

SUPPORTING INFORMATION

Copper-catalyzed regioselective synthesis of furan *via* tandem cycloaddition of ketone with unsaturated carboxylic acid under air

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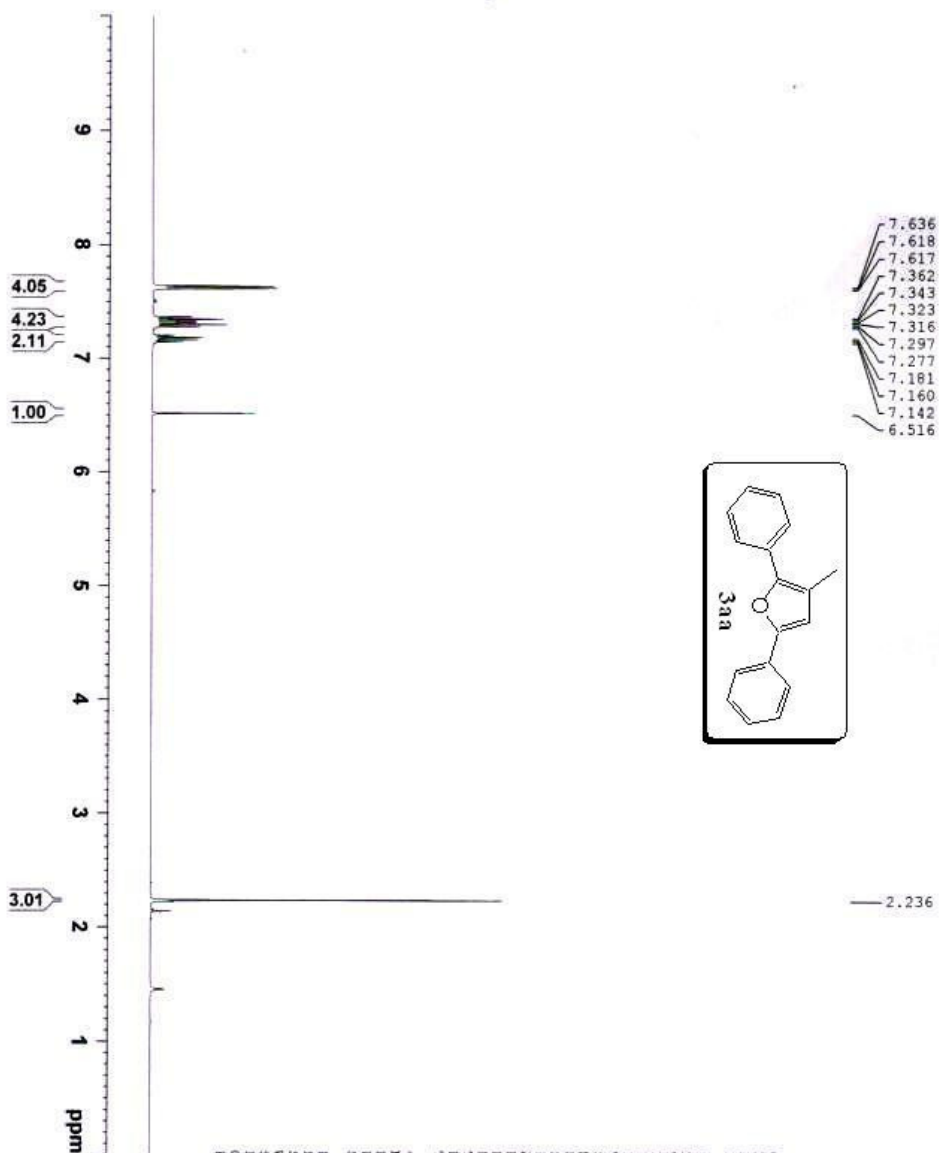
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1. General Information:

^1H NMR spectra were determined on 500 MHz, 400 MHz & 300 MHz spectrometer as solutions in CDCl_3 . Chemical shifts are expressed in parts per million (δ) and are referenced to tetramethylsilane (TMS) as internal standard and the signals were reported as s (singlet), d (doublet), t (triplet), dd (double doublet), m (multiplet) and coupling constants J were given in Hz. ^{13}C NMR spectra were recorded at 125 MHz, 100 MHz & 75 MHz in CDCl_3 . TLC was done on TLC Silica gel 60 F₂₅₄ coated on aluminium sheets (Merck). Silica gel (60-120 mesh) was used for column chromatography. Petroleum ether refers to the fraction boiling in the range of 60-80 °C unless otherwise mentioned. All solvents were dried and distilled before use. Commercially available substrates were freshly distilled before the reaction. Solvents, reagents and chemicals were purchased from Aldrich, Merck, Himedia, and Spectrochem. All reactions involving moisture sensitive reactants were executed using oven dried glassware.

2. NMR spectra for the synthesized Furan derivatives:



Current Data Parameters
NAME Dr. A HAJRA.1
EXPNO 263
PROCNO 1

F2 - Acquisition Parameters

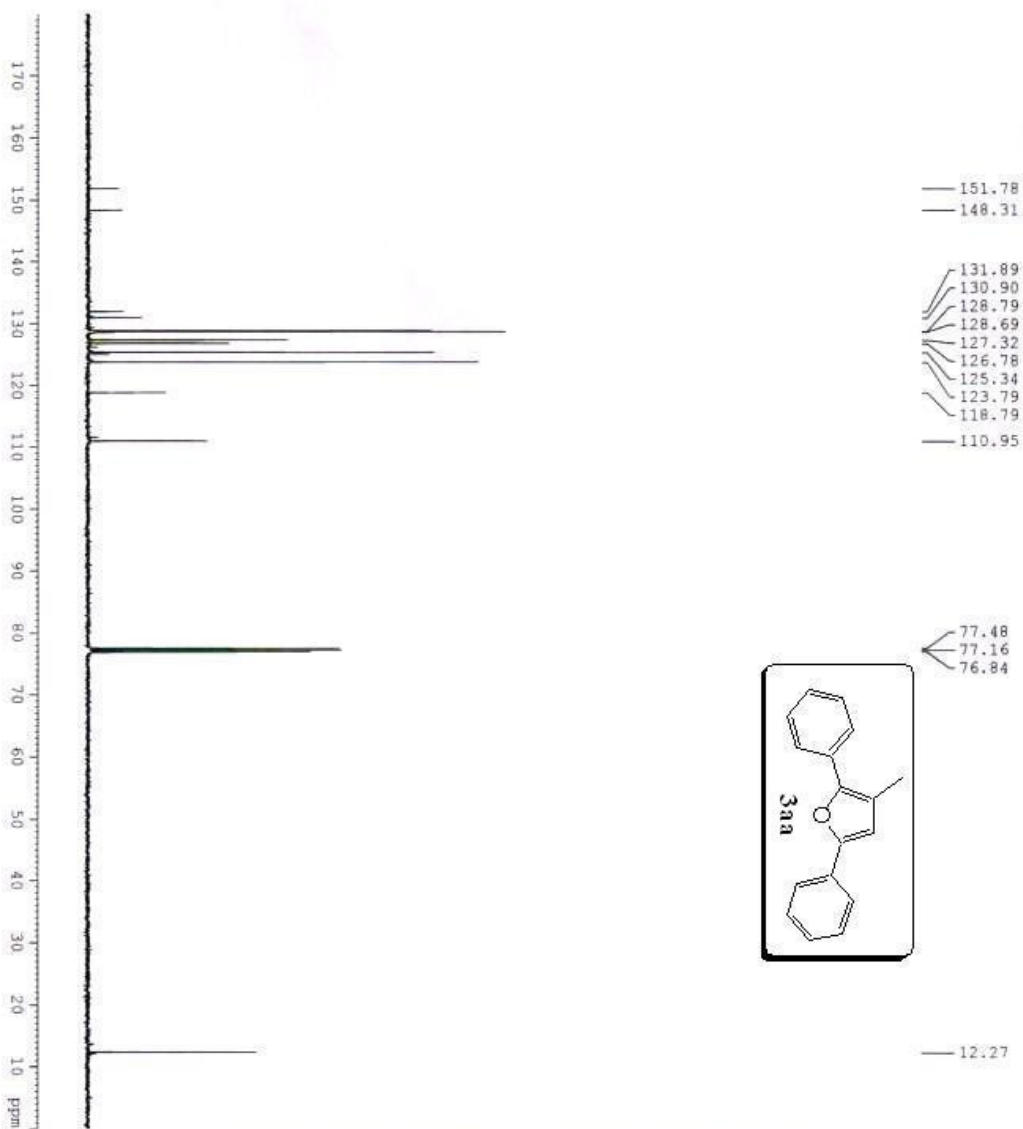
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Time 10.47
INSTRUM spect
PROBHD 5 mm PABO BB/
PULPROG zgpg30
TD 32768
SOLVENT CDCl3
NS 24
DS 2
SWH 8223.685 Hz
FIDRES 0.250967 Hz
AQ 1.992344 sec
RG 4096
DE 60.800 usec
TE 294.9 K
D1 1.0000000 sec
TDO 1

===== CHANNEL f1 =====

NUC1 1H
P1 14.75 usec
PL1 11.9943909 W
SFO1 400.152711 MHz

F2 - Processing parameters

SI 16384
SF 400.1500558 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00



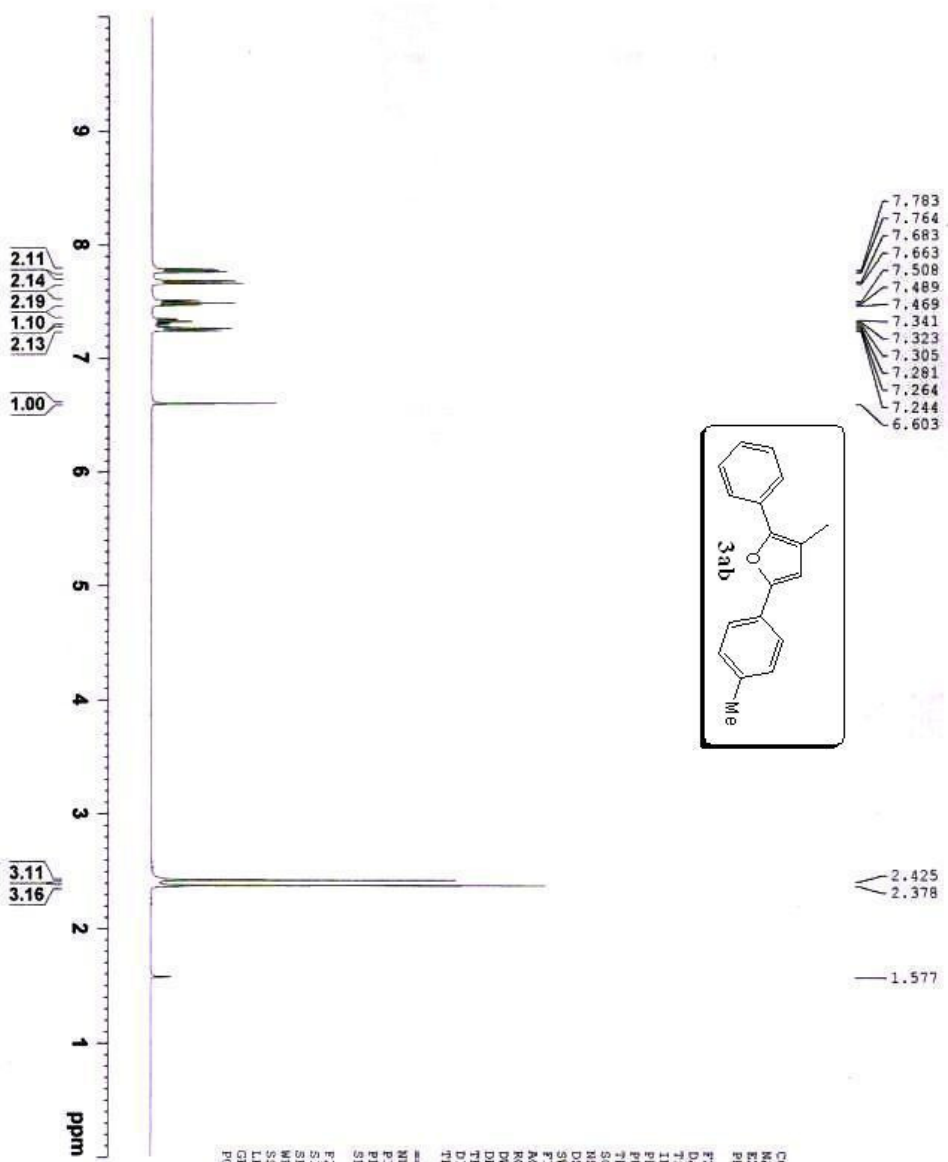
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NAME: Dr. A. HANNA 1
EXPNO: 264
PROCNO: 3

F2 - Acquisition Parameters
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Time : 10.59
INSTRUM : spect
PROBHD : 5 mm PABBO BB/
PULPROG : zgpg30
TD : 32768
SOLVENT : CDCl3
DS : 4
SWH : 24038.461 Hz
FIDRES : 0.73396 Hz
AQ : 0.6816244 sec
RG : 62.69
RG2 : 20.800 usec
DE : 29.50 usec
TE : 300.2 K
D1 : 2.00000000 sec
D11 : 0.03000000 sec
TD0 : 1

===== CHANNEL f1 =====
NUC1 : 13C
P1 : 12.50 usec
PL1 : 54.00000000 W
SFO1 : 100.6278588 MHz

===== CHANNEL f2 =====
CPDPRG2 : waltz16
NUC2 : 1H
P2 : 12.50 usec
PL2 : 0.00000000 W
PL12 : 0.40792929 W
PL13 : 0.26187081 W
SFO2 : 400.1516006 MHz

F2 - Processing parameters
SI : 32768
SF : 100.6177660 MHz
WDW : EM
SSB : 0
LB : 1.00 Hz
GB : 0
PC : 1.40

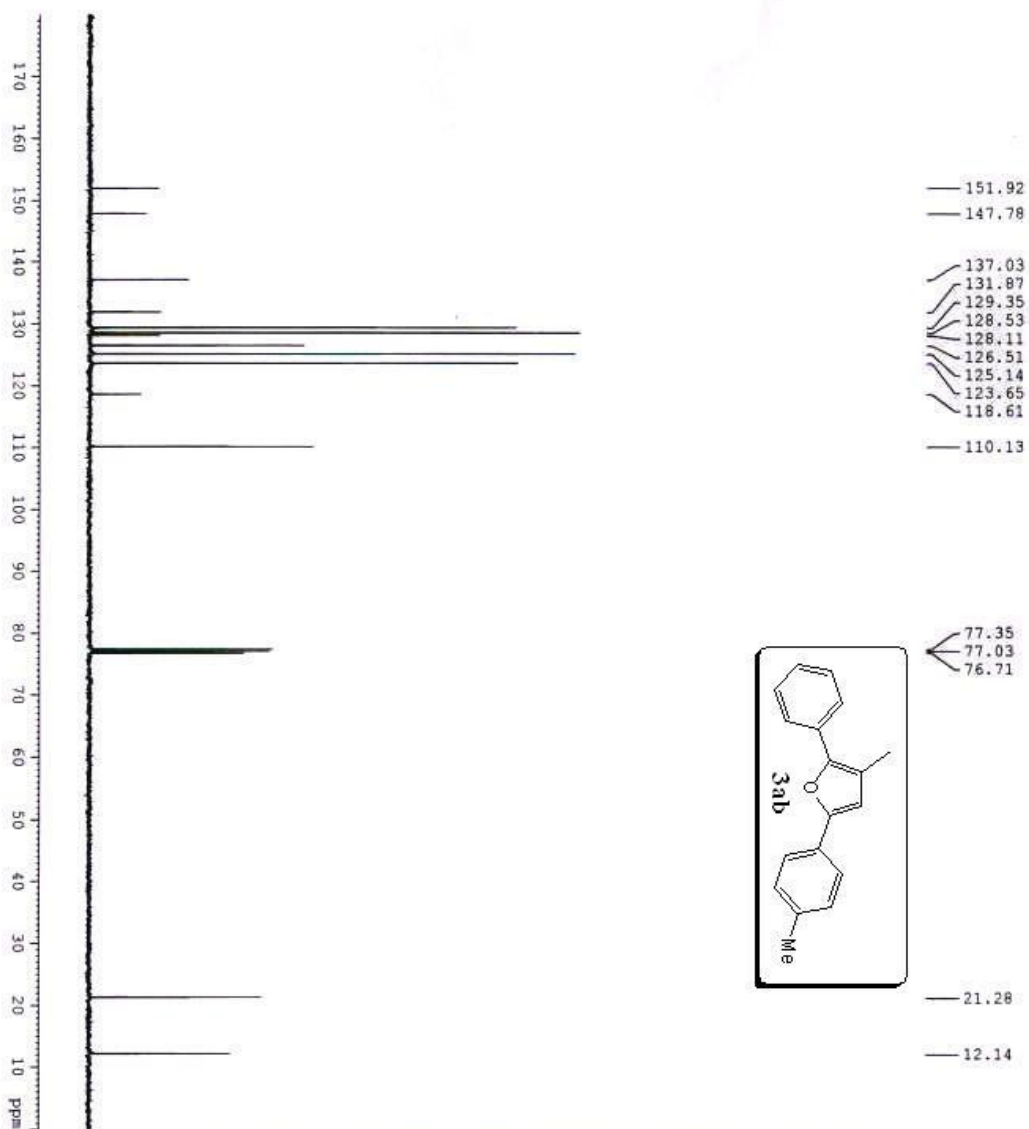


Current Data Parameters
NAME: Dr. A. HAJRA
EXPNO: 922
PROCNO: 1

F2 - Acquisition Parameters
Date_ Time: 2010815
Time: 10.48
INSTRUM: spect
PROBHD: 5 mm PABBO BB/
PULPROG: zg30
TD: 32768
SOLVENT: CDCl3
NS: 24
DS: 2
SWH: 8223.685 Hz
FIDRES: 0.333551 Hz
AQ: 1.992344 sec
RG: 47.25
DW: 60.800 usec
DE: 6.50 usec
TE: 297.4 K
D1: 1.00000000 sec
TDO: 1

===== CHANNEL f1 =====
NUC1: 1H
P1: 14.73 usec
PL1: 11.99499989 W
SFO1: 400.1524711 MHz

F2 - Processing parameters
SI: 16384
SF: 400.1500000 MHz
WDW: EM
SSB: 0
LB: 0.30 Hz
GB: 0
PC: 1.00

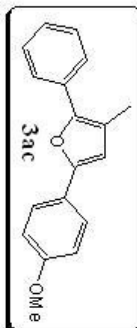


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NAME Dr. A. HADPA
EXPNO 923
PROCNO 1
F2 - Acquisition Parameters
Date_ 20130615
Time 10.58
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 32768
SOLVENT CDCl3
NS 160
DS 2
SWH 24038.461 Hz
FIDRES 0.131596 Hz
AQ 0.6816244 sec
RG 47.25
WM 20.860 umsec
TE 298.2 K
DE 2.00000000 sec
D11 0.01000000 sec
T00 1

