

## **$\chi$ -Shaped bis(areno)-1,4-dihydropyrrolo[3,2-*b*]pyrroles generated by oxidative aromatic coupling**

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## 1. General remarks.

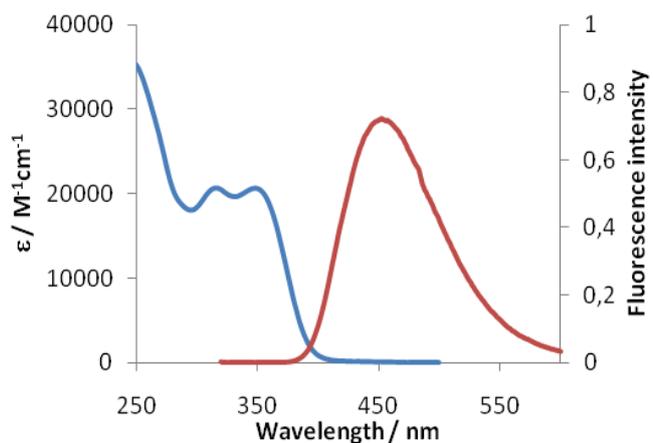
All reagents and solvents were purchased from commercial sources and were used as received unless otherwise noted. Reagent grade solvents ( $\text{CH}_2\text{Cl}_2$ , hexanes) were distilled prior to use. DMF was dried over magnesium sulfate, then distilled and stored under argon. Transformations with moisture and oxygen sensitive compounds were performed under a stream of argon. The reaction progress was monitored by means of thin layer chromatography (TLC), which was performed on aluminum foil plates, covered with Silica gel 60 F<sub>254</sub> or Aluminum oxide 60 F<sub>254</sub> (neutral). Products purification was done by means of column chromatography with Kieselgel 60 or Aluminum oxide. Occasionally, dry column vacuum chromatography (DCVC) for purification of products obtained was performed using Silica gel Type D 5F. The identity and purity of prepared compounds were proved by <sup>1</sup>H NMR and <sup>13</sup>C NMR spectrometry as well as by MS-spectrometry (*via* EI-MS or ESI-MS). For HRMS measurements both quadruple and TOF mass analyzer types were used. NMR spectra were measured on 500 MHz, 600 MHz or 400 MHz instruments with TMS as internal standard. All chemical shifts are given in ppm. All melting points for crystalline products were measured with automated melting point apparatus and were given without correction. The absorbance and fluorescence spectra were measured in dichloromethane.

### Linear optical measurements

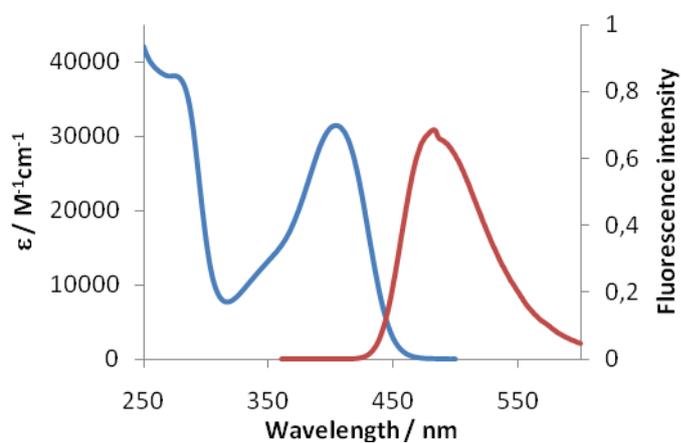
Steady-state fluorescence measurements were performed with dilute solutions ( $10^{-6}\text{M}$ , optical density < 0.1) contained in standard 1 cm quartz cuvettes at room temperature. Compounds were dissolved in dichloromethane unless otherwise noted. Emission spectra were obtained, for each compound, under excitation at  $\lambda=350$  nm. Fluorescence quantum yields were measured by using quinine hemisulphate monohydrate in 0.5M sulfuric acid as a standard.

## 2. Normalized absorption and emission spectra for synthesized compounds.

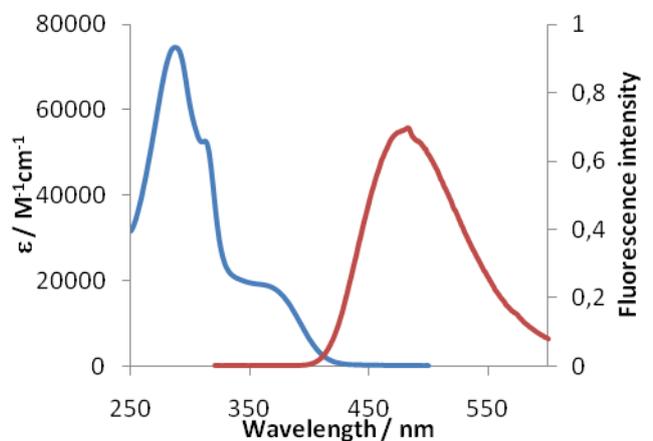
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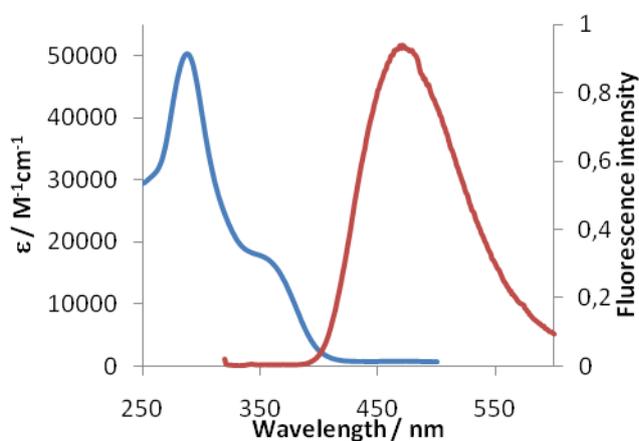
4b



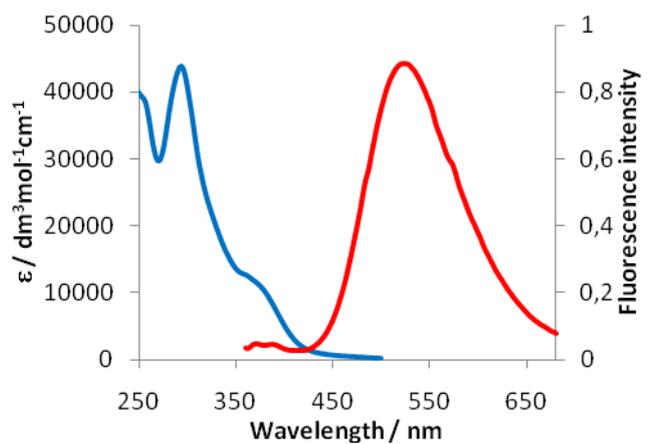
4c



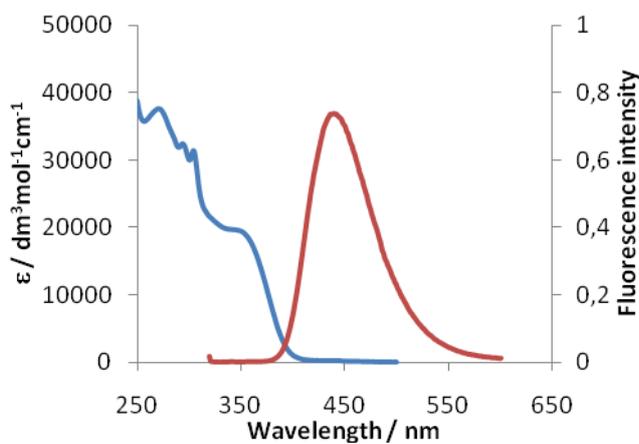
4d

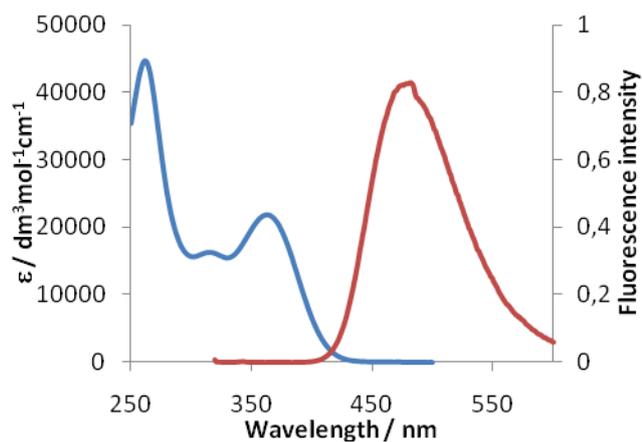
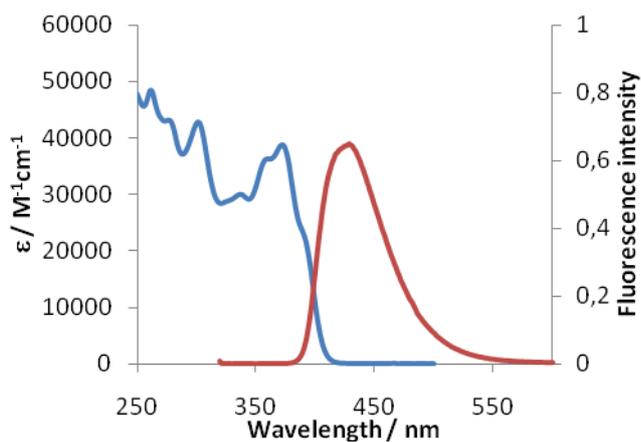
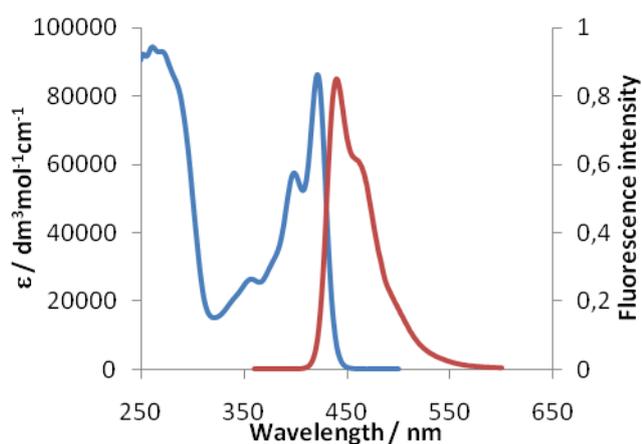
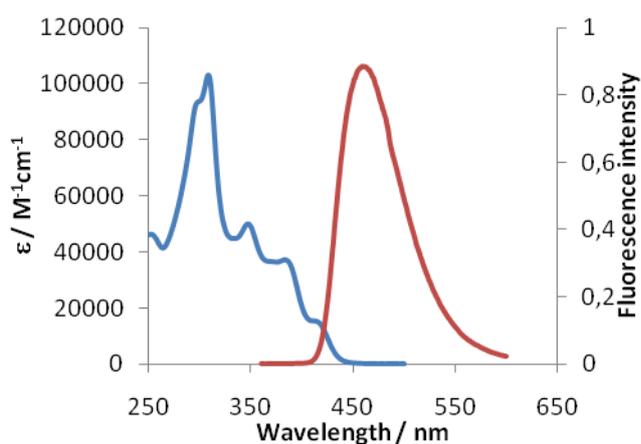
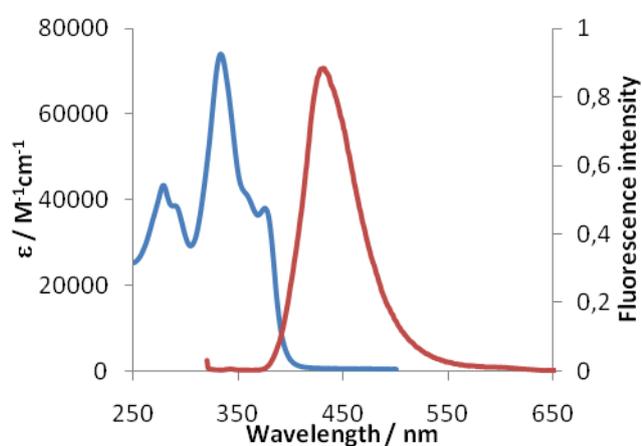
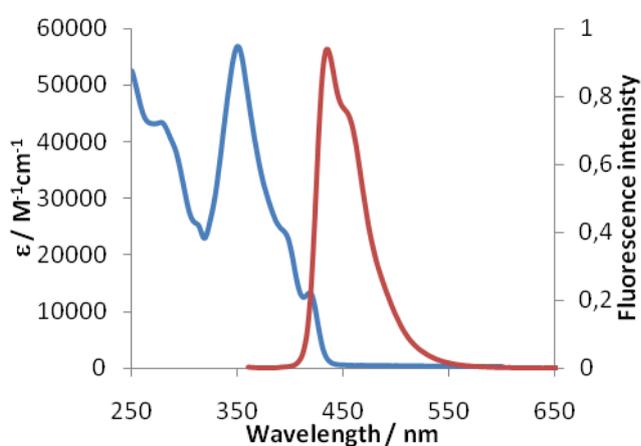


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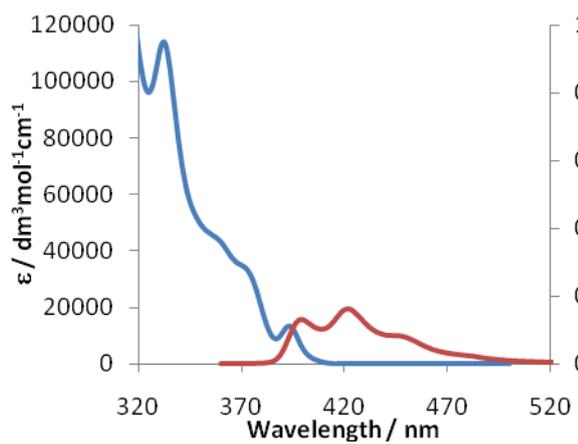


4f

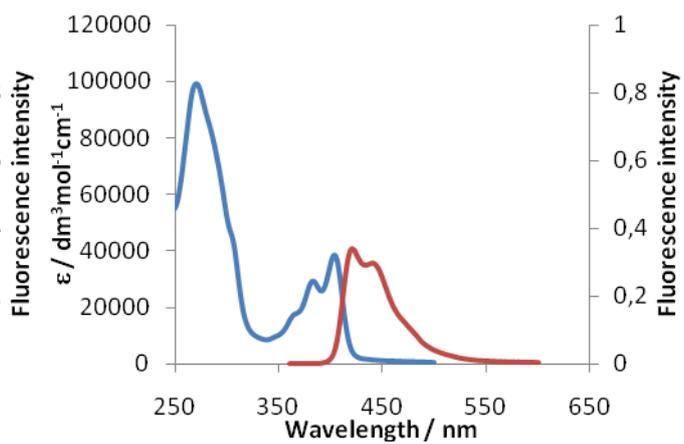


**4g****5a****5b****5c****5d****5e**

5f

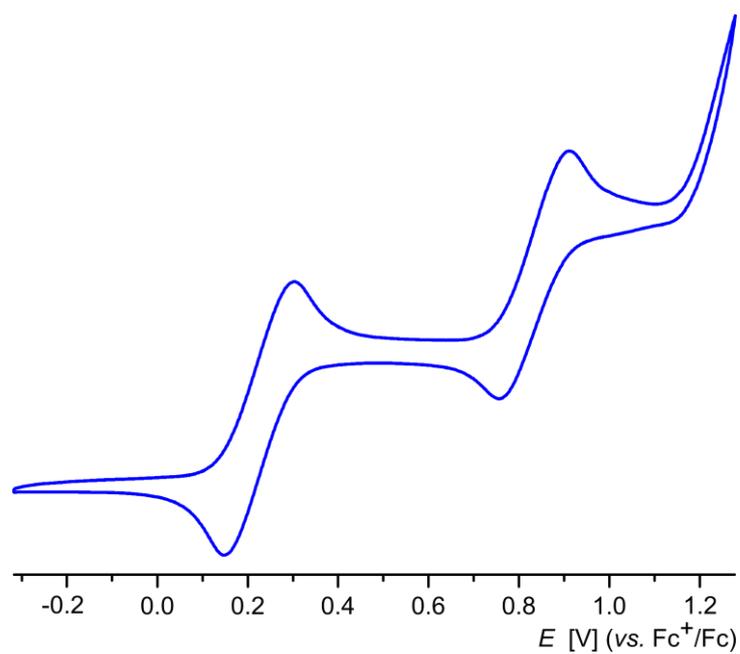


5g

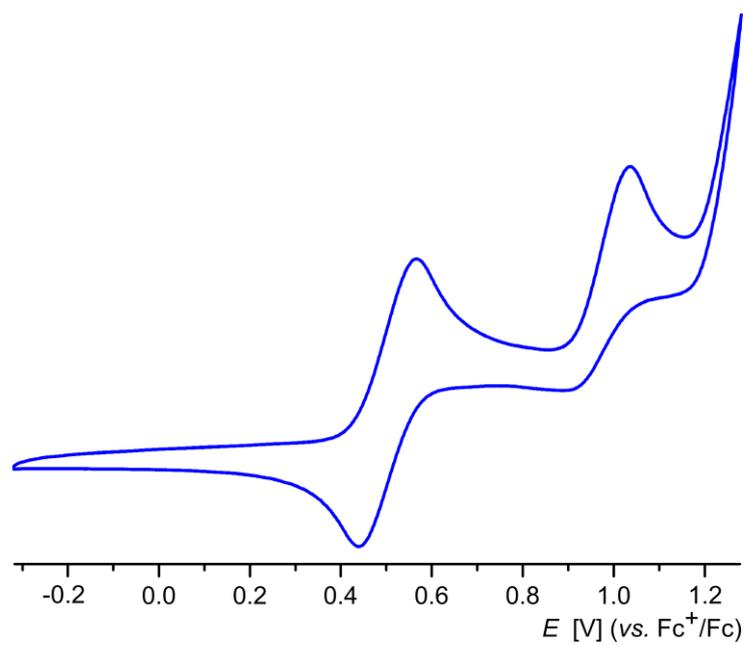


### 3. Cyclic voltammetry for selected compounds.

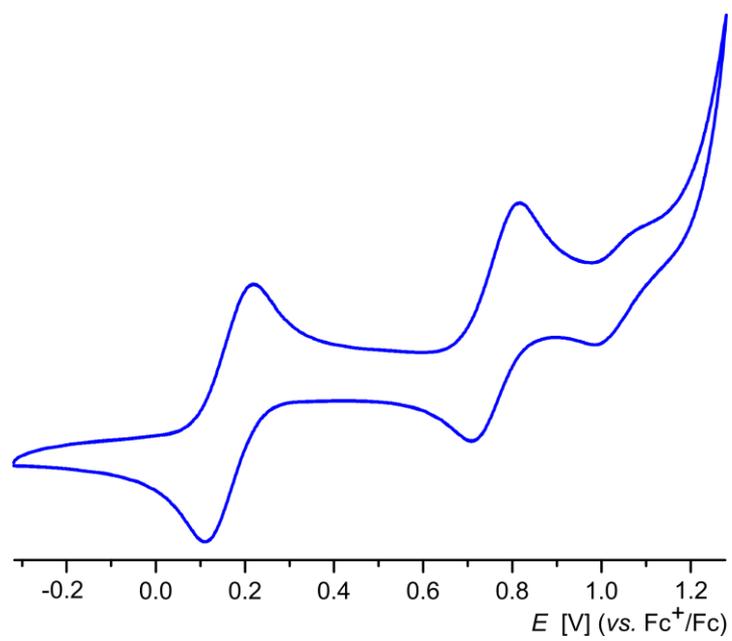
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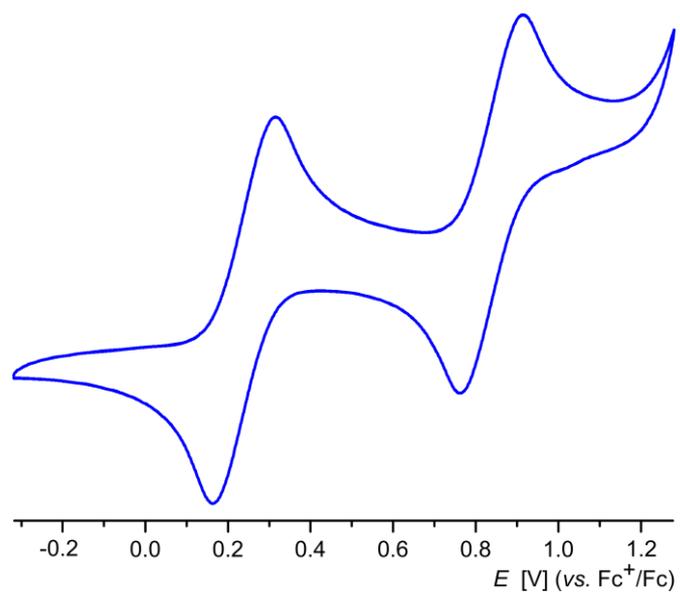
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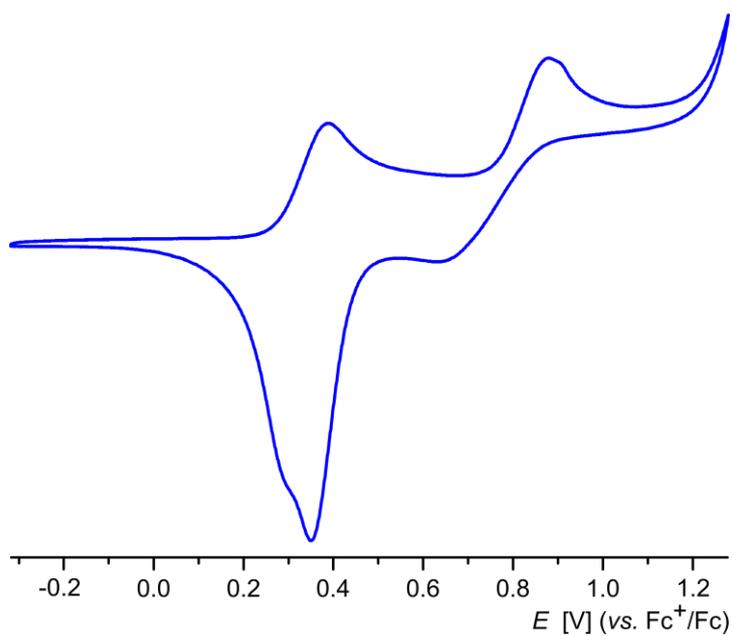
5c



