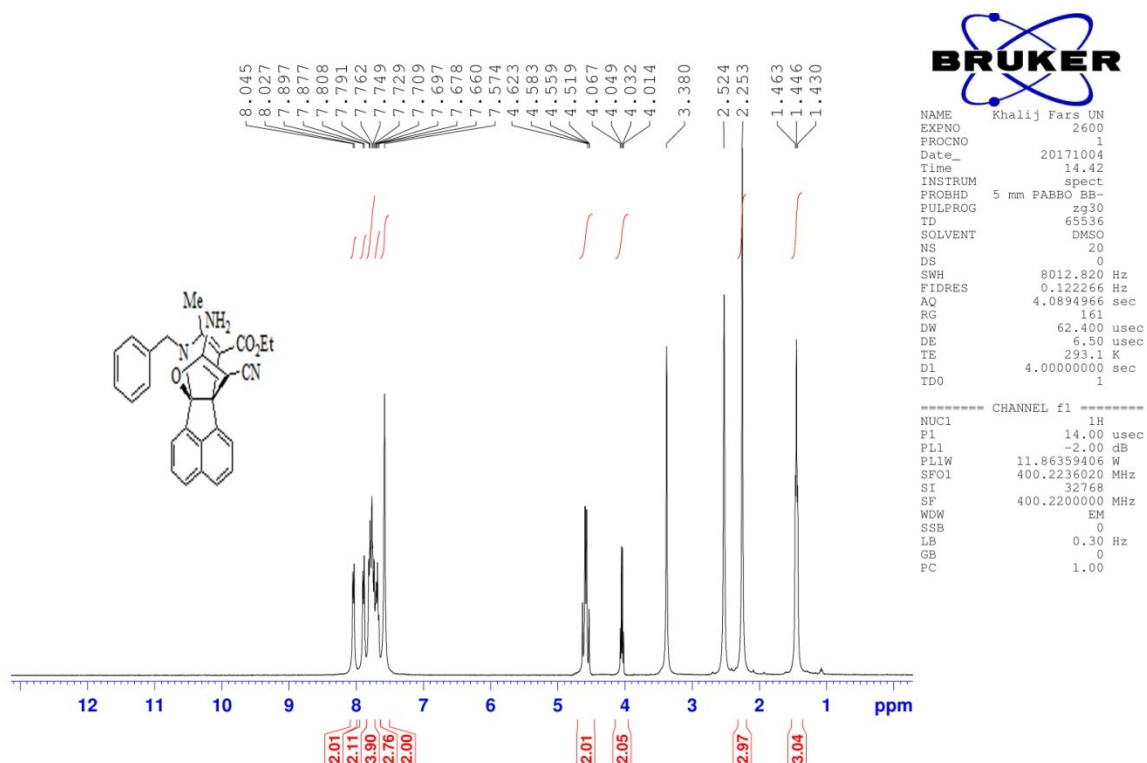
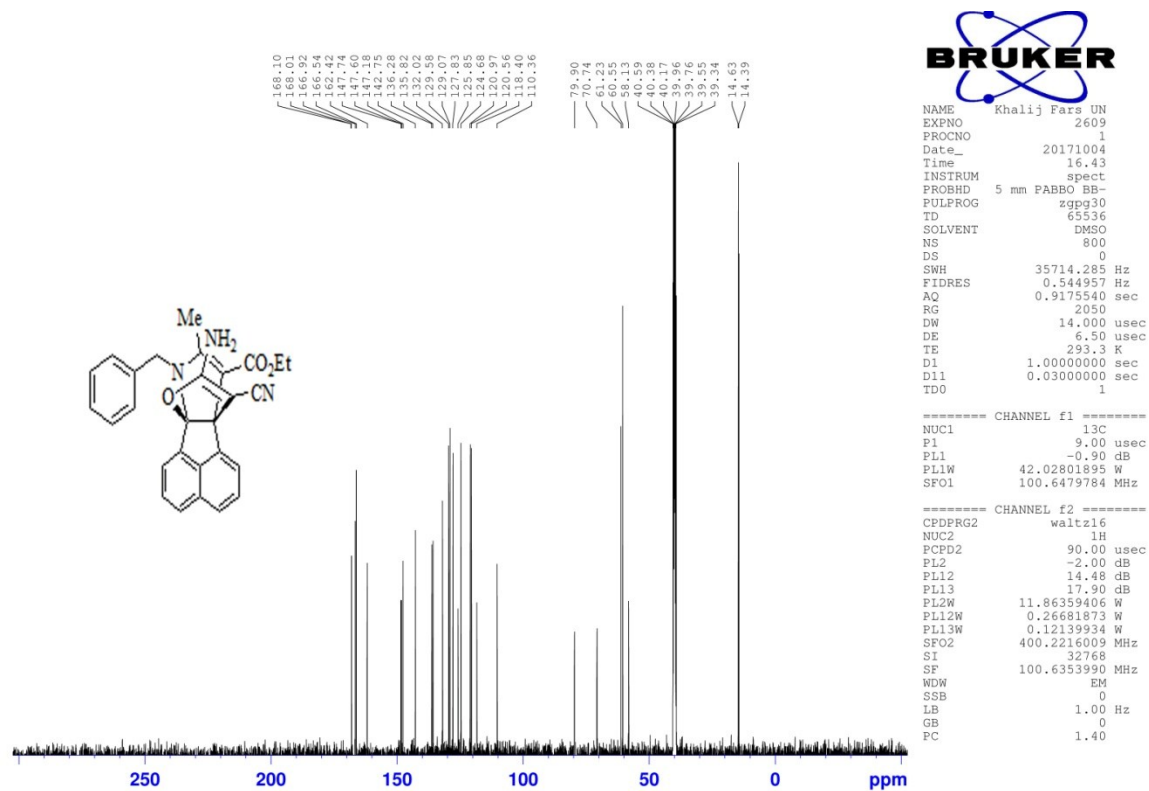


One-pot, sequential four-component synthesis of novel heterocyclic [3.3.3] propellane derivatives at room temperature

SUPPORTING INFORMATION

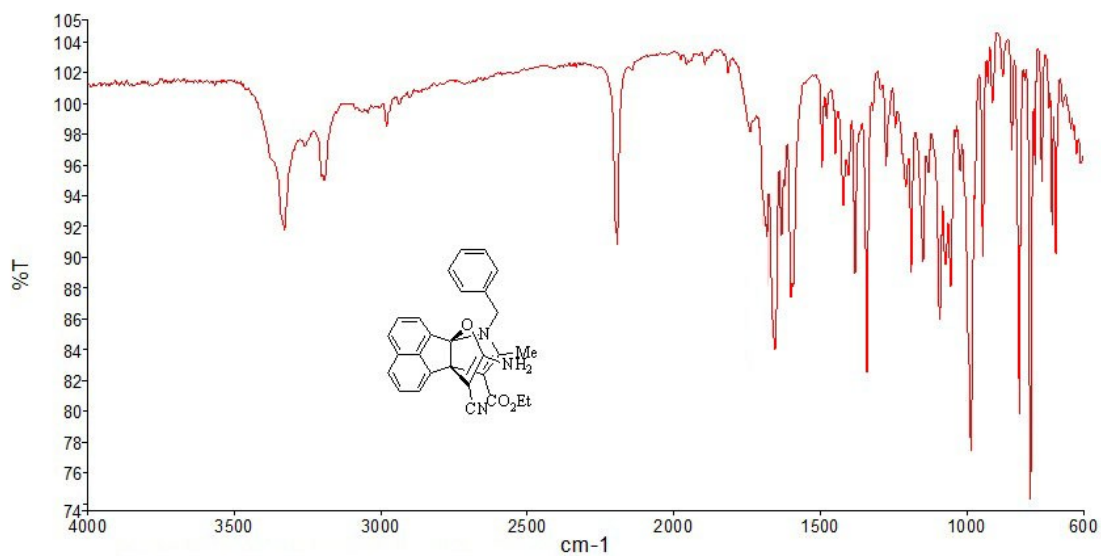
Ethyl-11-amino-7-benzyl-10-cyano-8-methyl-7H-6b,9a-(epoxyetheno)acenaphtho[1,2-b]pyrrole-9-carboxylate (6a)