===== CHANNEL f1 =====
NUC1 13C
P1 11.50 umsec
PL1 0.00000000 W
SFO1 100.6278588 MHz

===== CHANNEL f2 =====
NAME2 waitf16
NUC2 1H
PCPD2 80.00 umsec
PLM2 13.00000000 W
PLM12 0.40792999 W
PLM13 0.26307001 W
SFO2 400.1516006 MHz

F2 - Processing parameters
SI 32768
SF 100.6178026 MHz
WDW EN
SSB 0
LB 1.00 Hz
GB 0
EC 1.40



7.635
7.632
7.628
7.614
7.611
7.585
7.580
7.568
7.563
7.369
7.350
7.330
7.200
7.183
6.869
6.864
6.852
6.847
6.407

3.768

2.248

Current Data Parameters
NAME Dr. A HADPA 1
EXPNO 180
PROCNO 1

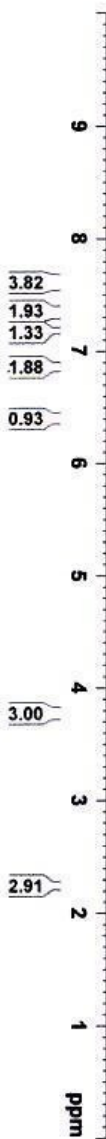
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Date_ 20100921
Time 18.37

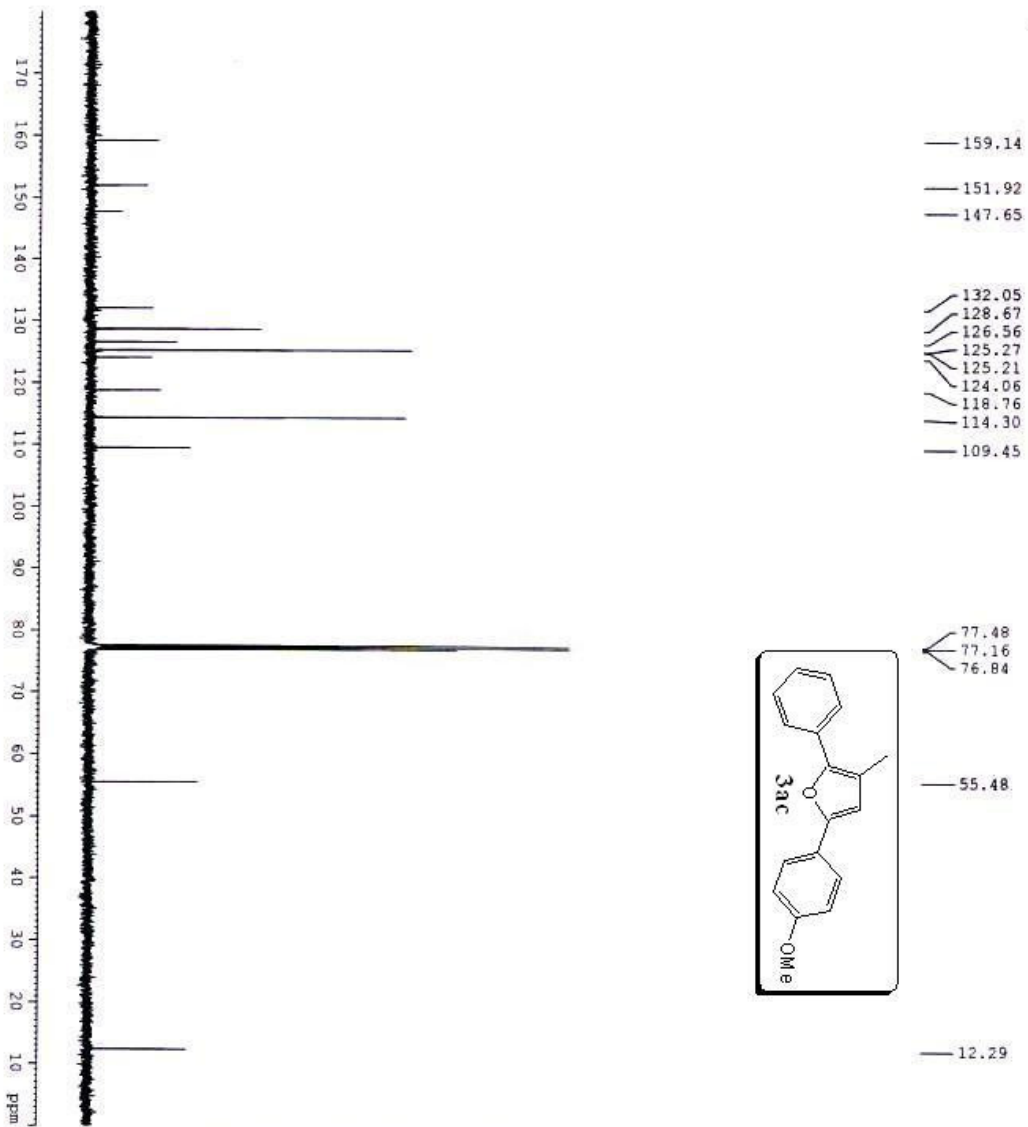
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 32
DS 2

SWH 8223.685 Hz
FIDRES 0.250967 Hz
AQ 1.993444 sec
RG 655
DE 60.800 usec
TE 296.6 K
D1 1.00000000 sec
TD0 1

NUC1 1H
P1 14.75 usec
PL1 0.00 dB
PC1 11.99439063 W
SFO1 400.1524711 MHz

F2 - Processing parameters
SI 16384
SF 400.1500392 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00





Current Data Parameters
NAME: 3ac
EXPNO: 1
PROCNO: 1

F2 - Acquisition Parameters
Date_: 20130921
Time: 20.39

INSTRUM: spect
PROBHD: 5 mm BBOH-1H/

PULPROG: zgpg30
TO: 31768

SOLVENT: CDCl3
NS: 800

DS: 2
SWH: 24038.442 Hz

FIDRES: 0.21339 Hz
AQ: 0.616244 sec

RG: 17.66
DE: 297.9 K

TE: 5.50 usec
TD: 1.0000000 sec

D11: 0.0300000 sec
TD0: 1

===== CHANNEL f1 =====
NUC1: 13C
P1: 8.40 usec
PL1: 0.0000000 dB

===== CHANNEL f2 =====
NUC2: 1H
P2: 12.00 usec
PL2: 0.0000000 dB

===== CHANNEL f3 =====
NUC3: 1H
P3: 12.00 usec
PL3: 0.0000000 dB

===== CHANNEL f4 =====
NUC4: 1H
P4: 12.00 usec
PL4: 0.0000000 dB

===== CHANNEL f5 =====
NUC5: 1H
P5: 12.00 usec
PL5: 0.0000000 dB

===== CHANNEL f6 =====
NUC6: 1H
P6: 12.00 usec
PL6: 0.0000000 dB

===== CHANNEL f7 =====
NUC7: 1H
P7: 12.00 usec
PL7: 0.0000000 dB

===== CHANNEL f8 =====
NUC8: 1H
P8: 12.00 usec
PL8: 0.0000000 dB

===== CHANNEL f9 =====
NUC9: 1H
P9: 12.00 usec
PL9: 0.0000000 dB

===== CHANNEL f10 =====
NUC10: 1H
P10: 12.00 usec
PL10: 0.0000000 dB

===== CHANNEL f11 =====
NUC11: 1H
P11: 12.00 usec
PL11: 0.0000000 dB

===== CHANNEL f12 =====
NUC12: 1H
P12: 12.00 usec
PL12: 0.0000000 dB

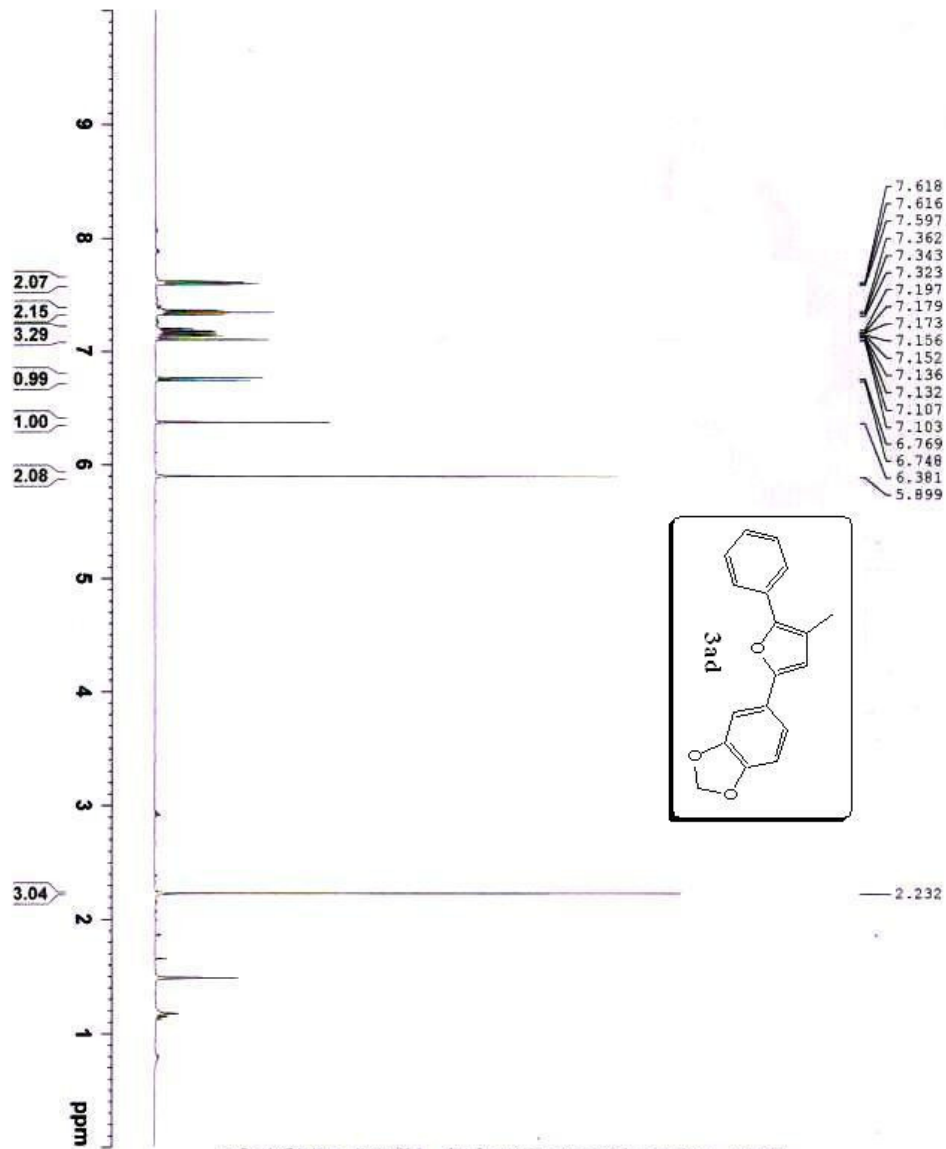
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NUC13: 1H
P13: 12.00 usec
PL13: 0.0000000 dB

===== CHANNEL f14 =====
NUC14: 1H
P14: 12.00 usec
PL14: 0.0000000 dB

===== CHANNEL f15 =====
NUC15: 1H
P15: 12.00 usec
PL15: 0.0000000 dB

===== CHANNEL f16 =====
NUC16: 1H
P16: 12.00 usec
PL16: 0.0000000 dB

===== CHANNEL f17 =====
NUC17: 1H
P17: 12.00 usec
PL17: 0.0000000 dB



Current Data Parameters
NAME Dr. A. HADPA 1
EXPNO 204
PROCNO 1

F2 - Acquisition Parameters
Date_ 20130926
Time 11.57
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 24
DS 2
SWH 8223.681 Hz
FIDRES 0.250967 Hz
AQ 1.9923444 sec
RG 93.46
PC 60.800 usec
DE 6.50 usec
TE 296.2 K
D1 1.00000000 sec
TDO 1

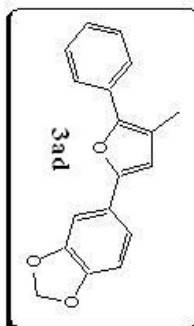
===== CHANNEL f1 =====
NUC1 1H
P1 14.75 usec
PLW1 11.9949989 W
SFO1 400.1524711 MHz

F2 - Processing parameters
SI 16384
SF 400.1500435 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

151.66
148.13
147.78
147.08
131.90
128.68
126.66
125.44
125.22
118.77
117.71
109.89
108.77
104.59
101.26

77.48
77.16
76.84

12.26



Current Data Parameters
NAME: 3ad
EXPNO: 1
PROCNO: 1

F2 - Acquisition Parameters
Date_: 20190526
Time: 12.29

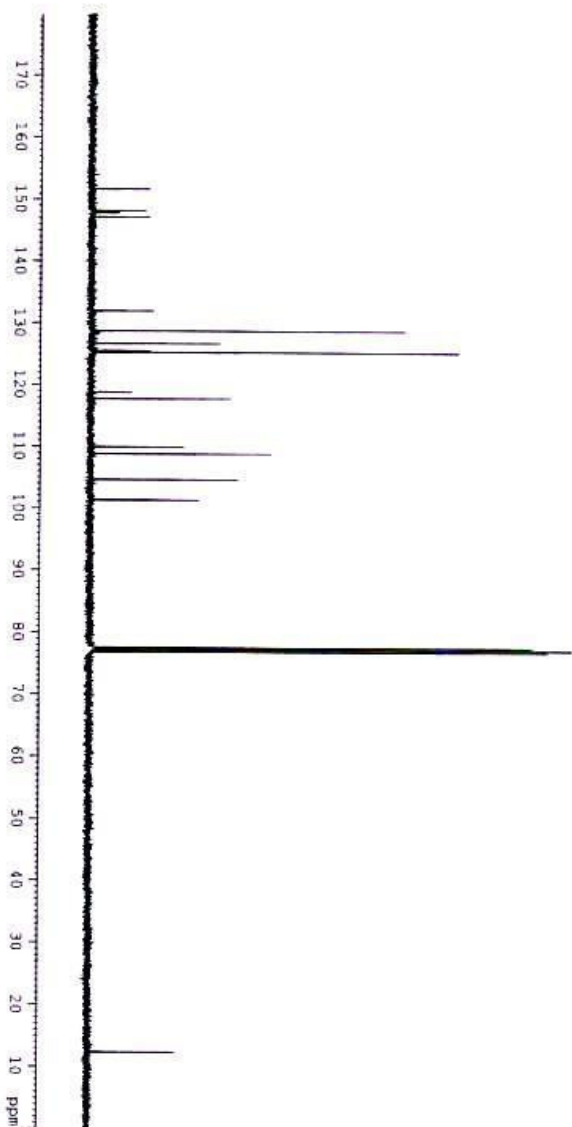
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PULPROG: zgpg30
TD: 32768
SOLVENT: CDCl3
NS: 400
DS: 2

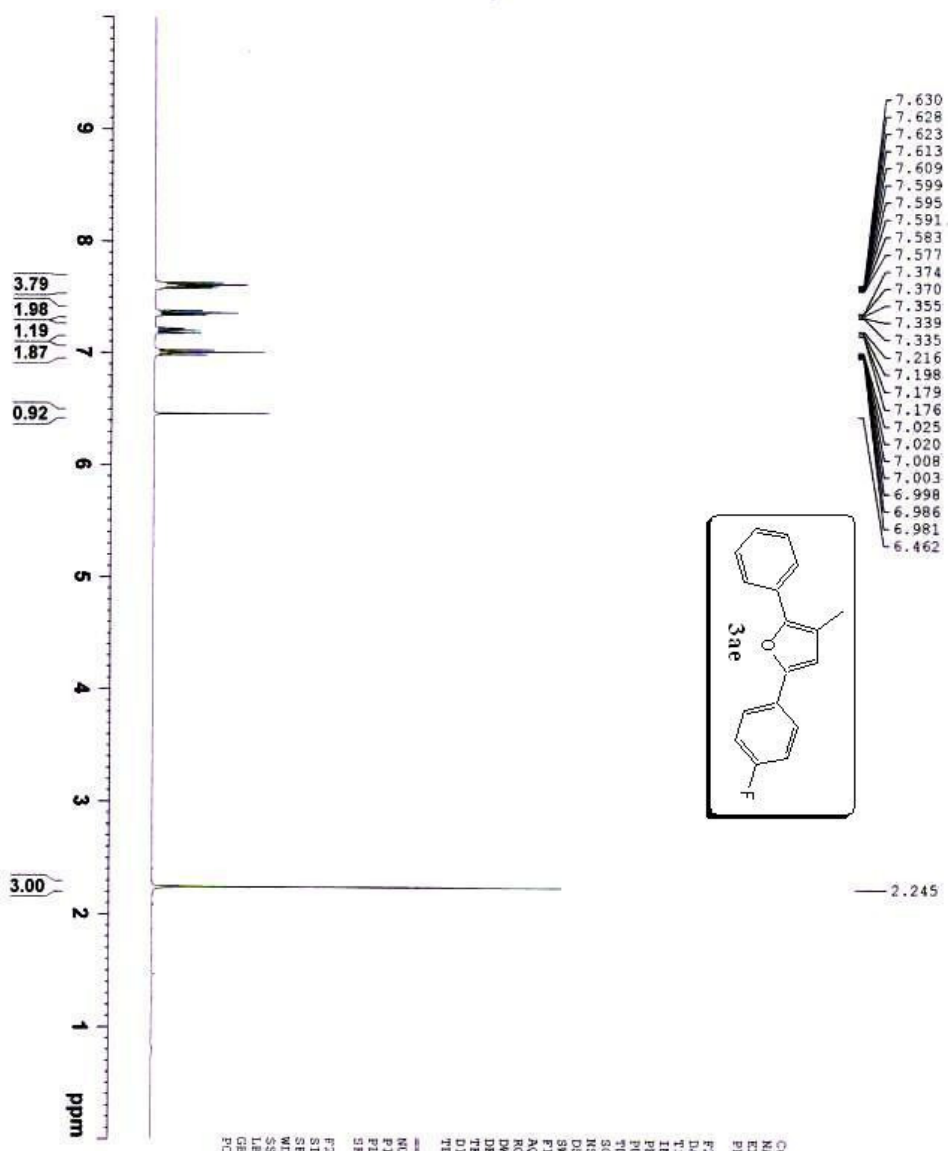
SWH: 24028.462 Hz
FIDRES: 0.0001842 Hz
AQ: 0.661244 sec
RG: 81.25
DM: 20.800 usec
DE: 6.50 usec
TE: 297.2 K
D1: 2.00000000 sec
D11: 0.05000000 sec
TDO: 1

CHANNEL F1
NUC1: 13C
P1: 6.90 usec
PL1: 54.00000000 W
SFO1: 100.6270558 MHz

CHANNEL F2
NUC2: 1H
P2: 18.00 usec
PL2: 0.00000000 W
SFO2: 400.1514006 MHz

F2 - Processing parameters
SI: 32768
SF: 120.6117851 MHz
WDW: EM
SSB: 0
LB: 1.00 Hz
GB: 0
PC: 1.40