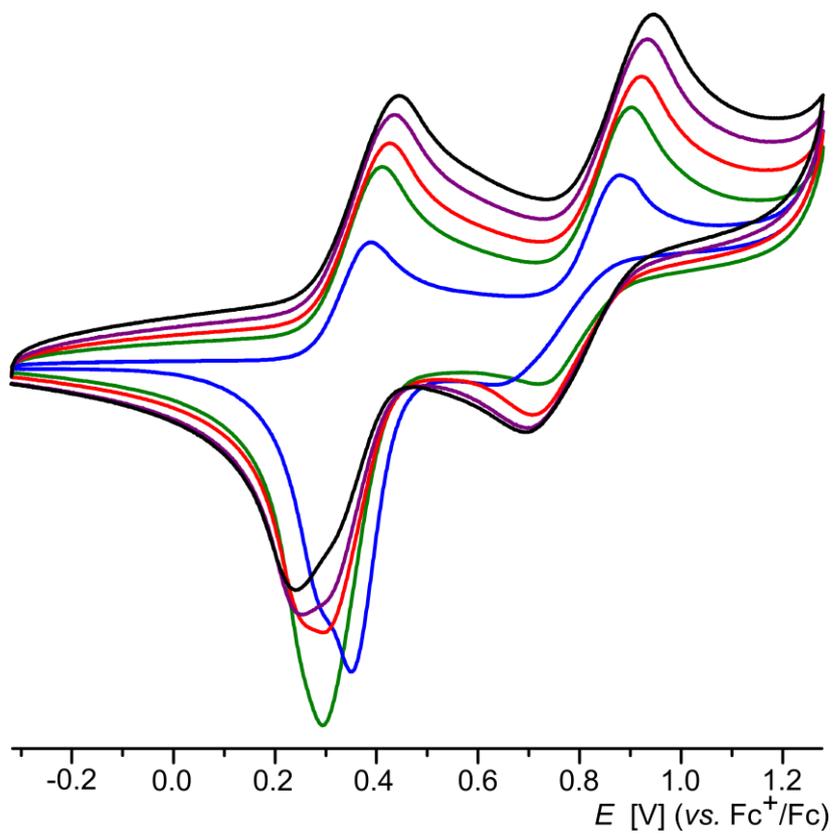
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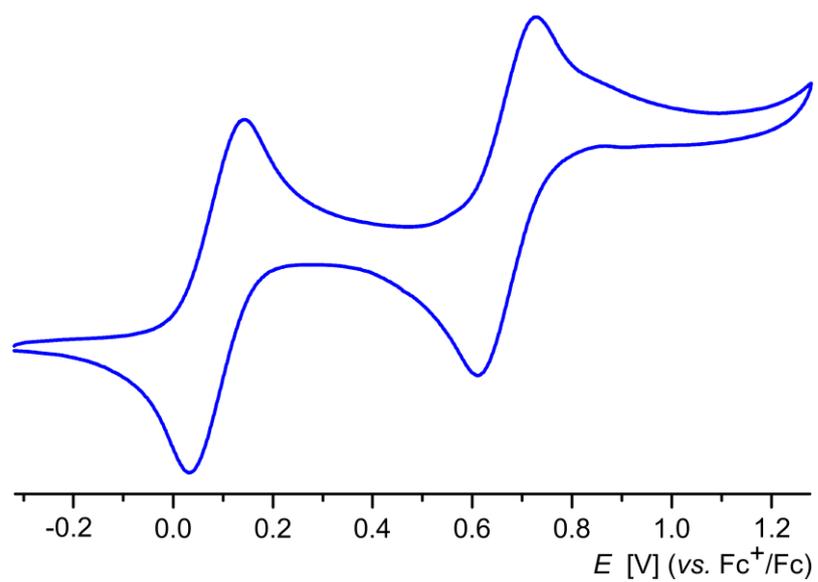
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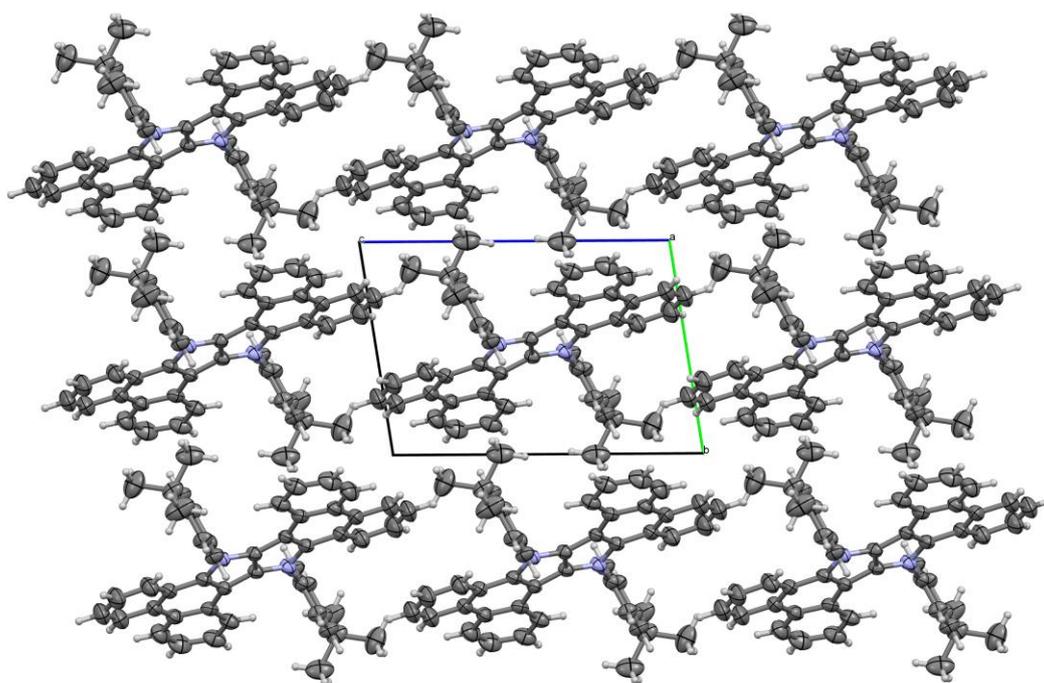
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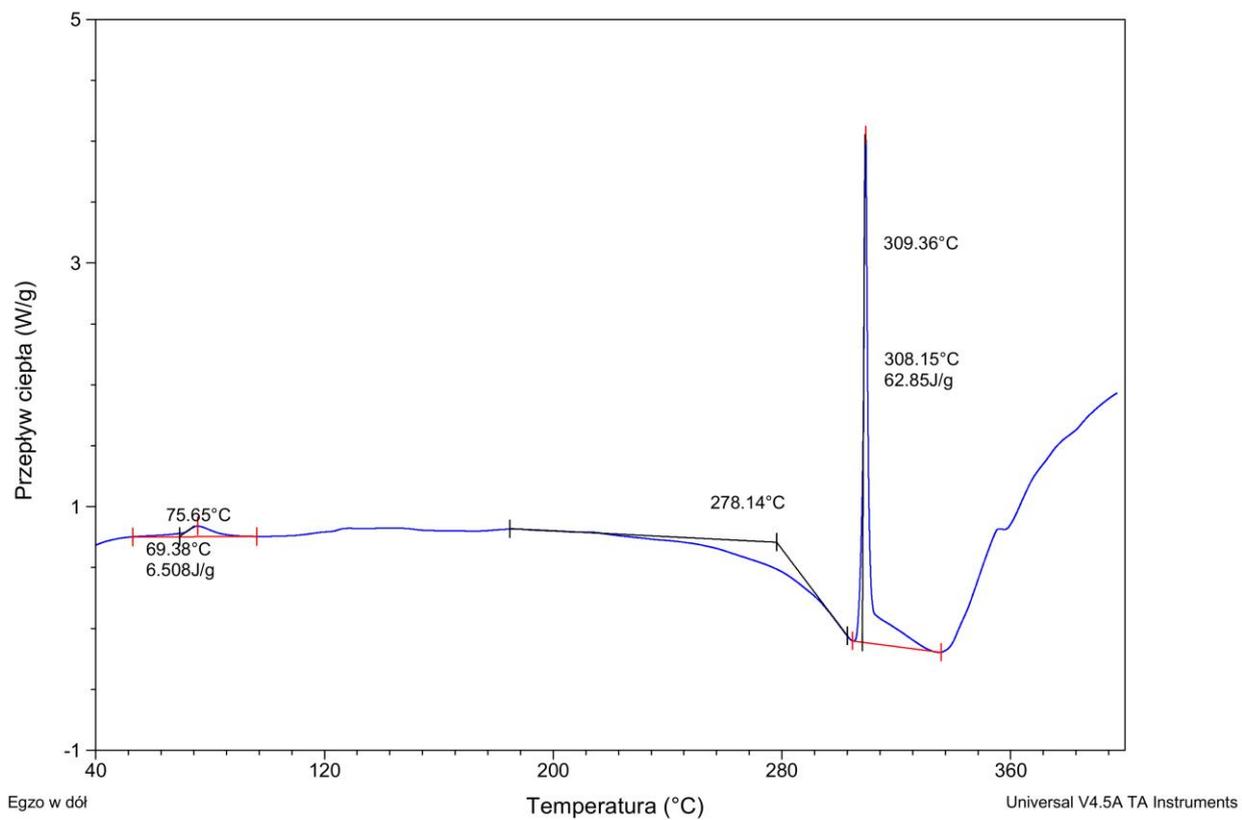
5g



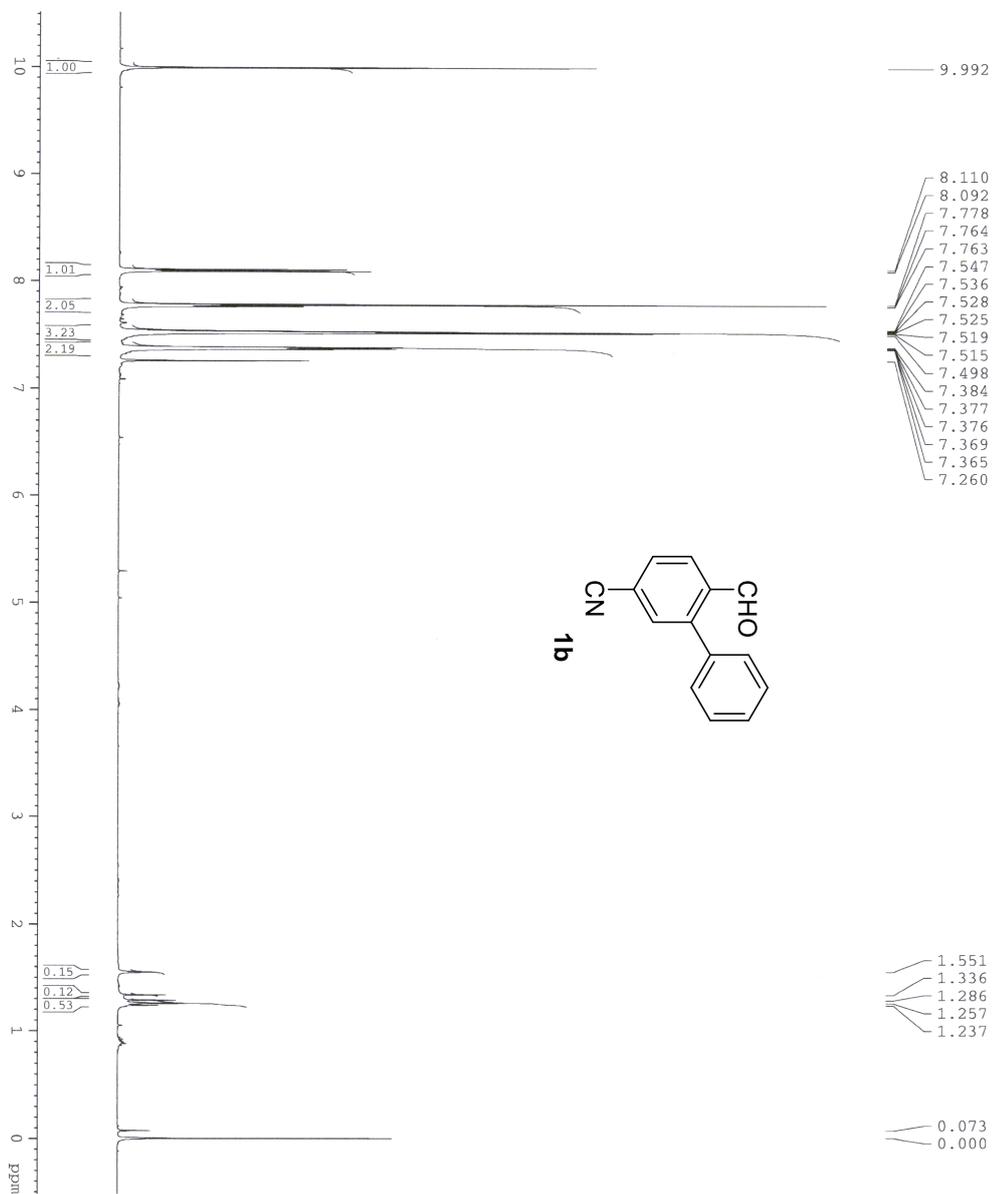
#### 4. Crystal packing for compound 5a.



