Supplmentary Materials for Heterocycles manuscript COM-13-12813 entitiled:

Synthesis of 1,4-diarylfluorenone and 1,4-diarylfluorene

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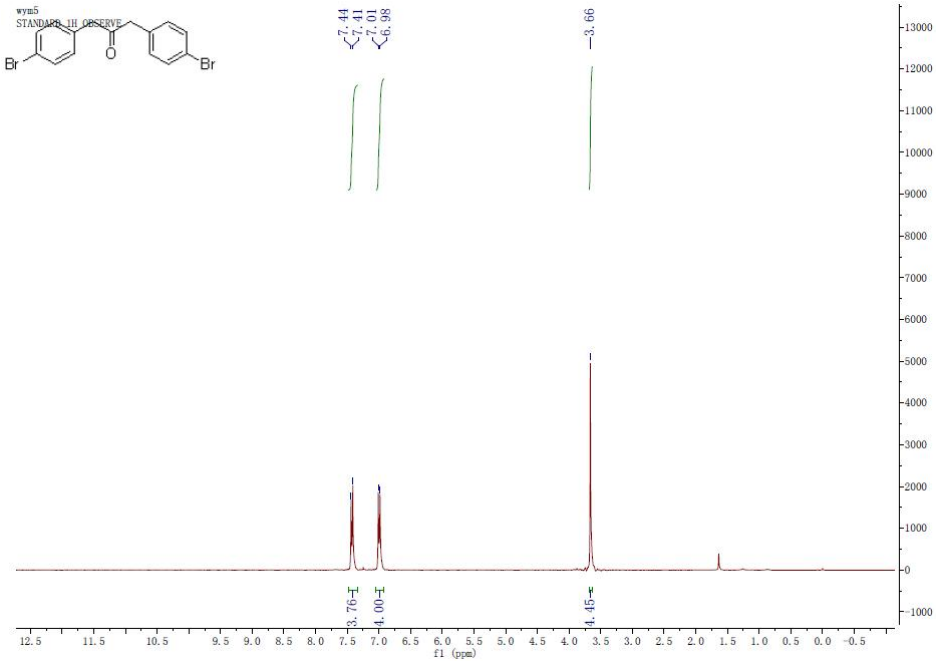
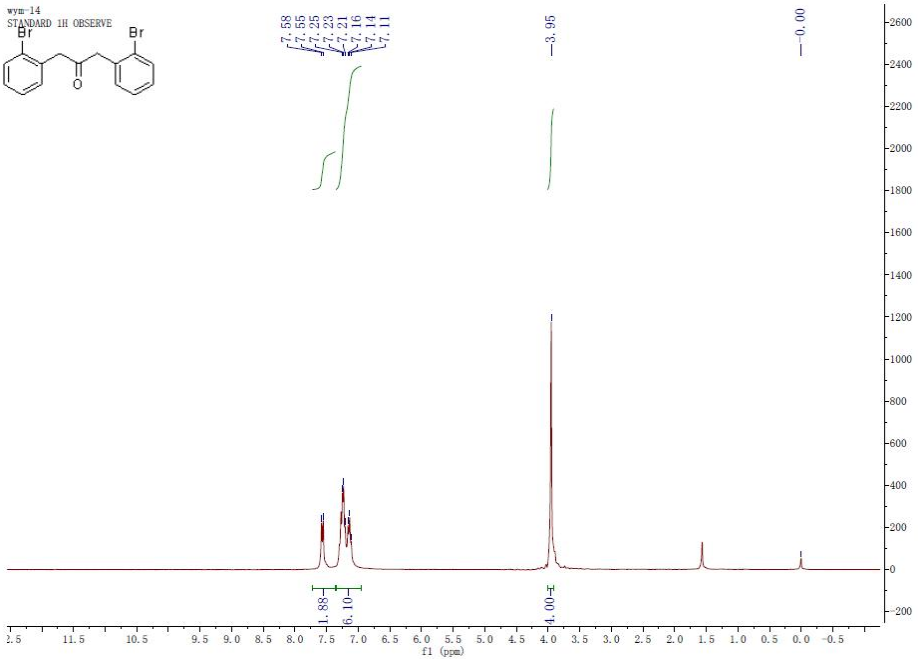
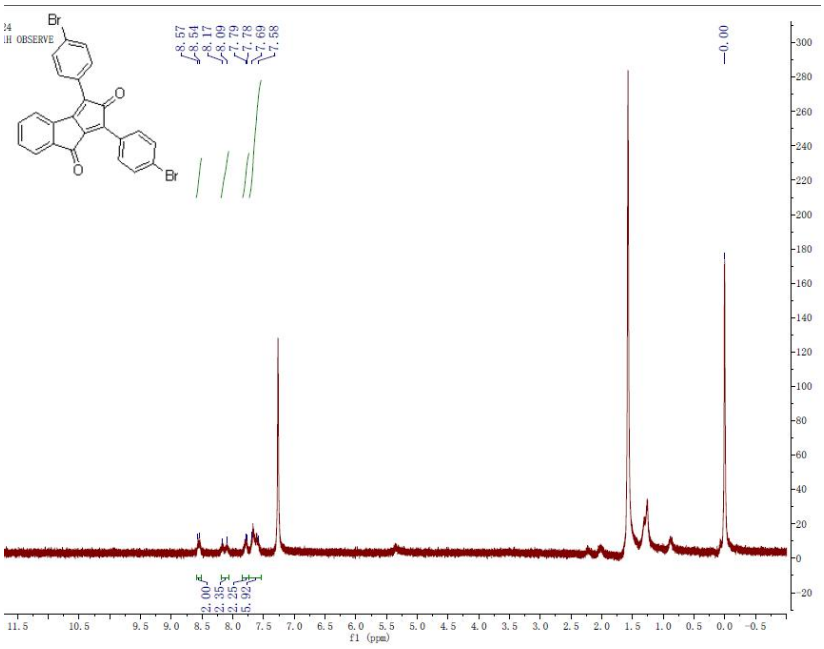
Proton NMR, carbon NMR and MS for some key intermediates and final products.