Current Data Parameters
NAME DE. A HAJRA
EXNO 985
PROCNO 1

F2 - Acquisition Parameters
Date_ 20130825
Time 13.17
INSTRUM spect
PROBHD 5 mm PABO BB/
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 16
DS 2
SWH 8223.685 Hz
FIDRES 0.000246 Hz
AQ 1.952346 sec
RG 93.44
BW 60.800 usec
DE 6.50 usec
TE 296.7 K
D1 1.00000000 sec
TD0 1

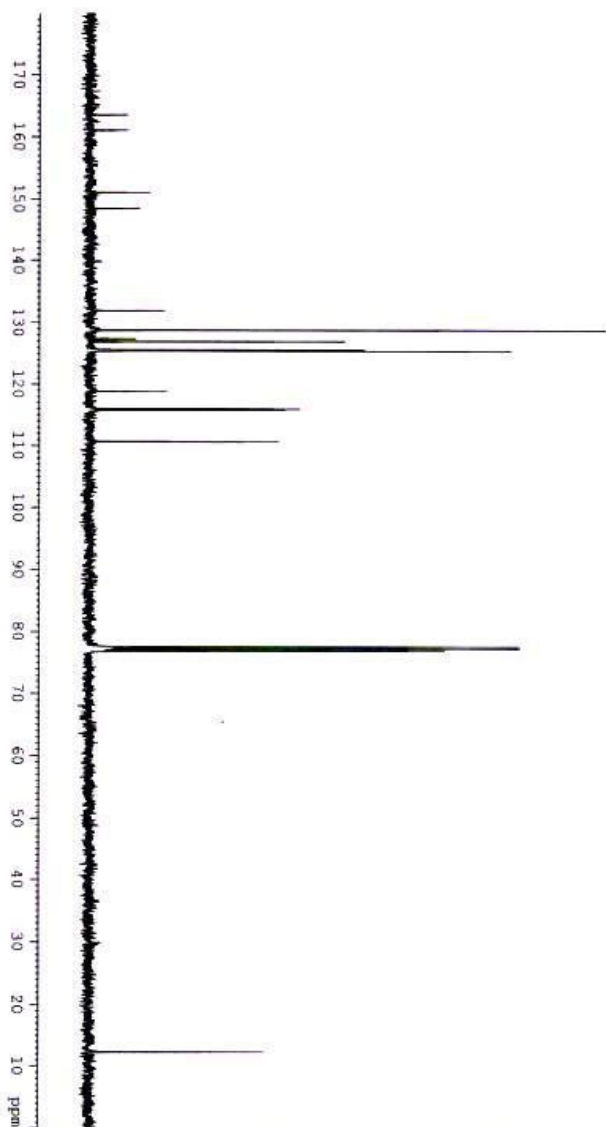
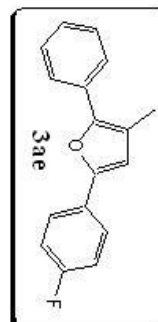
===== CHANNEL f1 =====
NUC1 1H
P1 14.70 usec
PL1 11.9446083
SFO1 400.1524711 MHz

F2 - Processing parameters
SI 16394
SF 400.1500424 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

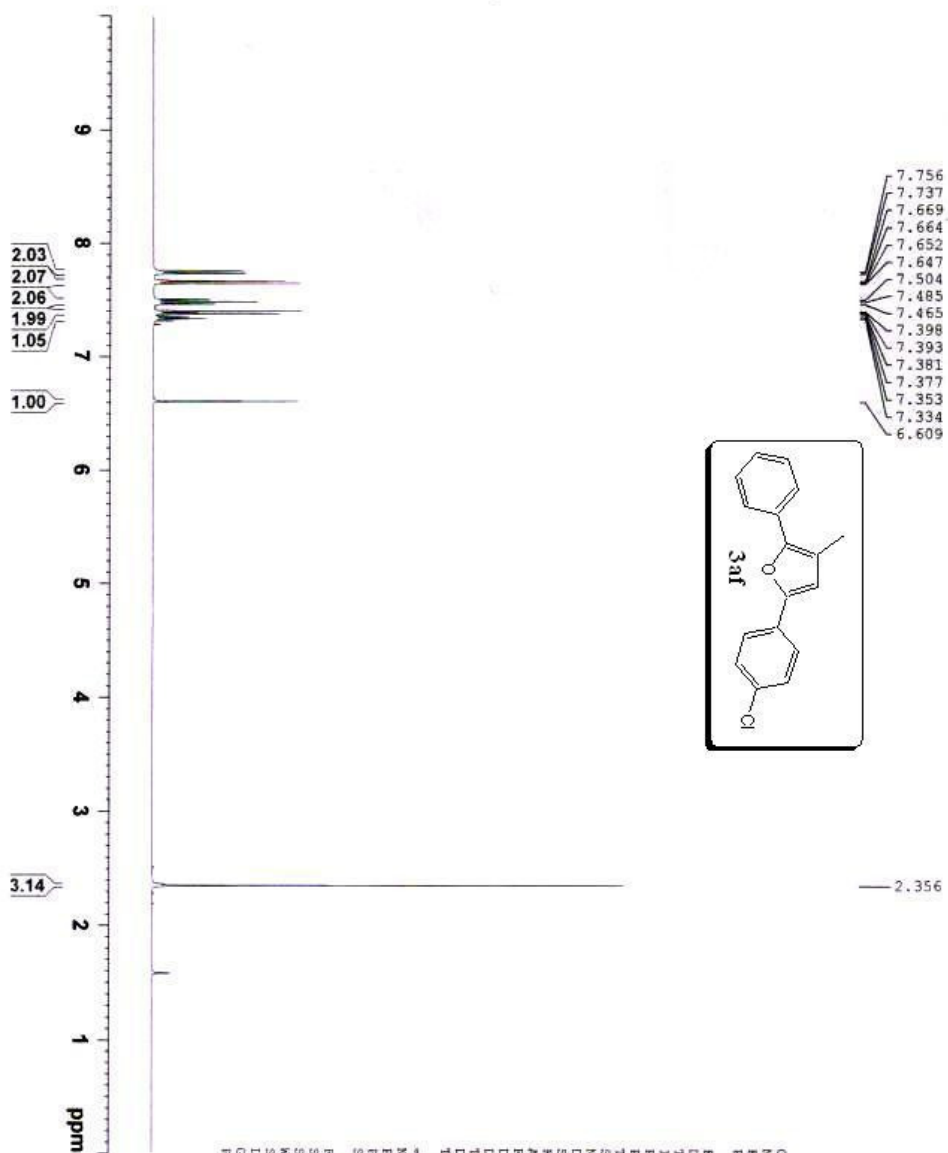
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150.99
148.35
131.80
128.72
127.29
126.87
125.56
125.48
125.35
118.80
115.95
115.73
110.60

77.48
77.16
76.85

12.23



Current Data Parameters
NAME: 3ae
EXPNO: 1
PROCNO: 1
F2 - Acquisition Parameters
Date_: 20180525
Time: 16.46
INSTRUM: spect
PROBHD: 5mm PABBO
PULPROG: zgpg30
TO: 3.2768
SOLVENT: CDCl3
NS: 512
DS: 2
SWH: 24039.461 Hz
FIDRES: 0.0001259 Hz
AQ: 0.681524 sec
RG: 67.65
DM: 20.800 usec
DE: 6.50 usec
TE: 298.0 K
D1: 1.00000000 sec
D11: 0.05000000 sec
TPO: 1
===== CHANNEL f1 =====
NUC1: 13C
P1: 6.90 usec
PL1: 54.00000000 W
SFO1: 100.6218398 MHz
===== CHANNEL f2 =====
CPDPRG2: waltz16
NUC2: 1H
P2: 50.00 usec
PL2: 17.00000000 W
PL12: 0.40792494 W
PL13: 0.25410000 W
SFO2: 400.1510006 MHz
F2 - Processing parameters
SI: 32768
SF: 100.6171836 MHz
WDW: EM
SSB: 0
GB: 0
PC: 1.40

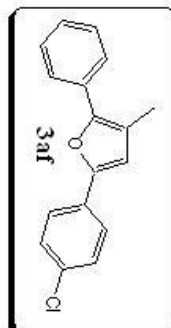


Current Data Parameters
NAME Dr. A. HAJRA
EXPNO 931
PROCNO 1

F2 - Acquisition Parameters
Date_ 20130816
Time 11.17
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 32768
FIDRES 0.32768
SOLVENT CDCl3
NS 24
DS 2
SWH 8223.682 Hz
FIDRES 0.32768 Hz
AQ 1.992344 sec
RG 47.25
RW 60.800 usec
DE 6.50 usec
TE 299.7 K
D1 1.00000000 sec
TDO 1

===== CHANNEL f1 =====
NUC1 1H
P1 18.75 usec
PL1 11.99499989 W
SFO1 400.1524711 MHz

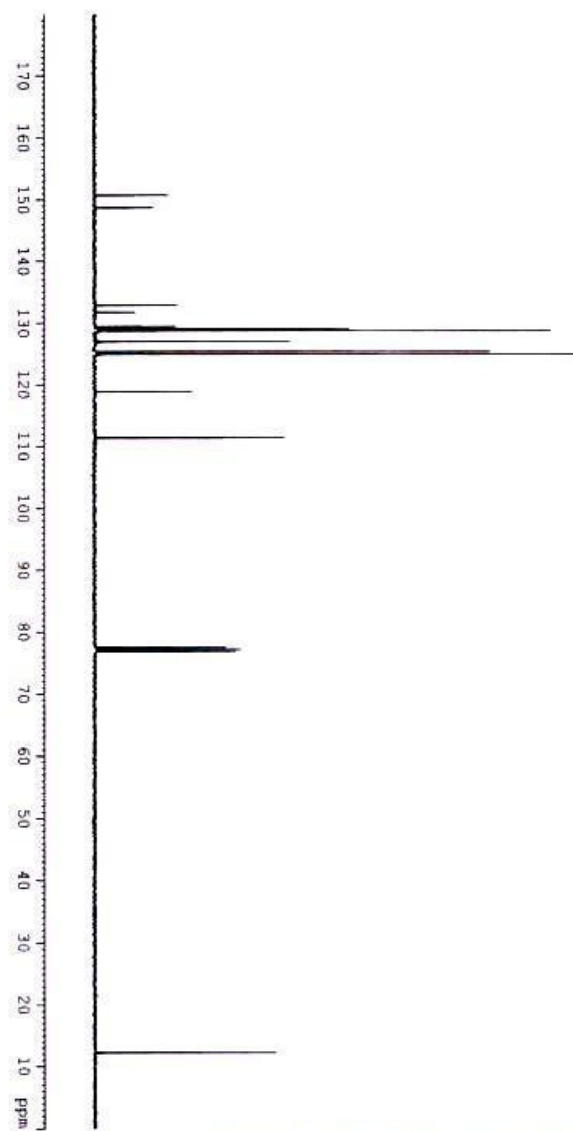
F2 - Processing Parameters
SI 16384
SF 400.150000 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00



150.70
148.64
132.86
131.68
129.38
128.97
128.71
126.96
125.37
124.94
118.86
111.37

77.48
77.16
76.84

12.18

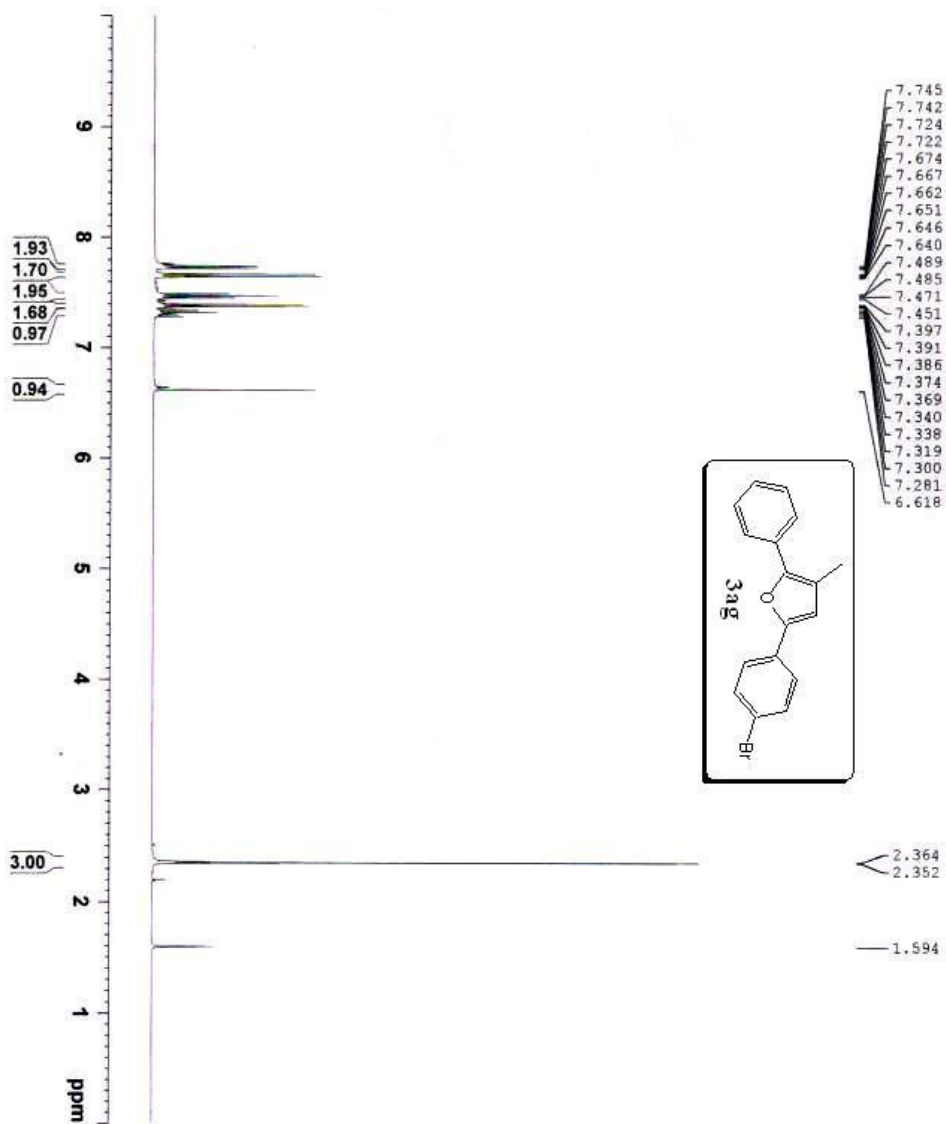


Current Data Parameters
NAME Dr. A. SARMA
EXPNO 312
PROCNO 1
F2 - Acquisition Parameters
Date_ 20100616
Time 11:29
INSTRUM spect
PROBHD 5 mm VAMBO HB/
PULPROG zgpg30
TD 32768
SOLVENT CDCl3
NS 340
DS 4
SWH 24030.461 Hz
FIDRES 0.73396 Hz
AQ 0.6816244 sec
RG 2048
GB 0.0000000
OR 2.0000000
TE 300.4 K
D1 2.00000000 sec
D11 0.03000000 sec
TPO 1

===== CHANNEL f1 =====
NUC1 13C
P1 8.40 usec
PL1 24.0000000 W
SFO1 100.6278588 MHz

===== CHANNEL f2 =====
NAME vatic16
EXPNO 312
PROCNO 1
PULPROG zgpg30
PL1 12.0000000 W
PL12 0.4079294 W
PL13 0.2617001 W
SFO2 400.1516006 MHz

F2 - Processing parameters
SI 16384
SF 100.617850 MHz
WDW EM
SSB 0
GB 0
LB 1.00 Hz
GB 0
PC 1.40



Current Data Parameters
NAME Dr. A. Hajra
EXNO 970
PROCNO 1

F2 - Acquisition Parameters

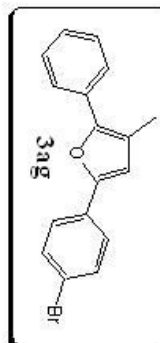
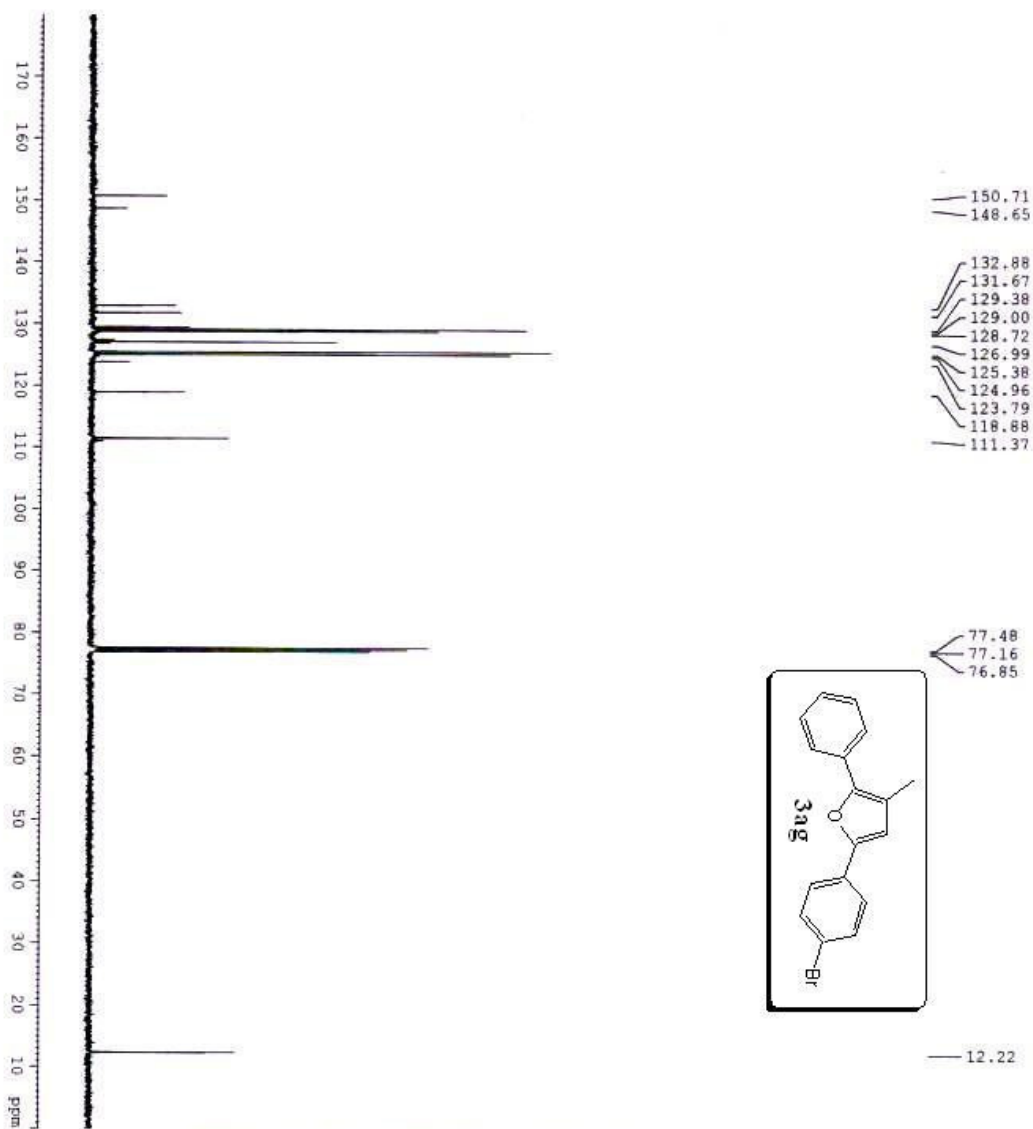
Date 20130823
Time 20:39
INSTRUM spect
PROBHD 5 mm PABBO-BB/
PULPROG zgpg30
TD 32768
FIDRES 0.25967 Hz
AQ 1.9923444 sec
RG 67.01 usec
RG 67.01 usec
DE 1.50 usec
TE 297.3 K
D1 1.00000000 sec
TDO 1