## 5. Differential Scanning Calorimetry curve for compound 5b.



6. <sup>1</sup>H and <sup>13</sup>C NMR spectra of compounds 1b-g, 4a-g and 5a-g.



```

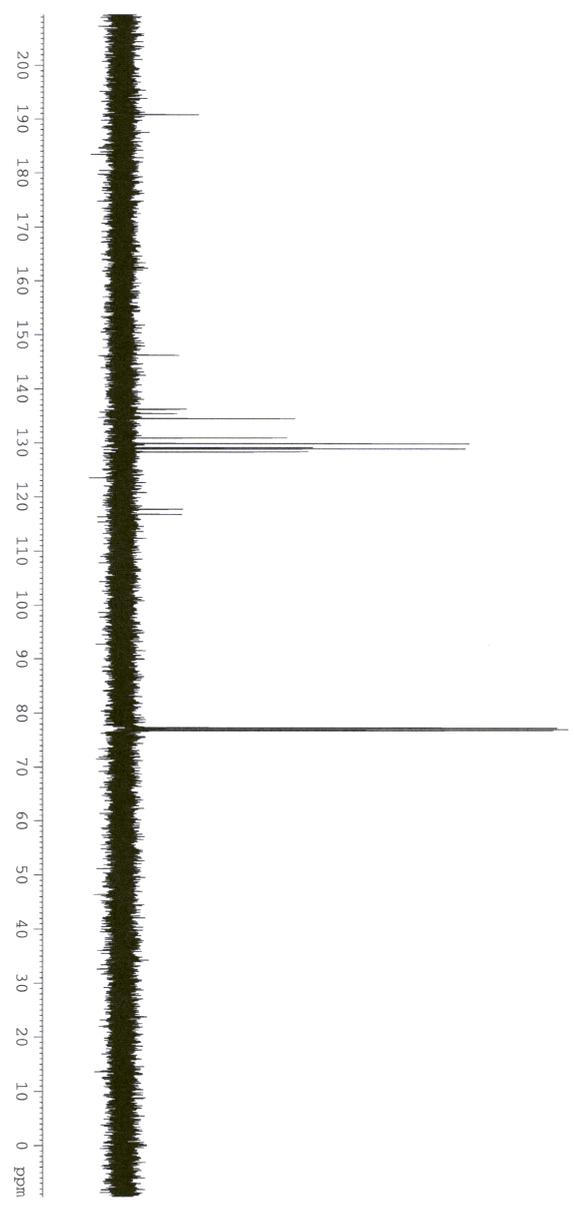
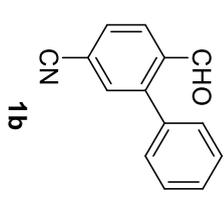
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 77.25  
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 76.75



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Current Data Parameters
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PROCNO    1

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PL13       32.00 dB
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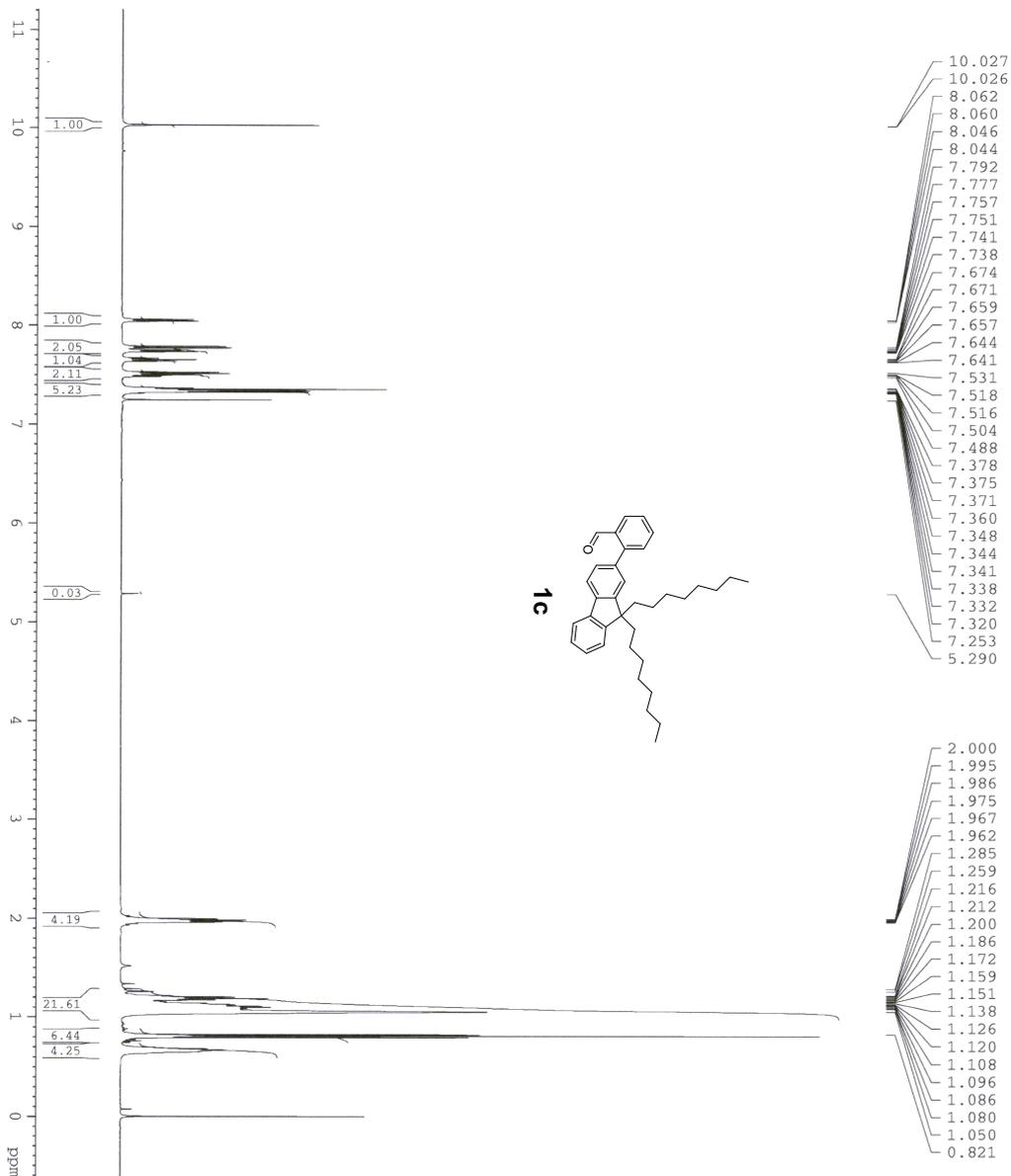
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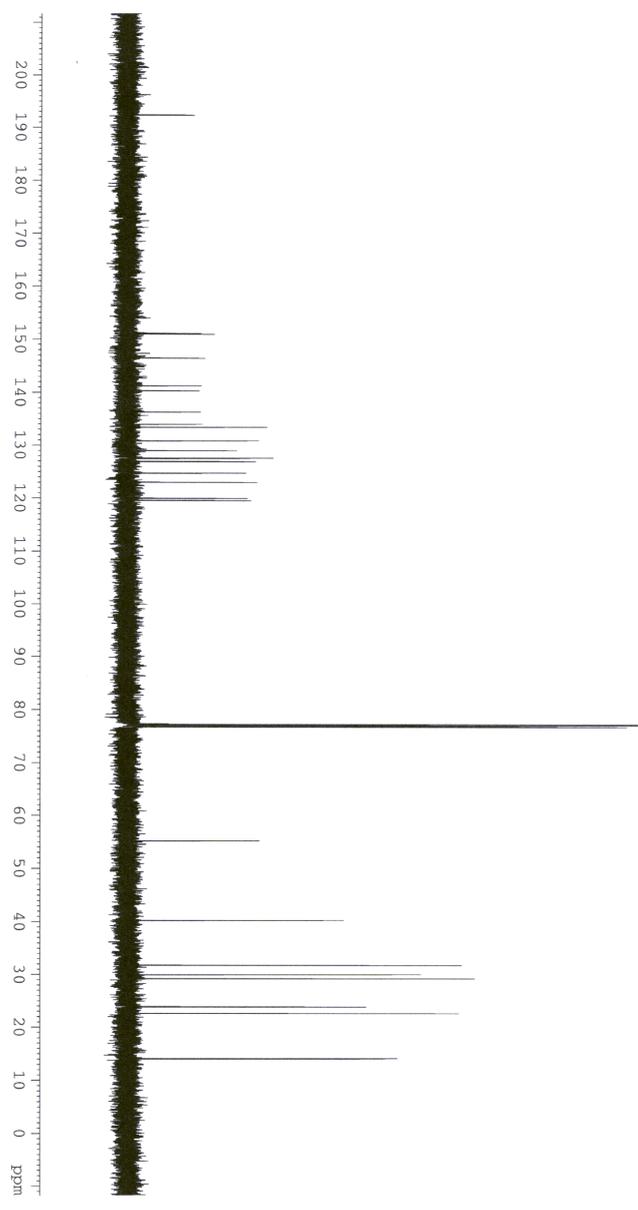
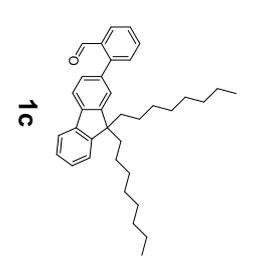
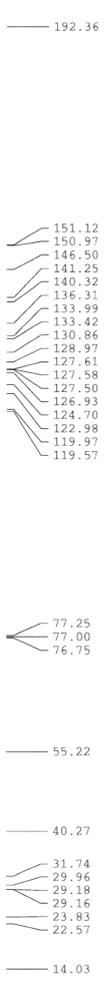


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 FIDRES 0.157632 Hz  
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 RG 101.6  
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 TE 303.0 K  
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SOLVENT   CDCl3
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RG         512
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TE         303.0 K
D1         1.00000000 sec
d11        0.03000000 sec
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TD0        1

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P1         5.00 usec
PL1        -3.00 dB
SFO1       125.7703643 MHz

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NUC2       1H
PCPD2      98.00 usec
PL2        3.00 dB
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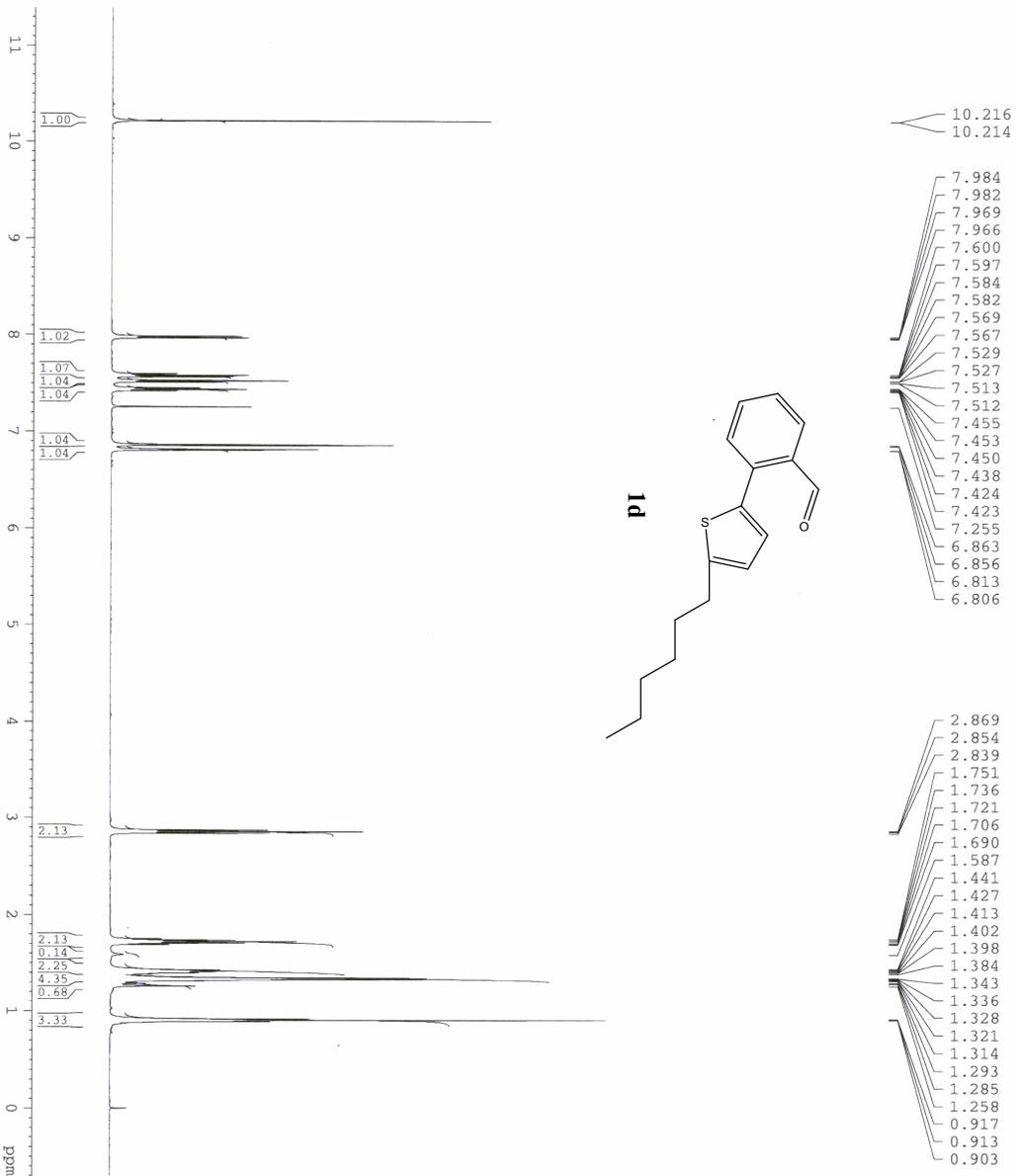


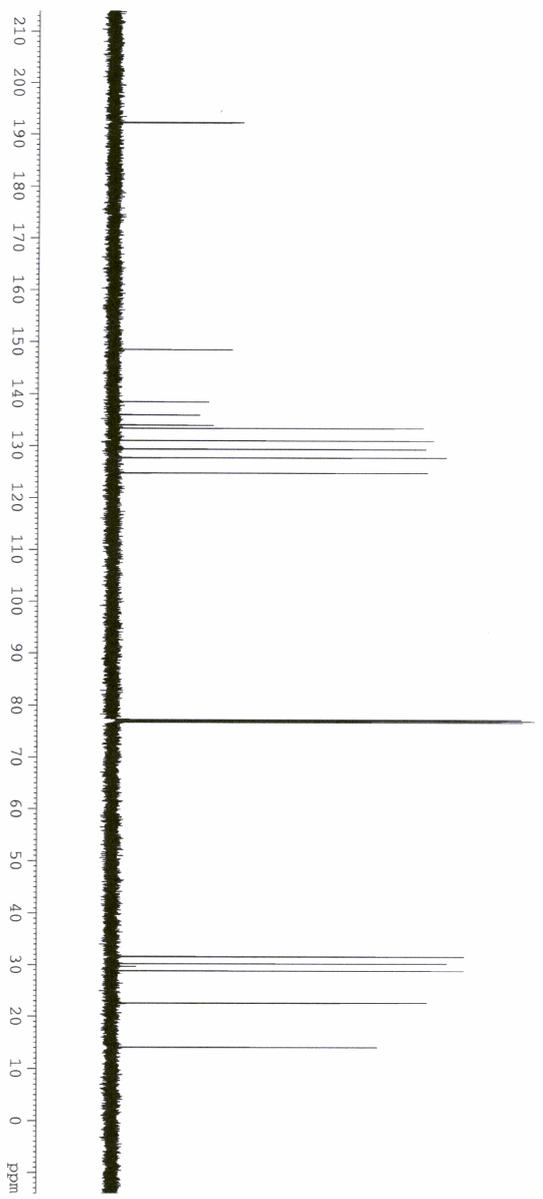
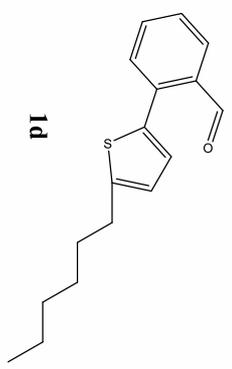
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 NS 32  
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 FIDRES 0.157632 Hz  
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 TE 303.0 K  
 D1 1.00000000 sec  
 TDO 1

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 PL1 5.00 dB  
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DS           4
SWH          32679.738 Hz
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RG          203.2
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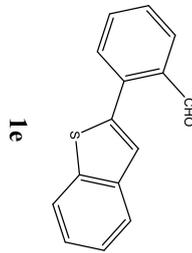
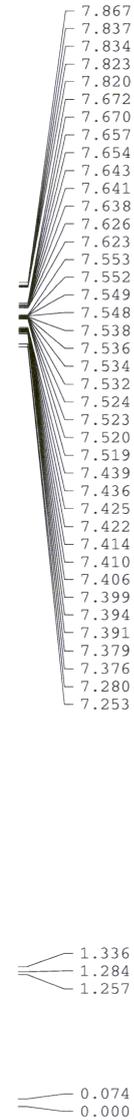
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SFO1       500.132 MHz
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F1MODE     QF

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GB         0
PC         1.40

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DS 0  
SWH 10330.578 Hz  
FIDRES 0.157633 Hz  
AQ 3.1719923 sec  
RG 287.4  
DW 48.400 usec  
DE 6.78 usec  
TE 303.0 K  
D1 1.00000000 sec  
TD0 1

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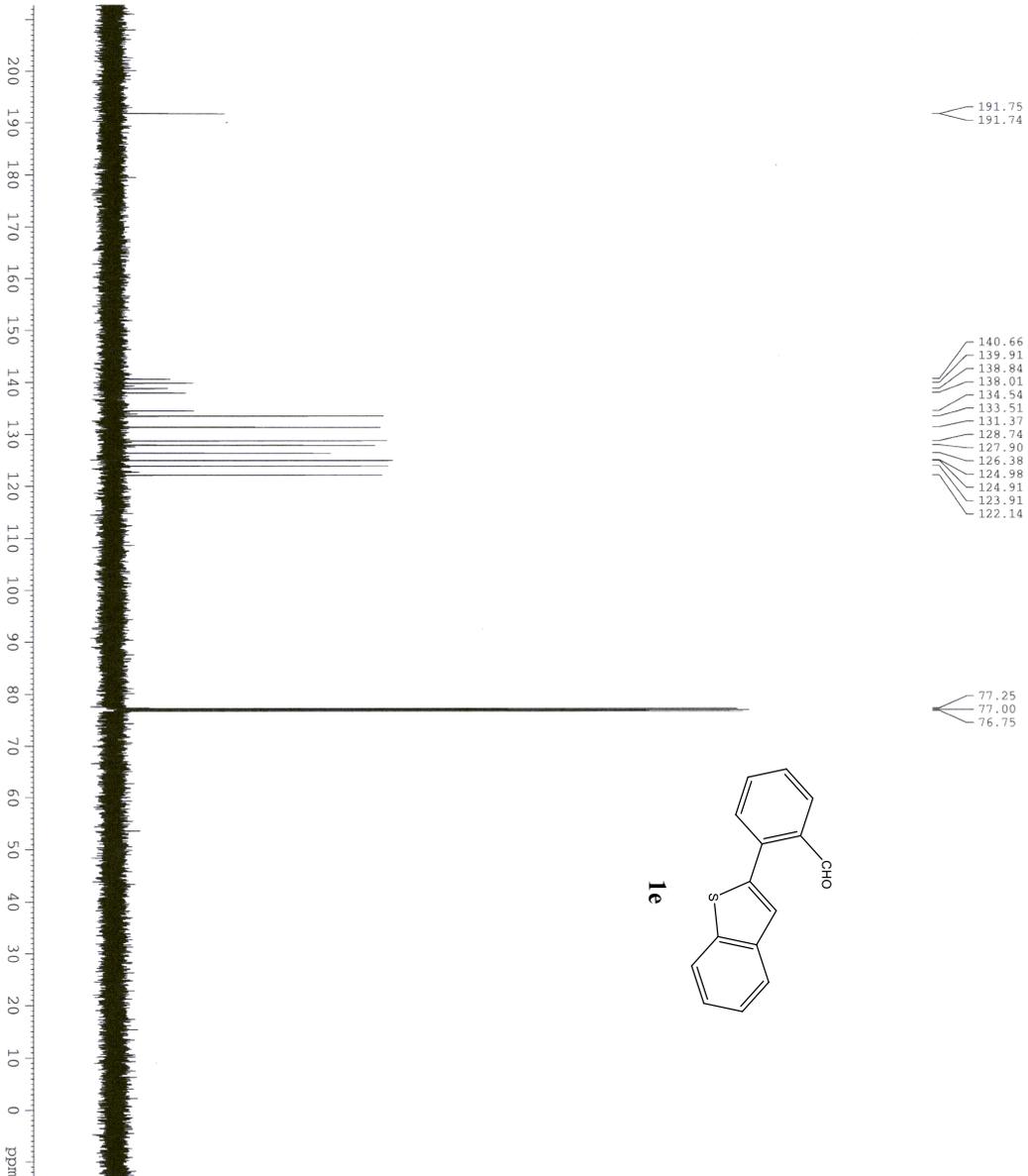
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 SOLVENT CDCl3  
 NS 606  
 DS 4  
 SWH 32679.738 Hz  
 FIDRES 0.498653 Hz  
 AQ 1.0027508 sec  
 RG 32768  
 DW 15.300 usec  
 DE 3.00 usec  
 TE 303.0 K  
 D1 1.00000000 sec  
 d11 0.03000000 sec  
 DELTA 0.89999998 sec  
 TDO 1

===== CHANNEL F1 =====  
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 P1 5.00 usec  
 PL1 -3.00 dB  
 SFO1 125.7703643 MHz  
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 CHANNEL2 waltz16  
 NUC2 1H  
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 PL2 3.00 dB  
 PL12 23.00 dB  
 PL13 32.00 dB  
 SFO2 500.1320005 MHz

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 FIDRES 7.812500 Hz  
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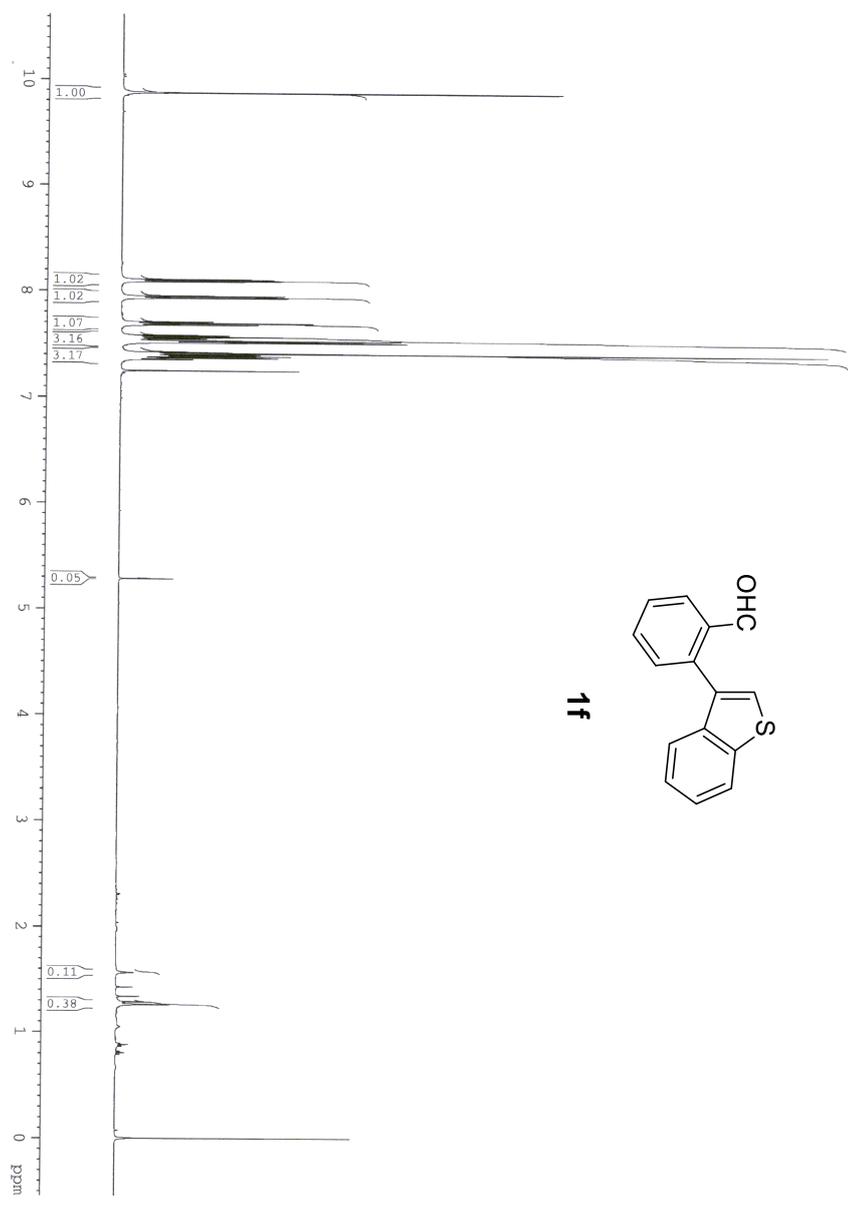
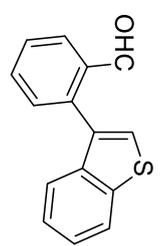
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FIDRES 0.157632 Hz  
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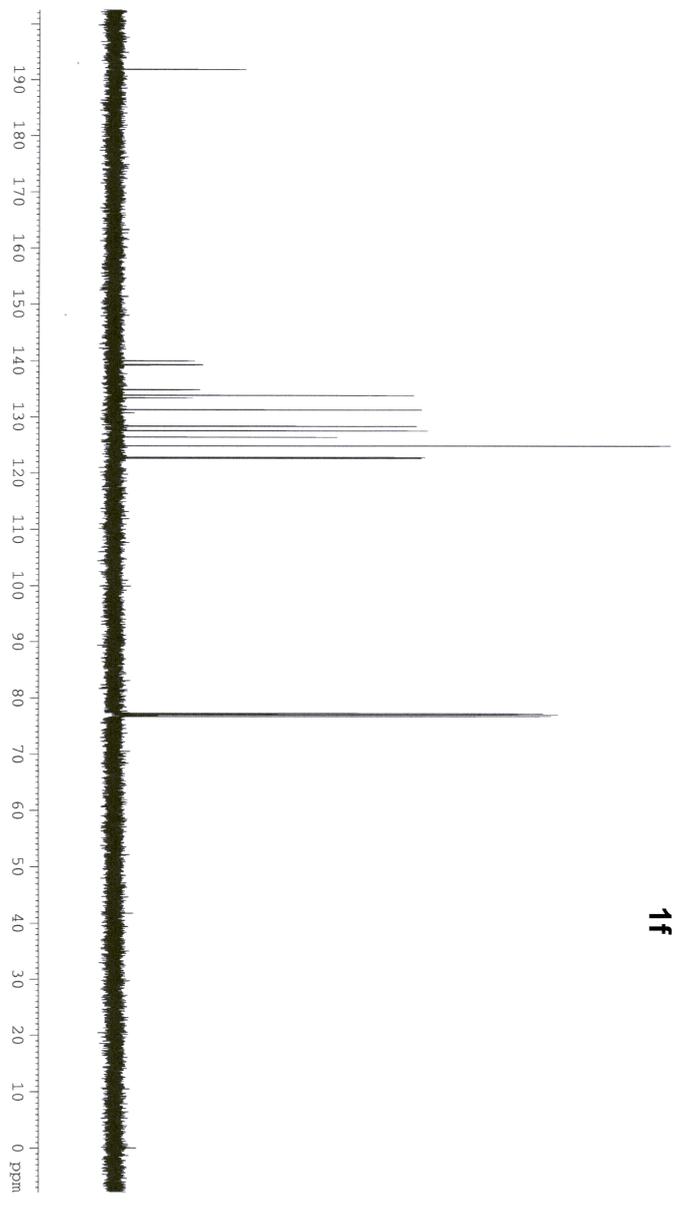
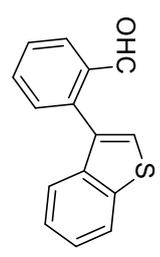
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LB 0.00 Hz  
GB 0  
PC 1.00

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191.89

139.97  
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139.30  
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SWH           32679.738 Hz
FIDRES       0.498653 Hz
AQ           1.0027508 sec
RG           32768
DM           13.710 usec
DE           7.710 usec
TE           303.0 K
D1           1.00000000 sec
d11          0.03000000 sec
DELTA        0.89999998 sec
TD0          1

===== CHANNEL f1 =====
NUC1         13C
P1           5.00 usec
PL1          -3.00 dB
SFO1         125.7703643 MHz

===== CHANNEL f2 =====
CPDPRG2      waltz16
NUC2         1H
PCPDZ        98.00 usec
PL2          3.00 dB
PL12         23.00 dB
PL13         32.00 dB
SFO2         500.1326005 MHz

F1 - Acquisition Parameters
ND0          1
TD           128
SFO1         500.132 MHz
SFRS         7.81259 Hz
SFO         1.299 ppm
PwMODE      gpc

F2 - Processing parameters
SI           262144
SF           125.7577957 MHz
RG           65536
WDW          EM
SSB          0
LB           0.50 Hz
GB           0
PC           1.40

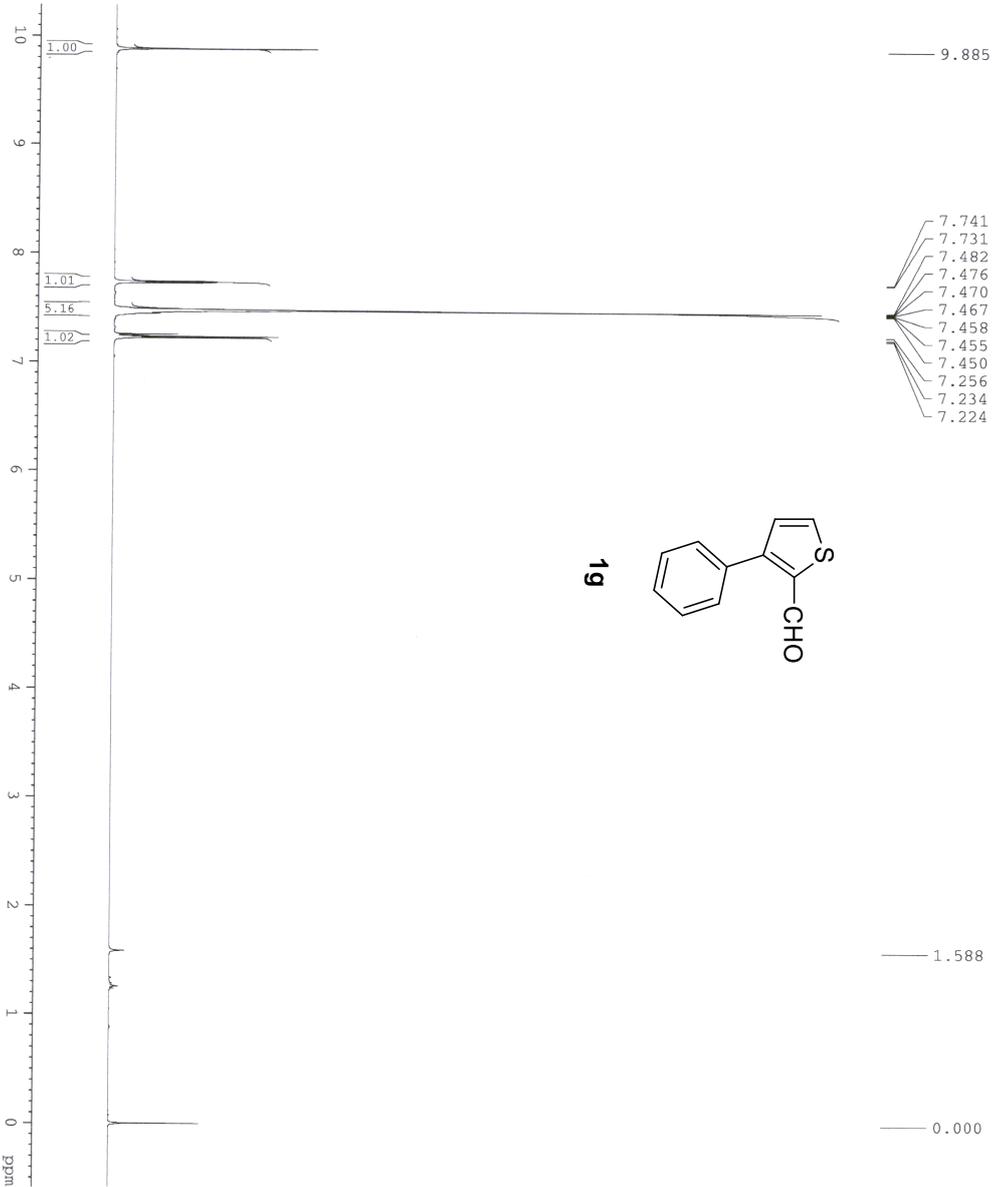
F1 - Processing parameters
SI           1024
SF           500.1300000 MHz
WDW          EM
SSB          0
LB           0.30 Hz
GB           0.1
  
