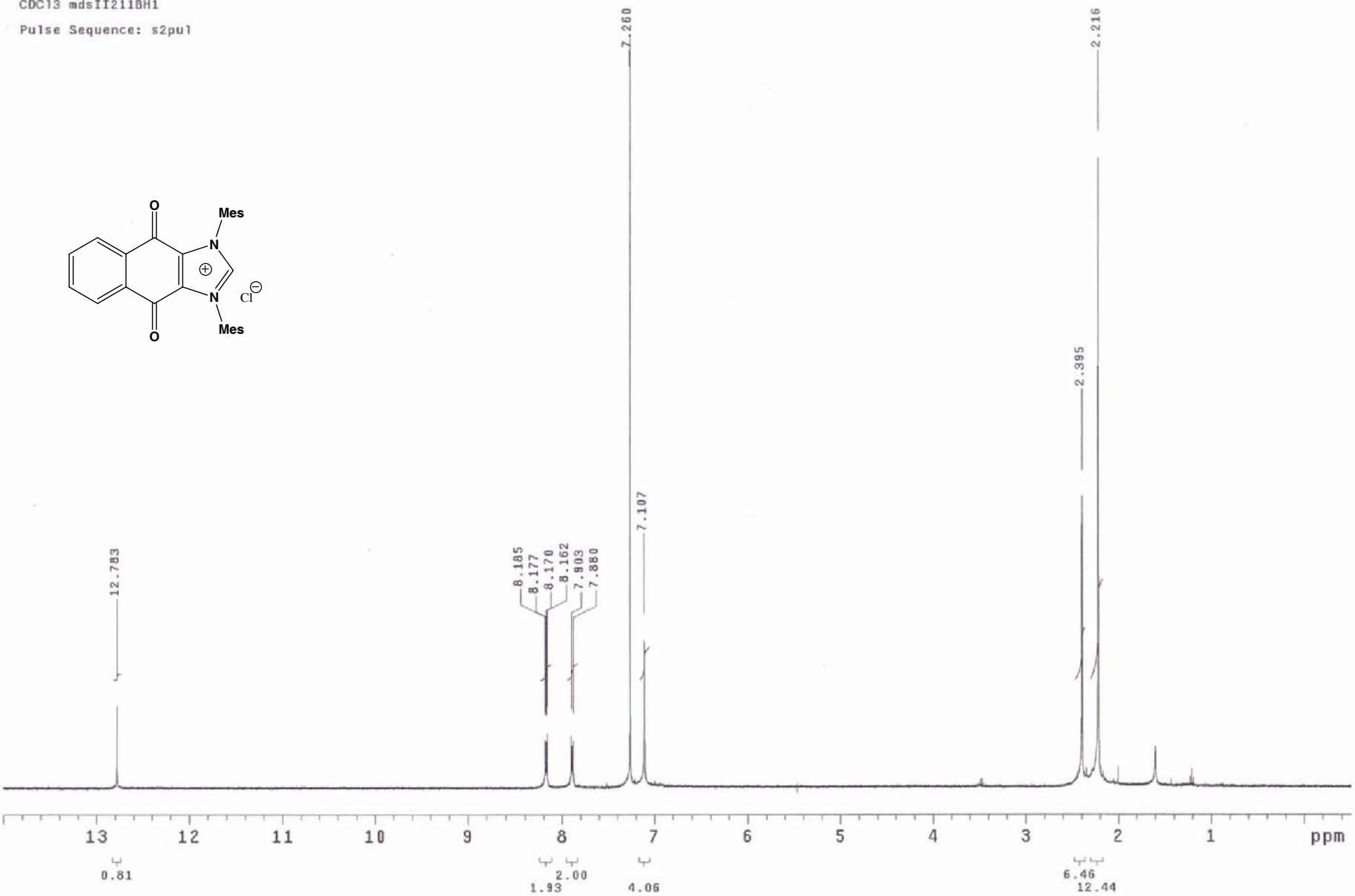
MDS-II-211 6-16-06
mesityl cyclized
CDCl3 mdsII211BH1

Pulse Sequence: s2pul

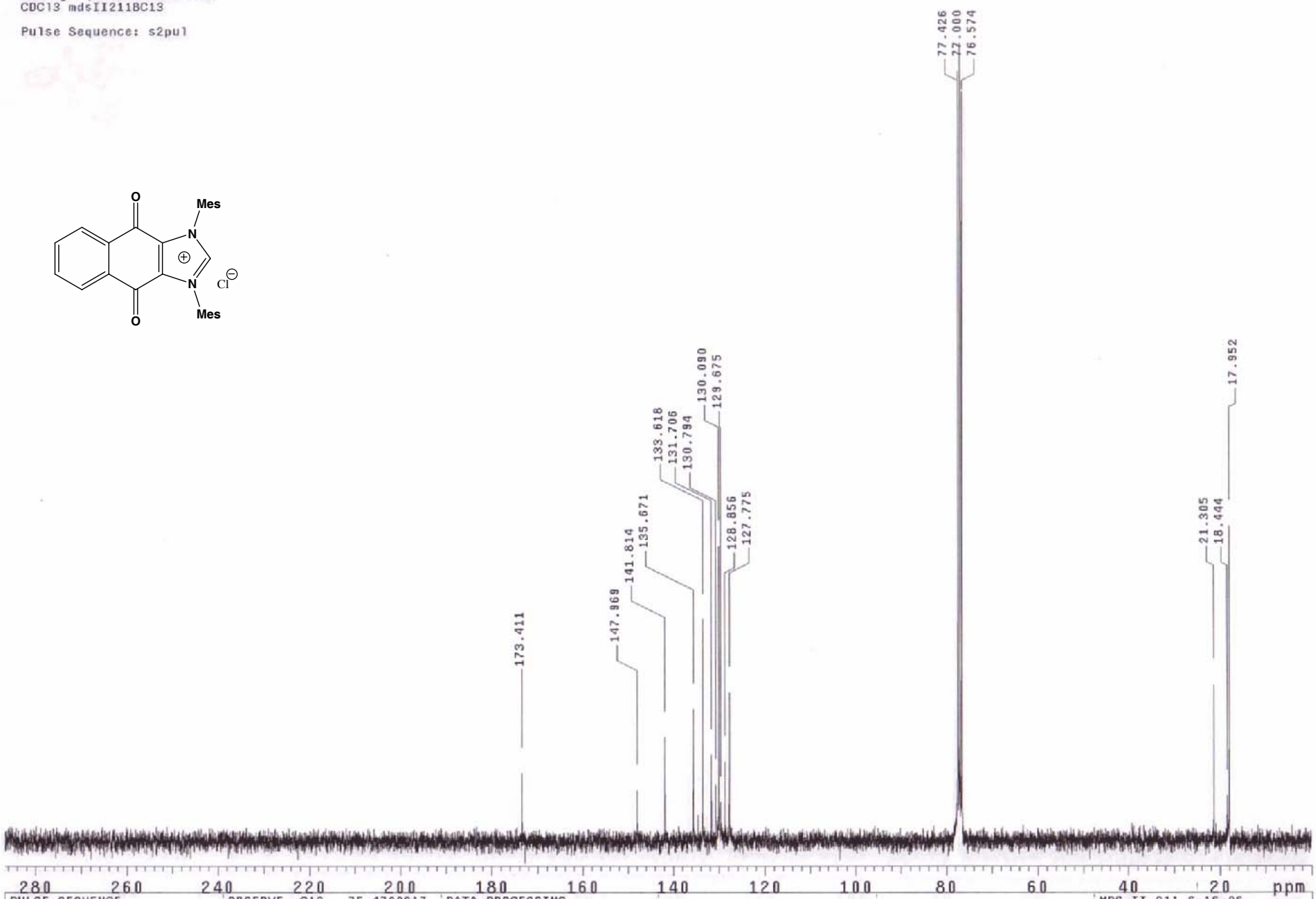


PULSE SEQUENCE Relax. delay 2.000 sec Pulse 16.4 degrees Acq. time 2.856 sec Width 8403.4 Hz 24 repetitions	OBSERVE H1, 400.2669776	DATA PROCESSING Line broadening 0.1 Hz FT size 65536 Total time 1 minutes			MDS-II-211 6-16-06 mesityl cyclized CDCl3 mdsII211BH1 Pulse Sequence: s2pul Solvent: CDCl3 Ambient temperature Mercury-400 "nmr6"

MDS-II-211 6-16-06
Mesityl Quinoimidazolium
CDCl3 mdsII211BC13

Pulse Sequence: s2pul

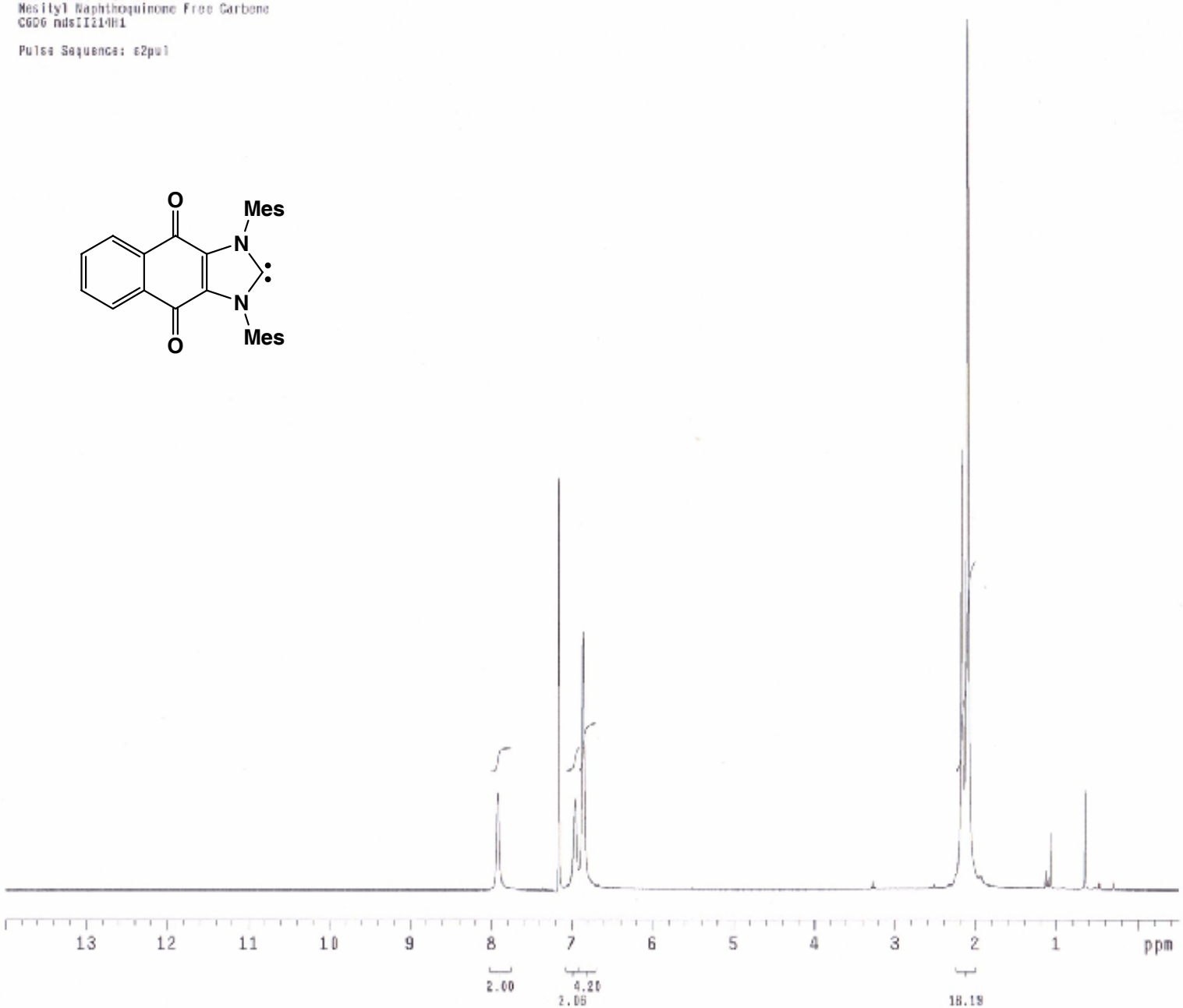
S2



PULSE SEQUENCE Relax. delay 2.000 sec Pulse 36.0 degrees Acq. time 1.777 sec Width 27008.8 Hz 1380 repetitions	OBSERVE C13, 75.4700217 DECOUPLE H1, 300.1409259 Power 40 dB continuously on WALTZ-16 modulated Single precision data	DATA PROCESSING Line broadening 1.0 Hz FT size 131072 Total time 86 minutes			MDS-II-211 6-16-06 Mesityl Quinoimidazolium CDCl3 mdsII211BC13 Pulse Sequence: s2pul Solvent: CDCl3 Ambient temperature UNITYplus-300 "nmr2"

MDS-II-214 6-19-06
Mesityl Naphthoquinone Free Carbene
C6D6 mdsII214H1

Pulse Sequence: s2pul

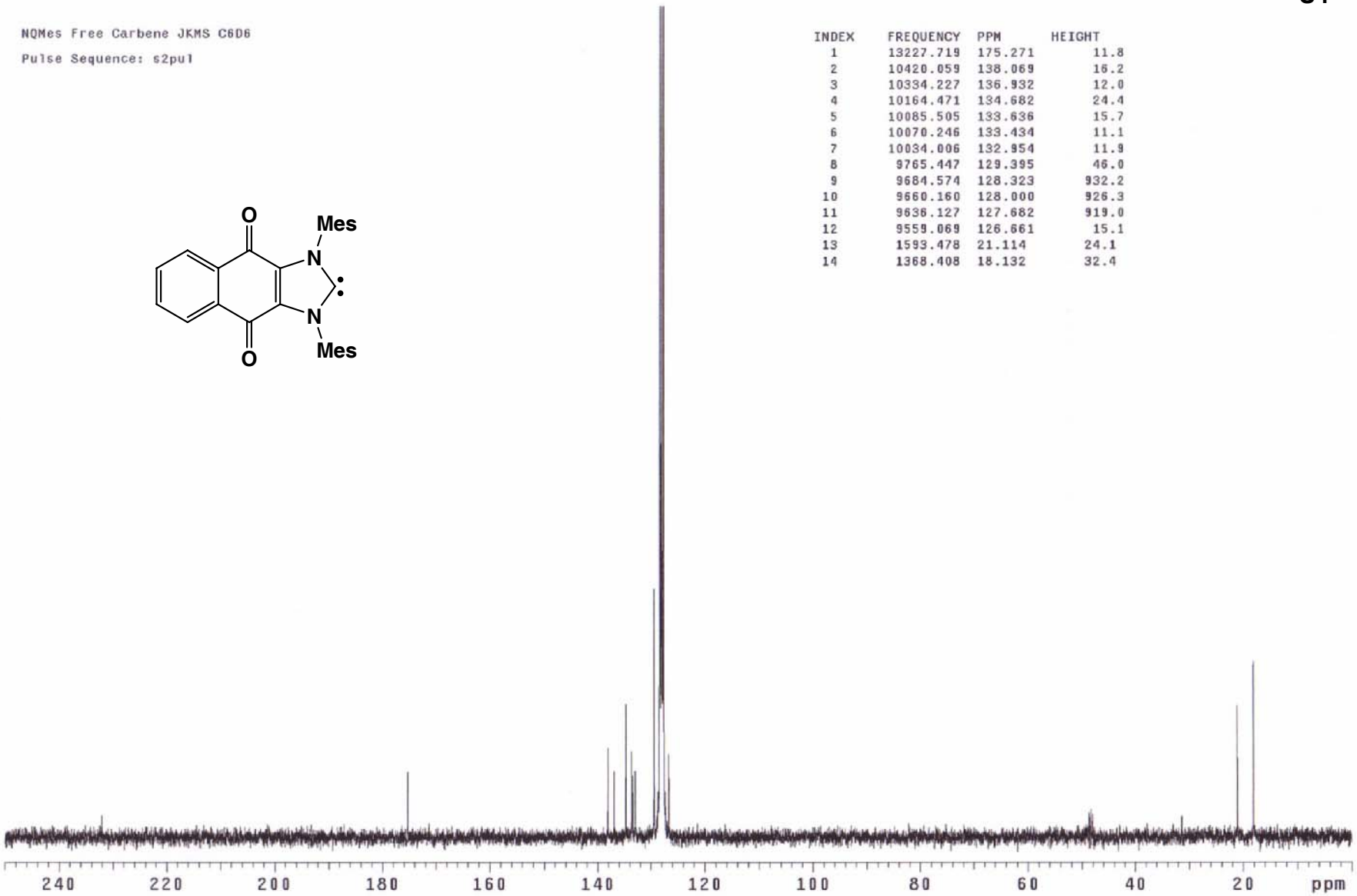


PULSE SEQUENCE Relax. delay 2.000 sec Pulse 18.4 degrees Acq. time 2.856 sec Width 8403.4 Hz 24 repetitions	OBSERVE H1, 400.2669957	DATA PROCESSING Line broadening 0.1 Hz FT size 65536 Total time 1 minutes			MDS-II-214 6-19-06 Mesityl Naphthoquinone Fre Carbene C6D6 mdsII214H1 Pulse Sequence: s2pul Solvent: Benzene Ambient temperature