CHANNEL F1

NUC1 ¹H
P1 14.75 usec
PLW1 11.99499989 W
SFO1 400.1524711 MHz

F2 - Processing Parameters

SI 16384
SF 400.1500000 MHz
WDW EM
SSB 0
LB 0
GB 0
PC 1.00



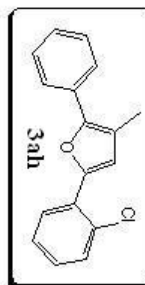
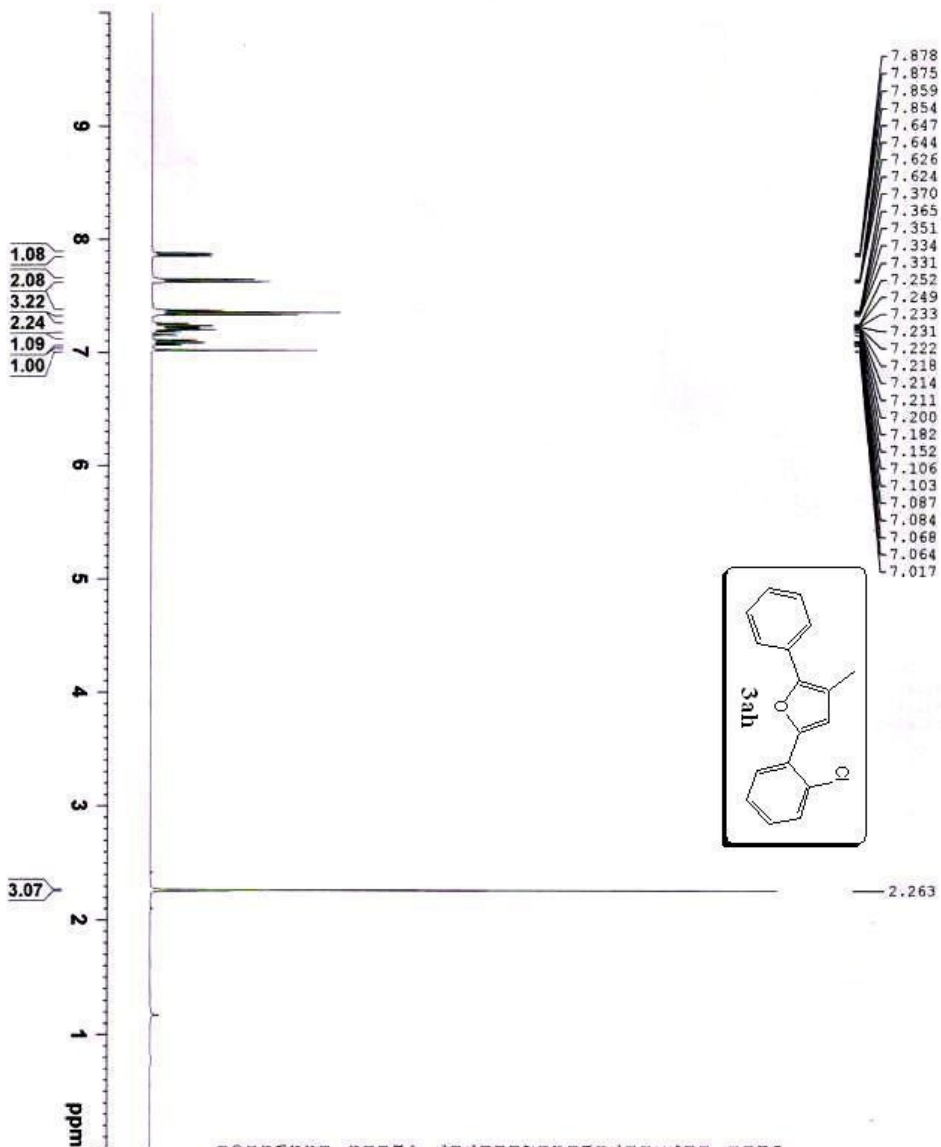
Current Data Parameters
 NAME Dr. A. HANNA
 EXPNO 943
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 2019.04.13
 Time 9.43
 INSTRON spect
 PROBRD 5 mm PABBO BB/
 FIDPROC 2992310
 TO 3768
 SOLVENT CDCl3
 NS 320
 DS 4
 SWH 24038.461 Hz
 FIDRES 0.733546 Hz
 AQ 0.6816244 sec
 RG 67.81
 INE 20.800 usec
 DE 28.30 usec
 TE 300.2 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 TD9 1

===== CHANNEL f1 =====
 NUC1 13C
 P1 130 usec
 PL1 0.00000000 M
 SFO1 100.628588 MHz

===== CHANNEL f2 =====
 NUC2 1H
 P2 12.00 usec
 PL2 0.00000000 M
 SFO2 400.1516206 MHz

F2 - Processing parameters
 SI 32768
 SF 100.617785 MHz
 KW 0
 NSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

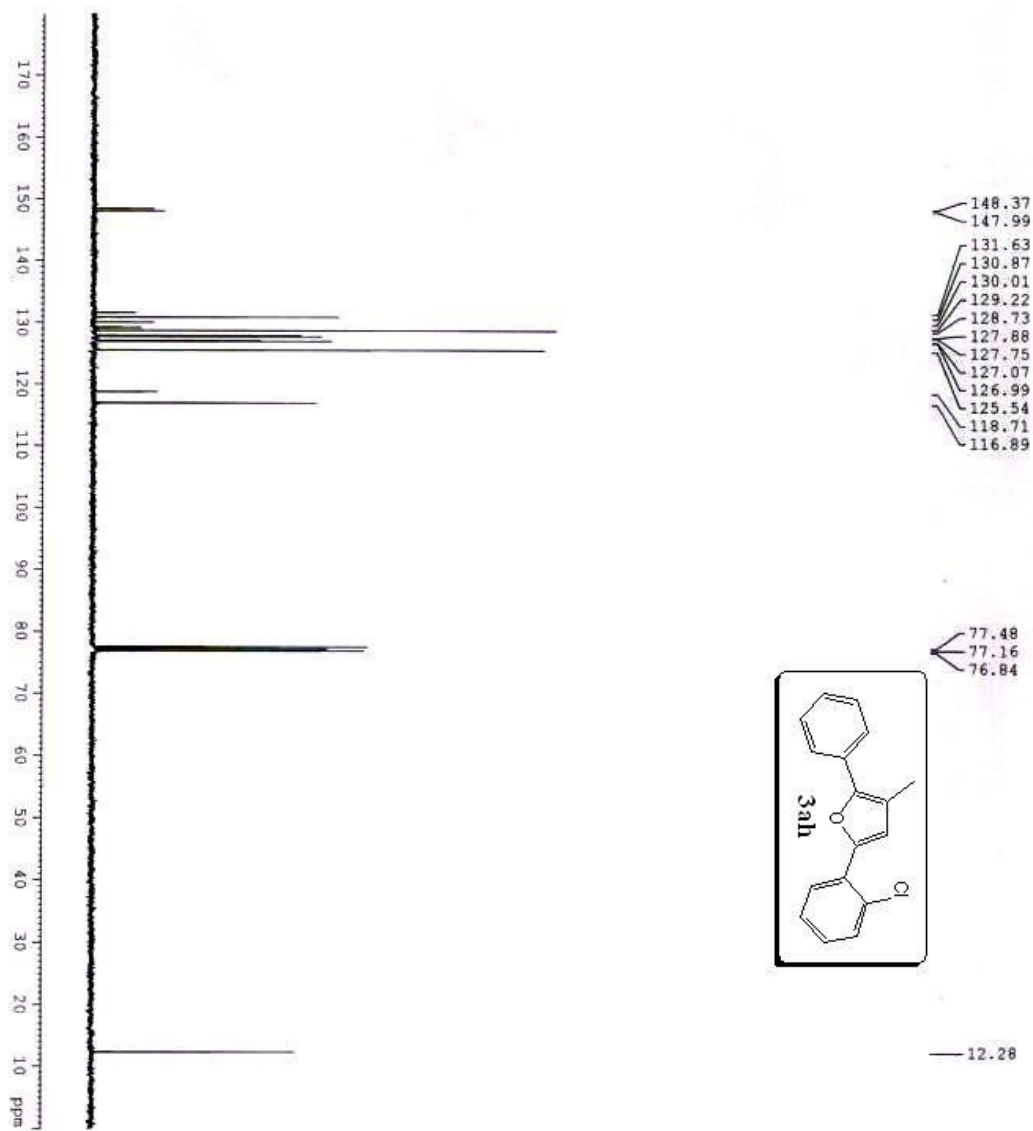


Current Data Parameters
NAME: Dr. A. HAJRA
EXPNO: 949
PROCNO: 1

F2 - Acquisition Parameters
Date_: 20130819
Time: 18.23
INSTRUM: spect
PROBHD: 5 mm PABBO BB/
PULPROG: zg30
TO: 32768
SOLVENT: CDCl3
NS: 24
DS: 2
SWH: 8223.683 Hz
FIDRES: 0.250967 Hz
AQ: 1.9923444 sec
RG: 67.81
DM: 60.800 usec
DE: 6.50 usec
TE: 295.1 K
D1: 1.00000000 sec
TDO: 1

===== CHANNEL f1 =====
NUC1: ¹H
P1: 14.75 usec
PL1: 11.99499989 W
SFO1: 400.1524711 MHz

F2 - Processing parameters
SI: 16384
SF: 400.1500518 MHz
WDW: EM
SSB: 0
LB: 0.30 Hz
GB: 0
PC: 1.00



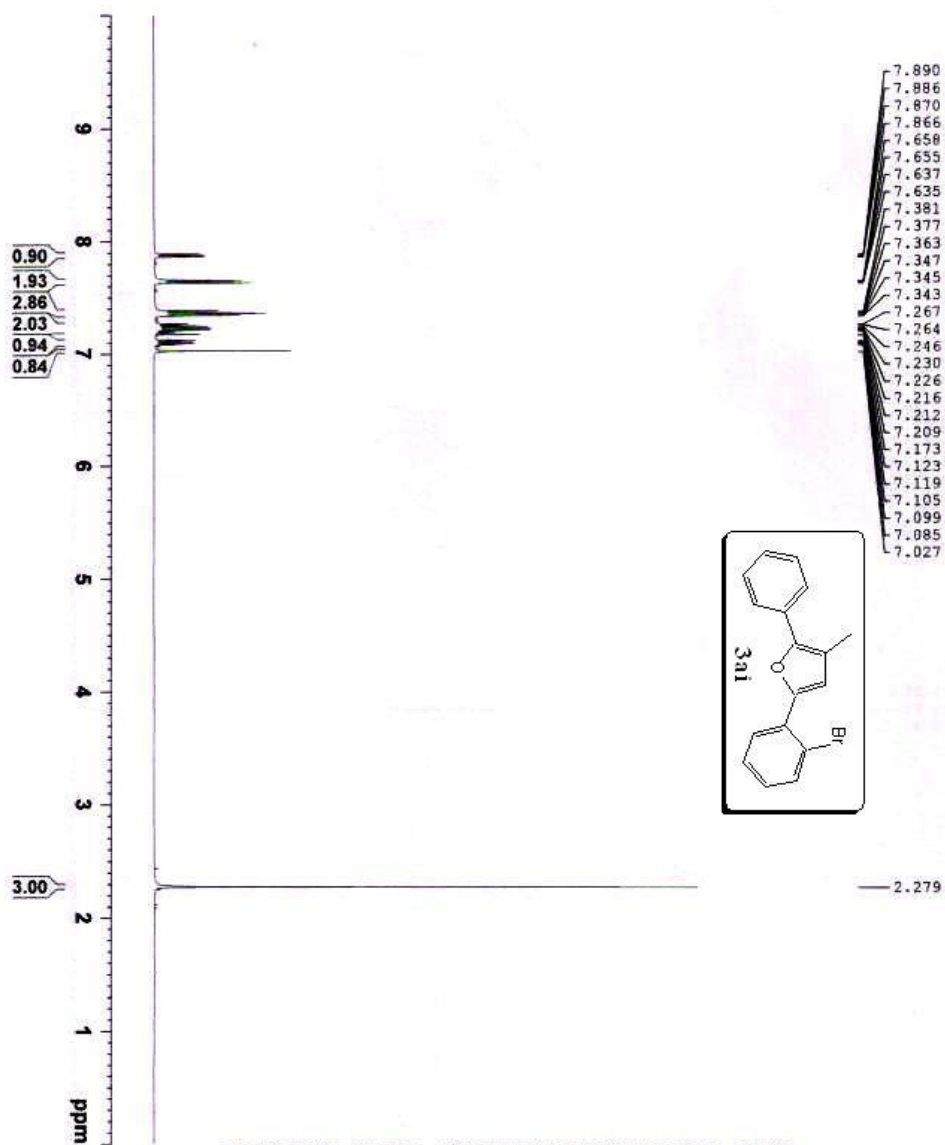
Current Data Parameters
NAME Dr. A. BALVA
EXPNO 950
PROCNO 1

F2 - Acquisition Parameters
Date_ 20100913
Time 18:37
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 32768
SOLVENT CDCl3
NS 240
DS 4
SWH 24018.441 Hz
FIDRES 0.723596 Hz
AQ 0.6116244 sec
RG 67.87
DM 20.800 usec
DE 6.50 usec
TE 300.0 K
D11 2.01000000 sec
D11 0.03000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 13C
P1 132
PL1 8.90 usec
PL11 54.00000000 dB
SFO1 100.6275588 MHz

===== CHANNEL f2 =====
CPCPRG2 waltz16
NUC2 1H
P2 16
PL2 80.00 usec
PL12 13.00000000 dB
PL13 0.10732999 W
PL14 0.36107001 W
SFO2 400.1516006 MHz

F2 - Processing parameters
SI 16384
SF 100.6177872 MHz
WDW DN
SSB 0
LB 1.00 Hz
GB 0
PC 1.40



Current Data Parameters
NAME Dr. A HAIRA
EXPNO 978
PROCNO 1

F2 - Acquisition Parameters
Date_ 20100824
Time 17:49
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 32
DS 2
SWH 8223.685 Hz
FIDRES 0.253267 Hz
AQ 1.592344 sec
RG 91.46
BW 60.800 usec
DE 6.50 usec
TE 297.1 K
D1 1.00000000 sec
TD0 1

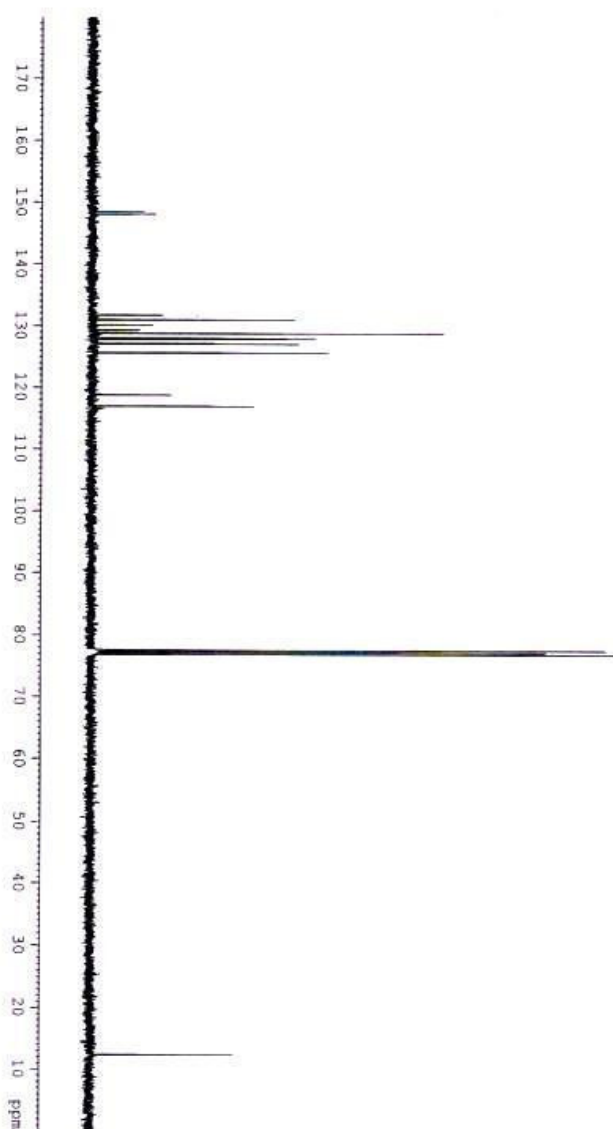
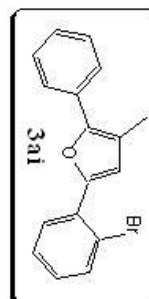
===== CHANNEL f1 =====
NUC1 13C
P1 14.70 usec
PL1 0.00 dB
SFO1 400.1524711 MHz

F2 - Processing parameters
SI 16384
SF 400.1500433 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

148.39
148.01
131.64
130.88
130.03
129.25
128.73
127.89
127.77
127.08
127.00
125.55
118.70
116.88