```

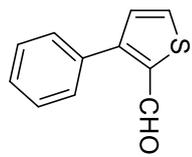
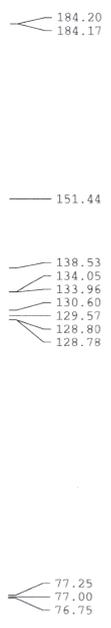


Current Data Parameters  
 NAME MK209  
 EXPNO 1  
 PROCNO 1

F2 - Acquisition Parameters  
 Date\_ 20140507  
 Time\_ 11:39  
 INSTRUM dpx  
 PROBD 5 mm TBI 1H/13  
 PULPROG zgpg30  
 TD 65536  
 SOLVENT CDCl3  
 NS 32  
 DS 0  
 SMH 10330.578 Hz  
 FIDRES 0.157632 Hz  
 AQ 3.171923 sec  
 RG 181  
 DW 48.400 usec  
 DE 6.78 usec  
 TE 303.0 K  
 D1 1.00000000 sec  
 TD0 1

==== CHANNEL F1 =====  
 NUC1 1H  
 P1 8.20 usec  
 PL1 5.00 dB  
 SFO1 500.1330885 MHz  
 F2 - Processing parameters  
 SI 32768  
 SF 500.1300252 MHz  
 MWDW no  
 SSB 0  
 LB 0.00 Hz  
 GB 0  
 PC 1.00





1g



```

Current Data Parameters
NAME          MK209
EXPNO        2
PROCNO       1

P2 - Acquisition Parameters
Date_         20140507
Time         12.08
INSTRUM      DDX
PROBHD       5 mm TBI H1/13
PULPROG      zgpg
SOLVENT      CDCl3
NS           836
DS           4
SWH          32679.738 Hz
FIDRES      0.498653 Hz
AQ          1.0027508 sec
RG          327.68
DE          1.5730
TE          303.0 K
DE         7.10 usec
D1          1.00000000 sec
d11         0.03000000 sec
DELTA      0.89999998 sec
TD          1

===== CHANNEL f1 =====
NUC1        13C
P1          5.00 usec
PL1         3.00 dB
SFO1       125.7703643 MHz

===== CHANNEL f2 =====
CPOPRG2     waltz16
NUC2        1H
PCPD2       98.00 usec
PL2         3.00 dB
PL12        3.00 dB
PL11        3.00 dB
SFO2       500.1320005 MHz

P1 - Acquisition parameters
ND0         1
TD          128
SFO1       500.132 MHz
FIDRES     7.8012504 Hz
SW         1.999 ppm
PnMODE     QF

P2 - Processing parameters
SI         262144
SF         125.7577949 MHz
WDW        EM
SSB        0
LB         0.50 Hz
GB         0
PC         1.40

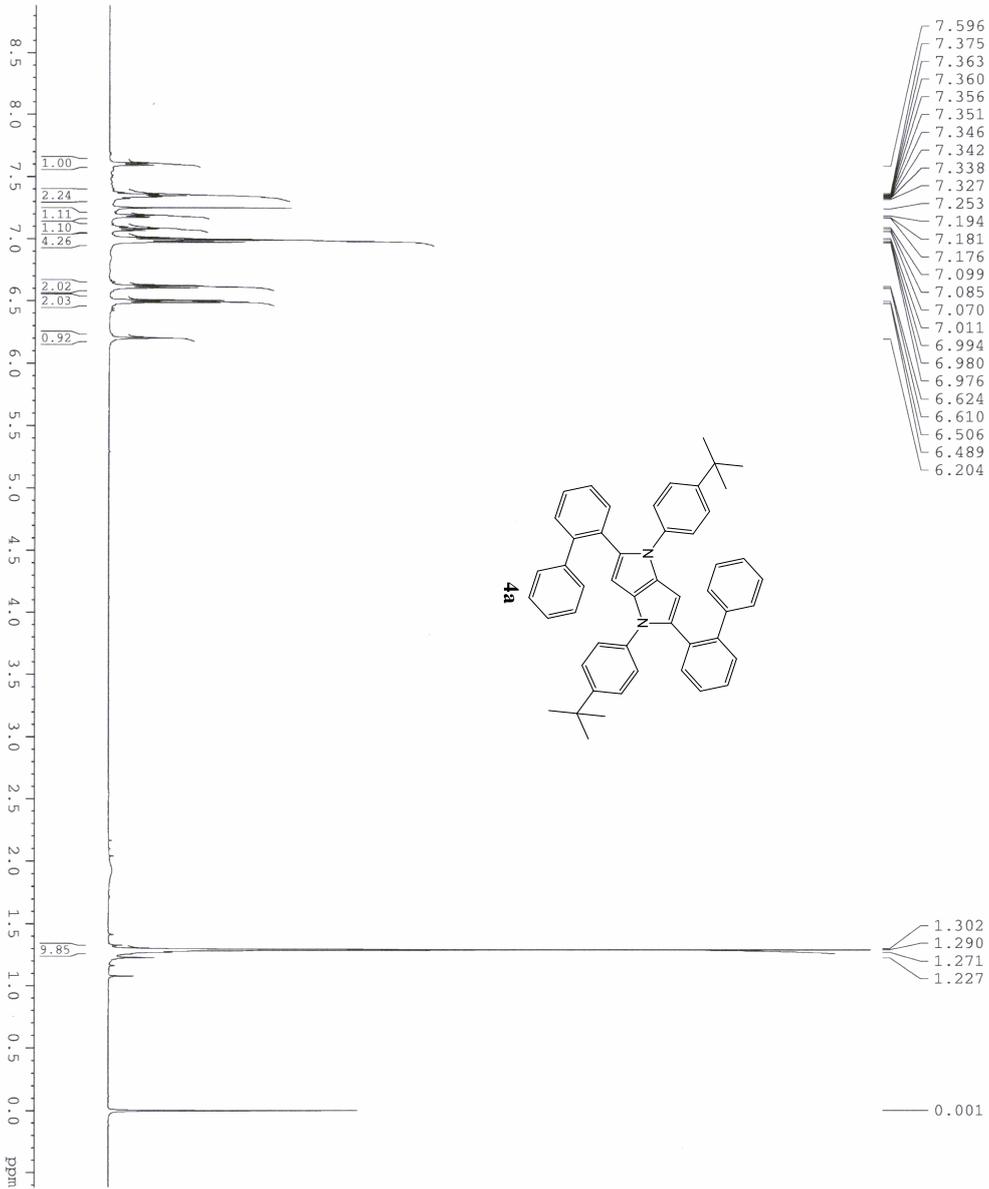
P1 - Processing parameters
SI         1024
MC2        OF
SF         500.1300000 MHz
WDW        SINE
SSB        0
LB         0.30 Hz
GB         0.1
  
```

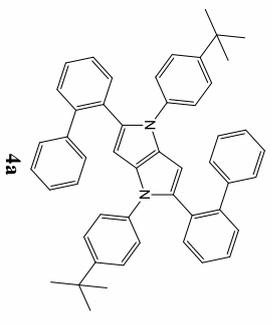
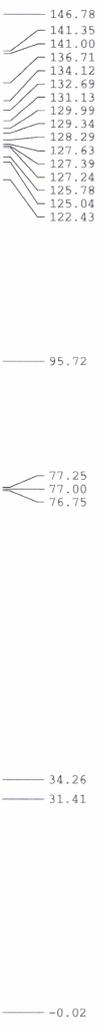


Current Data Parameters  
 NAME MK188  
 EXPNO 1  
 PROCNO 1

F2 - Acquisition Parameters  
 Date\_ 20140507  
 Time 13.06  
 INSTRUM DRX  
 PROBHD 5 mm TBI 1H/13  
 PULPROG zg30  
 TD 65536  
 SOLVENT CDCl3  
 NS 32  
 DS 0  
 SWH 10330.578 Hz  
 FIDRES 0.157632 Hz  
 AQ 3.1719923 sec  
 RG 287.4  
 DW 48.400 usec  
 DE 6.78 usec  
 TE 303.0 K  
 D1 1.00000000 sec  
 TD0 1

===== CHANNEL f1 =====  
 NUCL1 1H  
 P1 8.20 usec  
 PL1 5.00 dB  
 SFO1 500.1330885 MHz  
 F2 - Processing parameters  
 SI 32768  
 SF 500.1300271 MHz  
 WDW no  
 SSB 0  
 LB 0.00 Hz  
 GB 0  
 PC 1.00





```

Current Data Parameters
NAME          MK1B8
EXPNO        2
PROCNO       1

F2 - Acquisition Parameters
Date_        20140907
Time         13:01
INSTRUM      131PX
PROBHD       5 mm TBI 1H/13
PULPROG      zgpg3
TD           65536
SOLVENT      CDCl3
NS           2501
DS           4
SWH          32679.738 Hz
FIDRES       0.498653 Hz
AQ           1.0027508 sec
RG           32768
DM           15.300 usec
DE           3.0144 usec
TE           301.4 K
D1           1.00000000 sec
d11          0.03000000 sec
DELTA        0.89999998 sec
TD0          1

===== CHANNEL f1 =====
NUC1         13C
P1           5.00 usec
PL1          -3.00 dB
SFO1         125.7703643 MHz

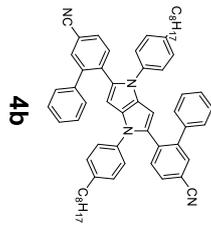
===== CHANNEL f2 =====
CPDPRG2      waltz16
NUC2         131H
PCPD2        98.00 usec
PL2          3.00 dB
PL12         23.00 dB
PL13         32.00 dB
SFO2         500.1320005 MHz

F1 - Acquisition parameters
ND0          1
TD           128
SFO1         500.132 MHz
FIDRES       7.812500 Hz
P1MODE       1.999 ppm
QF

F2 - Processing parameters
SI           262144
SF           125.7577925 MHz
WDW          EM
SSB          0
LB           0.50 Hz
GB           0
PC           1.40

F1 - Processing parameters
SI           1024
SF           500.1300000 MHz
WDW          SINE
SSB          0
LB           0.30 Hz
GB           0.1
  
```

7.623  
7.621  
7.607  
7.605  
7.460  
7.458  
7.255  
7.178  
7.163  
7.148  
7.064  
7.048  
7.033  
6.843  
6.826  
6.619  
6.604  
6.434  
6.418  
6.199



2.540  
2.525  
2.510  
1.595  
1.352  
1.323  
1.312  
0.919  
0.907  
0.893  
0.000



Current Data Parameters  
NAME MK250  
EXPNO 1  
PROCNO 1

F2 - Acquisition Parameters  
Date\_ 20140701  
Time 15.38  
INSTRUM DRX  
PROBHD 5 mm TBI 1H/13  
PULPROG zg  
TD 65536  
SOLVENT CDCl3  
NS 32  
DS 2  
SWH 10330.578 Hz  
FIDRES 0.157632 Hz  
AQ 3.171923 sec  
RG 143.7  
DW 48.400 usec  
DE 6.78 usec  
TE 303.0 K  
D1 1.00000000 sec  
TD0 1

==== CHANNEL f1 =====  
NUC1 1H  
P1 2.50 usec  
PL1 0.00 dB  
SFO1 500.1330885 MHz

F2 - Processing parameters  
SI 32768  
SF 500.1300260 MHz  
WDW no  
SSB 0  
LB 0.00 Hz  
GB 0  
PC 1.00



141.75  
139.71  
139.21  
136.96  
136.30  
133.76  
133.24  
131.49  
130.65  
130.63  
128.60  
128.08  
127.96  
126.94  
122.81  
118.91

111.16

96.53

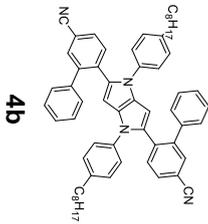
77.25  
77.00  
76.75

35.34  
31.91  
31.68  
29.50  
29.34  
29.27

22.68

14.11

-0.02



Current Data Parameters  
NAME MK250  
EXNO 1  
PROCNO 2

F2 - Acquisition Parameters  
Date\_ 20141131  
Time\_ 14:19:31  
INSTRUM 1 DRX  
PROBHD 5 mm TBI IH/13  
PULPROG zgpg  
TD 65536  
SOLVENT CDCl3  
NS 4394  
DS 2  
SWH 32679.738 Hz  
FIDRES 0.498653 Hz  
AQ 1.0027508 sec  
RG 32768  
RG 15.300 usec  
DM 1.0  
DE 303.0 X  
TE 1.00000000 sec  
D1 0.03000000 sec  
d11 0.89999998 sec  
DELTA 1  
TD0

===== CHANNEL F1 =====  
NUC1 13C  
P1 5.00 usec  
PL1 -3.00 dB  
SFO1 125.7703643 MHz

===== CHANNEL F2 =====  
CAPPFG2 waitz16  
NUC2 1H  
PCPD2 98.00 usec  
PL2 3.00 dB  
PL12 23.00 dB  
PL13 22.00 dB  
SFO2 500.1320003 MHz

F1 - Acquisition parameters  
ND0 1  
TD 128  
SF01 500.132 MHz  
FIDRES 7.812500 Hz  
SFO 1.392 ppm  
PnMODE QF

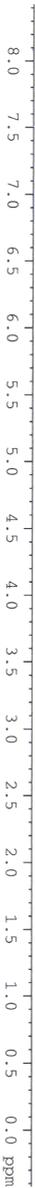
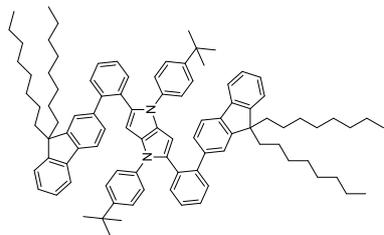
F2 - Processing parameters  
SI 262144  
SF 125.7577925 MHz  
WDW EM  
SSB 0  
LB 0.50 Hz  
GB 0  
PC 1.40

F1 - Processing parameters  
SI 128  
MC 1024  
SP 500.1300000 MHz  
WDW SINE  
SSB 0  
LB 0.30 Hz  
GB 0.11



7.620  
7.604  
7.449  
7.435  
7.310  
7.297  
7.282  
7.270  
7.252  
7.240  
7.217  
7.202  
7.038  
7.021  
6.892  
6.646  
6.630  
6.572  
6.557  
6.045

1.759  
1.750  
1.732  
1.726  
1.710  
1.701  
1.606  
1.597  
1.582  
1.573  
1.557  
1.548  
1.371  
1.321  
1.308  
1.286  
1.259  
1.181  
1.167  
1.153  
1.138  
1.073  
1.058  
1.047  
0.981  
0.915  
0.897  
0.883  
0.827



1.00  
1.04  
8.36  
1.99  
0.93  
2.01  
0.95  
0.89  
2.08  
2.31  
0.45  
10.43  
4.59  
18.13  
6.45  
4.49

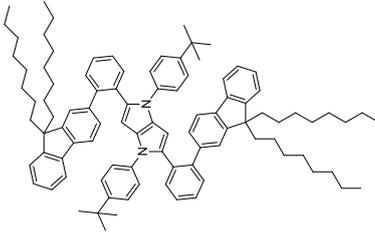
Current Data Parameters  
NAME MK216  
EXPNO 1  
PROCNO 1

F2 - Acquisition Parameters  
Date\_ 20140415  
Time 10.41  
INSTRUM DRX  
PROBHD 5 mm TBI 1H/13  
PULPROG zg30  
TD 65536  
SOLVENT CDCl3  
NS 32  
DS 2

SWH 10330.578 Hz  
FIDRES 0.157632 Hz  
AQ 3.171923 sec  
RG 128  
DM 48,400 usec  
DE 6.78 usec  
TE 303.0 K  
D1 1.00000000 sec  
TD0 1

==== CHANNEL f1 =====  
NUC1 1H  
P1 8.20 usec  
PL1 5.00 dB  
SFO1 500.1330885 MHz

F2 - Processing parameters  
SI 32768  
SF 500.1300278 MHz  
WDW no  
SSB 0  
LB 0.00 Hz  
GB 0  
PC 1.00



```

Current Data Parameters
NAME          RK216
EXPNO        2
PROCNO       1

F2 - Acquisition Parameters
Date_        20140415
Time         11.19
INSTRUM     5 mm TBI HX/13
PROBHD      5 mm TBI HX/13
PULPROG     zgpg30
TD           65536
SOLVENT     CDCl3
NS           1800
DS           4
SWH          32679.738 Hz
FIDRES       0.4296653 Hz
AQ           1.0032768 sec
RG           15.300 usec
DE           7.10 usec
TE           303.0 K
D1           1.0000000 sec
d11          0.8999999 sec
DELTA        0.8999999 sec
TDO          1

===== CHANNEL f1 =====
NUC1         13C
P1           5.00 usec
SFO1         125.7703643 MHz

===== CHANNEL f2 =====
CPDPRG2     waltz16
NUC2         1H
PCPD2       98.00 usec
P2          0.0000000 sec
PL1         23.00 dB
PL2         32.00 dB
SFO2         500.1320005 MHz

F1 - Acquisition parameters
TD0          1
SI           128
SF01         500.132 MHz
FIDRES       7.812500 Hz
SW           1.999 ppm
PRIMODE      QF

F2 - Processing parameters
SI           65536
SF           125.777924 MHz
WDW          EM
SSB          0
LB           0.50 Hz
GB           0
EC           1.40

F1 - Processing parameters
SI           1024
MC2          QF
SF           500.1300000 MHz
WDW          SINE
SSB          0
LB           0.30 Hz
GB           0.1
    
```



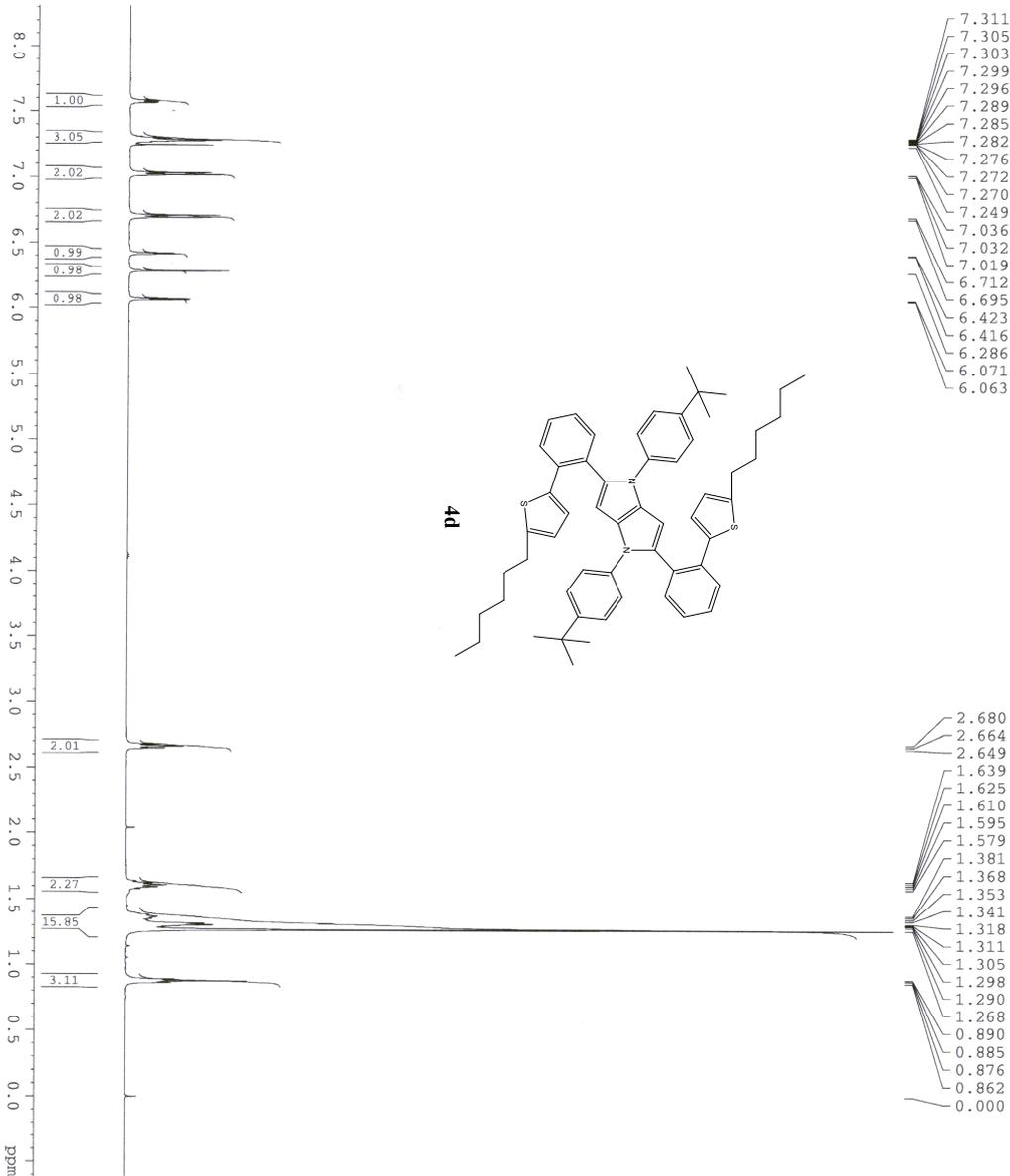
Current Data Parameters  
NAME MK193  
EXRNO 1  
PROCNO 1

