Supporting Information

for

Synthesis, spectral characterization, electron microscopic study and thermogravimetric analysis of a phosphorus containing dendrimer with diphenylsilanediol as core unit

E. Dadapeer[1], B. Hari Babu[2], C. Suresh Reddy[1] and Naga Raju Charmathi*[1]

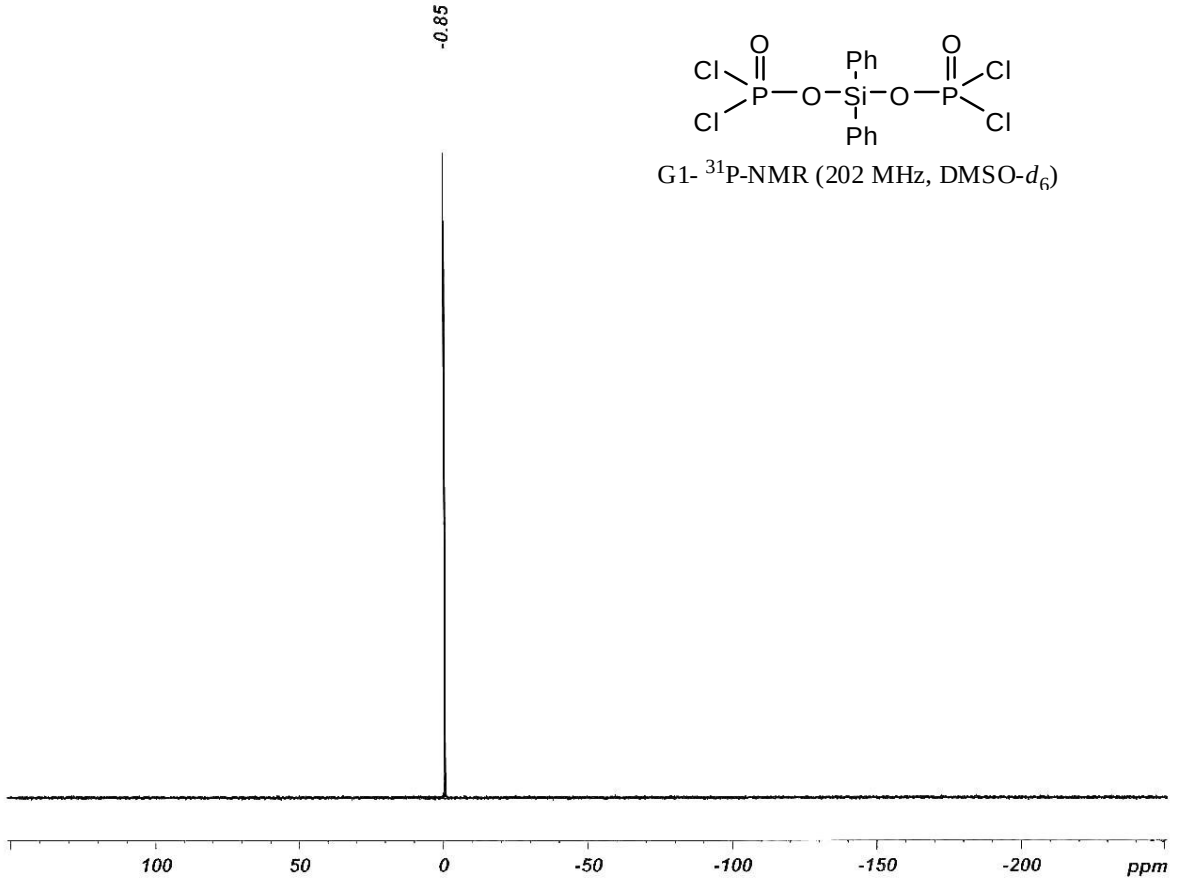
[1]Department of Chemistry, Sri Venkateswara University, Tirupati, Andhra Pradesh, India -517 502 and [2]Department of Chemistry, National Cheng Kung University, Tainan -701, Taiwan

Email: Naga Raju Charmathi - rajuchamarthi10@gmail.com

*Corresponding author

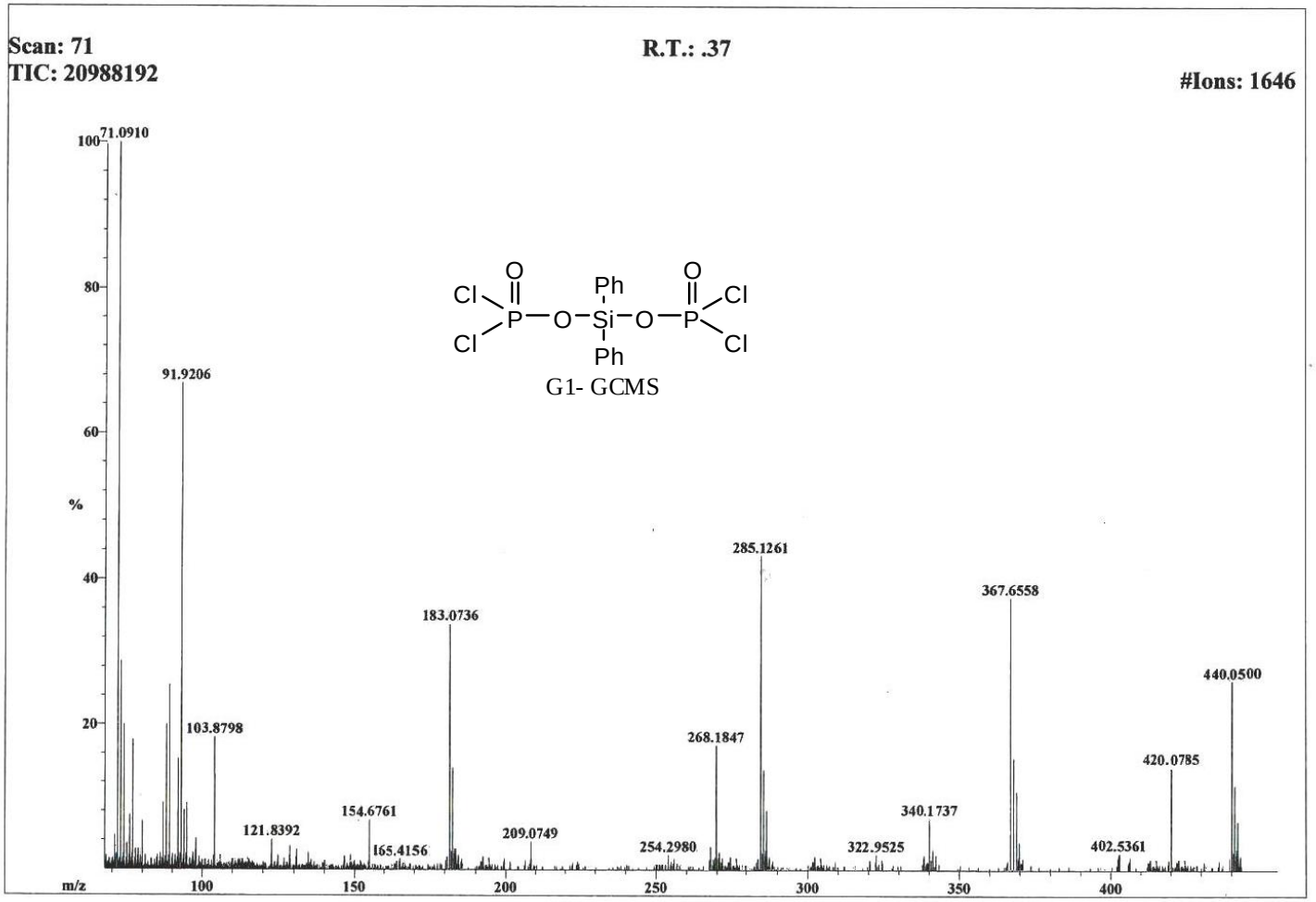
Spectral details

G_1 Spectra



G1- ^{31}P-NMR (202 MHz, DMSO-d_6)