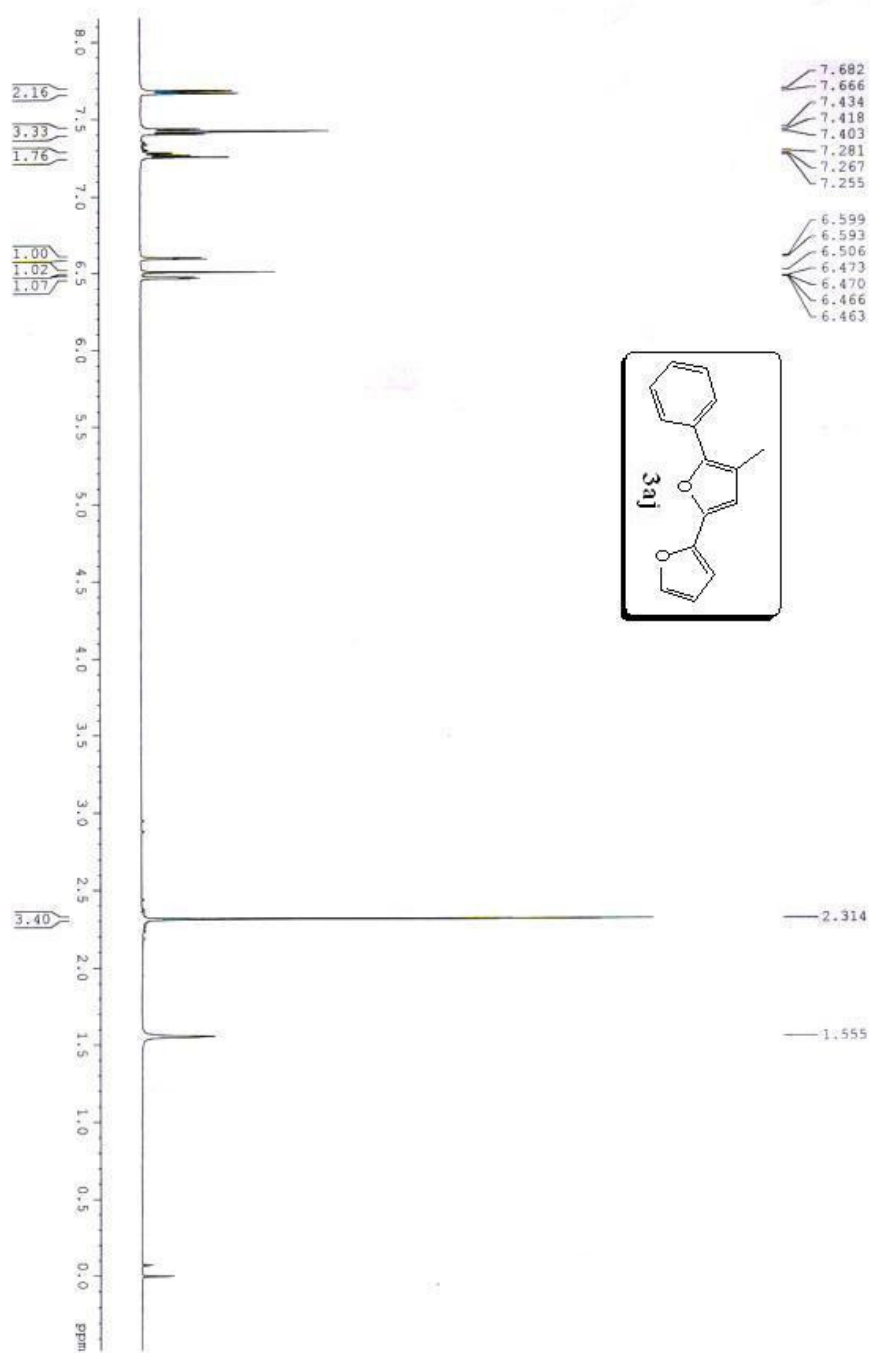
77.47
77.15
76.84

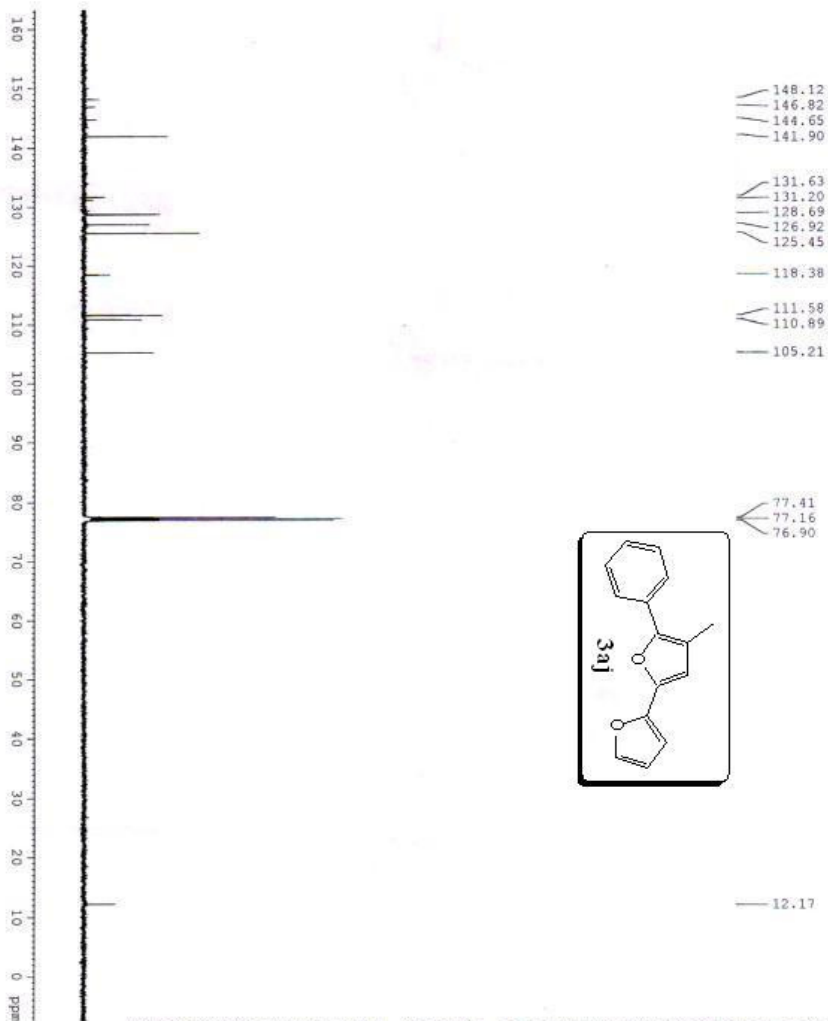
12.27



Current Data Parameters
NAME: Dr. A. HAUSA
EXNO: 913
PROCNO: 1
F2 - Acquisition Parameters
Date: 2013024
Time: 18.05
INSTRUM: spect
PROBHD: 5 mm PABBO BB/
PULPROG: zgpg30
TD: 65536
AQ: 0.1446
RG: 320
SOLVENT: CDCl3
NS: 120
DS: 2
SWH: 24038.461 Hz
FIDRES: 0.133596 Hz
AQ: 0.6816244 sec
RG: 320
SOLVENT: CDCl3
TE: 300.2 K
DE: 6.30 usec
TE: 298.0 K
D1: 2.00000000 sec
D11: 0.03000000 sec
D08: 1
===== CHANNEL f1 =====
NUC1: 13C
P1: 4.90 usec
PLM1: 54.0000000 W
SFO1: 100.6278588 MHz
===== CHANNEL f2 =====
CPDPRG2: waltz16
NUC2: 1H
P2: 80.00 usec
PLM2: 12.00000000 W
SFO2: 400.146091 MHz
===== F2 - Processing parameters =====
SI: 16384
SF: 100.617851 MHz
WDW: EM
GB: 0
LB: 1.00 Hz
GB: 0
PC: 1.40



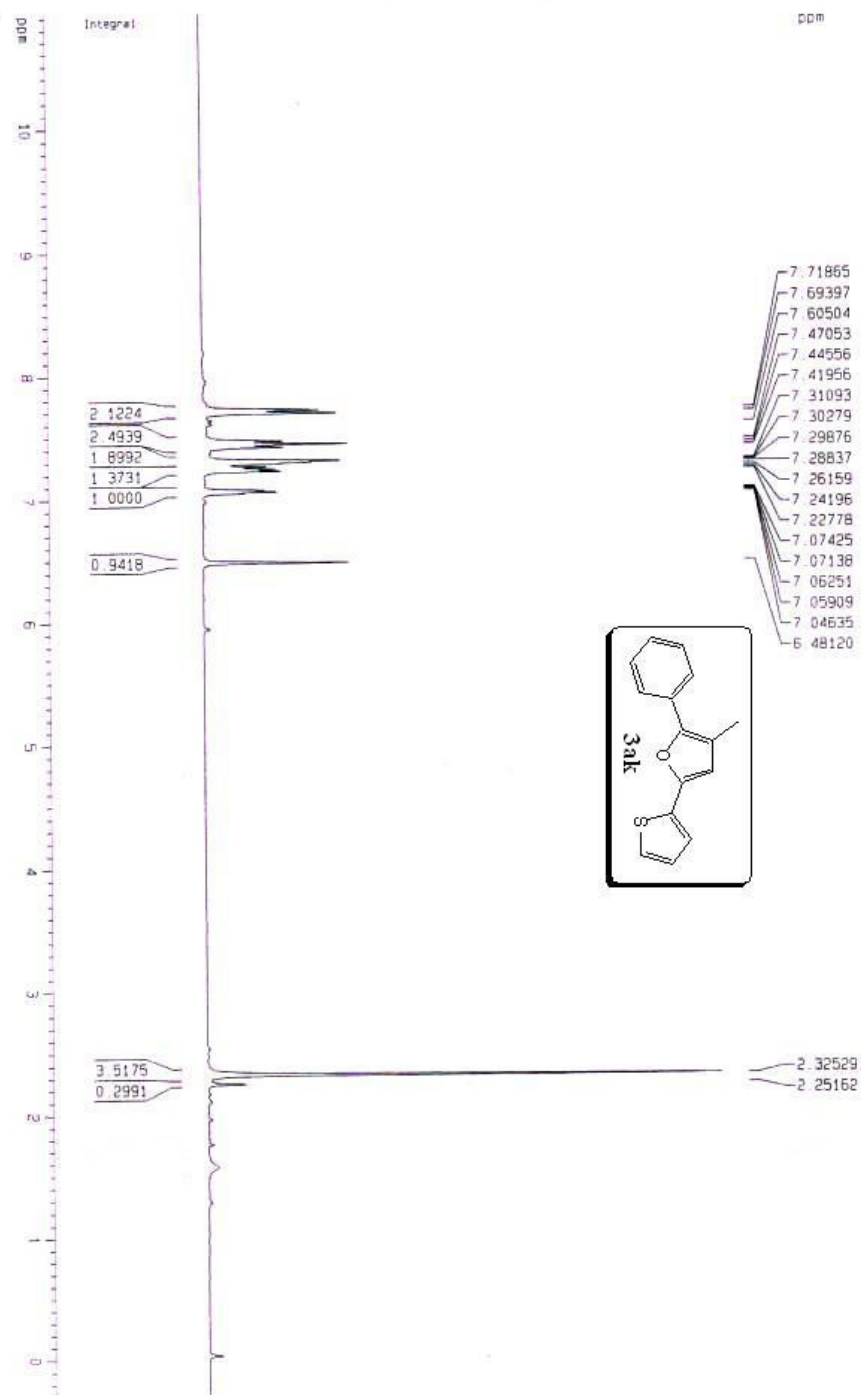


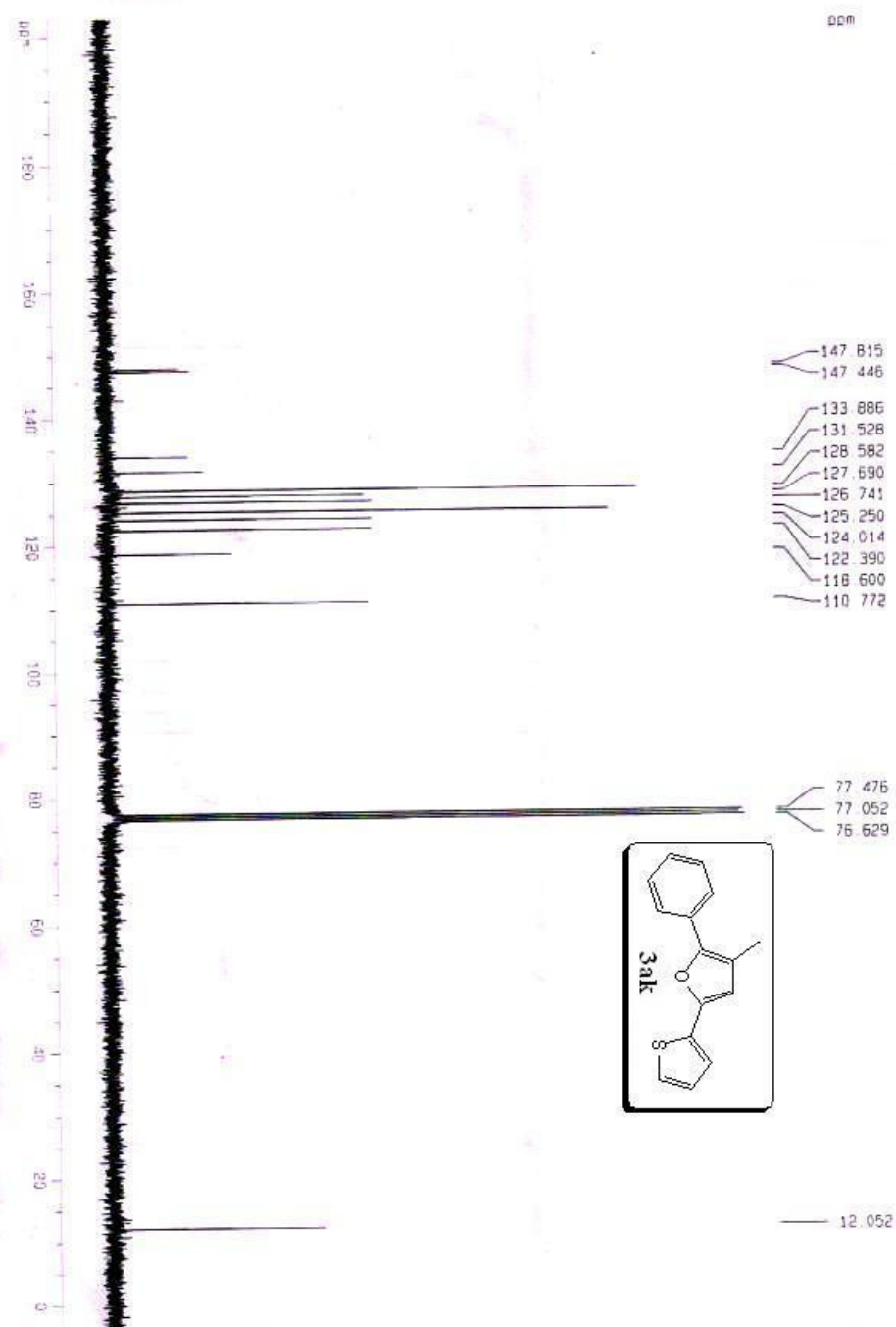


NAME	ACK04-13C
EXPNO	1
PROCNO	1
DATE_	20131021
TIME	11:11
INSTRUM	5 mm PABBO BB-
PROBHD	zgpg30
PULPROG	zgpg30
TD	32768
SOLVENT	CDCl3
NS	945
DS	4
SWH	29761.904 Hz
FIDRES	0.908261 Hz
AQ	0.550524 sec
RG	32
DE	16.800 usec
TE	299.3 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1

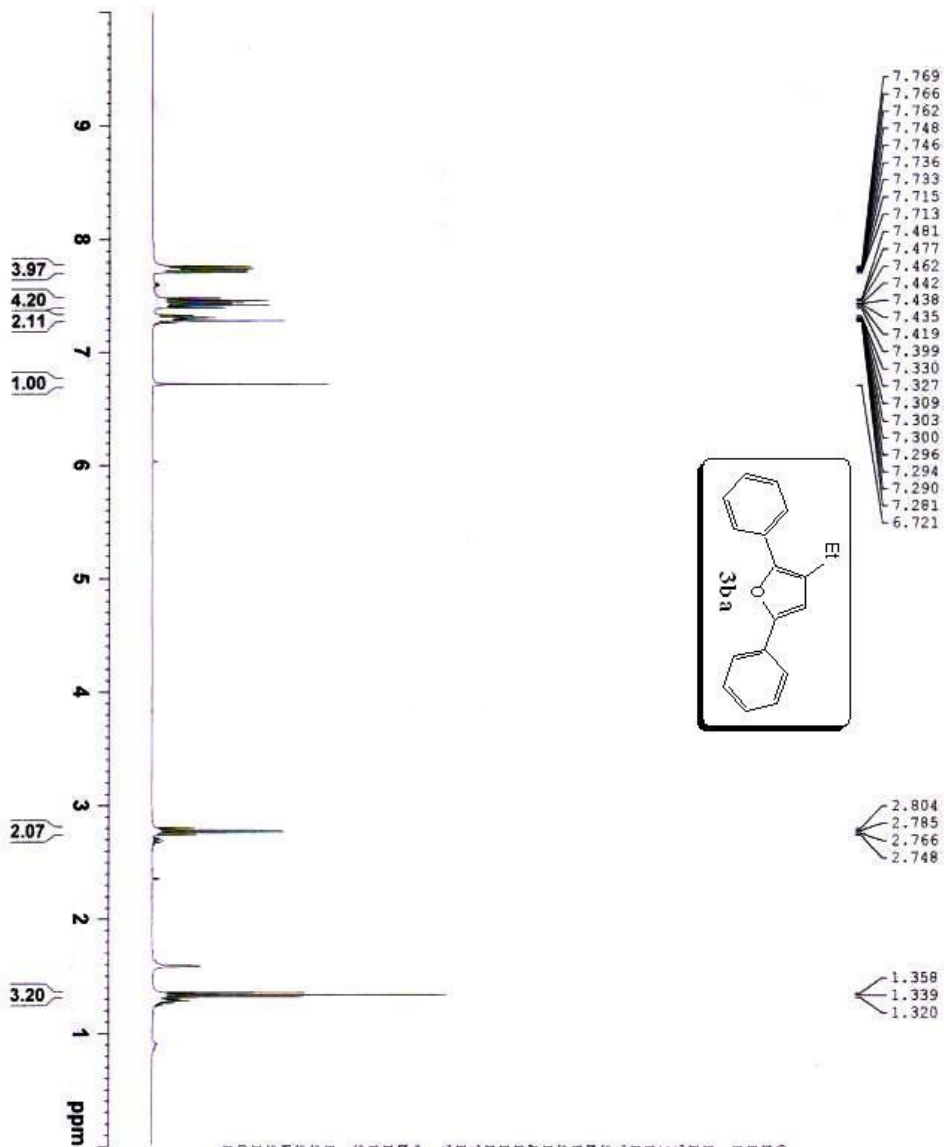
CHANNEL F1	
NUC1	13C
P1	9.88 usec
PL1	0.10 dB
PL1W	82.1610610 W
SFO1	125.7703643 MHz

CHANNEL F2	
CPDPRG2	waltz16
NUC2	1H
PCPD2	80.00 usec
PL2	1.00 dB
PL12	16.50 dB
PL13	20.00 dB
PL1W	15.50230623 W
PL13W	0.44440623 W
PL13M	0.19517358 W
SFO2	500.1320005 MHz
SI	16384
SF	125.7377659 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40