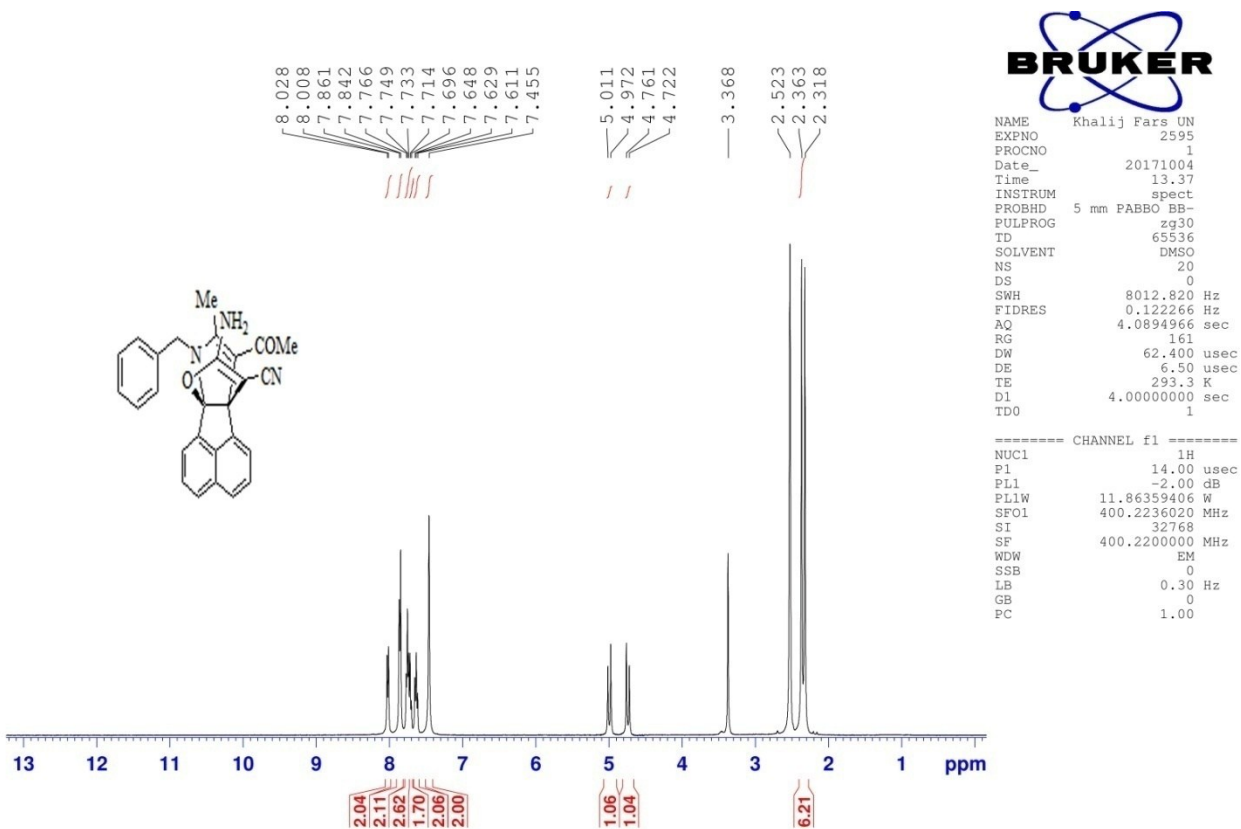


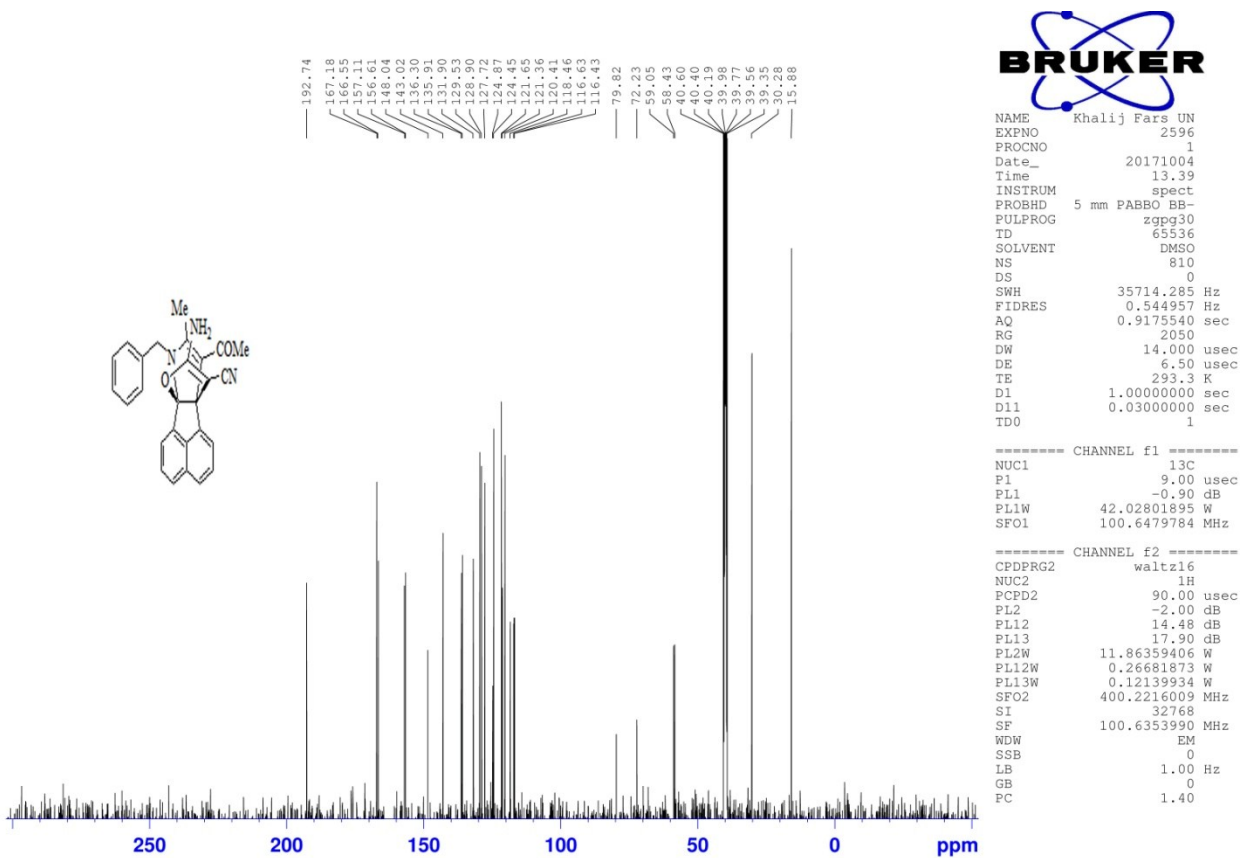
Analyst
Date

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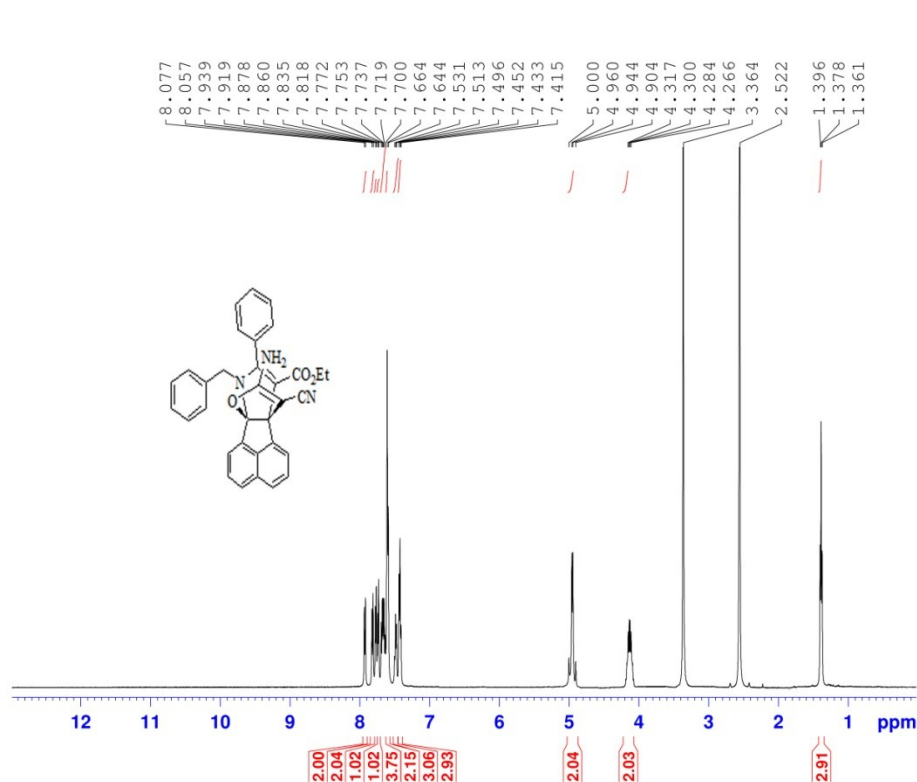


9-acetyl-11-amino-7-benzyl-8-methyl-7H-6b,9a-(epoxyetheno)acenaphtho[1,2-b]pyrrole-10-carbonitrile (6b)

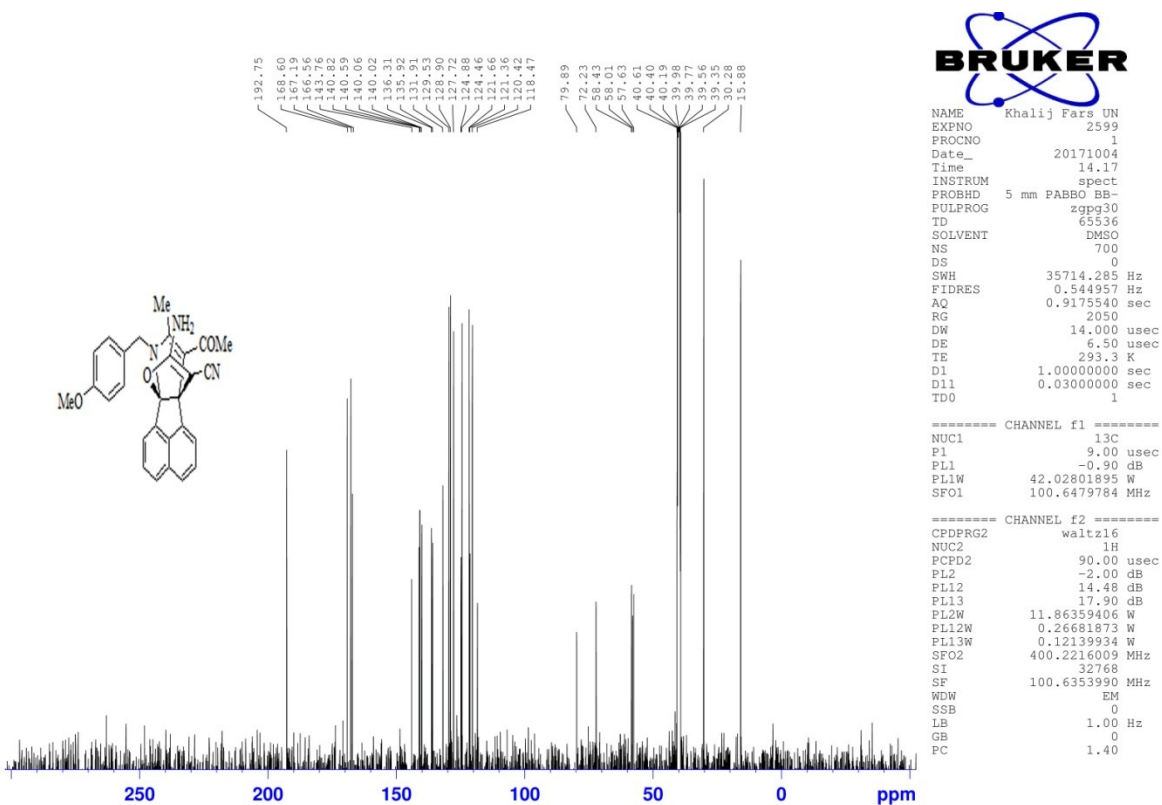
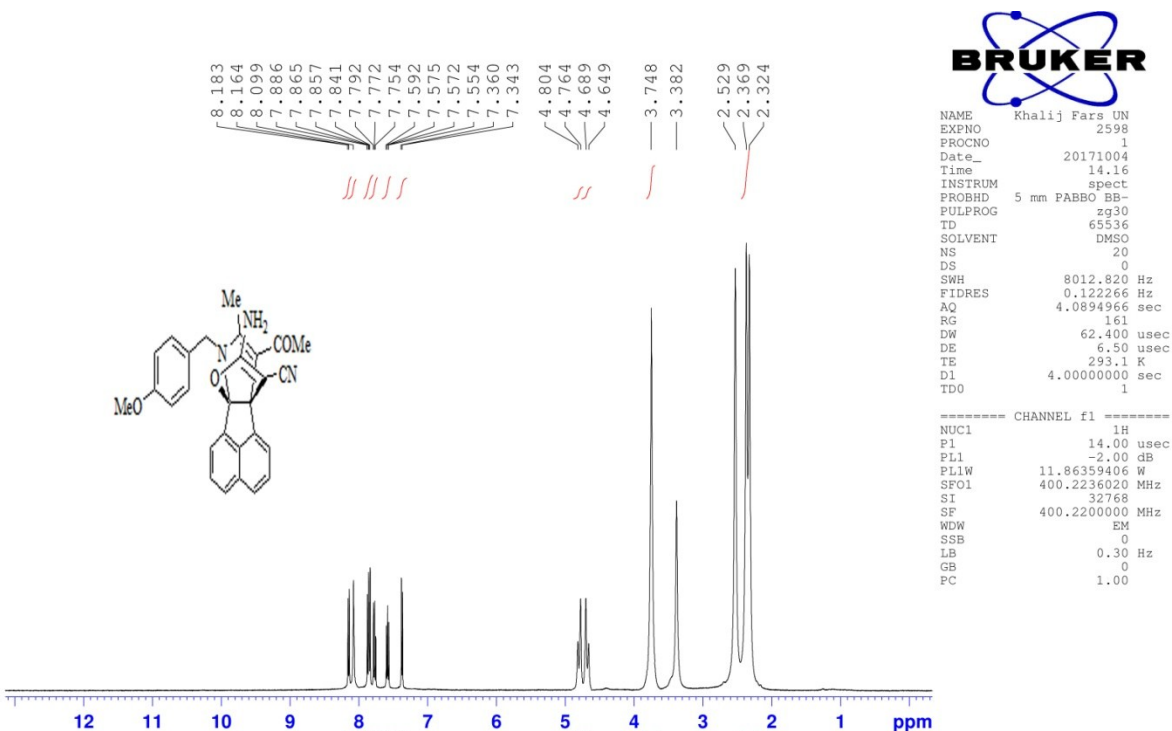


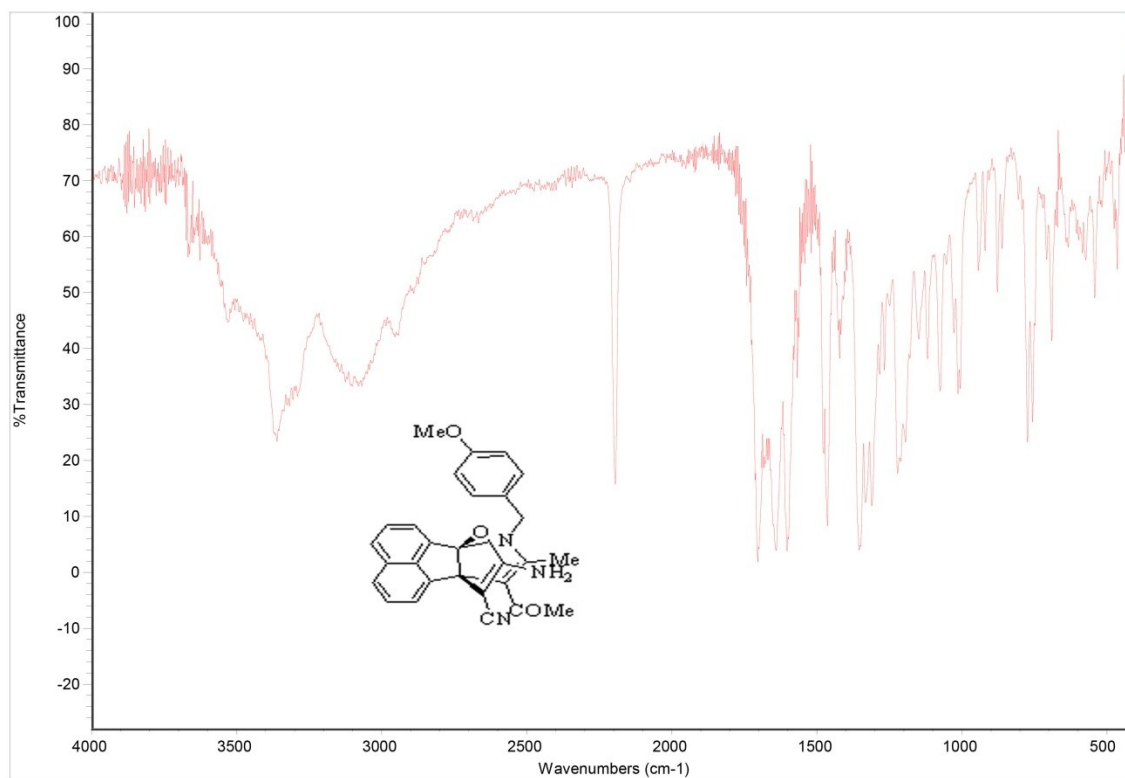


Ethyl-11-amino-7-benzyl-10-cyano-8-phenyl-7H-6b,9a-(epoxyetheno)acenaphtho[1,2-b]pyrrole-9-carboxylate (6c)