F2 - Acquisition Parameters

Date\_ 20140317  
Time 12.09  
INSTRUM DUKA  
PROBHD 5 mm TBI 1H/1  
PULPROG zgpg30  
TD 65536  
SOLVENT CDCl3  
NS 32  
DS 0  
SWH 10330.578 Hz  
FIDRES 0.157632 Hz  
AQ 3.171923 sec  
RG 128  
DW 48.400 usec  
DE 6.78 usec  
TE 303.0 K  
D1 1.00000000 sec  
TD0 1

==== CHANNEL f1 =====  
NUC1 1H  
P1 8.20 usec  
PL1 5.00 dB  
SF01 500.130885 MHz

F2 - Processing parameters  
SI 32768  
SF 500.1300292 MHz  
WDW no  
SSB 0  
LB 0.00 Hz  
CB 0  
PC 1.00

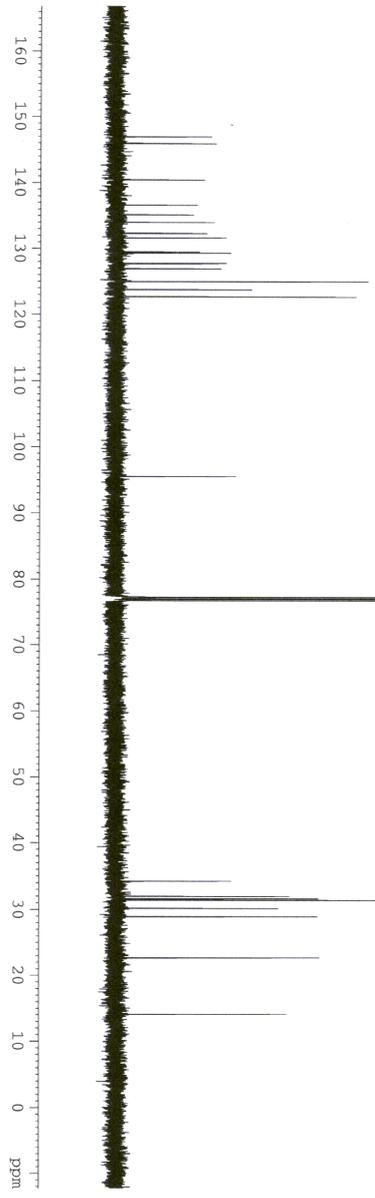
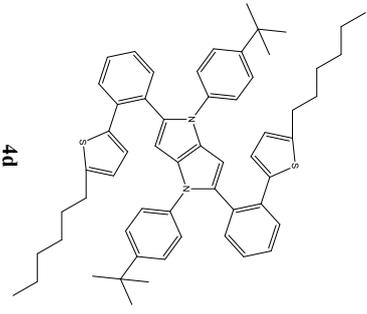
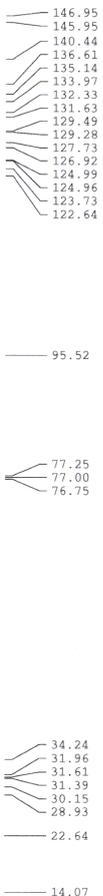


7.311  
7.305  
7.303  
7.299  
7.296  
7.289  
7.285  
7.282  
7.276  
7.272  
7.270  
7.249  
7.036  
7.032  
7.019  
6.712  
6.695  
6.423  
6.416  
6.286  
6.071  
6.063

2.680  
2.664  
2.649  
1.639  
1.625  
1.610  
1.595  
1.579  
1.381  
1.368  
1.353  
1.341  
1.318  
1.311  
1.305  
1.298  
1.290  
1.268  
0.890  
0.885  
0.876  
0.862  
0.000

8.0  
7.5  
7.0  
6.5  
6.0  
5.5  
5.0  
4.5  
4.0  
3.5  
3.0  
2.5  
2.0  
1.5  
1.0  
0.5  
0.0  
ppm

1.00  
3.05  
2.02  
2.02  
0.99  
0.98  
0.98  
2.01  
2.27  
15.85  
3.11



Current Data Parameters  
 NAME MKI193  
 EXPNO 2  
 PROCNO 1

F2 - Acquisition Parameters  
 Date\_ 20140317  
 Time 12.21  
 INSTRUM DRX  
 PROBHD 5 mm TBI 1H/13  
 PULPROG zgpg30  
 TD 65536  
 SOLVENT CDCl3  
 NS 880  
 DS 4  
 SWH 32679.738 Hz  
 FIDRES 0.4027502 Hz  
 AQ 1.0027502 sec  
 RG 32768  
 DW 15.300 usec  
 DE 7.10 usec  
 TE 303.0 K  
 D1 1.0000000 sec  
 d11 0.0000000 sec  
 DELTA 0.9399998 sec  
 TDO 1

==== CHANNEL F1 =====  
 NUCL1 13C  
 P1 5.00 usec  
 PL1 -3.00 dB  
 SFO1 125.7703643 MHz

==== CHANNEL F2 =====  
 CPDPRG2 waltz16  
 NUCL2 1H  
 P2 9.00 usec  
 PL2 23.00 dB  
 PL12 23.00 dB  
 PL13 32.00 dB  
 SFO2 500.1320005 MHz

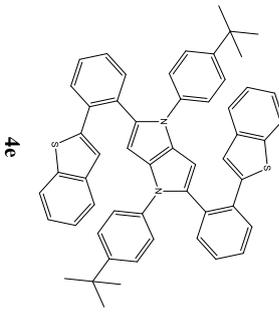
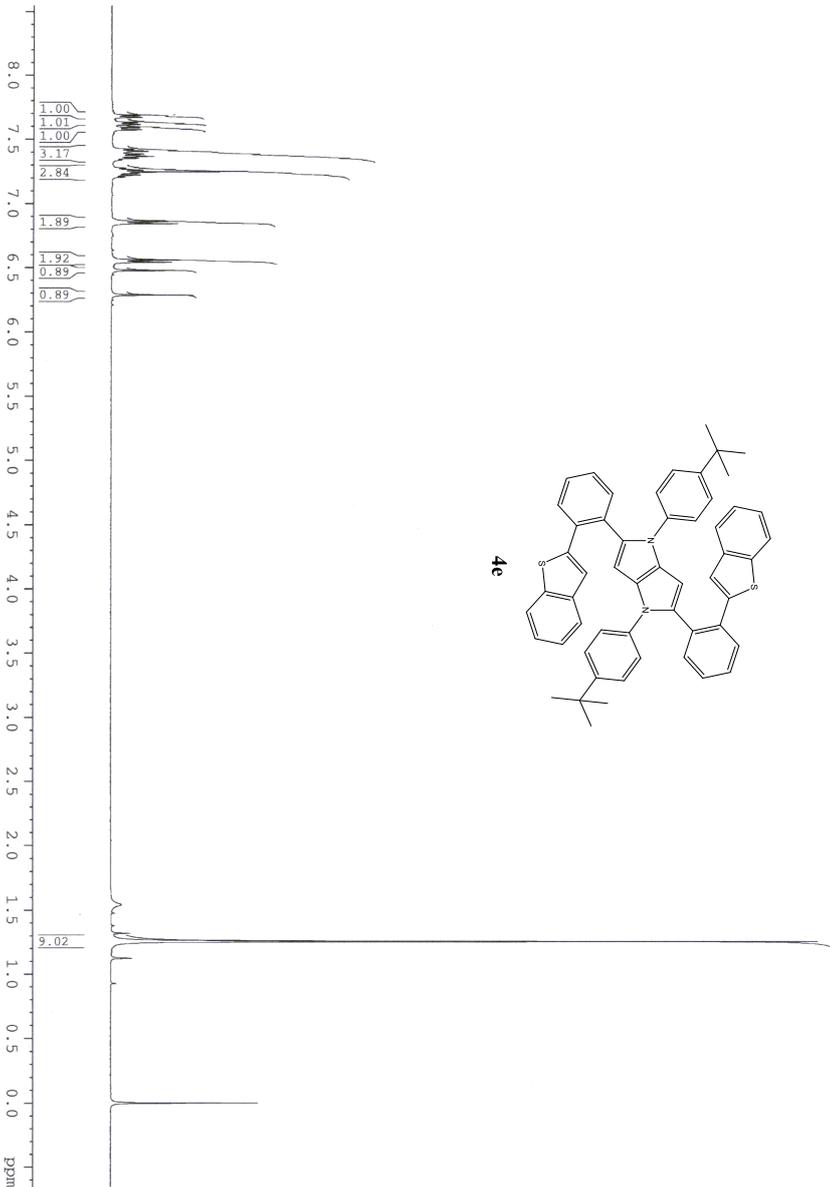
F1 - Acquisition Parameters  
 TD 128  
 SFO1 500.132 MHz  
 FIDRES 7.812500 Hz  
 SW 1.999 ppm  
 FREQ0 0F

F2 - Processing Parameters  
 SI 3262144  
 SF 125.7577930 MHz  
 WDW EM  
 SSB 0  
 LB 0.50 Hz  
 GB 0  
 FC 1.40

P1 - Processing Parameters  
 SI 1024  
 OF 0F  
 SF 500.1300000 MHz  
 SSB SINE  
 LB 0.30 Hz  
 GB 0.1



7.424  
7.413  
7.410  
7.401  
7.389  
7.386  
7.375  
7.371  
7.368  
7.357  
7.354  
7.280  
7.279  
7.266  
7.251  
7.241  
7.239  
7.225  
7.211  
6.865  
6.848  
6.562  
6.545  
6.480  
6.287



```

Current Data Parameters
NAME          MK1199-new
EXPNO         1
PROCNO        1

F2 - Acquisition Parameters
Date_         20140521
Time          10.29
INSTRUM      DRX
PROBHD       5 mm TBI 1H/13
PULPROG      zg30
TD           65536
SOLVENT      CDCl3
NS           32
DS           0
SWH          10330.578 Hz
FIDRES       0.157632 Hz
AQ           3.1719923 sec
RG           287.4
DW           48.400 usec
DE           6.78 usec
TE           303.0 K
TL           1.0000000 sec
TDO          1

===== CHANNEL f1 =====
NUC1          1H
P1            8.20 usec
PL1           5.00 dB
SFO1         500.1330885 MHz

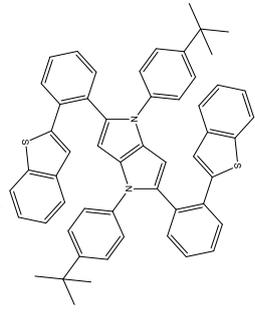
F2 - Processing parameters
SI            32768
SF           500.1300278 MHz
WDW          no
SSB          0
LB           0.00 Hz
GB           0
PC           1.00
  
```

147.18  
143.60  
140.82  
140.20  
136.51  
134.44  
133.65  
133.03  
131.63  
129.98  
129.85  
128.16  
127.84  
125.13  
123.81  
123.63  
123.38  
122.61  
121.93  
121.71

96.03

77.25  
77.00  
76.75

34.27  
31.34



Current Data Parameters  
NAME MAL19-new  
PROCNO 1

F2 - Acquisition Parameters  
Date\_ 20140521  
Time 10.46  
INSTRUM dx  
PROBHD 5 mm TBI 1H/3  
PULPROG zgpg30  
TD 65536  
SOLVENT CDCl3  
NS 1020  
DS 4  
SWH 32679.728 Hz  
FIDRES 0.499642 Hz  
AQ 1.0027508 sec  
RG 32768  
LW 15.300 usec  
TE 303.0 K  
DE 7.10 usec  
d1 1.000000 sec  
d11 0.030000 sec  
DELTA 0.89999998 sec  
TD0 1

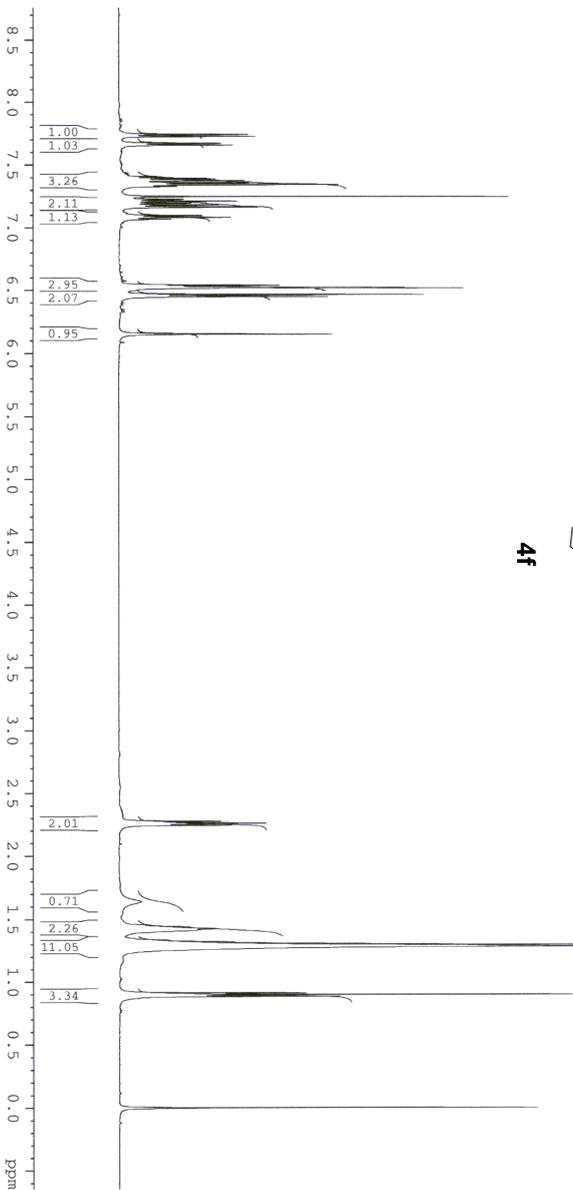
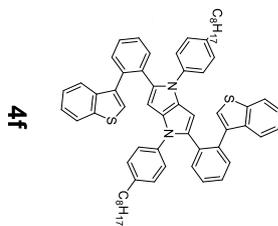
==== CHANNEL F1 =====  
NUC1 13C  
P1 5.00 usec  
PL1 -3.00 dB  
SFO1 125.7703643 MHz

==== CHANNEL F2 =====  
CPDPRG2 waltz16  
NUC2 1H  
P2 98.00 usec  
PL2 3.00 dB  
PL12 23.00 dB  
PL13 32.00 dB  
SFO2 500.1320005 MHz

F1 - Acquisition Parameters  
NUC 13C  
TD 128  
SFO1 500.132 MHz  
FIDRES 7.812500 Hz  
SW 1.999 ppm  
P1MODE QF

F2 - Processing Parameters  
SI 26214  
SF 125.7577927 MHz  
WDW EM  
SSB 0  
GB 0.50 Hz  
PC 1.40

F1 - Processing Parameters  
SI 1024  
MC2 500.130000 MHz  
WDW EM  
SSB 0  
GB 0.30 Hz  
LB 0.1



```

Current Data Parameters
NAME          MK251
EXPNO         1
PROCNO        1

F2 - Acquisition Parameters
Date_         20140702
Time          14.06
INSTRUM       DRX
PROBHD        5 mm TBI 1H/13
PULPROG       zg
TD            65536
SOLVENT       CDCl3
NS            32
DS            0
SWH           10330.578 Hz
FIDRES        0.157632 Hz
AQ            3.1719923 sec
RG            128
DW            48.400 usec
DE            6.78 usec
TE            303.0 K
D1            1.00000000 sec
TD0           1

===== CHANNEL f1 =====
NUC1          1H
P1            2.50 usec
PL1           0.00 dB
SFO1         500.1330885 MHz

F2 - Processing parameters
SI           32768
SF           500.1300271 MHz
WDW          no
SSB          0
LB           0.00 Hz
GB           0
PC           1.00
  
```

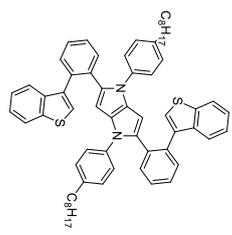
139.36  
138.99  
138.00  
136.64  
136.04  
134.93  
133.98  
133.97  
131.25  
130.03  
129.44  
127.88  
127.54  
127.22  
123.90  
123.36  
122.44  
122.35  
121.92

95.78

77.25  
77.00  
76.75

35.11  
31.92  
31.08  
29.50  
29.49  
29.30  
22.69  
14.12  
-0.01

150  
140  
130  
120  
110  
100  
90  
80  
70  
60  
50  
40  
30  
20  
10  
0 ppm



4f



Current Data Parameters  
NAME HK231  
EXPNO 1  
PROCNO 1

F2 - Acquisition Parameters

Date\_ 20140702  
Time 14.42  
INSTRUM spect  
PROBHD 5 mm TBI 1H/13  
PULPROG zgpg2  
TD 65536  
SOLVENT CDCl3  
NS 2610  
DS 4  
SFORES 32679.734 Hz  
AQ 0.1498653 Hz  
RG 1.0027508 sec  
DW 15.300 usec  
DE 7.10 usec  
TE 303.0 K  
TR 1.000000 sec  
d11 0.0300000 sec  
DELTA 0.89999998 sec  
TPO 1

==== CHANNEL F1 =====  
NUC1 13C  
P1 5.00 usec  
PL1 -3.00 dB  
SFO1 125.7703643 MHz

==== CHANNEL F2 =====  
CPDPRG2 waltz16  
NUC2 1H  
P2 98.00 usec  
PL2 3.00 dB  
PL12 23.00 dB  
PL13 32.00 dB  
SFO2 500.1320005 MHz

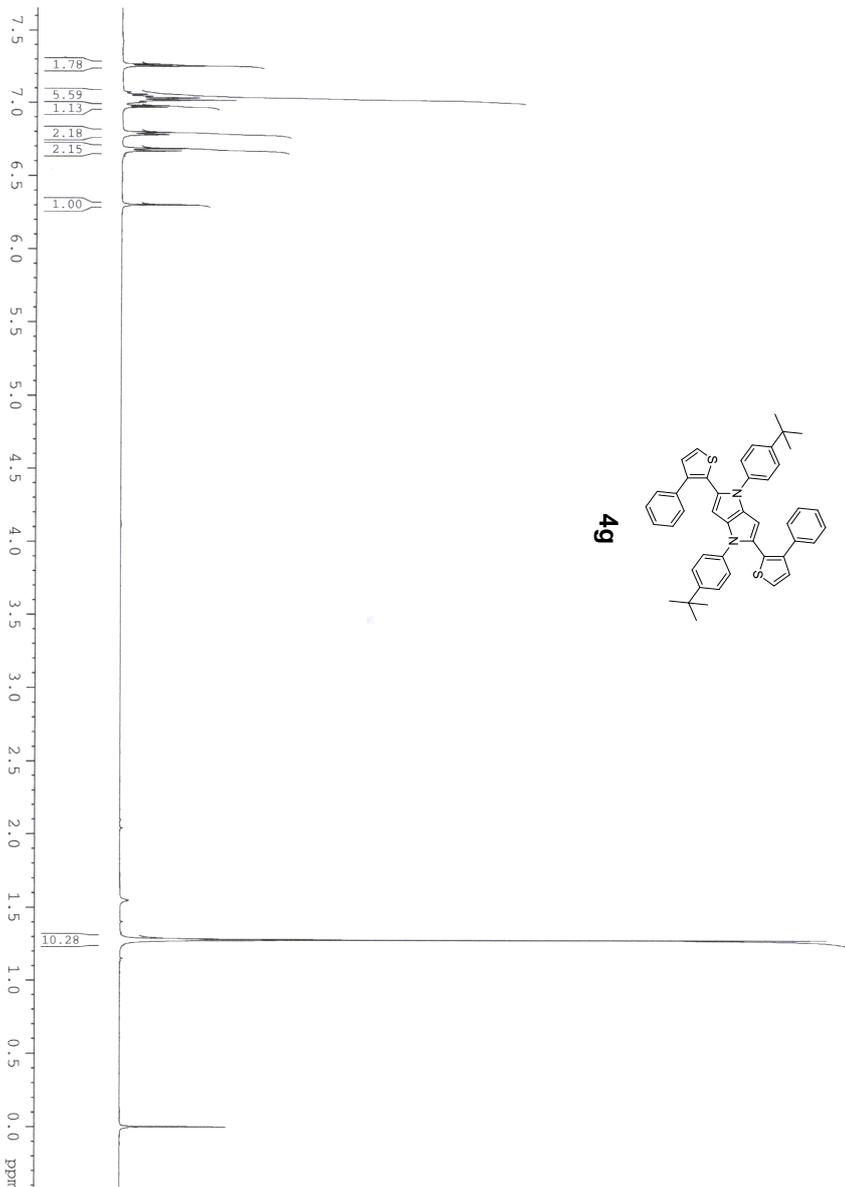
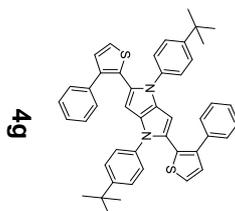
F1 - Acquisition Parameters  
NUC1 13C  
SFO1 500.132 MHz  
FIDRES 7.812500 Hz  
SFO2 500.1320005 MHz

