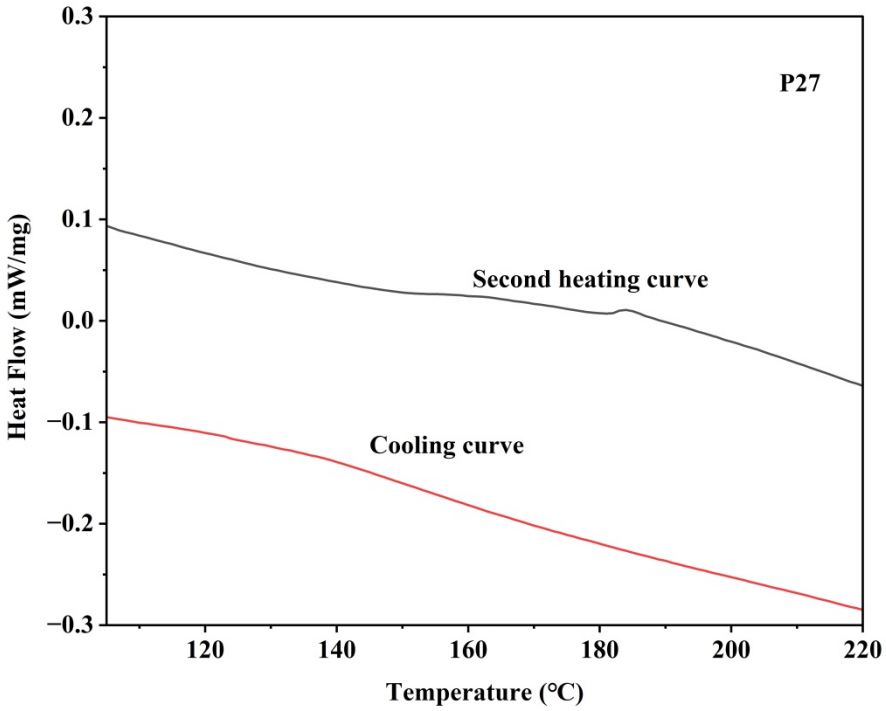

P22
Second heating curve
Cooling curve
Heat Flow (mW/mg)
Temperature (°C)
0.6
0.4
0.2
0.0
−0.2
−0.4
−0.6
100
120
140
160
180
200
220

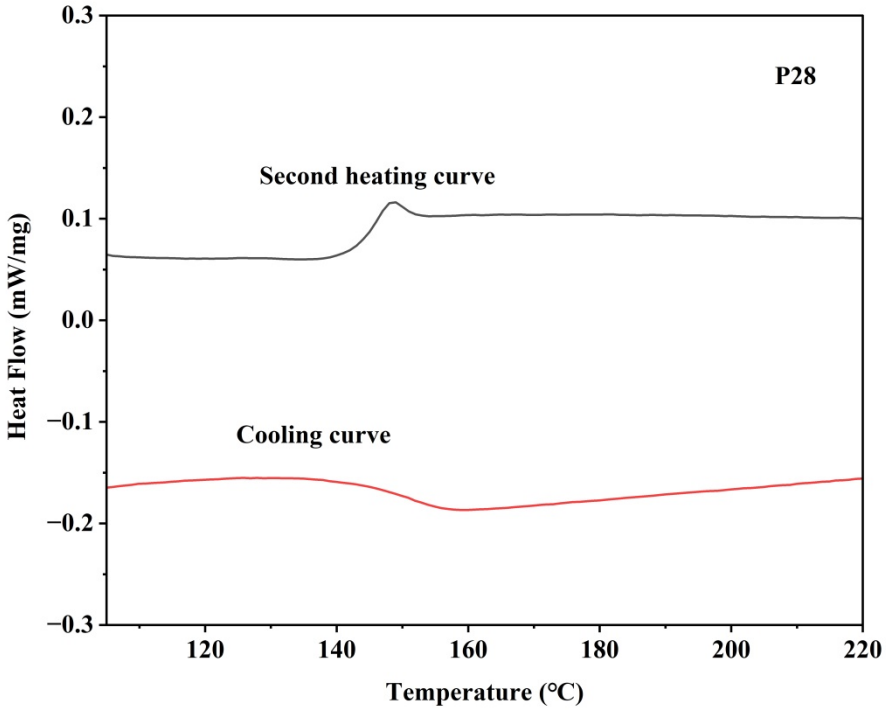

P23
Second heating curve
Cooling curve
Heat Flow (mW/mg)
Temperature (°C)
0.6
0.4
0.2
0.0
−0.2
−0.4
−0.6
100
120
140
160
180
200
220


P24
Second heating curve
Cooling curve
Heat Flow (mW/mg)
Temperature (°C)
0.3
0.2
0.1
0.0
−0.1
−0.2
−0.3
120
140
160
180
200
220


P25
Second heating curve
Cooling curve
Heat Flow (mW/mg)
Temperature (°C)
0.3
0.2
0.1
0.0
−0.1
−0.2
−0.3
120
140
160
180
200
220


P26
Second heating curve
Cooling curve
Heat Flow (mW/mg)
Temperature (°C)
0.3
0.2
0.1
0.0
−0.1
−0.2
−0.3
120
140
160
180
200
220





7.4 Copies of the GPC traces of polymers

GPC trace of P1

2024/5/25 10:49 色谱图 D:\GPC-色谱图\2024\20240525\24052401-2.prm 第1页/共1页

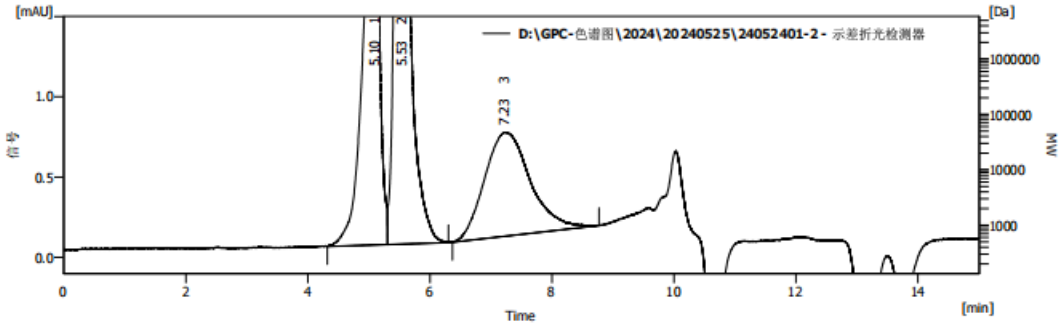
白银图微新材料科技有限公司

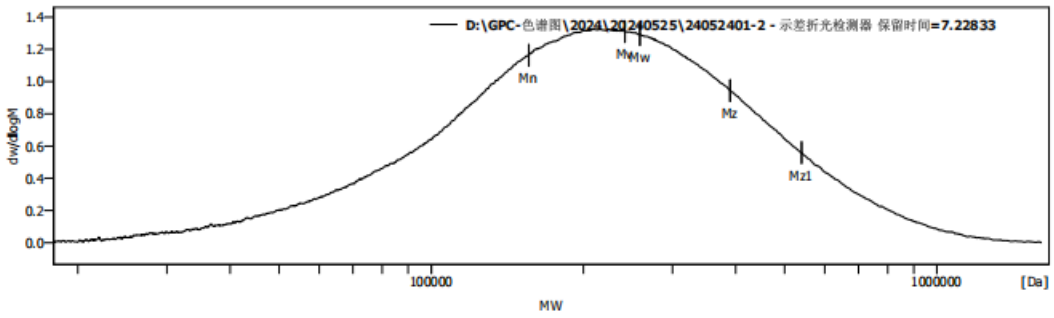
色谱图信息:

文件名	: D:\GPC-色谱图\2024\20240525\24052401-2.prm	建立文件	: 2024/5/25 10:47:22
初始	: 采集, 采集启动2024/5/25 10:32:21	采集数据	: 2024/5/25 10:47:21
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2024/5/25 10:49:04, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2024/5/25 10:49:04
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\2024\校准曲线20240505.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\2024\校准曲线202405 - 通用窄峰流速修正. - D:\GPC-色谱图\2024\20240525\24052401-2 - 示差折光检测器)
*方程式: Y = -0.00664*X^3 + 0.23626*X^2 - 3.24007*X + 18.97824*
相关因子: 0.9996642

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高[mAU]	峰高[%]	峰面积[mAU.s]	峰面积[%]
1	5.10	4.32	5.30	1.0000	51548732	6109741 0	73963056	10167061 2	164201655	71252148	1.2106	3.16	29.97	49.34	29.73
2	5.53	5.30	6.30	1.0000	14360788	12393445	13881244	15038429	16044891	13695090	1.1200	6.73	63.88	82.84	49.91
3	7.23	6.37	8.77	1.0000	247460	155952	258696	390224	540430	241791	1.6588	0.65	6.15	33.79	20.36

GPC trace of P2

2024/3/21 18:17 色谱图 D:\GPC-色谱图\2024\20240321\J-134-1.prm 第1页/共1页

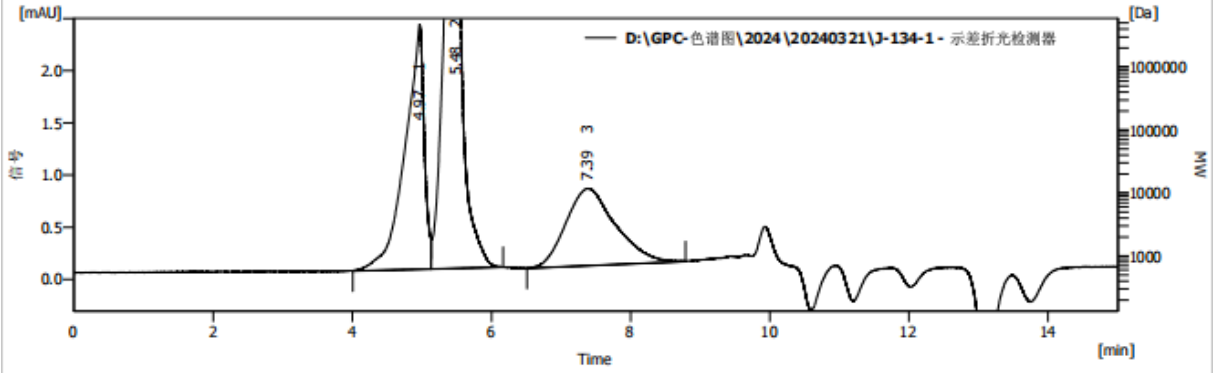
白银图微新材料科技有限公司

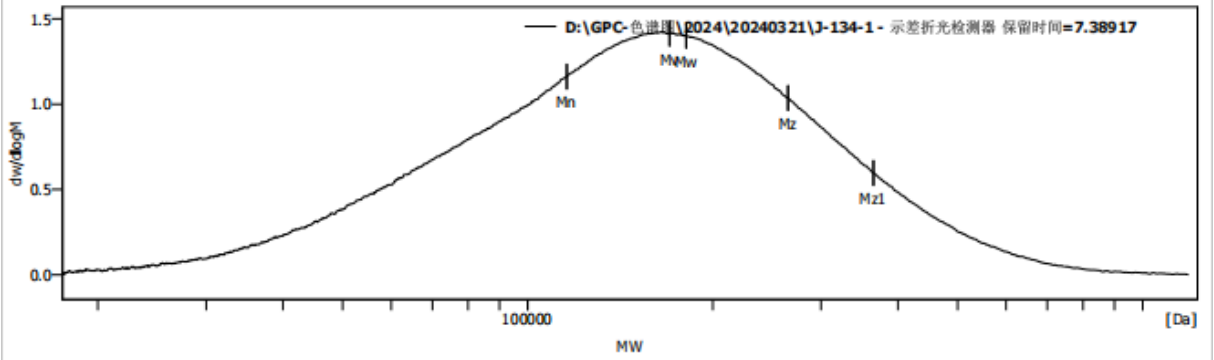
色谱图信息:

文件名	: D:\GPC-色谱图\2024\20240321\J-134-1.prm	建立文件	: 2024/3/21 18:00:50
初始	: 采集，采集启动2024/3/21 17:45:49	采集数据	: 2024/3/21 18:00:50
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2024/3/21 18:17:16, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2024/3/21 18:17:16
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\2024\校准曲线202403.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\2024\校准曲线202403 - 通用窄峰流速修正, - D:\GPC-色谱图\2024\20240321\J-134-1 - 示差折光检测器)

*方程式: Y = -0.00999*X^3 + 0.32504*X^2 - 4.0111*X + 21.16817*

相关因子: 0.9996522

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高 [mAU]	峰高 [%]	峰面积 [mAU.s]	峰面积 [%]
1	4.97	4.00	5.13	1.0000	109910867	145677875	224045261	538624233	1401743995	202932390	1.5379	2.35	29.55	44.88	27.74
2	5.48	5.13	6.17	1.0000	20402739	19590704	23462435	27268866	31228136	22909367	1.1976	4.86	61.11	80.04	49.47
3	7.39	6.51	8.79	1.0000	177029	115821	181057	265186	365046	170236	1.5633	0.74	9.33	36.88	22.79

GPC trace of P3

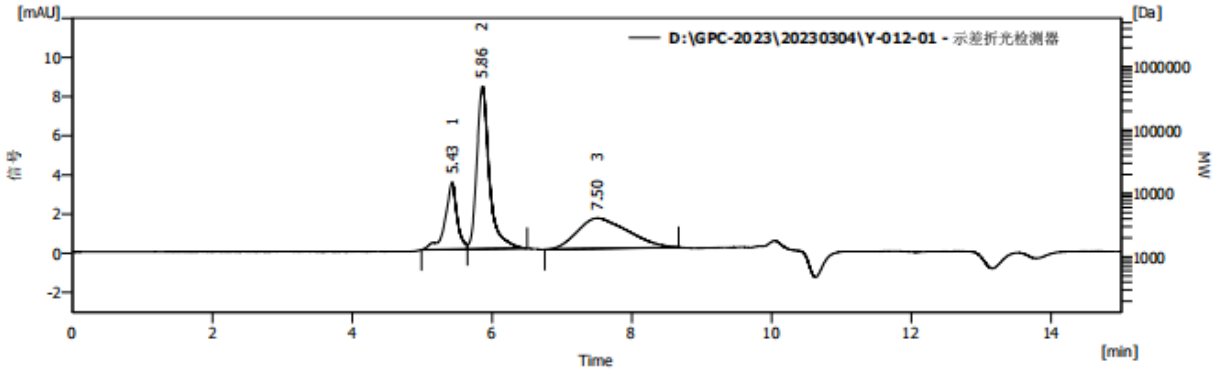
白银图微新材料科技有限公司

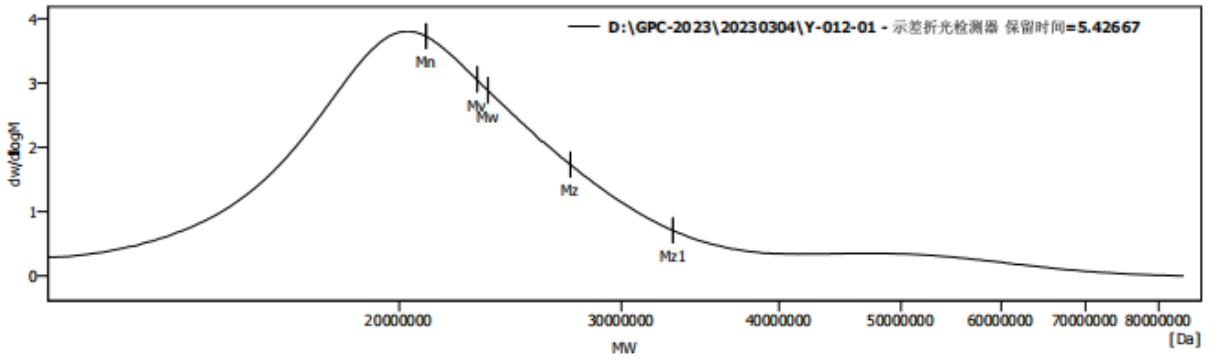
色谱图信息:

文件名	: D:\GPC-2023\20230304\Y-012-01.prm	建立文件	: 2023/3/4 14:19:11
初始	: 采集, 采集启动2023/3/4 14:04:10	采集数据	: 2023/3/4 14:19:11
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2023/3/4 14:26:20, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2023/3/4 14:26:20
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\校准曲线202301.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\校准曲线202301 - 通用窄峰流速修正. - D:\GPC-2023\20230304\Y-012-01 - 示差折光检测器)
*方程式: Y = -0.01016*X^3 + 0.32541*X^2 - 3.96692*X + 20.87943*
相关因子: 0.9996180

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高 [mAU]	峰高 [%]	峰面积 [mAU.s]	峰面积 [%]
1	5.43	4.99	5.65	1.0000	20451257	21014511	23526811	27345668	32973863	23064248	1.1196	3.41	25.68	40.67	18.25
2	5.86	5.65	6.50	1.0000	5770568	4933366	5453729	5858241	6198416	5388015	1.1055	8.31	62.54	103.73	46.55
3	7.50	6.75	8.67	1.0000	137884	90636	128319	174381	223201	122102	1.4158	1.57	11.78	78.43	35.20

GPC trace of P4

2024/3/22 18:48 色谱图 D:\GPC-色谱图\2024\20240322\L-1119-3.prm 第1页/共1页

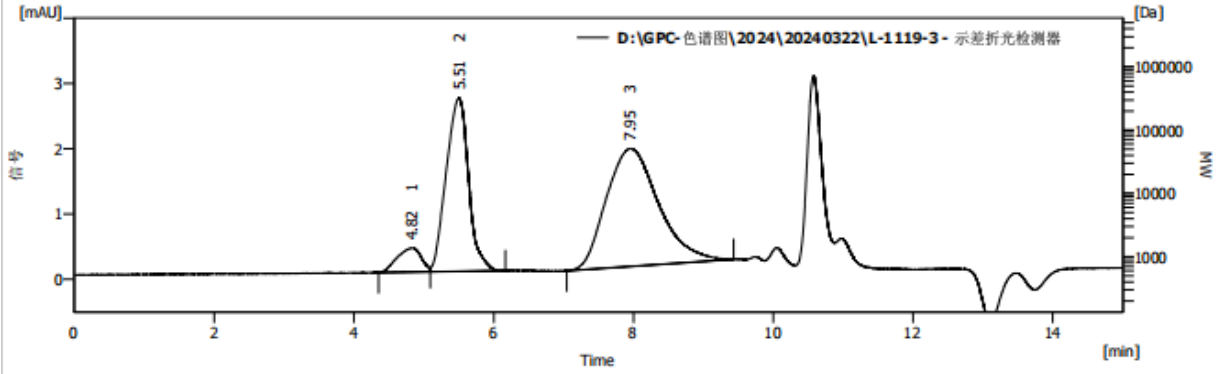
白银图微新材料科技有限公司

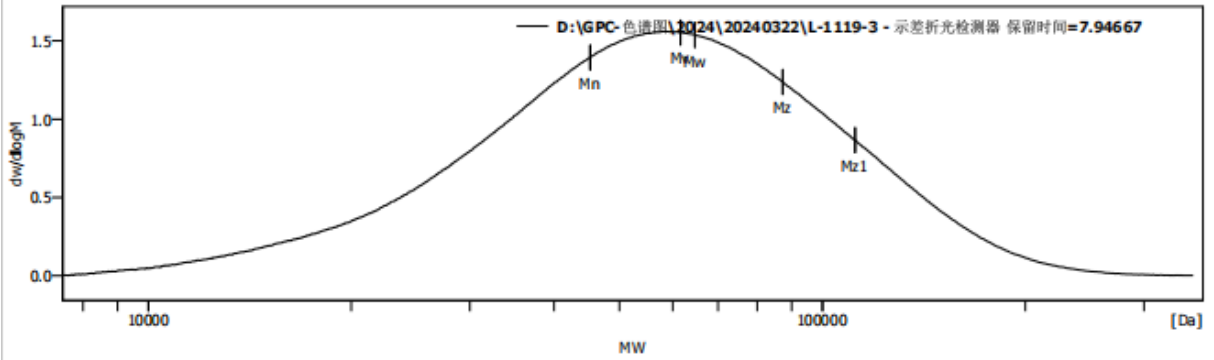
色谱图信息:

文件名	: D:\GPC-色谱图\2024\20240322\L-1119-3.prm	建立文件	: 2024/3/22 18:32:50
初始	: 采集，采集启动2024/3/22 18:17:49	采集数据	: 2024/3/22 18:32:50
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2024/3/22 18:48:32, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2024/3/22 18:48:32
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\2024\校准曲线202403.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\2024\校准曲线202403 - 通用窄峰流速修正. - D:\GPC-色谱图\2024\20240322\L-1119-3 - 示差折光检测器)
*方程式: Y = -0.00999*X^3 + 0.32504*X^2 - 4.0111*X + 21.16817*
相关因子: 0.9996522