Current Data Parameters
 Name: 20131108
 Date: 20131108
 Time: 16:00
 Instrument: 5 mm BBO BB-1H
 Acquisition: 200 MHz
 P1: 12.00
 FIDRES: 0.000000
 AQ: 0.000000
 SFO: 200.130000
 F2 - Acquisition Parameters
 Name: 20131108
 Date: 20131108
 Time: 16:00
 Instrument: 5 mm BBO BB-1H
 Acquisition: 200 MHz
 P1: 12.00
 FIDRES: 0.000000
 AQ: 0.000000
 SFO: 200.130000
 F2 - Processing parameters
 SI: 32768
 SF: 200.130000
 F2: 200.130000
 EQ: 0
 GB: 0
 LB: 1.00 Hz
 GB: 0
 PC: 1.00
 TO: 20.00 cm
 F1: 200.130000
 F2: 200.130000
 F3: 200.130000
 F4: 200.130000
 F5: 200.130000
 F6: 200.130000
 F7: 200.130000
 F8: 200.130000
 F9: 200.130000
 F10: 200.130000
 F11: 200.130000
 F12: 200.130000
 F13: 200.130000
 F14: 200.130000
 F15: 200.130000
 F16: 200.130000
 F17: 200.130000
 F18: 200.130000
 F19: 200.130000
 F20: 200.130000
 F21: 200.130000
 F22: 200.130000
 F23: 200.130000
 F24: 200.130000
 F25: 200.130000
 F26: 200.130000
 F27: 200.130000
 F28: 200.130000
 F29: 200.130000
 F30: 200.130000
 F31: 200.130000
 F32: 200.130000
 F33: 200.130000
 F34: 200.130000
 F35: 200.130000
 F36: 200.130000
 F37: 200.130000
 F38: 200.130000
 F39: 200.130000
 F40: 200.130000
 F41: 200.130000
 F42: 200.130000
 F43: 200.130000
 F44: 200.130000
 F45: 200.130000
 F46: 200.130000
 F47: 200.130000
 F48: 200.130000
 F49: 200.130000
 F50: 200.130000
 F51: 200.130000
 F52: 200.130000
 F53: 200.130000
 F54: 200.130000
 F55: 200.130000
 F56: 200.130000
 F57: 200.130000
 F58: 200.130000
 F59: 200.130000
 F60: 200.130000
 F61: 200.130000
 F62: 200.130000
 F63: 200.130000
 F64: 200.130000
 F65: 200.130000
 F66: 200.130000
 F67: 200.130000
 F68: 200.130000
 F69: 200.130000
 F70: 200.130000
 F71: 200.130000
 F72: 200.130000
 F73: 200.130000
 F74: 200.130000
 F75: 200.130000
 F76: 200.130000
 F77: 200.130000
 F78: 200.130000
 F79: 200.130000
 F80: 200.130000
 F81: 200.130000
 F82: 200.130000
 F83: 200.130000
 F84: 200.130000
 F85: 200.130000
 F86: 200.130000
 F87: 200.130000
 F88: 200.130000
 F89: 200.130000
 F90: 200.130000
 F91: 200.130000
 F92: 200.130000
 F93: 200.130000
 F94: 200.130000
 F95: 200.130000
 F96: 200.130000
 F97: 200.130000
 F98: 200.130000
 F99: 200.130000
 F100: 200.130000



Current Data Parameters
NAME Dr. A. HAJRA
EXPNO 202
PROCNO 1

F2 - Acquisition Parameters
Date_ 20130924
Time 19.50
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 32
DS 2
SWH 8223.685 Hz
FIDRES 0.220067 Hz
AQ 1.9623444 sec
RG 93.46
INW 60.800 usec
DE 6.50 usec
TE 297.1 K
D1 1.00000000 sec
TD0 1

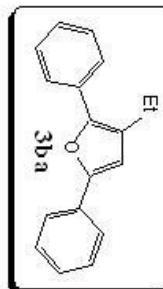
===== CHANNEL f1 =====
NUC1 1H
P1 14.70 usec
PL1 0.00000000 W
SFO1 400.1524711 MHz

F2 - Processing parameters
SI 16384
SF 400.1500000 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

151.94
147.58
131.71
130.80
128.62
128.52
128.40
127.13
126.75
125.44
125.37
125.16
123.62
108.61

77.29
77.18
76.97
76.66

19.29
14.39



Current Data Parameters
NAME: 17_A_WATRA_1
EXPNO: 203
PROCNO: 1

F2 - Acquisition Parameters
Date_: 20110924
Time: 12.10

INSTRUM: spect
PROBHD: 5 mm PABBO BH/

PULPROG: zgpg30
TO: 32768

SOLVENT: CDCl3
NS: 400

DS: 4
SWH: 34038.461 Hz

FIDRES: 0.733596 Hz
AQ: 0.6816244 sec

RG: 67.66
DE: 20.800 usec

TE: 300.2 K
DE: 2.00000000 sec

D11: 0.03000000 sec
TD0: 1

===== CHANNEL f1 =====
NUC1: 13C
P1: 130 usec
PL1: 0.00000000 W
SFO1: 100.628358 MHz

===== CHANNEL f2 =====
NUC2: 1H
P2: 12.00 usec
PL2: 0.00000000 W
SFO2: 400.1514206 MHz

===== CHANNEL f3 =====
NUC3: 1H
P3: 12.00 usec
PL3: 0.00000000 W
SFO3: 400.1514206 MHz

===== CHANNEL f4 =====
NUC4: 1H
P4: 12.00 usec
PL4: 0.00000000 W
SFO4: 400.1514206 MHz

===== CHANNEL f5 =====
NUC5: 1H
P5: 12.00 usec
PL5: 0.00000000 W
SFO5: 400.1514206 MHz

===== CHANNEL f6 =====
NUC6: 1H
P6: 12.00 usec
PL6: 0.00000000 W
SFO6: 400.1514206 MHz

===== CHANNEL f7 =====
NUC7: 1H
P7: 12.00 usec
PL7: 0.00000000 W
SFO7: 400.1514206 MHz

===== CHANNEL f8 =====
NUC8: 1H
P8: 12.00 usec
PL8: 0.00000000 W
SFO8: 400.1514206 MHz

===== CHANNEL f9 =====
NUC9: 1H
P9: 12.00 usec
PL9: 0.00000000 W
SFO9: 400.1514206 MHz

===== CHANNEL f10 =====
NUC10: 1H
P10: 12.00 usec
PL10: 0.00000000 W
SFO10: 400.1514206 MHz

===== CHANNEL f11 =====
NUC11: 1H
P11: 12.00 usec
PL11: 0.00000000 W
SFO11: 400.1514206 MHz

===== CHANNEL f12 =====
NUC12: 1H
P12: 12.00 usec
PL12: 0.00000000 W
SFO12: 400.1514206 MHz

===== CHANNEL f13 =====
NUC13: 1H
P13: 12.00 usec
PL13: 0.00000000 W
SFO13: 400.1514206 MHz

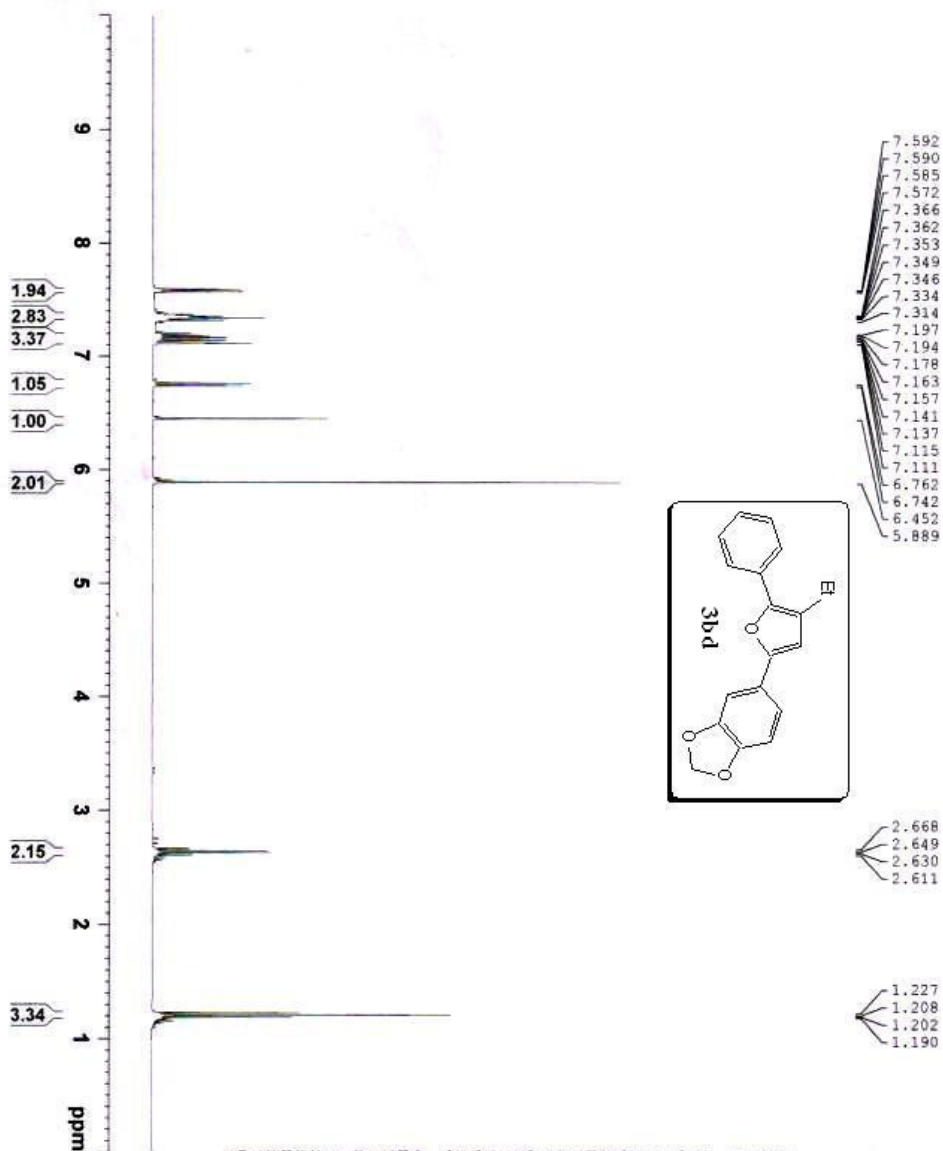
===== CHANNEL f14 =====
NUC14: 1H
P14: 12.00 usec
PL14: 0.00000000 W
SFO14: 400.1514206 MHz

===== CHANNEL f15 =====
NUC15: 1H
P15: 12.00 usec
PL15: 0.00000000 W
SFO15: 400.1514206 MHz

===== CHANNEL f16 =====
NUC16: 1H
P16: 12.00 usec
PL16: 0.00000000 W
SFO16: 400.1514206 MHz

===== CHANNEL f17 =====
NUC17: 1H
P17: 12.00 usec
PL17: 0.00000000 W
SFO17: 400.1514206 MHz

===== CHANNEL f18 =====
NUC18: 1H
P18: 12.00 usec
PL18: 0.00000000 W
SFO18: 400.1514206 MHz

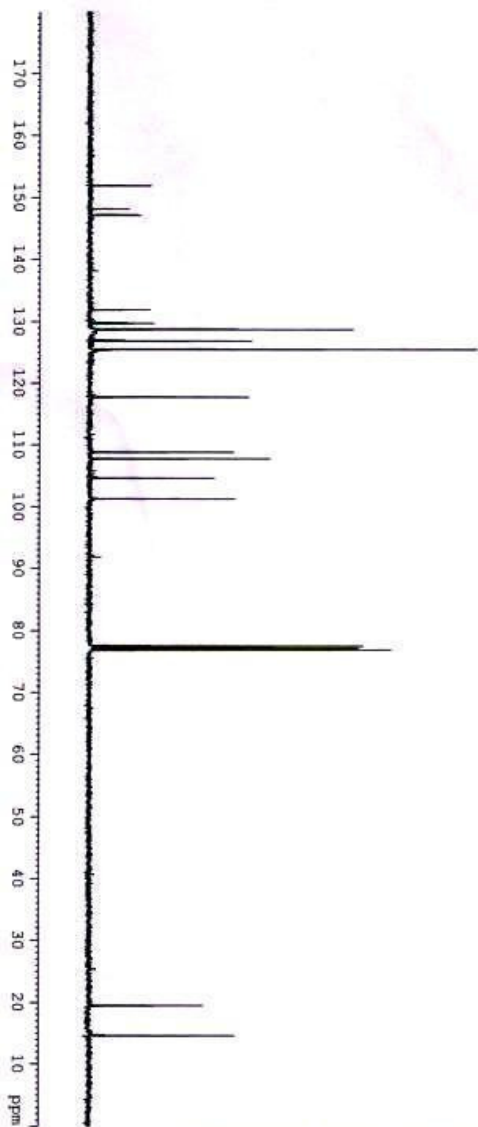


Current Data Parameters
NAME 3bd
EXPNO 214
PROCNO 1

F2 - Acquisition Parameters
Date_ 20100929
Time 17.11
INSTRUM spect
PROBHD 5 mm PARBO BB/
PULPROG zg30
TD 32768
SOLVENT CDCl3
DS 24
SS 2
SWH 8223.685 Hz
FIDRES 0.250967 Hz
AQ 1.8923444 sec
RG 62.69
DM 60.800 usec
DE 6.50 usec
TE 297.0 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 ¹H
P1 14.75 usec
PLW1 11.99439989 W
SFO1 400.1524711 MHz

F2 - Processing parameters
SI 16384
SF 400.1500472 MHz
WDW EM
SSB 0
GB 0
PC 1.00



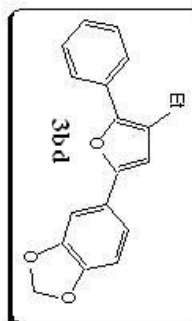
151.94
148.11
147.18
147.04

131.86
129.61
128.67
128.28
126.77
125.47
117.68

108.74
107.71
104.57
101.23

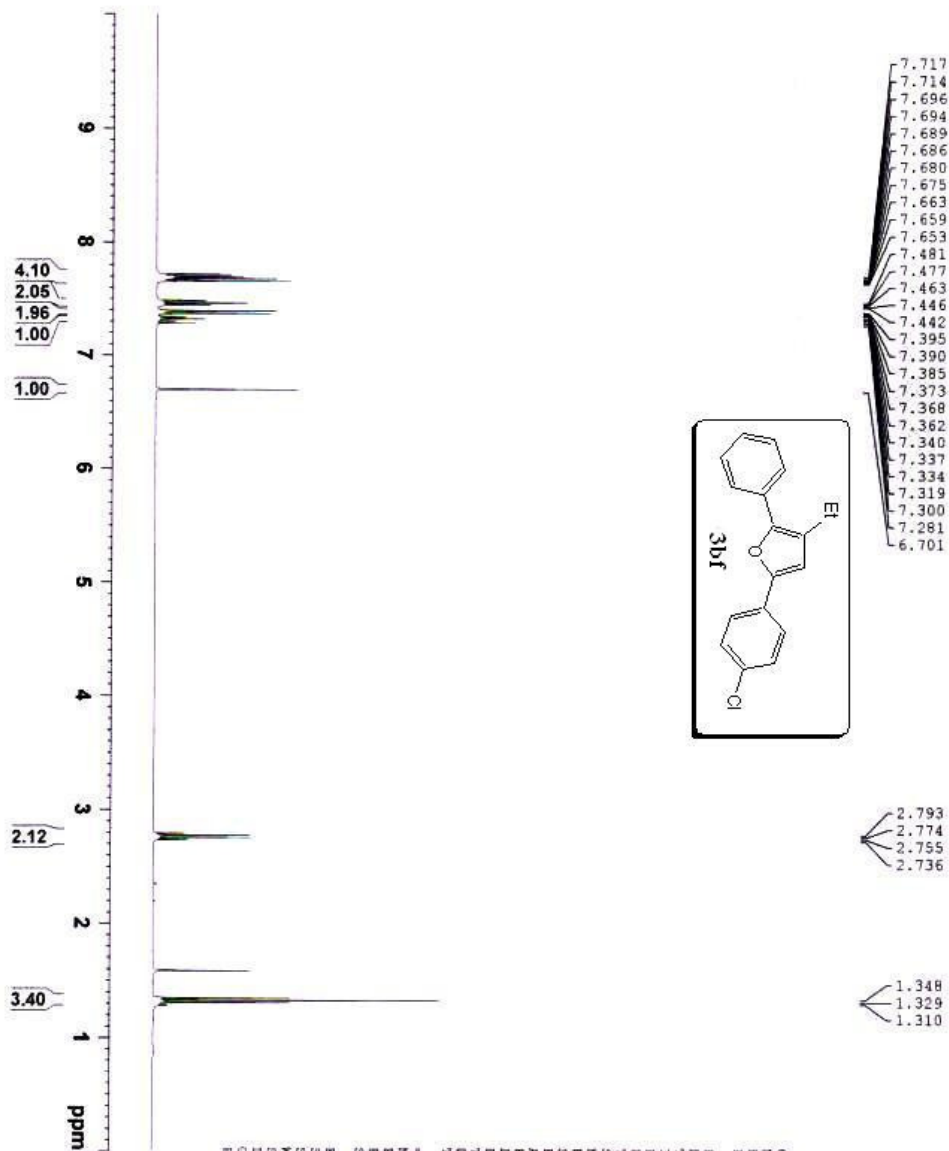
77.47
77.16
76.84

19.44
14.53



Current Data Parameters
NAME Dr. A. NADIA 1
EXPNO 246
PROCNO 1
F2 - Acquisition Parameters
Date_ 201105
Time_ 13.04
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 32768
SOLVENT CDCl3
DS 402
SWH 24038.461 Hz
FIDRES 0.733596 Hz
AQ 0.6516244 sec
RG 62.69
RW 20.800 usec
DS 402
TE 296.4 K
D11 2.00000000 sec
TDO 0.03000000 sec
1
===== CHANNEL f1 =====
NUC1 13C
P1 8.50 usec
PL1 34.00000000 M
SFO1 100.6275568 MHz
===== CHANNEL f2 =====
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PLM2 12.00000000 M
PLM12 0.40732949 M
PLM13 0.26107001 M
SFO2 400.1516006 MHz
F2 - Processing parameters
SI 32768
SF 100.6177600 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40