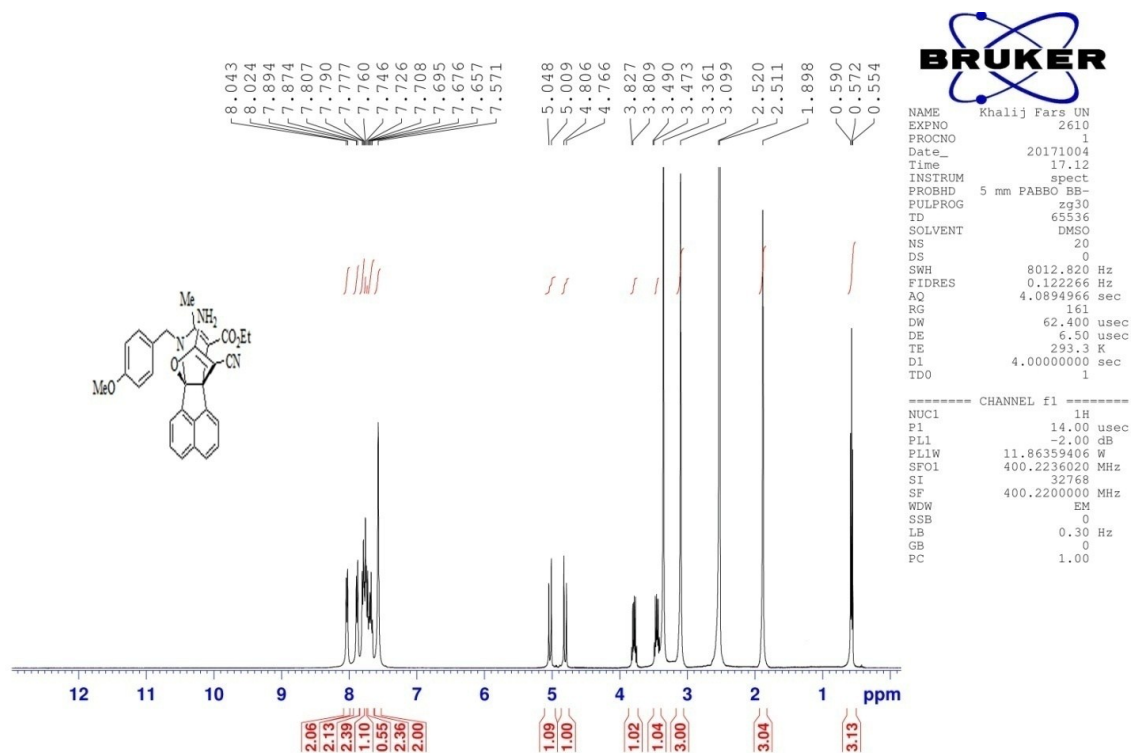


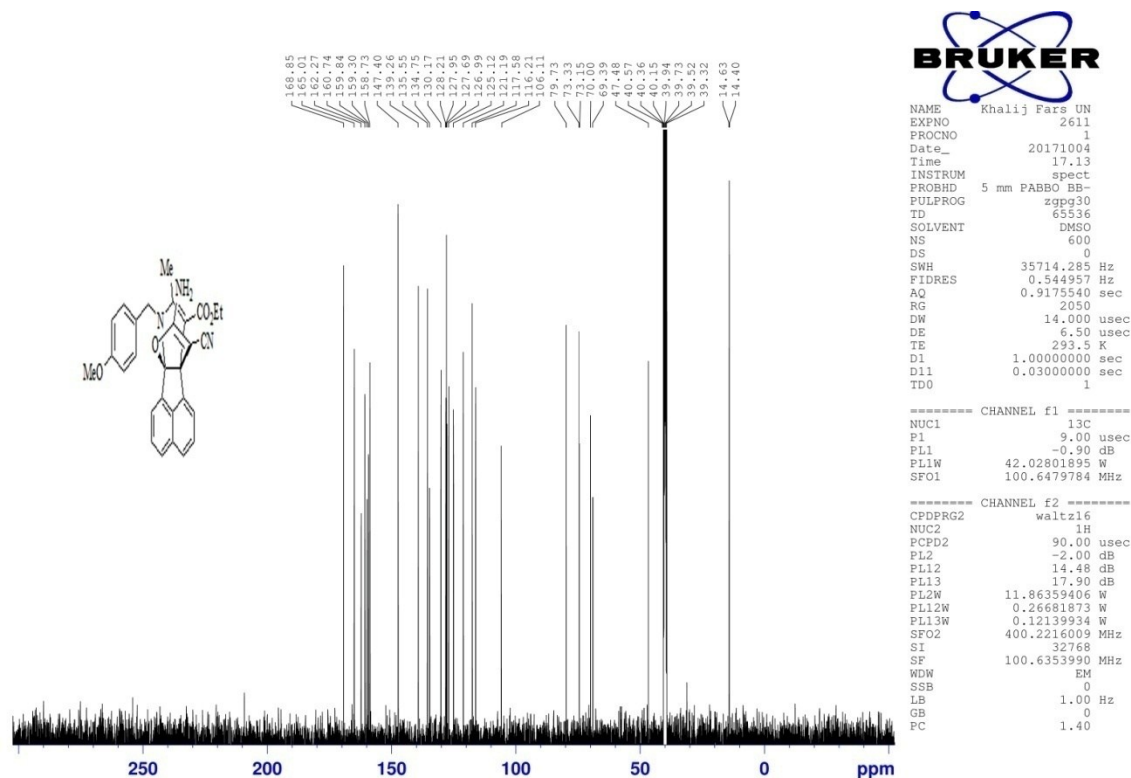
9-Acetyl-11-amino-7-(4-methoxybenzyl)-8-methyl-7H-6b,9a-(epoxyetheno)acenaphtho[1,2-b]pyrrole-10-carbonitrile (6d)



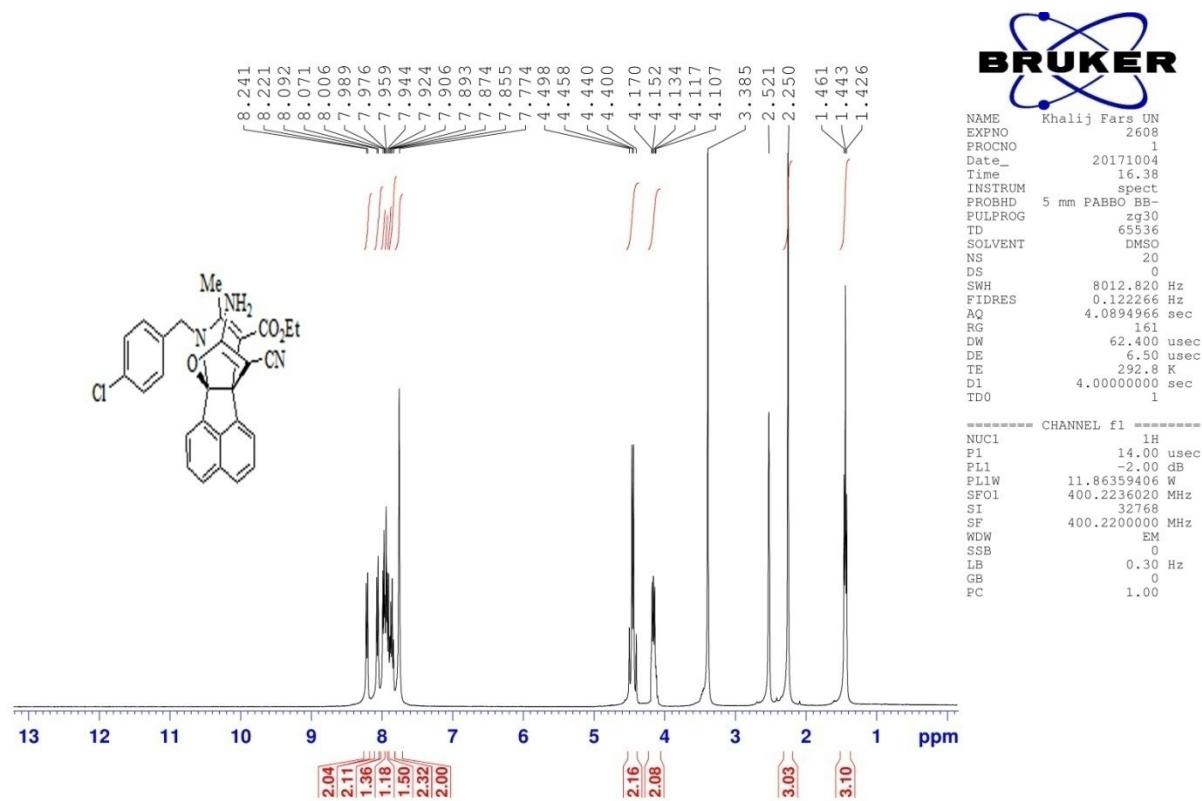


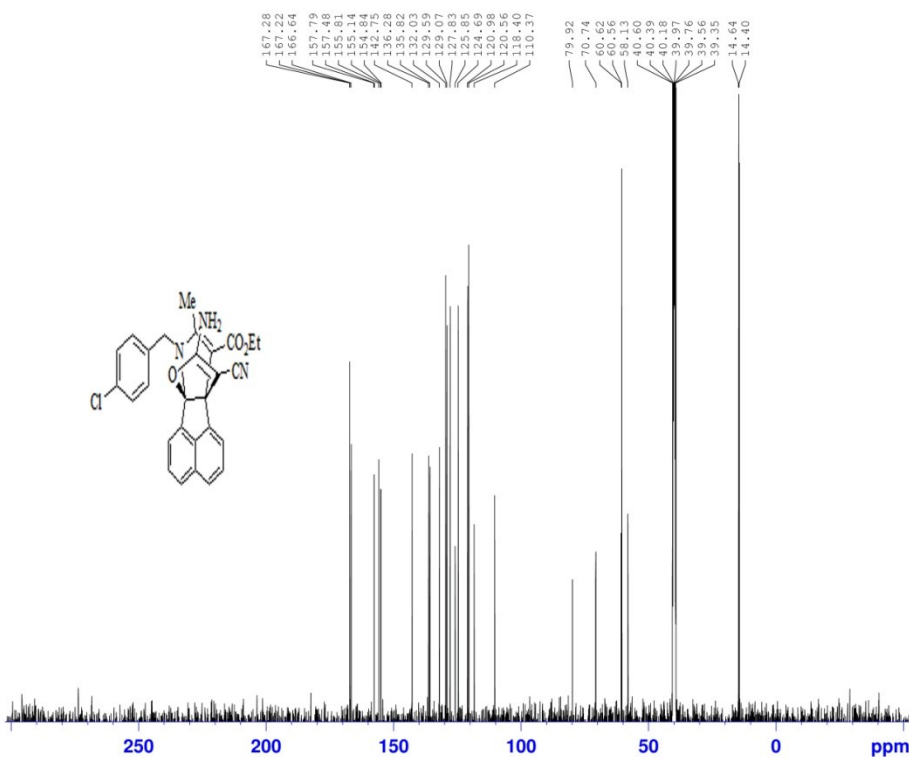
Ethyl-11-amino-10-cyano-7-(4-methoxybenzyl)-8-methyl-7H-6b,9a-(epoxyetheno)acenaphtho[1,2-b]pyrrole-9-carboxylate (6e)





Ethyl-11-amino-7-(4-chlorobenzyl)-10-cyano-8-methyl-7H-6b,9a-(epoxyetheno)acenaphtho[1,2-b]pyrrole-9-carboxylate (6f)



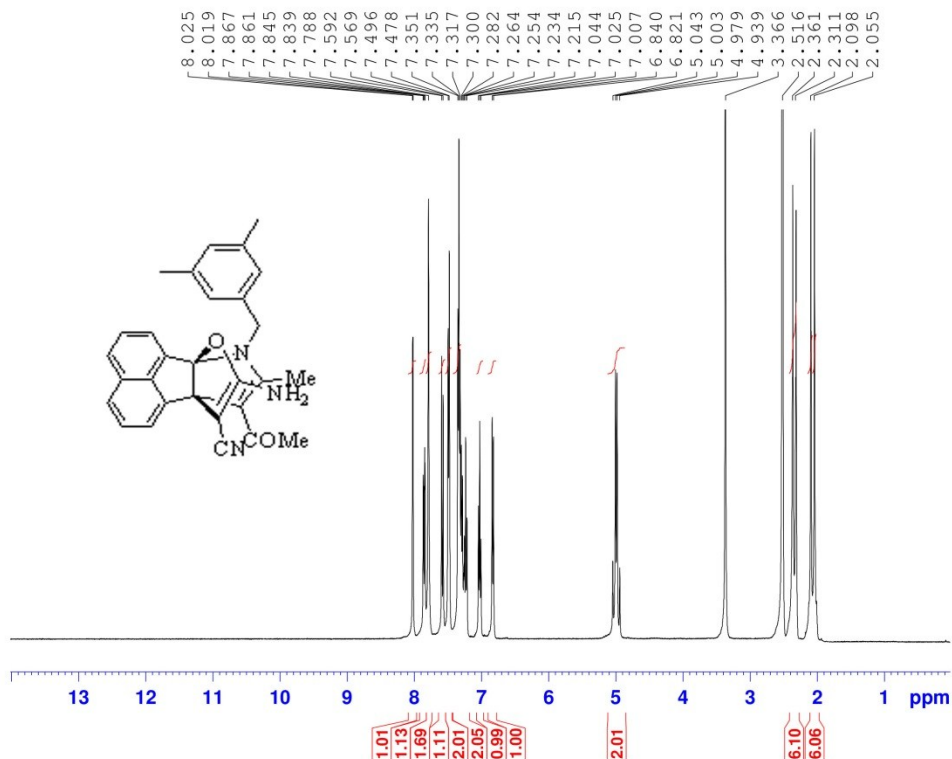


NAME Khalij Fars UN
EXPNO 2601
PROCNO 1
Date_ 20171004
Time 14.45
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 800
DS 0
SWH 35714.285 Hz
FIDRES 0.544957 Hz
AQ 0.9175540 sec
RG 2050
DW 14.000 usec
DE 6.50 usec
TE 293.1 K
D1 1.00000000 sec
D11 0.03000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 13C
P1 9.00 usec
PL1 -0.90 dB
PL1W 42.02801895 W
SFO1 100.6479784 MHz

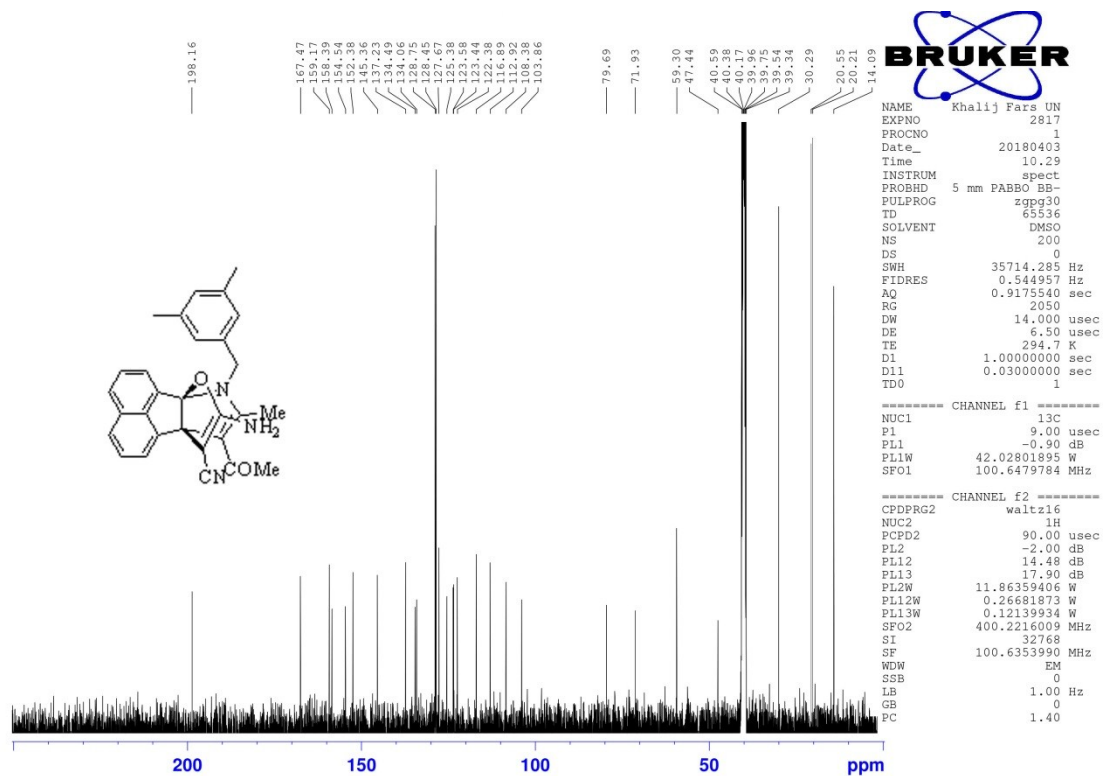
===== CHANNEL f2 =====
CPDPRG2 waltz16
NUC2 1H
PCPD2 90.00 usec
PL2 -2.00 dB
PL12 14.48 dB
PL13 17.90 dB
PL2W 11.86359406 W
PL12W 0.26681873 W
PL13W 0.12139934 W
SFO2 400.2216009 MHz
SI 32768
SF 100.6353990 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