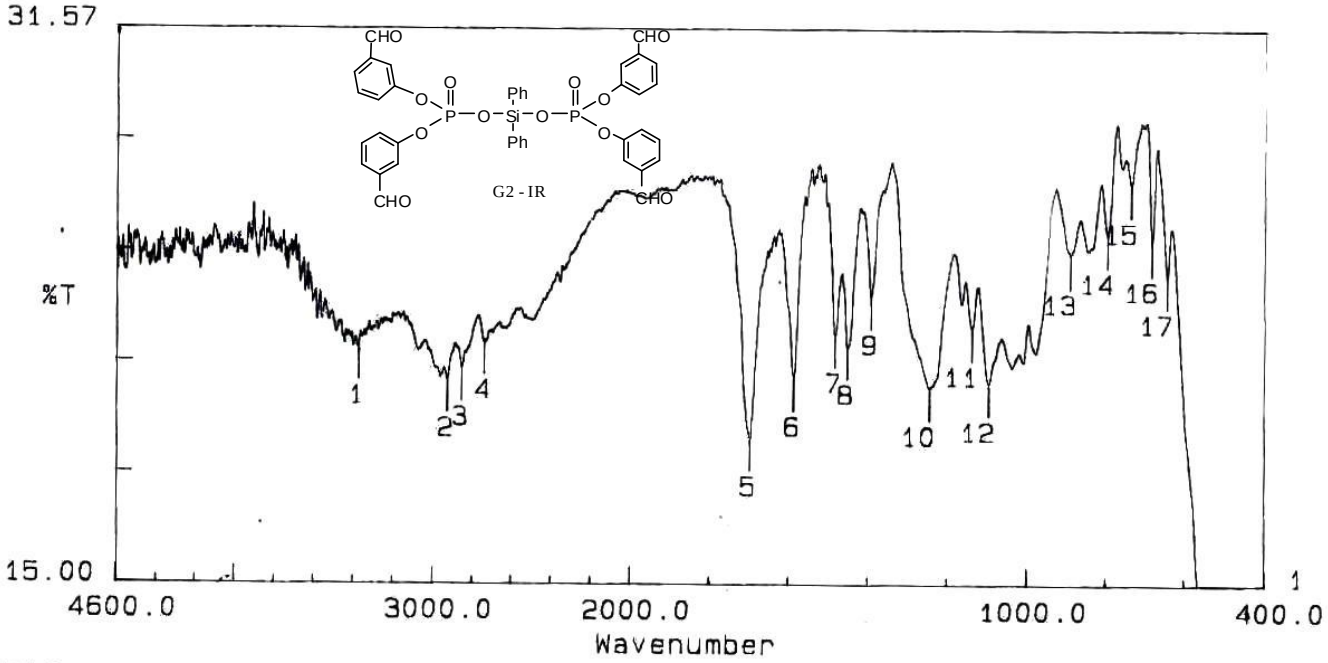
G_1 ^{31}P-NMR Spectrum



G1- GCMS

G_1 GCMS

G_2 Spectra



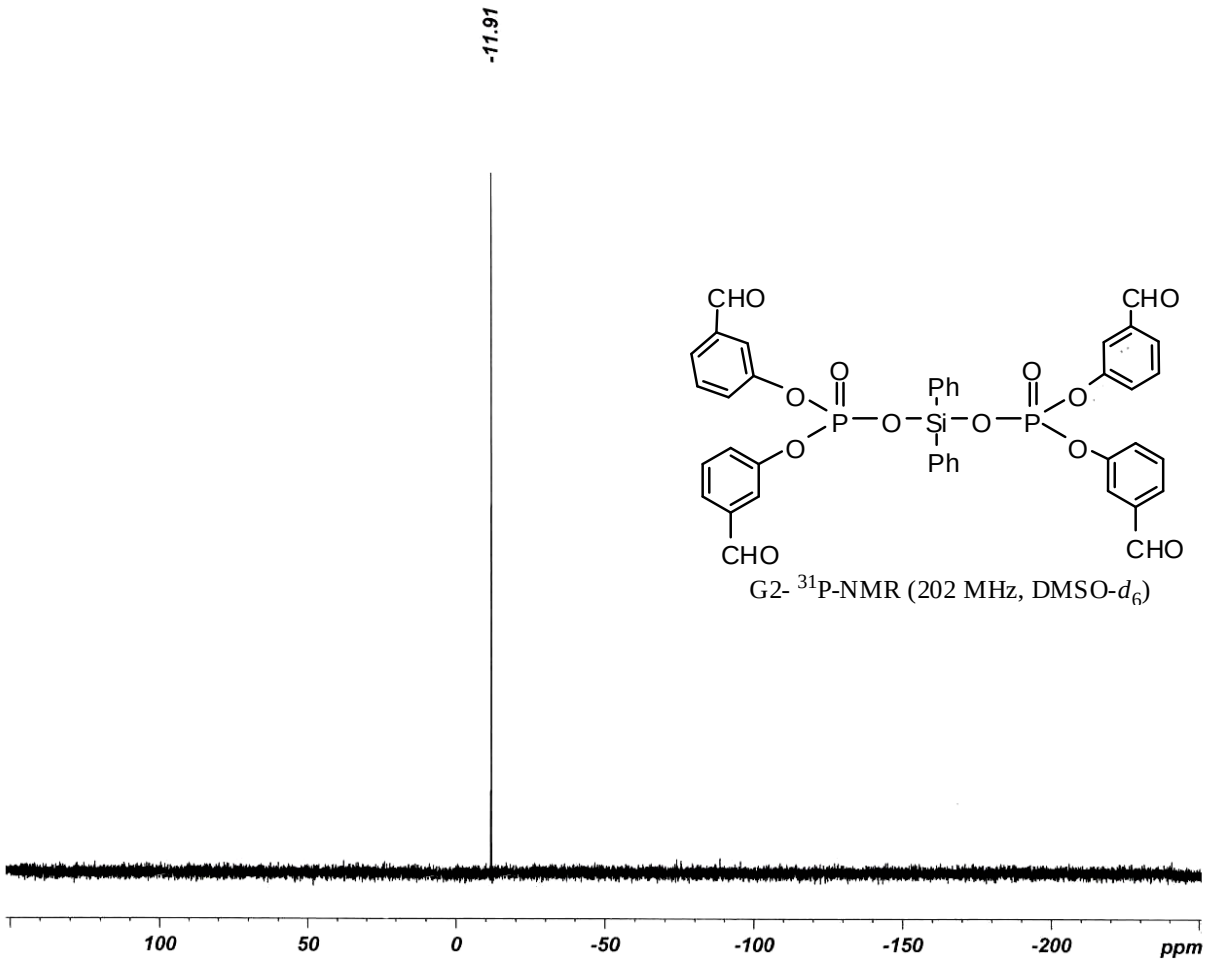
Condition

upper 31.56 lower 15.00 depth 1.00

Peak table

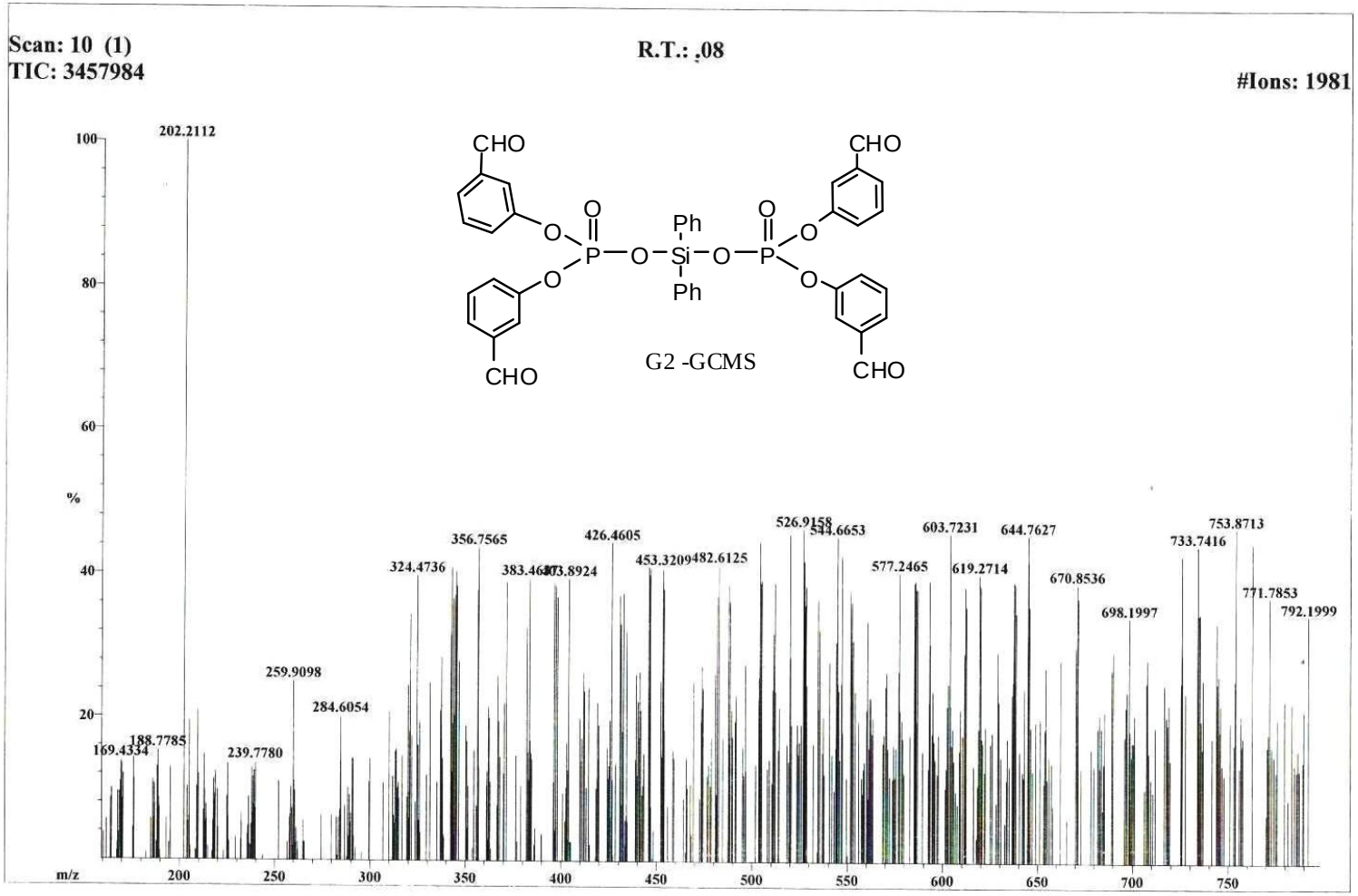
1:	3373.80 (22.1)	2:	2924.35 (21.1)	3:	2851.05 (21.4)	4:	2737.24 (22.2)