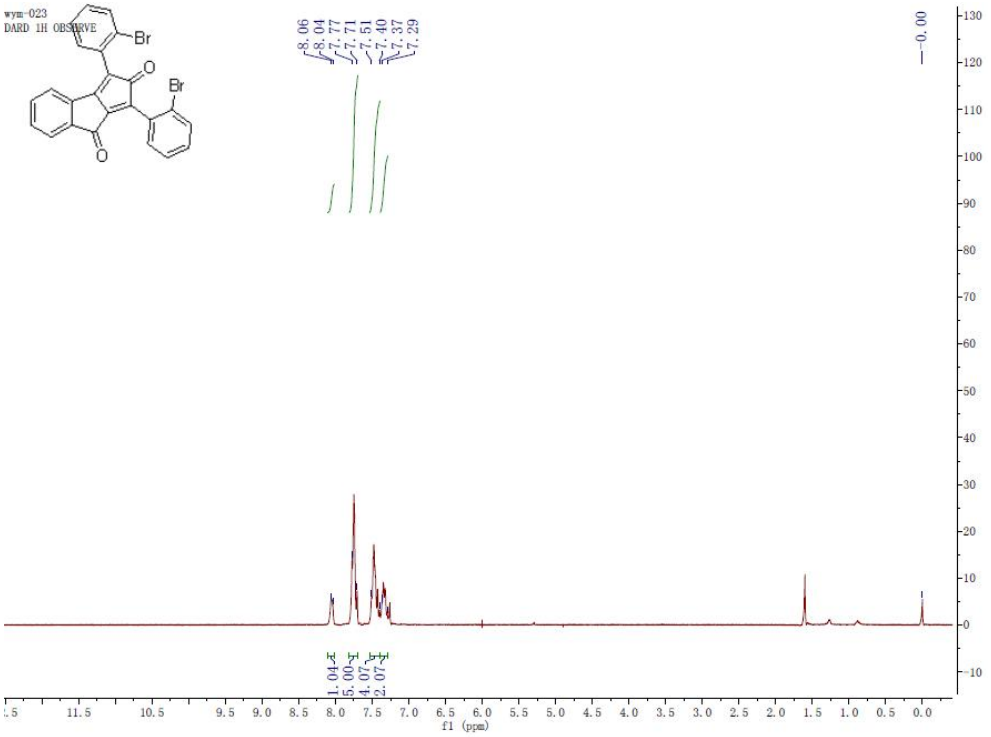
^{1}H NMR for compound 2b

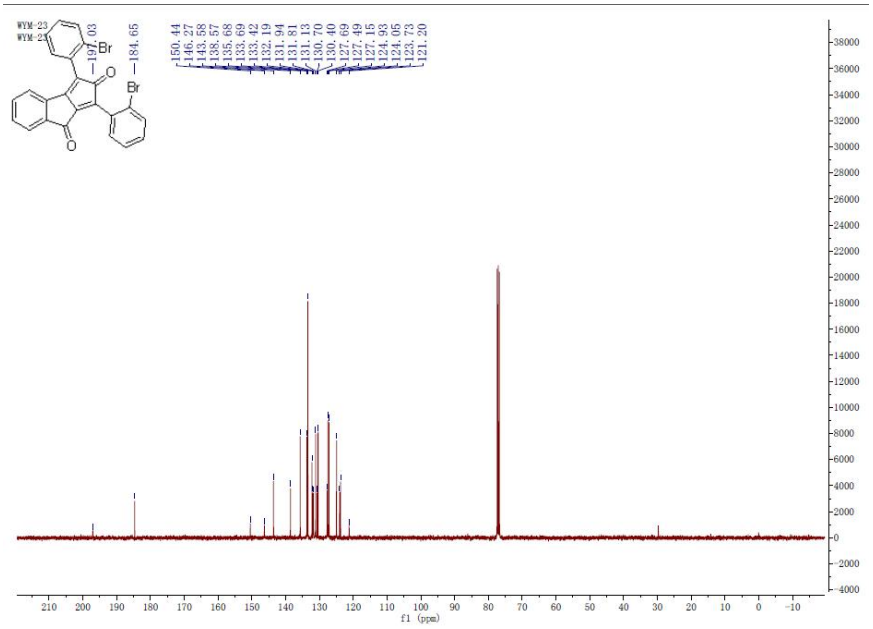


^{1}H NMR for compound 2c

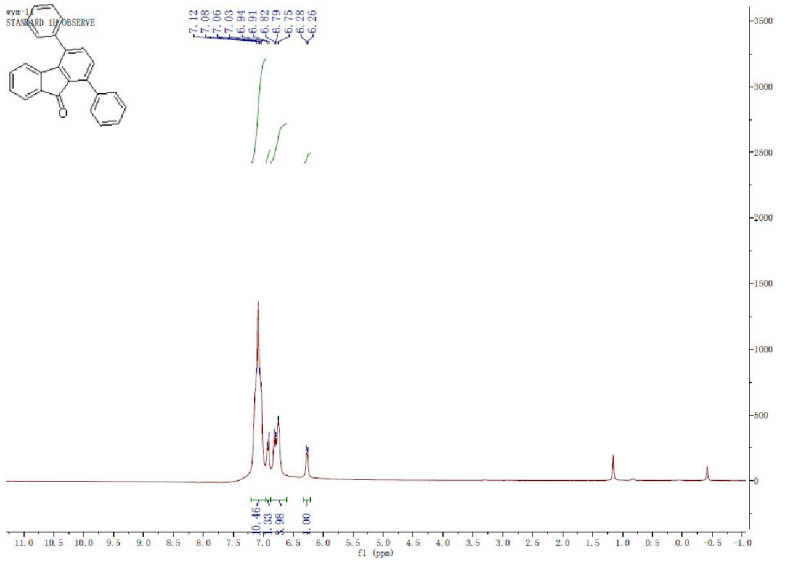


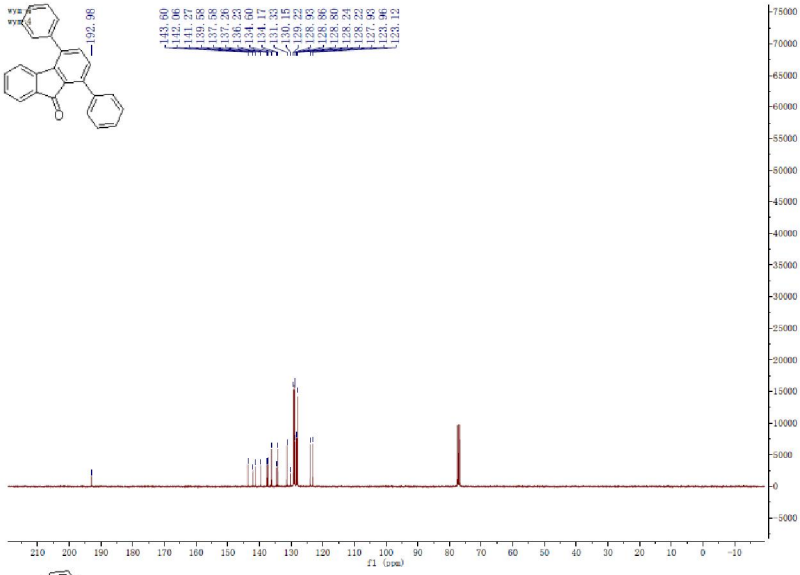
^{1}H NMR for compound 3b (high quality proton NMR could not be obtained due to the low solubility))