9-Acetyl-11-amino-7-(3,5-dimethylbenzyl)-8-methyl-7H-6b,9a-(epoxyetheno)acenaphtho[1,2-b]pyrrole-10-carbonitrile (6g)

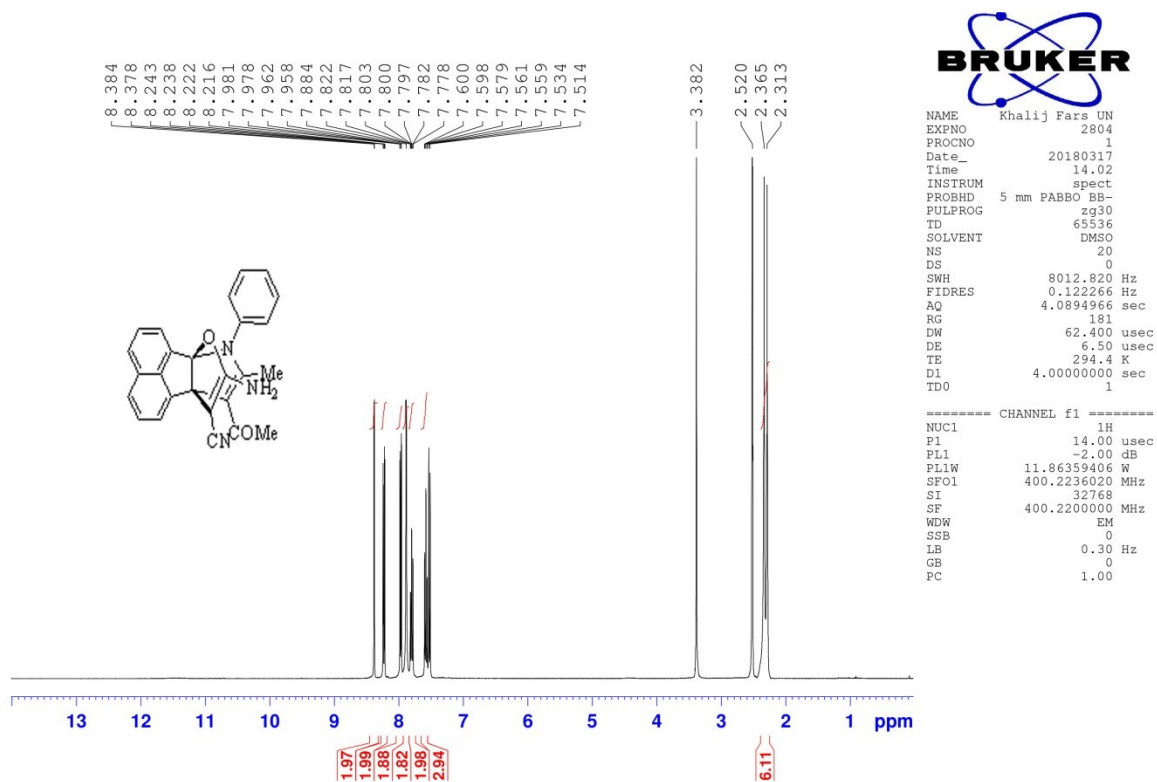


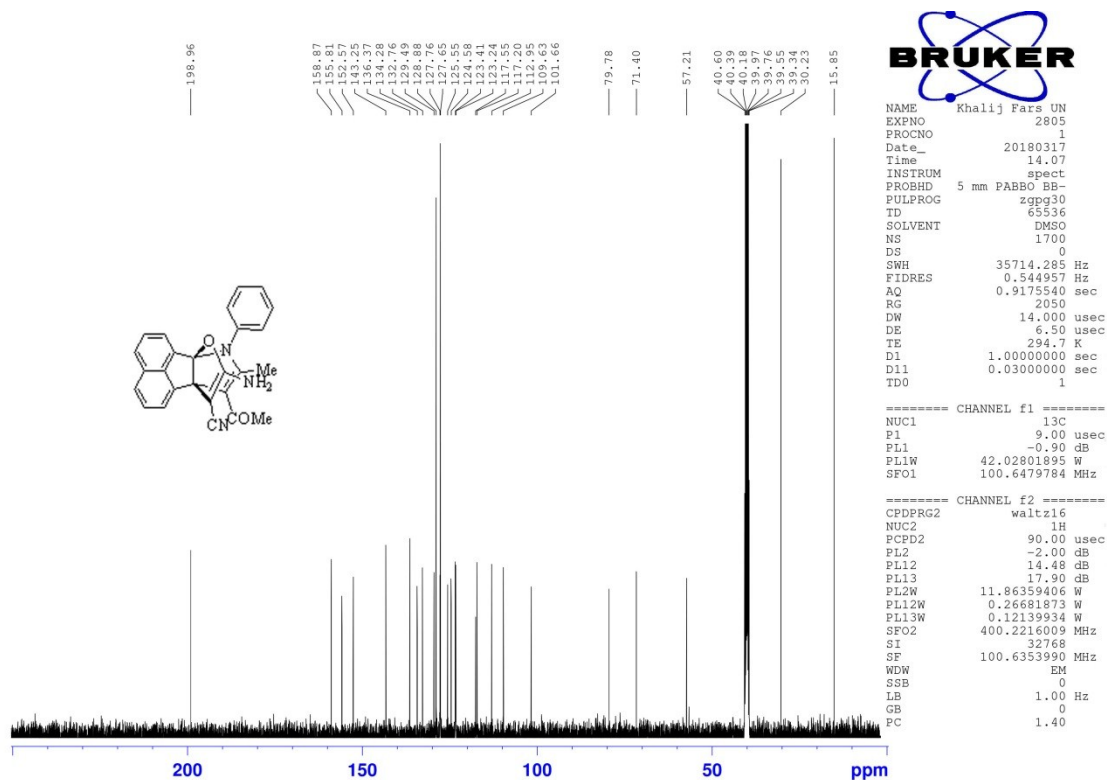
NAME Khalij Fars UN
EXPNO 2807
PROCNO 1
Date_ 20180317
Time 15.13
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT DMSO
NS 20
DS 0
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 181
DW 62.400 usec
DE 6.50 usec
TE 294.2 K
D1 4.00000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 1H
P1 14.00 usec
PL1 -2.00 dB
PL1W 11.86359406 W
SFO1 400.2236020 MHz
SI 32768
SF 400.2200000 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

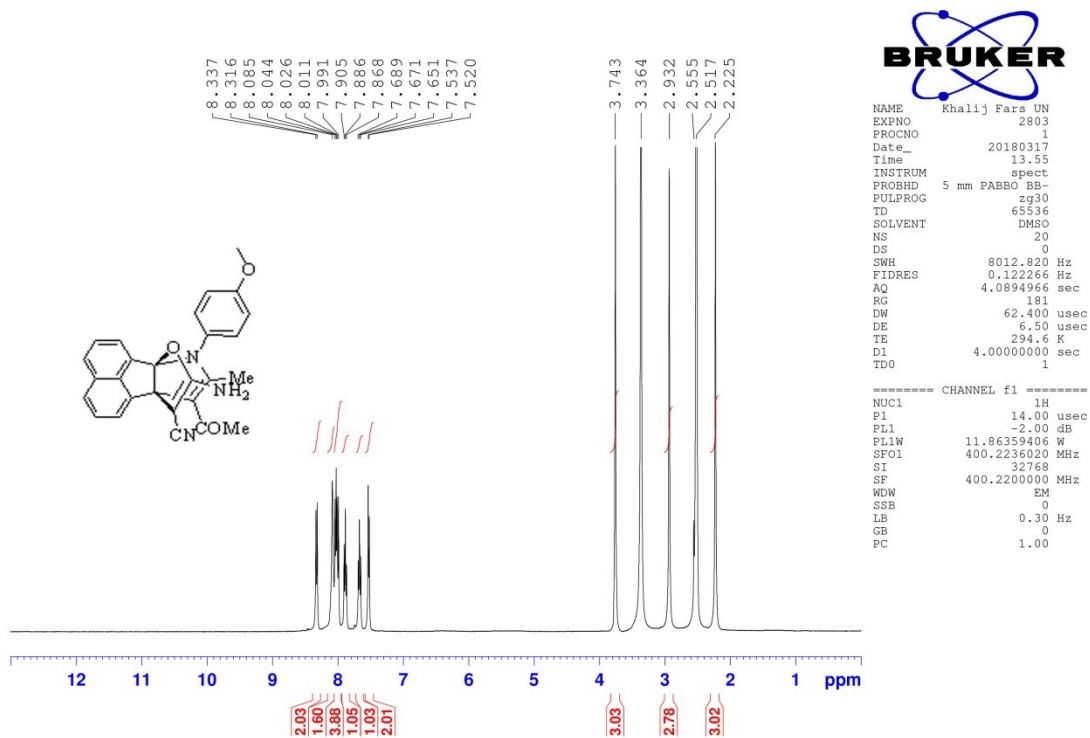


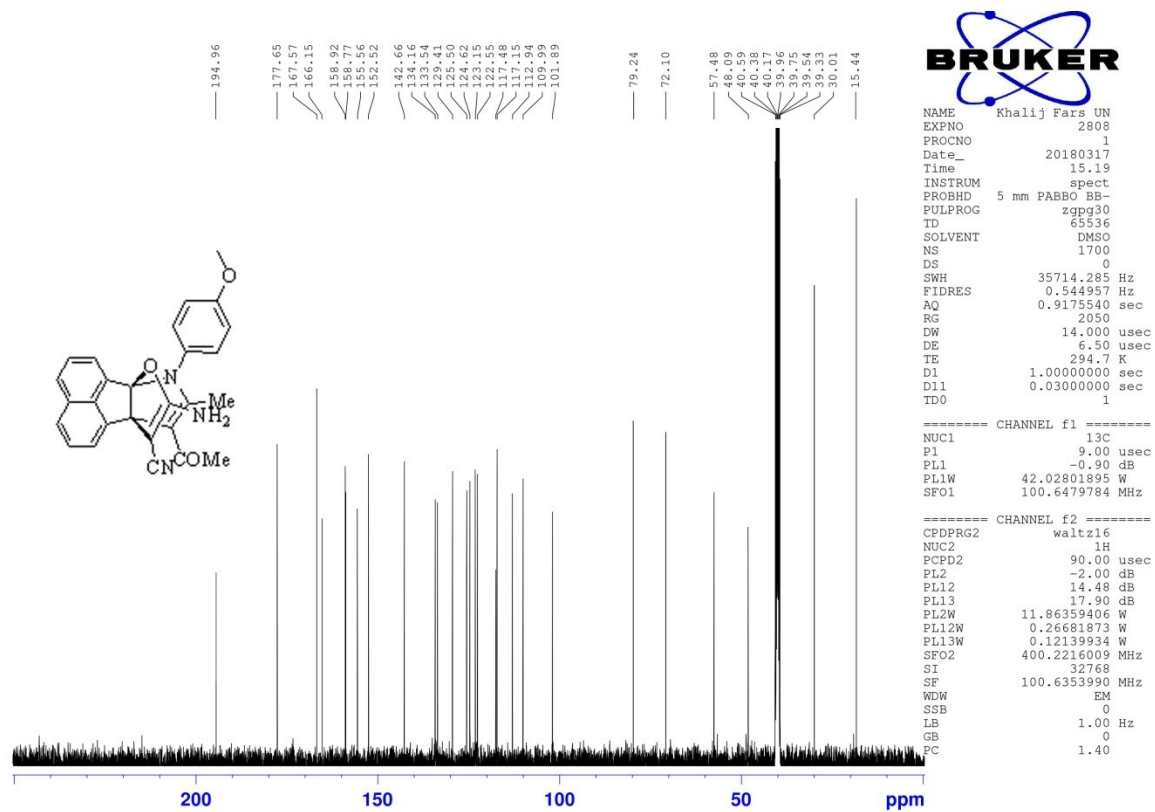
9-Acetyl-11-amino-8-methyl-7-phenyl-7H-6b,9a-(epoxyetheno)acenaphtho[1,2-b]pyrrole-10-carbonitrile (6h)