5:	1697.51 (19.4)	6:	1587.56 (21.2)	7:	1483.39 (22.5)	8:	1452.53 (22.1)
9:	1392.73 (23.6)	10:	1244.20 (20.9)	11:	1183.10 (22.7)	12:	1095.67 (21.0)
13:	981.19 (24.9)	14:	796.67 (25.5)	15:	736.87 (27.0)	16:	682.86 (25.2)
17:	644.28 (24.3)						

G_2 IR Spectrum



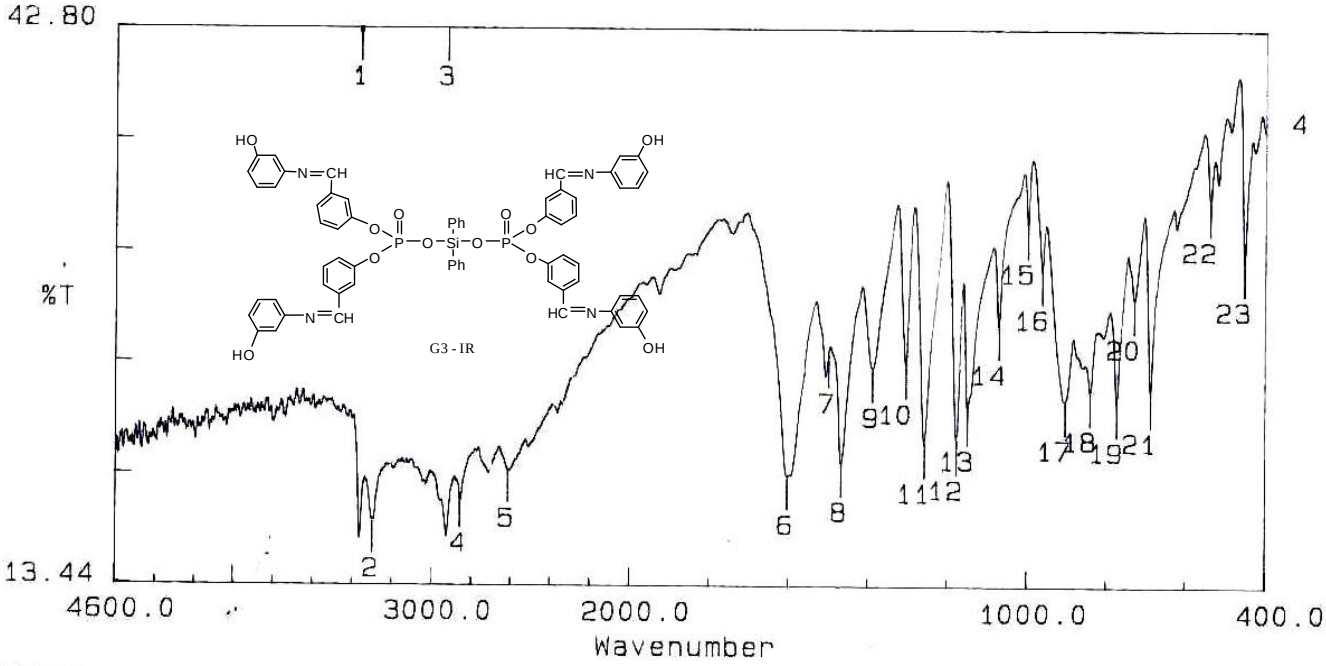
G2- ^{31}P-NMR (202 MHz, DMSO-d_6)