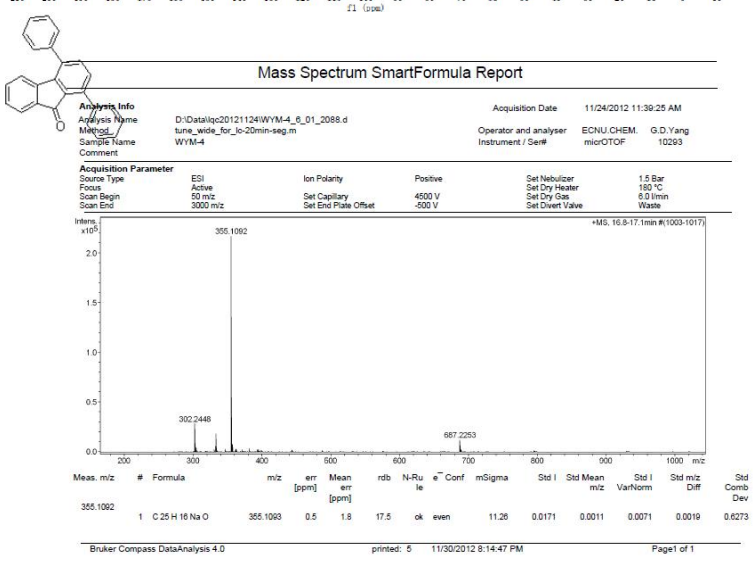




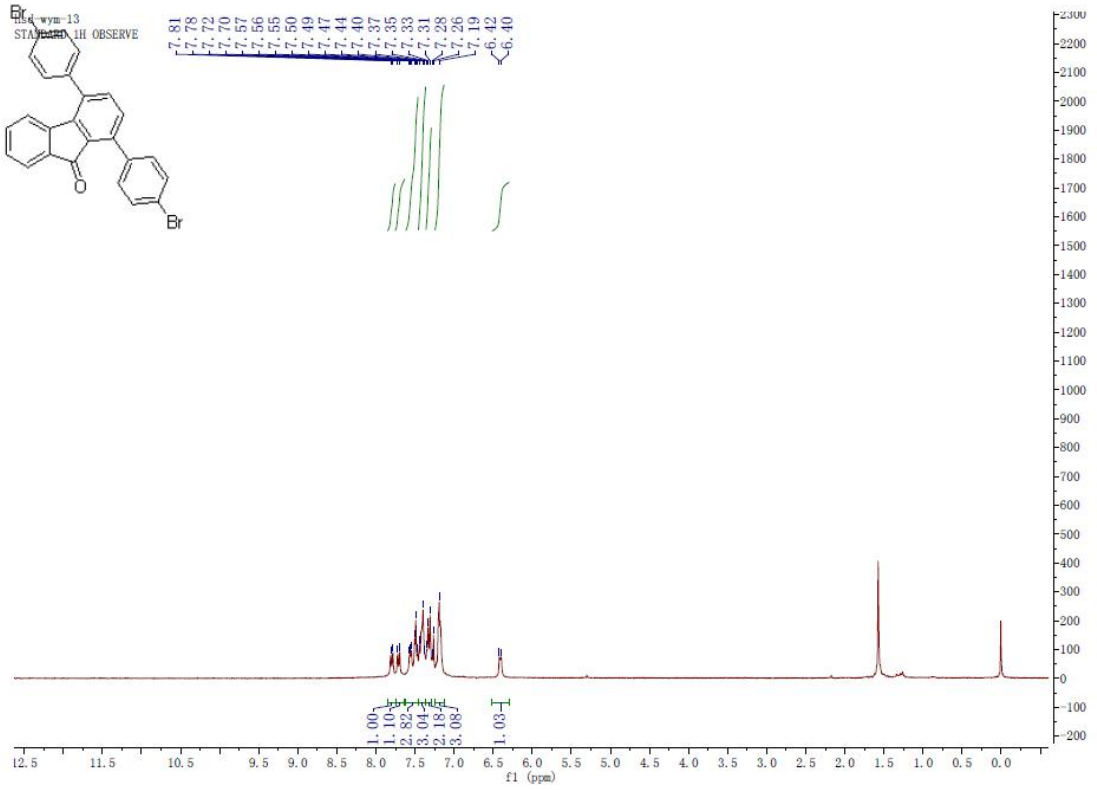
^{1}H NMR and ^{13}C NMR for compound 3c