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高[mAU]	峰高[%]	峰面积[mAU.s]	峰面积[%]
1	4.82	4.35	5.09	1.0000	18534893	18600767	24696642	33181314	42874684	23607485	1.3278	0.37	7.66	8.95	5.51
2	5.51	5.09	6.17	1.0000	18593161	17648631	21987522	26902479	32208415	21306821	1.2458	2.66	54.92	59.24	36.46
3	7.95	7.04	9.43	1.0000	64339	45246	64700	87373	111854	61617	1.4299	1.81	37.42	94.29	58.03

GPC trace of P5

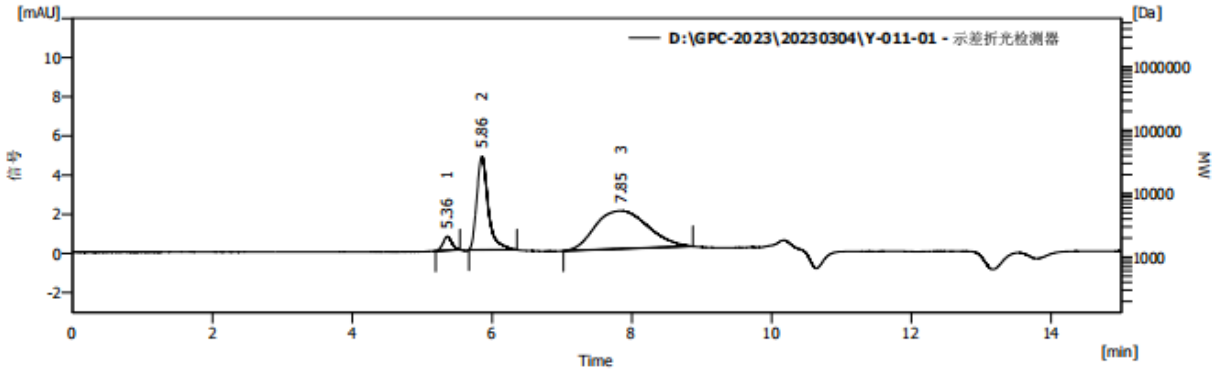
白银图微新材料科技有限公司

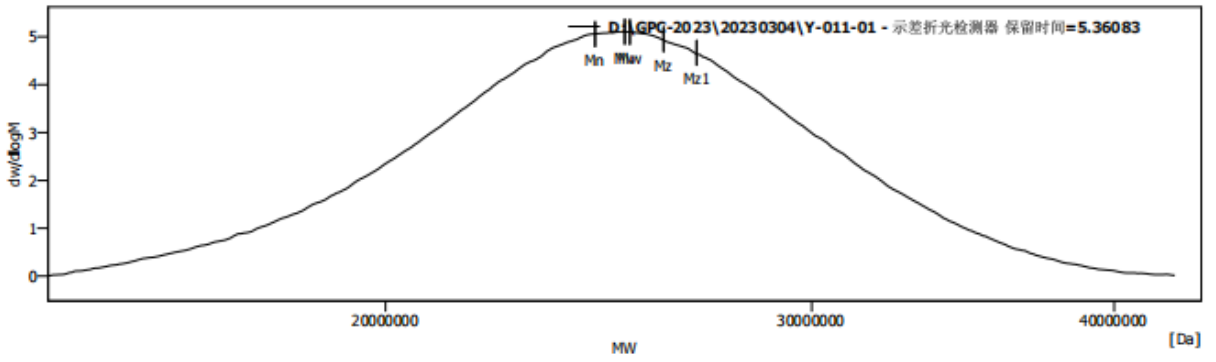
色谱图信息:

文件名	: D:\GPC-2023\20230304\Y-011-01.prm	建立文件	: 2023/3/4 14:03:31
初始	: 采集, 采集启动2023/3/4 13:48:30	采集数据	: 2023/3/4 14:03:31
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2023/3/4 14:20:09, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2023/3/4 14:20:09
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\校准曲线202301.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\校准曲线202301 - 通用窄峰流速修正. - D:\GPC-2023\20230304\Y-011-01 - 示差折光检测器)
*方程式: Y = -0.01016*X^3 + 0.32541*X^2 - 3.96692*X + 20.87943*
相关因子: 0.9996180

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高 [mAU]	峰高 [%]	峰面积 [mAU.s]	峰面积 [%]
1	5.36	5.19	5.54	1.0000	25071643	24415428	25231918	26058272	26887862	25108991	1.0334	0.72	9.68	6.25	3.84
2	5.86	5.67	6.36	1.0000	5864403	5200110	5590861	5908243	6177246	5539738	1.0751	4.79	64.21	54.47	33.45
3	7.85	7.02	8.87	1.0000	75337	60233	80921	106217	133231	77497	1.3435	1.95	26.11	102.09	62.71

GPC trace of P6

2024/3/8 13:59 色谱图 D:\GPC-色谱图\2024\20240308\Y-232-1.prm 第1页/共1页

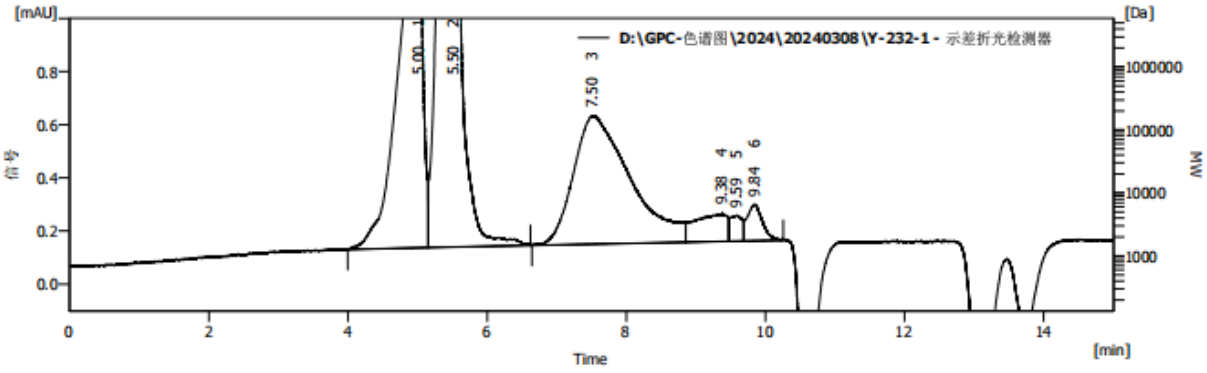
白银图微新材料科技有限公司

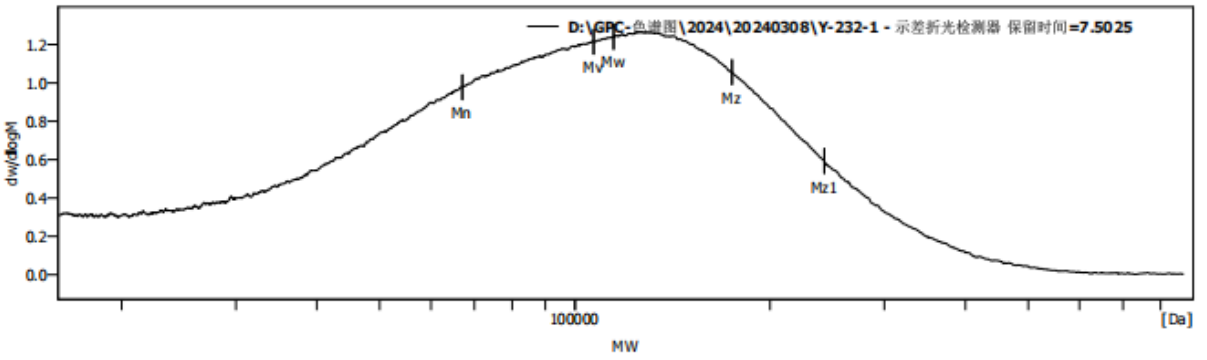
色谱图信息:

文件名	: D:\GPC-色谱图\2024\20240308\Y-232-1.prm	建立文件	: 2024/3/8 13:41:41
初始	: 采集, 采集启动2024/3/8 13:26:40	采集数据	: 2024/3/8 13:41:41
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2024/3/8 13:59:25, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2024/3/8 13:59:25
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\2024\校准曲线202403.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\2024\校准曲线202403 - 通用窄峰流速修正, - D:\GPC-色谱图\2024\20240308\Y-232-1 - 示差折光检测器)

*方程式: Y = -0.00999*X^3 + 0.32504*X^2 - 4.01111*X + 21.16817*

相关因子: 0.9996522

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高 [mAU]	峰高 [%]	峰面积 [mAU.s]	峰面积 [%]
1	5.00	3.99	5.15	1.0000	96435866	137121482	217875656	529876865	1381872968	196472279	1.5889	1.46	27.51	31.73	26.38
2	5.50	5.15	6.62	1.0000	19028737	16922192	22582810	26676910	30687683	21959248	1.3345	3.02	56.91	54.56	45.36
3	7.50	6.64	8.86	1.0000	142496	67049	114768	174698	242453	106887	1.7117	0.48	9.11	27.38	22.77
4	9.38	8.86	9.48	1.0000	7981	9991	10528	11103	11681	10444	1.0538	0.11	2.03	3.36	2.79
5	9.59	9.48	9.69	1.0000	6133	6198	6231	6265	6299	6226	1.0054	0.10	1.84	1.15	0.95
6	9.84	9.69	10.25	1.0000	4543	4394	4460	4523	4582	4451	1.0152	0.14	2.60	2.10	1.75

GPC trace of P7

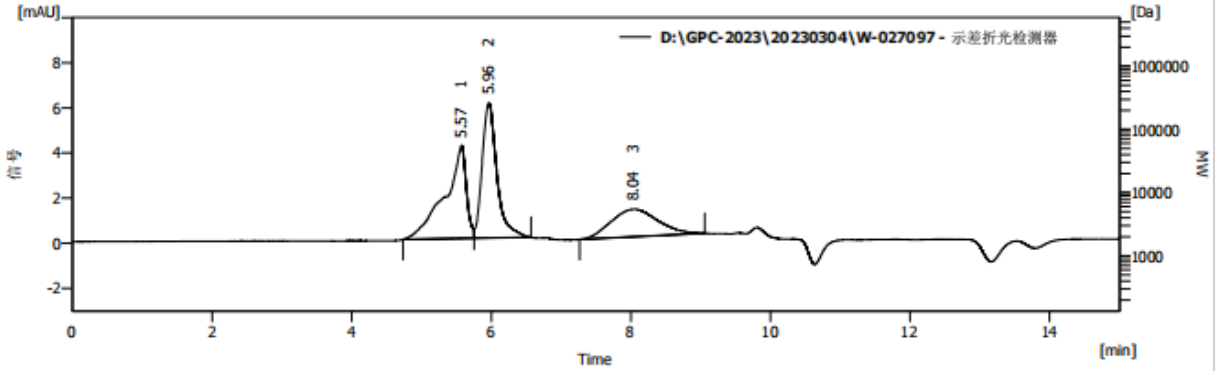
白银图微新材料科技有限公司

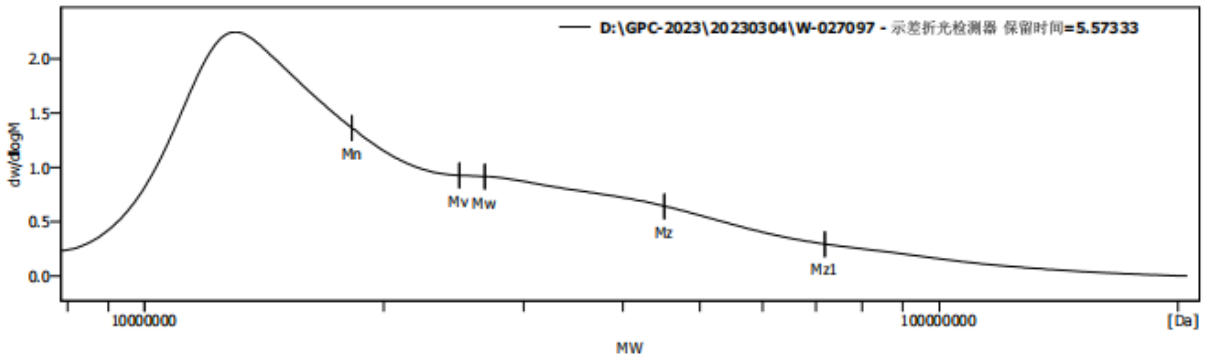
色谱图信息:

文件名	: D:\GPC-2023\20230304\W-027097.prm	建立文件	: 2023/3/4 13:14:50
初始	: 采集, 采集启动2023/3/4 12:59:49	采集数据	: 2023/3/4 13:14:50
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2023/3/4 13:18:45, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2023/3/4 13:18:45
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\校准曲线202301.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\校准曲线202301 - 通用窄峰流速修正. - D:\GPC-2023\20230304\W-027097 - 示差折光检测器)
*方程式: Y = -0.01016*X^3 + 0.32541*X^2 - 3.96692*X + 20.87943*
相关因子: 0.9996180

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高 [mAU]	峰高 [%]	峰面积 [mAU.s]	峰面积 [%]
1	5.57	4.73	5.75	1.0000	13140054	18244171	26809237	45131561	71871617	24913576	1.4695	4.13	36.37	88.36	37.70
2	5.96	5.75	6.57	1.0000	4343045	3735929	4156970	4505431	4807171	4101529	1.1127	5.99	52.80	88.44	37.74
3	8.04	7.27	9.06	1.0000	54274	45015	57291	71706	87089	55307	1.2727	1.23	10.83	57.56	24.56

GPC trace of P8

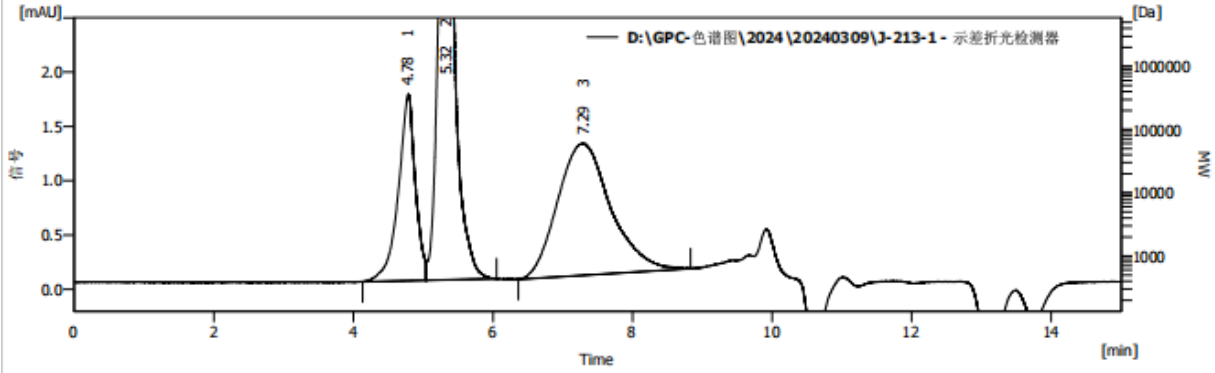
白银图微新材料科技有限公司

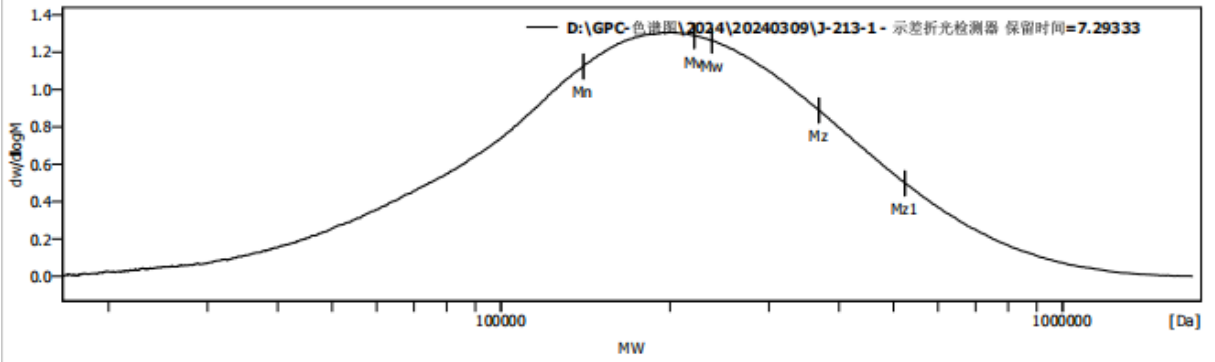
色谱图信息:

文件名	: D:\GPC-色谱图\2024\20240309\J-213-1.prm	建立文件	: 2024/3/9 14:14:05
初始	: 采集, 采集启动2024/3/9 13:59:04	采集数据	: 2024/3/9 14:14:05
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2024/3/9 14:26:45, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2024/3/9 14:26:45
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\2024\校准曲线202403.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\2024\校准曲线202403 - 通用窄峰流速修正. - D:\GPC-色谱图\2024\20240309\J-213-1 - 示差折光检测器)
*方程式: Y = -0.00999*X^3 + 0.32504*X^2 - 4.0111*X + 21.16817*
相关因子: 0.9996522

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高[mAU]	峰高[%]	峰面积[mAU.s]	峰面积[%]
1	4.78	4.13	5.04	1.0000	211160189	212407928	274060062	406015941	687278556	261190551	1.2903	1.72	19.81	29.17	16.66
2	5.32	5.04	6.05	1.0000	33055228	27902541	32476916	36586221	40670680	31856827	1.1639	5.74	66.18	81.49	46.55
3	7.29	6.36	8.83	1.0000	213702	140211	237542	368583	524044	221113	1.6942	1.22	14.01	64.41	36.79

GPC trace of P9

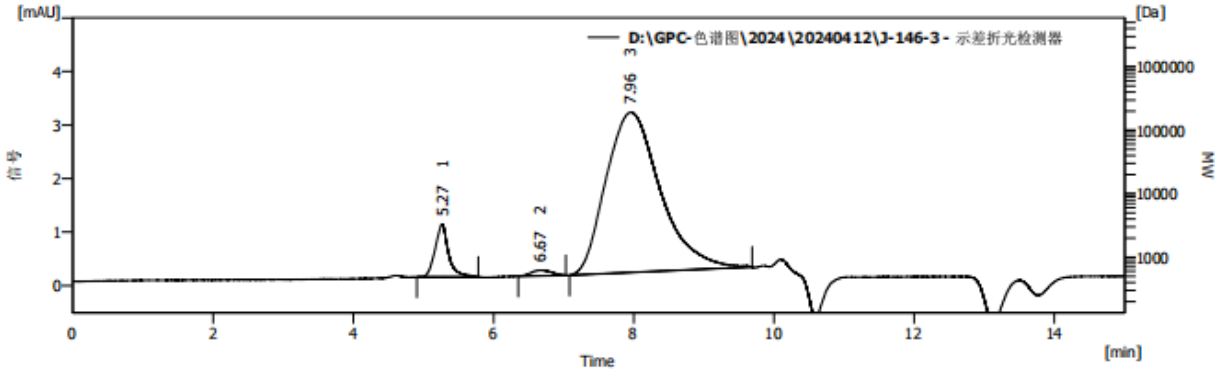
白银图微新材料科技有限公司

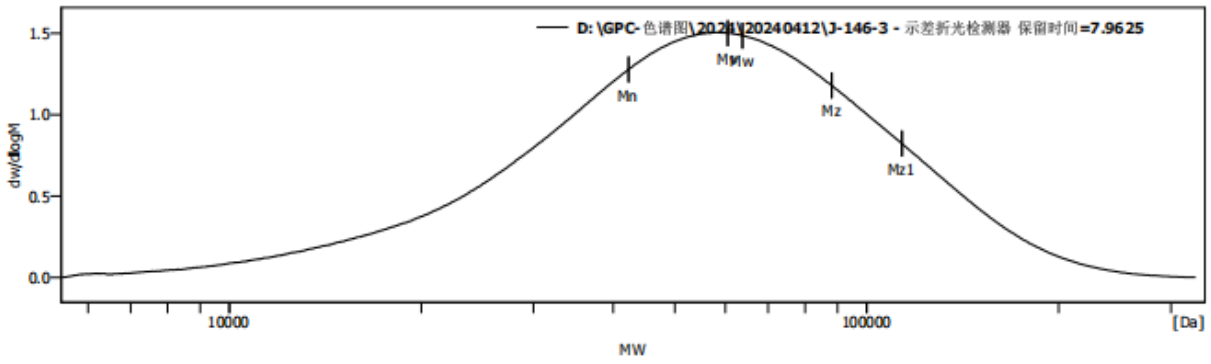
色谱图信息:

文件名	: D:\GPC-色谱图\2024\20240412\J-146-3.prm	建立文件	: 2024/4/12 11:01:15
初始	: 采集, 采集启动2024/4/12 10:46:14	采集数据	: 2024/4/12 11:01:14
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2024/4/12 11:17:36, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2024/4/12 11:17:36
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\2024\校准曲线240403.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\2024\校准曲线240403 - 通用窄峰流速修正. - D:\GPC-色谱图\2024\20240412\J-146-3 - 示差折光检测器)
*方程式: Y = -0.00999*X^3 + 0.32504*X^2 - 4.0111*X + 21.16817*
相关因子: 0.9996522

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高 [mAU]	峰高 [%]	峰面积 [mAU.s]	峰面积 [%]
1	5.27	4.91	5.78	1.0000	39832628	35715451	40964198	45757751	50597919	40242957	1.1470	0.99	24.20	13.15	7.42
2	6.67	6.35	7.03	1.0000	811410	745745	813064	885748	961247	802572	1.0903	0.11	2.62	2.18	1.23
3	7.96	7.08	9.69	1.0000	62637	42308	63859	88134	113588	60532	1.5094	3.00	73.18	161.74	91.34

GPC trace of P10

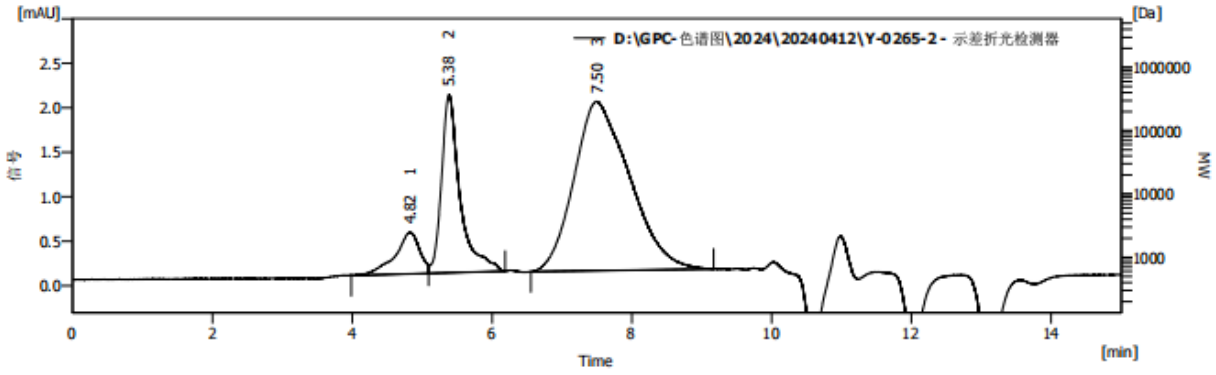
白银图微新材料科技有限公司

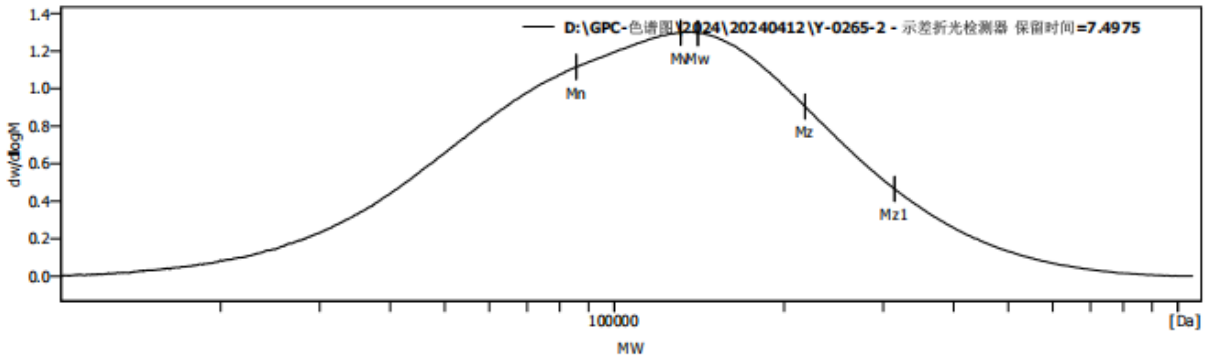
色谱图信息:

文件名	: D:\GPC-色谱图\2024\20240412\Y-0265-2.prm	建立文件	: 2024/4/12 15:21:56
初始	: 采集, 采集启动2024/4/12 15:06:56	采集数据	: 2024/4/12 15:21:56
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2024/4/12 15:53:00, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2024/4/12 15:53:00
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\2024\校准曲线202403.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\2024\校准曲线202403 - 通用窄峰流速修正. - D:\GPC-色谱图\2024\20240412\Y-0265-2 - 示差折光检测器)
*方程式: Y = -0.00999*X^3 + 0.32504*X^2 - 4.0111*X + 21.16817*
相关因子: 0.9996522

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高 [mAU]	峰高 [%]	峰面积 [mAU.s]	峰面积 [%]
1	4.82	3.98	5.09	1.0000	184790135	192957708	325647971	739384792	1592047185	292417143	1.6877	0.47	10.72	11.46	7.45
2	5.38	5.09	6.19	1.0000	27573145	17871547	24568663	29774278	34246399	23737332	1.3747	2.01	45.80	37.03	24.07
3	7.50	6.56	9.17	1.0000	143848	85603	140675	218070	314463	131149	1.6433	1.90	43.48	105.38	68.48

GPC trace of P11

2024/4/12 11:50 色谱图 D:\GPC-色谱图\2024\20240412\J-146-4.prm 第1页/共1页

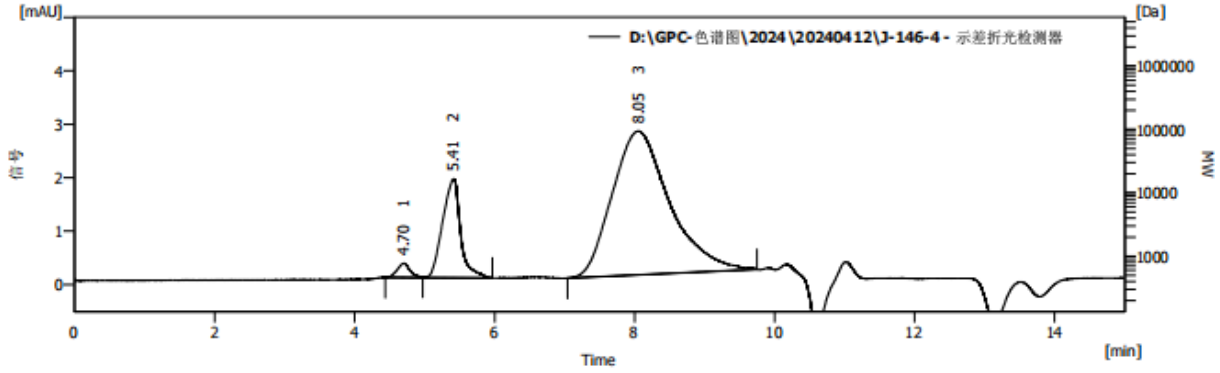
白银图微新材料科技有限公司

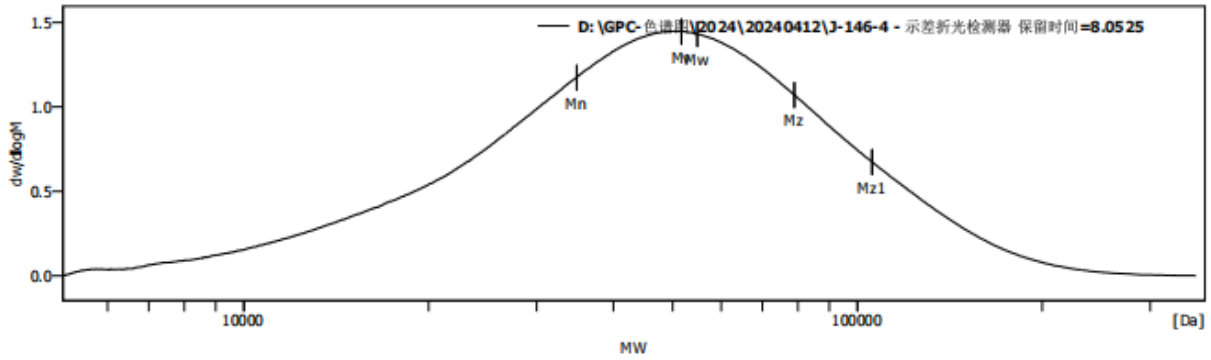
色谱图信息:

文件名	: D:\GPC-色谱图\2024\20240412\J-146-4.prm	建立文件	: 2024/4/12 11:33:09
初始	: 采集, 采集启动2024/4/12 11:18:09	采集数据	: 2024/4/12 11:33:09
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2024/4/12 11:50:20, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2024/4/12 11:50:20
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\2024\校准曲线202403.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\2024\校准曲线202403 - 通用窄峰流速修正. - D:\GPC-色谱图\2024\20240412\J-146-4 - 示差折光检测器)
*方程式: Y = -0.00999*X^3 + 0.32504*X^2 - 4.0111*X + 21.16817*
相关因子: 0.9996522

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高[mAU]	峰高[%]	峰面积[mAU.s]	峰面积[%]
1	4.70	4.44	4.97	1.0000	284484574	266751670	299031655	333176071	368951956	294104306	1.1210	0.27	5.57	3.43	1.81
2	5.41	4.97	5.97	1.0000	24876779	24170745	29066437	34137444	39643699	28343982	1.2025	1.85	38.51	32.97	17.35
3	8.05	7.04	9.75	1.0000	53883	34883	54877	78918	105684	51687	1.5732	2.69	55.92	153.63	80.84

GPC trace of P12

2024/4/12 16:13 色谱图 D:\GPC-色谱图\2024\20240412\Y-0265-3.prm 第1页/共1页

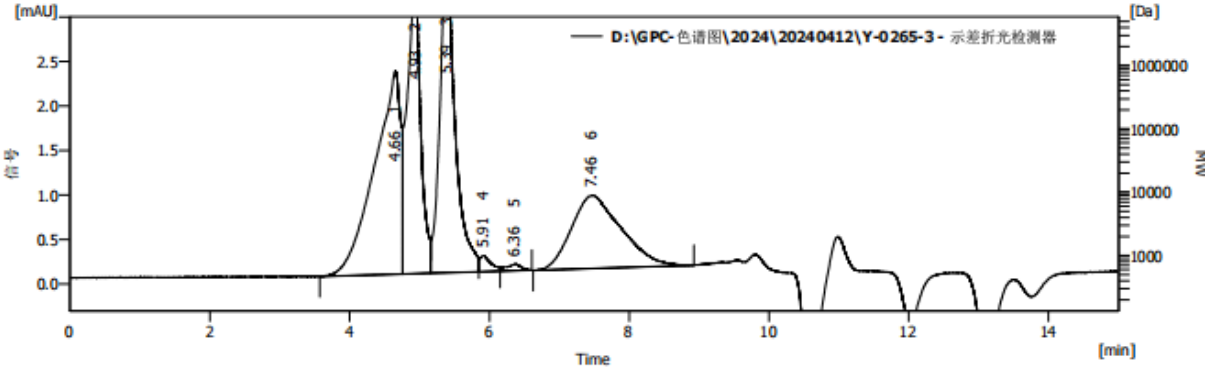
白银图微新材料科技有限公司

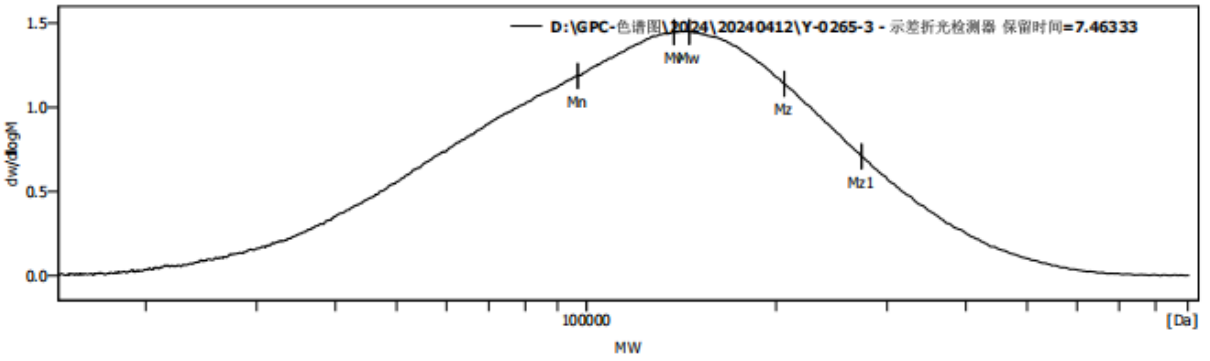
色谱图信息:

文件名	: D:\GPC-色谱图\2024\20240412\Y-0265-3.prm	建立文件	: 2024/4/12 15:57:13
初始	: 采集, 采集启动2024/4/12 15:42:12	采集数据	: 2024/4/12 15:57:13
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2024/4/12 16:13:17, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2024/4/12 16:13:17
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\2024\校准曲线202403.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\2024\校准曲线202403 - 通用窄峰流速修正. - D:\GPC-色谱图\2024\20240412\Y-0265-3 - 示差折光检测器)

*方程式: Y = -0.00999*X^3 + 0.32504*X^2 - 4.01111*X + 21.16817*

相关因子: 0.9996522

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高 [mAU]	峰高 [%]	峰面积 [mAU.s]	峰面积 [%]
1	4.66	3.57	4.76	1.0000	340884634	532038440	1050420993	3141574911	8346277982	908017925	1.9743	2.29	22.09	59.45	29.41
2	4.93	4.76	5.16	1.0000	123943885	121095676	133750636	146416328	158406886	131857955	1.1045	3.33	32.14	44.29	21.91
3	5.39	5.16	5.85	1.0000	26995447	21952395	25684566	29021981	32073279	25170747	1.1700	3.67	35.39	54.62	27.02
4	5.91	5.85	6.15	1.0000	5641015	4776588	5004729	5214007	5399009	4972115	1.0478	0.18	1.74	2.04	1.01
5	6.36	6.15	6.61	1.0000	1741979	1762384	1874956	1992246	2108487	1857673	1.0639	0.07	0.72	1.11	0.55
6	7.46	6.62	8.92	1.0000	153488	96940	145779	206186	273400	137780	1.5038	0.82	7.93	40.64	20.10

GPC trace of P13

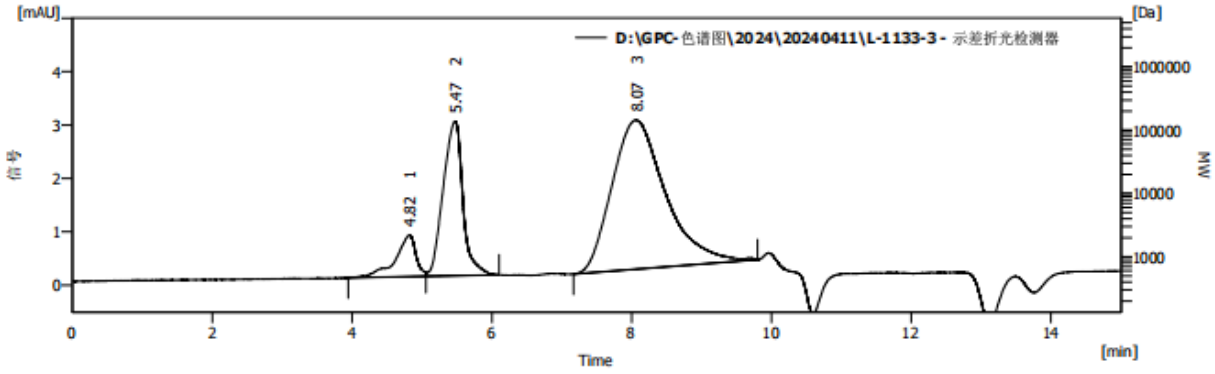
白银图微新材料科技有限公司

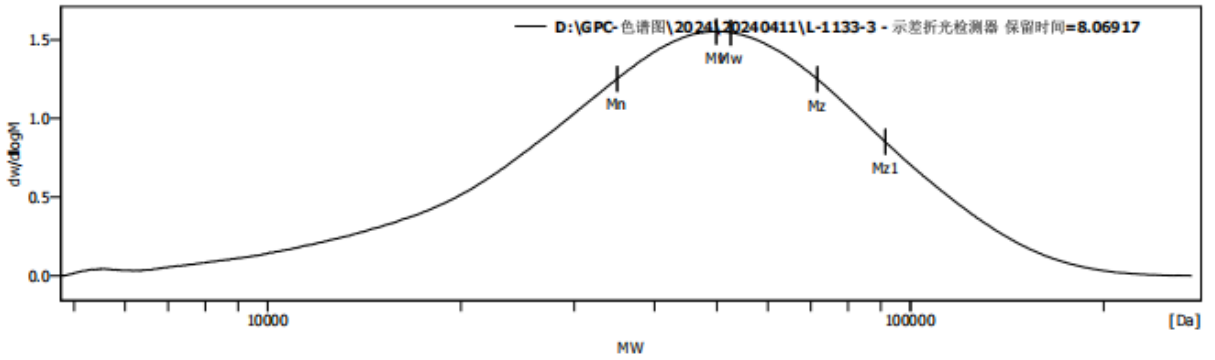
色谱图信息:

文件名	: D:\GPC-色谱图\2024\20240411\L-1133-3.prm	建立文件	: 2024/4/11 16:17:59
初始	: 采集, 采集启动2024/4/11 16:02:59	采集数据	: 2024/4/11 16:17:59
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2024/4/11 16:34:06, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2024/4/11 16:34:06
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\2024\校准曲线202403.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\2024\校准曲线202403 - 通用窄峰流速修正. - D:\GPC-色谱图\2024\20240411\L-1133-3 - 示差折光检测器)
*方程式: Y = -0.00999*X^3 + 0.32504*X^2 - 4.0111*X + 21.16817*
相关因子: 0.9996522

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高 [mAU]	峰高 [%]	峰面积 [mAU.s]	峰面积 [%]
1	4.82	3.94	5.06	1.0000	182572873	222290275	369422395	884821334	1977046680	330498744	1.6619	0.78	12.07	15.91	7.18
2	5.47	5.06	6.10	1.0000	20615222	20067611	24401172	29115940	34338465	23742664	1.2159	2.90	44.74	56.71	25.58
3	8.07	7.17	9.80	1.0000	52420	35004	52572	71686	91467	49916	1.5019	2.79	43.19	149.06	67.24

GPC trace of P14

2024/4/18 14:52 色谱图 D:\GPC-色谱图\2024\20240418\L-1135-6.prm 第1页/共1页

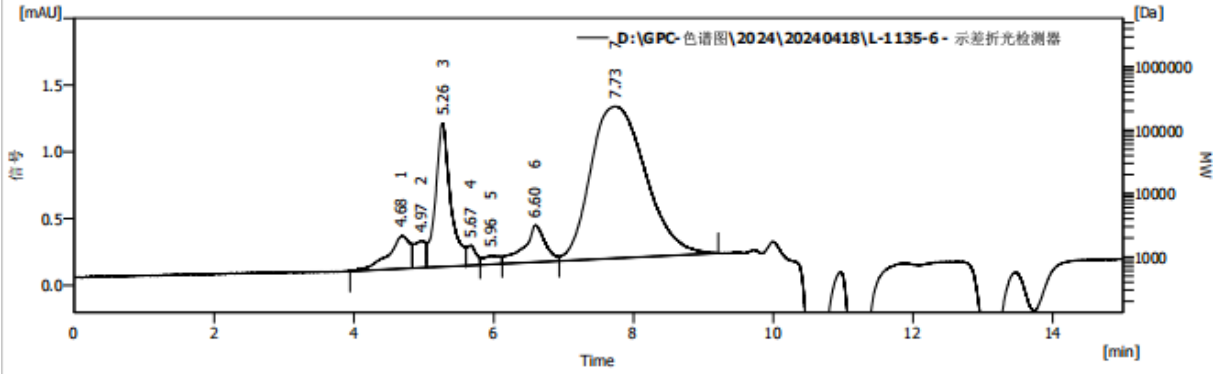
白银图微新材料科技有限公司

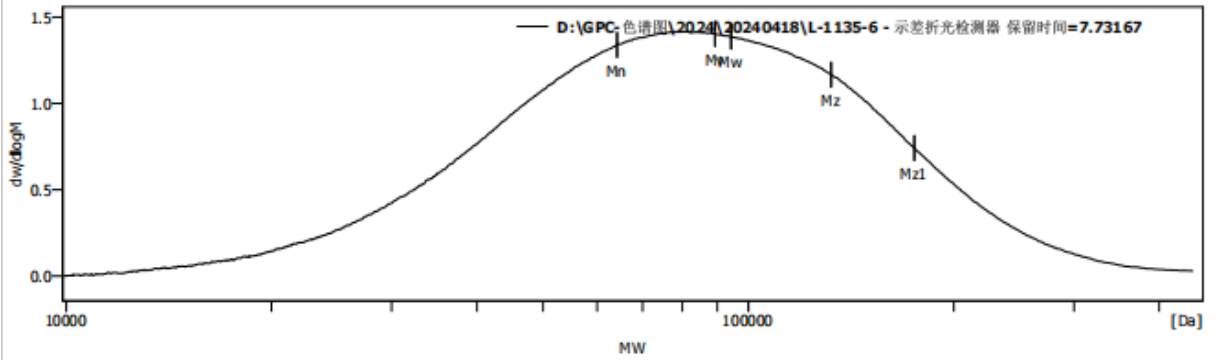
色谱图信息:

文件名	: D:\GPC-色谱图\2024\20240418\L-1135-6.prm	建立文件	: 2024/4/18 14:35:34
初始	: 采集，采集启动2024/4/18 14:20:33	采集数据	: 2024/4/18 14:35:33
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2024/4/18 14:52:54, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2024/4/18 14:52:54
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\2024\校准曲线202403.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\2024\校准曲线202403 - 通用窄峰流速修正. - D:\GPC-色谱图\2024\20240418\L-1135-6 - 示差折光检测器)
*方程式: Y = -0.00999*X^3 + 0.32504*X^2 - 4.0111*X + 21.16817*
相关因子: 0.9996522

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高 [mAU]	峰高 [%]	峰面积 [mAU.s]	峰面积 [%]
1	4.68	3.94	4.84	1.0000	308434827	357448663	577184015	1247738647	2473175574	521391809	1.6147	0.25	7.80	5.31	5.62
2	4.97	4.84	5.04	1.0000	108635442	118499111	123583610	128835127	133999705	122804450	1.0429	0.20	6.39	2.34	2.47
3	5.26	5.04	5.60	1.0000	40050062	34219521	39397086	44619516	49766251	38627270	1.1513	1.07	34.04	16.04	16.96
4	5.67	5.60	5.80	1.0000	11485062	10641487	10912112	11174645	11423377	10872172	1.0254	0.15	4.73	1.40	1.48
5	5.96	5.80	6.12	1.0000	5000313	4731123	5017986	5318844	5614623	4973623	1.0606	0.07	2.14	1.09	1.15
6	6.60	6.12	6.93	1.0000	969039	978000	1177281	1461714	1802285	1141118	1.2038	0.28	8.81	5.96	6.30

GPC trace of P15

2024/4/18 15:25 色谱图 D:\GPC-色谱图\2024\20240418\L-1135-7.prm 第1页/共1页

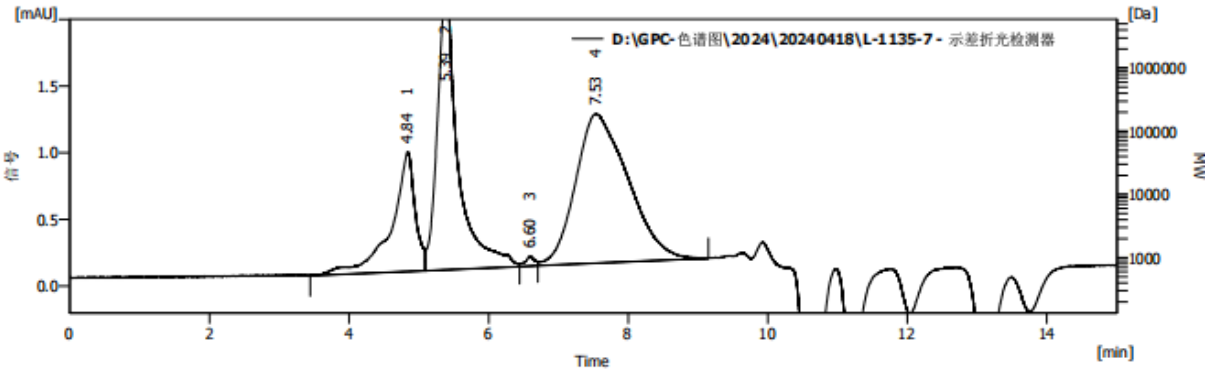
白银图微新材料科技有限公司

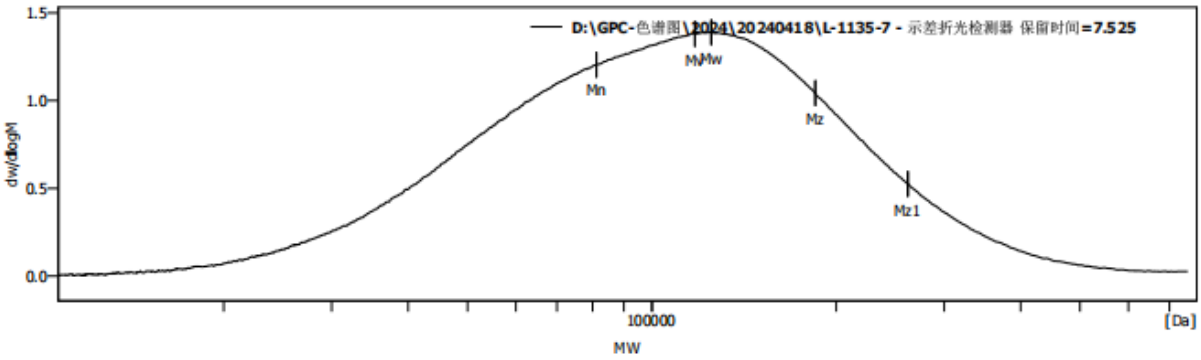
色谱图信息:

文件名	: D:\GPC-色谱图\2024\20240418\L-1135-7.prm	建立文件	: 2024/4/18 15:06:38
初始	: 采集, 采集启动2024/4/18 14:51:38	采集数据	: 2024/4/18 15:06:38
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2024/4/18 15:25:28, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2024/4/18 15:25:28
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\2024\校准曲线202403.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\2024\校准曲线202403 - 通用窄峰流速修正. - D:\GPC-色谱图\2024\20240418\L-1135-7 - 示差折光检测器)
*方程式: Y = -0.00999*X^3 + 0.32504*X^2 - 4.0111*X + 21.16817*
相关因子: 0.9996522

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高 [mAU]	峰高 [%]	峰面积 [mAU.s]	峰面积 [%]
1	4.84	3.44	5.09	1.0000	171903104	21698670	866813906	1009099117	2540704835	576161476	4.0753	0.90	21.09	21.28	17.15
2	5.39	5.09	6.44	1.0000	26853065	13719286	23983927	30841912	36130175	22834770	1.7482	2.17	50.89	43.44	35.00
3	6.60	6.44	6.71	1.0000	970949	981675	1004800	1029462	1055297	1001204	1.0236	0.08	1.76	0.69	0.56
4	7.53	6.71	9.15	1.0000	136585	81247	125062	184929	261912	117607	1.5393	1.12	26.27	58.70	47.29

GPC trace of P16

2024/4/18 15:58 色谱图 D:\GPC-色谱图\2024\20240418\L-1135-8.prm 第1页/共1页

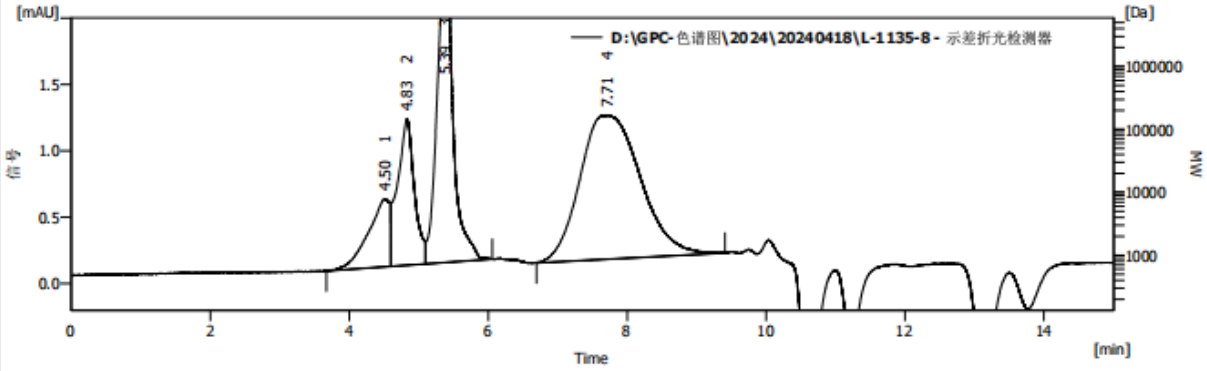
白银图微新材料科技有限公司

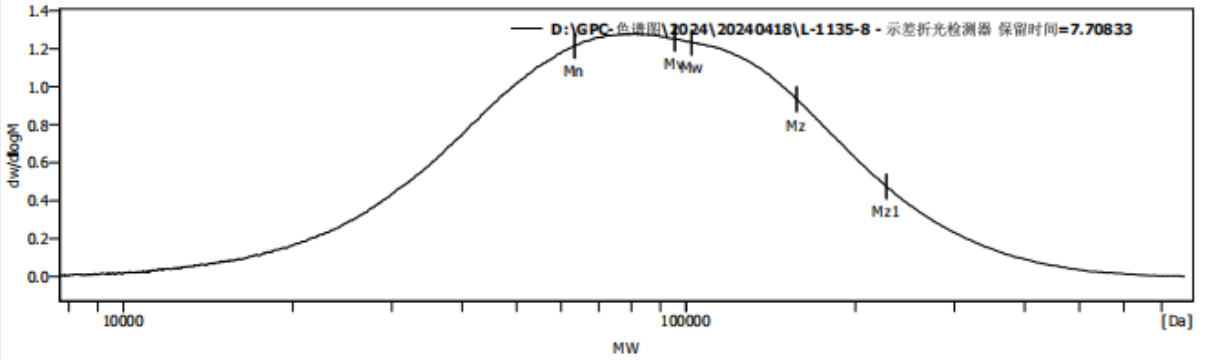
色谱图信息:

文件名	: D:\GPC-色谱图\2024\20240418\L-1135-8.prm	建立文件	: 2024/4/18 15:38:37
初始	: 采集, 采集启动2024/4/18 15:23:37	采集数据	: 2024/4/18 15:38:37
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2024/4/18 15:58:08, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2024/4/18 15:58:08
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\2024\校准曲线202403.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\2024\校准曲线202403 - 通用窄峰流速修正. - D:\GPC-色谱图\2024\20240418\L-1135-8 - 示差折光检测器)
*方程式: Y = -0.00999*X^3 + 0.32504*X^2 - 4.0111*X + 21.16817*
相关因子: 0.9996522

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高[mAU]	峰高[%]	峰面积[mAU.s]	峰面积[%]
1	4.50	3.67	4.60	1.0000	607211044	844274440	1332322882	2845359439	6269401235	1210708458	1.5781	0.51	9.59	10.99	8.16
2	4.83	4.60	5.10	1.0000	176620034	170628229	202479043	236899623	270145183	197504807	1.1867	1.10	20.62	18.68	13.87
3	5.39	5.10	6.06	1.0000	26711489	23936033	28274337	32227448	36162525	27681832	1.1812	2.65	49.51	39.06	29.01
4	7.71	6.69	9.41	1.0000	97537	63437	102305	157394	227239	95560	1.6127	1.09	20.28	65.93	48.96

GPC trace of P17

2024/4/15 12:43 色谱图 D:\GPC-色谱图\2024\20240415\LN-1135-4.prm 第1页/共1页

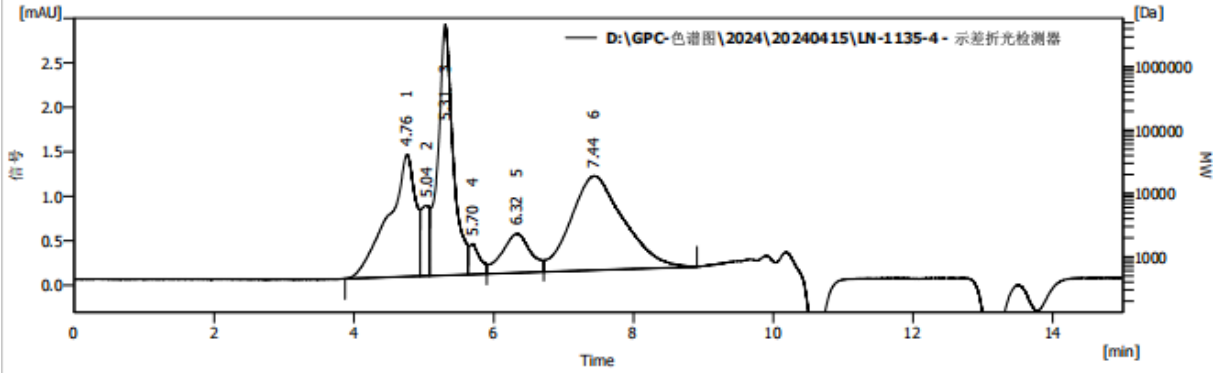
白银图微新材料科技有限公司

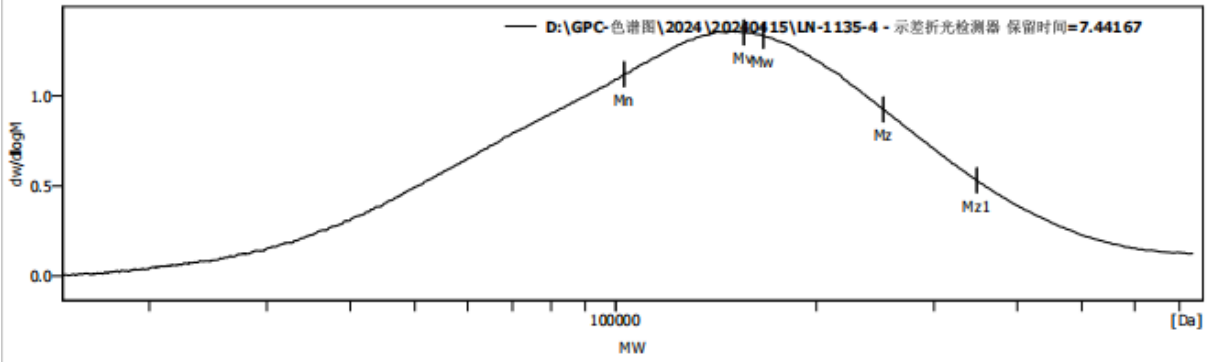
色谱图信息:

文件名	: D:\GPC-色谱图\2024\20240415\LN-1135-4.prm	建立文件	: 2024/4/15 12:23:33
初始	: 采集, 采集启动2024/4/15 12:08:33	采集数据	: 2024/4/15 12:23:33
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2024/4/15 12:43:25, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2024/4/15 12:43:25
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\2024\校准曲线202403.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\2024\校准曲线202403 - 通用窄峰流速修正. - D:\GPC-色谱图\2024\20240415\LN-1135-4 - 示差折光检测器)
*方程式: Y = -0.00999*X^3 + 0.32504*X^2 - 4.0111*X + 21.16817*
相关因子: 0.9996522

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高 [mAU]	峰高 [%]	峰面积 [mAU.s]	峰面积 [%]
1	4.76	3.87	4.95	1.0000	232124985	294188908	569886499	1352827082	2557345184	500725330	1.9371	1.38	20.13	36.78	23.24
2	5.04	4.95	5.08	1.0000	85933298	92213044	93930514	95670437	97395034	93670623	1.0186	0.79	11.60	6.36	4.02
3	5.31	5.08	5.63	1.0000	35070863	30894236	35596392	40435937	45215345	34887905	1.1522	2.82	41.26	42.94	27.13
4	5.70	5.63	5.90	1.0000	10535494	9030246	9412794	9772025	10097000	9357337	1.0424	0.35	5.05	3.77	2.38
5	6.32	5.90	6.71	1.0000	1906577	1694974	2119102	2660777	3253126	2046729	1.2502	0.44	6.45	12.58	7.95
6	7.44	6.71	8.91	1.0000	159979	103019	166579	252008	347800	155717	1.6170	1.06	15.51	55.84	35.28

GPC trace of P18

2024/4/15 11:32 色谱图 D:\GPC-色谱图\2024\20240415\J-147-4.prm 第1页/共1页

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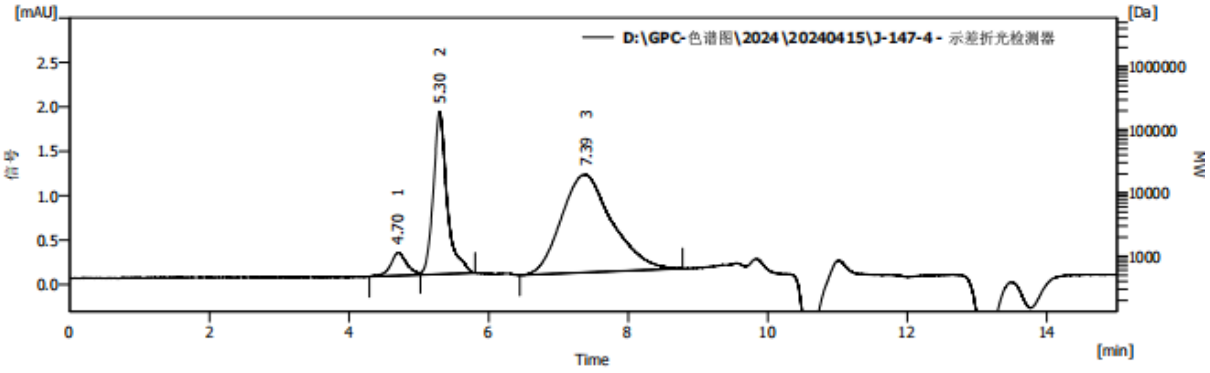
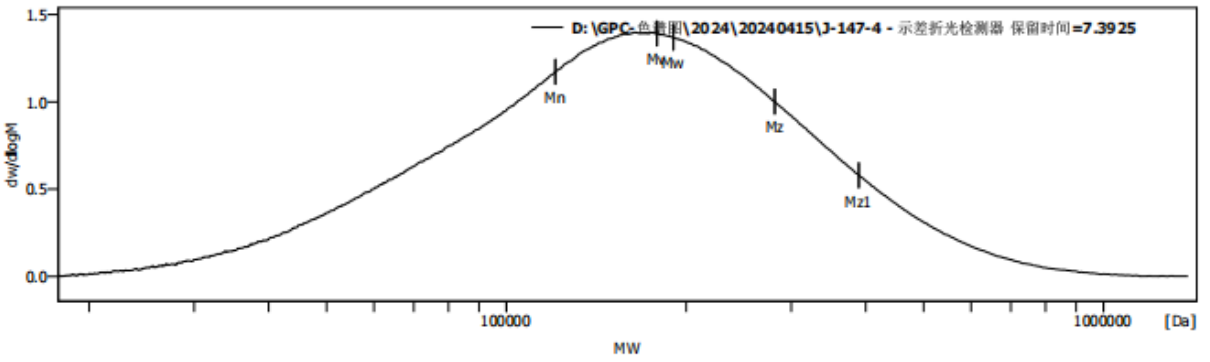
色谱图信息:

文件名	: D:\GPC-色谱图\2024\20240415\J-147-4.prm	建立文件	: 2024/4/15 11:13:49
初始	: 采集，采集启动2024/4/15 10:58:48	采集数据	: 2024/4/15 11:13:49
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2024/4/15 11:32:16, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2024/4/15 11:32:16
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\2024\校准曲线20240 3.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\2024\校准曲线20240 3 - 通用 窄峰流速修正. - D:\GPC-色谱图\2024\20240415\J-147-4 - 示差折光检测器)

*方程式: Y = -0.00999*X^3 + 0.32504*X^2 - 4.0111*X + 21.16817*

相关因子: 0.9996522

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高[mAU]	峰高[%]	峰面积[mAU.s]	峰面积[%]
1	4.70	4.29	5.02	1.0000	285368282	246580352	301562952	381268933	502118207	291923707	1.2230	0.26	8.14	4.15	4.88
2	5.30	5.02	5.81	1.0000	36127794	30430632	35045051	39217681	43212240	34408954	1.1516	1.83	57.32	25.10	29.55
3	7.39	6.45	8.78	1.0000	175887	120906	190417	281565	389346	178760	1.5749	1.10	34.53	55.70	65.57