G_2 ^{31}P-NMR Spectrum


Scan: 10 (1)
TIC: 3457984
R.T.: ,08
#Ions: 1981
CHO
CHO
CHO
CHO
O
O
O
O
O
O
P
P
Si
Ph
Ph
G2 -GCMS
100
80
60
40
20
%
m/z
202.2112
169.4334
188.7785
239.7780
259.9098
284.6054
324.4736
356.7565
383.4683
426.4605
453.3209
482.6125
526.9158
544.6653
577.2465
603.7231
619.2714
644.7627
670.8536
698.1997
733.7416
753.8713
771.7853
792.1999
200
250
300
350
400
450
500
550
600
650
700
750

G_2 GCMS

G_3 Spectra



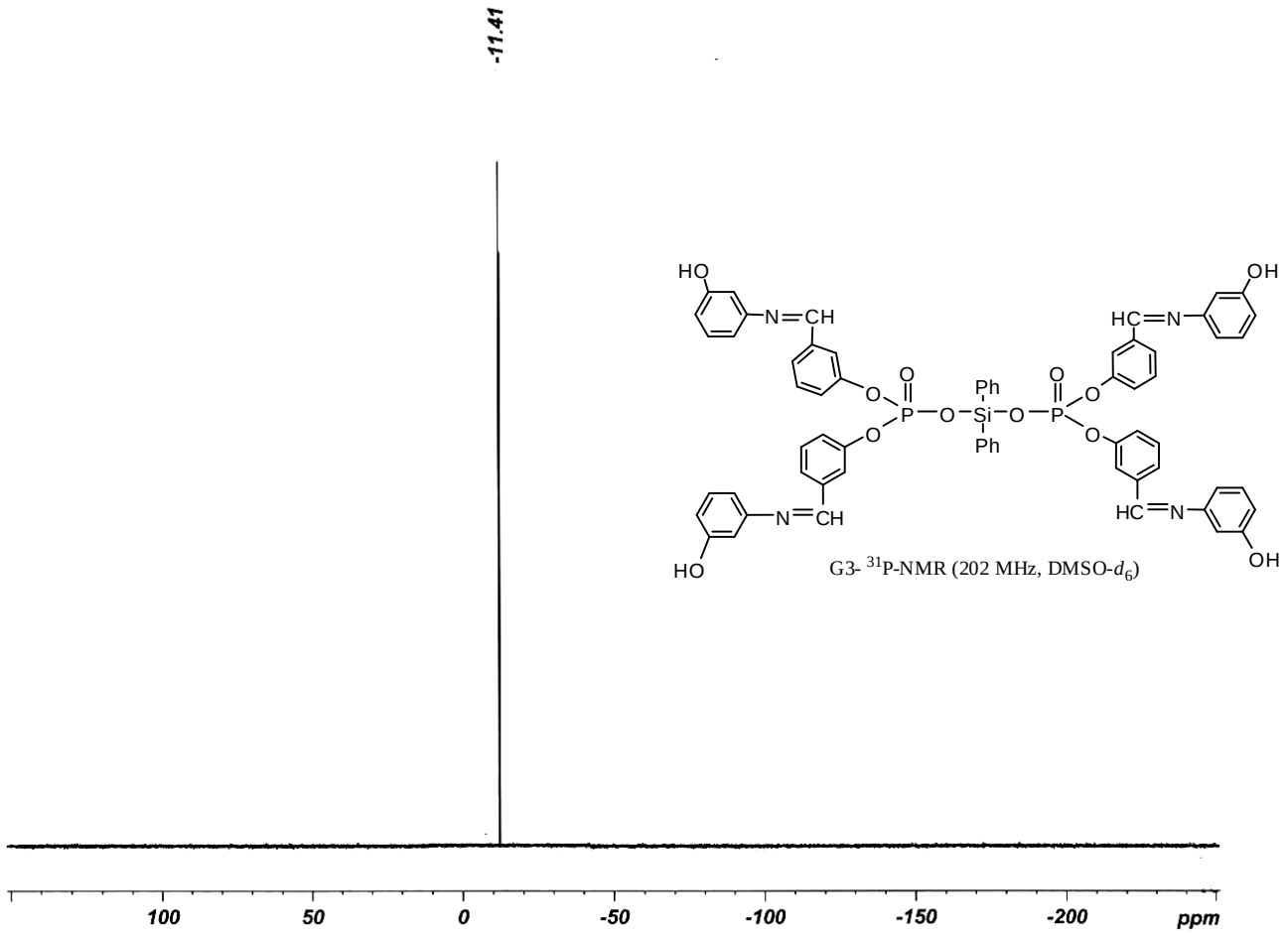
Condition

upper 42.80 lower 13.43 depth 2.00

Peak table

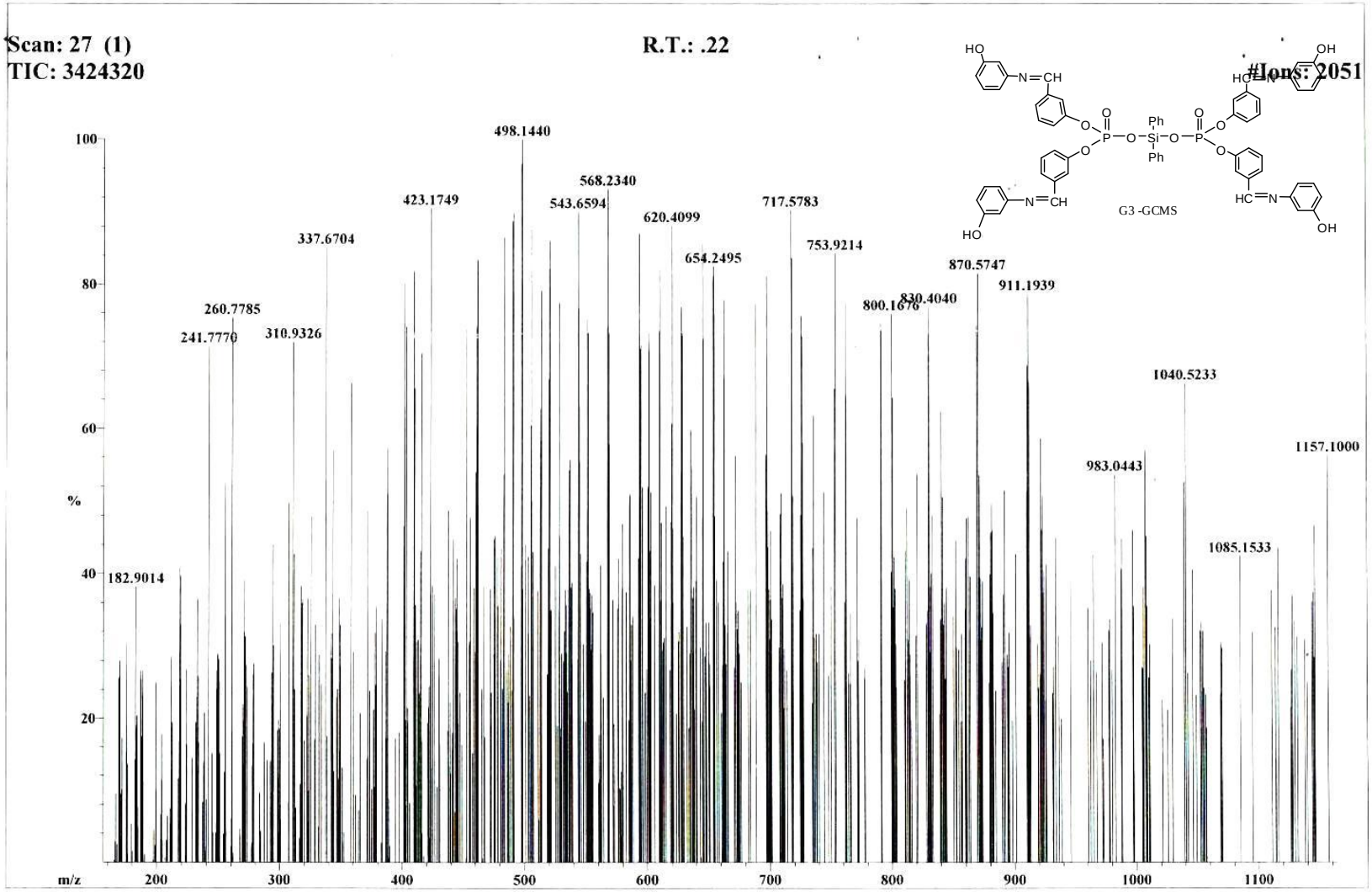
1:	3362.23 (15.9)	2:	3296.64 (16.9)	3:	2924.35 (16.0)	4:	2858.76 (18.3)
5:	2613.78 (19.6)	6:	1602.99 (19.2)	7:	1498.82 (25.7)	8:	1467.96 (20.0)
9:	1388.87 (25.0)	10:	1304.00 (25.1)	11:	1257.70 (21.0)	12:	1176.68 (21.1)
13:	1149.68 (22.7)	14.	1070.59 (27.2)	15:	999.22 (32.5)	16:	962.57 (30.1)
17:	904.70 (23.2)	18:	841.04 (23.7)	19:	773.52 (23.1)	20:	729.16 (28.6)
21:	686.72 (23.6)	22:	538.19 (33.8)	23:	453.31 (30.6)		