F2 - Processing Parameters  
SI 262144  
SF 125.7577924 MHz  
WDW EM  
SSB 0  
LB 0.50 Hz  
GB 1.40

F1 - Processing Parameters  
SI 1024  
SF 500.1300000 MHz  
WDW EM  
SSB 0  
LB 0.30 Hz  
GB 0.1



7.043  
7.040  
7.033  
7.016  
7.005  
7.002  
6.999  
6.978  
6.967  
6.794  
6.780  
6.777  
6.685  
6.682  
6.668  
6.303



1.278  
0.000

Current Data Parameters  
NAME MK212  
EXPNO 1  
PROCNO 1

F2 - Acquisition Parameters  
Date\_ 20140508  
Time 10.46  
INSTRUM DRX  
PROBHD 5 mm TBI 1H/13  
PULPROG zg30  
TD 65536  
SOLVENT CDCl3  
NS 32  
DS 0  
SMH 10330.578 Hz  
FIDRES 0.157632 Hz  
AQ 3.1719923 sec  
RG 287.74  
DM 48.400 usec  
DE 6.78 usec  
TE 303.0 K  
D1 1.00000000 sec  
TD0 1

==== CHANNEL f1 =====  
NUC1 1H  
P1 8.20 usec  
PL1 5.00 dB  
SFO1 500.1330885 MHz

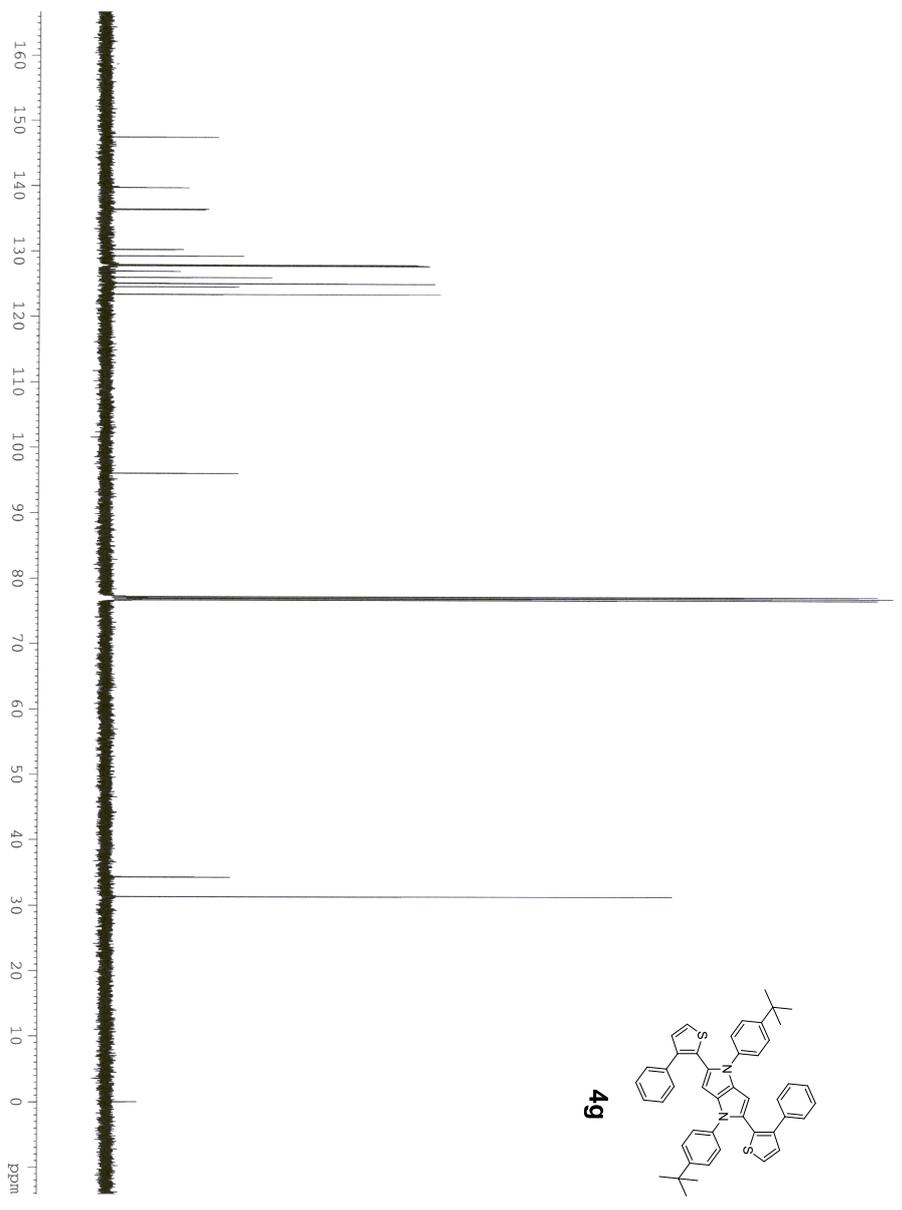
F2 - Processing parameters  
SI 32768  
SF 500.1300278 MHz  
WDW no  
SSB 0  
LB 0.00 Hz  
GB 0  
PC 1.00

147.45  
 139.77  
 136.50  
 136.40  
 130.28  
 130.24  
 129.31  
 127.95  
 127.81  
 126.95  
 126.02  
 125.08  
 124.58  
 123.44

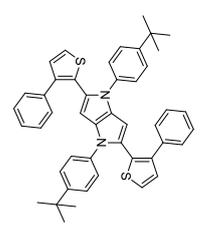
96.05  
 77.25  
 77.00  
 76.75

34.29  
 31.37

-0.01



**4g**



Current Data Parameters  
 NAME MK212  
 EXPNO 2  
 PROCNO 1

F2 - Acquisition Parameters  
 Date\_ 20140508  
 Time 11.01  
 INSTRUM DRX  
 PROBHD 5 mm TBI 1H/13  
 PULPROG zgpg30  
 TD 65536  
 SOLVENT CDCl3  
 NS 3225  
 DS 4  
 SWH 32679.738 Hz  
 FIDRES 0.498553 Hz  
 AQ 1.0027268 sec  
 RG 327.268  
 DW 15.300 usec  
 DE 7.10 usec  
 TE 303.0 K  
 D1 1.00000000 sec  
 d11 0.03000000 sec  
 DELTA 0.85959599 sec  
 TDO 1

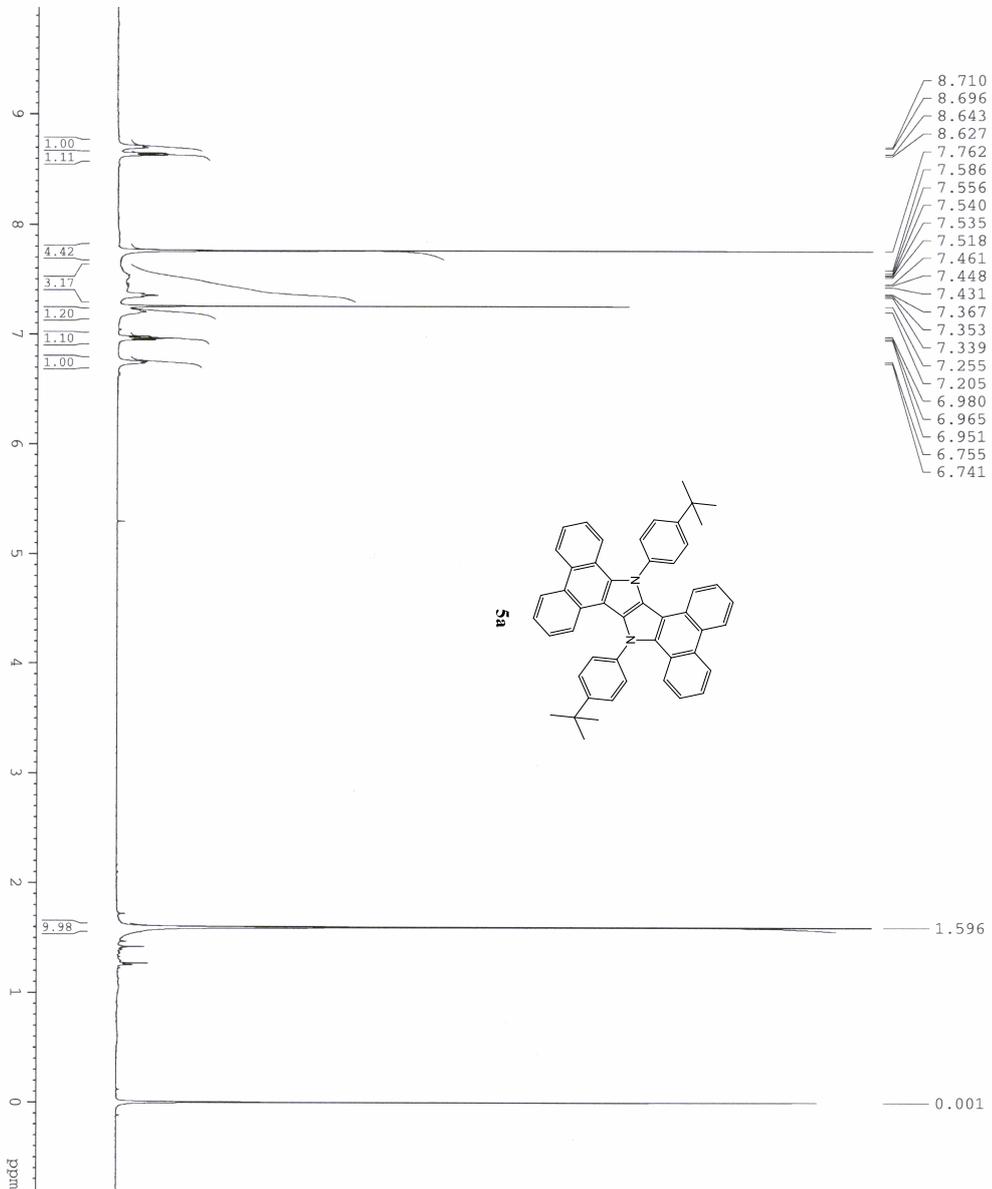
===== CHANNEL F1 =====  
 NUC1 13C  
 P1 5.00 usec  
 PL1 -3.00 dB  
 SFO1 125.7705643 MHz

===== CHANNEL F2 =====  
 CPDPRG2 waltz16  
 NUC2 1H  
 PCPD2 98.00 usec  
 PL2 2.00 dB  
 PL3 32.00 dB  
 SFO2 500.1320005 MHz

F1 - Acquisition parameters  
 ND0 132  
 SFO1 500.132 MHz  
 FIDRES 7.812500 Hz  
 SW 1.999 ppm  
 PRNMODE QP

F2 - Processing parameters  
 SI 32768  
 SF 125.7577923 MHz  
 WDW EM  
 SSB 0  
 LB 0.50 Hz  
 GB 0  
 PC 1.40

F1 - Processing parameters  
 SI 1024  
 MC2 500.1300000 MHz  
 SF SINE  
 WDM SINE  
 SSB 1  
 GB 0.1



Current Data Parameters  
 NAME WK189-new  
 EXPNO 1  
 PROCNO 1

F2 - Acquisition Parameters  
 Date\_ 20140508  
 Time 15.15  
 INSTRUM DRX  
 PROBHD 5 mm TBI 1H/13  
 PULPROG zg30  
 TD 65536  
 SOLVENT CDCl3  
 NS 64  
 DS 0  
 SWH 10330.578 Hz  
 FIDRES 0.157632 Hz  
 AQ 3.171923 sec  
 RG 512  
 DW 48.400 usec  
 DE 6.78 usec  
 TE 303.0 K  
 D1 1.00000000 sec  
 TDO 1

==== CHANNEL F1 =====  
 NUC1 1H  
 P1 8.20 usec  
 PL1 5.00 dB  
 SF01 500.1330885 MHz

F2 - Processing parameters  
 SI 32768  
 SF 500.1300265 MHz  
 WDW no  
 SSB 0  
 LB 0.00 Hz  
 GB 0  
 PC 1.00



Current Data Parameters  
 NAME MKL189-new  
 PROCNO 1

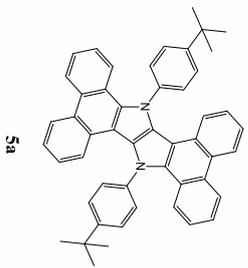
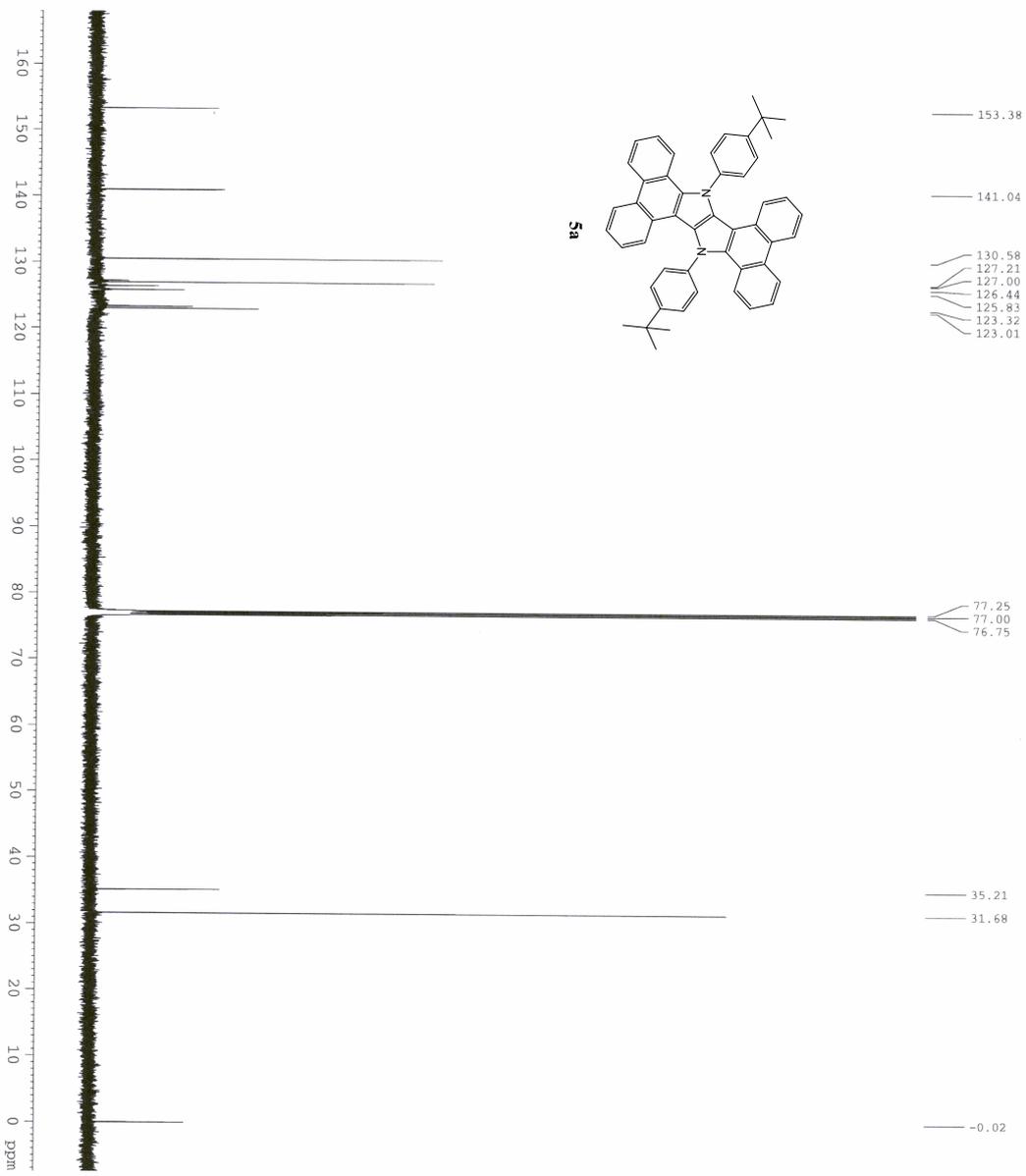
F2 - Acquisition Parameters  
 Date\_ 20140509  
 Time 9.07  
 INSTRUM DRX  
 PULPROG zgpg30  
 TD 65536  
 SOLVENT CDCl3  
 NS 31500  
 DS 4  
 SWH 32670.728 Hz  
 FWHM 62.642 Hz  
 AQ 1.0027502 sec  
 RG 32768  
 DW 15.300 usec  
 DE 7.10 usec  
 TE 303.0 K  
 TD0 1.00000000 sec  
 d11 0.02000000  
 DELTA 0.89999998 sec  
 TD0 1

==== CHANNEL F1 =====  
 NUCL1 13C  
 P1 5.130 usec  
 PL1 -3.00 dB  
 SFO1 125.7703643 MHz  
 ===== CHANNEL F2 =====  
 CPEPRG2 waltz16  
 NUCL2 1H  
 P2 98.10 usec  
 PL2 3.00 dB  
 PL12 23.00 dB  
 PL13 32.00 dB  
 SFO2 500.1320005 MHz

F1 - Acquisition parameters  
 MD0  
 TD 128  
 SP01 500.132 MHz  
 FIDPRES 7.812500 Hz  
 SW 1.999 ppm  
 FWHM0DE QP

F2 - Processing parameters  
 SI 262144  
 SF 125.7577929 MHz  
 WDM EM  
 SSB 0  
 LB 0.50 Hz  
 GB 0  
 PC 1.40

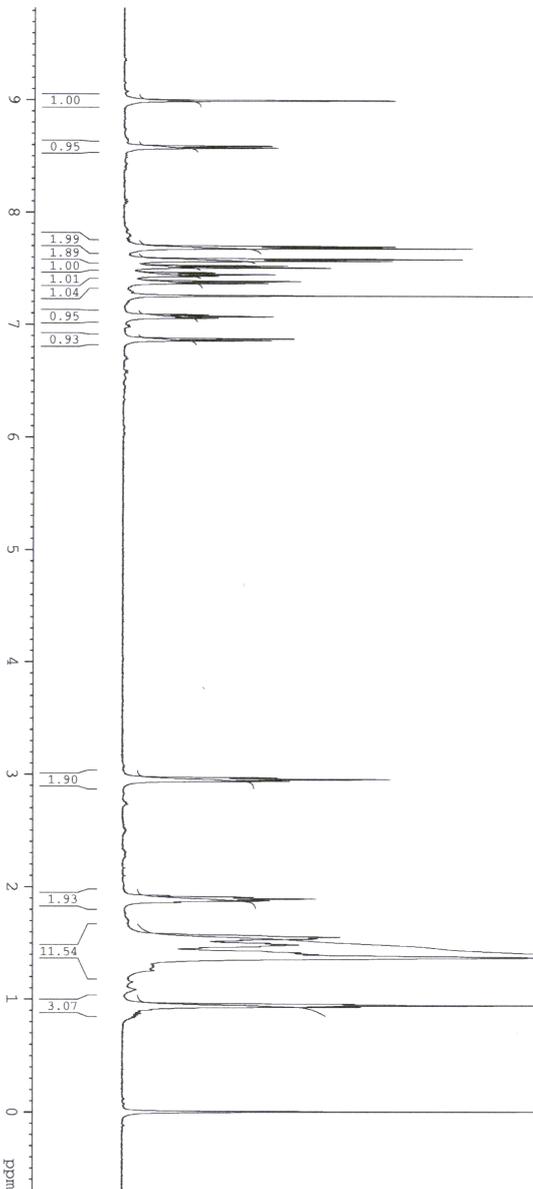
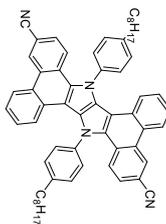
F1 - Processing parameters  
 SI 1024  
 MC2 QP  
 SFO 500.1300000 MHz  
 WDM SSI0  
 SSB 0  
 LB 0.30 Hz  
 GB 0.1





8.996  
8.590  
8.574  
7.697  
7.681  
7.584  
7.569  
7.524  
7.506  
7.461  
7.446  
7.431  
7.385  
7.367  
7.256  
7.087  
7.072  
7.057  
6.875  
6.859

2.969  
2.954  
2.939  
1.922  
1.907  
1.893  
1.879  
1.863  
1.553  
1.539  
1.525  
1.512  
1.500  
1.485  
1.456  
1.413  
1.399  
1.372  
1.289  
1.255  
0.955  
0.942  
0.929  
0.905  
0.000