NQMes Free Carbene JKMS C6D6

Pulse Sequence: s2pul

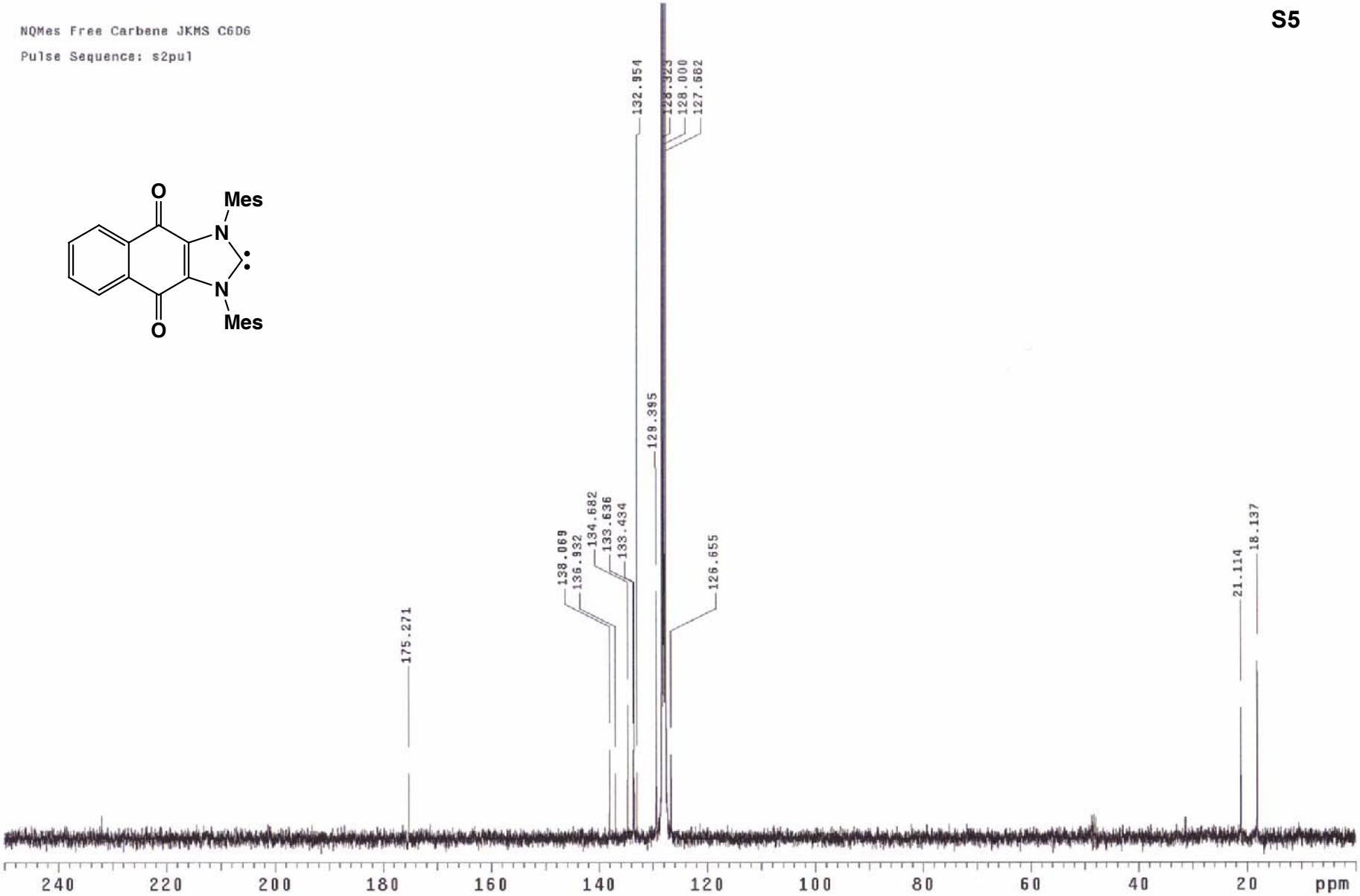
INDEX	FREQUENCY	PPM	HEIGHT
1	13227.719	175.271	11.8
2	10420.059	138.069	16.2
3	10334.227	136.932	12.0
4	10164.471	134.682	24.4
5	10085.505	133.636	15.7
6	10070.246	133.434	11.1
7	10034.006	132.954	11.9
8	9765.447	129.395	46.0
9	9684.574	128.323	932.2
10	9660.160	128.000	926.3
11	9636.127	127.682	919.0
12	9559.069	126.661	15.1
13	1593.478	21.114	24.1
14	1368.408	18.132	32.4



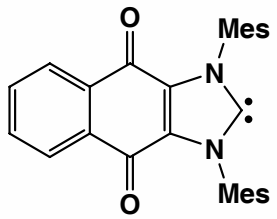
PULSE SEQUENCE	OBSERVE C13, 75.4700004	DATA PROCESSING			NQMes Free Carbene JKMS C6
Relax. delay 1.500 sec Pulse 36.0 degrees Acq. time 1.777 sec Width 25000.0 Hz 1181 repetitions	DECOUPLE H1, 300.1409529 Power 40 dB continuously on WALTZ-16 modulated Single precision data	Line broadening 1.0 Hz FT size 131072 Total time 64 minutes			Pulse Sequence: s2pul Solvent: Benzene Ambient temperature UNITYplus-300 "nmr2"

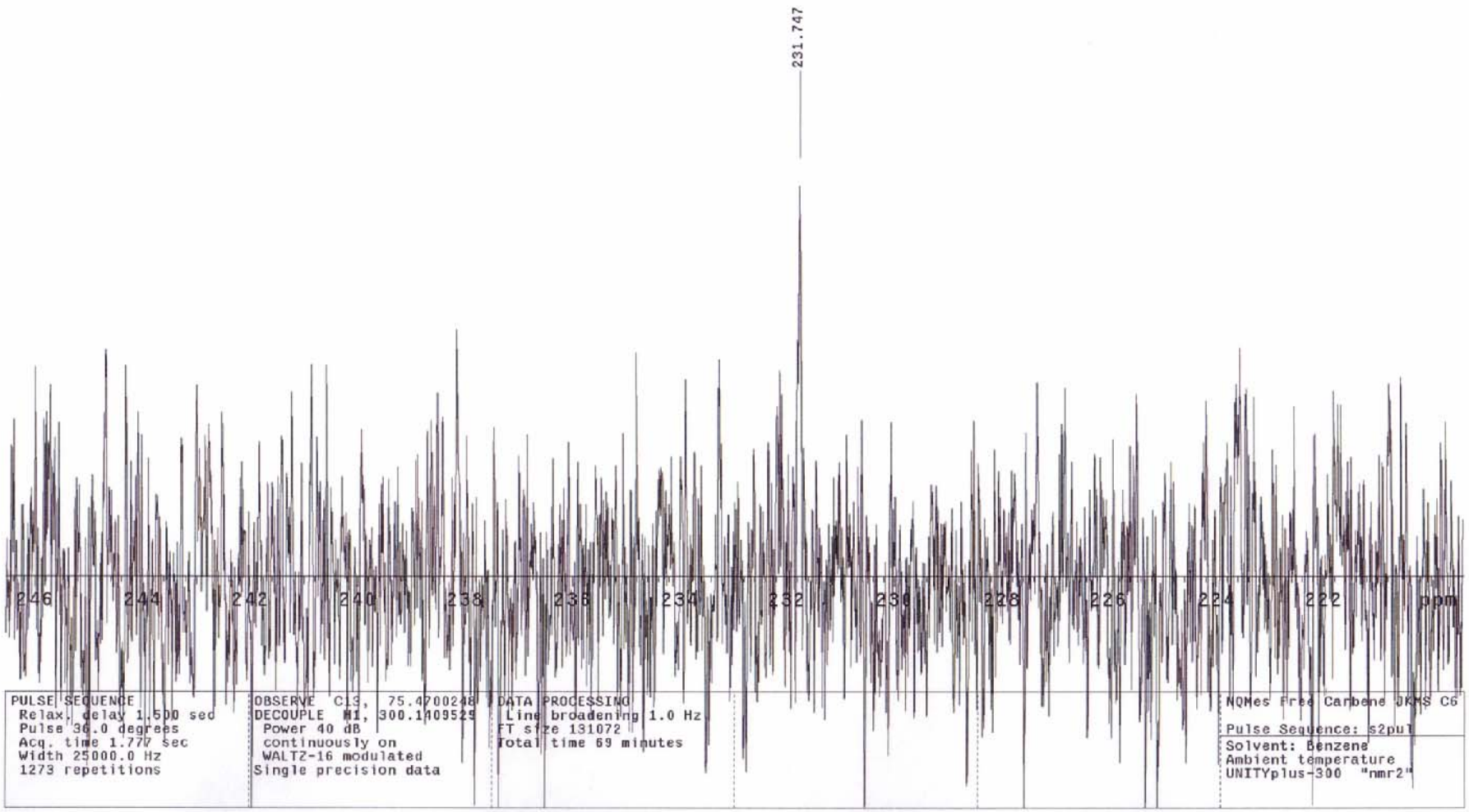
NQMes Free Carbene JKMS C6D6

Pulse Sequence: s2pul



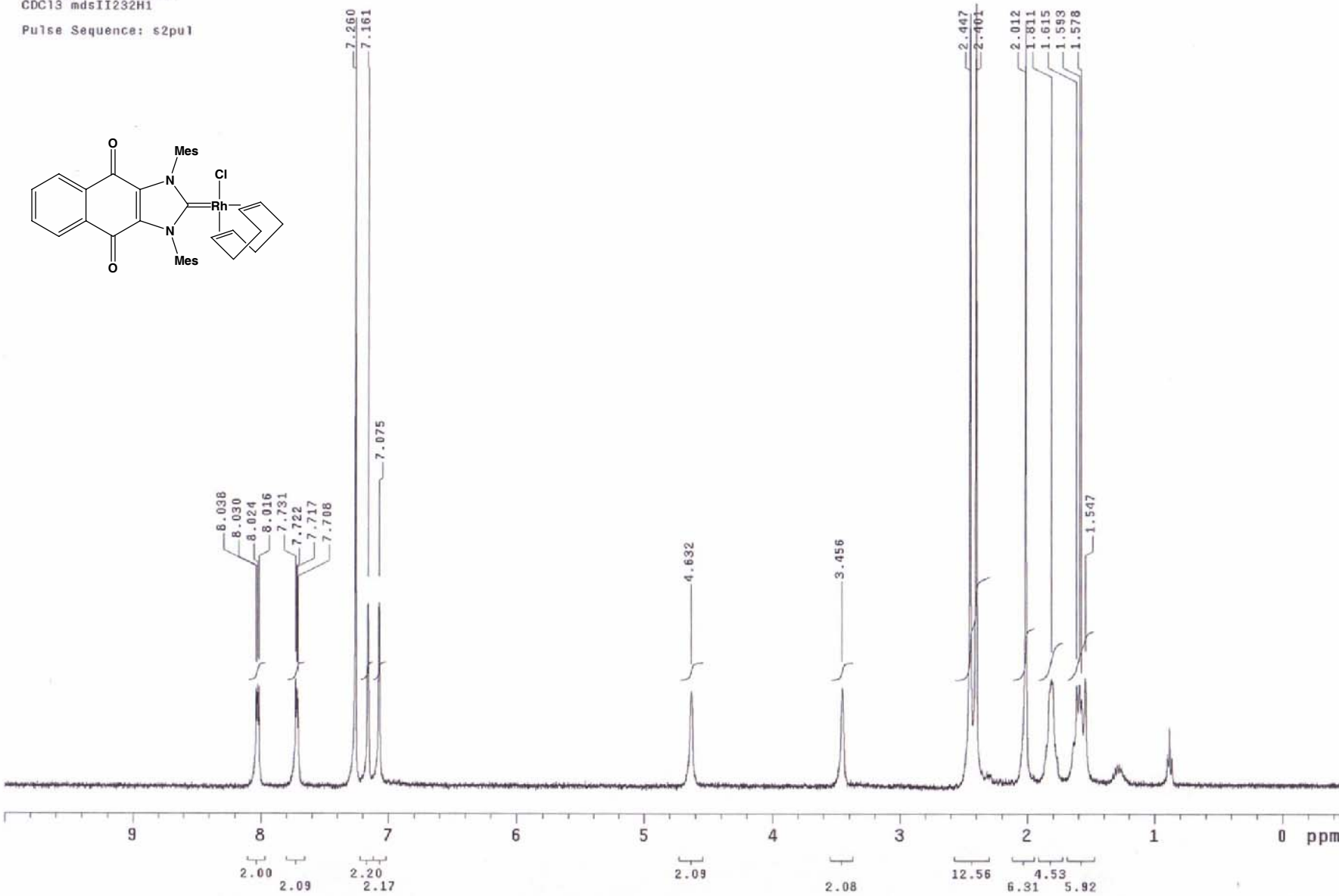
PULSE SEQUENCE Relax. delay 1.500 sec Pulse 36.0 degrees Acq. time 1.777 sec Width 25000.0 Hz 1160 repetitions	OBSERVE C13, 75.4700004 DECOUPLE H1, 300.1409529 Power 40 dB continuously on WALTZ-16 modulated Single precision data	DATA PROCESSING Line broadening 1.0 Hz FT size 131072 Total time 63 minutes			NQMes Free Carbene JKMS C6 Pulse Sequence: s2pul Solvent: Benzene Ambient temperature UNITYplus-300 "nmr2"