G_3 IR Spectrum



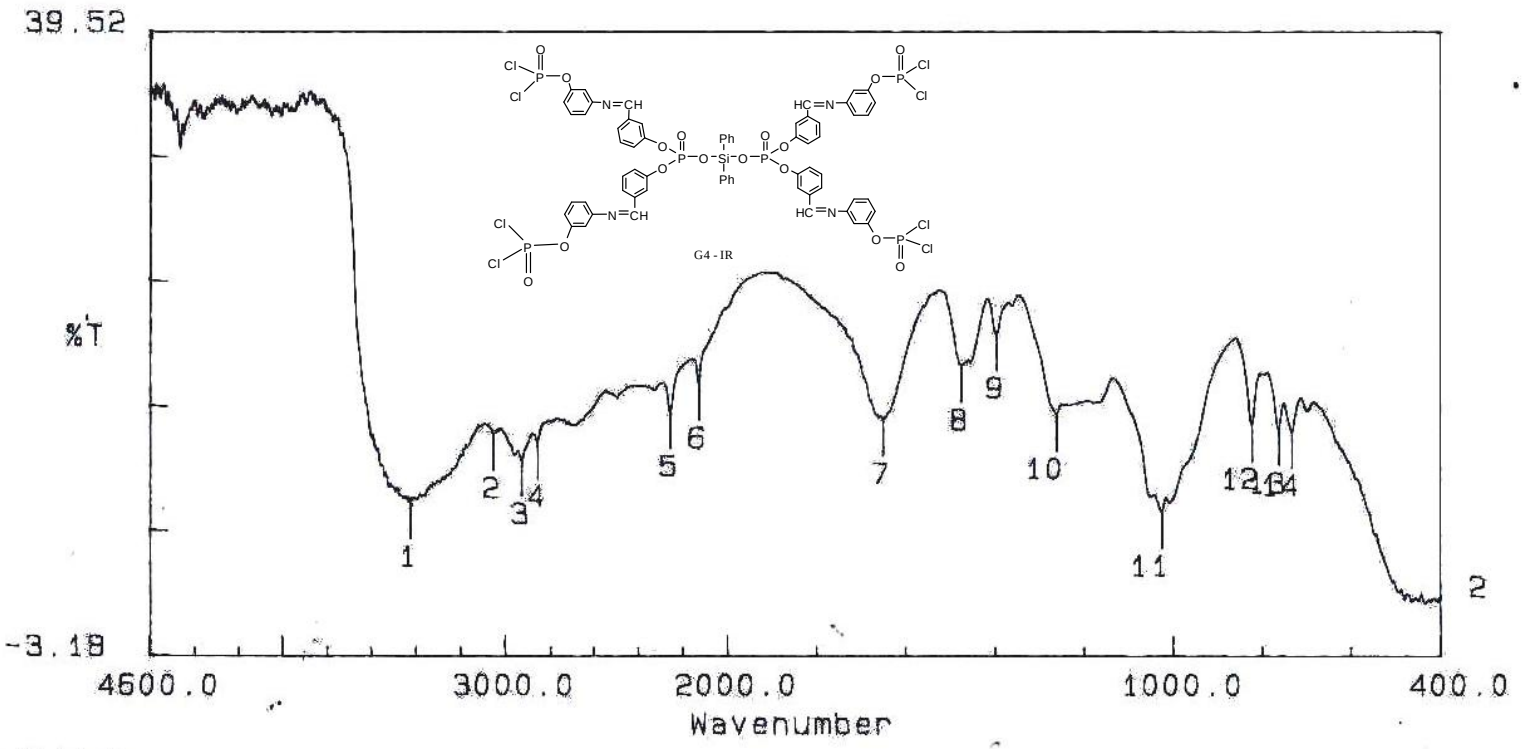
G3- ^{31}P-NMR (202 MHz, DMSO-d_6)

G_3 ^{31}P-NMR Spectrum


Scan: 27 (1)
TIC: 3424320
R.T.: .22
#Ions: 2051
G3 -GCMS
498.1440
568.2340
543.6594
423.1749
620.4099
717.5783
337.6704
753.9214
654.2495
870.5747
911.1939
830.4040
800.1676
260.7785
241.7770
310.9326
1040.5233
1157.1000
983.0443
1085.1533
182.9014
100
80
60
40
20
%
m/z
200
300
400
500
600
700
800
900
1000
1100