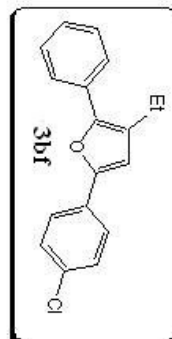
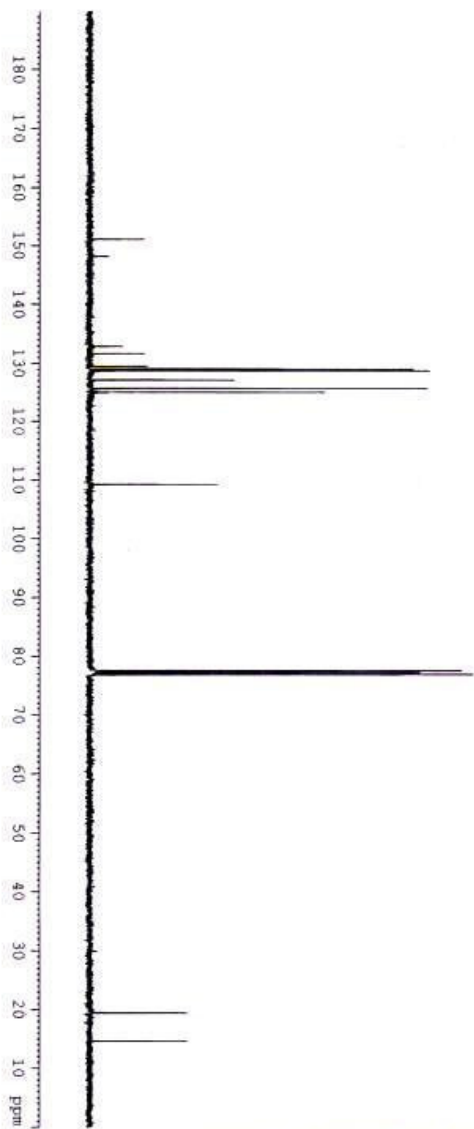
Current Data Parameters
NAME Dr. A HAJRA.1
EXPNO 189
PROCNO 1

F2 - Acquisition Parameters

Date_ 20130922
Time 19.08
INSTRUM spect
PROBHD 5 mm PABBO-1H
PULPROG zgpg30
TD 32768
SOLVENT CDCl₃
NS 24
DS 2
SWH 8223.685 Hz
FIDRES 0.250967 Hz
AQ 1.9923444 sec
RG 81.66 usec
IN 65.50 usec
DE 296.7 K
TE 1.0000000 sec
D1 1

CHANNEL f1

NUC1 ¹H
P1 14.75 usec
PLM1 11.99499989 W
SFO1 400.1524711 MHz
F2 - Processing parameters
SI 16384
SF 400.1500000 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00



151.05
148.11
132.87
131.65
129.47
129.00
128.74
127.12
125.67
125.62
124.98
109.23

77.47
77.15
76.84

19.41
14.54

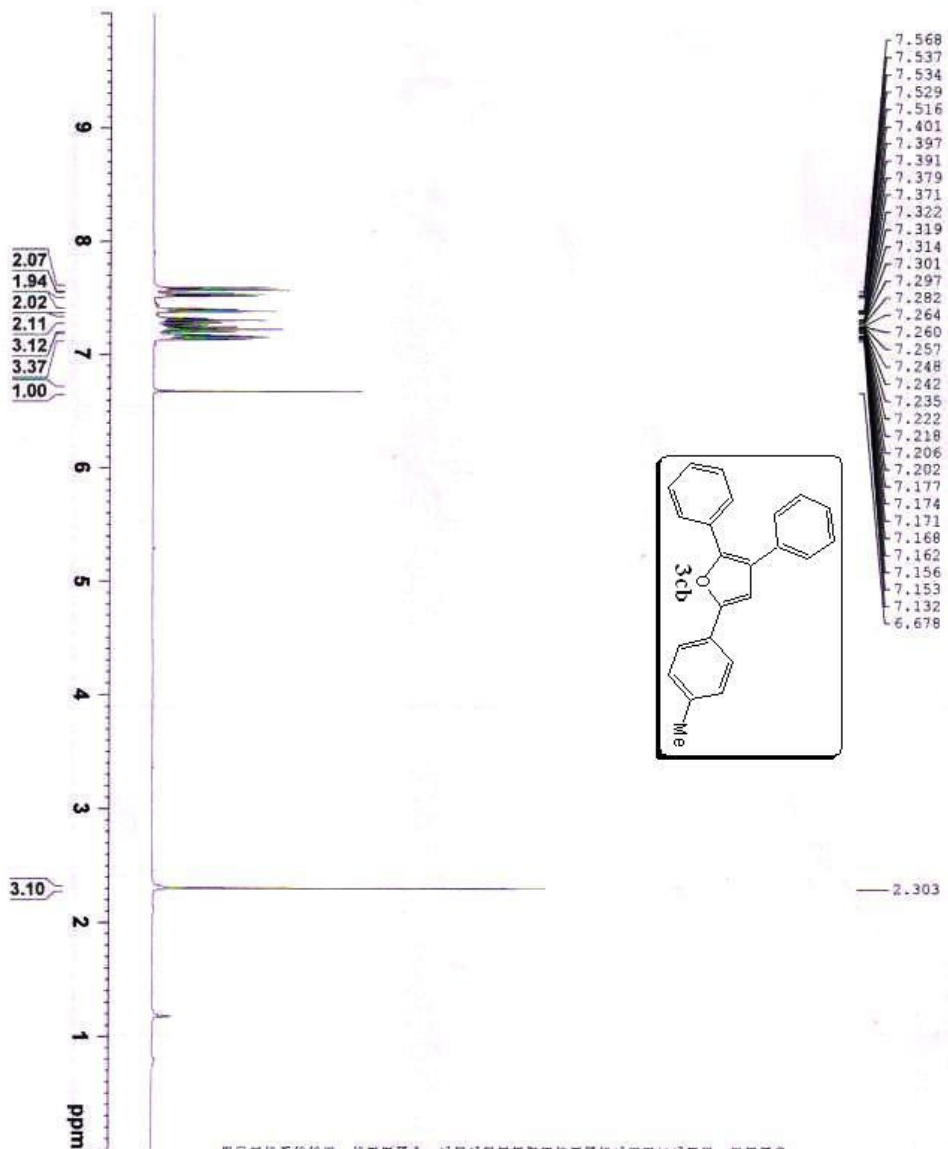


Current Data Parameters
NAME: Dr. A. BALHA 1
EXPNO: 190
PROCNO: 1
F2 - Acquisition Parameters
Date_ Time: 20100922 19.27
INSTRUM: spect
PROBHD: 5 mm PABBO BB7
PULPROG: zgpg30
F2 - Processing parameters
SI: 32768
SF: 100.6177850 MHz
WDW: EM
SSB: 0
LB: 1.00 Hz
GB: 0
PC: 1.40

----- CHANNEL f1 -----
NUC1: 13C
P1: 8.50 usec
PLW1: 54.00000000 W
SFO1: 100.6278588 MHz

----- CHANNEL f2 -----
CHRGPRG2: waltz16
NUC2: 1H
PCPG2: 40.00 usec
PLW2: 12.00000000 W
PLW12: 0.40792999 W
PLW13: 0.26107001 W
SFO2: 400.1516856 MHz

----- CHANNEL f3 -----
CHRGPRG3: waltz16
NUC3: 1H
PCPG3: 40.00 usec
PLW3: 12.00000000 W
PLW13: 0.40792999 W
PLW14: 0.26107001 W
SFO3: 400.1516856 MHz



Current Data Parameters
NAME Dr. A. HAJRA
EXNO 41
PROCNO 1

F2 - Acquisition Parameters

Date_ 20130831
Time 17.25
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 32768
SOLVENT CDCl₃
NS 32
DS 2
SWH 8223.685 Hz
FIDRES 0.25067 Hz
AQ 1.923444 sec
RG 87.66
WDW 60.800 usec
DE 397.8 K
TE 300.2 K
TDO 1.0000000 sec
TD0 1

===== CHANNEL F1 =====

NUC1 ¹H
PI 14.75 usec
PLW1 11.9449989 W
SFO1 400.1524711 MHz

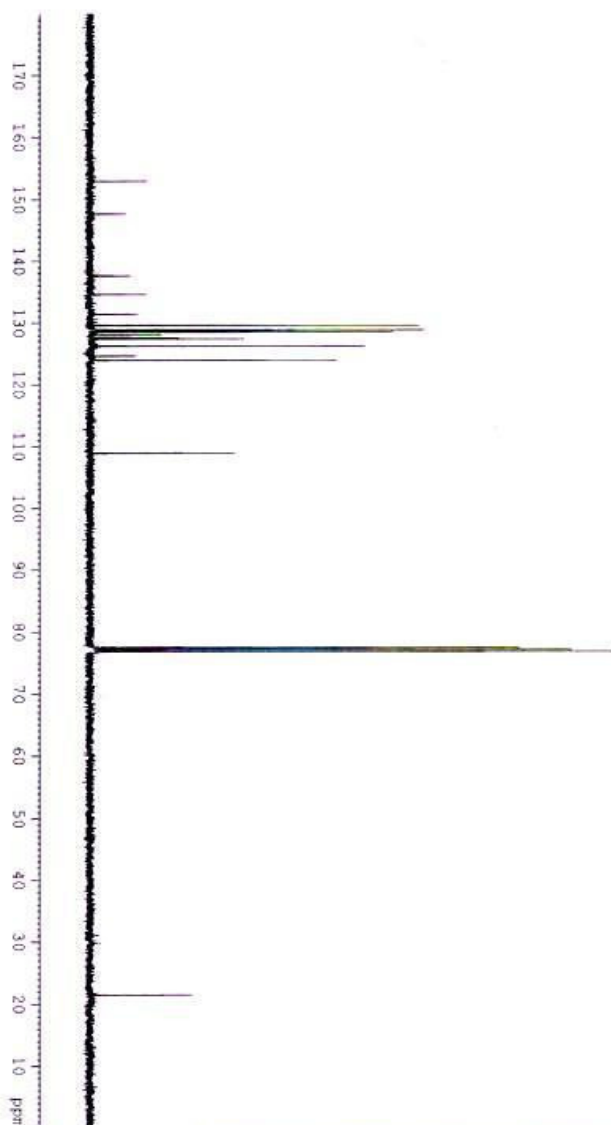
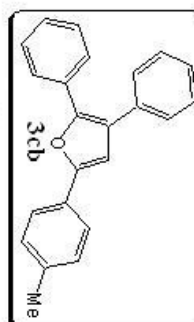
F2 - Processing Parameters

SI 32
SF 400.1500455 MHz
WDW EM
SSB 0
GB 0
PC 1.00

152.94
147.63
137.57
134.57
131.34
129.57
128.84
128.79
128.52
127.99
127.50
127.38
126.21
124.61
123.94
108.91

77.47
77.16
76.84

21.47



Current Data Parameters
NAME Dr. A. Kuchta
EXPNO 42
PROCNO 1

F2 - Acquisition Parameters

Date_ 20110931
Time 17.45
INSTRUM spect
PROBHD 5 mm PABBO-500
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 400
DS 2
SWH 24039.463 Hz
FIDRES 0.131526 Hz
AQ 0.601074 sec
RG 47.46
WE 20.870 umsec
DE 6.50 udec
TE 298.2 K
D1 2.00000000 sec
D11 0.05000000 sec
TD0 1

CHANNEL f1

NUC1 13C
P1 8.99 umsec
PL1 54.0000000 W
SFO 100.6274588 MHz

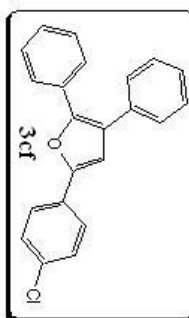
CHANNEL f2

NUC2 1H
PCPD2 80.00 umsec
PLM2 12.00000000 W
PLM12 0.40732929 W
PLM13 0.40732929 W
SFO2 400.146064 MHz

F2 - Processing Parameters

SI 16384
SF 100.617850 MHz
WDW EM
SSB 0
GB 0
PC 1.40

7.723
7.719
7.707
7.702
7.640
7.636
7.616
7.500
7.496
7.479
7.476
7.471
7.451
7.438
7.433
7.429
7.422
7.405
7.401
7.385
7.382
7.374
7.367
7.344
7.325
7.311
7.308
7.290
7.282
7.272
6.832

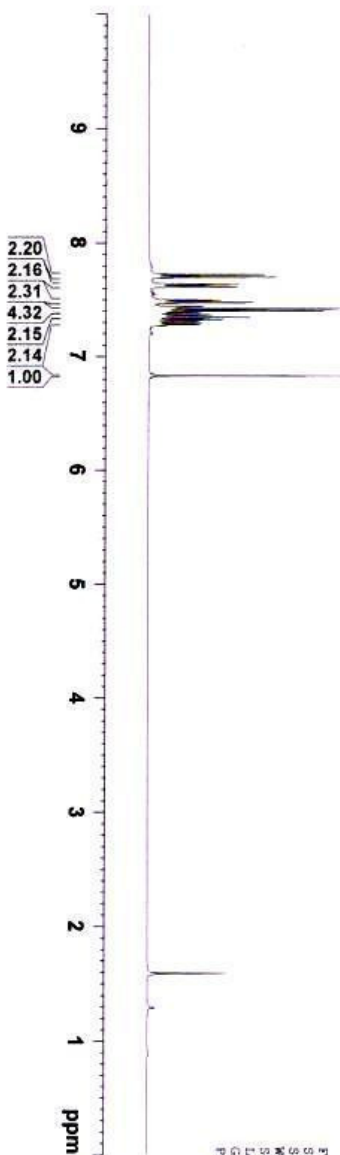


Current Data Parameters
NAME Dr. A HAJRA 1
EXPNO 60
PROCNO 1

F2 - Acquisition Parameters
Date_ 20130807
Time 12:47
INSTRUM spect
PROBHD 5 mm PABO BB/
PULPROG zgpg30
TD 32768
SOLVENT CDCl3
NS 24
DS 2
SWH 8223.685 Hz
FIDRES 0.250967 Hz
AQ 0.023444 sec
RG 77.545
BQ 1.992444 sec
DQ 60.800 usec
DE 6.50 usec
TE 296.2 K
D1 1.00000000 sec
TD0 1

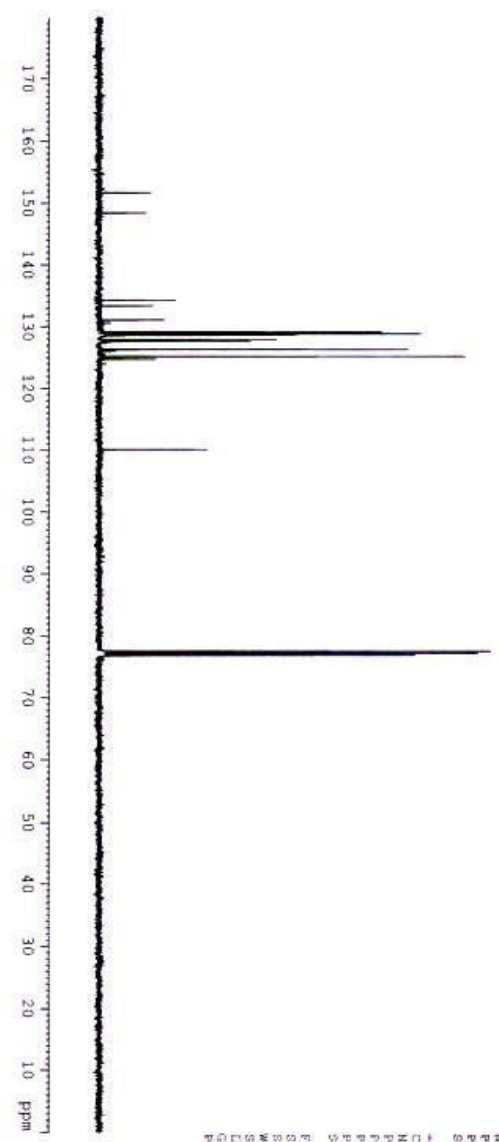
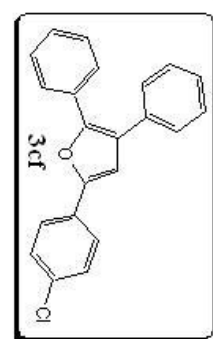
===== CHANNEL f1 =====
NUC1 1H
P1 14.75 usec
PL1 0.00000000
SFO1 400.1524711 MHz

F2 - Processing parameters
SI 16384
SF 400.1500000 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00



151.61
148.35
134.20
133.28
131.03
129.16
129.11
128.85
128.81
128.58
127.82
127.55
126.30
125.13
124.74
110.02

77.48
77.16
76.85

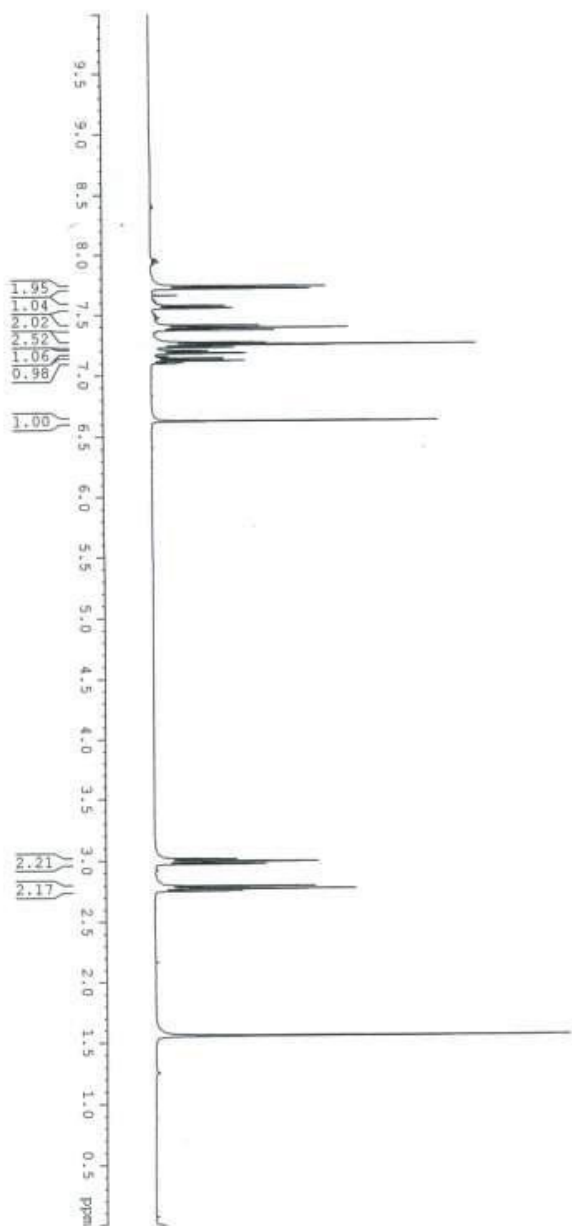
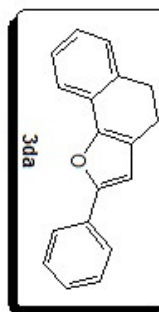


Current Data Parameters
NAME: Dr. A. ULTRA 1
EXPNO: #1
PROCNO: 1
F2 - Acquisition Parameters
Date_ : 20100904
Time : 16.38
INSTRUM : spect
PROBHD : 5 mm PABBO BB/
PULPROG : zgpg30
TD : 32768
SOLVENT : CDCl3
NS : 640
DS : 4
SWH : 24038.461 Hz
FIDRES : 0.733296 Hz
AQ : 0.6816244 sec
RG : 67.8
DM : 20.000 usec
DE : 67.8
TE : 297.2 K
D1 : 2.00000000 sec
D11 : 0.03000000 sec
TD0 : 1
----- CHANNEL f1 -----
NUC1 : 13C
P1 : 1.00 usec
PL1 : 0.00 dB
SFO1 : 100.6279958 MHz
----- CHANNEL f2 -----
CROSSP2 : water76
NUC2 : 1H
P2 : 0.00000000 usec
PL2 : 12.00000000 dB
PL12 : 0.40792999 M
PL13 : 0.26107001 M
SFO2 : 400.1516006 MHz
F2 - Processing parameters
SI : 32768
SF : 100.6177651 MHz
WDW : EM
SSB : 0
LB : 1.00 Hz
GB : 0
PC : 1.40