O
Mes
N
N
Mes
O


231.747
246
244
242
240
238
236
234
232
230
228
226
224
222
ppm
PULSE SEQUENCE
Relax. delay 1.500 sec
Pulse 36.0 degrees
Acq. time 1.777 sec
Width 25000.0 Hz
1273 repetitions
OBSERVE C13, 75.4700248
DECOUPLE H1, 300.1409529
Power 40 dB
continuously on
WALTZ-16 modulated
Single precision data
DATA PROCESSING
Line broadening 1.0 Hz
FT size 131072
Total time 69 minutes
NQMes Free Carbene JKMS C6
Pulse Sequence: s2pul
Solvent: Benzene
Ambient temperature
UNITYplus-300 "nmr2"

MDS-II-232 7-1-06
Rh(COD)Cl MesNaphth
CDCl3 mdsII232H1

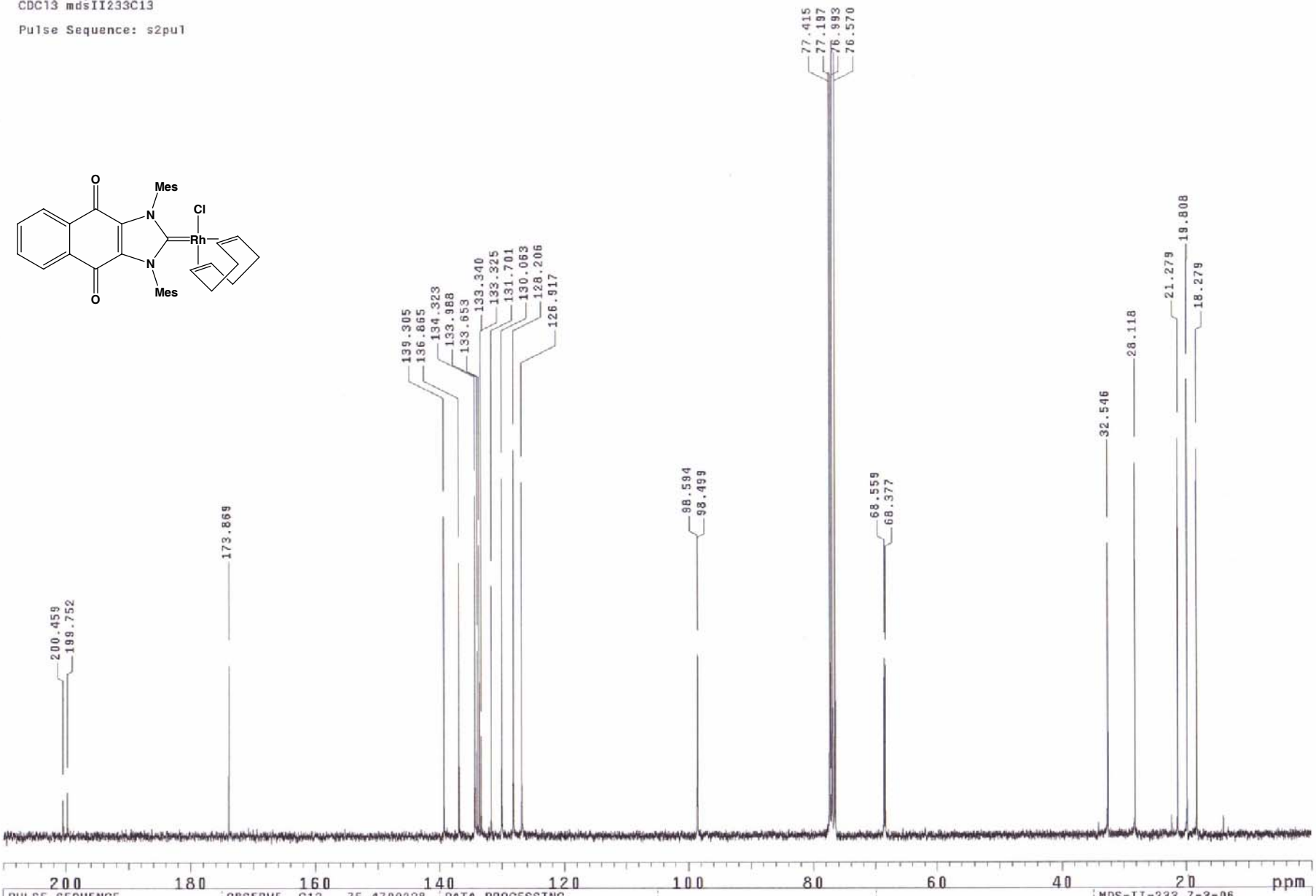
Pulse Sequence: s2pul



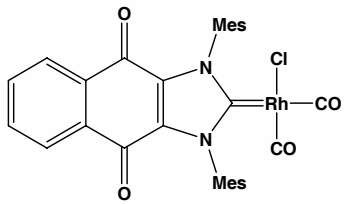
PULSE SEQUENCE	OBSERVE H1, 400.2669779	DATA PROCESSING			MDS-II-232 7-1-06 Rh(COD)Cl MesNaphth CDCl3 mdsII232H1
Relax. delay 2.000 sec Pulse 16.4 degrees Acq. time 2.856 sec Width 5602.2 Hz 24 repetitions		Line broadening 0.1 Hz FT size 32768 Total time 1 minutes			Pulse Sequence: s2pul Solvent: CDCl3 Ambient temperature Mercury-400 "nmr6"

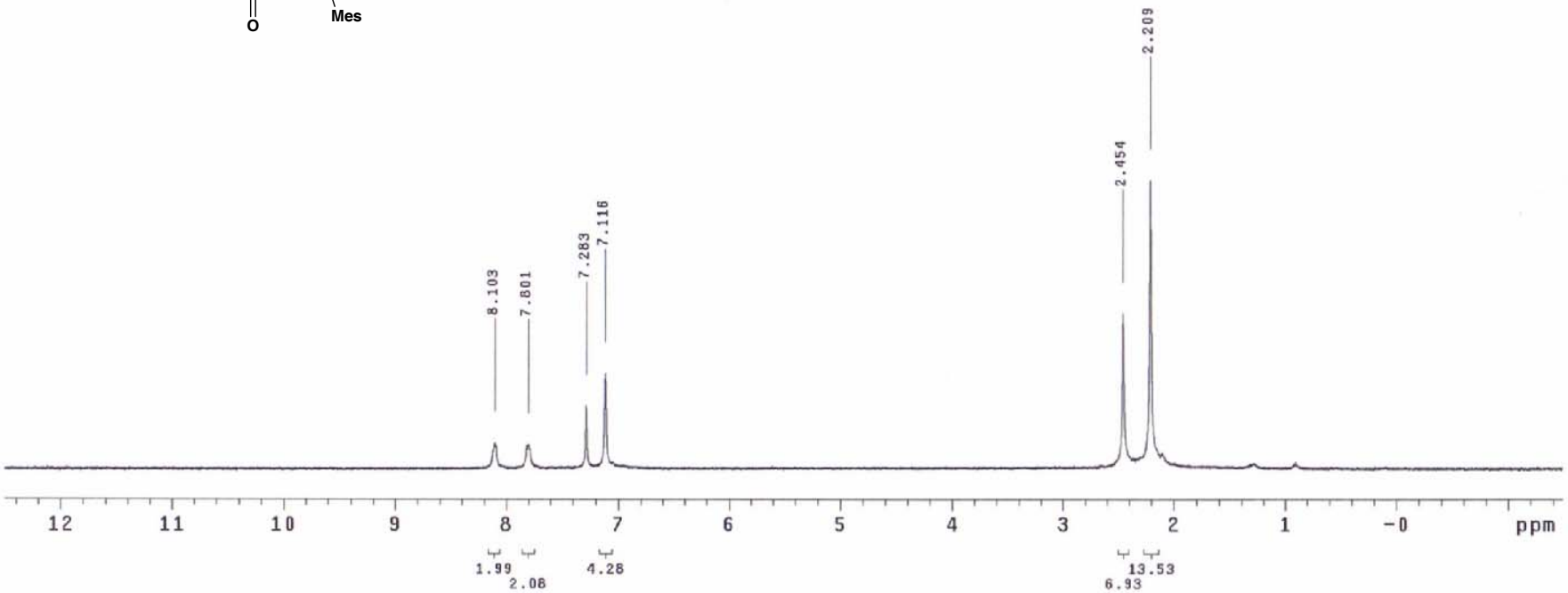
MDS-II-233 7-3-06
RhCl(COD) MesNphth
CDCl3 mdsII233C13

Pulse Sequence: s2pul

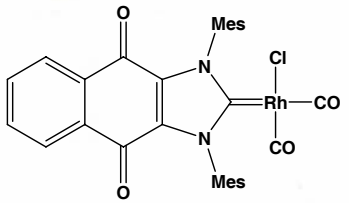


PULSE SEQUENCE Relax. delay 2.000 sec Pulse 36.0 degrees Acq. time 1.777 sec Width 18009.9 Hz 3008 repetitions	OBSERVE C13, 75.4700238 DECOUPLE H1, 300.1409259 Power 40 dB continuously on WALTZ-16 modulated Single precision data	DATA PROCESSING Line broadening 1.0 Hz FT size 65536 Total time 3.2 hours		MDS-II-233 7-3-06 RhCl(COD) MesNphth CDCl3 mdsII233C13 Pulse Sequence: s2pul Solvent: CDCl3 Ambient temperature UNITYplus-300 "nmr2"





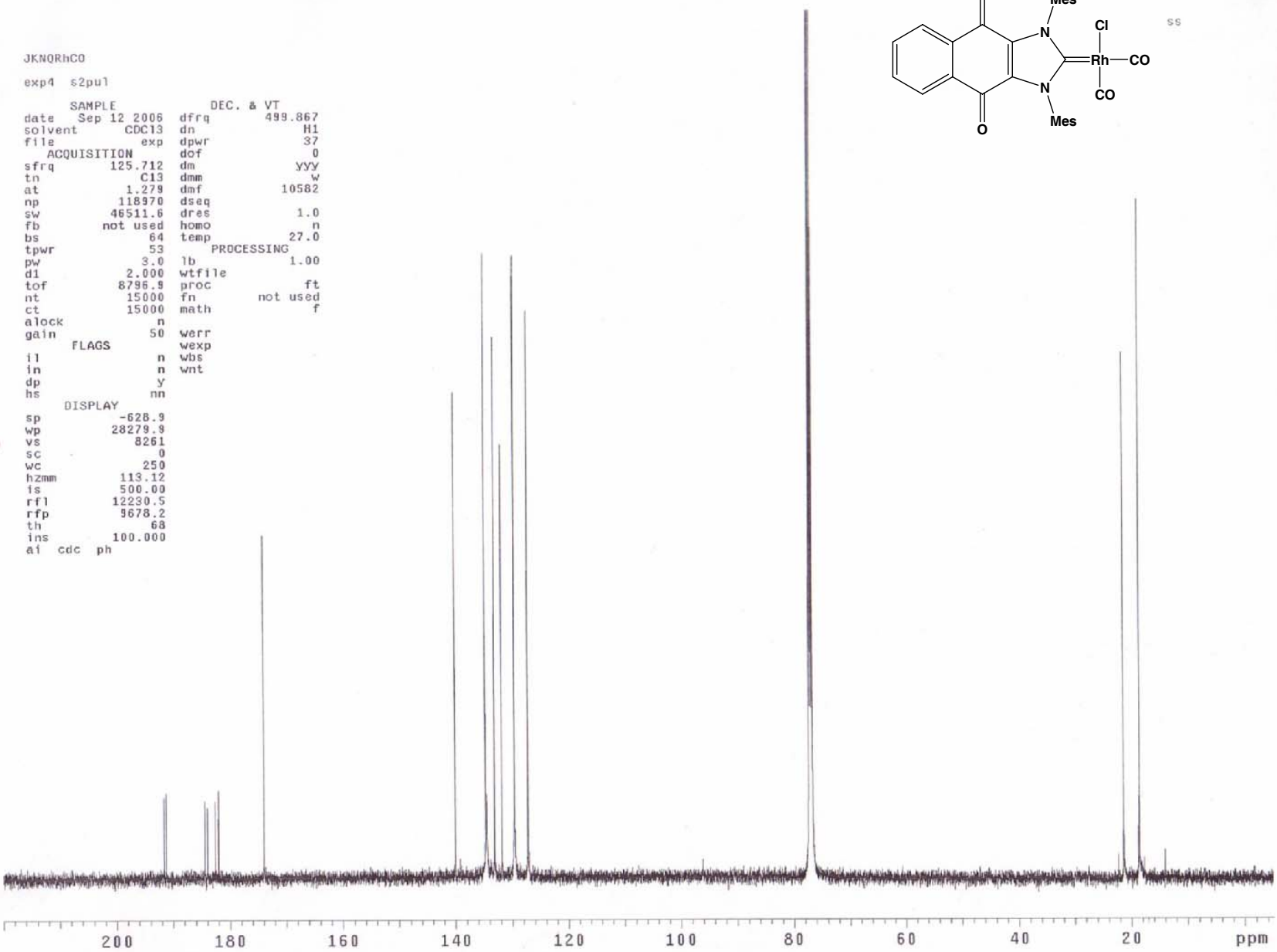
PULSE SEQUENCE Relax. delay 1.000 sec Pulse 15.0 degrees Acq. time 3.813 sec Width 4196.4 Hz 30 repetitions	OBSERVE H1, 300.1390251	DATA PROCESSING Line broadening 0.1 Hz FT size 32768 Total time 2 minutes			NQRhCOCl Pulse Sequence: s2pul Solvent: CDCl3 Ambient temperature UNITYplus-300 "nmr2"

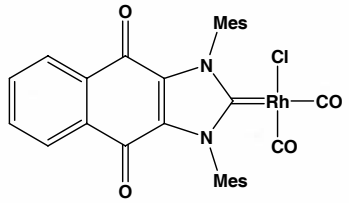


JKNQRhCO

exp4 s2pul

SAMPLE		DEC. & VT	
date	Sep 12 2006	dfrq	499.867
solvent	CDCl3	dn	H1
file	exp	dpwr	37
ACQUISITION		dof	0
sfrq	125.712	dm	yyy
tn	C13	dmm	w
at	1.279	dmf	10582
np	118970	dseq	
sw	46511.6	dres	1.0
fb	not used	homo	n
bs	64	temp	27.0
tpwr	53	PROCESSING	
pw	3.0	lb	1.00
d1	2.000	wtfile	
tof	8796.9	proc	ft
nt	15000	fn	not used
ct	15000	math	f
alock	n		
gain	50	werr	
FLAGS		wexp	
il	n	wbs	
in	n	wnt	
dp	y		
hs	nn		
DISPLAY			
sp	-628.9		
wp	28279.9		
vs	8261		
sc	0		
wc	250		
hzmm	113.12		
is	500.00		
rfl	12230.5		
rfp	9678.2		
th	68		
ins	100.000		
ai cdc ph			