G_3 GCMS

G_4 Spectra

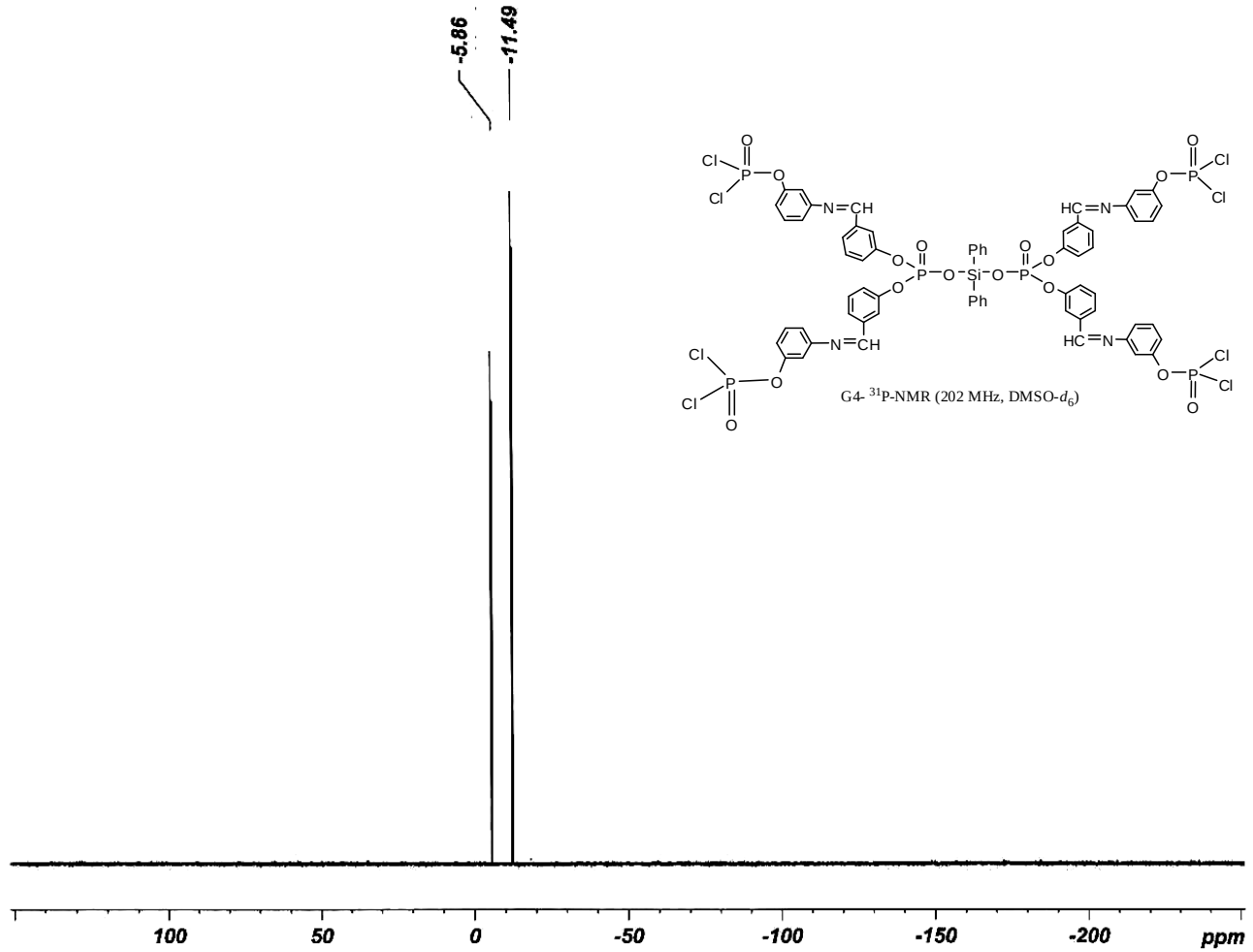


Condition
upper 39.51 lower -3.18 depth 1.00

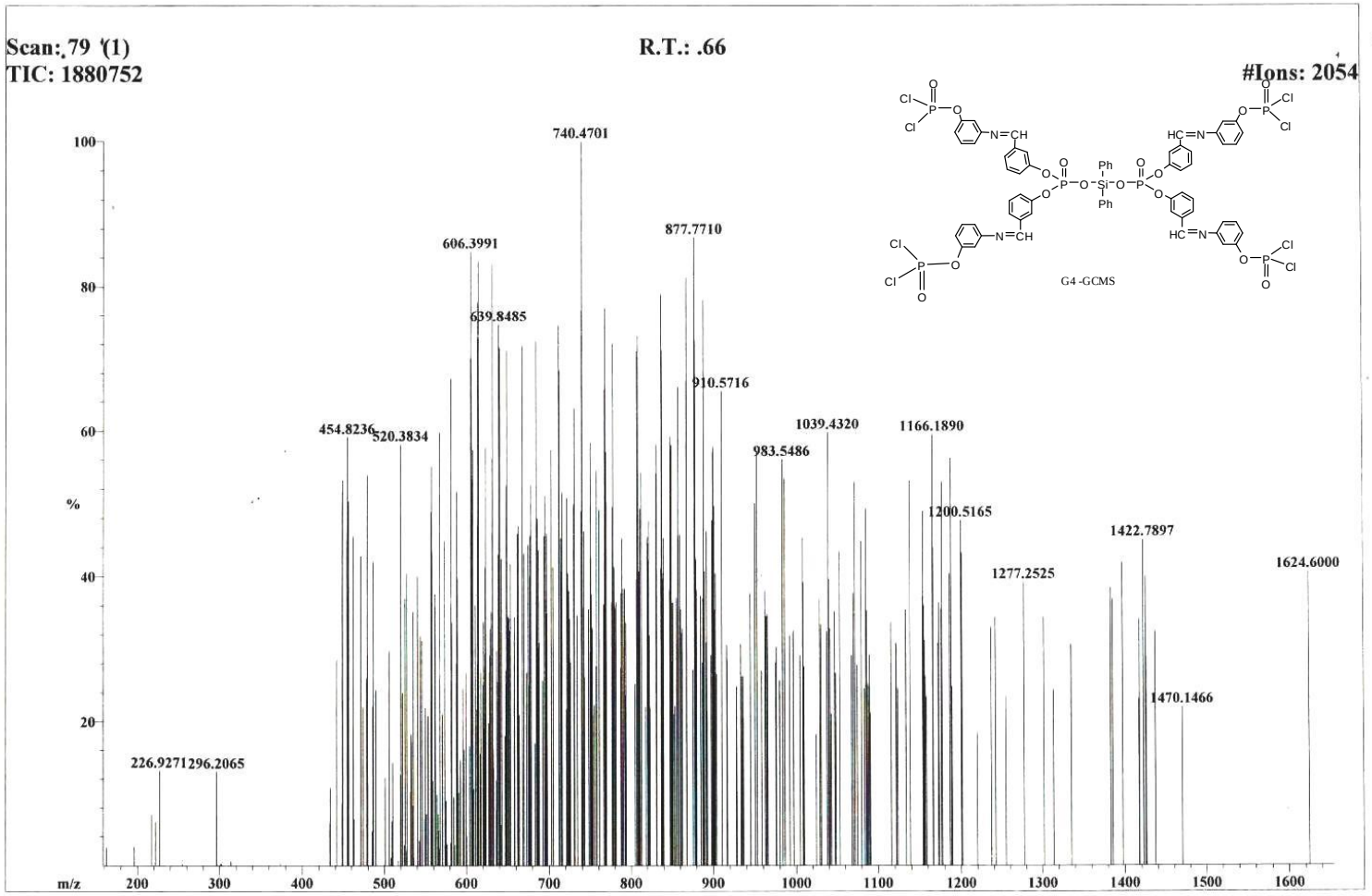
Peak table

1:	3427.81 (7.4)	2:	3053.59 (12.0)	3:	2926.28 (10.3)	4:	2854.90 (11.5)
5:	2254.99 (13.5)	6:	2127.68 (15.5)	7:	1615.22 (13.0)	8:	1475.68 (16.7)
9:	1396.59 (19.0)	10:	1261.56 (13.4)	11:	1186.22 (6.7)	12:	960.68 (12.7)
13:	861.95 (12.4)	14:	733.02 (12.2)				