GPC trace of P19

2024/4/15 13:15 色谱图 D:\GPC-色谱图\2024\20240415\LN-1135-5.prm 第1页/共1页

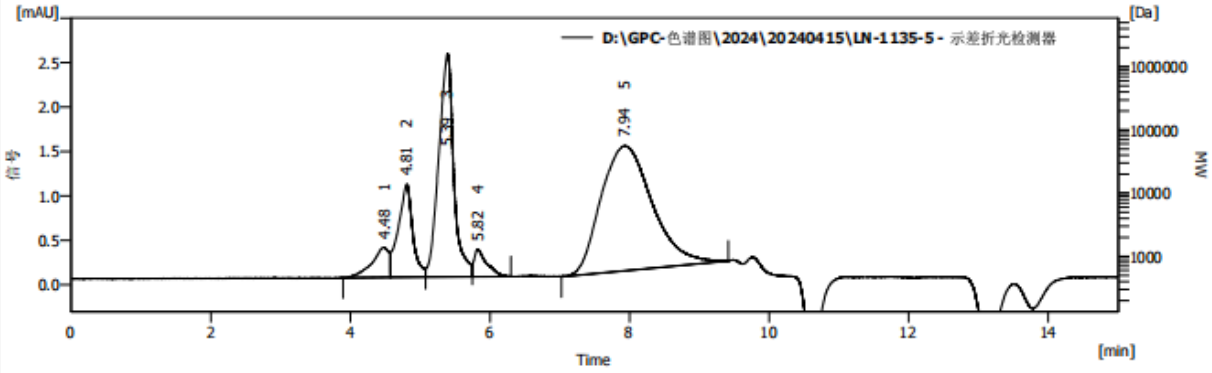
白银图微新材料科技有限公司

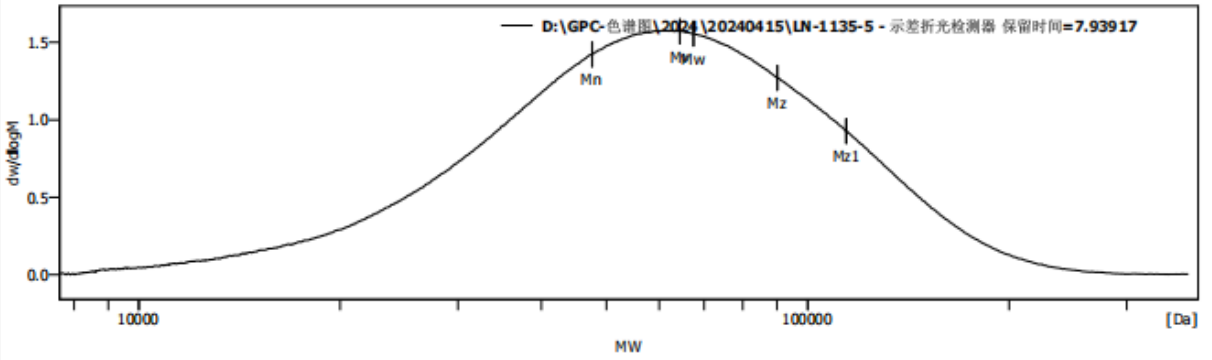
色谱图信息:

文件名	: D:\GPC-色谱图\2024\20240415\LN-1135-5.prm	建立文件	: 2024/4/15 12:55:49
初始	: 采集, 采集启动2024/4/15 12:40:48	采集数据	: 2024/4/15 12:55:49
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2024/4/15 13:15:51, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2024/4/15 13:15:52
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\2024\校准曲线202403.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\2024\校准曲线202403 - 通用窄峰流速修正. - D:\GPC-色谱图\2024\20240415\LN-1135-5 - 示差折光检测器)
*方程式: Y = -0.00999*X^3 + 0.32504*X^2 - 4.0111*X + 21.16817*
相关因子: 0.9996522

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高 [mAU]	峰高 [%]	峰面积 [mAU.s]	峰面积 [%]
1	4.48	3.89	4.57	1.0000	676051169	840108035	1111467553	1678099673	2610391411	1052806062	1.3230	0.34	6.04	5.76	4.29
2	4.81	4.57	5.08	1.0000	193363299	192062455	221751349	253665274	285856486	217158843	1.1546	1.05	18.65	15.07	11.22
3	5.39	5.08	5.75	1.0000	26641002	25877848	29553586	33378147	37435037	29002754	1.1420	2.52	44.76	37.51	27.92
4	5.82	5.75	6.30	1.0000	7258572	5590945	6084254	6501125	6841322	6017303	1.0882	0.31	5.52	3.93	2.93
5	7.94	7.02	9.42	1.0000	65164	47648	67513	90101	114233	64411	1.4169	1.41	25.03	72.08	53.65

GPC trace of P20

2024/4/15 12:41 色谱图 D:\GPC-色谱图\2024\20240415\LN-1135-3.prm 第1页/共1页

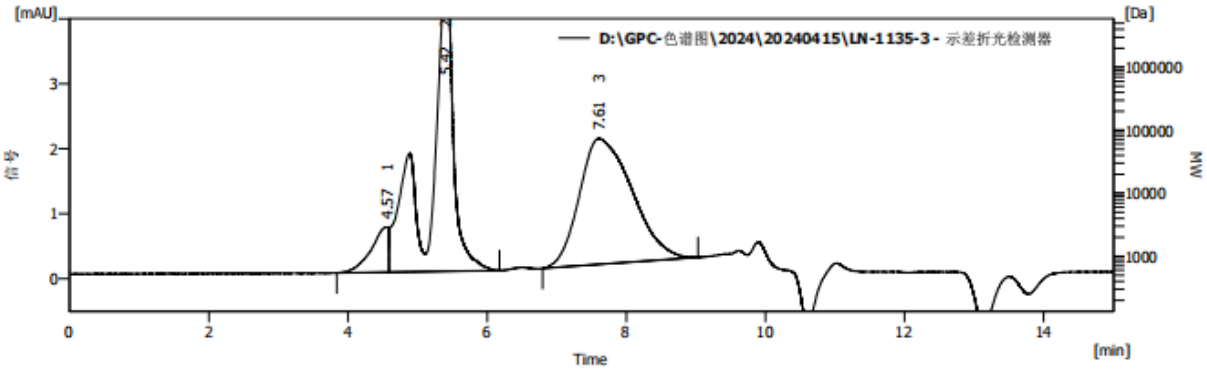
白银图微新材料科技有限公司

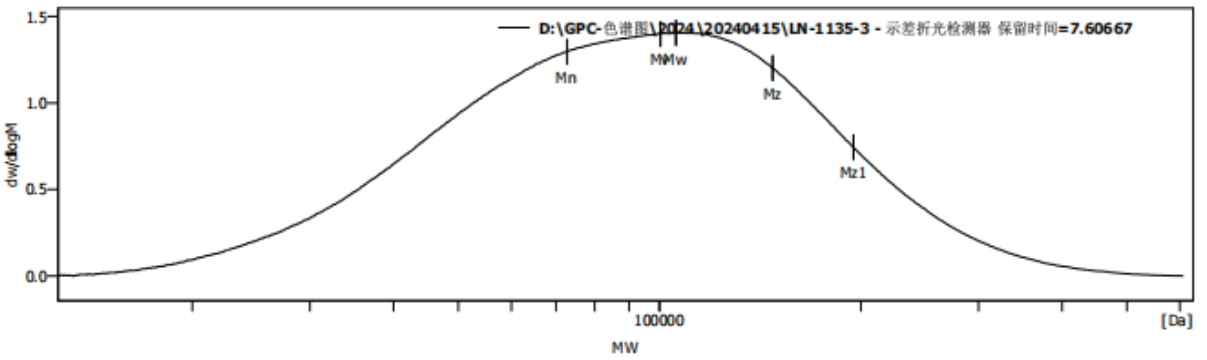
色谱图信息:

文件名	: D:\GPC-色谱图\2024\20240415\LN-1135-3.prm	建立文件	: 2024/4/15 11:46:07
初始	: 采集，采集启动2024/4/15 11:31:07	采集数据	: 2024/4/15 11:46:07
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2024/4/15 12:41:57, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2024/4/15 12:41:57
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\2024\校准曲线240403.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\2024\校准曲线240403 - 通用窄峰流速修正. - D:\GPC-色谱图\2024\20240415\LN-1135-3 - 示差折光检测器)

*方程式: Y = -0.00999*X^3 + 0.32504*X^2 - 4.0111*X + 21.16817*

相关因子: 0.9996522

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高 [mAU]	峰高 [%]	峰面积 [mAU.s]	峰面积 [%]
1	4.57	3.84	4.59	1.0000	473837338	779659054	1062656501	1725049713	2959575461	998839082	1.3630	0.70	9.27	12.01	5.44
2	5.42	4.59	6.18	1.0000	24681445	29047433	72646749	176678202	257533284	61611929	2.5010	4.89	64.95	106.75	48.37
3	7.61	6.80	9.03	1.0000	117343	72748	105845	147717	195138	100338	1.4550	1.94	25.79	101.94	46.19

GPC trace of P21

2024/4/15 18:48 色谱图 D:\GPC-色谱图\2024\20240415\Y-0266-1.prm 第1页/共1页

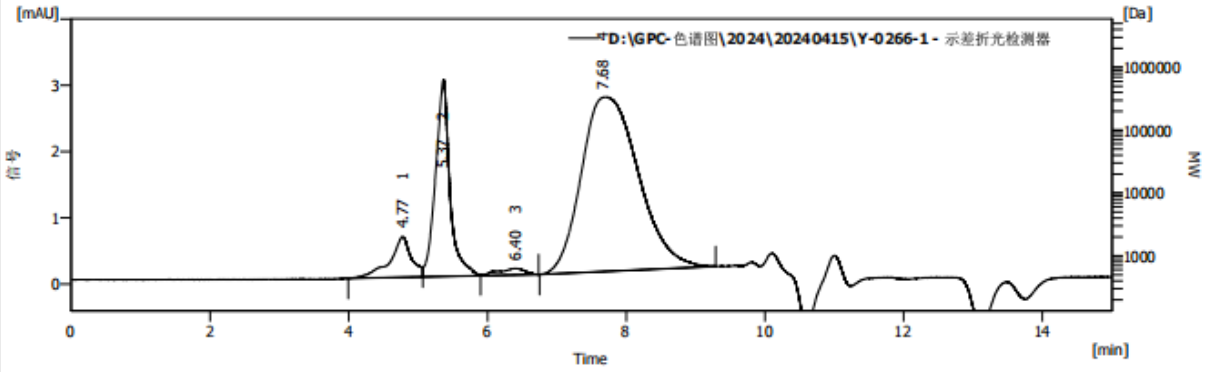
白银图微新材料科技有限公司

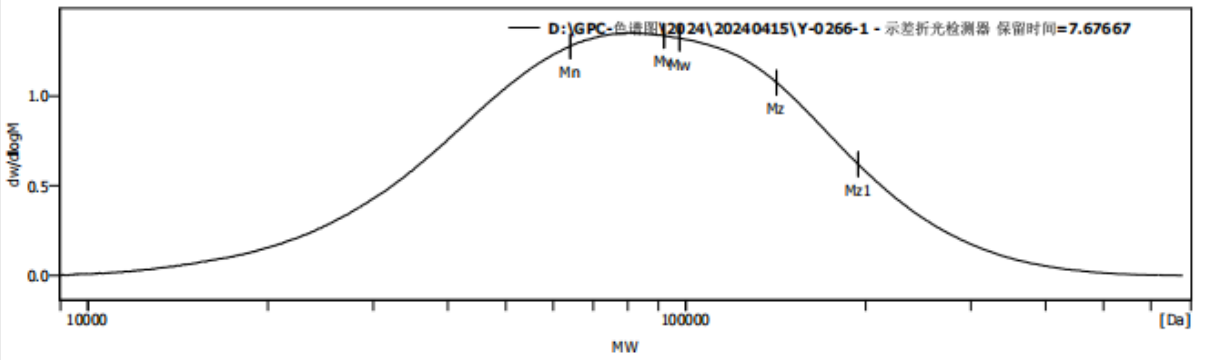
色谱图信息:

文件名	: D:\GPC-色谱图\2024\20240415\Y-0266-1.prm	建立文件	: 2024/4/15 18:26:58
初始	: 采集，采集启动2024/4/15 18:11:57	采集数据	: 2024/4/15 18:26:58
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2024/4/15 18:48:06, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2024/4/15 18:48:06
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\2024\校准曲线202403.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\2024\校准曲线202403 - 通用窄峰流速修正. - D:\GPC-色谱图\2024\20240415\Y-0266-1 - 示差折光检测器)
*方程式: Y = -0.00999*X^3 + 0.32504*X^2 - 4.0111*X + 21.16817*
相关因子: 0.9996522

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高 [mAU]	峰高 [%]	峰面积 [mAU.s]	峰面积 [%]
1	4.77	3.99	5.07	1.0000	219695958	219895151	374614475	828643342	1657702212	336476686	1.7036	0.61	9.71	13.22	6.32
2	5.37	5.07	5.90	1.0000	28922116	26373681	30939077	35245667	39626147	30300790	1.1731	2.97	47.02	42.67	20.39
3	6.40	5.90	6.74	1.0000	1547383	1731264	2121064	2620552	3148856	2053745	1.2252	0.10	1.56	2.68	1.28
4	7.68	6.75	9.29	1.0000	103268	64145	97692	141867	194364	92042	1.5230	2.63	41.71	150.68	72.01

GPC trace of P22

2024/4/15 19:20 色谱图 D:\GPC-色谱图\2024\20240415\Y-0266-2.prm 第1页/共1页

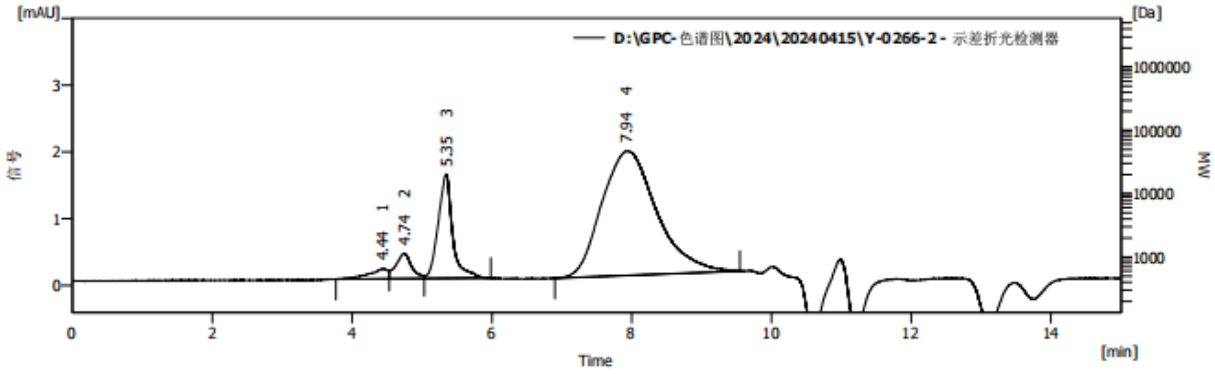
白银图微新材料科技有限公司

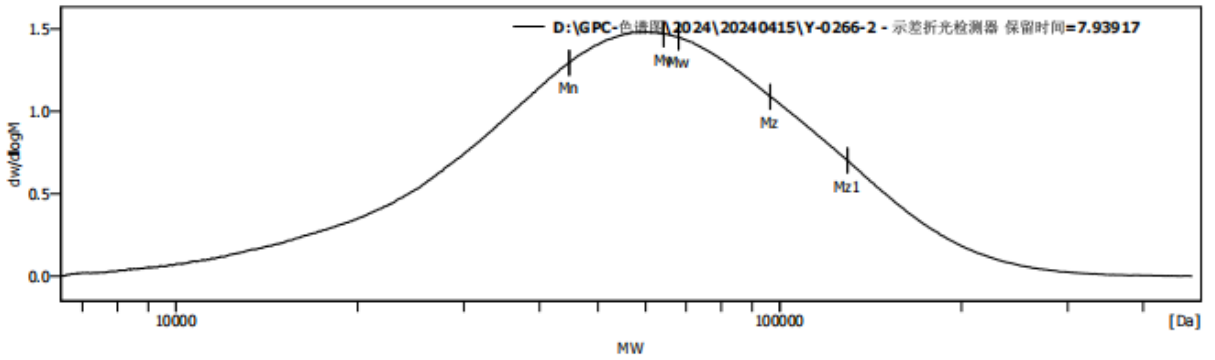
色谱图信息:

文件名	: D:\GPC-色谱图\2024\20240415\Y-0266-2.prm	建立文件	: 2024/4/15 19:01:31
初始	: 采集, 采集启动2024/4/15 18:46:31	采集数据	: 2024/4/15 19:01:31
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2024/4/15 19:20:23, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2024/4/15 19:20:23
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\2024\校准曲线240403.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\2024\校准曲线240403 - 通用窄峰流速修正. - D:\GPC-色谱图\2024\20240415\Y-0266-2 - 示差折光检测器)
*方程式: Y = -0.00999*X^3 + 0.32504*X^2 - 4.0111*X + 21.16817*
相关因子: 0.9996522

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高 [mAU]	峰高 [%]	峰面积 [mAU.s]	峰面积 [%]
1	4.44	3.77	4.53	1.0000	791289298	1084400418	1694586240	3253369588	5685435294	1548619045	1.5627	0.15	3.81	2.92	2.19
2	4.74	4.53	5.03	1.0000	245303551	224653187	262668940	302461670	341233793	256867167	1.1692	0.38	9.61	5.88	4.42
3	5.35	5.03	5.98	1.0000	30832124	27563840	32681592	37174462	41602008	31999906	1.1857	1.56	39.46	22.33	16.77
4	7.94	6.90	9.55	1.0000	65164	44817	68008	96417	129542	64277	1.5175	1.87	47.12	102.04	76.63

GPC trace of P23

2024/1/30 12:02 色谱图 D:\GPC-色谱图\2024\20240130\Y-0214-2.prm 第1页/共1页

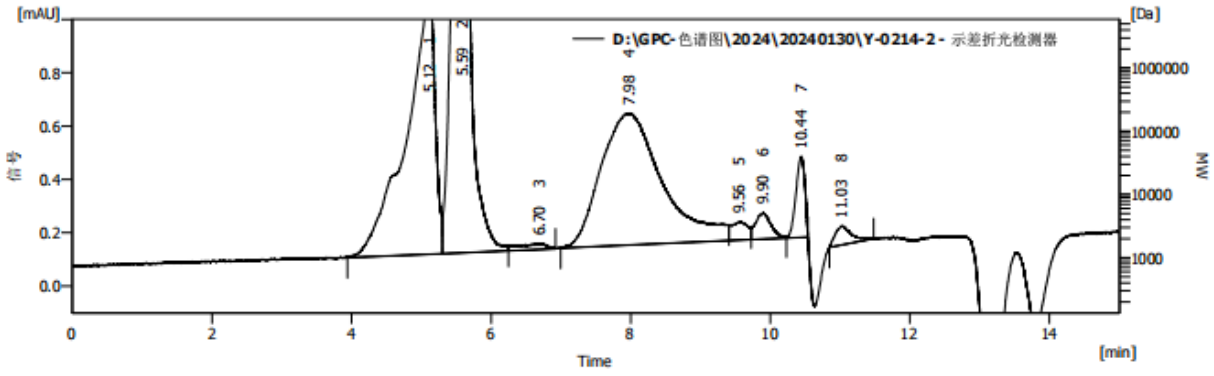
白银图微新材料科技有限公司

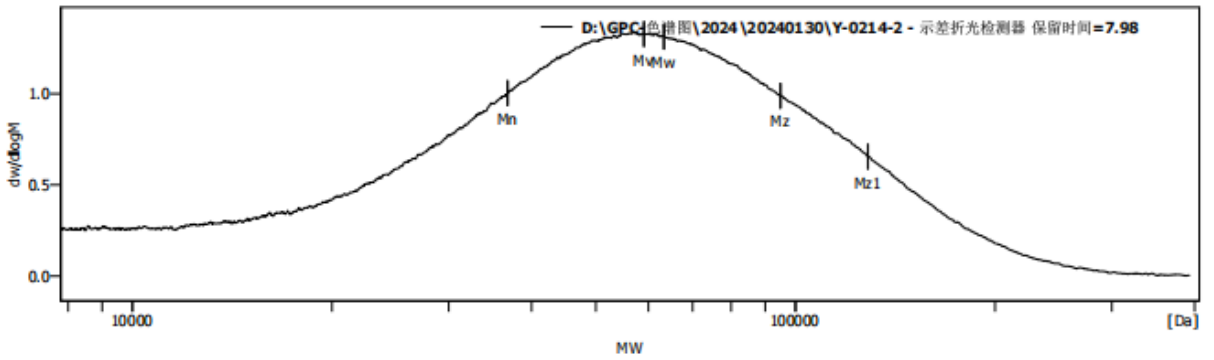
色谱图信息:

文件名	: D:\GPC-色谱图\2024\20240130\Y-0214-2.prm	建立文件	: 2024/1/30 11:58:10
初始	: 采集, 采集启动2024/1/30 11:43:10	采集数据	: 2024/1/30 11:58:10
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2024/1/30 12:02:42, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2024/1/30 12:02:42
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\2024\校准曲线202401.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\2024\校准曲线202401 - 通用窄峰流速修正. - D:\GPC-色谱图\2024\20240130\Y-0214-2 - 示差折光检测器)
*方程式: Y = -0.01045*X^3 + 0.3349*X^2 - 4.07592*X + 21.30064*
相关因子: 0.9996367

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高[mAU]	峰高[%]	峰面积[mAU.s]	峰面积[%]
1	5.12	3.94	5.30	1.0000	65389773	100359395	233140172	807212707	1881712869	194044719	2.3231	0.97	21.84	27.83	26.67
2	5.59	5.30	6.25	1.0000	14228378	13274349	15504989	17447305	19295115	15208463	1.1680	2.42	54.29	39.07	37.45
3	6.70	6.25	6.92	1.0000	768946	980013	1157983	1359183	1548262	1129079	1.1816	0.02	0.52	0.64	0.62
4	7.98	7.00	9.41	1.0000	61576	36827	63337	95003	128658	59095	1.7199	0.50	11.15	30.29	29.03
5	9.56	9.41	9.73	1.0000	6408	6381	6458	6535	6612	6446	1.0121	0.07	1.55	1.13	1.09
6	9.90	9.73	10.23	1.0000	4261	4170	4235	4296	4355	4225	1.0154	0.10	2.22	1.53	1.47

GPC trace of P24

2024/4/16 12:30 色谱图 D:\GPC-色谱图\2024\20240416\24041203-X.prm 第1页/共1页

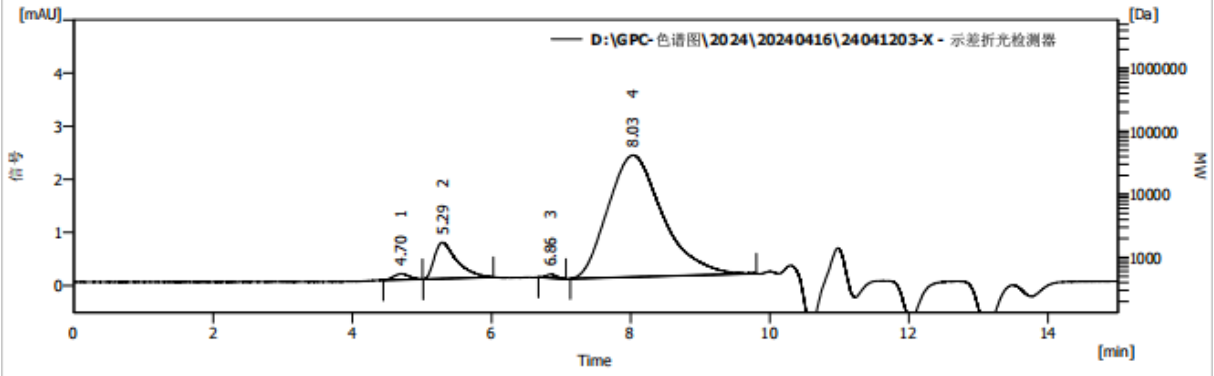
白银图微新材料科技有限公司

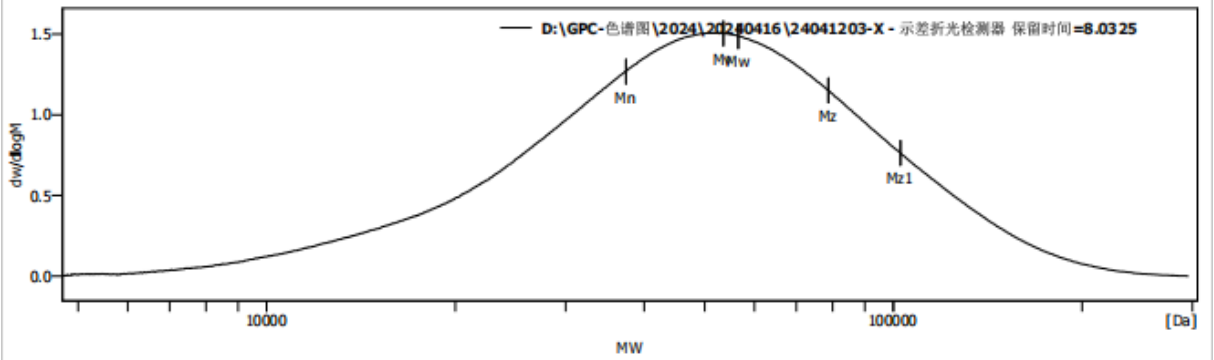
色谱图信息:

文件名	: D:\GPC-色谱图\2024\20240416\24041203-X.prm	建立文件	: 2024/4/16 12:15:43
初始	: 采集, 采集启动2024/4/16 12:00:42	采集数据	: 2024/4/16 12:15:43
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2024/4/16 12:30:50, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2024/4/16 12:30:50
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\2024\校准曲线20240 3.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\2024\校准曲线20240 3 - 通用窄峰流速修正. - D:\GPC-色谱图\2024\20240416\24041203-X - 示差折光检测器)
*方程式: Y = -0.00999*X^3 + 0.32504*X^2 - 4.0111*X + 21.16817*
相关因子: 0.9996522

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高 [mAU]	峰高 [%]	峰面积 [mAU.s]	峰面积 [%]
1	4.70	4.44	5.01	1.0000	283603769	254622409	293903011	336342960	379888350	287808749	1.1543	0.11	3.60	1.76	1.22
2	5.29	5.02	6.02	1.0000	36619469	22674220	30705722	37779964	43580200	29602194	1.3542	0.68	21.55	15.39	10.71
3	6.86	6.67	7.07	1.0000	534487	514537	527512	540565	553620	525563	1.0252	0.07	2.31	0.76	0.53
4	8.03	7.13	9.81	1.0000	55701	37454	56578	78805	102646	53573	1.5106	2.30	72.53	125.85	87.54

GPC trace of P25

2024/4/16 11:20 色谱图 D:\GPC-色谱图\2024\20240416\24041201-X.prm 第1页/共1页

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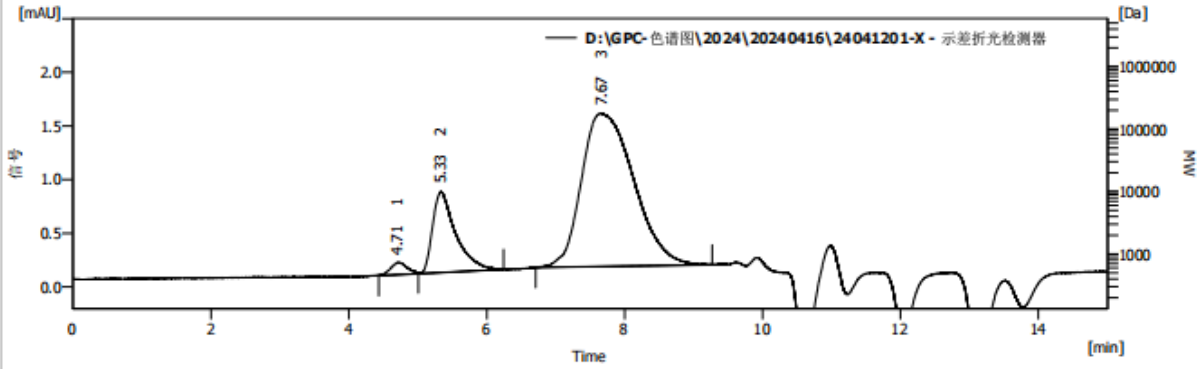
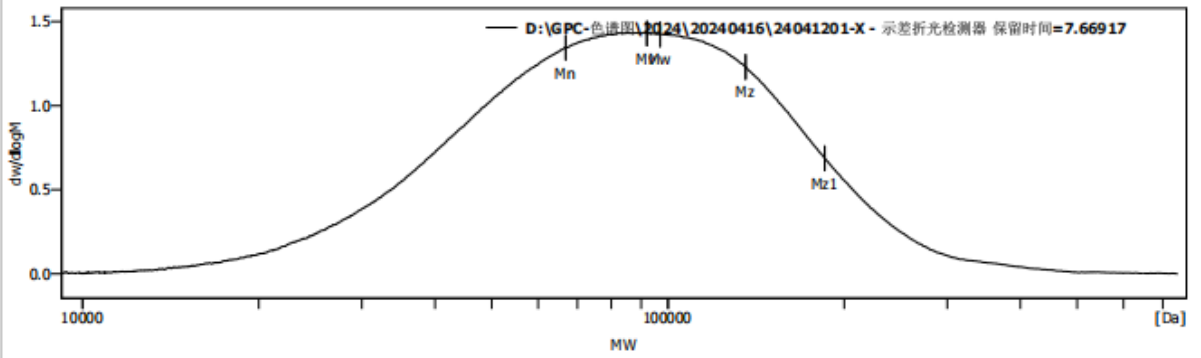
色谱图信息:

文件名	: D:\GPC-色谱图\2024\20240416\24041201-X.prm	建立文件	: 2024/4/16 11:04:02
初始	: 采集，采集启动2024/4/16 10:49:01	采集数据	: 2024/4/16 11:04:02
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2024/4/16 11:20:23, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2024/4/16 11:20:23
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\2024\校准曲线202403.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\2024\校准曲线202403 - 通用窄峰流速修正. - D:\GPC-色谱图\2024\20240416\24041201-X - 示差折光检测器)
*方程式: Y = -0.00999*X^3 + 0.32504*X^2 - 4.0111*X + 21.16817*
相关因子: 0.9996522

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高[mAU]	峰高[%]	峰面积[mAU.s]	峰面积[%]
1	4.71	4.43	5.01	1.0000	276660662	234766277	276421302	323828233	374690356	269781025	1.1774	0.11	5.00	1.90	2.01
2	5.33	5.01	6.24	1.0000	32094364	18736683	26948569	33946472	39750108	25854946	1.4383	0.75	32.85	17.61	18.57
3	7.67	6.71	9.27	1.0000	104681	66921	96987	135658	185276	92023	1.4493	1.43	62.15	75.31	79.42

GPC trace of P26

2024/4/16 10:52 色谱图 D:\GPC-色谱图\2024\20240416\Y-0266-3.prm 第1页/共1页

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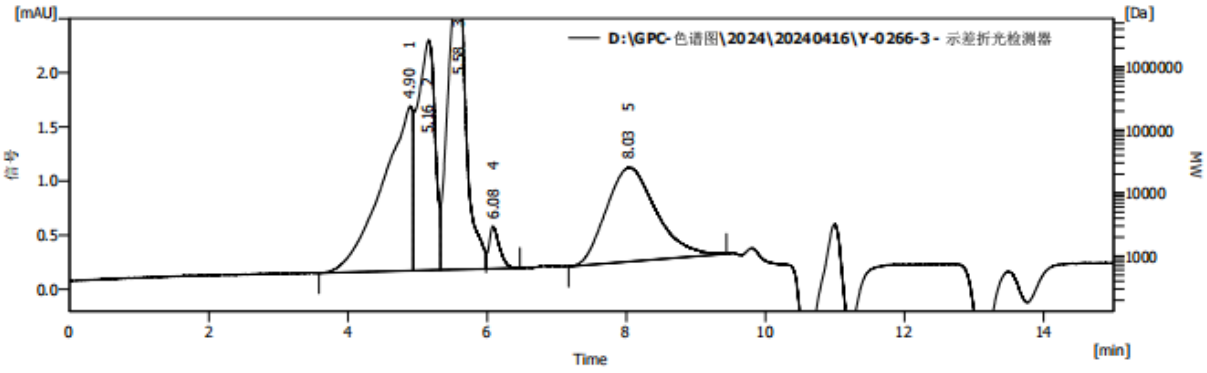
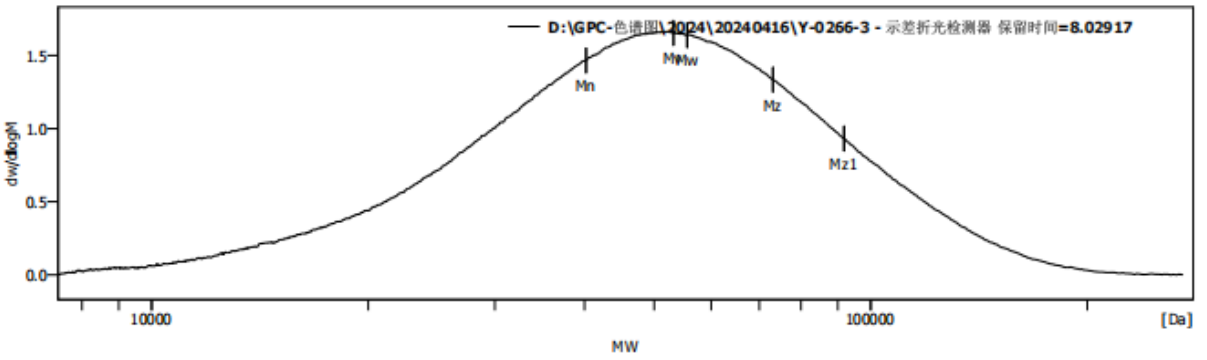
色谱图信息:

文件名	: D:\GPC-色谱图\2024\20240416\Y-0266-3.prm	建立文件	: 2024/4/16 10:31:17
初始	: 采集, 采集启动2024/4/16 10:16:17	采集数据	: 2024/4/16 10:31:17
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2024/4/16 10:52:37, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2024/4/16 10:52:37
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\2024\校准曲线20240403.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\2024\校准曲线20240403 - 通用窄峰流速修正. - D:\GPC-色谱图\2024\20240416\Y-0266-3 - 示差折光检测器)

*方程式: Y = -0.00999*X^3 + 0.32504*X^2 - 4.0111*X + 21.16817*

相关因子: 0.9996522

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高 [mAU]	峰高 [%]	峰面积 [mAU.s]	峰面积 [%]
1	4.90	3.58	4.94	1.0000	141152461	291692951	758128126	3255000411	8876738052	613274927	2.5991	1.52	19.77	45.69	25.21
2	5.16	4.94	5.33	1.0000	57638271	61201893	68444019	76237554	83750657	67306742	1.1183	2.13	27.64	37.41	20.64
3	5.58	5.33	5.98	1.0000	14783328	13676061	15888380	18009592	19992162	15569220	1.1618	2.78	36.17	50.59	27.91
4	6.08	5.98	6.47	1.0000	3532752	3151472	3289786	3413334	3523865	3270457	1.0439	0.39	5.09	4.13	2.28
5	8.03	7.17	9.44	1.0000	56011	40217	55594	73139	91867	53182	1.3824	0.87	11.33	43.44	23.96

GPC trace of P27

2024/4/16 12:00 色谱图 D:\GPC-色谱图\2024\20240416\24041202-X.prm 第1页/共1页

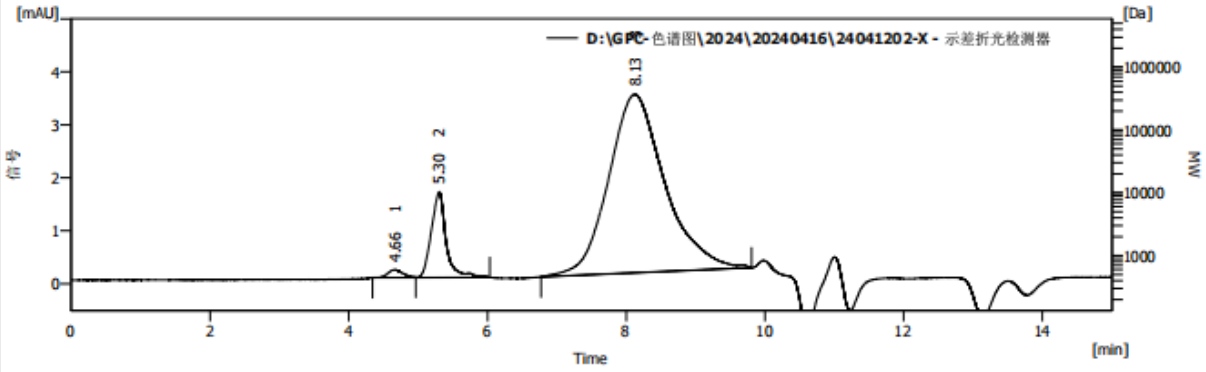
白银图微新材料科技有限公司

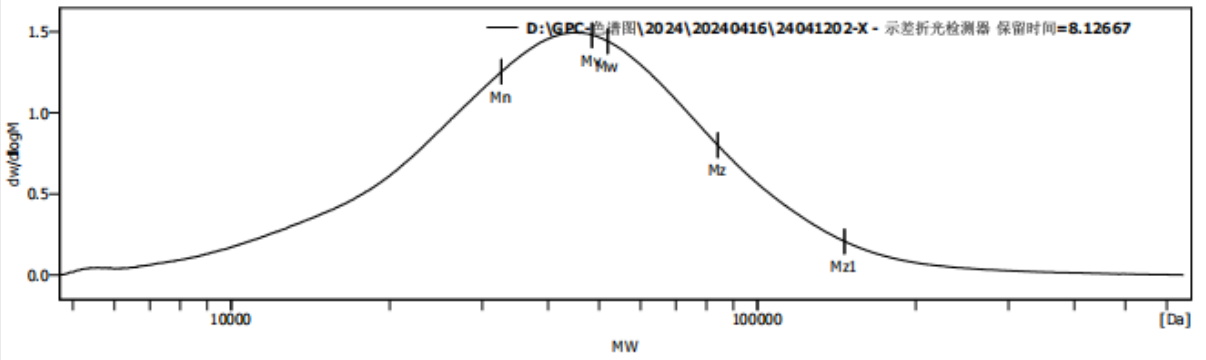
色谱图信息:

文件名	: D:\GPC-色谱图\2024\20240416\24041202-X.prm	建立文件	: 2024/4/16 11:33:36
初始	: 采集，采集启动2024/4/16 11:18:35	采集数据	: 2024/4/16 11:33:36
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2024/4/16 12:00:15, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2024/4/16 12:00:15
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\2024\校准曲线24003.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\2024\校准曲线24003 - 通用窄峰流速修正. - D:\GPC-色谱图\2024\20240416\24041202-X - 示差折光检测器)
*方程式: Y = -0.00999*X^3 + 0.32504*X^2 - 4.0111*X + 21.16817*
相关因子: 0.9996522

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高[mAU]	峰高[%]	峰面积[mAU.s]	峰面积[%]
1	4.66	4.34	4.96	1.0000	333489014	287283024	335135624	391984538	461431218	327436239	1.1666	0.15	2.96	2.29	1.06
2	5.30	4.96	6.03	1.0000	35165563	28854559	36316776	41718853	46507221	35447315	1.2586	1.62	31.52	24.03	11.09
3	8.13	6.77	9.81	1.0000	47709	32642	51938	84051	146498	48498	1.5912	3.37	65.52	190.35	87.85

GPC trace of P28

2024/6/4 12:04 色谱图 D:\GPC-色谱图\2024\20240604\L-1140-C6.prm 第1页/共1页

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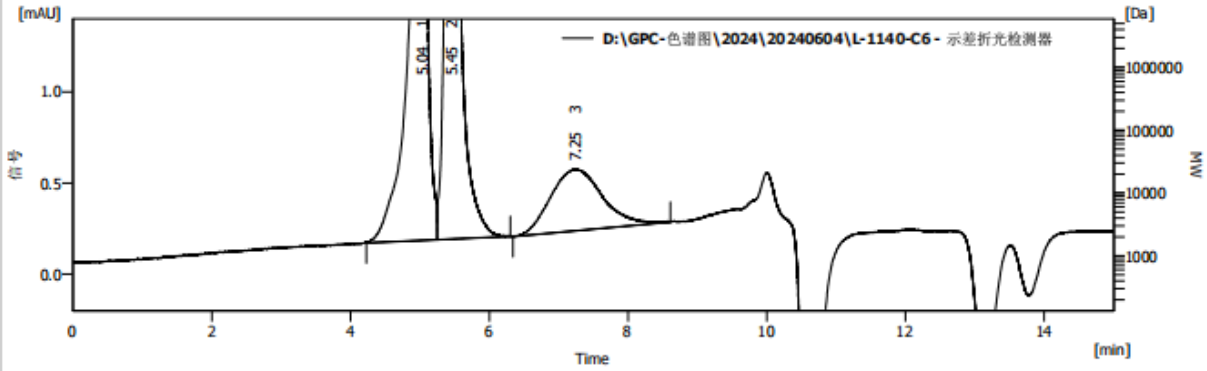
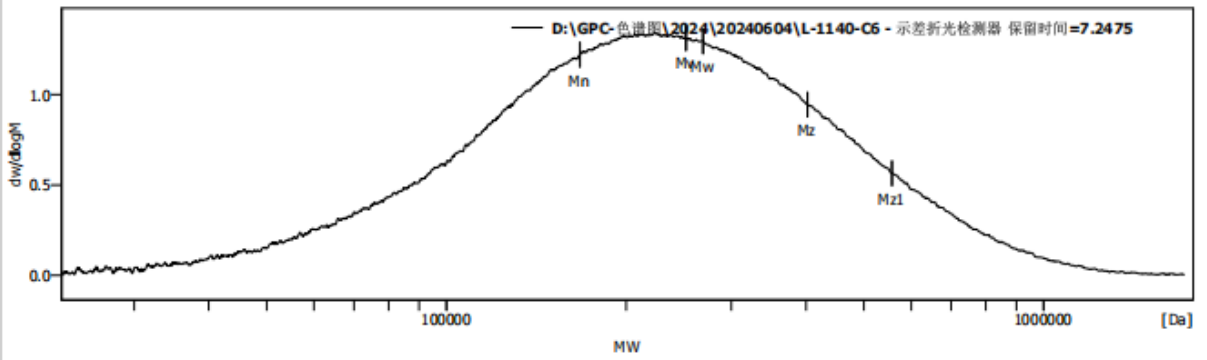
色谱图信息:

文件名	: D:\GPC-色谱图\2024\20240604\L-1140-C6.prm	建立文件	: 2024/6/4 11:45:22
初始	: 采集, 采集启动2024/6/4 11:30:21	采集数据	: 2024/6/4 11:45:22
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2024/6/4 12:04:07, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2024/6/4 12:04:07
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\2024\校准曲线20240 5.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\2024\校准曲线20240 5 - 通用窄峰流速修正. - D:\GPC-色谱图\2024\20240604\L-1140-C6 - 示差折光检测器)

*方程式: Y = -0.00664*X^3 + 0.23626*X^2 - 3.24007*X + 18.97824*

相关因子: 0.9996642

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高 [mAU]	峰高 [%]	峰面积 [mAU.s]	峰面积 [%]
1	5.04	4.23	5.25	1.0000	63814868	76169197	98334706	152969237	266967789	93287135	1.2910	3.26	39.48	50.17	40.31
2	5.45	5.25	6.30	1.0000	18107800	15086972	16978847	18375099	19543041	16750177	1.1254	4.66	56.43	56.77	45.61
3	7.25	6.34	8.61	1.0000	238202	167420	269036	402493	557409	252009	1.6070	0.34	4.09	17.53	14.09

GPC trace of P1-1

2025/1/6 17:07 色谱图 D:\GPC-色谱图\2025\20250106\L-1245-4.prm 第1页/共1页

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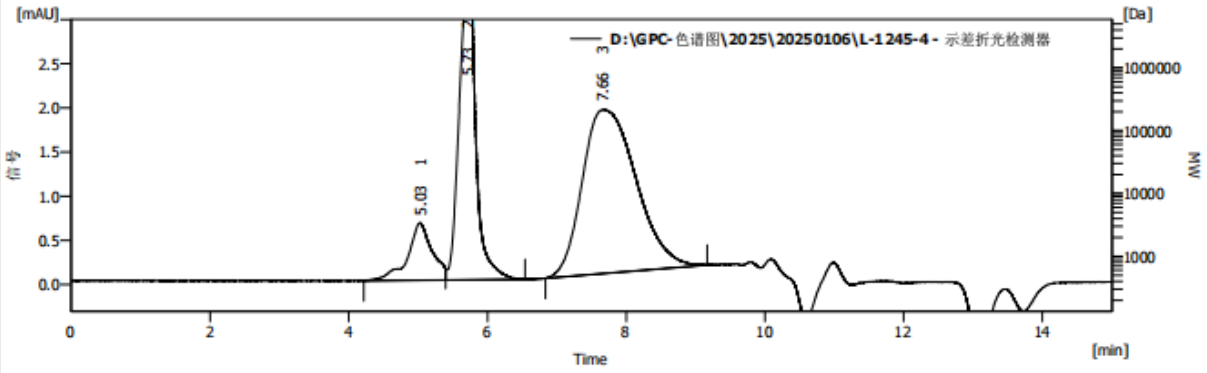
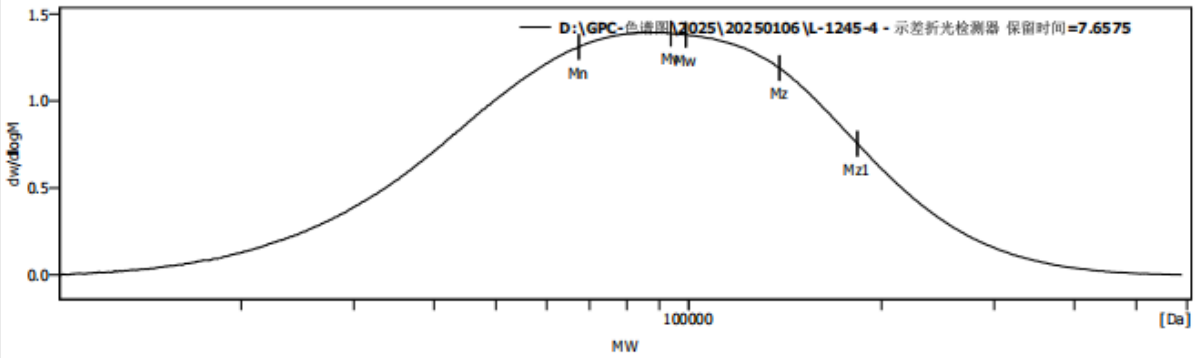
色谱图信息:

文件名 : D:\GPC-色谱图\2025\20250106\L-1245-4.prm
建立文件 : 2025/1/6 16:55:01
初始 : 采集，采集启动2025/1/6 16:40:01
采集数据 : 2025/1/6 16:55:01
...原始项目 : 仪器测试
通过 : Administrator

打印版本信息:

打印版本 : - #2; 2025/1/6 17:07:12, IA: 8.0 Rev.1 最近(链接的校准)
打印数据 : 2025/1/6 17:07:12
编辑格式 : D:\W5100\DataFiles\Common\模板.sty
通过 : Administrator
校准文件 : D:\校准曲线\2024\校准曲线2024 12.cal
项目 : 仪器测试





结果表(D:\校准曲线\2024\校准曲线202412 - 通用窄峰流速修正. - D:\GPC-色谱图\2025\20250106\L-1245-4 - 示差折光检测器)
*方程式: Y = -0.01138*X^3 + 0.36163*X^2 - 4.33856*X + 22.16322*
相关因子: 0.9996848

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高[mAU]	峰高[%]	峰面积[mAU.s]	峰面积[%]
1	5.03	4.22	5.40	1.0000	110189046	93572357	166389822	410244172	920794739	147923814	1.7782	0.65	10.61	15.94	9.12
2	5.73	5.40	6.54	1.0000	11015081	9912043	11756252	13344842	14922409	11515810	1.1861	3.62	59.07	58.74	33.62
3	7.66	6.83	9.17	1.0000	109090	67406	99022	138601	183432	93808	1.4690	1.86	30.32	100.06	57.26

GPC trace of P1-100kg

2025/1/13 15:25 色谱图 D:\GPC-色谱图\2025\20250113\L-1249-3.prm 第1页/共1页

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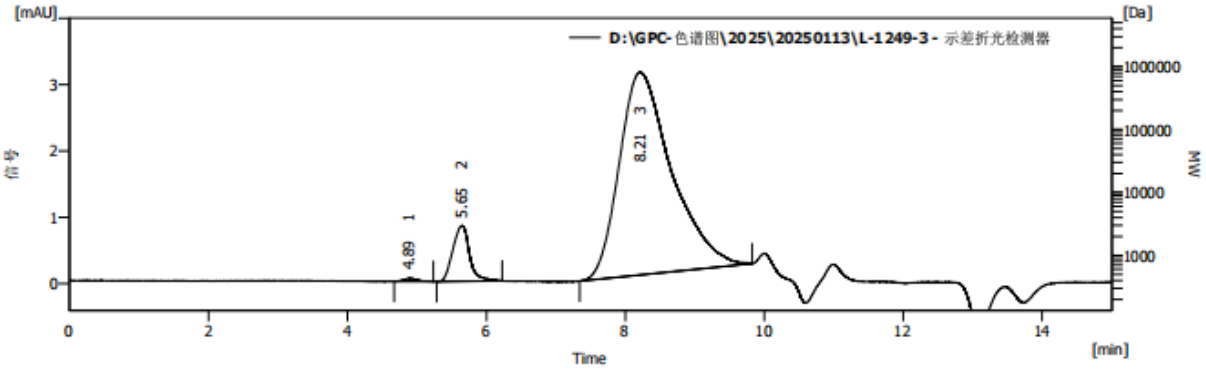
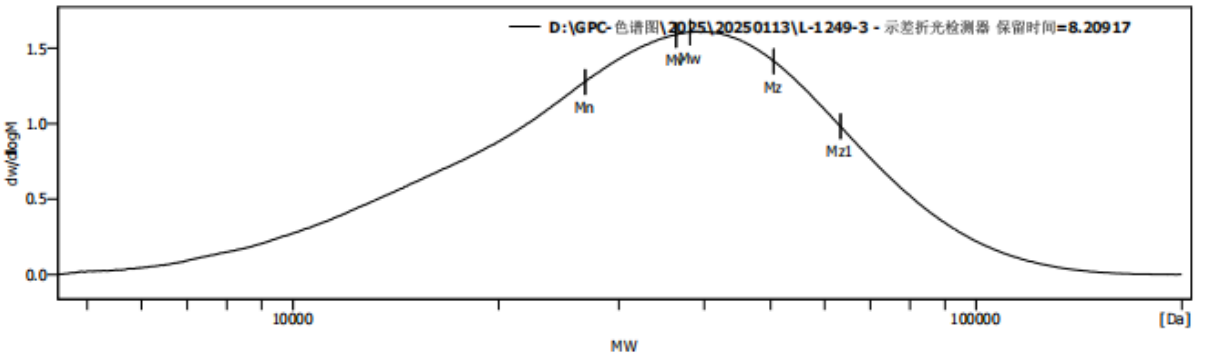
色谱图信息:

文件名	: D:\GPC-色谱图\2025\20250113\L-1249-3.prm	建立文件	: 2025/1/13 15:24:06
初始	: 采集，采集启动2025/1/13 15:09:06	采集数据	: 2025/1/13 15:24:06
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2025/1/13 15:25:16, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2025/1/13 15:25:16
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\2024\校准曲线2024 12.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\2024\校准曲线202412 - 通用窄峰流速修正. - D:\GPC-色谱图\2025\20250113\L-1249-3 - 示差折光检测器)

*方程式: Y = -0.01138*X^3 + 0.36163*X^2 - 4.33856*X + 22.16322*

相关因子: 0.9996848

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高[mAU]	峰高[%]	峰面积[mAU.s]	峰面积[%]
1	4.89	4.67	5.23	1.0000	181183081	155691279	177842017	199509248	221079114	174627014	1.1423	0.05	1.25	0.61	0.35
2	5.65	5.28	6.23	1.0000	13963520	12892818	14936410	16861630	18771281	14649323	1.1585	0.84	21.25	13.98	8.00
3	8.21	7.34	9.82	1.0000	42102	26793	38125	50555	63348	36383	1.4229	3.06	77.50	160.23	91.65

GPC trace of P8-1

2024/12/13 12:03 色谱图 D:\GPC-色谱图\2024\20241213\Y-0461-2.prm 第1页/共1页

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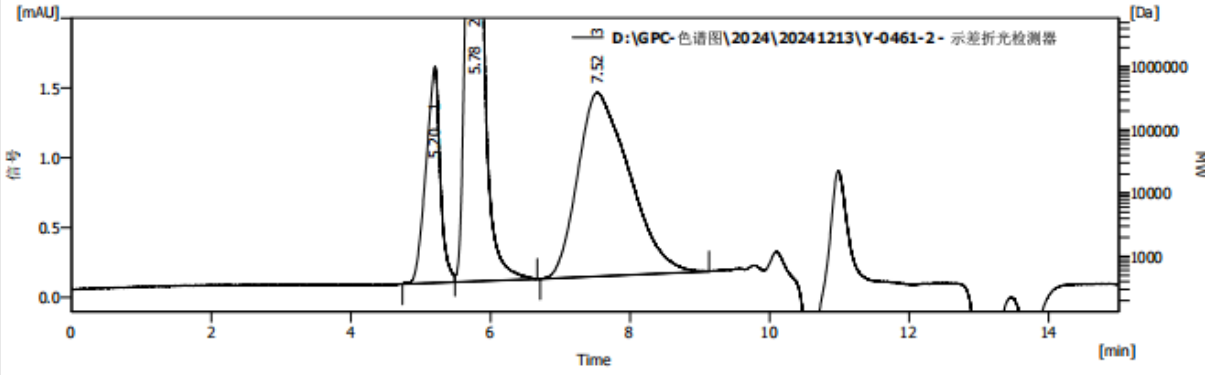
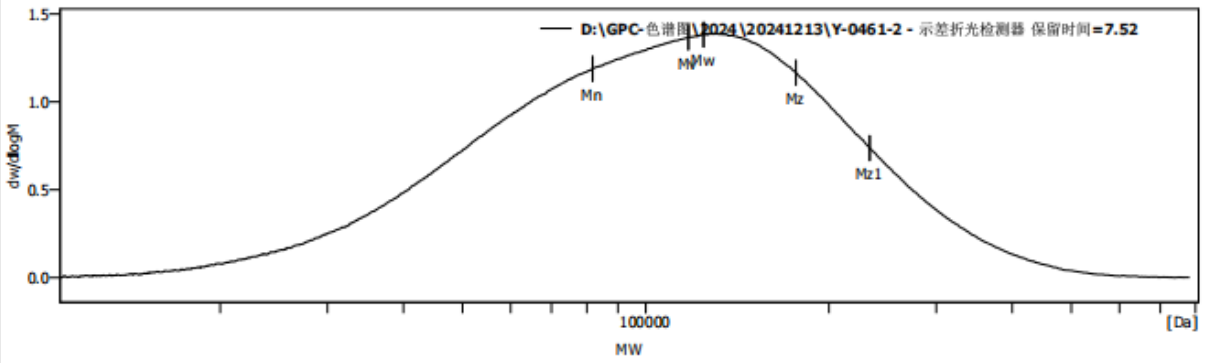
色谱图信息:

文件名	: D:\GPC-色谱图\2024\20241213\Y-0461-2.prm	建立文件	: 2024/12/13 12:01:41
初始	: 采集，采集启动2024/12/13 11:46:40	采集数据	: 2024/12/13 12:01:41
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2024/12/13 12:03:28, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2024/12/13 12:03:28
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\2024\校准曲线2024 12.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\2024\校准曲线202412 - 通用窄峰流速修正. - D:\GPC-色谱图\2024\20241213\Y-0461-2 - 示差折光检测器)
*方程式: Y = -0.01138*X^3 + 0.36163*X^2 - 4.33856*X + 22.16322*
相关因子: 0.9996848

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高 [mAU]	峰高 [%]	峰面积 [mAU.s]	峰面积 [%]
1	5.20	4.74	5.49	1.0000	59626726	62052294	70853077	81751699	95879172	69406750	1.1418	1.55	18.24	22.06	12.86
2	5.78	5.49	6.67	1.0000	9311452	8219434	9489071	10454380	11329821	9335964	1.1545	5.63	66.26	81.88	47.73
3	7.52	6.71	9.13	1.0000	141221	81803	124494	176505	233410	117559	1.5219	1.32	15.50	67.60	39.41

GPC trace of P9-1

2025/1/18 16:06 色谱图 D:\GPC-色谱图\2025\20250118\L-1250-4.2.prm 第1页/共1页

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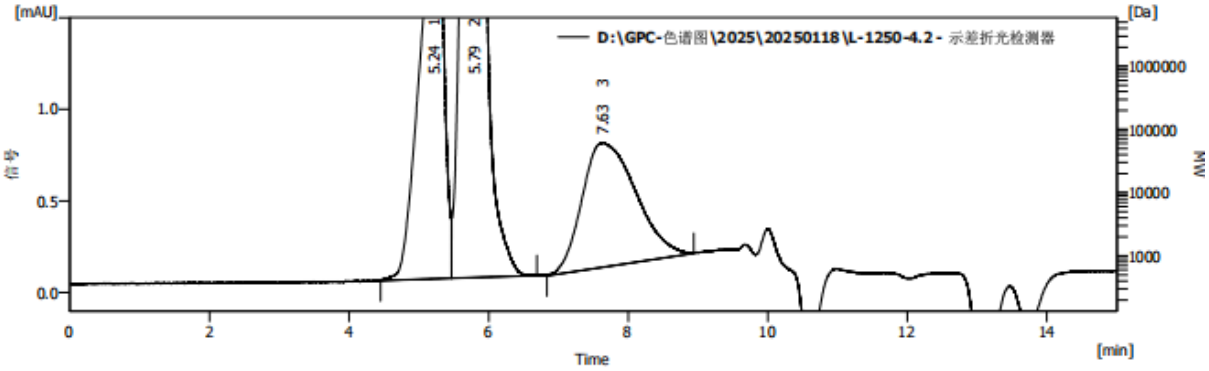
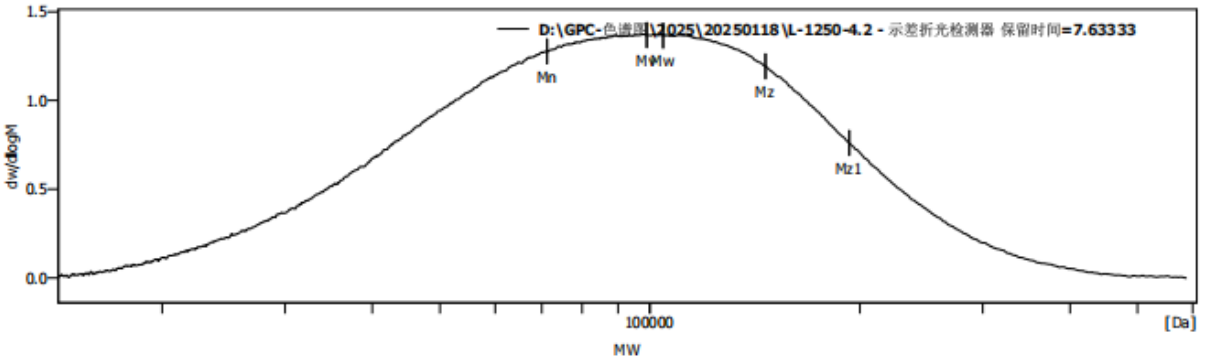
色谱图信息:

文件名	: D:\GPC-色谱图\2025\20250118\L-1250-4.2.prm	建立文件	: 2025/1/18 16:04:29
初始	: 采集, 采集启动2025/1/18 15:49:28	采集数据	: 2025/1/18 16:04:29
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2025/1/18 16:06:07, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2025/1/18 16:06:07
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\2024\校准曲线2024 12.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\2024\校准曲线202412 - 通用 窄峰流速修正. - D:\GPC-色谱图\2025\20250118\L-1250-4.2 - 示差折光检测器)
*方程式: Y = -0.01138*X^3 + 0.36163*X^2 - 4.33856*X + 22.16322*
相关因子: 0.9996848

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高 [mAU]	峰高 [%]	峰面积 [mAU.s]	峰面积 [%]
1	5.24	4.45	5.47	1.0000	53629043	60297528	82352621	126796915	220552498	77838529	1.3658	1.95	25.44	48.75	26.06
2	5.79	5.47	6.69	1.0000	9105289	7920756	9614282	11222272	12806283	9376563	1.2138	5.05	65.69	101.96	54.50
3	7.63	6.84	8.94	1.0000	114080	71254	104521	146471	193213	98980	1.4669	0.68	8.87	36.37	19.44