7.738
7.735
7.730
7.716
7.714
7.574
7.556
7.410
7.405
7.391
7.375
7.371
7.271
7.267
7.265
7.252
7.250
7.233
7.231
7.201
7.200
7.183
7.140
7.137
7.122
7.118
7.103
7.100
6.626

3.014
2.994
2.974
2.793
2.772
2.753

1.554



Current Data Parameters
NAME Dr. A. HUBER 2014
EXPNO 879
PROCNO 1

F2 - Acquisition Parameters
Date_ 20140909
Time 17:57
INSTRUM spect
PROBHD 5 mm PABBO BBI
PULPROG zg30
TD 32768
FIDRES 1.992344 sec
RG 168.31
SOLVENT CDCl3
NS 32
DS 2
SWH 8223.685 Hz
FIDRES 0.250967 Hz
AQ 1.992344 sec
RG 168.31
LW 60.800 usec
DE 6.50 usec
TE 298.2 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 1H
P1 14.75 usec
PLW1 11.99499889 W
SFO1 400.1524711 MHz
F2 - Processing Parameters
SI 16384
SF 400.150016 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00



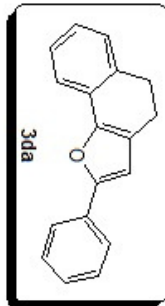
Current Data Parameters
NAME: DF_A_HAURA_2014
EXPNO: 880
PROCNO: 1

F2 - Acquisition Parameters
Date_ : 20140909
Time : 18.19
INSTRUM : spect
PROBHD : 5 mm PABBO
PULPROG : zgpg30
TD : 32768
SOLVENT : CDCl3
NS : 640
DS : 2
SWH : 34038.461 Hz
FIDRES : 0.733596 Hz
AQ : 0.6816244 sec
RG : 87.66
DM : 20.800 usec
DE : 39.20 usec
TE : 300.2 K
D1 : 2.00000000 sec
D11 : 0.03000000 sec
TD0 : 1

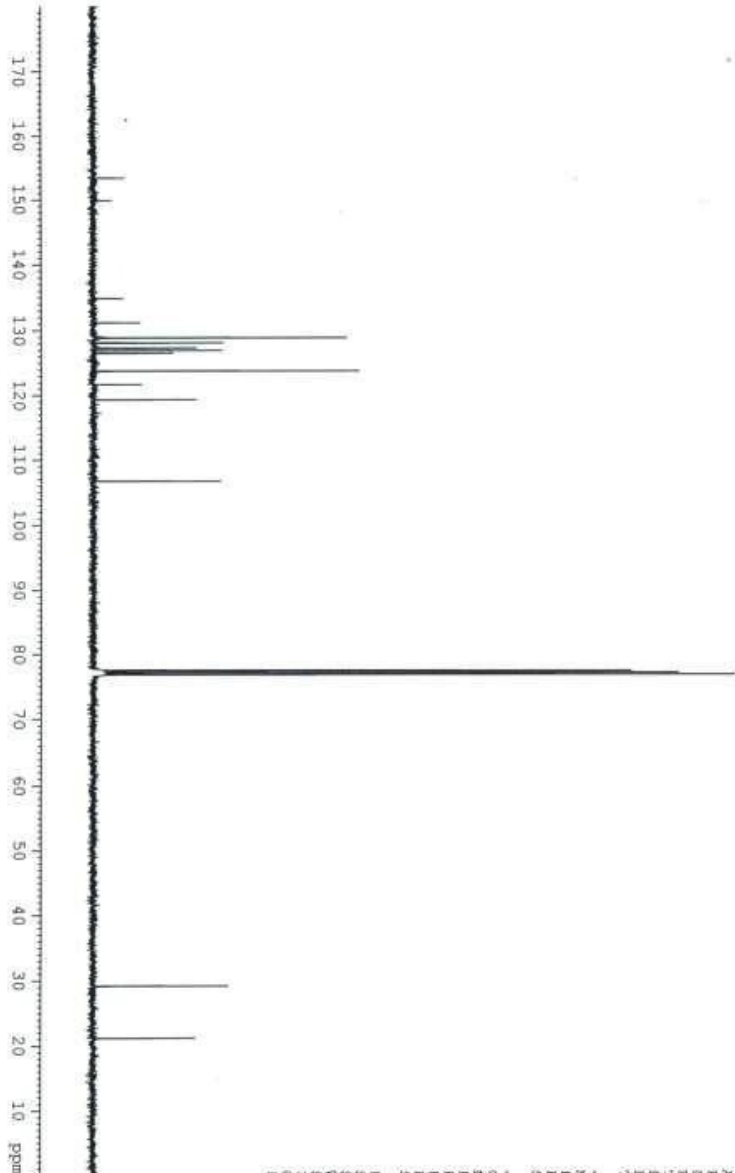
CHANNEL f1
NUC1 : 13C
P1 : 8.90 usec
PL1 : 54.00000000 W
SFO1 : 100.6278589 MHz

CHANNEL f2
CPDPRG2 : waltz16
NUC2 : 1H
PCPD2 : 80.00 usec
PLM2 : 12.00000000 W
PLM12 : 0.40792999 W
PLM13 : 0.26107001 W
SFO2 : 400.1516906 MHz

F2 - Processing parameters
SI : 16384
SF : 100.6177836 MHz
RGW : EM
SOS : 0
GB : 1.00 Hz
PC : 1.40



- 153.34
- 149.84
- 134.82
- 131.14
- 128.82
- 128.12
- 128.07
- 127.29
- 126.90
- 126.50
- 123.75
- 121.62
- 119.29
- 106.69
- 77.47
- 77.16
- 76.84
- 29.17
- 21.17



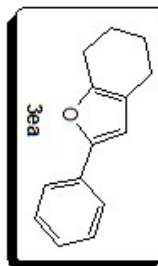
7.620
7.617
7.613
7.599
7.597
7.356
7.352
7.337
7.321
7.317
7.255
7.209
7.199
7.190
7.174
7.172
7.169
6.464

2.673
2.669
2.658
2.654
2.646
2.642
2.638
2.474
2.470
2.466
2.459
2.455
2.451
2.444
2.440
2.436
1.885
1.877
1.869
1.863
1.853
1.848
1.838
1.833
1.778
1.773
1.763
1.758
1.748
1.742
1.735
1.727



Current Data Parameters
NAME Dr. A HAJRA 2014
EXPNO 840
PROCNO 1

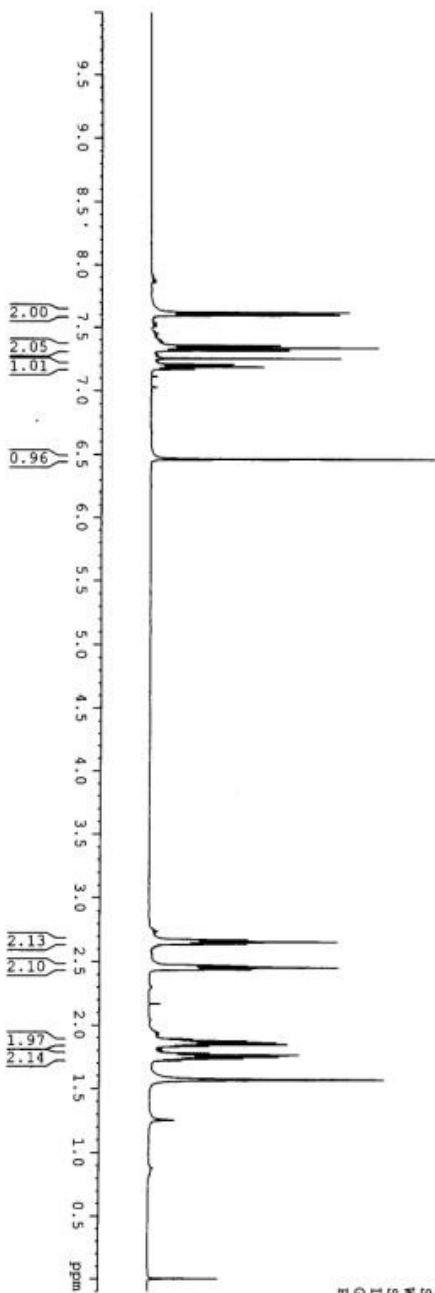
F2 - Acquisition Parameters
Date_ 20140906
Time 17.03



INSTRUM 5 mm PABBO BBI
PROBHD 5 mm PABBO BBI
PULPROG zg30
TD 32768
SOLVENT CDCl3
DS 32
SWH 8223.685 Hz
FIDRES 0.250967 Hz
AQ 1.9923444 sec
RG 87.66
DE 60.800 usec
TE 295.9 K
D1 1.0000000 sec
TD0 1

CHANNEL f1 1H
NUC1 1H
P1 14.75 usec
PL1 11.9949989 W
SFO1 400.1524711 MHz

F2 - Processing parameters
SI 32
SF 400.1500110 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00





Current Data Parameters
NAME Dr. A. BARKER
EXPNO 641
PROCNO 1

F2 - Acquisition Parameters

Date_ 20140906
Time 17.41
INSTRUM spect
PROBHD 5 mm BBO BB/
PULPROG zgpg30
TD 32768
SOLVENT CDCl3
NS 800
DS 2
SWH 24036.447 Hz
FIDRES 0.733564 Hz
AQ 0.6816244 sec
RG 87.66
DM 20,800 usec
DE 6.50 usec
TE 297.2 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

CHANNEL f1
NUC1 13C
P1 8.90 usec
PL1 0.00000000 W
SFO1 100.6278566 MHz

CHANNEL f2
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PLM2 12.00000000 W
PLM12 0.40792999 W
PLM13 0.26107001 W
SFO2 400.1516006 MHz

F2 - Processing parameters
SI 16384
SF 100.6177836 MHz
SFO 100.6177836 MHz
GB 0
PC 1.40

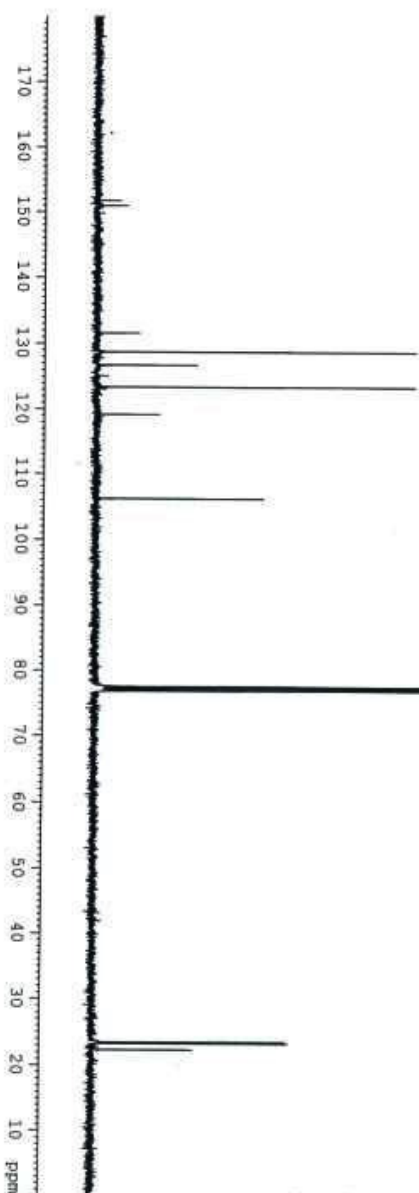
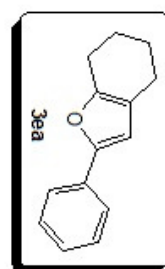
151.73
150.95

131.58
128.69
126.69
123.38
119.13

106.15

77.48
77.16
76.84

23.44
23.28
23.24
22.29



7.629
7.626
7.622
7.608
7.606
7.356
7.352
7.338
7.321
7.317
7.247
7.207
7.205
7.202
7.186
7.171
7.168
7.165
6.468

2.686
2.669
2.653
2.421
2.405
2.388
1.829
1.813
1.807
1.800
1.790
1.784
1.768
1.691
1.674
1.662
1.645
1.629
1.366
1.359
1.331
1.321
1.271
1.258
1.251
1.241

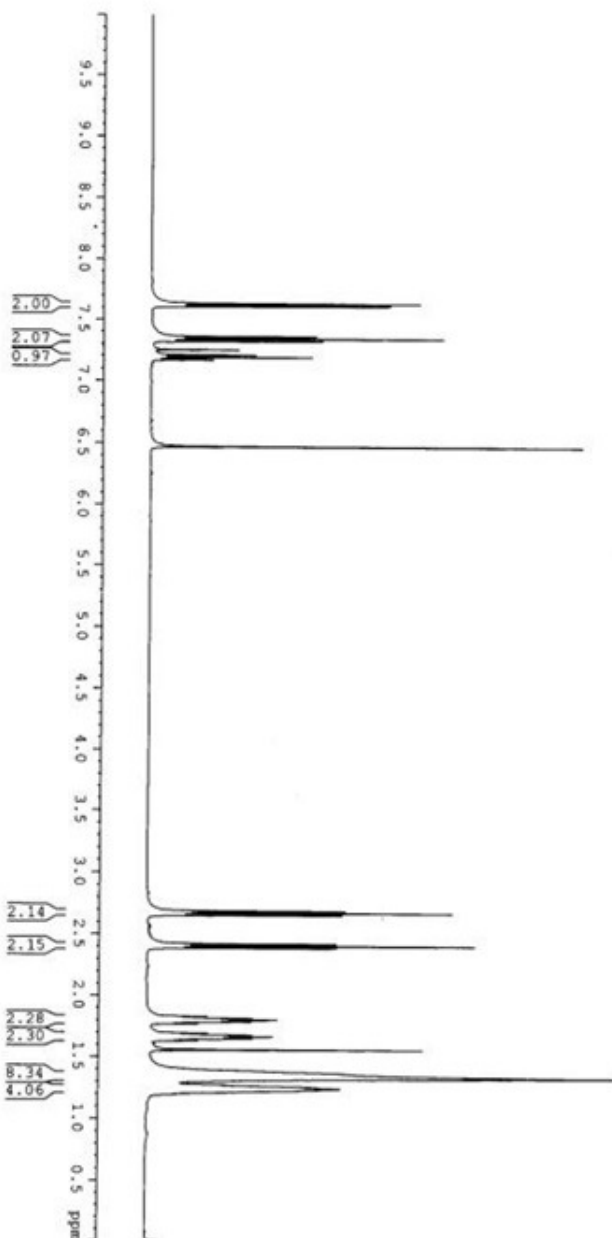


Current Data Parameters
NAME Dr. A. HAJRA 2014
EXPNO 847
PROCNO 1

F2 - Acquisition Parameters
Date_ 20140906
Time 20.03
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 24
DS 2
SWH 8233.685 Hz
FIDRES 0.250867 Hz
AQ 1.9923444 sec
RG 62.69
DM 60.800 usec
DE 6.50 usec
TE 296.2 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 1H
P1 14.75 usec
PL1 11.9949989 W
SFO1 400.1524711 MHz

F2 - Processing parameters
SI 16384
SF 400.1500139 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00



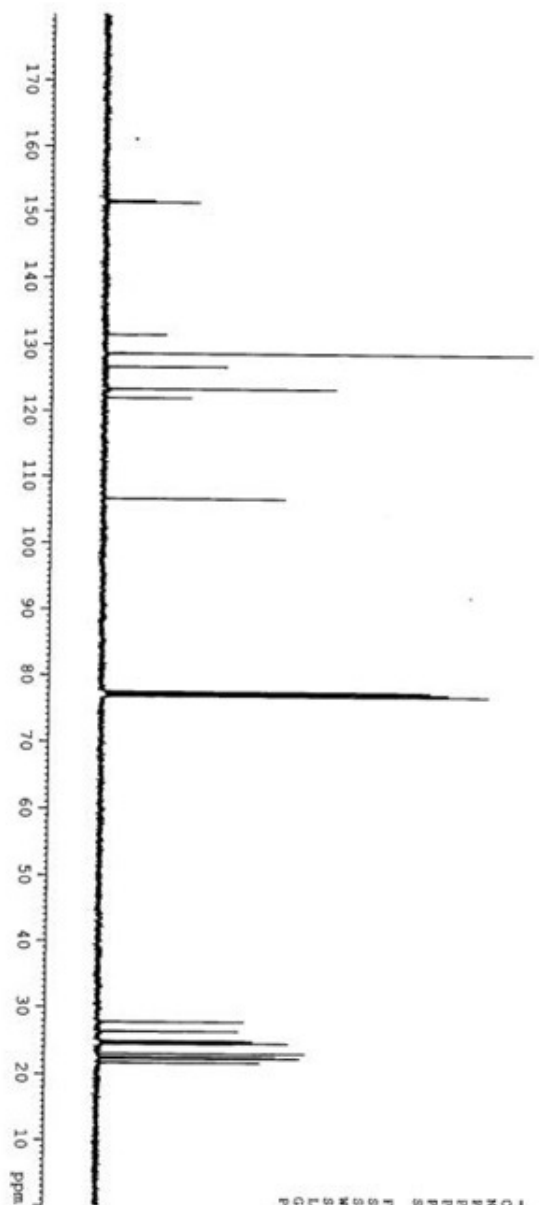
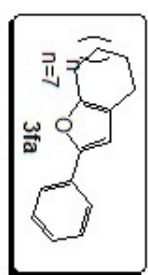
151.63
151.37

131.51
128.66
126.67
123.36
121.98

106.64

77.47
77.16
76.84

27.77
26.36
24.94
24.83
24.58
24.48
23.02
22.49
22.30
21.68



Current Data Parameters
NAME Dr. A. MATVA 2014
EXPNO 848
PROCNO 1

F2 - Acquisition Parameters
Date_ 20140906
Time 20:47
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 32768
SOLVENT CDCl3
NS 512
DS 2
SWH 24038.461 Hz
FIDRES 0.733596 Hz
AQ 0.6816244 sec
RG 62.69
EW 20.800 usec
DE 8.50 usec
TE 297.2 K
D11 2.0000000 sec
D11 0.0300000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 ¹³C
P1 8.90 usec
PLM1 54.0000000 W
SFO1 100.6278588 MHz

===== CHANNEL f2 =====
CROSSPO2 waltz16
NUC2 ¹H
PCPD2 1W
PLM2 12.0000000 W
PLM2 0.4079298 W
PLM3 0.2610701 W
SFO2 400.1516096 MHz

F2 - Processing parameters
SI 16384
SF 100.617851 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40