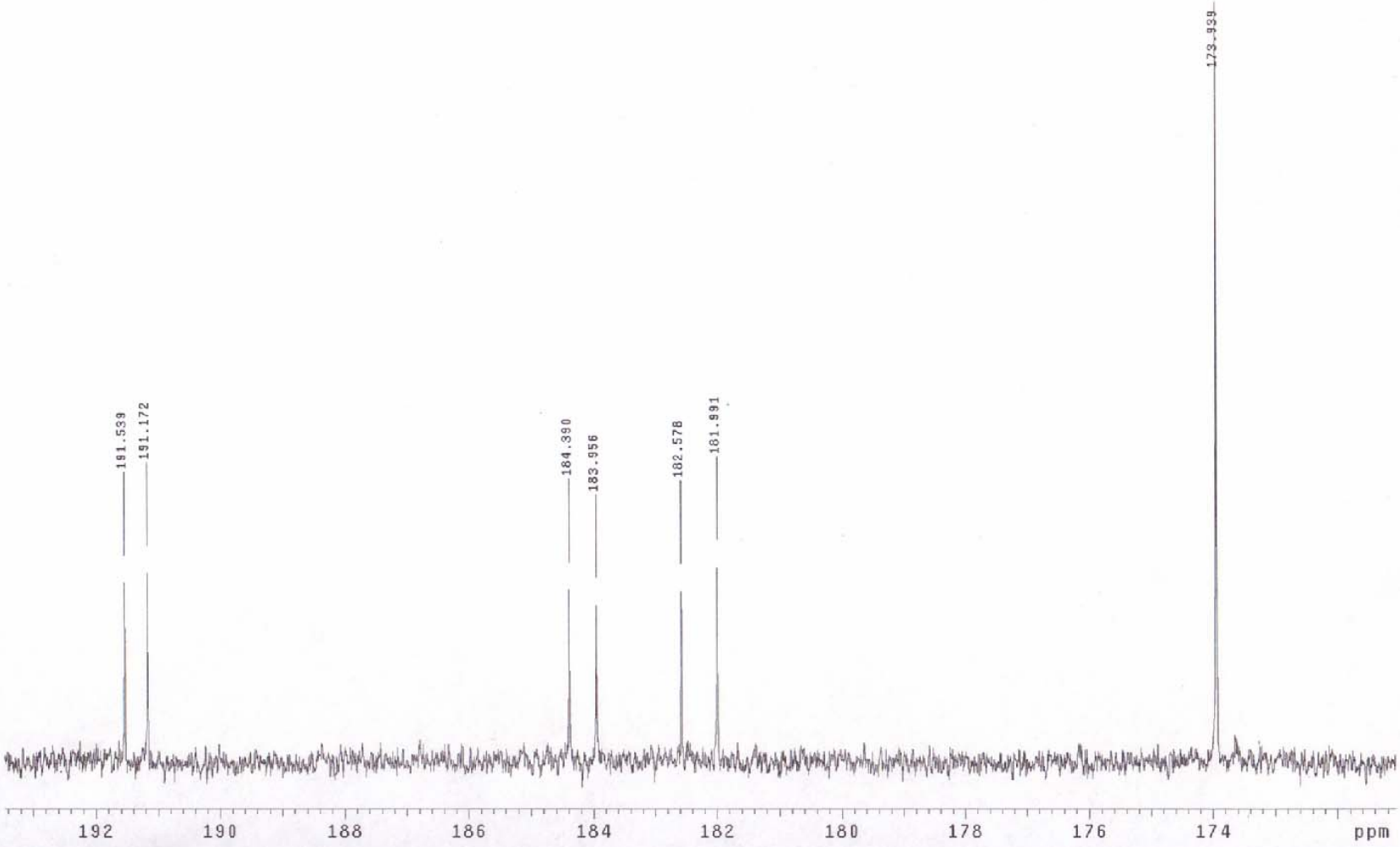


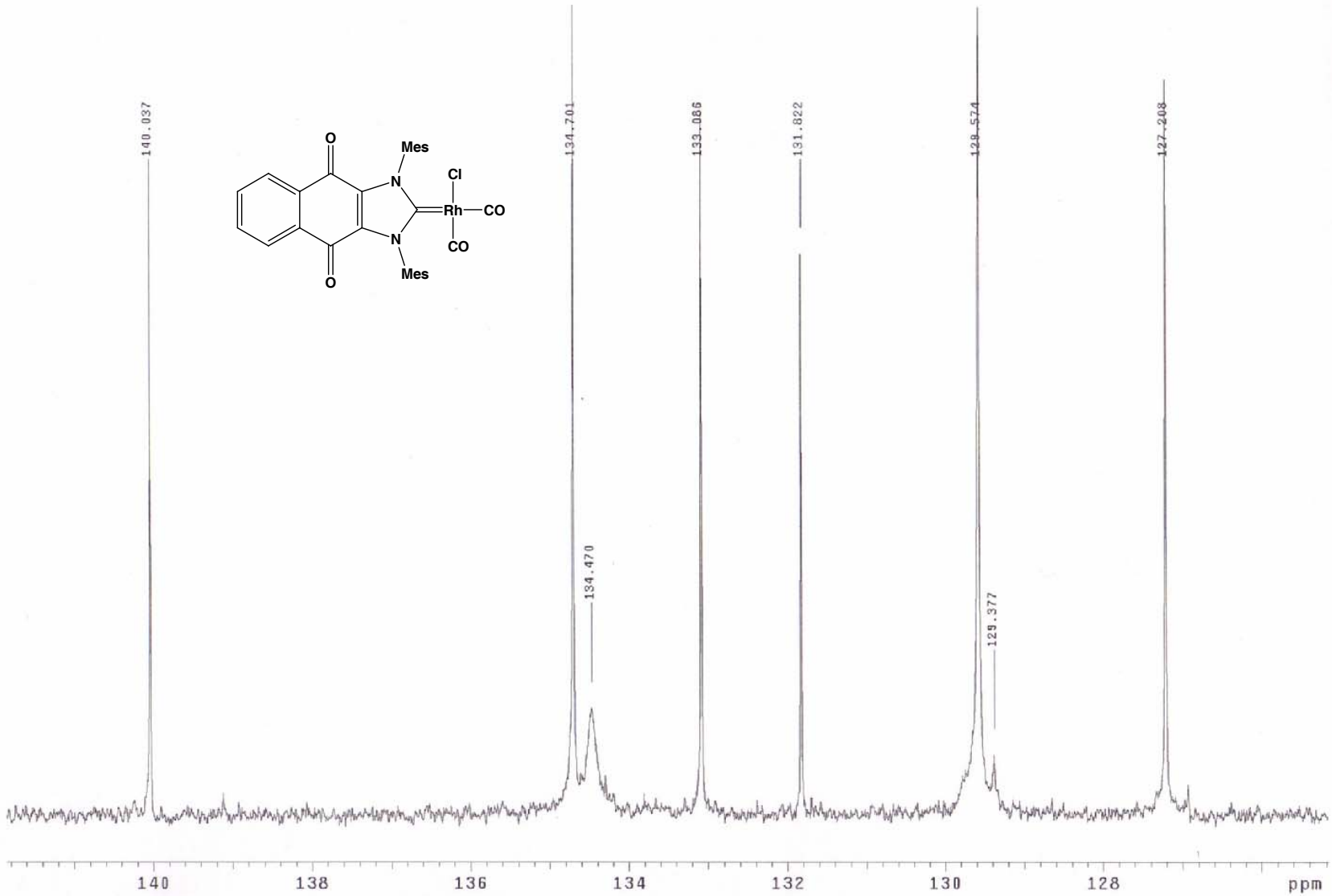


JKNQRhCO

Pulse Sequence: s2pul

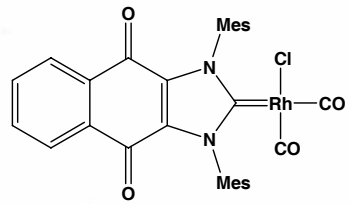
ss

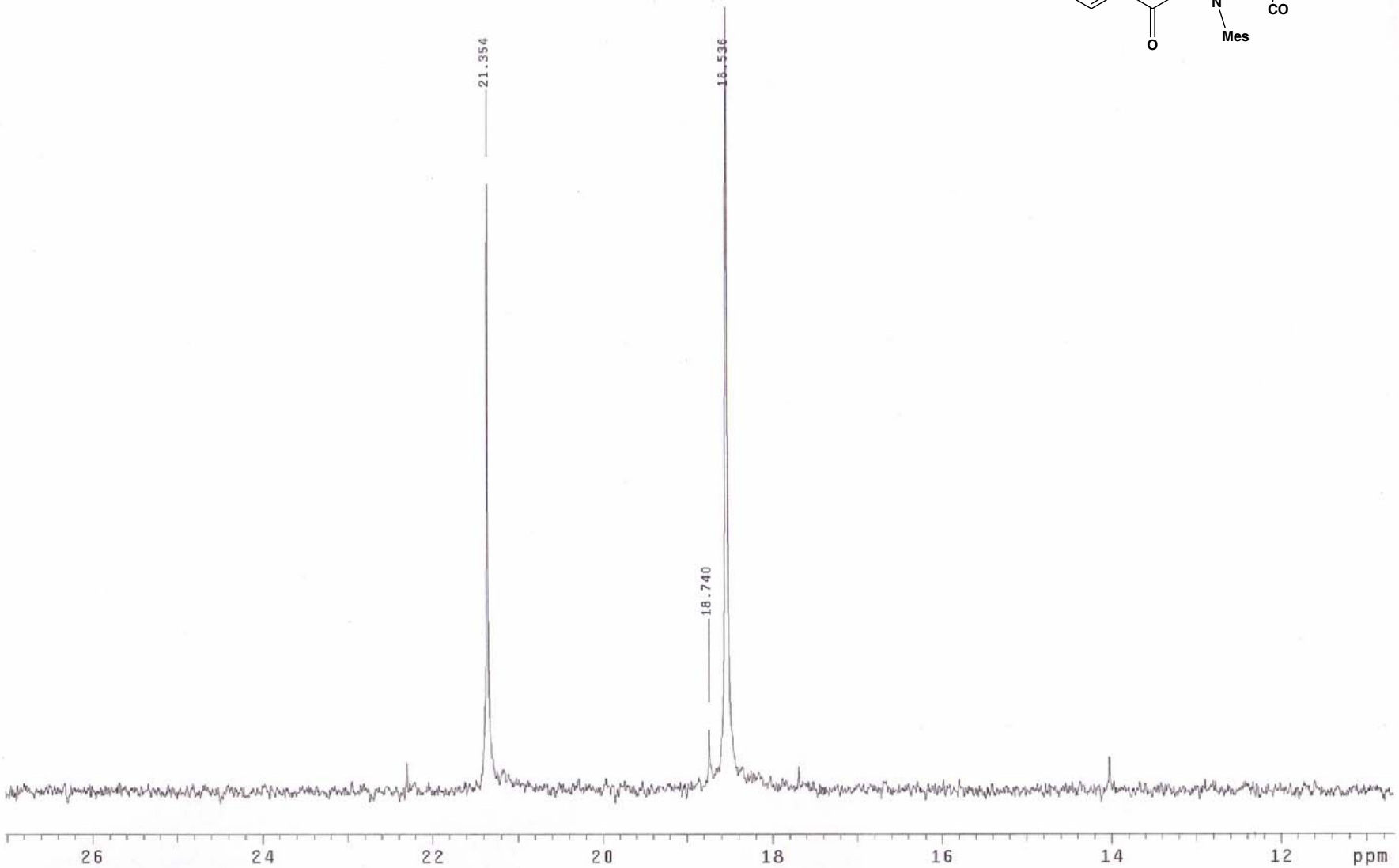


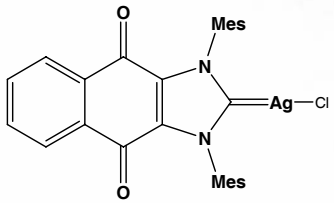

JKNQRhCO
Pulse Sequence: s2pul
ss
140.037
134.701
134.470
133.086
131.822
129.574
129.377
127.208
O
Mes
N
Cl
Rh
CO
CO
N
Mes
O
140
138
136
134
132
130
128
ppm