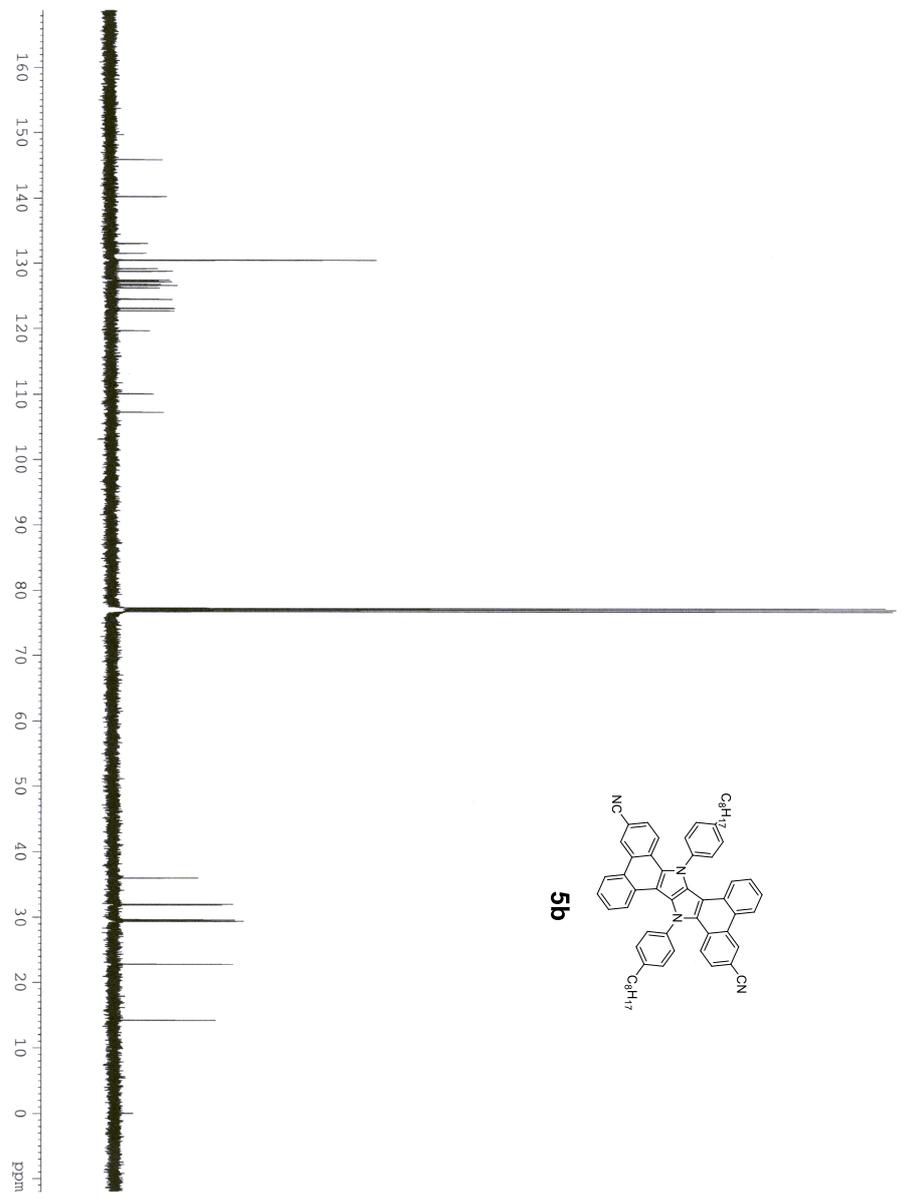
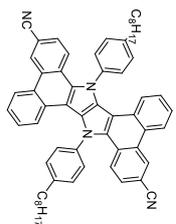
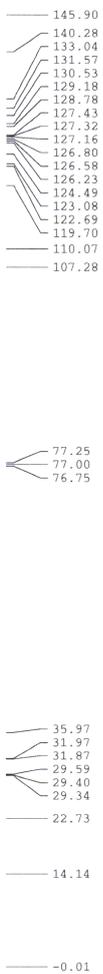
```

Current Data Parameters
NAME          MK252
EXPNO         1
PROCNO        1

F2 - Acquisition Parameters
Date_         20140703
Time          14.41
INSTRUM      DRX
PROBHD       5 mm TBI 1H/13
PULPROG      zg
TD            65536
SOLVENT      CDCl3
NS            32
DS            0
SMH           10330.578 Hz
FIDRES       0.157632 Hz
AQ            3.115923 sec
RG            203.2
DM            48.400 usec
DE            6.78 usec
TE            303.0 K
D1            1.00000000 sec
TD0           1

===== CHANNEL f1 =====
NUC1          1H
P1            2.50 usec
PL1           0.00 dB
SFO1          500.1330885 MHz

F2 - Processing parameters
SI            32768
SF            500.1300258 MHz
WDW           no
SSB           0
LB            0.00 Hz
GB            0
PC            1.00
  
```



```

Current Data Parameters
NAME          MK252
EXPNO         1
PROCNO        1

F2 - Acquisition Parameters
Date_         20140703
Time         15.01
INSTRUM       spect
PROBHD        5 mm TBI 1H/1
PULPROG       zgpg
TD            65536
SOLVENT       CDCl3
NS           8000
DS           4
SWH          32679.73 Hz
FIDRES       0.498653 Hz
AQ           1.0027508 sec
RG           32768
LW          15.300 usec
GB           7.10 usec
DE          303.0 K
TE          0.0100000 sec
d11         0.0100000 sec
DELTA       0.89999998 sec
TD0         1

===== CHANNEL F1 =====
NUC1         13C
P1          5.00 usec
PL1         -3.00 dB
SFO1        125.7703643 MHz

===== CHANNEL F2 =====
NAME         waltz16
PROG         waltz16
NUC2         1H
PCPD2        98.00 usec
PL2          3.00 dB
PL12        23.00 dB
PL13        32.00 dB
SFO2        500.1320005 MHz

F1 - Acquisition parameters
ND0          128
TD           65536
SFO1         500.132 MHz
FIDRES       7.812500 Hz
SW          1.999 ppm
FHM0000     QF

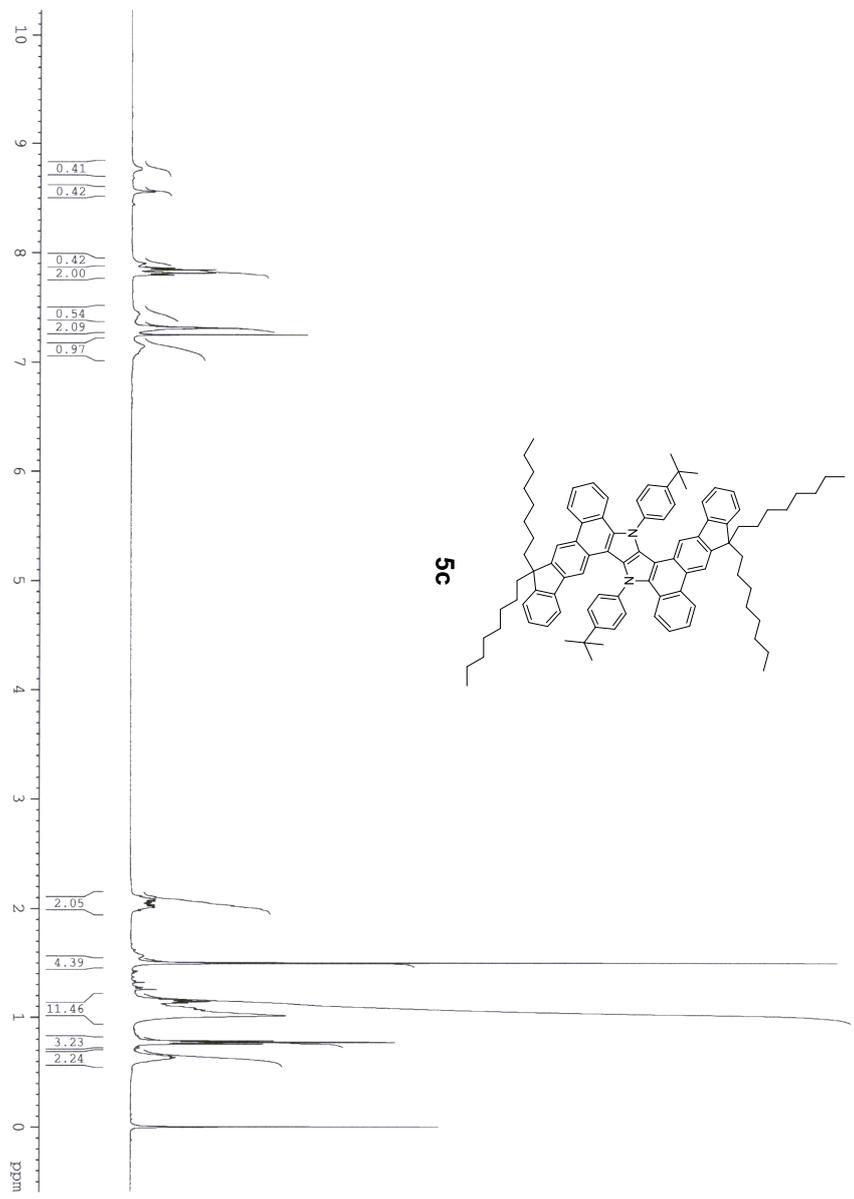
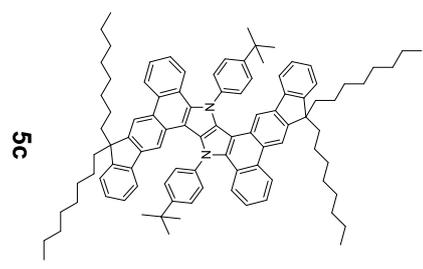
F2 - Processing parameters
SI           262144
SF          125.7577918 MHz
WDW         EM
SSB         0
GB          0.50 Hz
PC          1.40

F1 - Processing parameters
SI           1024
SF          500.130000 MHz
WDW         QF
SSB         0
GB          0.30 Hz
PC          0.1
  
```



- 8.772
- 8.565
- 7.906
- 7.864
- 7.848
- 7.816
- 7.800
- 7.439
- 7.332
- 7.317
- 7.312
- 7.304
- 7.273
- 7.253
- 7.149

- 2.116
- 2.104
- 2.089
- 2.083
- 2.068
- 2.057
- 2.044
- 2.033
- 2.021
- 2.011
- 1.984
- 1.498
- 1.171
- 1.159
- 1.145
- 1.131
- 1.086
- 1.081
- 1.068
- 1.014
- 0.785
- 0.771
- 0.757
- 0.645



- 0.41
- 0.42
- 0.42
- 2.00
- 0.54
- 2.09
- 0.97

- 2.05
- 4.39
- 11.46
- 3.23
- 2.24

```

Current Data Parameters
NAME          MK223-new
EXPNO         1
PROCNO        1

F2 - Acquisition Parameters
Date_         20140520
Time          15.09
INSTRUM      DRX
PROBHD       5 mm TBI 1H/13
PULPROG      zgpg30
TD           65536
SOLVENT      CDCl3
NS           64
DS           0
SWH          10330.578 Hz
FIDRES       0.157632 Hz
AQ           3.1719923 sec
RG           143.7
RG           48.400 usec
DM           6.778 usec
DE           303.0 K
TE           1.00000000 sec
TD0          1

===== CHANNEL f1 =====
NUC1         1H
P1           2.50 usec
PL1          0.00 dB
SFO1         500.1330885 MHz

F2 - Processing parameters
SI           32768
SF           500.1300271 MHz
WDW          no
SSB          0
LB           0.00 Hz
GB           0
PC           1.00
  
```

152.91  
151.39  
146.29  
141.21  
141.12  
140.02  
134.40  
130.60  
130.37  
129.71  
127.25  
127.04  
126.91  
126.74  
126.51  
125.41  
124.73  
123.89  
122.73  
122.01  
120.97  
117.77  
116.99  
109.56

77.25  
77.00  
76.75

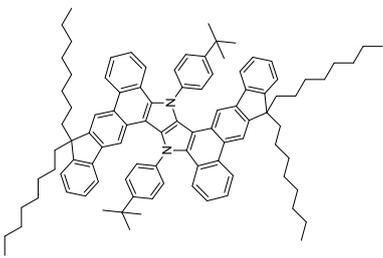
54.67

41.02

35.16  
31.77  
31.49  
30.07  
29.21  
29.19  
23.82  
22.55

14.01  
13.95

-0.02



170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 ppm



Current Data Parameters  
 NAME BRZ23-new  
 DATE 20140521  
 PROCNO 1

F2 - Acquisition Parameters  
 Date\_ 20140521  
 Time 7.18  
 INSTRUM 5 mm TBI 1H/13  
 PULPROG zgpg30  
 TD 65536  
 SOLVENT CDCl3  
 NS 28800  
 DS 4  
 F2 - Processing Parameters  
 SI 1024  
 SF 500.130000 MHz  
 WDW EM  
 SSB 0  
 GB 0  
 PC 1.40

F1 - Acquisition Parameters  
 NDU 128  
 TD 500.132 MHz  
 SFO1 7.812500 Hz  
 FIDRES 1.999 PPM  
 FWHM 0.30 Hz  
 QF 0.1

===== CHANNEL F1 =====  
 NUCL1 13C  
 P2 5.00 usec  
 PL1 -3.00 dB  
 SFO1 125.7703643 MHz

===== CHANNEL F2 =====  
 GPROG2 waltz16  
 NUCL2 1H  
 P2 98.01 usec  
 PL2 3.00 dB  
 PL12 23.00 dB  
 PL13 32.00 dB  
 SFO2 500.1320005 MHz



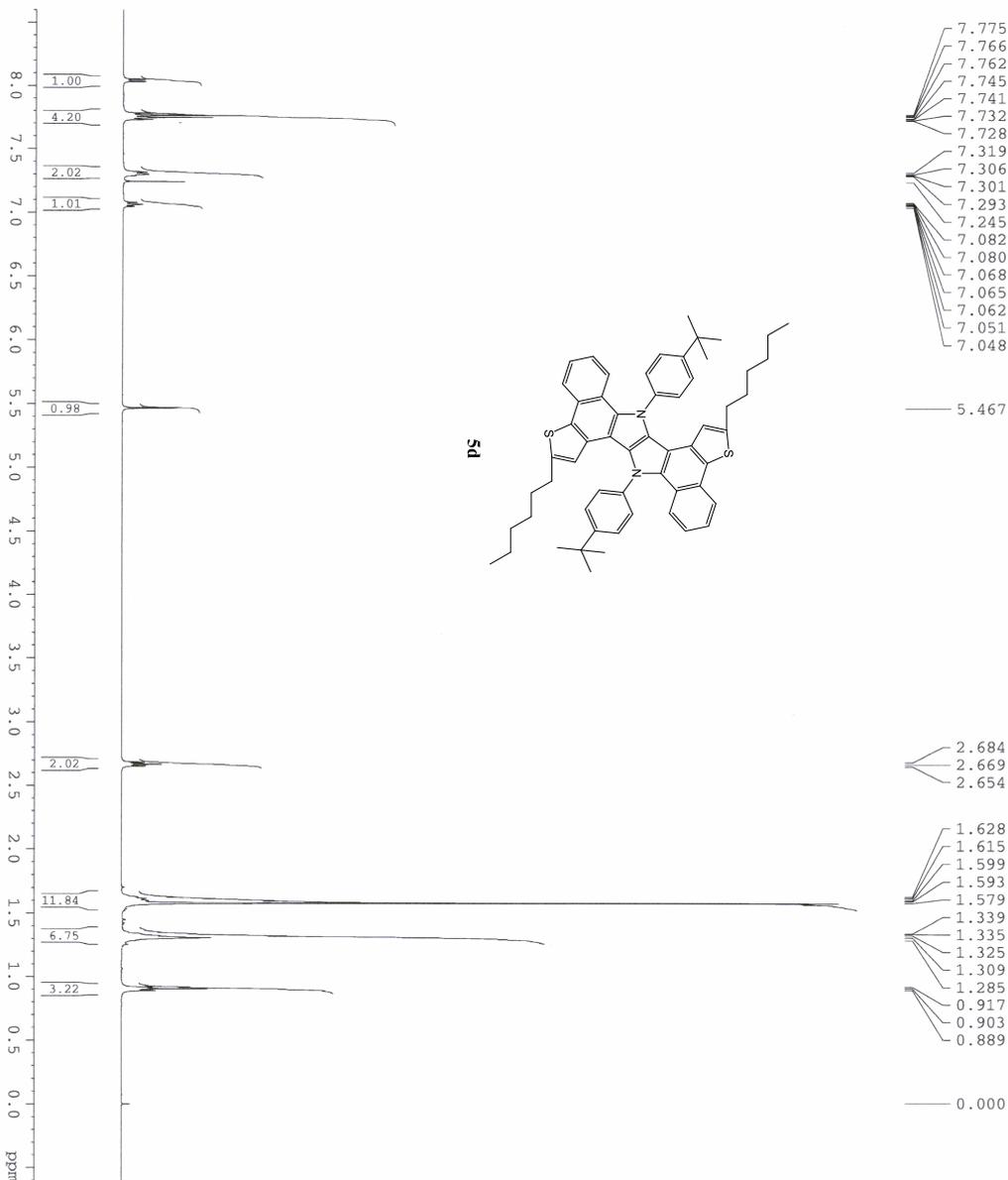
Current Data Parameters  
 NAME MK194  
 EXPNO 1  
 PROCNO 1

F2 - Acquisition Parameters

Date\_ 20140317  
 Time 13.26  
 INSTRUM 1H NMR  
 PULPROG zgpg30  
 RUFREQ 500.1300315  
 TD 65536  
 SOLVENT CDCl3  
 NS 32  
 DS 0  
 SWH 10330.578 Hz  
 FIDRES 0.157632 Hz  
 AQ 3.171923 sec  
 RG 181  
 DW 48.400 usec  
 DE 6.78 usec  
 TE 303.0 K  
 TD 1.00000000 sec  
 ID0 1

===== CHANNEL f1 =====  
 NUC1 1H  
 P1 8.20 usec  
 PL1 5.00 dB  
 SFO1 500.1300315 MHz

F2 - Processing parameters  
 SI 32768  
 SF 500.1300315 MHz  
 WDW no  
 SSB 0  
 LB 0.00 Hz  
 GB 0  
 PC 1.00





Current Data Parameters  
 NAME HK194  
 EXNO 2  
 PROCNO 1

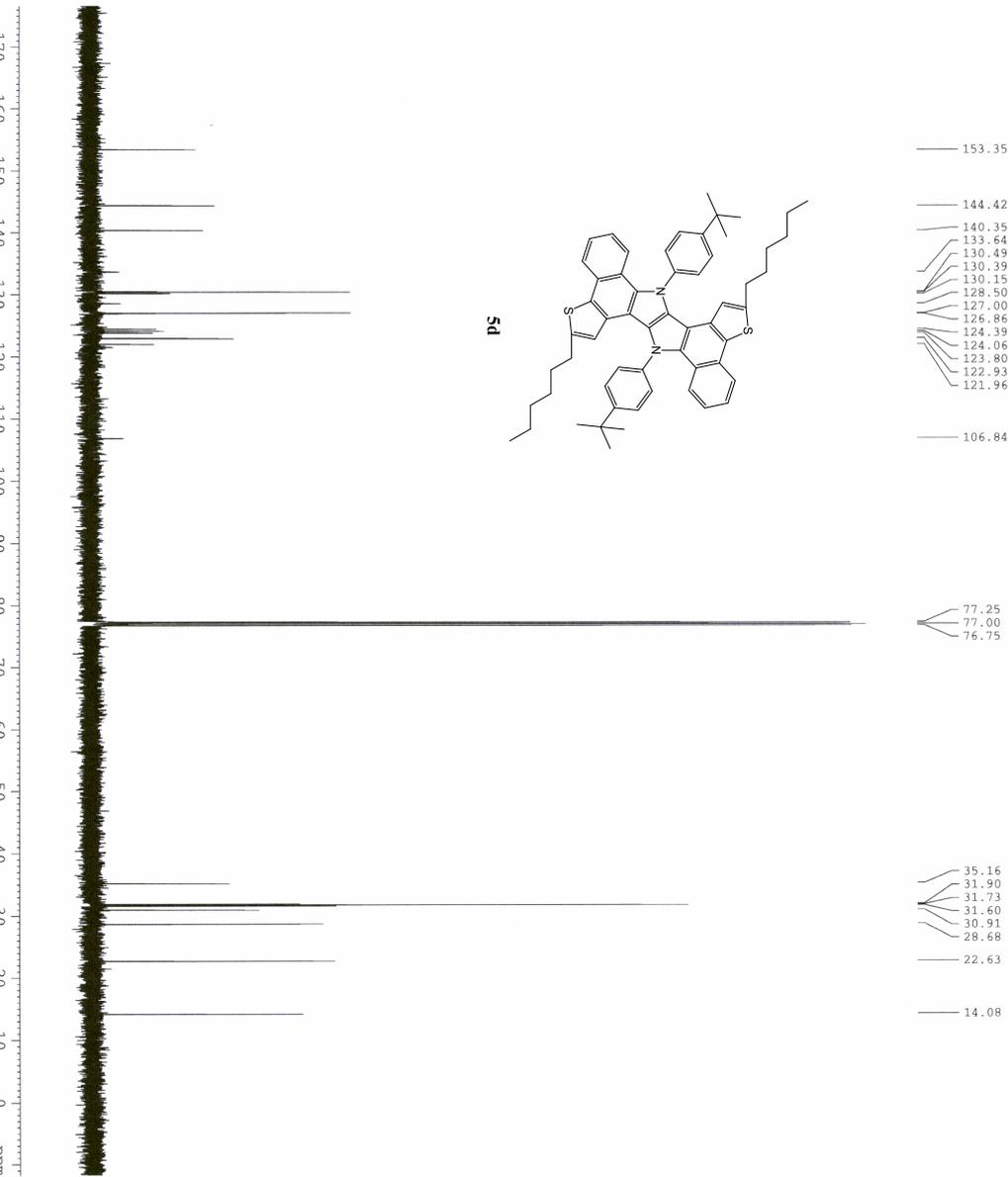
F2 - Acquisition Parameters  
 Date\_ 20140317  
 Time 14:06  
 INSTRUM 14-EXB  
 PROBRD 5 mm TBI H/13  
 PULPROG zgpg  
 TD 65536  
 SOLVENT CDCl3  
 NS 1200  
 DS 4  
 SFO 32779.738 Hz  
 FIDRES 0.498653 Hz  
 AQ 1.0027508 sec  
 RG 32768  
 DW 15.300 usec  
 DE 3.710 usec  
 DI 1.00000000 sec  
 d11 0.03000000 sec  
 DELTA 0.89999998 sec  
 TDO 1

==== CHANNEL F1 =====  
 NUC1 13C  
 P1 5.00 usec  
 PL1 -3.00 dB  
 SFO1 125.7703643 MHz

==== CHANNEL F2 =====  
 NUC2 1H  
 P2 98.00 usec  
 PL2 3.00 dB  
 PL12 23.00 dB  
 PL13 32.00 dB  
 SFO2 500.1320005 MHz

F1 - Acquisition parameters  
 NDO 1  
 TD 128  
 SFO1 500.132 MHz  
 FIDRES 7.812500 Hz  
 SW 1.999 ppm  
 F2HMODE QF

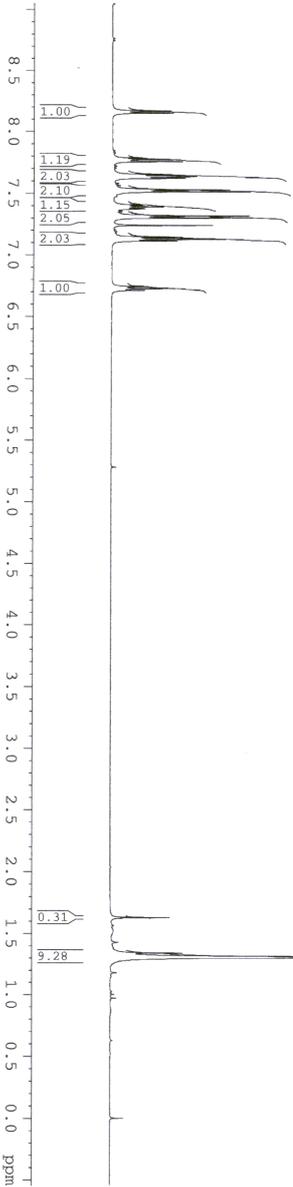
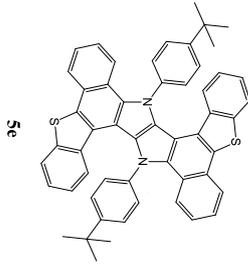
F2 - Processing parameters  
 SI 262144  
 SF 125.7577935 MHz  
 WDW EM  
 SSB 0.50 Hz  
 GB 0  
 PC 1.40