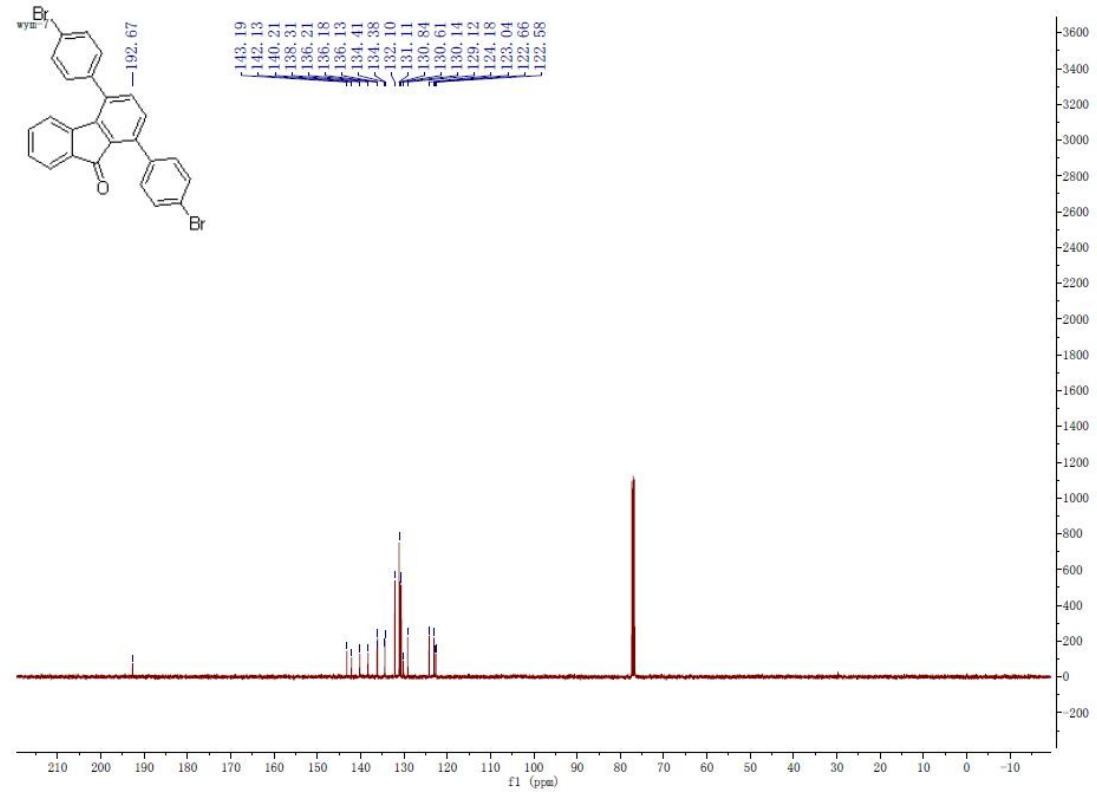




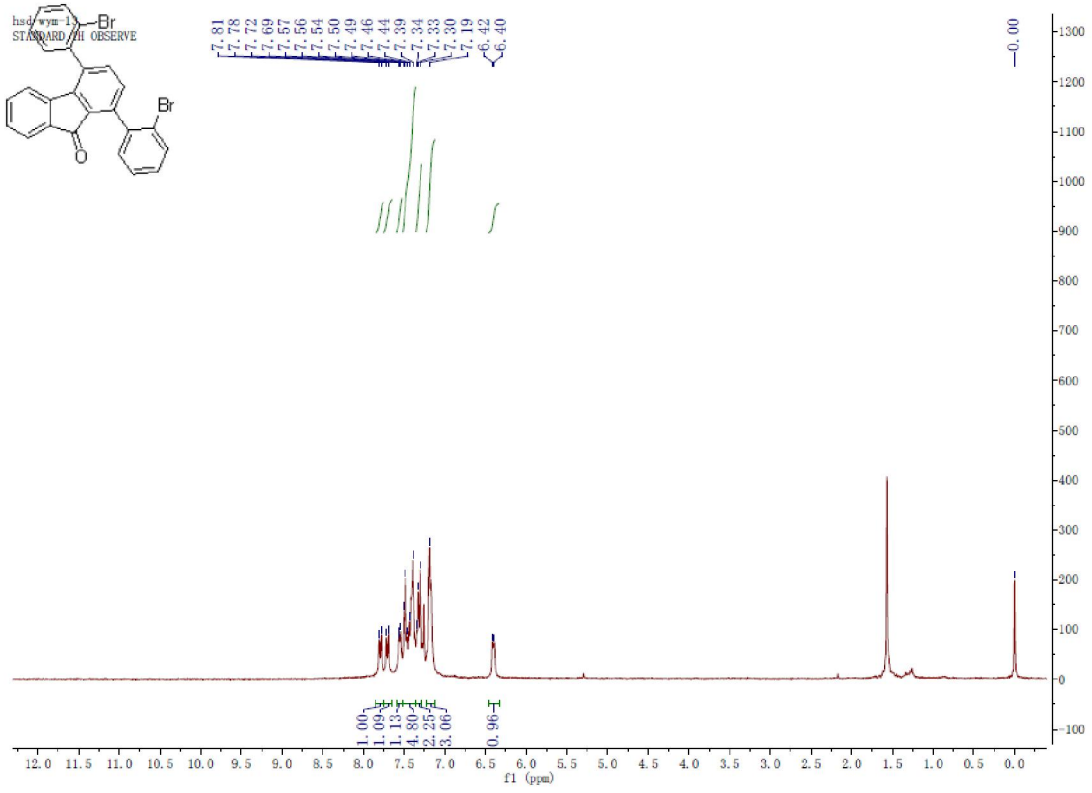


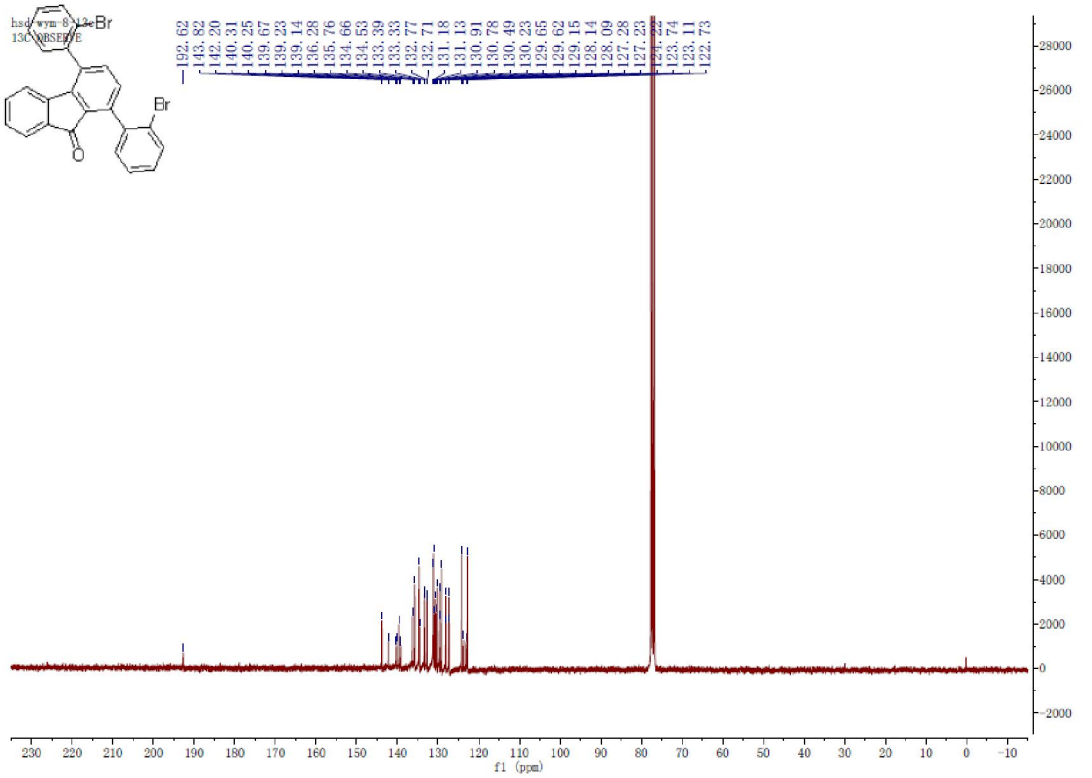
^{1} H NMR , ^{13} C NMR and MS for compound 4a



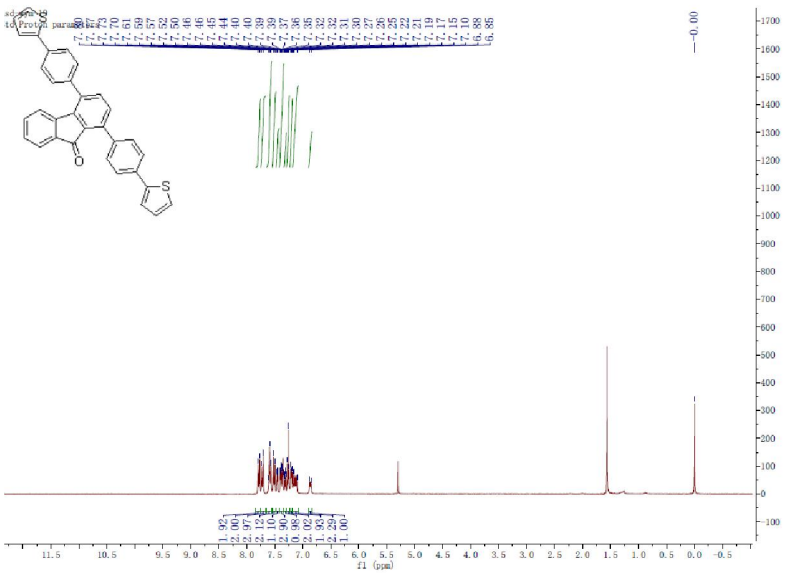


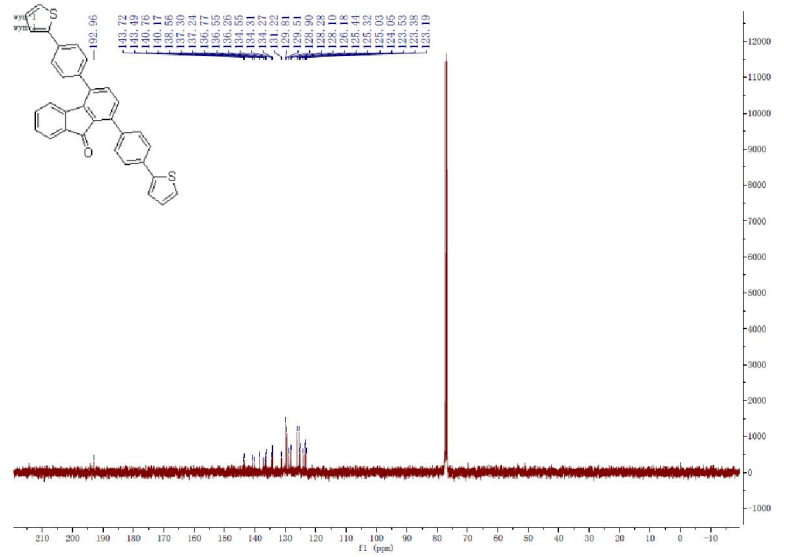
^{1}H NMR and ^{13}C NMR for compound 4b





^{1} H NMR and ^{13} C NMR for compound 4c





Mass Spectrum SmartFormula Report

Analysis Info

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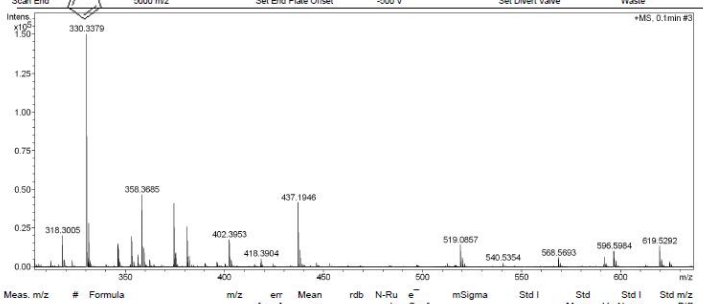
Method	tune_wide.m	Operator and analyser	ECNU.CHEM. G.D.Yang
Sample Name	WYM-1	Instrument / Ser#	micrOTOF 10293
Comment			

Acquisition Parameter

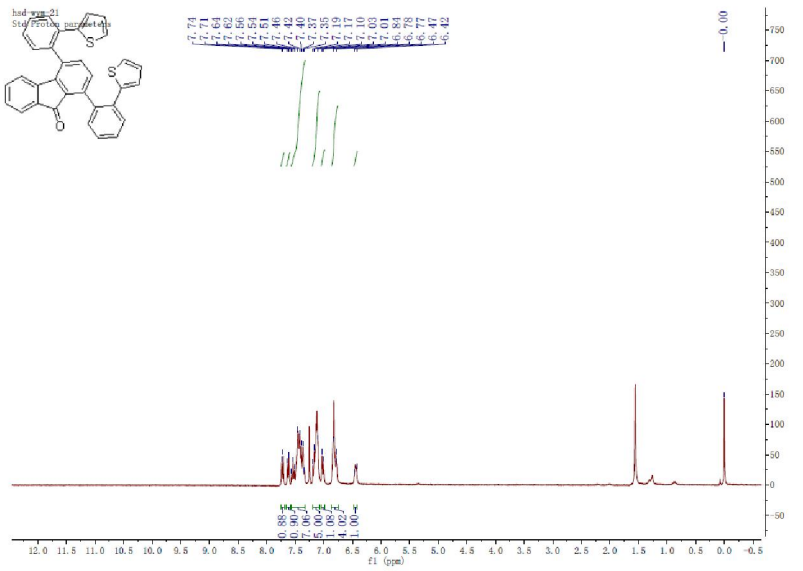
Source Type	ESI	Ion Polarity	Positive	Set Nebulizer	0.4 Bar
Focus	Active			Set Dry Heater	180 °C
Scan Begin	50 m/z	Set Capillary	4500 V	Set Dry Gas	4.0 l/min
Scan End	5000 m/z	Set End Plate Offset	-500 V	Set Divert Valve	Waste