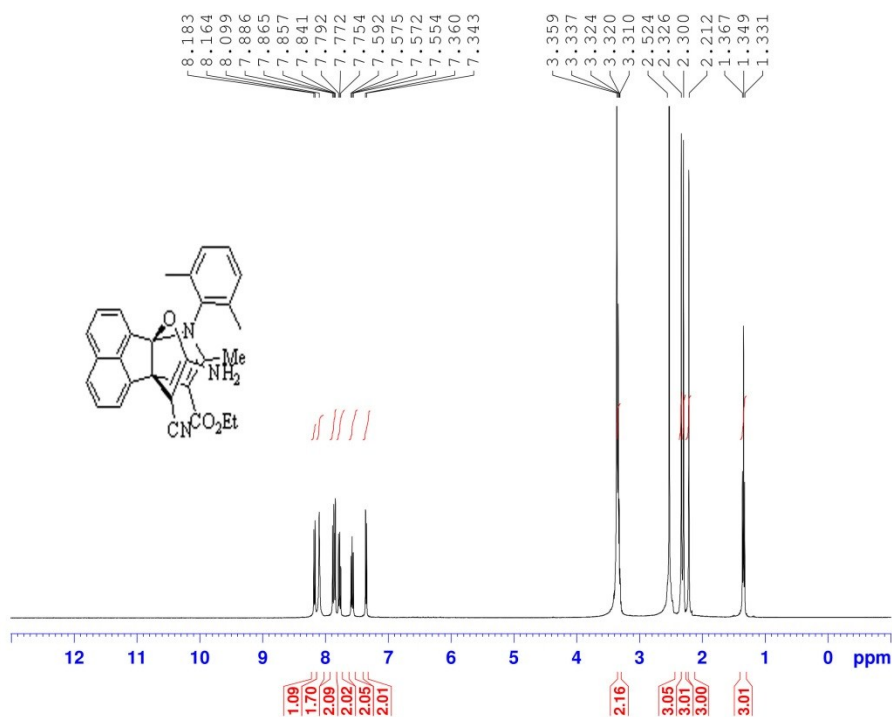


9-Acetyl-11-amino-7-(4-methoxyphenyl)-8-methyl-7H-6b,9a-(epoxyetheno)acenaphtho[1,2-b]pyrrole-10-carbonitrile (6i)



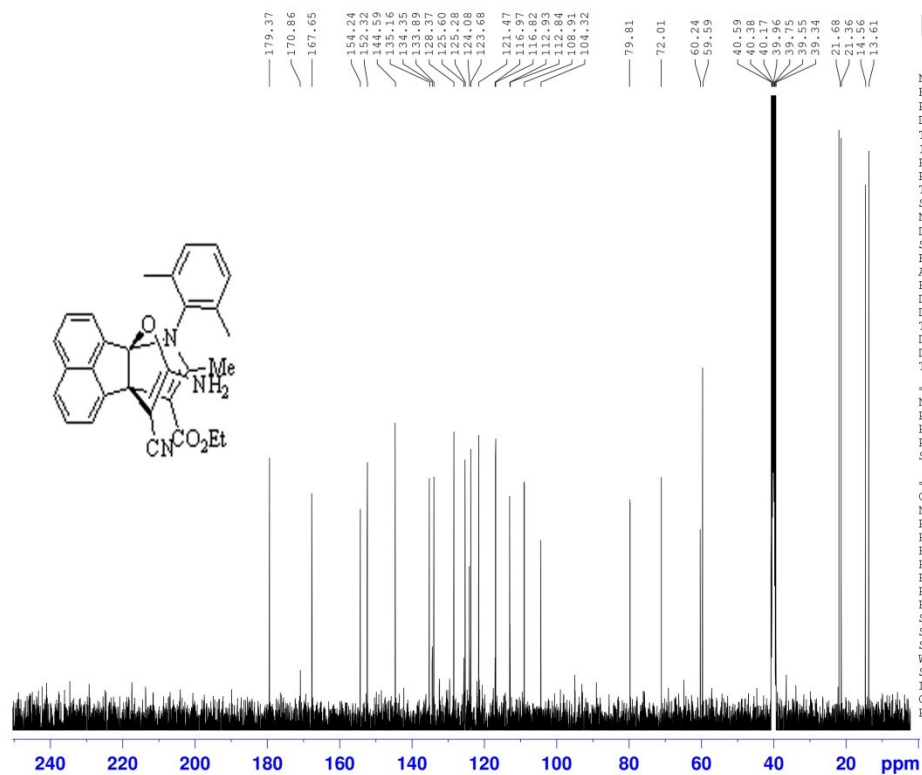


Ethyl 11-amino-10-cyano-7-(2,6-dimethylphenyl)-8-methyl-7H-6b,9a-(epoxyetheno)acenaphtho[1,2-b]pyrrole-9-carboxylate (6j)



NAME Khalij Fars UN
EXPNO 2802
PROCNO 1
Date_ 20180317
Time 13.43
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT DMSO
NS 20
DS 0
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 181
DW 62.400 usec
DE 6.50 usec
TE 294.6 K
D1 4.00000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 1H
P1 14.00 usec
PL1 -2.00 dB
PL1W 11.86359406 W
SFO1 400.2236020 MHz
SI 32768
SF 400.2200000 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

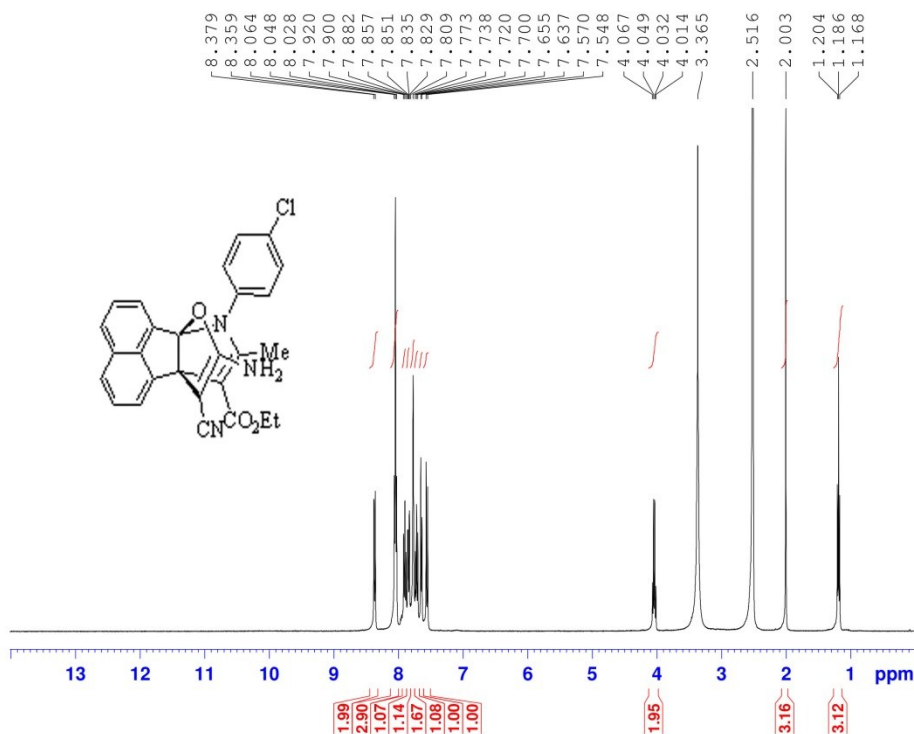


NAME Khalij Fars UN
EXPNO 2816
PROCNO 1
Date_ 20180403
Time 10.02
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 500
DS 0
SWH 35714.285 Hz
FIDRES 0.544957 Hz
AQ 0.9175540 sec
RG 2050
DW 14.000 usec
DE 6.50 usec
TE 294.7 K
D1 1.00000000 sec
D11 0.03000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 13C
P1 9.00 usec
PL1 -0.90 dB
PL1W 42.02801895 W
SFO1 100.6479784 MHz

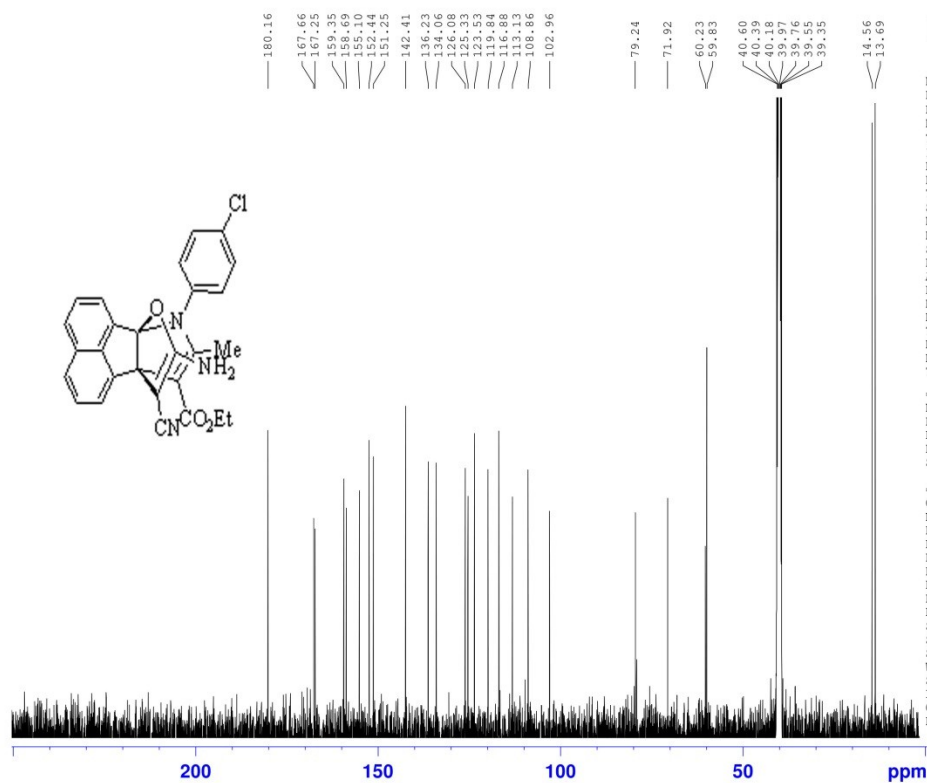
===== CHANNEL f2 =====
CPDPRG2 waltz16
NUC2 1H
PCPD2 90.00 usec
PL2 -2.00 dB
PL12 14.48 dB
PL13 17.90 dB
PL2W 11.86359406 W
PL12W 0.26681873 W
PL13W 0.12139934 W
SFO2 400.2216009 MHz
SI 32768
SF 100.6353990 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

Ethyl 11-amino-7-(4-chlorophenyl)-10-cyano-8-methyl-7H-6b,9a-(epoxyetheno)acenaphtho[1,2-b]pyrrole-9-carboxylate (6k)



NAME Khalij Fars UN
EXPNO 2806
PROCNO 1
Date_ 20180317
Time_ 15.08
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT DMSO
NS 20
DS 0
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 181
DW 62.400 usec
DE 6.50 usec
TE 294.2 K
D1 4.00000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 1H
P1 14.00 usec
PL1 -2.00 dB
PL1W 11.86359406 W
SF01 400.2236020 MHz
SI 32768
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

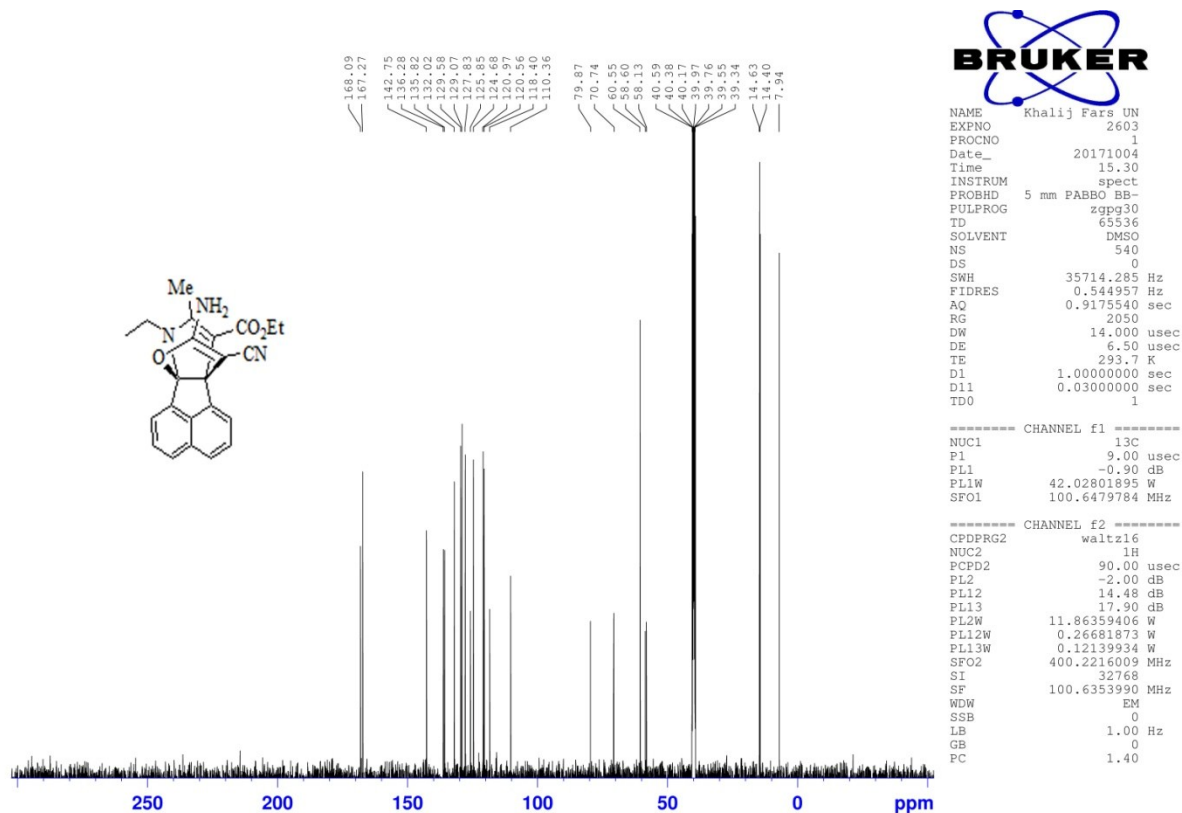
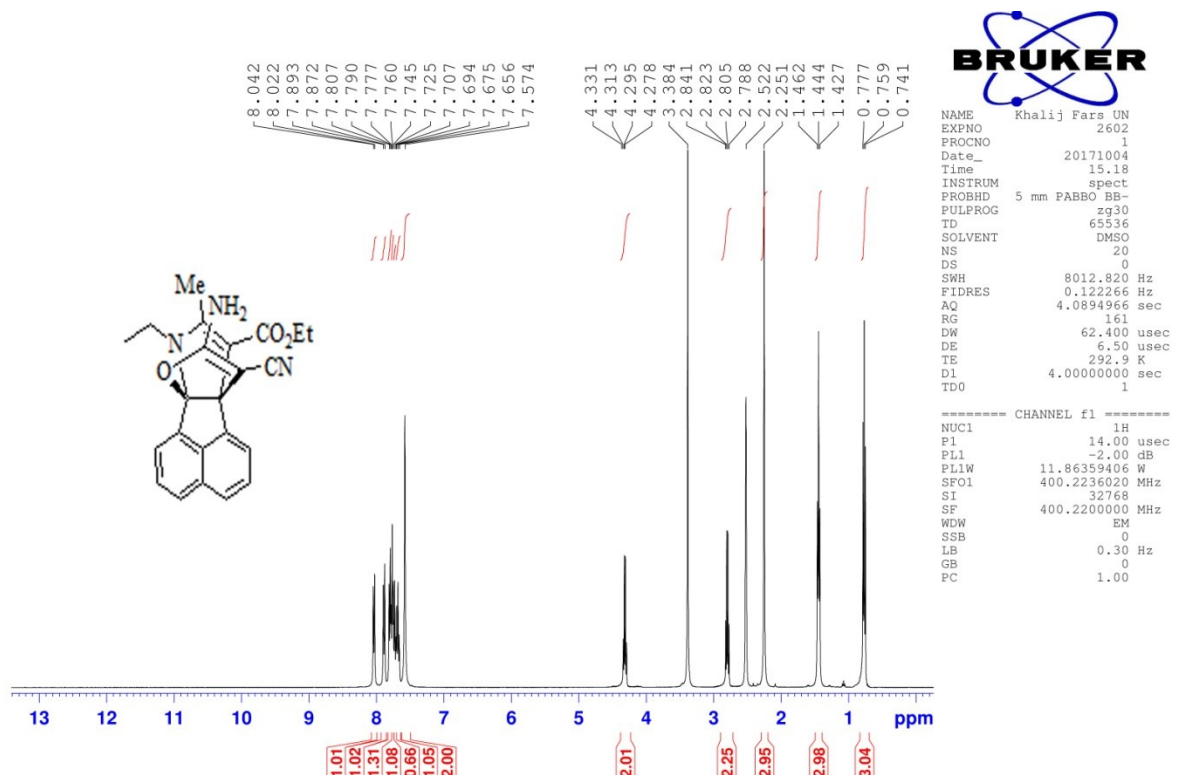