G_4 IR Spectrum

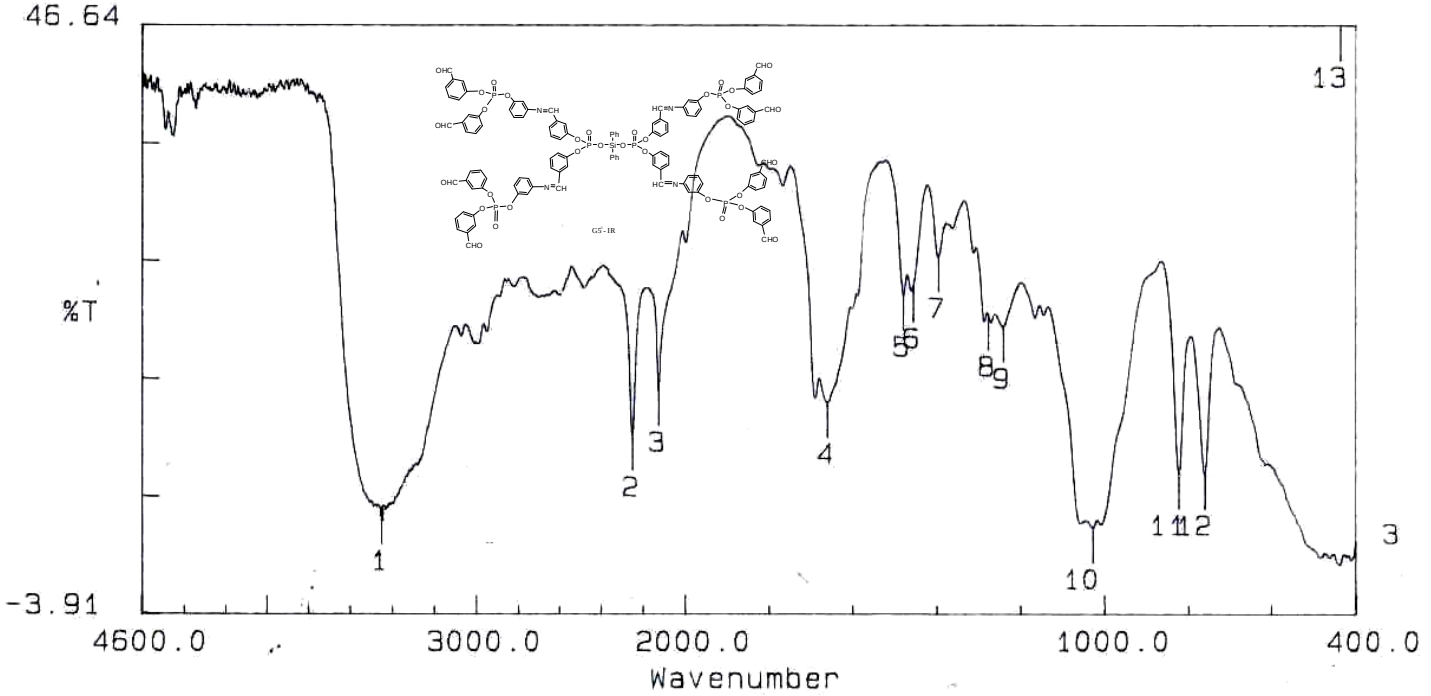


G_4 ^{31}P-NMR Spectrum


Scan: 79 (1)
TIC: 1880752
R.T.: .66
#Ions: 2054
G4 -GCMS
740.4701
877.7710
606.3991
639.8485
910.5716
454.8236
520.3834
1039.4320
1166.1890
983.5486
1200.5165
1422.7897
1624.6000
1277.2525
1470.1466
226.9271
296.2065
%
m/z
100
80
60
40
20
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600