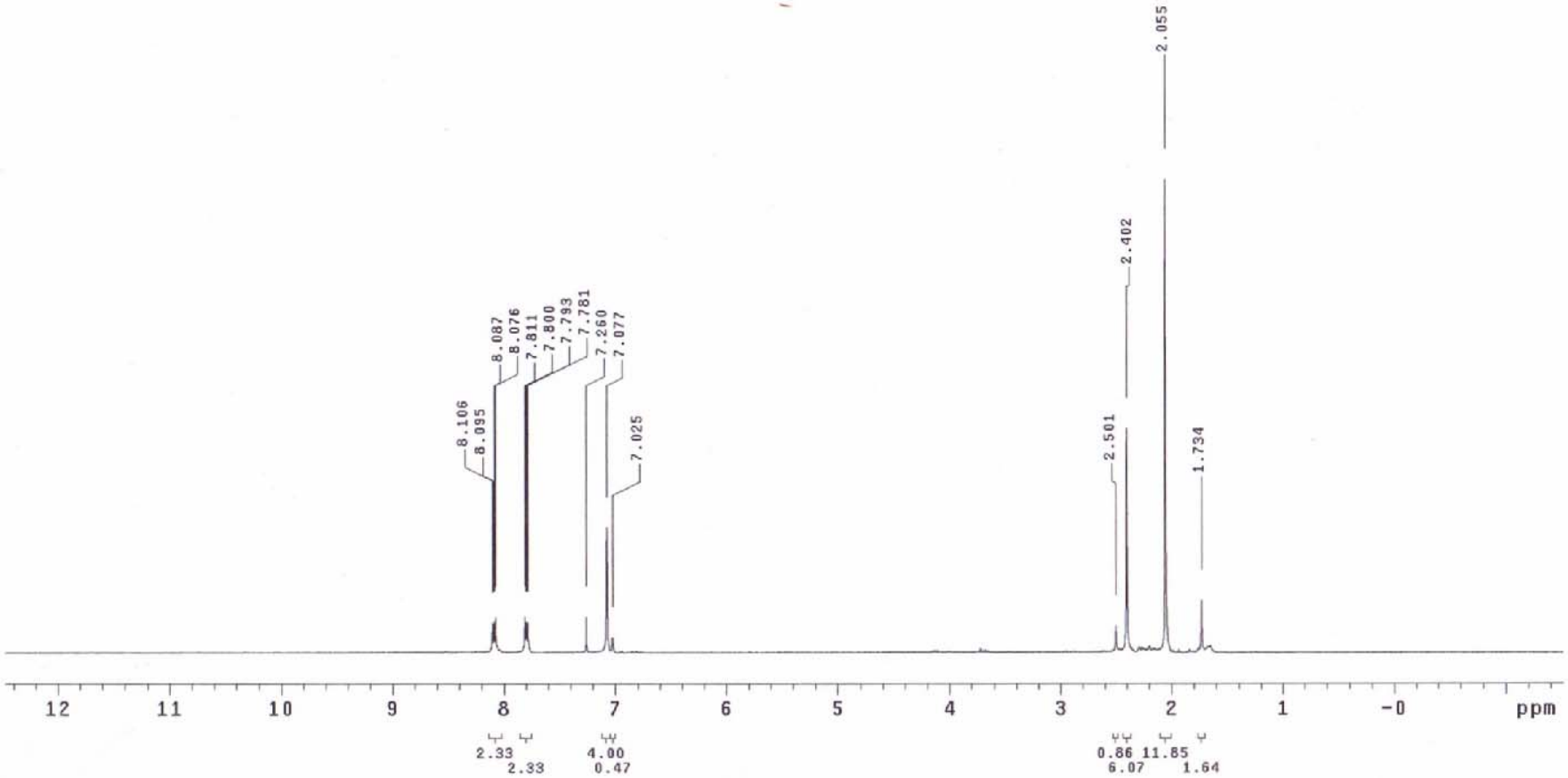
JKNQRhCO

Pulse Sequence: s2pul

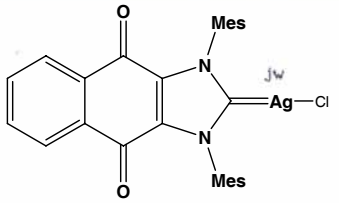








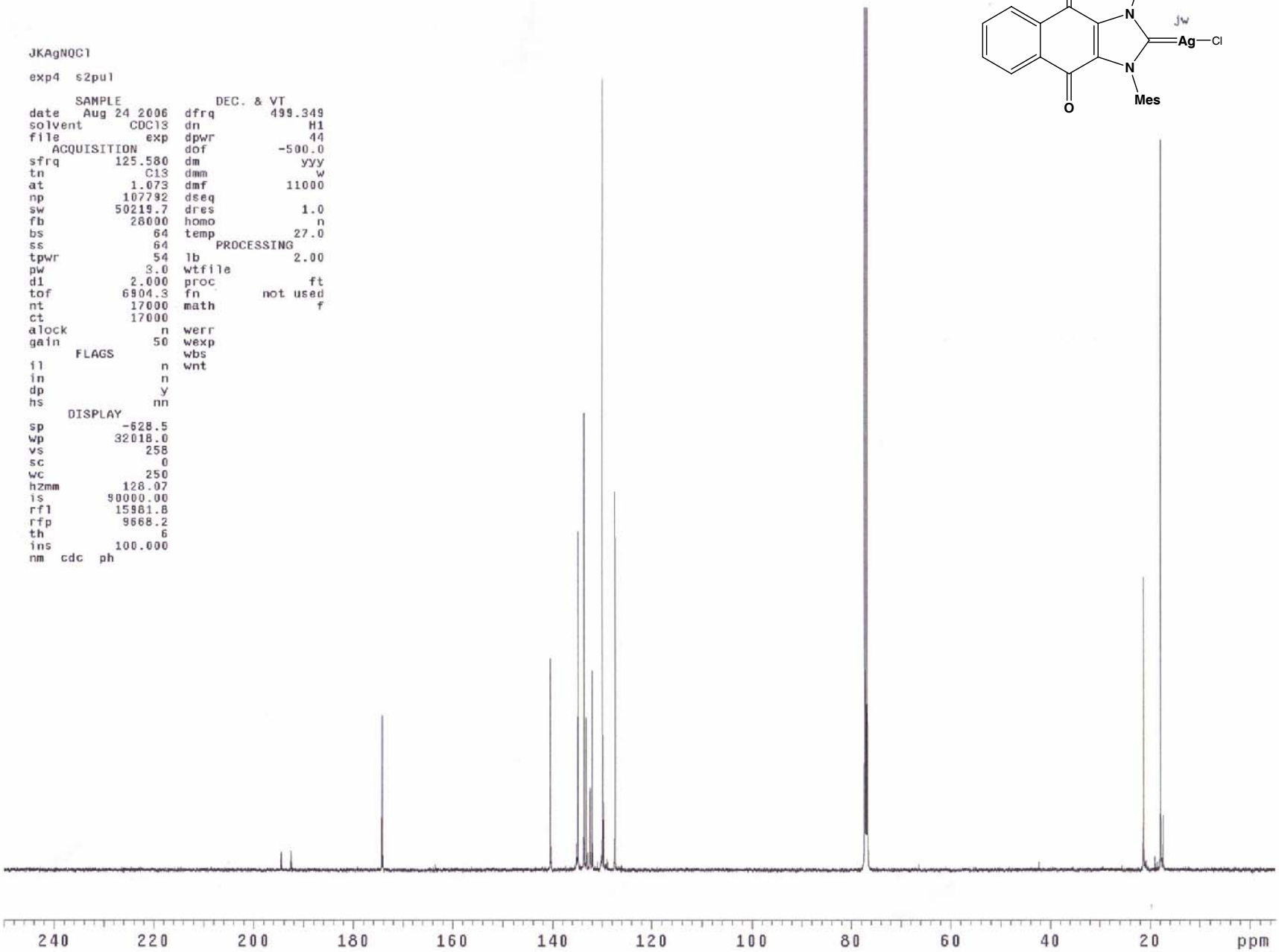
PULSE SEQUENCE Relax. delay 1.000 sec Pulse 15.0 degrees Acq. time 3.813 sec Width 4196.4 Hz 29 repetitions	OBSERVE H1, 300.1390326	DATA PROCESSING Line broadening 0.1 Hz FT size 32768 Total time 2 minutes			NQAgCl Pulse Sequence: s2pul Solvent: CDCl3 Ambient temperature UNITYplus-300 "nmr2"



JKAgNQCl

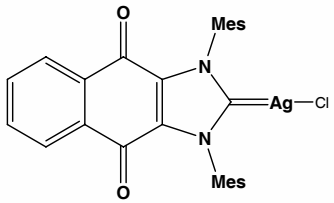
exp4 s2pul

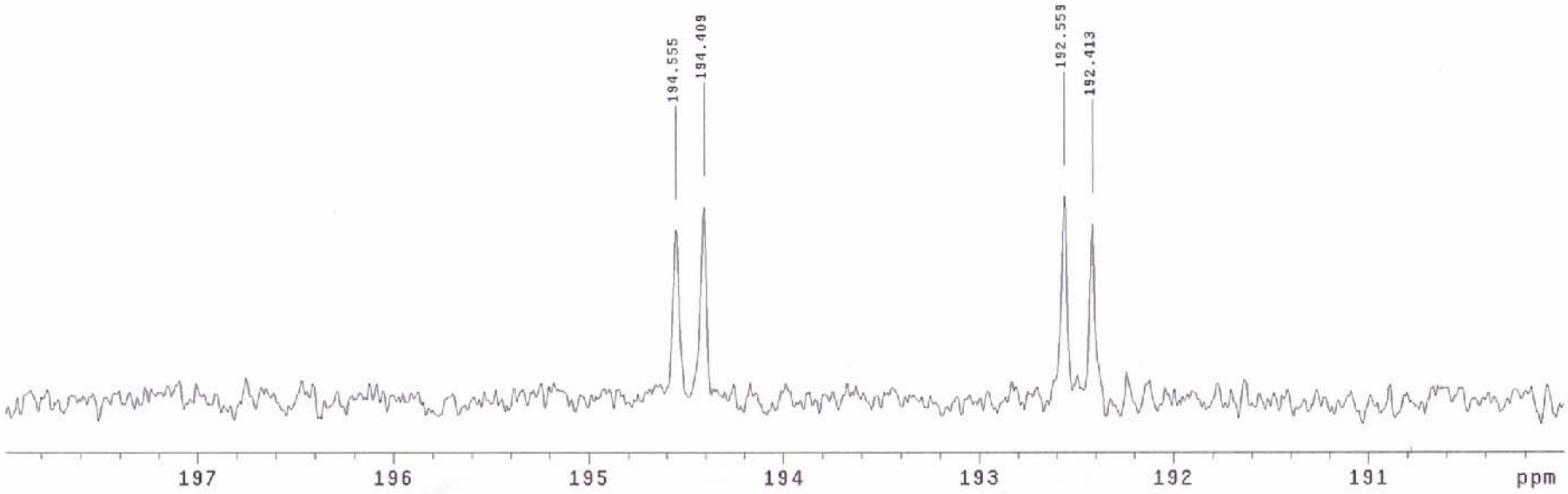
SAMPLE		DEC. & VT	
date	Aug 24 2006	dfrq	499.349
solvent	CDCl3	dn	H1
file	exp	dpwr	44
ACQUISITION		dof	-500.0
sfrq	125.580	dm	yyy
tn	C13	dmm	w
at	1.073	dmf	11000
np	107792	dseq	
sw	50219.7	dres	1.0
fb	28000	homo	n
bs	64	temp	27.0
ss	64	PROCESSING	
tpwr	54	lb	2.00
pw	3.0	wtfile	
d1	2.000	proc	ft
tof	6904.3	fn	not used
nt	17000	math	f
ct	17000		
alock	n	werr	
gain	50	wexp	
FLAGS		wbs	
il	n	wnt	
in	n		
dp	y		
hs	nn		
DISPLAY			
sp	-628.5		
wp	32018.0		
vs	258		
sc	0		
wc	250		
hzmm	128.07		
is	90000.00		
rfl	15981.8		
rfp	9668.2		
th	6		
ins	100.000		
nm cdc ph			