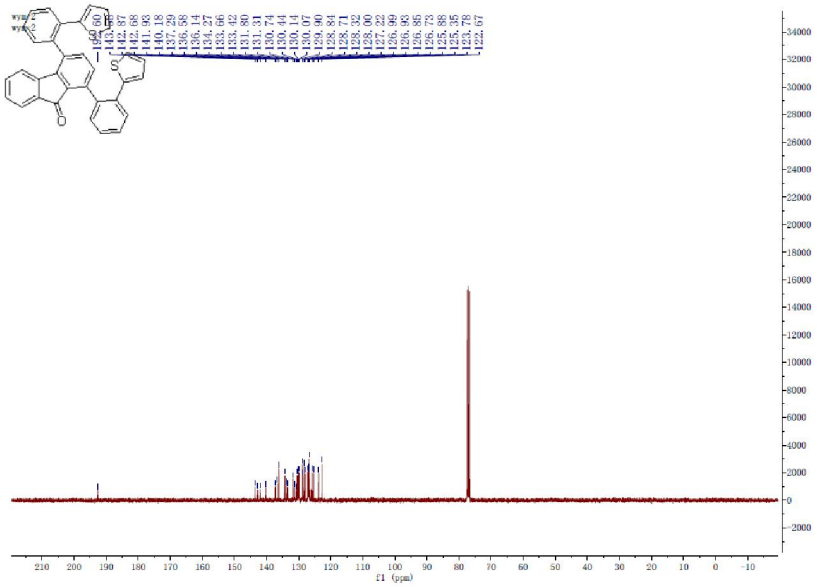


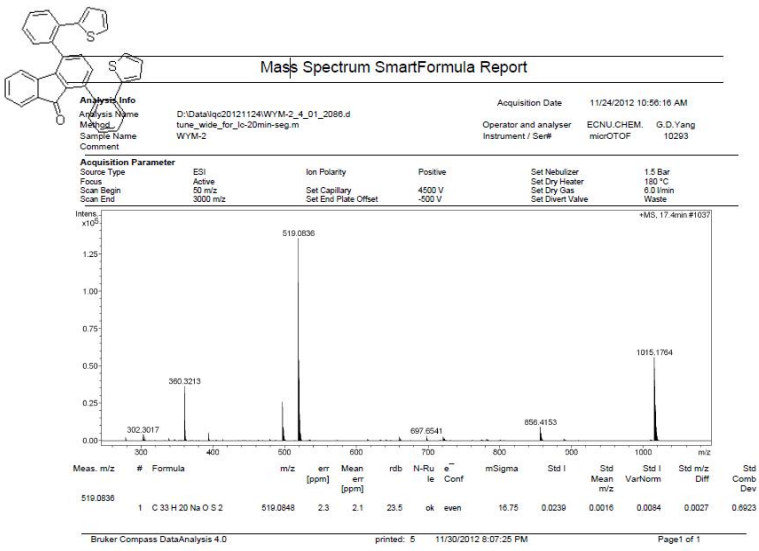
Meas. m/z	#	Formula	m/z	err [ppm]	Mean err [ppm]	rdb	N-Rule	e⁻ Conf	mSigma	Std I	Std Mean m/z	Std I VarNorm	Std m/z Diff	Std Comb Dev
519.0857	1	C 33 H 20 Na O S 2	519.0848	-1.9	-2.9	23.5	ok	even	17.62	0.0245	0.0018	0.0073	0.0020	0.4988

Bruker Compass DataAnalysis 4.0 printed: 5 12/6/2012 9:07:18 AM Page1 of 1

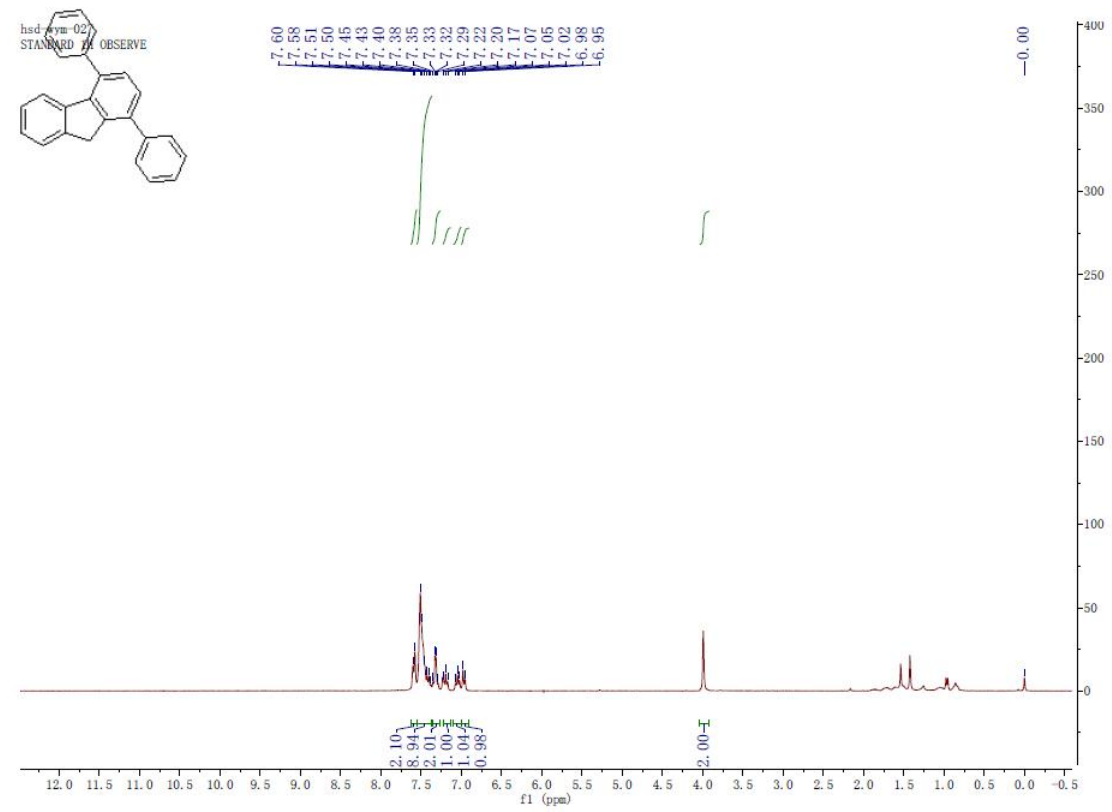
^{1} H NMR , ^{13} C NMR and MS for compound 4d