GPC trace of P13-1

2024/12/14 14:01 色谱图 D:\GPC-色谱图\2024\20241214\Y-0462-1.prm 第1页/共1页

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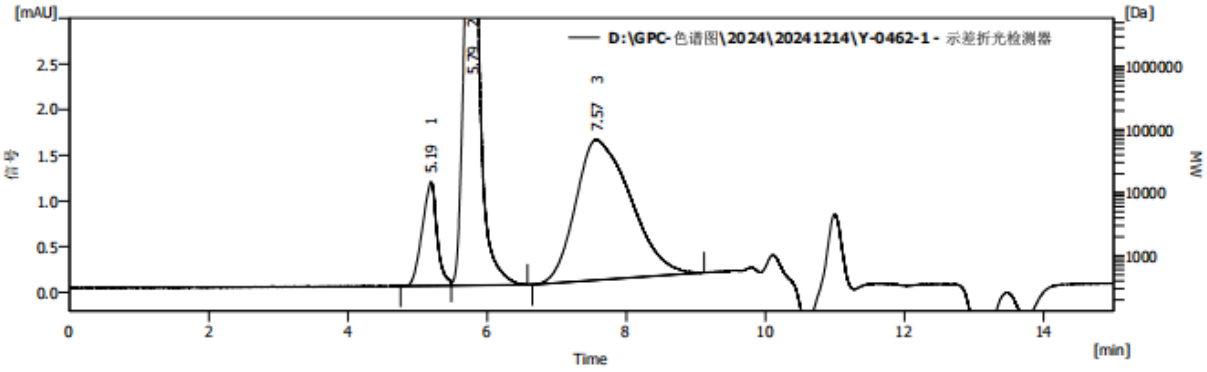
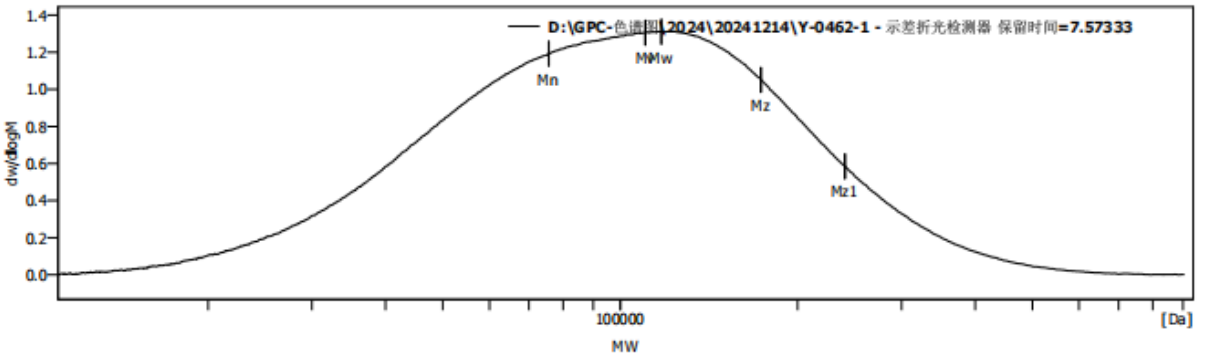
色谱图信息:

文件名	: D:\GPC-色谱图\2024\20241214\Y-0462-1.prm	建立文件	: 2024/12/14 14:00:28
初始	: 采集, 采集启动2024/12/14 13:45:27	采集数据	: 2024/12/14 14:00:27
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2024/12/14 14:01:21, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2024/12/14 14:01:21
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\2024\校准曲线2024 12.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\2024\校准曲线202412 - 通用窄峰流速修正. - D:\GPC-色谱图\2024\20241214\Y-0462-1 - 示差折光检测器)

*方程式: Y = -0.01138*X^3 + 0.36163*X^2 - 4.33856*X + 22.16322*

相关因子: 0.9996848

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高 [mAU]	峰高 [%]	峰面积 [mAU.s]	峰面积 [%]
1	5.19	4.76	5.48	1.0000	62619860	62270554	71296995	82006943	94998027	69841895	1.1450	1.14	14.12	16.84	9.34
2	5.79	5.48	6.58	1.0000	9082689	8074227	9288747	10267760	11165334	9134951	1.1504	5.38	66.77	78.93	43.78
3	7.57	6.65	9.12	1.0000	127630	75685	117452	173362	240566	110347	1.5518	1.54	19.12	84.51	46.88

GPC trace of P14-1

2025/1/9 16:23 色谱图 D:\GPC-色谱图\2025\20250109\L-1249-2.prm 第1页/共1页

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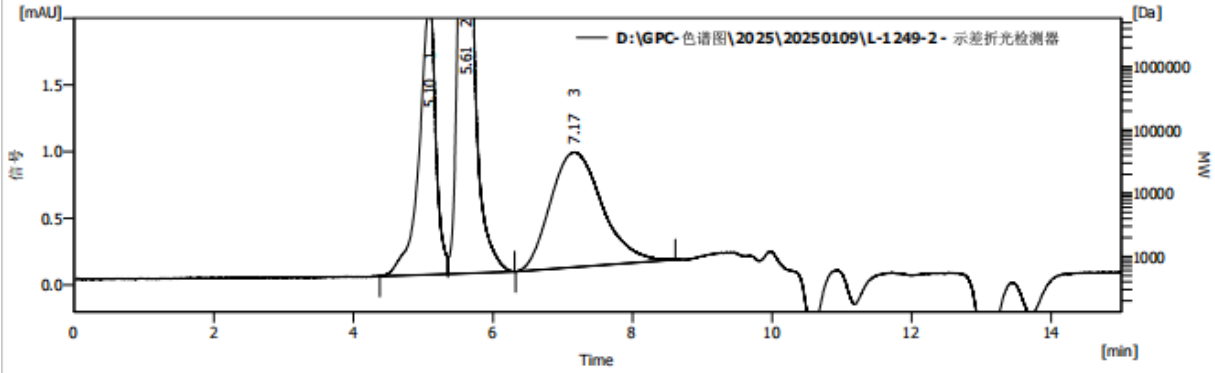
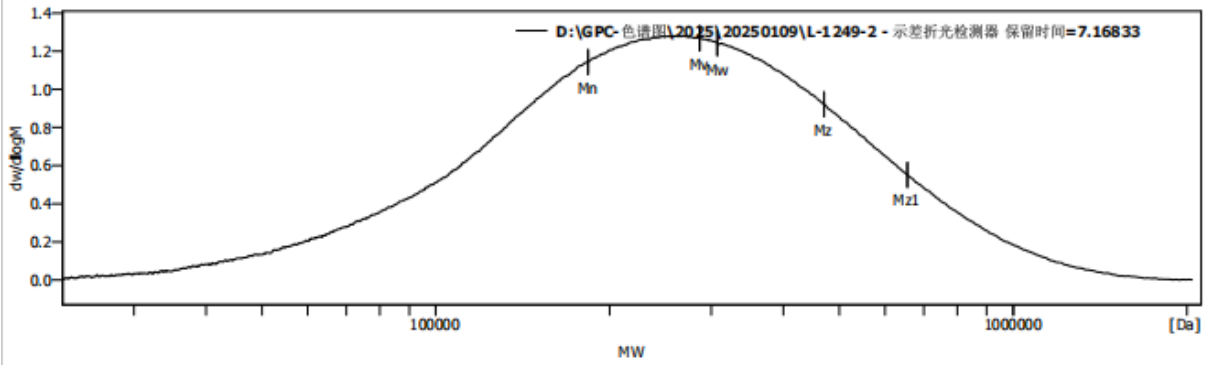
色谱图信息:

文件名	: D:\GPC-色谱图\2025\20250109\L-1249-2.prm	建立文件	: 2025/1/9 16:19:44
初始	: 采集, 采集启动2025/1/9 16:04:43	采集数据	: 2025/1/9 16:19:43
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2025/1/9 16:23:08, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2025/1/9 16:23:08
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\2024\校准曲线2024 12.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\2024\校准曲线202412 - 通用窄峰流速修正. - D:\GPC-色谱图\2025\20250109\L-1249-2 - 示差折光检测器)
*方程式: Y = -0.01138*X^3 + 0.36163*X^2 - 4.33856*X + 22.16322*
相关因子: 0.9996848

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高 [mAU]	峰高 [%]	峰面积 [mAU.s]	峰面积 [%]
1	5.10	4.38	5.35	1.0000	87095154	94790640	123733930	195255804	356175233	117268277	1.3053	1.98	22.47	33.58	22.11
2	5.61	5.35	6.31	1.0000	15525624	13526909	15391855	16890810	18262008	15155305	1.1379	5.98	67.73	73.87	48.63
3	7.17	6.32	8.61	1.0000	285181	183580	307490	470627	656004	286696	1.6750	0.86	9.80	44.44	29.26

GPC trace of P20-1

2024/12/13 13:29 色谱图 D:\GPC-色谱图\2024\20241213\Y-0461-2-1.prm 第1页/共1页

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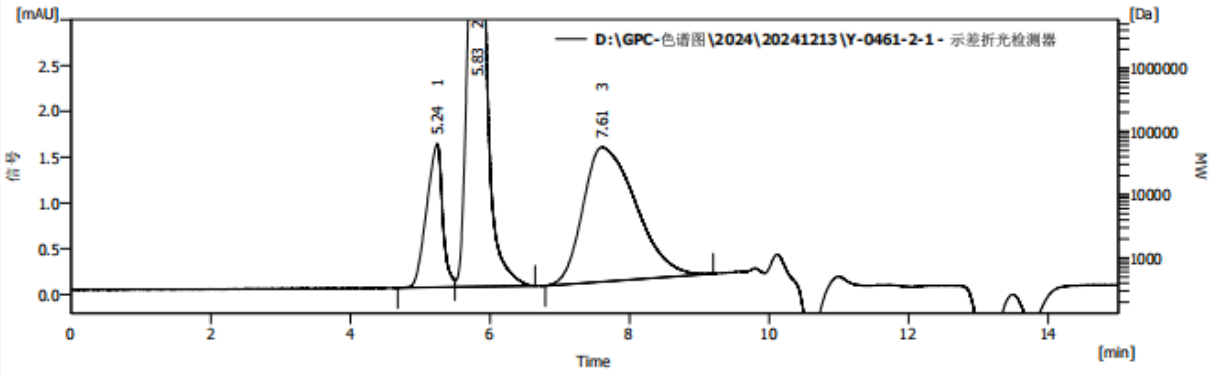
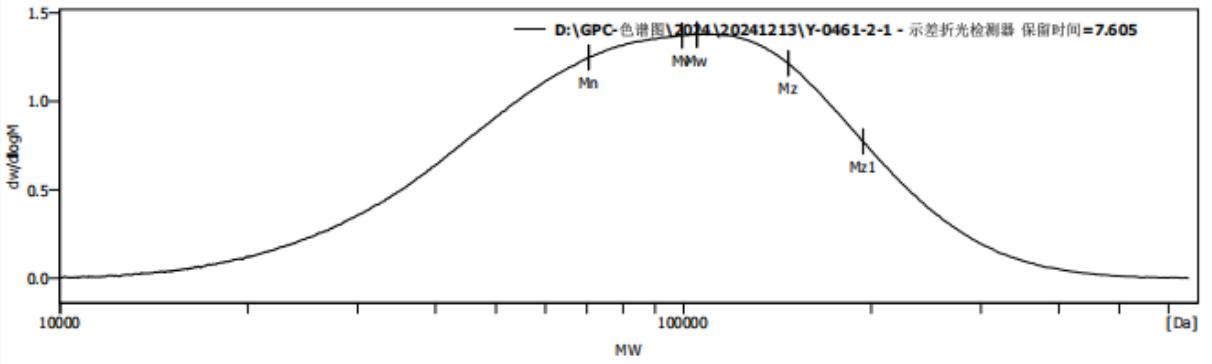
色谱图信息:

文件名	: D:\GPC-色谱图\2024\20241213\Y-0461-2-1.prm	建立文件	: 2024/12/13 13:17:22
初始	: 采集，采集启动2024/12/13 13:02:21	采集数据	: 2024/12/13 13:17:22
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2024/12/13 13:29:23, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2024/12/13 13:29:23
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\2024\校准曲线2024 12.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\2024\校准曲线2024 12 - 通用窄峰流速修正. - D:\GPC-色谱图\2024\20241213\Y-0461-2-1 - 示差折光检测器)
*方程式: Y = -0.01138*X^3 + 0.36163*X^2 - 4.33856*X + 22.16322*
相关因子: 0.9996848

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高[mAU]	峰高[%]	峰面积[mAU.s]	峰面积[%]
1	5.24	4.68	5.50	1.0000	51973192	56618723	65668887	77843539	95523314	64121132	1.1598	1.57	17.53	24.86	12.31
2	5.83	5.50	6.64	1.0000	8066345	7127185	8382573	9446237	10456388	8219149	1.1761	5.90	65.99	99.73	49.37
3	7.61	6.79	9.20	1.0000	120264	70489	105112	147282	194136	99489	1.4912	1.47	16.48	77.42	38.32

GPC trace of P21-1

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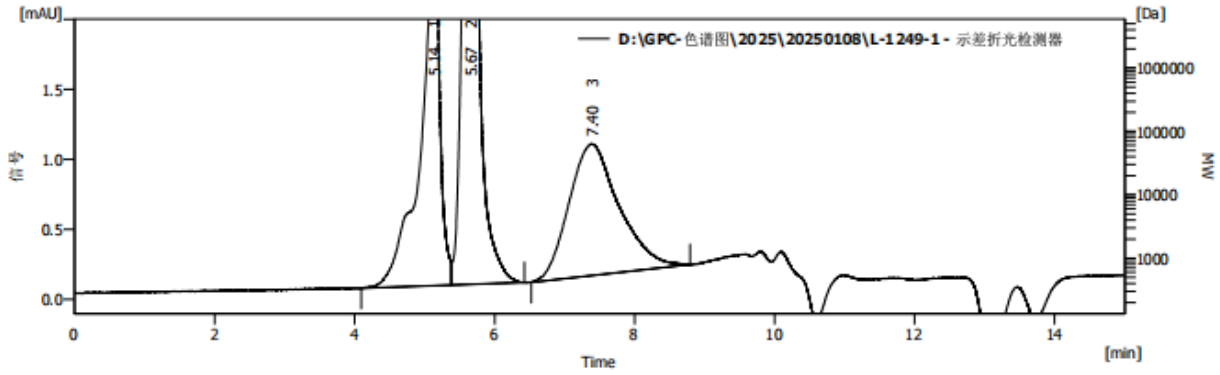
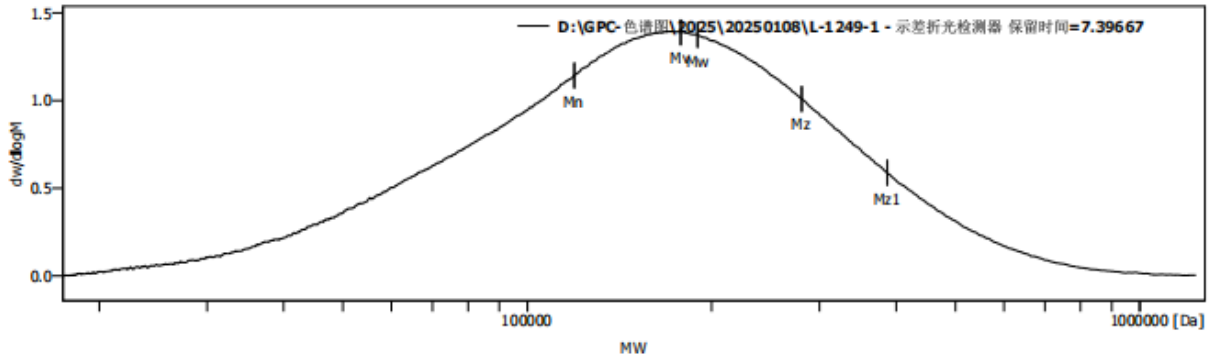
色谱图信息:

文件名	: D:\GPC-色谱图\2025\20250108\L-1249-1.prm	建立文件	: 2025/1/8 13:51:17
初始	: 采集, 采集启动2025/1/8 13:36:16	采集数据	: 2025/1/8 13:51:17
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2025/1/8 13:52:55, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2025/1/8 13:52:55
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\2024\校准曲线2024 12.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\2024\校准曲线20241 2 - 通用窄峰流速修正. - D:\GPC-色谱图\2025\20250108\L-1249-1 - 示差折光检测器)
*方程式: Y = -0.01138*X^3 + 0.36163*X^2 - 4.33856*X + 22.16322*
相关因子: 0.9996848

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高[mAU]	峰高[%]	峰面积[mAU.s]	峰面积[%]
1	5.14	4.09	5.38	1.0000	74538373	91998565	152626643	394687859	1079206332	136041559	1.6590	2.92	30.37	49.60	28.17
2	5.67	5.38	6.42	1.0000	13028128	11765396	13561909	15061344	16490563	13330010	1.1527	5.76	59.85	79.65	45.25
3	7.40	6.52	8.79	1.0000	179406	119324	189650	280529	386883	177961	1.5894	0.94	9.78	46.79	26.58

GPC trace of P27-1

2024/12/11 14:32 色谱图 D:\GPC-色谱图\2024\20241211\Y-0458-2.prm 第1页/共1页

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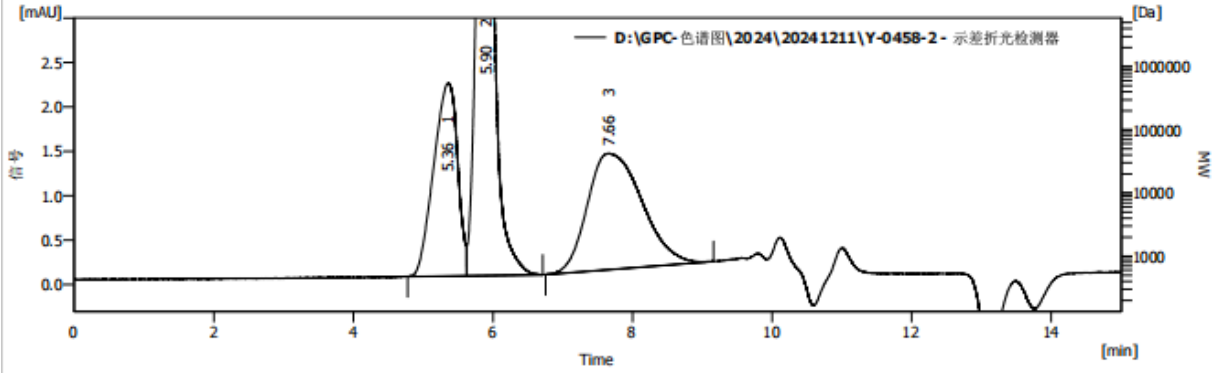
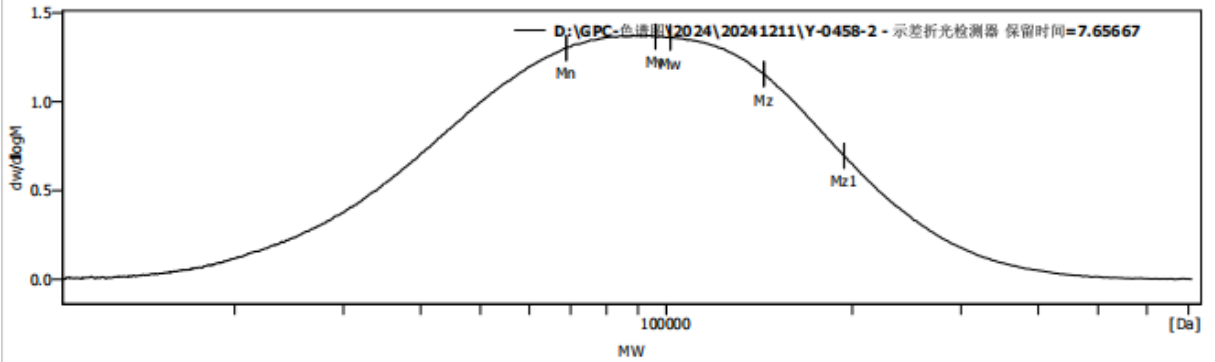
色谱图信息:

文件名	: D:\GPC-色谱图\2024\20241211\Y-0458-2.prm	建立文件	: 2024/12/11 14:31:08
初始	: 采集, 采集启动2024/12/11 14:16:08	采集数据	: 2024/12/11 14:31:08
...原始项目	: 仪器测试	通过	: Administrator

打印版本信息:

打印版本	: - #2; 2024/12/11 14:32:02, IA: 8.0 Rev.1 最近(链接的校准)	打印数据	: 2024/12/11 14:32:02
编辑格式	: D:\W5100\DataFiles\Common\模板.sty	通过	: Administrator
校准文件	: D:\校准曲线\2024\校准曲线2024 12.cal		
项目	: 仪器测试		





结果表(D:\校准曲线\2024\校准曲线20241 2 - 通用窄峰流速修 正. - D:\GPC-色谱图\2024\20241211\Y-0458-2 - 示差折光检测器)
*方程式: Y = -0.01138*X^3 + 0.36163*X^2 - 4.33856*X + 22.16322*
相关因子: 0.9996848

	最大保留时间	起始保留时间	结束保留时间	流速修正	Mp	Mn	Mw	Mz	Mz1	Mv	PD	峰高 [mAU]	峰高 [%]	峰面积 [mAU.s]	峰面积 [%]
1	5.36	4.78	5.62	1.0000	34985449	36820376	47233874	62543191	82164604	45335349	1.2828	2.18	21.14	51.73	21.90
2	5.90	5.62	6.71	1.0000	6556716	5856162	6761263	7537545	8264232	6641730	1.1546	6.80	66.12	113.30	47.96
3	7.66	6.75	9.16	1.0000	109258	68888	101584	143934	194131	96103	1.4746	1.31	12.74	71.20	30.14