JKAgNQCl

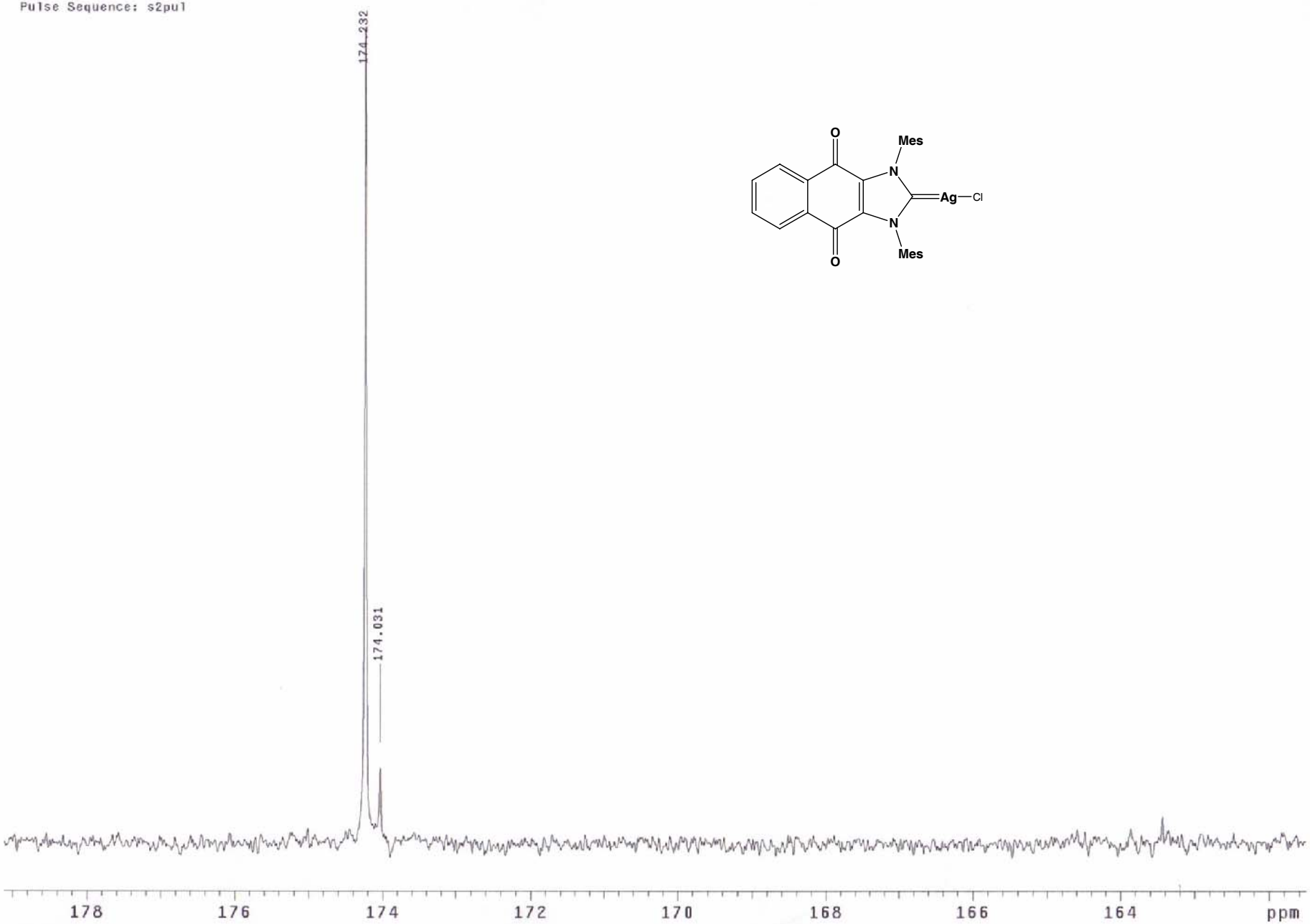
Pulse Sequence: s2pul





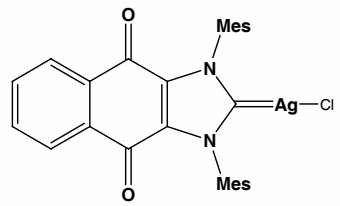
JKAgNQCl

Pulse Sequence: s2pul



JKAgNQCl

Pulse Sequence: s2pul

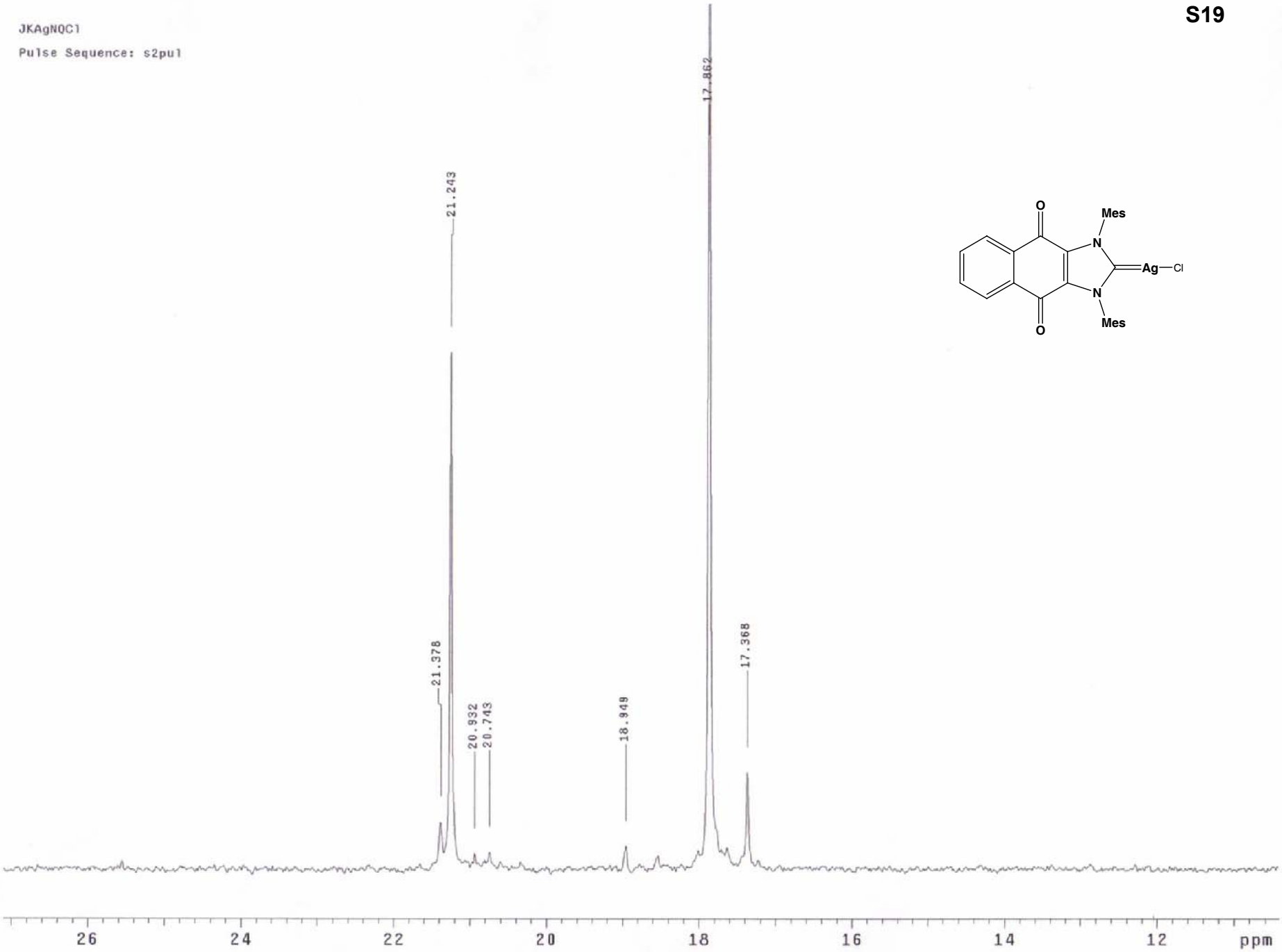


140.459
140.355
135.173
134.887
133.648
133.202
132.860
132.488
132.421
131.982
131.817
130.108
129.907
129.614
127.404
127.294