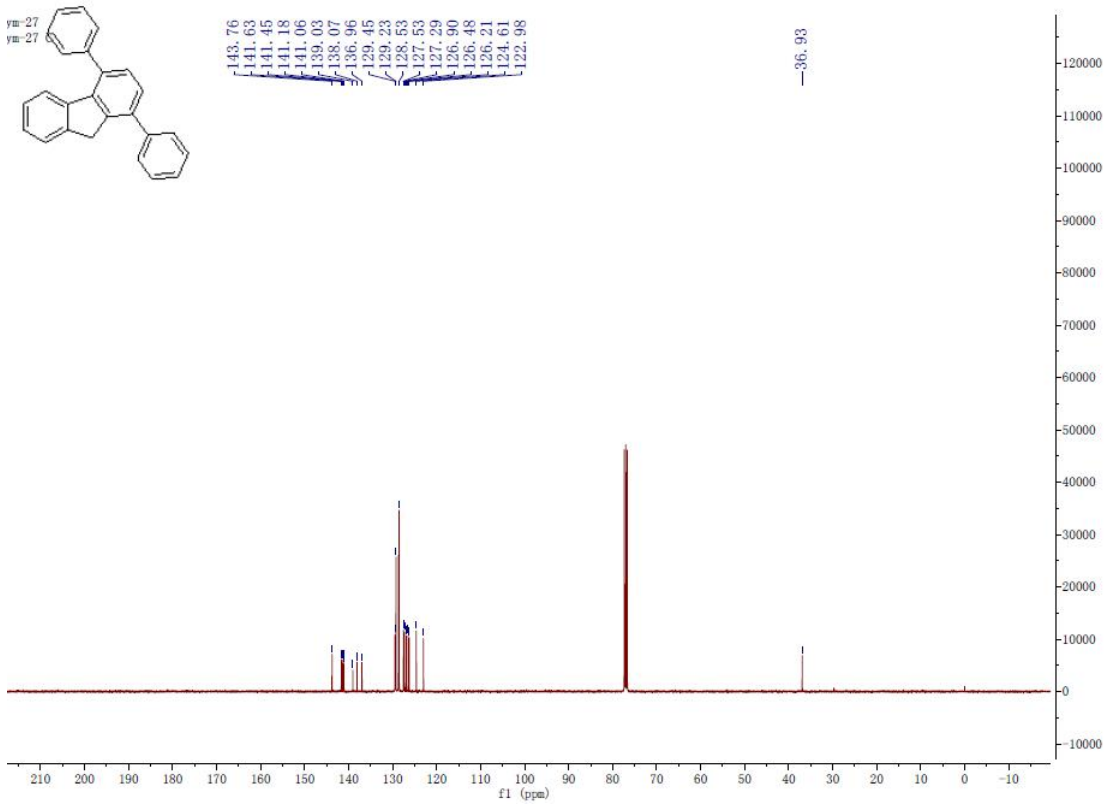




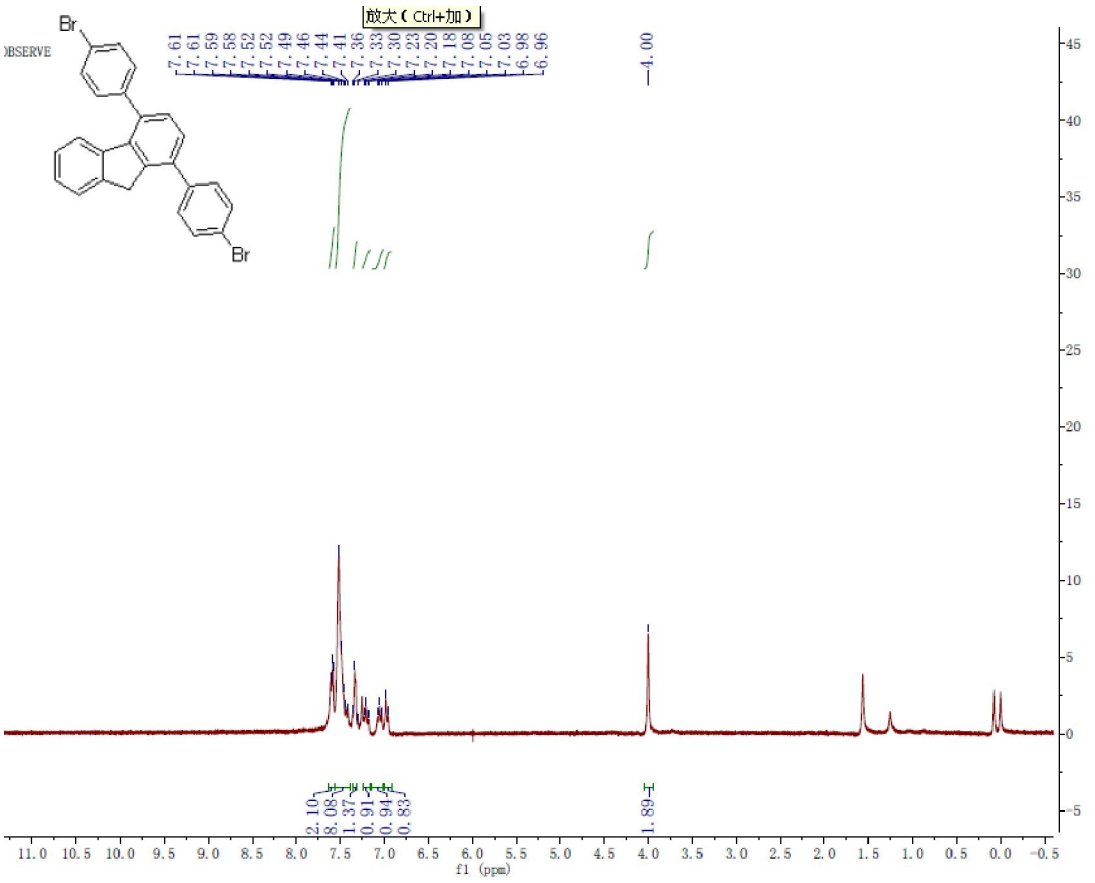


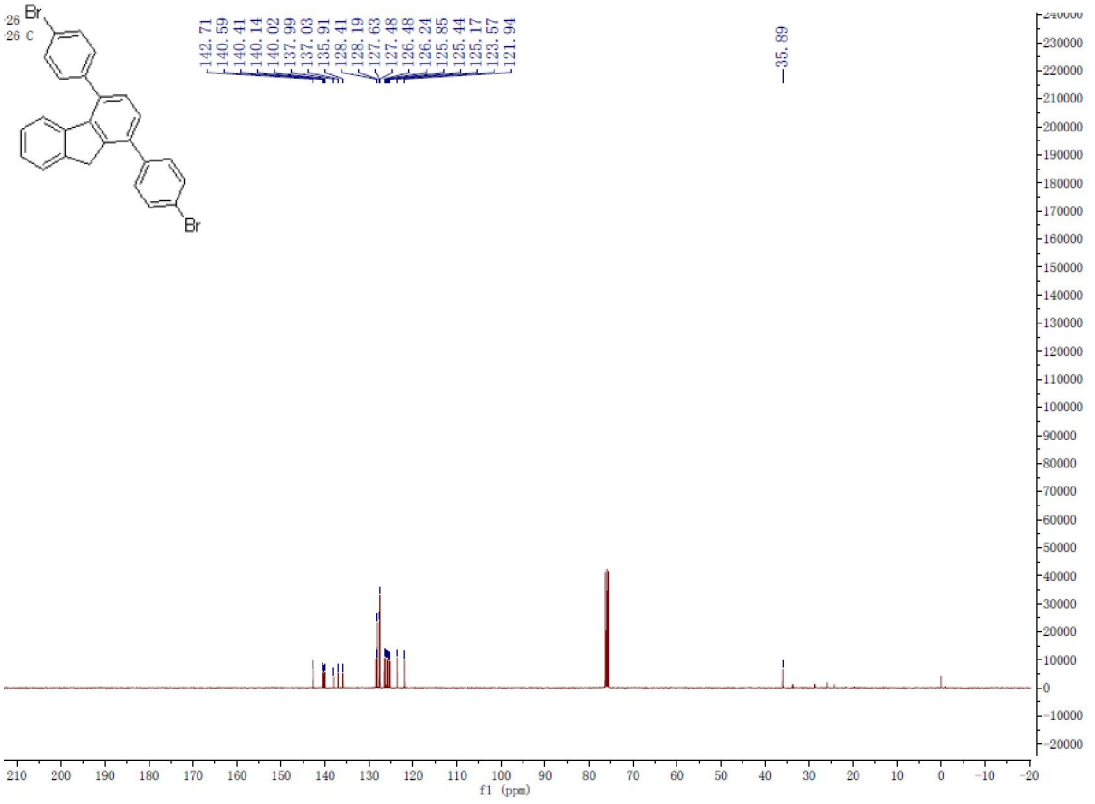
^{1} H NMR, ^{13} C NMR and MS for compound 4e