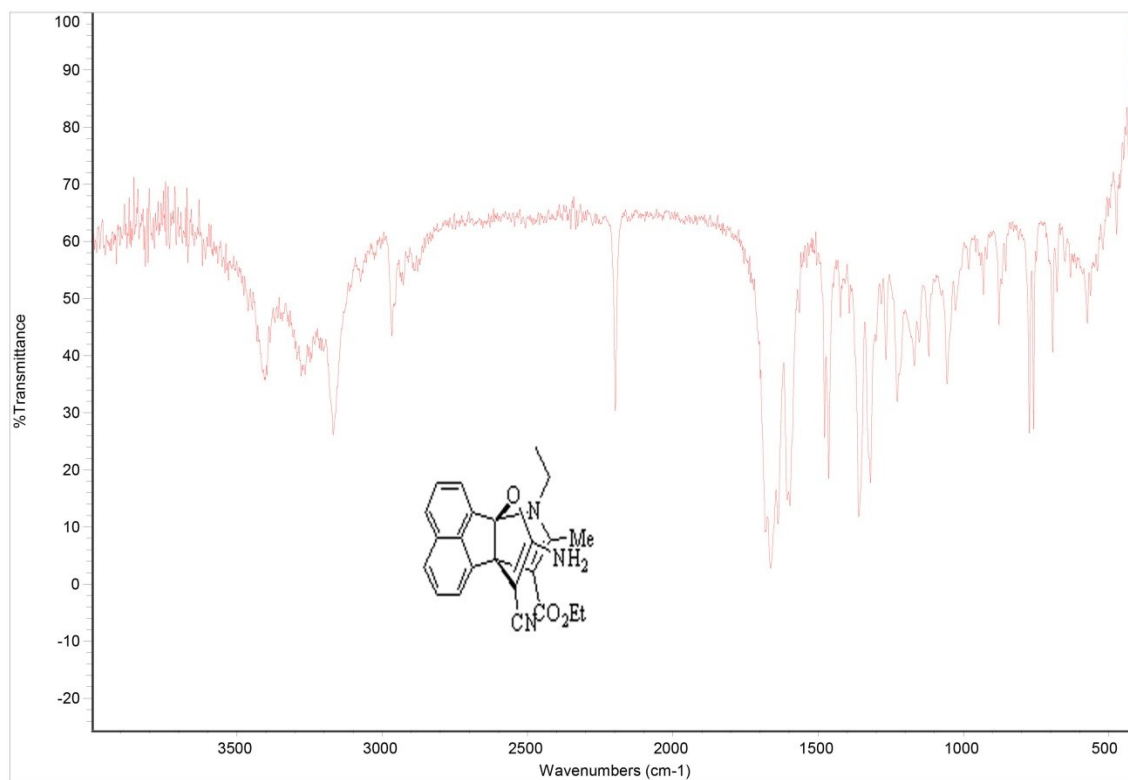
NAME Khalij Fars UN
EXPNO 2815
PROCNO 1
Date_ 20180403
Time_ 09.26
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 800
DS 0
SWH 35714.285 Hz
FIDRES 0.544957 Hz
AQ 0.9175540 sec
RG 2050
DW 14.000 usec
DE 6.50 usec
TE 294.7 K
D1 1.00000000 sec
D11 0.03000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 13C
P1 9.00 usec
PL1 -0.90 dB
PL1W 42.02801895 W
SF01 100.6479784 MHz

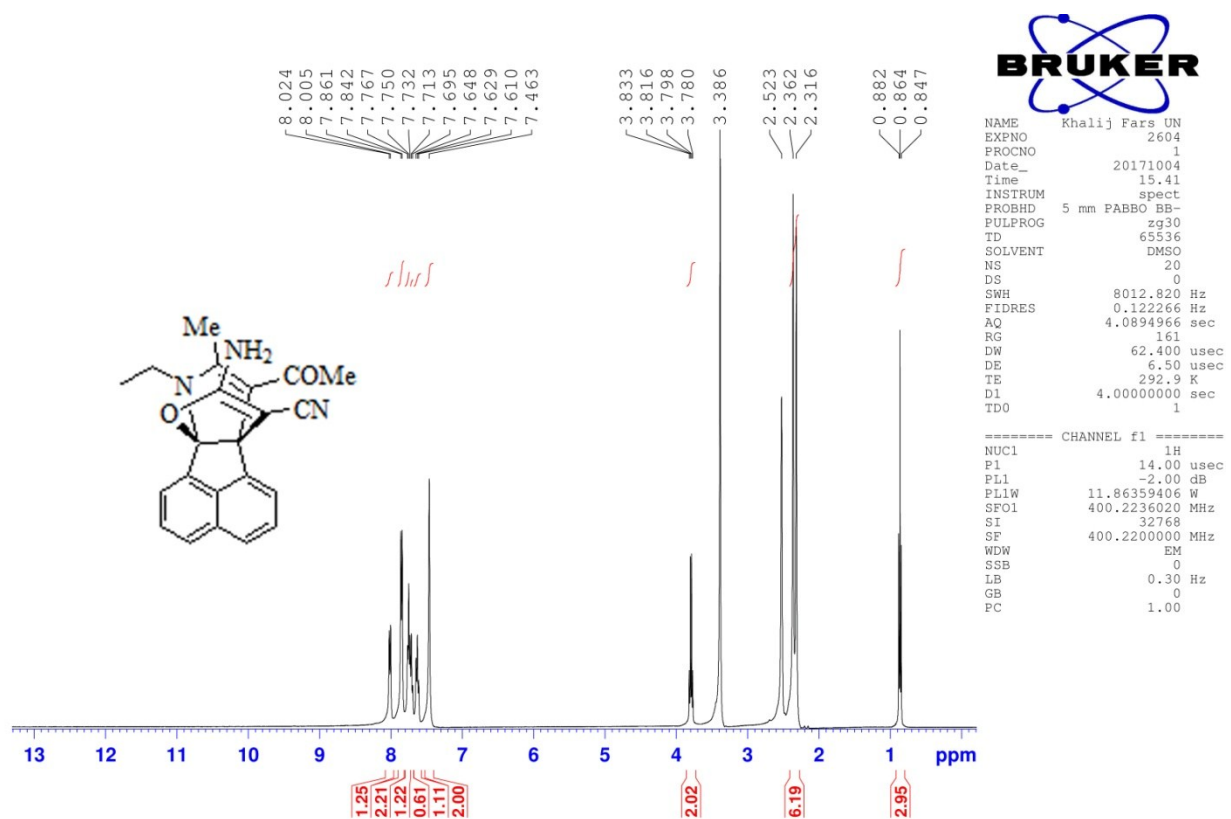
===== CHANNEL f2 =====
CPDPRG2 waltz16
NUC2 1H
PCPD2 90.00 usec
PL2 -2.00 dB
PL12 14.48 dB
PL13 17.90 dB
PL2W 11.86359406 W
PL12W 0.26681873 W
PL13W 0.12139934 W
SF02 400.2216009 MHz
SI 32768
SF 100.6353990 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

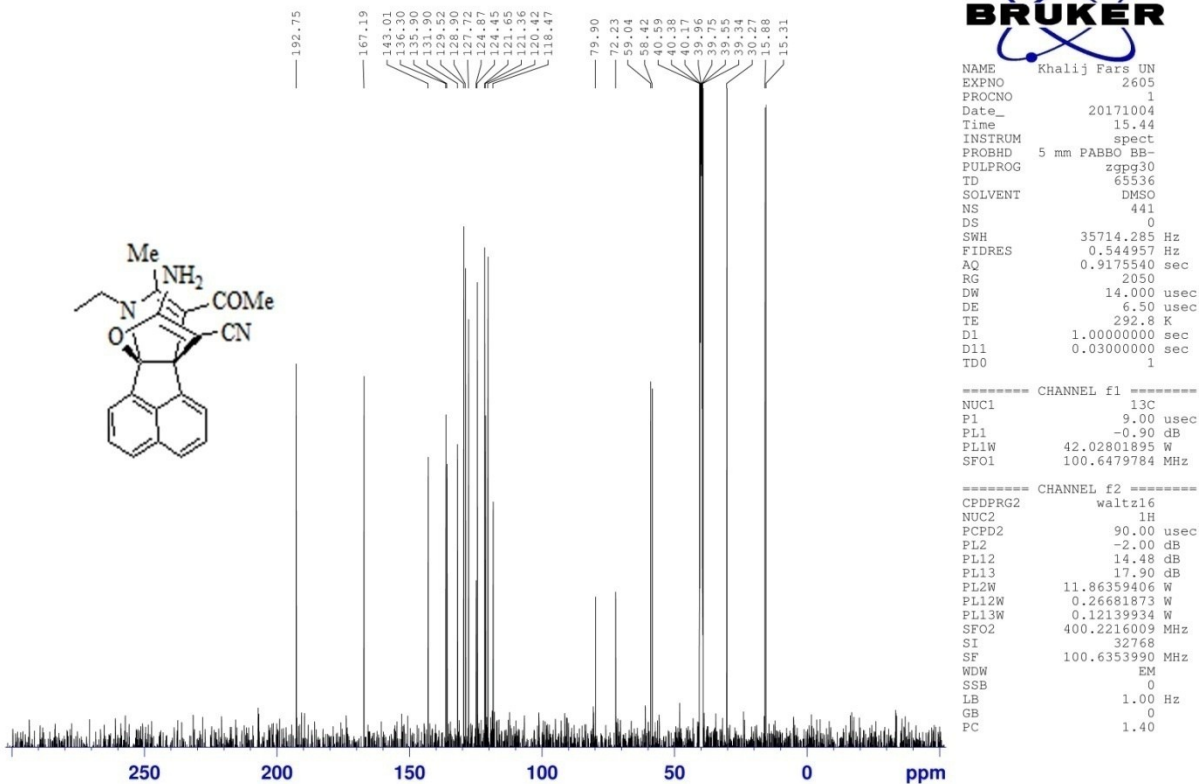
Ethyl-11-amino-10-cyano-7-ethyl-8-methyl-7H-6b,9a-(epoxyetheno)acenaphtho[1,2-b]pyrrole-9-carboxylate (6l)