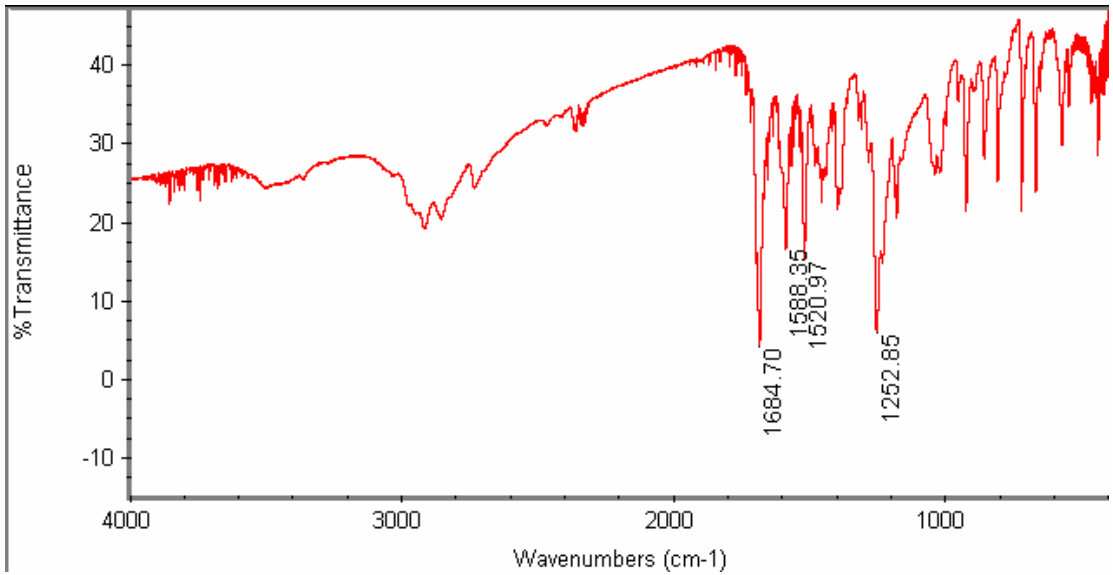
140 138 136 134 132 130 128 126 ppm

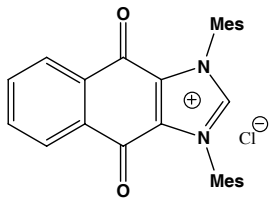
JKAgNQCl

Pulse Sequence: s2pul

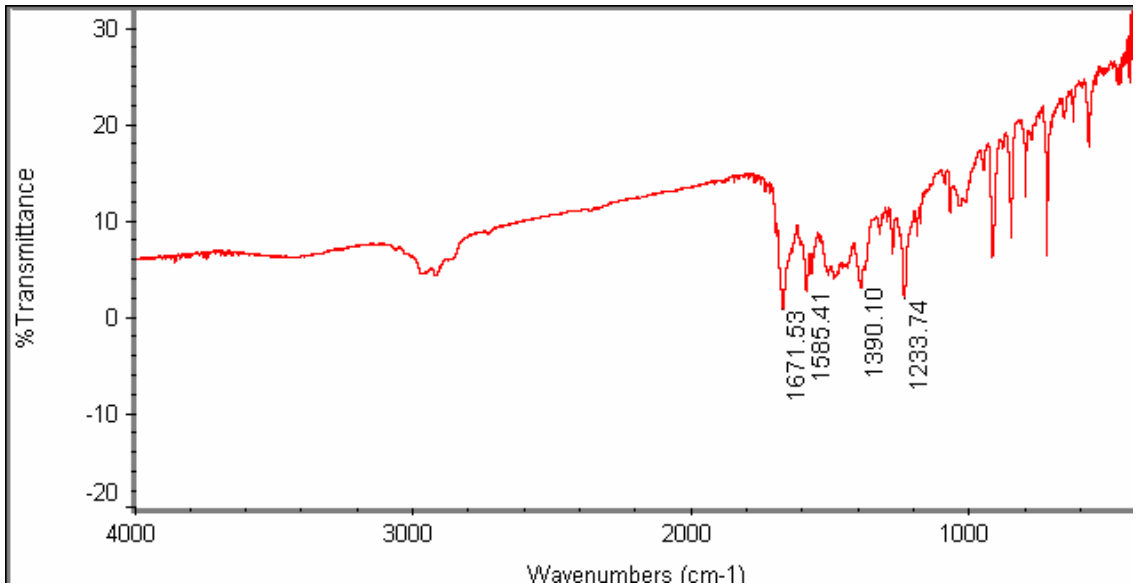


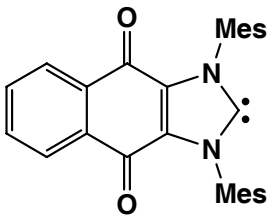
NQ-Azolium



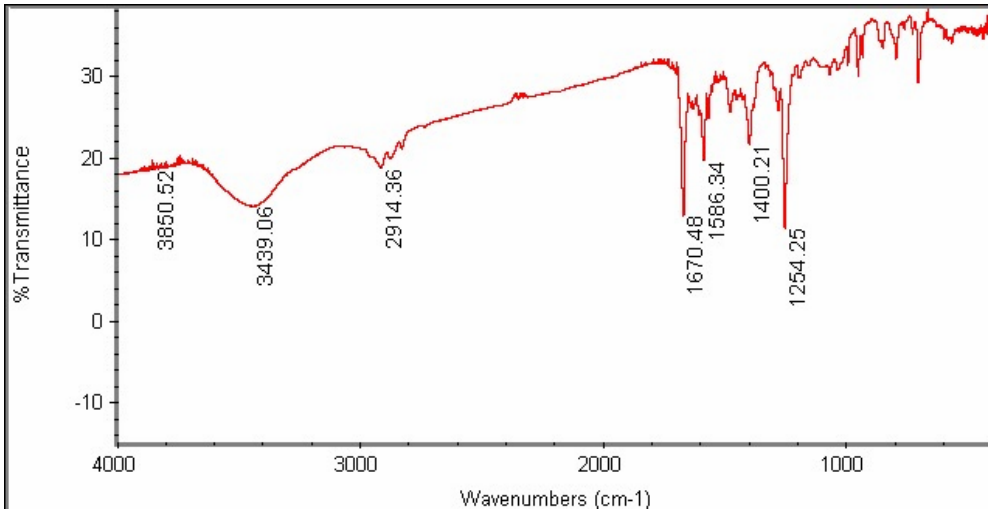


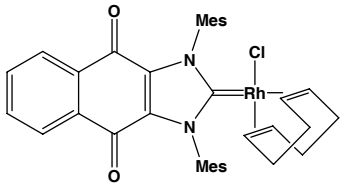
NQ-Carbene



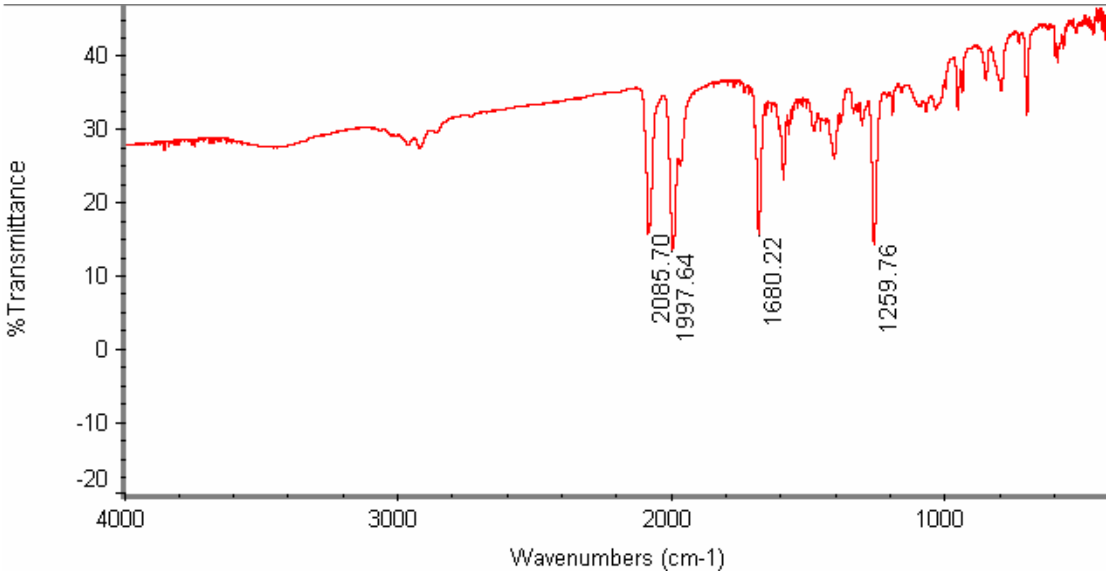


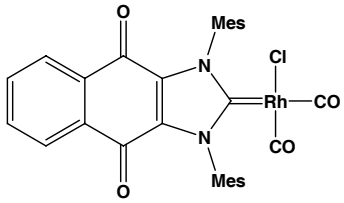
NQ-Rh(COD)Cl



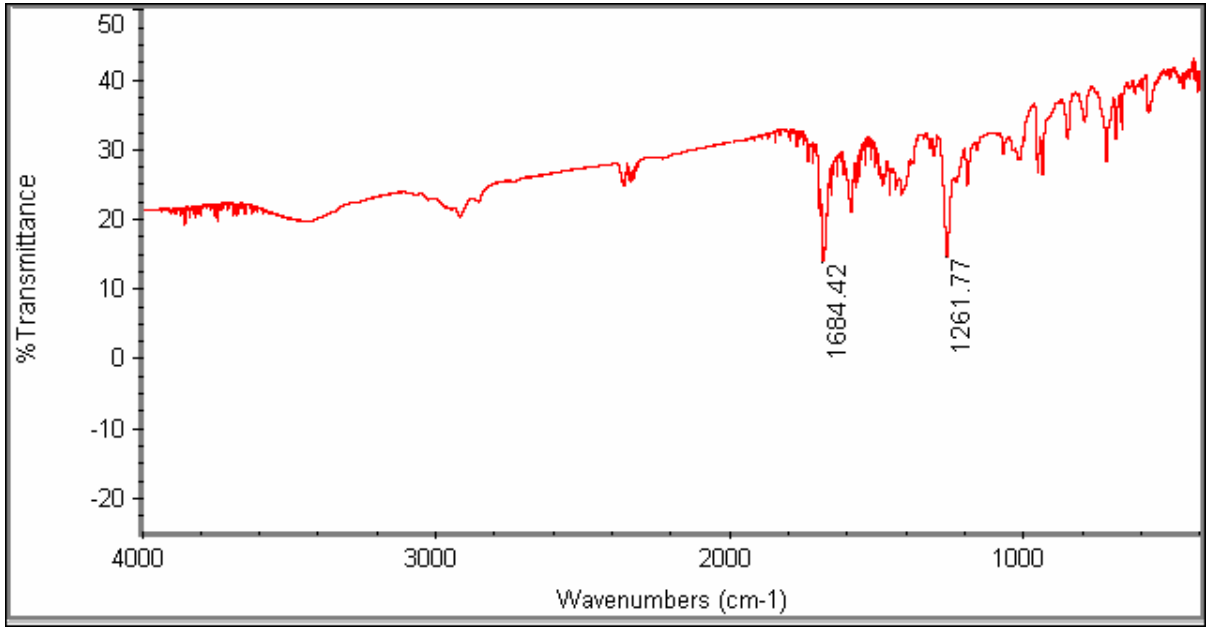


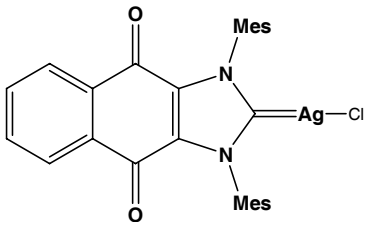
NQ-Rh(CO)2Cl

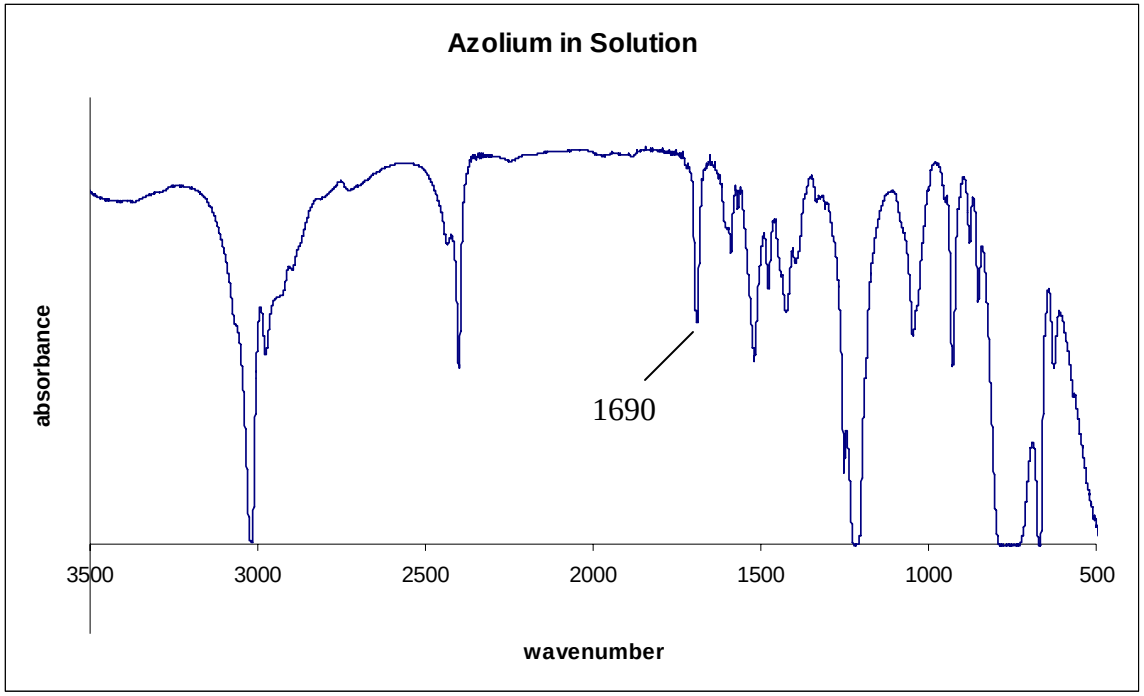


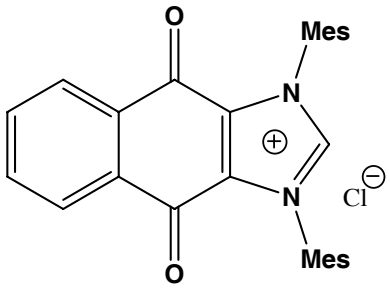


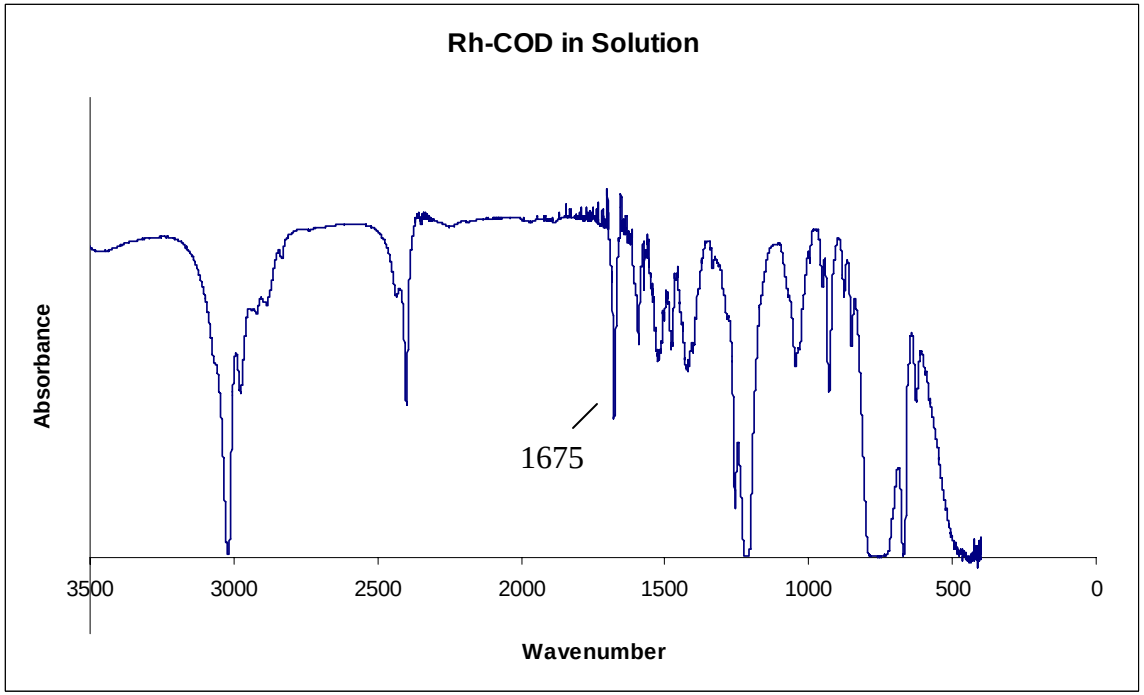
NQ-AgCl

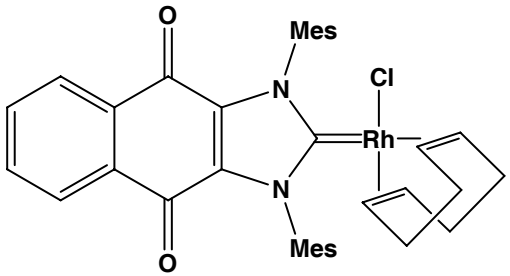

50
40
30
20
10
0
-10
-20
%Transmittance
1684.42
1261.77
4000
3000
2000
1000
Wavenumbers (cm-1)

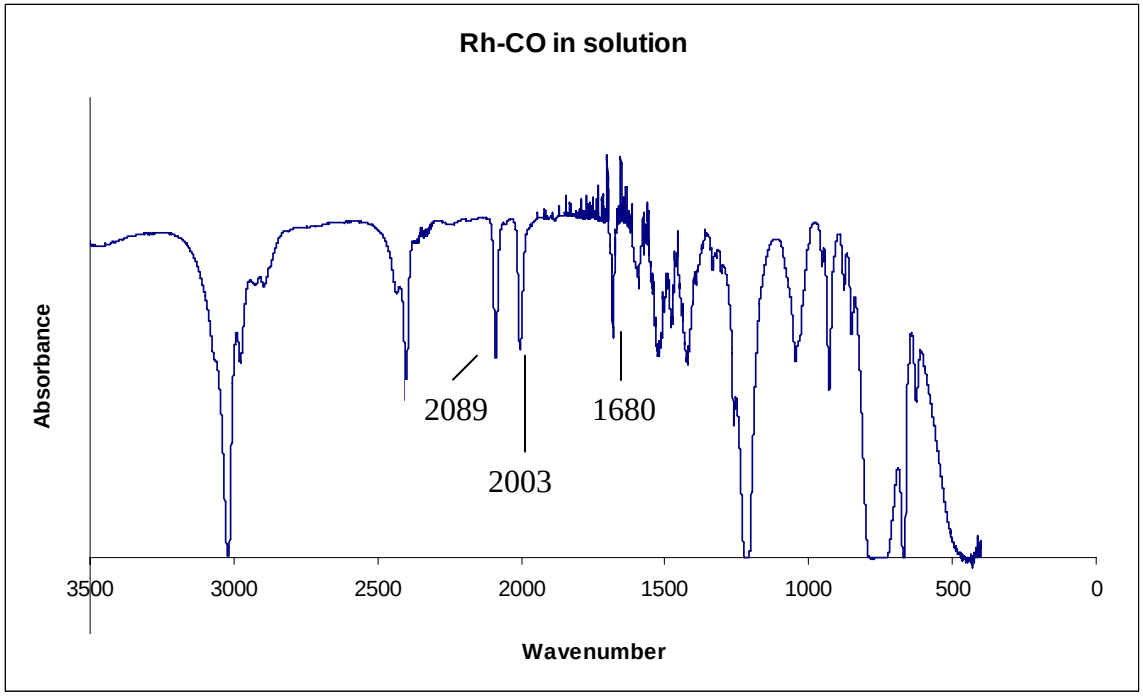

O
Mes
N
Ag
Cl
N
O
Mes

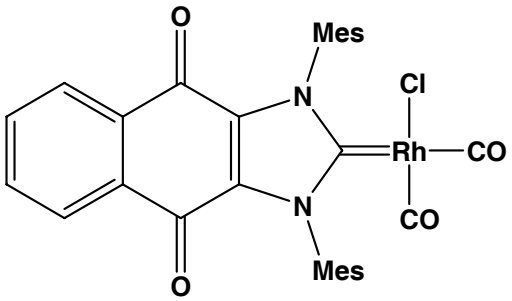

Azolium in Solution
absorbance
1690
3500
3000
2500
2000
1500
1000
500
wavenumber

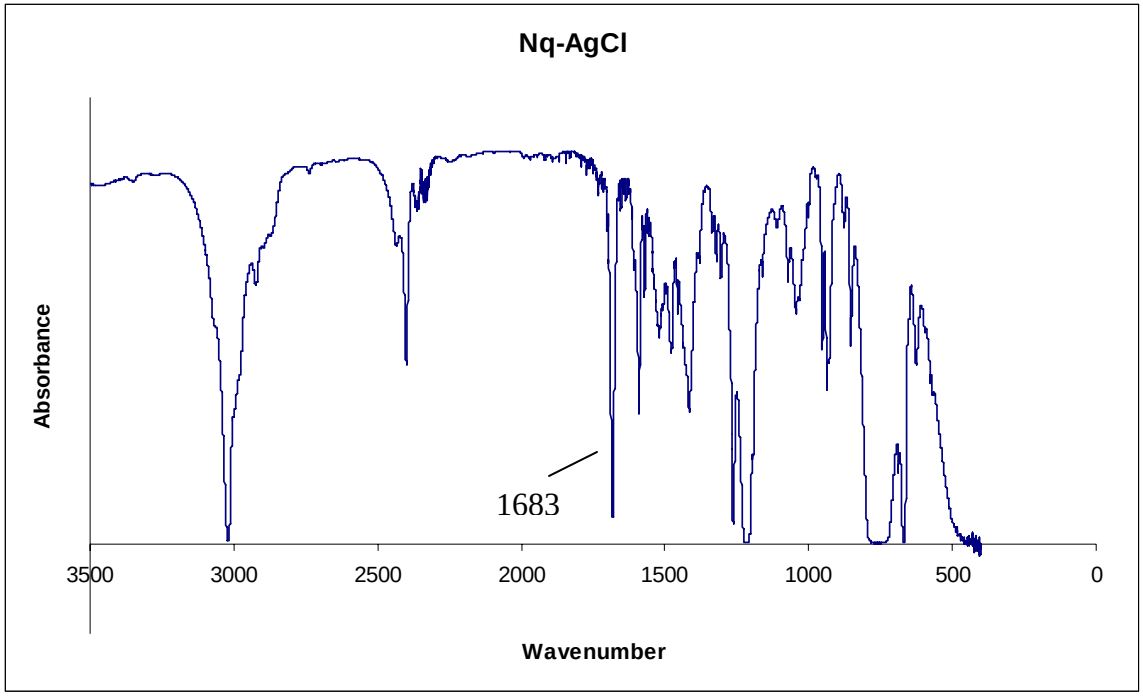

O
Mes
N
N
Cl
O
Mes

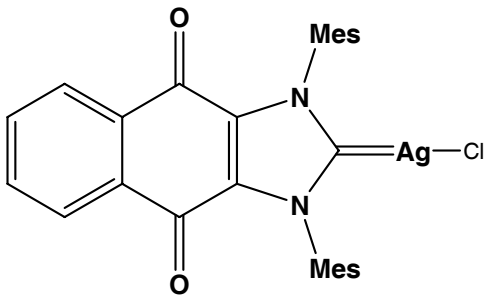

Rh-COD in Solution
Absorbance
1675
3500
3000
2500
2000
1500
1000
500
0
Wavenumber