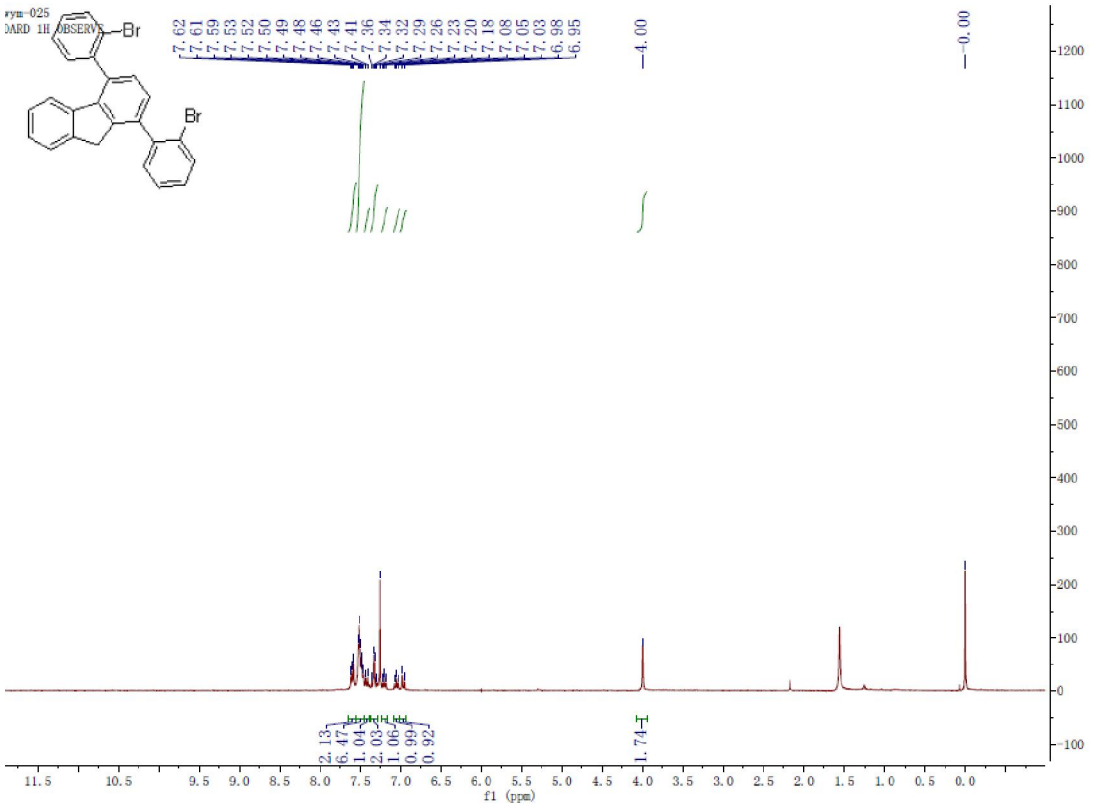


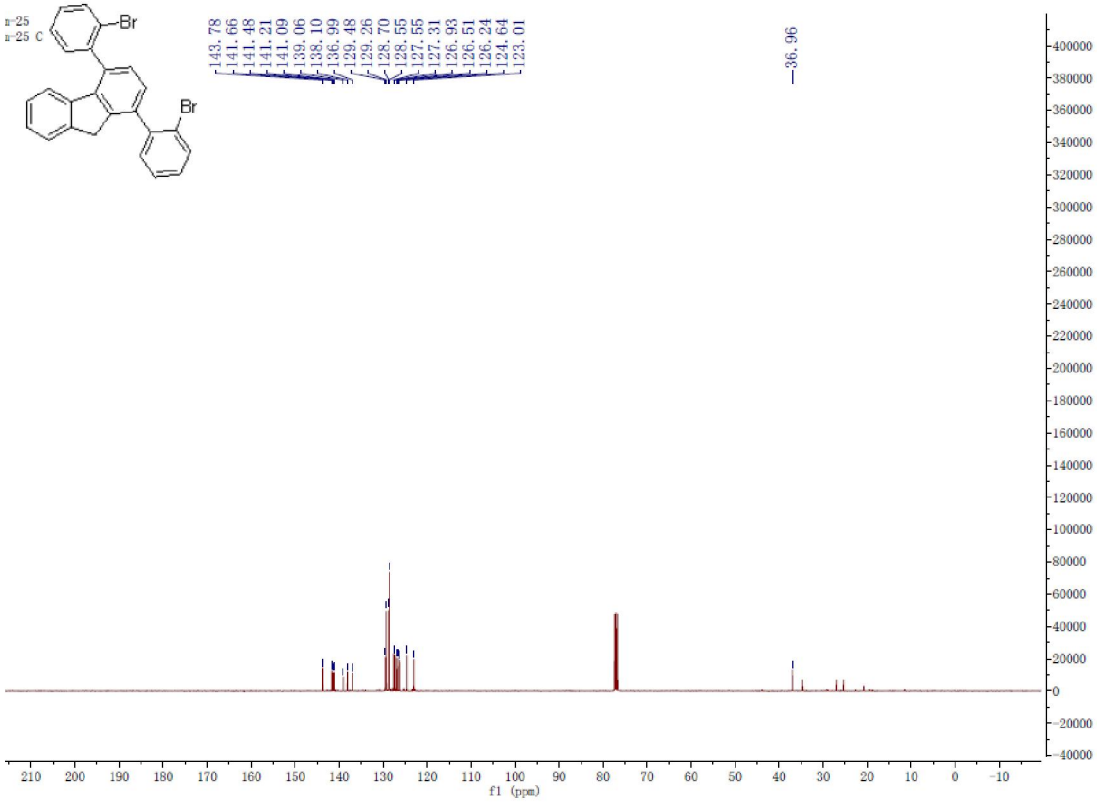
^{1}H NMR and ^{13}C NMR for compound 5a