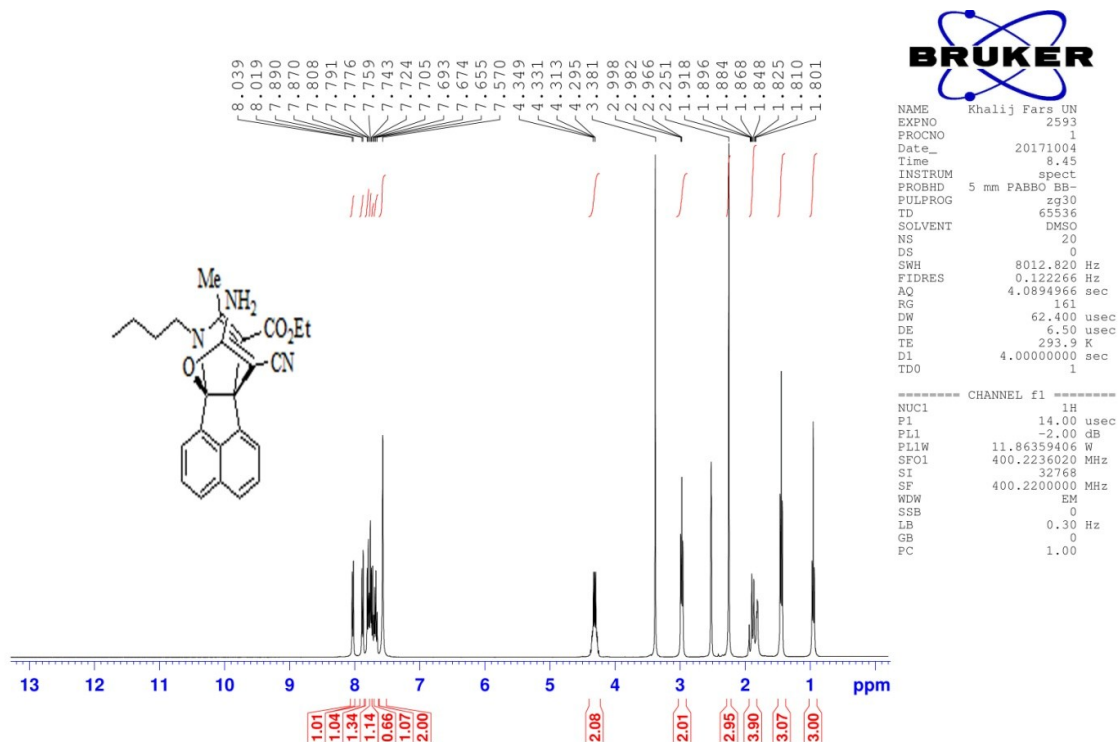


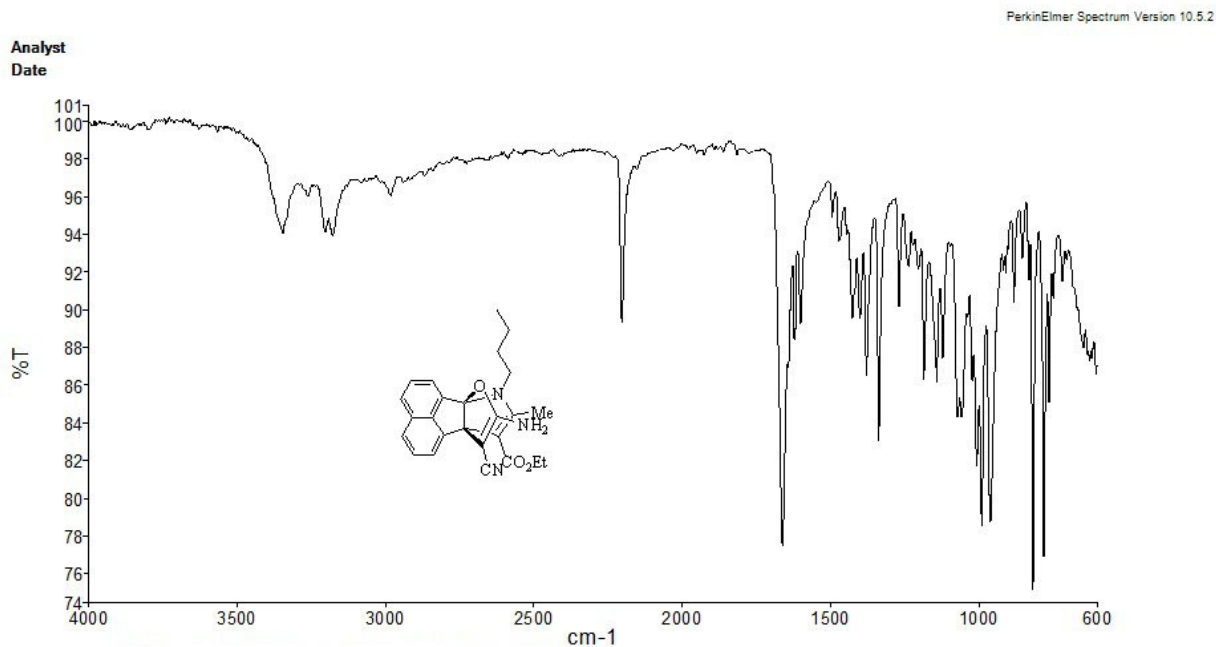
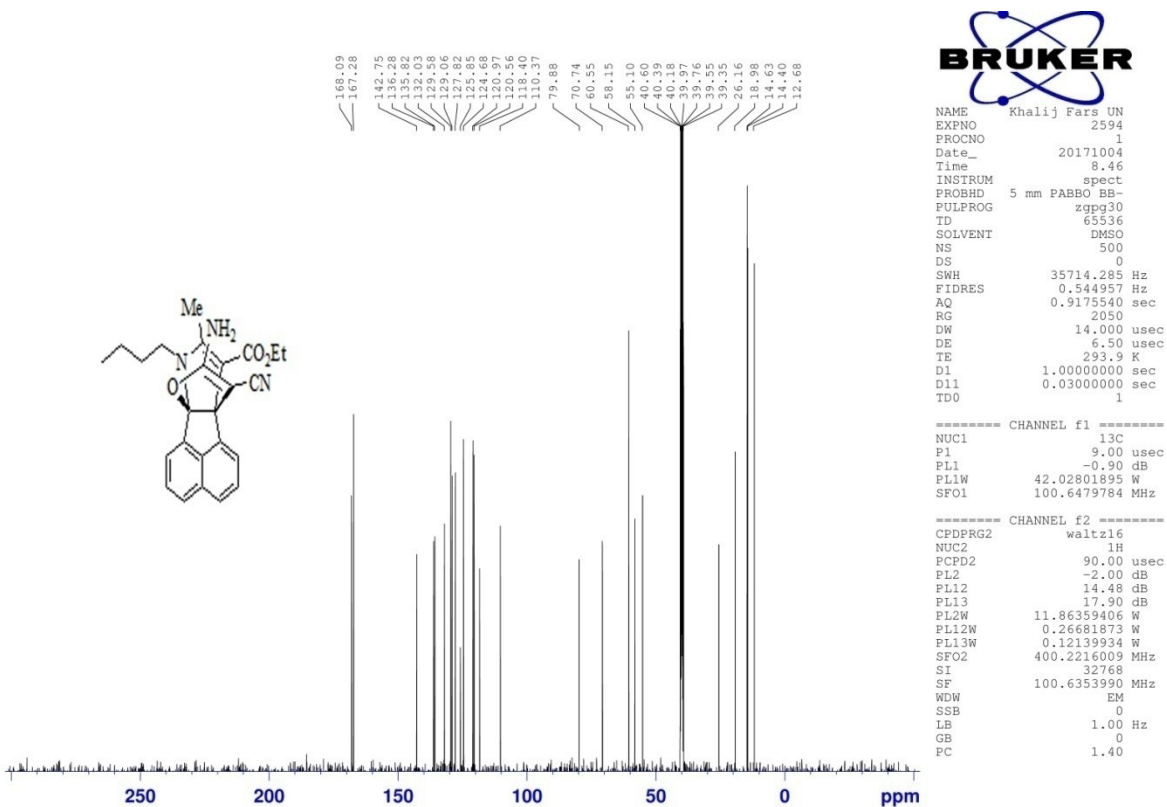
9-Acetyl-11-amino-7-ethyl-8-methyl-7H-6b,9a-(epoxyetheno)acenaphtho[1,2-b]pyrrole-10-carbonitrile (6m)



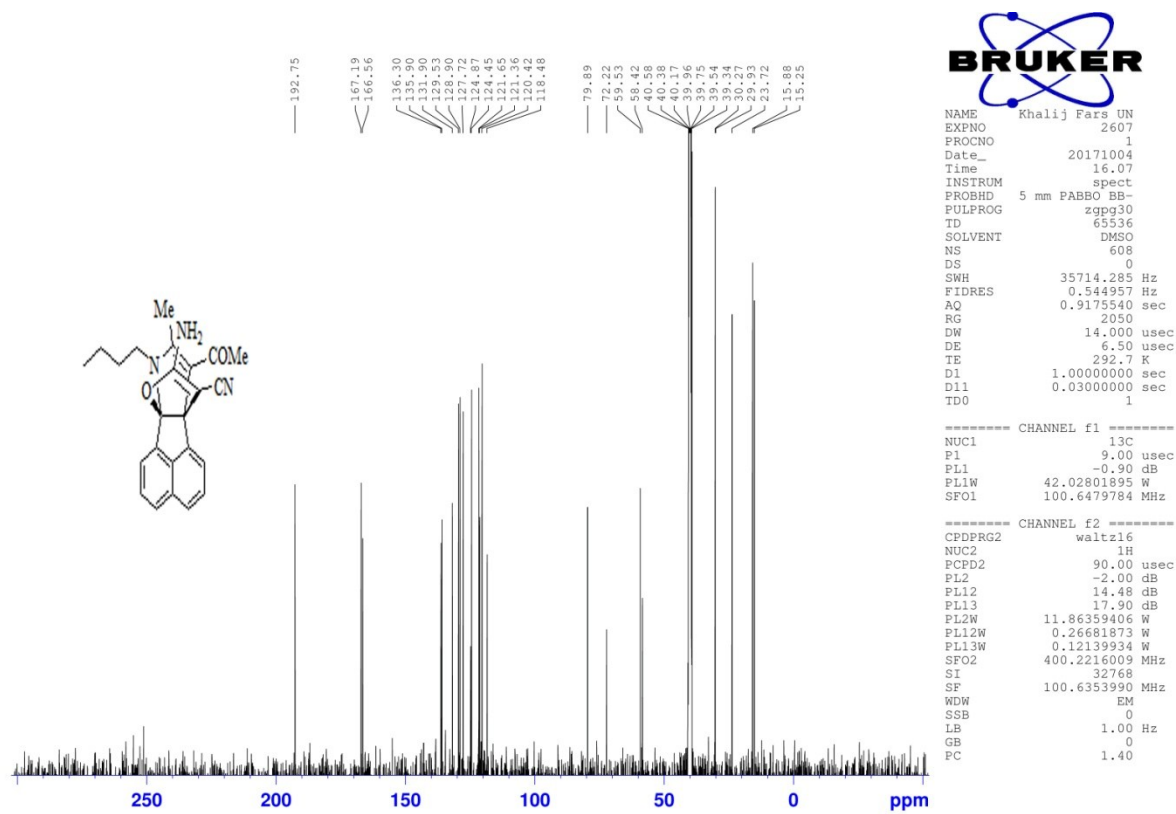
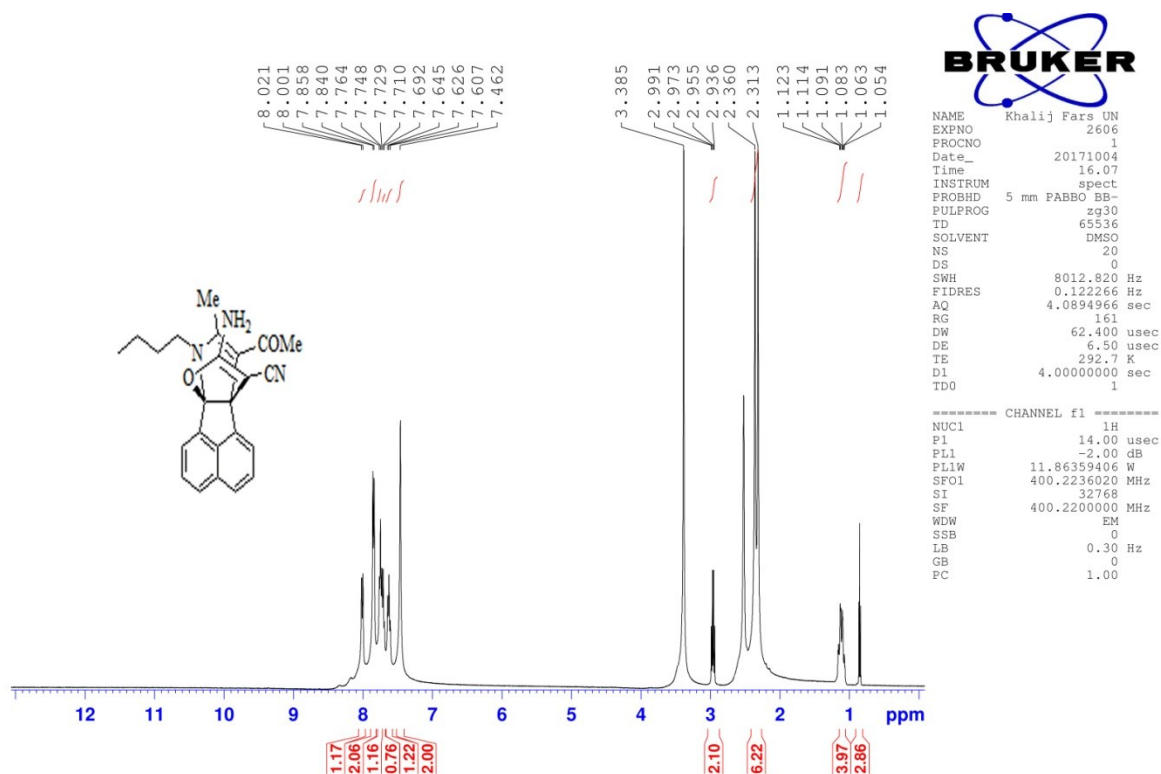


Ethyl-11-amino-7-butyl-10-cyano-8-methyl-7H-6b,9a-(epoxyetheno)acenaphtho[1,2-b]pyrrole-9-carboxylate (6n)