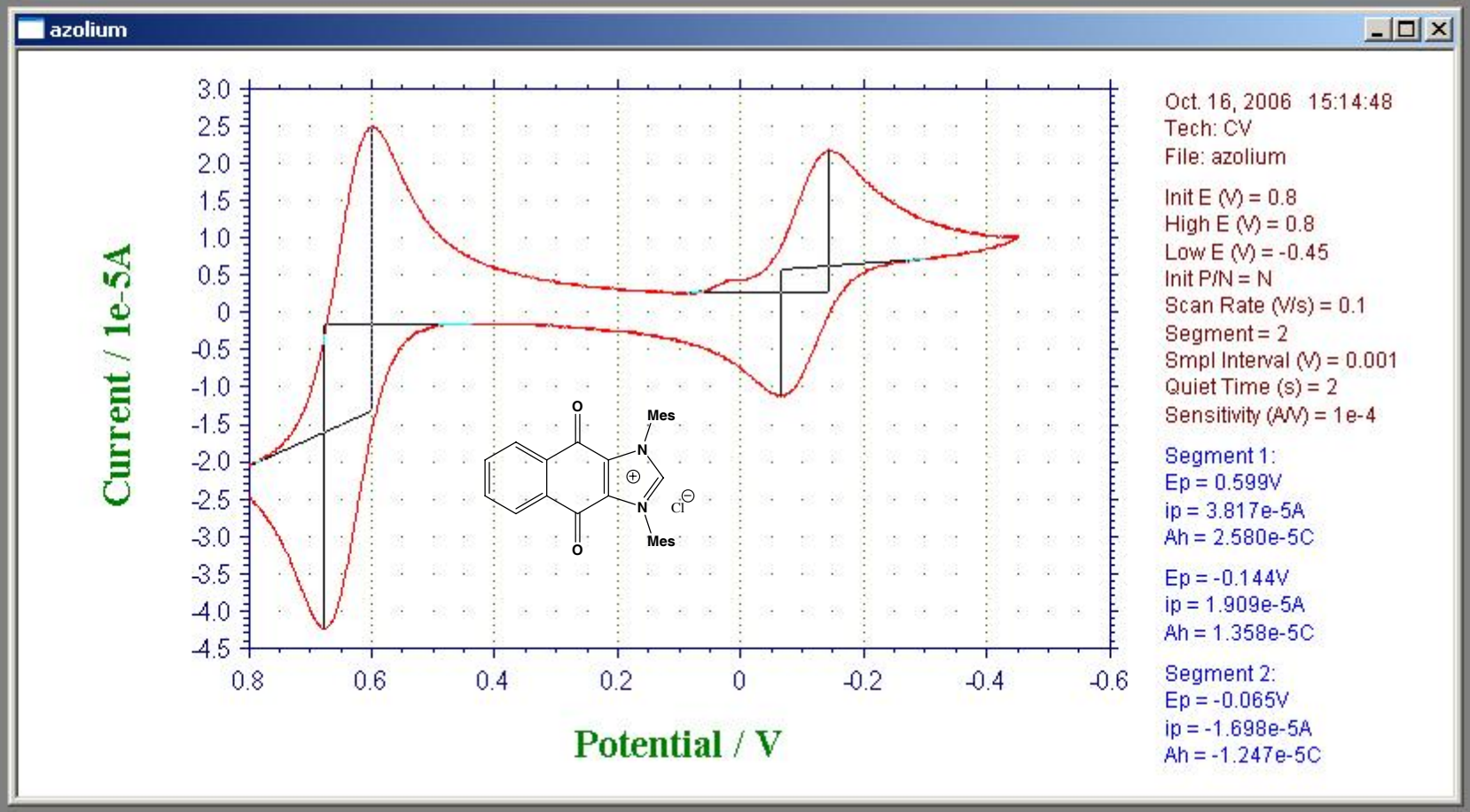

O
Mes
N
Cl
Rh
N
O
Mes

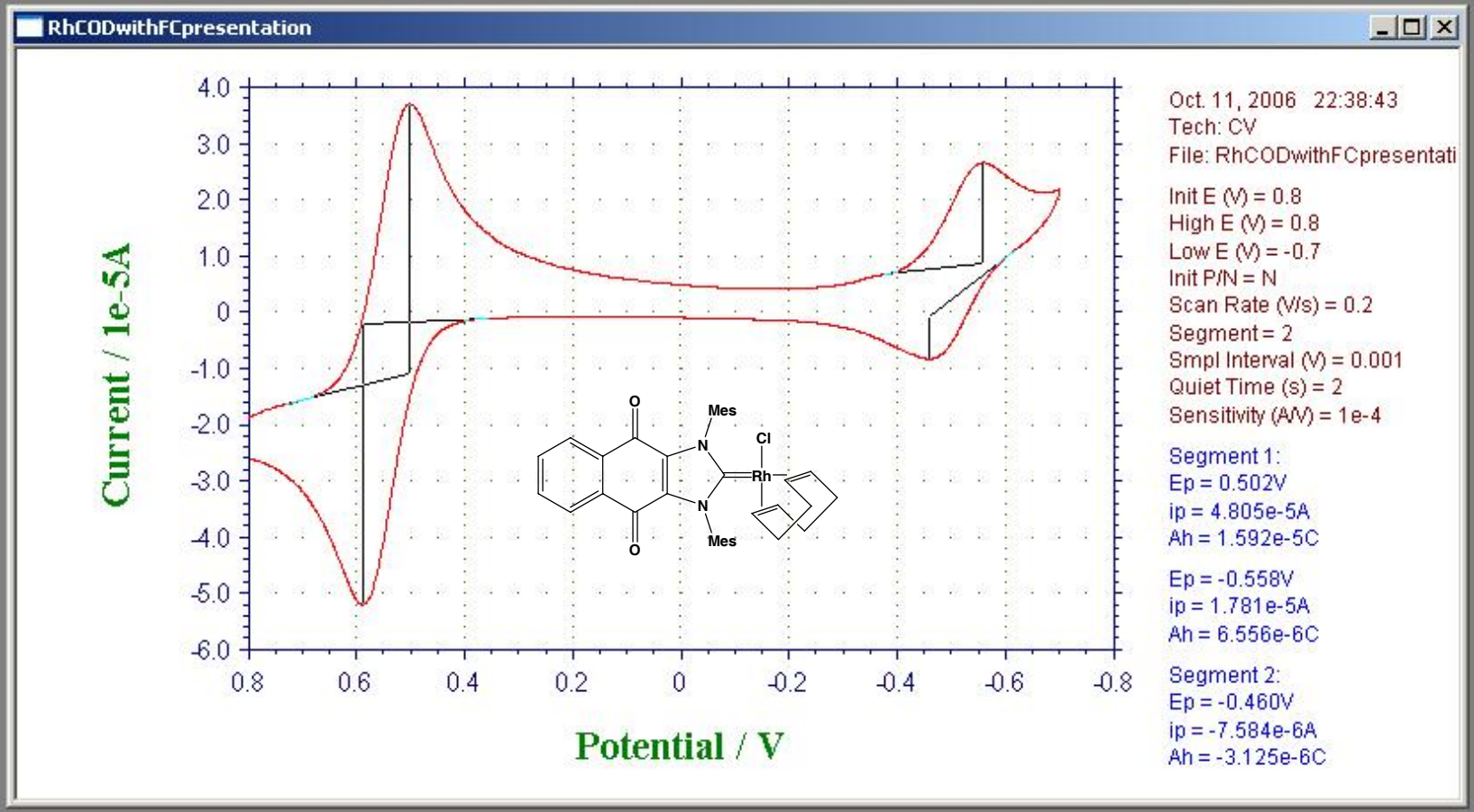

Rh-CO in solution
Absorbance
2089
2003
1680
3500
3000
2500
2000
1500
1000
500
0
Wavenumber

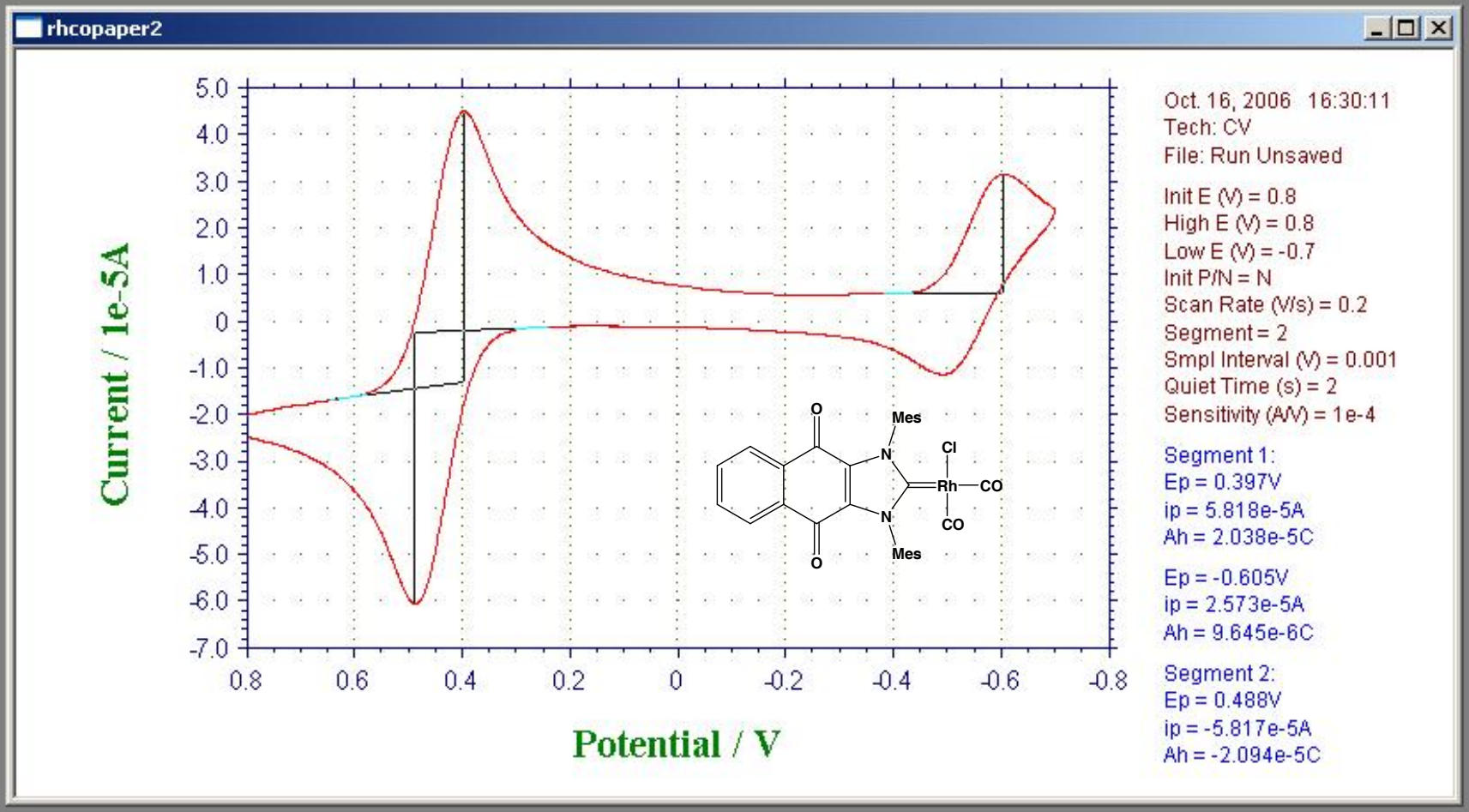

O
Mes
N
Cl
Rh
CO
N
CO
O
Mes

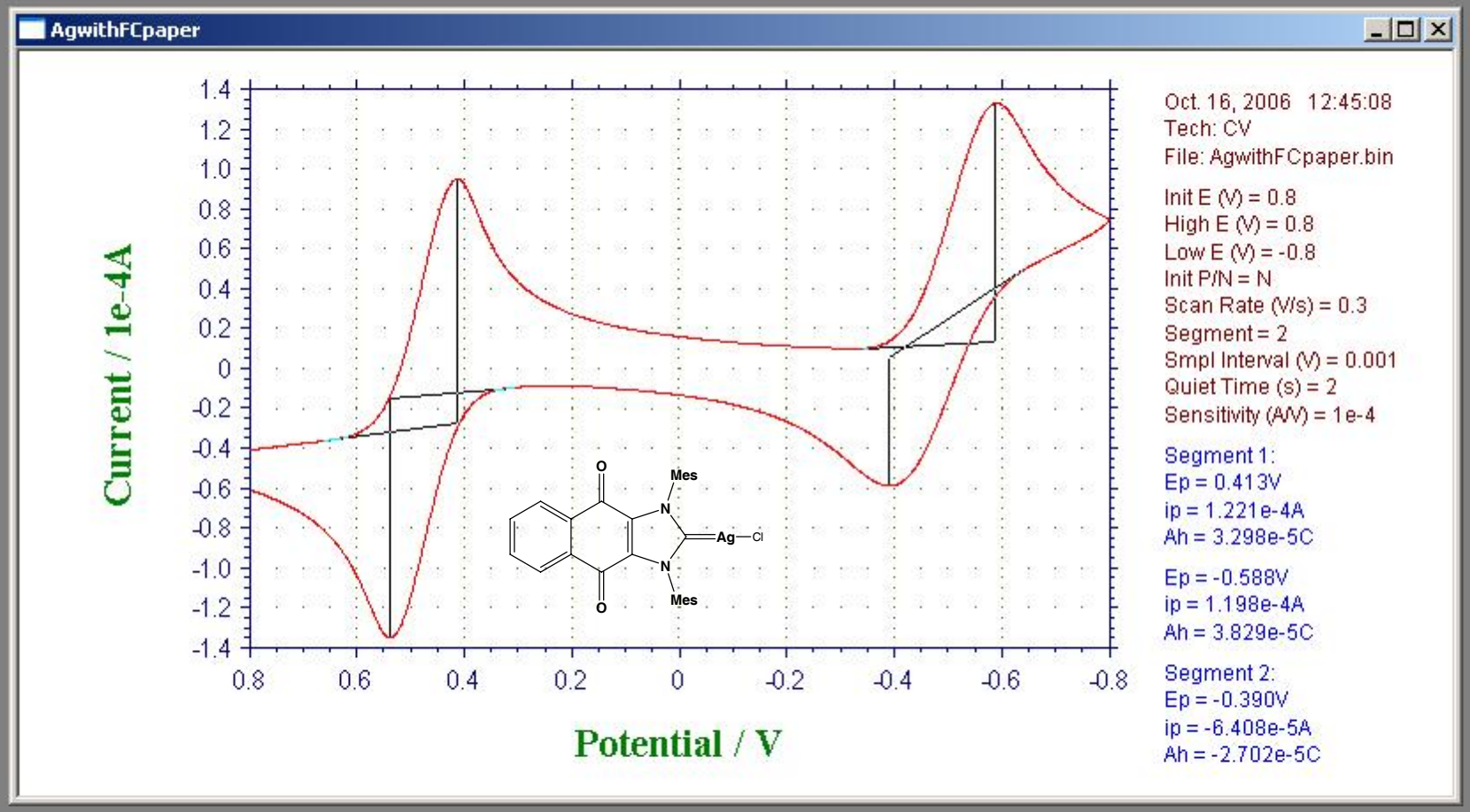

Nq-AgCl
Absorbance
1683
3500
3000
2500
2000
1500
1000
500
0
Wavenumber


O
Mes
N
Ag
Cl
N
O
Mes


azolium
Current / 1e-5A
Potential / V
3.0
2.5
2.0
1.5
1.0
0.5
0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
-3.5
-4.0
-4.5
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
O
Mes
N
N
Cl
Mes
O
Oct. 16, 2006 15:14:48
Tech: CV
File: azolium
Init E (V) = 0.8
High E (V) = 0.8
Low E (V) = -0.45
Init P/N = N
Scan Rate (V/s) = 0.1
Segment = 2
Smpl Interval (V) = 0.001
Quiet Time (s) = 2
Sensitivity (A/V) = 1e-4
Segment 1:
Ep = 0.599V
ip = 3.817e-5A
Ah = 2.580e-5C
Ep = -0.144V
ip = 1.909e-5A
Ah = 1.358e-5C
Segment 2:
Ep = -0.065V
ip = -1.698e-5A
Ah = -1.247e-5C


RhCODwithFCpresentation
Current / 1e-5A
Potential / V
4.0
3.0
2.0
1.0
0
-1.0
-2.0
-3.0
-4.0
-5.0
-6.0
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
O
Mes
N
Cl
Rh
N
Mes
O
Oct. 11, 2006 22:38:43
Tech: CV
File: RhCODwithFCpresentati
Init E (V) = 0.8
High E (V) = 0.8
Low E (V) = -0.7
Init P/N = N
Scan Rate (V/s) = 0.2
Segment = 2
Smpl Interval (V) = 0.001
Quiet Time (s) = 2
Sensitivity (A/V) = 1e-4
Segment 1:
Ep = 0.502V
ip = 4.805e-5A
Ah = 1.592e-5C
Ep = -0.558V
ip = 1.781e-5A
Ah = 6.556e-6C
Segment 2:
Ep = -0.460V
ip = -7.584e-6A
Ah = -3.125e-6C


rhcopaper2
Current / 1e-5A
Potential / V
5.0
4.0
3.0
2.0
1.0
0
-1.0
-2.0
-3.0
-4.0
-5.0
-6.0
-7.0
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
O
Mes
N
Cl
Rh
CO
CO
N
O
Mes
Oct. 16, 2006 16:30:11
Tech: CV
File: Run Unsaved
Init E (V) = 0.8
High E (V) = 0.8
Low E (V) = -0.7
Init P/N = N
Scan Rate (V/s) = 0.2
Segment = 2
Smpl Interval (V) = 0.001
Quiet Time (s) = 2
Sensitivity (A/V) = 1e-4
Segment 1:
Ep = 0.397V
ip = 5.818e-5A
Ah = 2.038e-5C
Ep = -0.605V
ip = 2.573e-5A
Ah = 9.645e-6C
Segment 2:
Ep = 0.488V
ip = -5.817e-5A
Ah = -2.094e-5C


AgwithFCpaper
Current / 1e-4A
Potential / V
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1.0
-1.2
-1.4
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
O
Mes
N
Ag—Cl
N
Mes
O
Oct. 16, 2006 12:45:08
Tech: CV
File: AgwithFCpaper.bin
Init E (V) = 0.8
High E (V) = 0.8
Low E (V) = -0.8
Init P/N = N
Scan Rate (V/s) = 0.3
Segment = 2
Smpl Interval (V) = 0.001
Quiet Time (s) = 2
Sensitivity (A/V) = 1e-4
Segment 1:
Ep = 0.413V
ip = 1.221e-4A
Ah = 3.298e-5C
Ep = -0.588V
ip = 1.198e-4A
Ah = 3.829e-5C
Segment 2:
Ep = -0.390V
ip = -6.408e-5A
Ah = -2.702e-5C