7.788  
7.777  
7.761  
7.654  
7.642  
7.637  
7.627  
7.534  
7.518  
7.409  
7.394  
7.379  
7.322  
7.306  
7.244  
7.149  
7.148  
7.133  
7.119  
7.117  
6.746  
6.745  
6.730  
6.716  
6.715

1.631  
1.341  
1.307  
0.001



Current Data Parameters  
NAME MK200  
EXPNO 1  
PROCNO 1

F2 - Acquisition Parameters  
Date\_ 20140317  
Time 12.47  
INSTRUM 5 mm TBI H1/13  
PROBHD 1H/13  
PULPROG zgpg30  
SOLVENT CDCl3  
NS 32  
DS 0  
SWH 10330.578 Hz  
FIDRES 0.157632 Hz  
AQ 3.1719923 sec  
RG 181  
DE 48.400 usec  
TE 6.78 usec  
TD 303.0 K  
TDO 1.00000000 sec

===== CHANNEL f1 =====  
NUC1 1H  
P1 8.20 usec  
PL1 5.00 dB  
SFO1 500.1330885 MHz

F2 - Processing parameters  
SI 32768  
SF 500.1300318 MHz  
WDW no  
SSB 0  
LB 0.00 Hz  
GB 0  
PC 1.00



Current Data Parameters  
 Name: 20140317  
 EXPNO: 1  
 PROCNO: 1

F2 - Acquisition Parameters  
 Date\_: 20140317  
 Time: 13.06  
 Instrument: spect  
 PROBHD: 5 mm TBI 1H/13  
 PULPROG: zgpg30  
 TD: 65536  
 SOLVENT: CDCl3  
 NS: 900  
 DS: 4  
 SFO1: 32679.738 Hz  
 FIDRES: 0.498653 Hz  
 AQ: 1.0027508 sec  
 RG: 32768  
 DW: 15.300 usec  
 DE: 7.10 usec  
 TE: 300.2 K  
 D1: 1.00000000 sec  
 d11: 0.03000000 sec  
 DELTA: 0.89999998 sec  
 TDO: 1

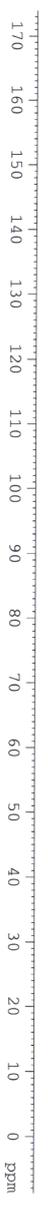
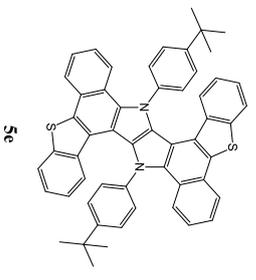
==== CHANNEL F1 =====  
 NUC1: 13C  
 P1: 5.00 usec  
 PL1: -3.00 dB  
 SFO1: 125.7703643 MHz

==== CHANNEL F2 =====  
 CDPORG2: waltz16  
 NUC2: 13C  
 P2: 98.00 usec  
 PL2: 3.00 dB  
 PL12: 23.00 dB  
 PL13: 32.00 dB  
 SFO2: 500.1320005 MHz

F1 - Acquisition Parameters  
 NDO: 128  
 TD: 128  
 SFO1: 500.132 MHz  
 FIDRES: 7.812500 Hz  
 SW: 1.999 Hz  
 FWHM: 0.30 Hz  
 SSB: 0  
 GB: 0.30 Hz  
 PC: 1.40

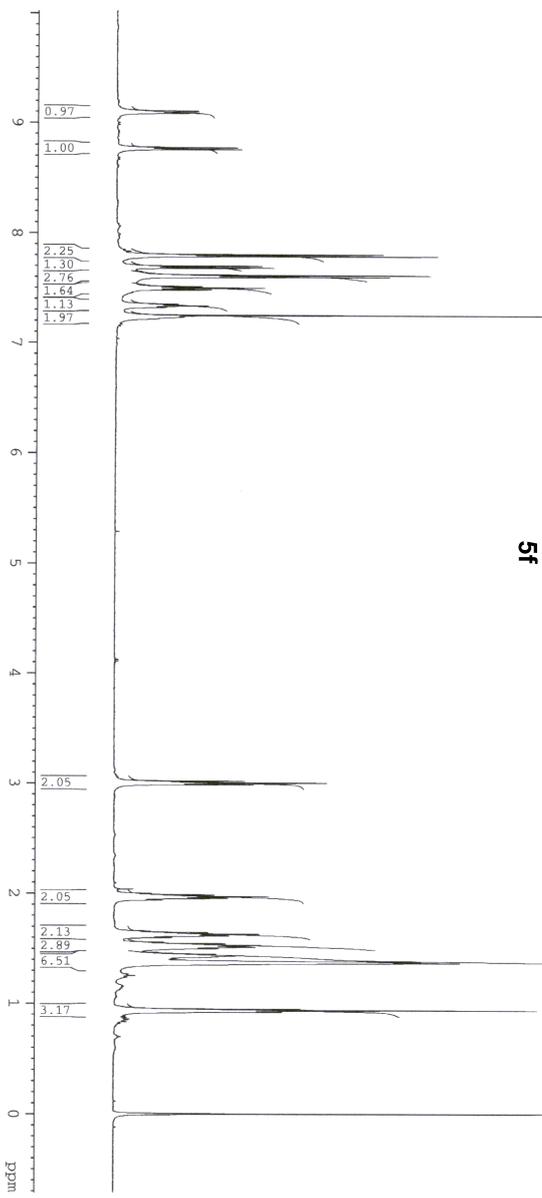
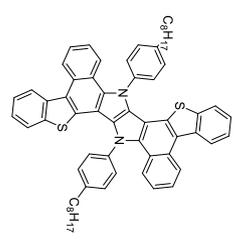
F2 - Processing Parameters  
 SI: 1024  
 SF: 500.1300000 MHz  
 WDM: 1  
 SSB: 0  
 LB: 0.1 GB

- 152.02
- 139.05
- 137.62
- 137.22
- 131.72
- 129.18
- 128.93
- 126.56
- 125.64
- 125.46
- 125.23
- 124.31
- 124.21
- 123.65
- 123.27
- 122.80
- 121.87
- 121.47
- 106.29
- 77.25
- 77.00
- 76.74
- 34.72
- 31.43



9.102  
9.086  
8.776  
8.759  
7.806  
7.790  
7.700  
7.684  
7.651  
7.616  
7.600  
7.514  
7.499  
7.484  
7.351  
7.337  
7.322  
7.250  
7.234

3.019  
3.004  
2.989  
2.039  
2.001  
1.986  
1.971  
1.956  
1.941  
1.660  
1.646  
1.631  
1.615  
1.601  
1.559  
1.546  
1.540  
1.530  
1.514  
1.501  
1.448  
1.437  
1.427  
1.410  
1.382  
1.376  
1.368  
0.948  
0.935



Current Data Parameters  
 NAME MK253  
 EXPNO 1  
 PROCNO 1

F2 - Acquisition Parameters  
 Date\_ 20140704  
 Time 10.33  
 INSTRUM DRX  
 PROBD 5 mm TBI 1H/13  
 PULPROG zg  
 TD 65536  
 SOLVENT CDCl3  
 NS 32  
 DS 2  
 SFO 10330.578 Hz  
 FIDRES 0.157632 Hz  
 AQ 3.1719923 sec  
 RG 181  
 DW 48.400 usec  
 DE 6.78 usec  
 TE 303.0 K  
 D1 1.00000000 sec  
 TD0 1

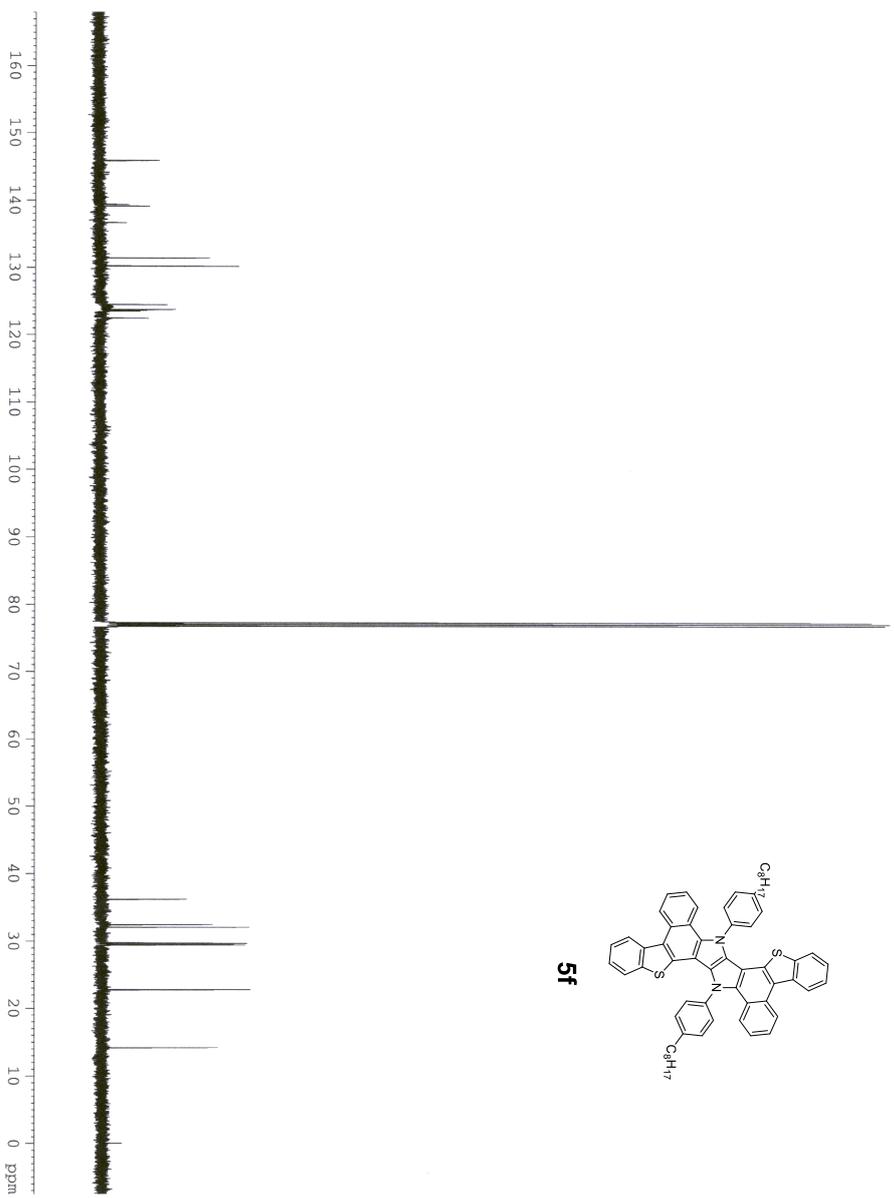
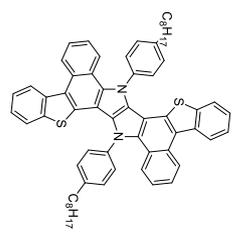
==== CHANNEL f1 =====  
 NUC1 1H  
 P1 2.50 usec  
 PL1 0.00 dB  
 SF01 500.1330885 MHz

F2 - Processing parameters  
 SI 32768  
 SF 500.1300284 MHz  
 MDW no  
 SSB 0  
 LB 0.00 Hz  
 GB 0  
 PC 1.00

145.87  
139.39  
139.14  
136.69  
131.44  
130.22  
124.44  
123.72  
123.64  
123.50  
122.44

77.25  
77.00  
76.75

36.18  
32.42  
32.04  
29.63  
29.47  
29.41  
22.75  
14.15  
-0.02



Current Data Parameters  
NAME: HK32  
EXPNO: 1  
PROCNO: 1

F2 - Acquisition Parameters  
Date\_ 20140704  
Time 10:49  
INSTRUM spect  
PROBHD 5 mm TBI 1H/13  
PULPROG zgpg3  
TD 65536  
SOLVENT CDCl3  
NS 4502  
DS 4  
SWH 32679.738 Hz  
FIDRES 0.498653 Hz  
AQ 1.0027508 sec  
RG 32768  
DW 15.300 usec  
DE 7.110 usec  
TE 300.2 K  
D1 1.0000000 sec  
d11 0.0300000 sec  
DELTA 0.89999998 sec  
TDO 1

==== CHANNEL F1 =====  
NUC1 13C  
P1 5.100 usec  
PL1 -3.00 dB  
SFO1 125.7703643 MHz

==== CHANNEL F2 =====  
CPDPRG2 waltz16  
NUC2 13C  
PCPD2 98.00 usec  
PL2 3.00 dB  
PL12 23.00 dB  
PL13 32.00 dB  
SFO2 500.1320005 MHz

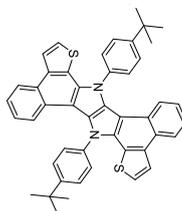
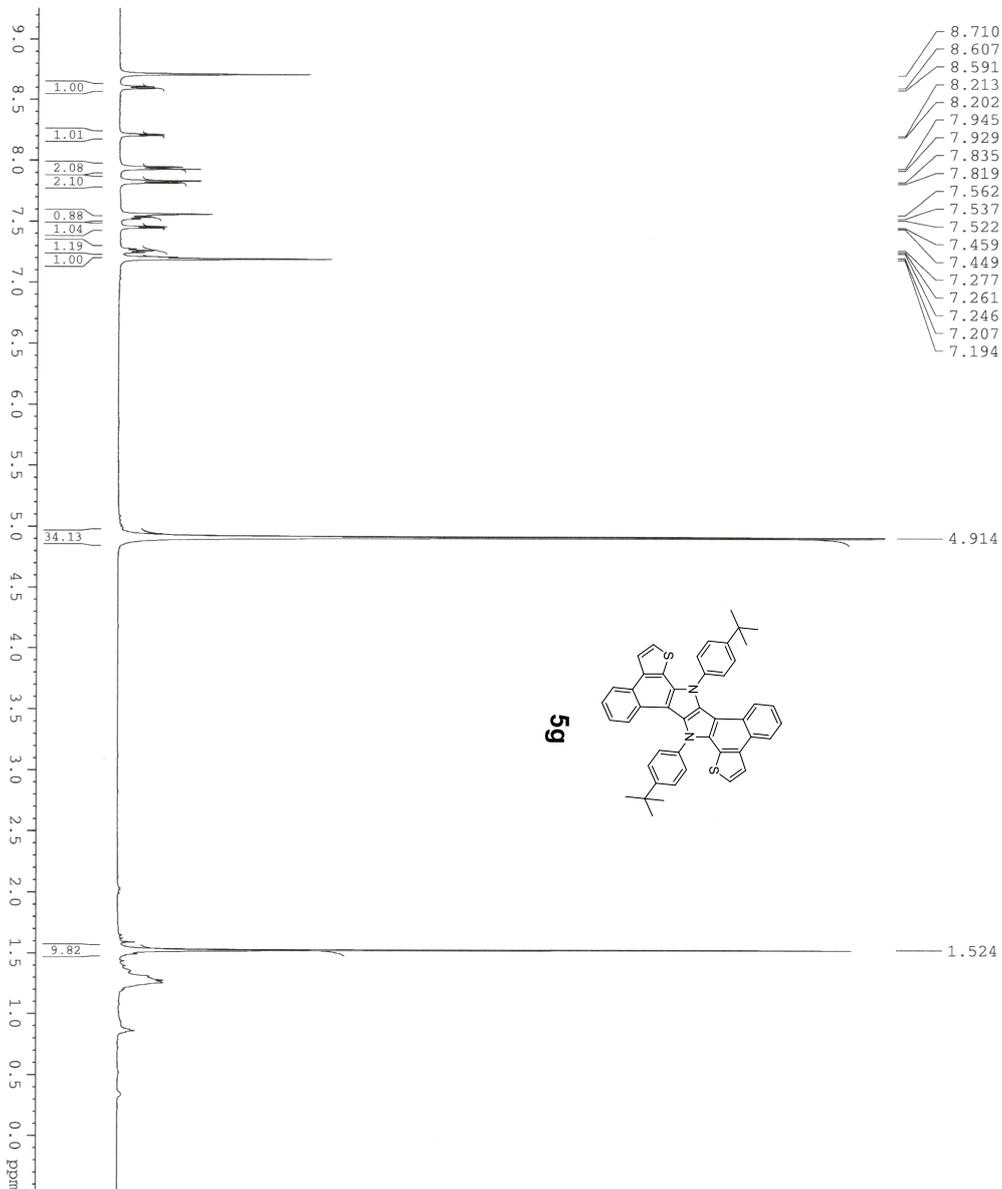
F1 - Acquisition parameters  
NUC1 13C  
TD 128  
SFO1 500.132 MHz  
FIDRES 7.812500 Hz  
SW 1.999 ppm  
FINDOP VQ

F2 - Processing parameters  
SI 262144  
SF 125.7577929 MHz  
WDW EM  
SSB 0 Hz  
GB 0  
PC 1.40

F1 - Processing parameters  
SI 1024  
RG 1024  
SFO1 500.130000 MHz  
WDW SINC  
SSB 0  
LB 0.30 Hz  
GB 0.1

Pomiar w temp. pokojowej (303 K)

8.710  
8.607  
8.591  
8.213  
8.202  
7.945  
7.929  
7.835  
7.819  
7.562  
7.537  
7.522  
7.459  
7.449  
7.277  
7.261  
7.246  
7.207  
7.194



Current Data Parameters  
NAME MK225  
EXPNO 1  
PROCNO 1

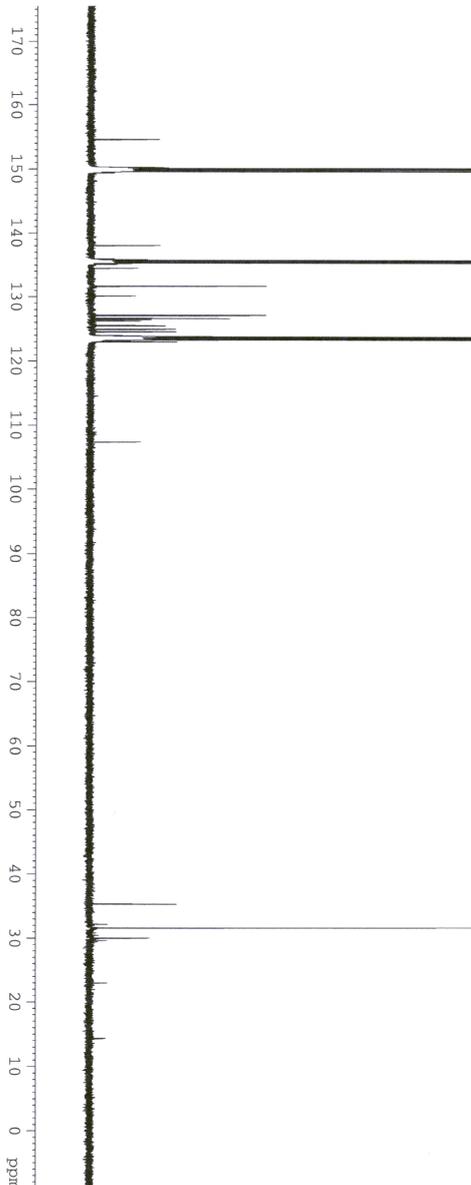
F2 - Acquisition Parameters  
Date\_ 20140521  
Time 13.57  
INSTRUM DRX  
PROBHD 5 mm TBI 1H/13  
PULPROG zg30  
TD 65536  
SOLVENT PYR  
NS 32  
DS 0  
SWH 10330.578 Hz  
FIDRES 0.157632 Hz  
AQ 3.1719923 sec  
RG 181  
DM 48.400 usec  
DE 6.78 usec  
TE 303.0 K  
D1 1.00000000 Sec  
TDO 1

==== CHANNEL f1 =====  
NUC1 1H  
P1 8.20 usec  
PL1 5.00 dB  
SF01 500.1330885 MHz  
F2 - Processing parameters  
SI 32768  
SF 500.129983 MHz  
WDW no  
SSB 0  
LB 0.00 Hz  
GB 0  
PC 1.00

Pomiar w temp. pokojowej (303 K)



5g



35.31  
31.59  
30.00



Current Data Parameters  
NAME BK25  
EXPNO 1  
PROCNO 1

F2 - Acquisition Parameters

Date\_ 20140521  
Time 14.15  
Date\_ 20140521  
Time\_ 14.15  
PROBHD 5 mm TBI 1H/13  
PULPROG zgpg30  
TD 65536  
SOLVENT PYR  
NS 32650  
DS 4  
SWH 32679.774 Hz  
FIDRES 0.4498653 Hz  
AQ 1.0027508 sec  
RG 32768  
DW 15.300 usec  
DE 7.10 usec  
TE 303.2 K  
TD0 1.00000000 sec  
d11 0.03000000 sec  
DELTA 0.89999998 sec  
TDO 1

==== CHANNEL F1 =====  
NUC1 13C  
P1 5.00 usec  
PL1 -3.00 dB  
SFO1 125.7703643 MHz

==== CHANNEL F2 =====  
CPDPRG2 waltz16  
NUC2 13C  
P2 98.00 usec  
PL2 3.00 dB  
PL12 23.00 dB  
PL13 32.00 dB  
SFO2 500.1320005 MHz

F1 - Acquisition parameters  
NUC1 128  
TD 128  
SFO1 500.132 MHz  
FIDRES 7.812500 Hz  
SW 1.999 ppm  
FMODE QF

F2 - Processing parameters  
SI 262144  
SF 125.7577561 MHz  
WDW EM  
SSB 0  
GB 0  
PC 1.40

F1 - Processing parameters  
SI 1024  
MC2 500.1300000 MHz  
WDW SINE  
SSB 0  
LB 0.30 Hz  
GB 0.1