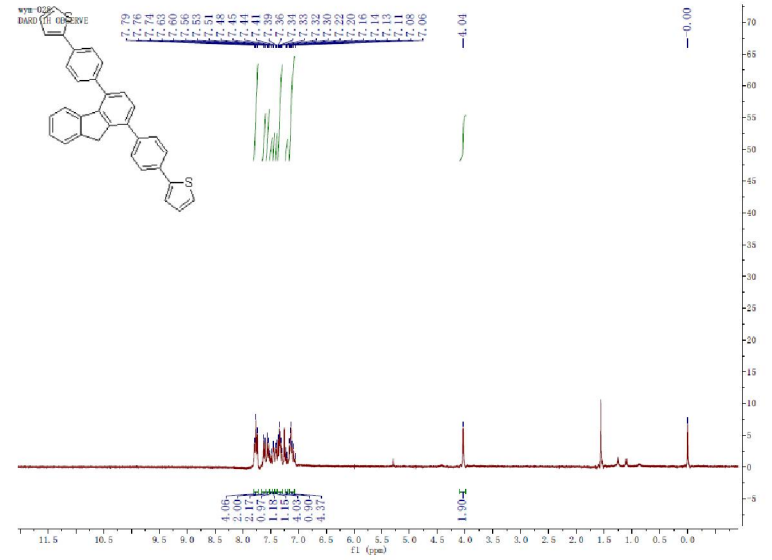


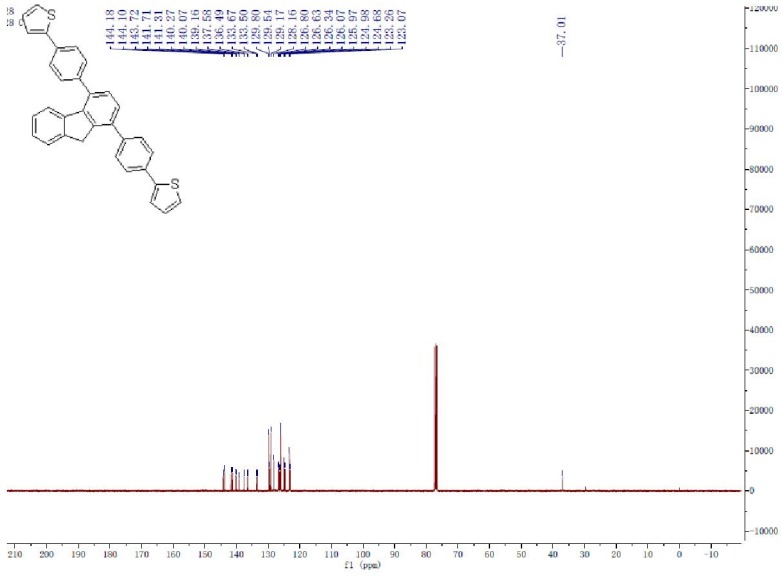
^{1} H NMR and ^{13} C NMR for compound5b

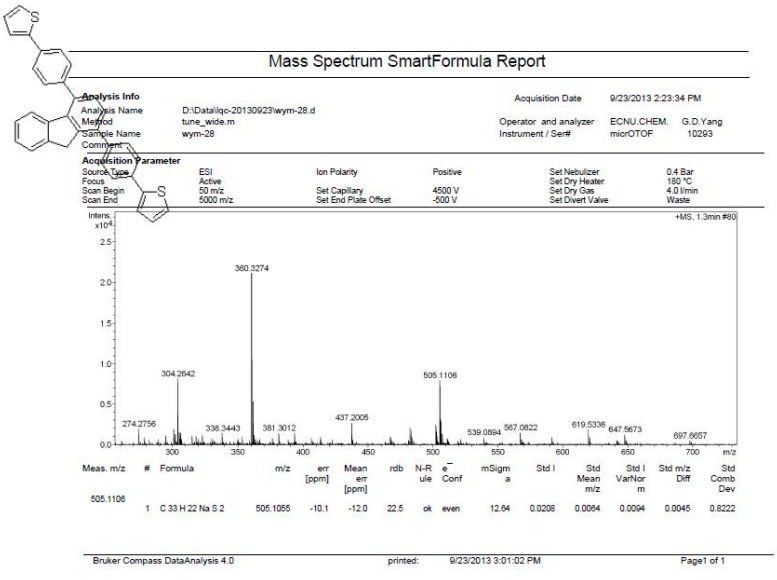




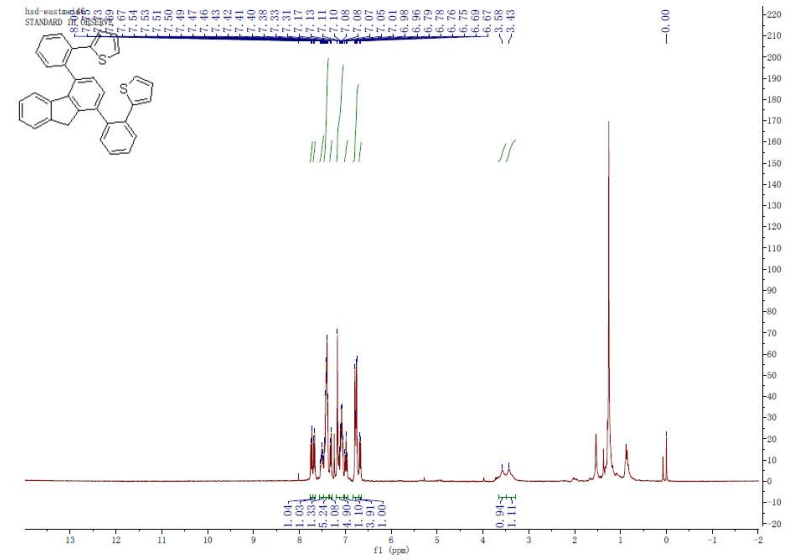
^{1} H NMR and ^{13} C NMR for compound 5c

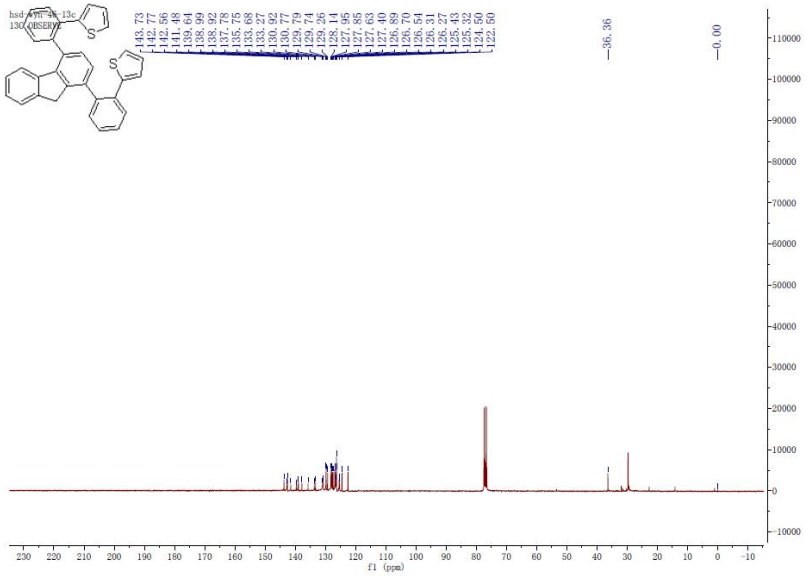






^{1}H NMR, ^{13}C NMR and MS for compound 5d





Mass Spectrum SmartFormula Report

Analysis Info

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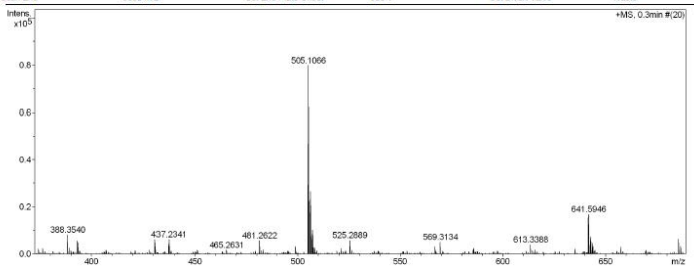
Sample Name	wym-46	Instrument / Ser#	micrOTOF 10293
Comment			

Acquisition Parameter

Source Type	ESI	Ion Polarity	Positive	Set Nebulizer	1.5 Bar
Focus	Active			Set Dry Heater	180 °C
Scan Begin	50 m/z	Set Capillary	4500 V	Set Dry Gas	6.0 l/min
Scan End	5000 m/z	Set End Plate Offset	-500 V	Set Divert Valve	Waste



Meas. m/z	#	Formula	m/z	err [ppm]	Mean err [ppm]	rdb	N-Rule	e⁻ Conf	mSigma	Std I	Std Mean m/z	Std I VarNorm	Std m/z Diff	Std Comb Dev
505.1066	1	C 33 H 22 Na S 2	505.1055	-2.1	-1.9	22.5	ok	even	22.74	0.0393	0.0014	0.0110	0.0023	0.5514

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^{1} H NMR, ^{13} C NMR and MS for compound 5e