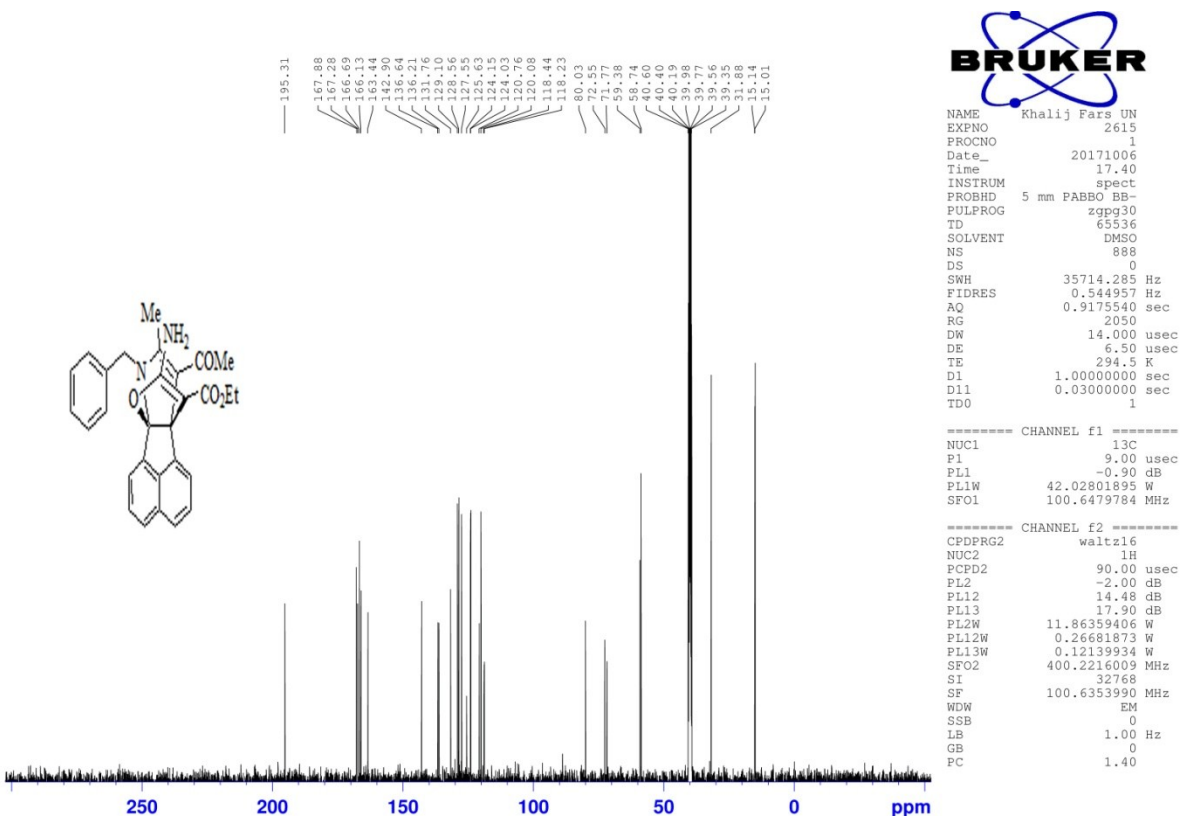
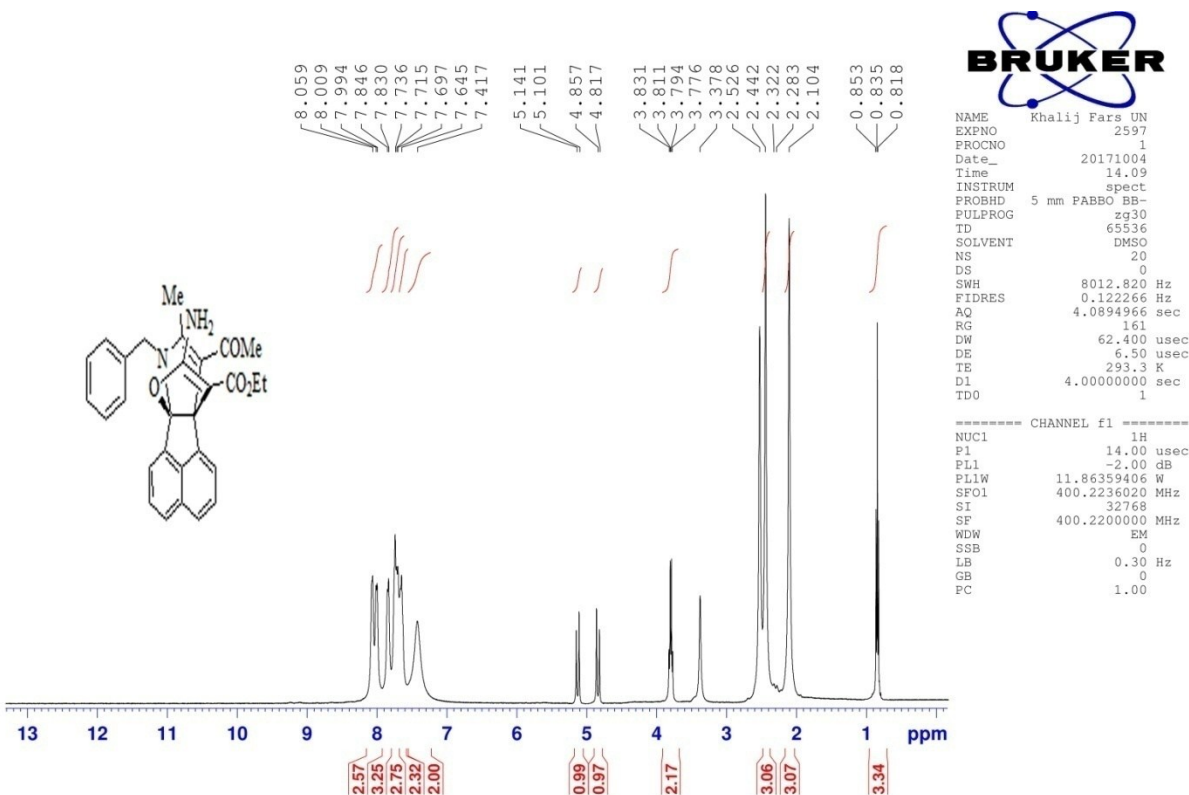




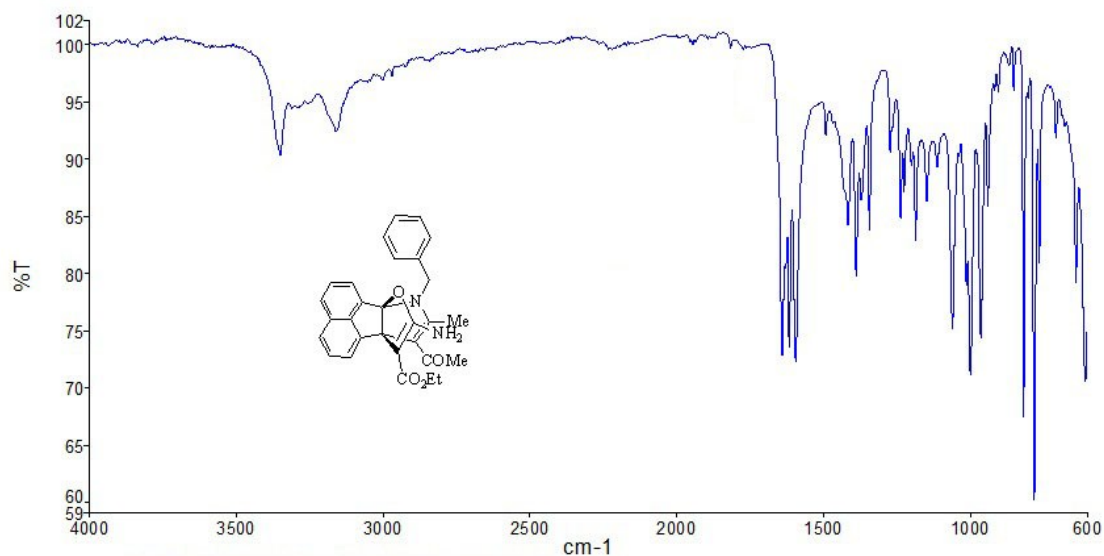
9-Acetyl-11-amino-7-butyl-8-methyl-7H-6b,9a-(epoxyetheno)acenaphtho[1,2-b]pyrrole-10-carbonitrile (6o)



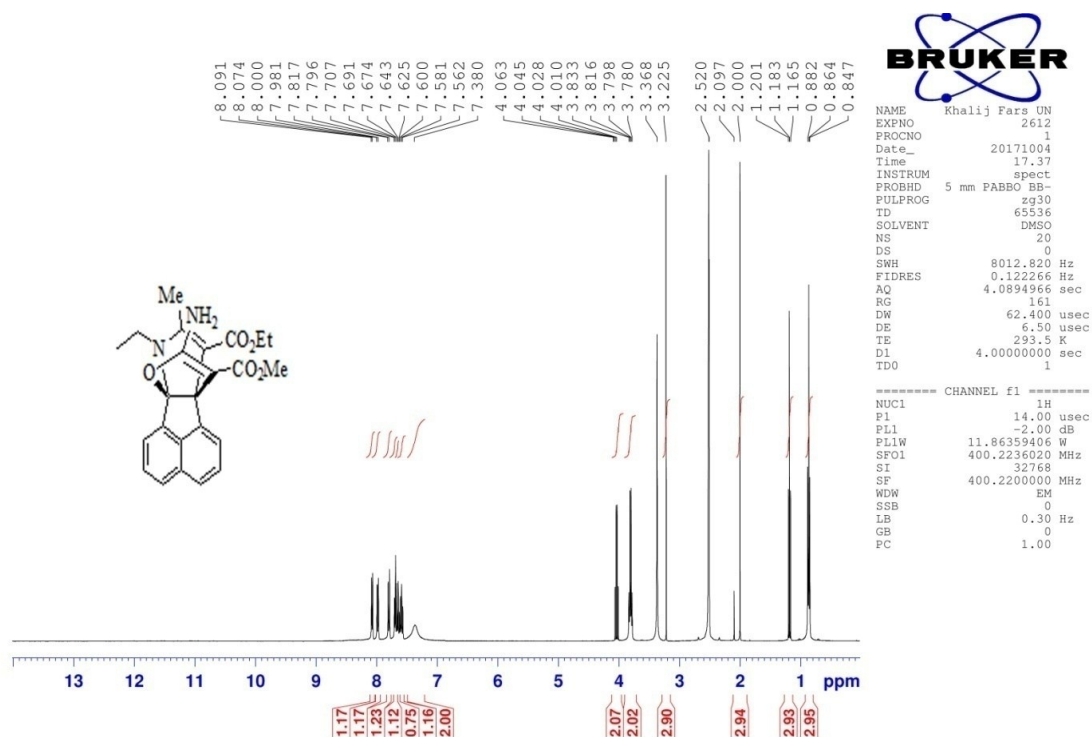
Ethyl-9-acetyl-11-amino-7-benzyl-8-methyl-7H-6b,9a-(epoxyetheno)acenaphtho[1,2-b]pyrrole-10-carboxylate (6p)

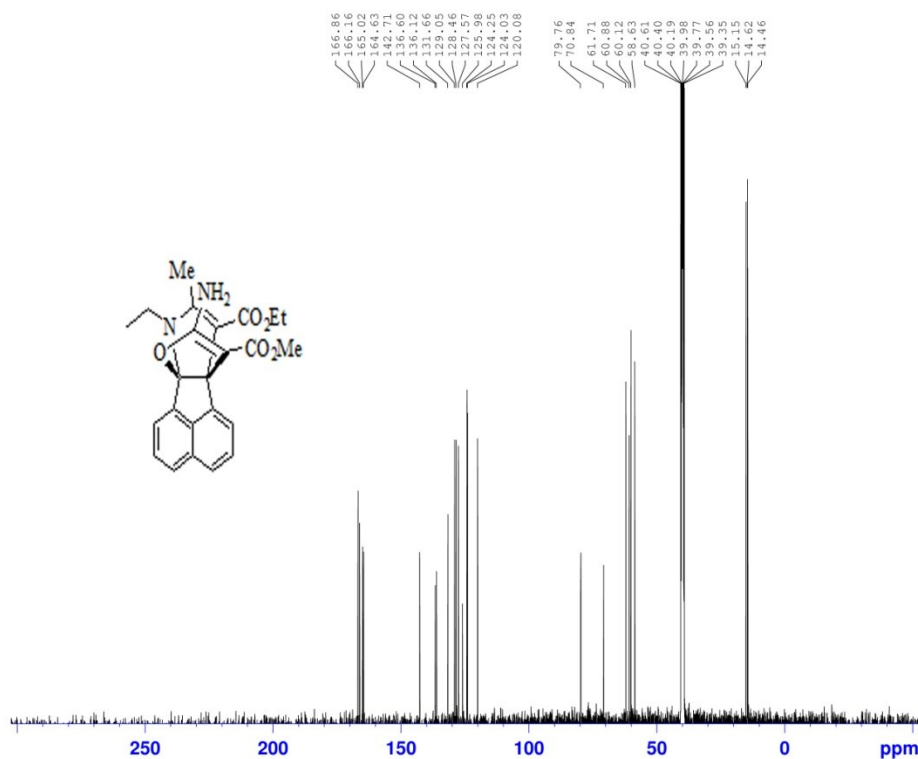


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9-Ethyl-10-methyl-11-amino-7-ethyl-8-methyl-7H-6b,9a-(epoxyetheno)acenaphtho[1,2-b]pyrrole-9,10-dicarboxylate (6q)





NAME Khalij Fars UN
 EXPNO 2613
 PROCNO 1
 Date_ 20171006
 Time 13.36
 INSTRUM spect
 PROBHD 5 mm PABBO BB-
 PULPROG zgpg30
 TD 65536
 SOLVENT DMSO
 NS 5000
 DS 0
 SWH 35714.285 Hz
 FIDRES 0.544957 Hz
 AQ 0.9175540 sec
 RG 2050
 DW 14.000 usec
 DE 6.50 usec
 TE 294.5 K
 D1 1.00000000 sec
 D11 0.03000000 sec
 TDO 1

===== CHANNEL f1 =====
 NUC1 13C
 P1 9.00 usec
 PL1 -0.90 dB
 PL1W 42.02801895 W
 SFO1 100.6479784 MHz

===== CHANNEL f2 =====
 CPDPRG2 waltz16
 NUC2 1H
 PCPD2 90.00 usec
 PL2 -2.00 dB
 PL12 14.48 dB
 PL13 17.90 dB
 PL2W 11.86359406 W
 PL12W 0.26681873 W
 PL13W 0.12139934 W
 SFO2 400.2216009 MHz
 SI 32768
 SF 100.6353990 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

PerkinElmer Spectrum Version 10.5.2

Analyst
 Date