G_4 GCMS

G_5 Spectra

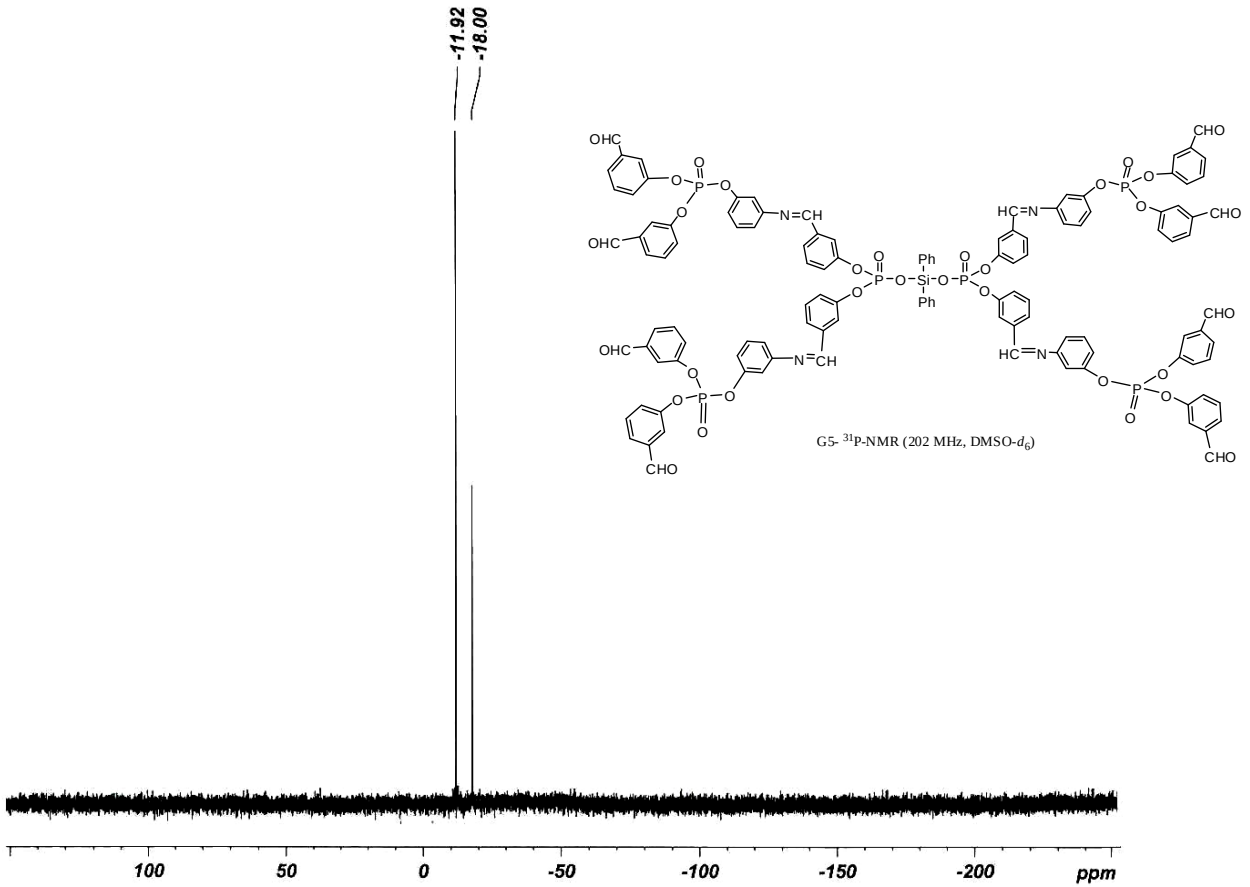


Condition
upper 46.63 lower -3.91 depth 2.00

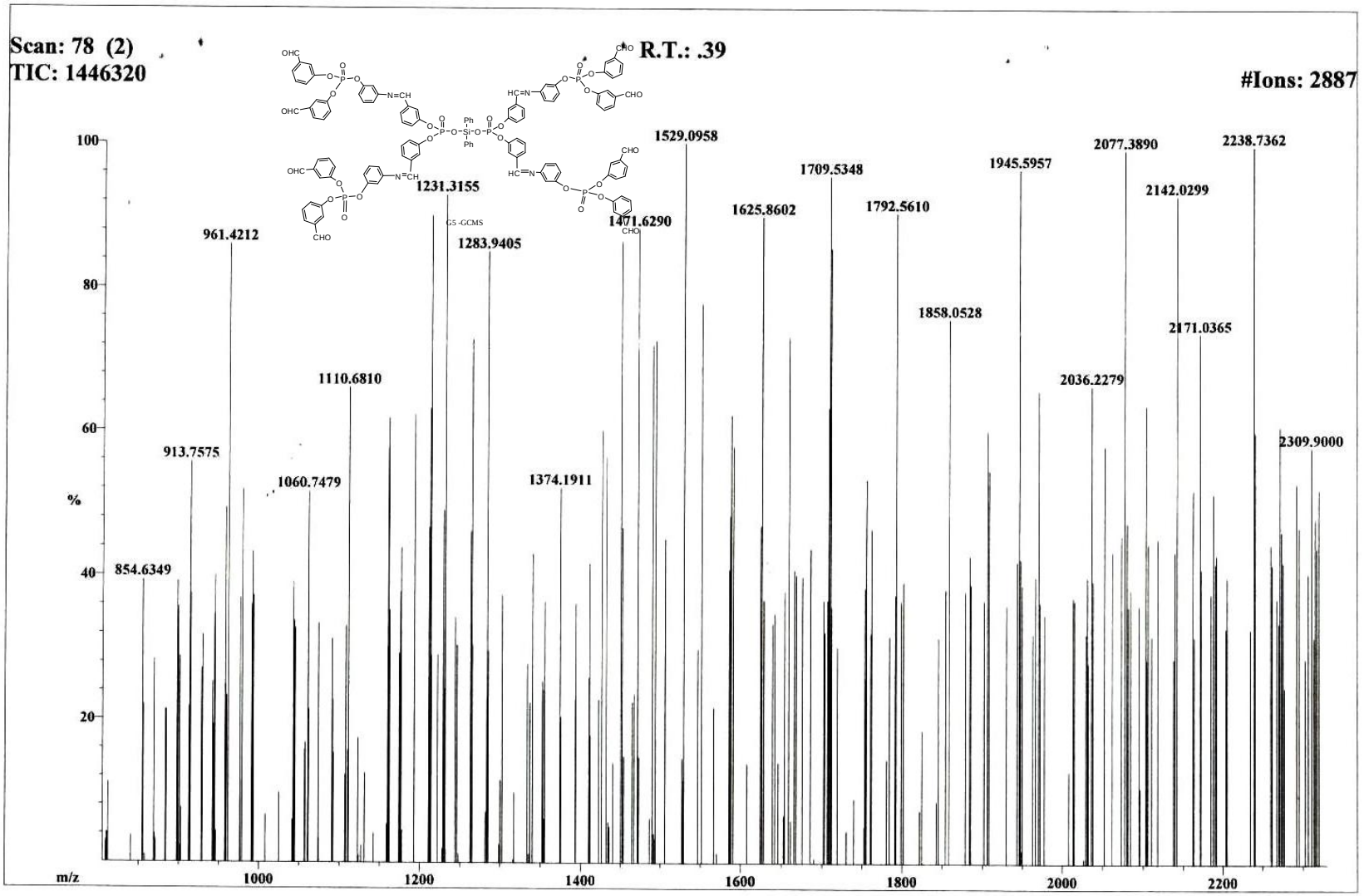
Peak table

1:	3452.89 (5.1)	2:	2251.13 (11.5)	3:	2125.75 (15.3)	4:	1660.86 (14.3)
5:	1620.53 (23.5)	6:	1456.39 (24.2)	7:	1396.59 (26.8)	8:	1277.00 (21.8)
9:	1202.27 (20.8)	10:	1028.15 (3.5)	11:	923.68 (8.2)	12:	860.02 (8.1)
13:	537.88 (0.3)						

G_5 IR Spectrum

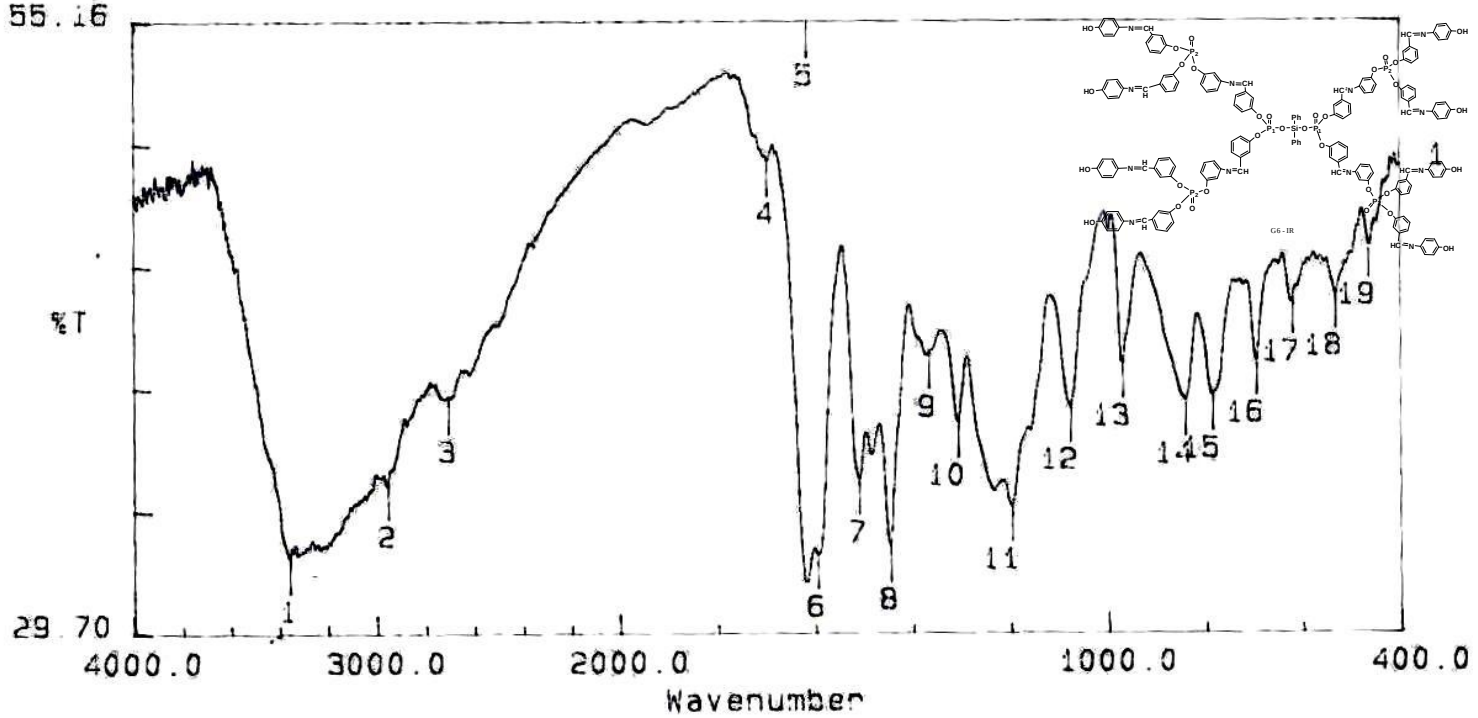


G_5 ^{31}P-NMR Spectrum


Scan: 78 (2)
TIC: 1446320
R.T.: .39
#Ions: 2887
G5 -GCMS
961.4212
1231.3155
1283.9405
1471.6290
1529.0958
1625.8602
1709.5348
1792.5610
1858.0528
1945.5957
2077.3890
2142.0299
2171.0365
2238.7362
2309.9000
2036.2279
1110.6810
913.7575
1060.7479
1374.1911
854.6349
100
80
60
40
20
%
m/z
1000
1200
1400
1600
1800
2000
2200

G_5 GCMS

G_6 Spectra



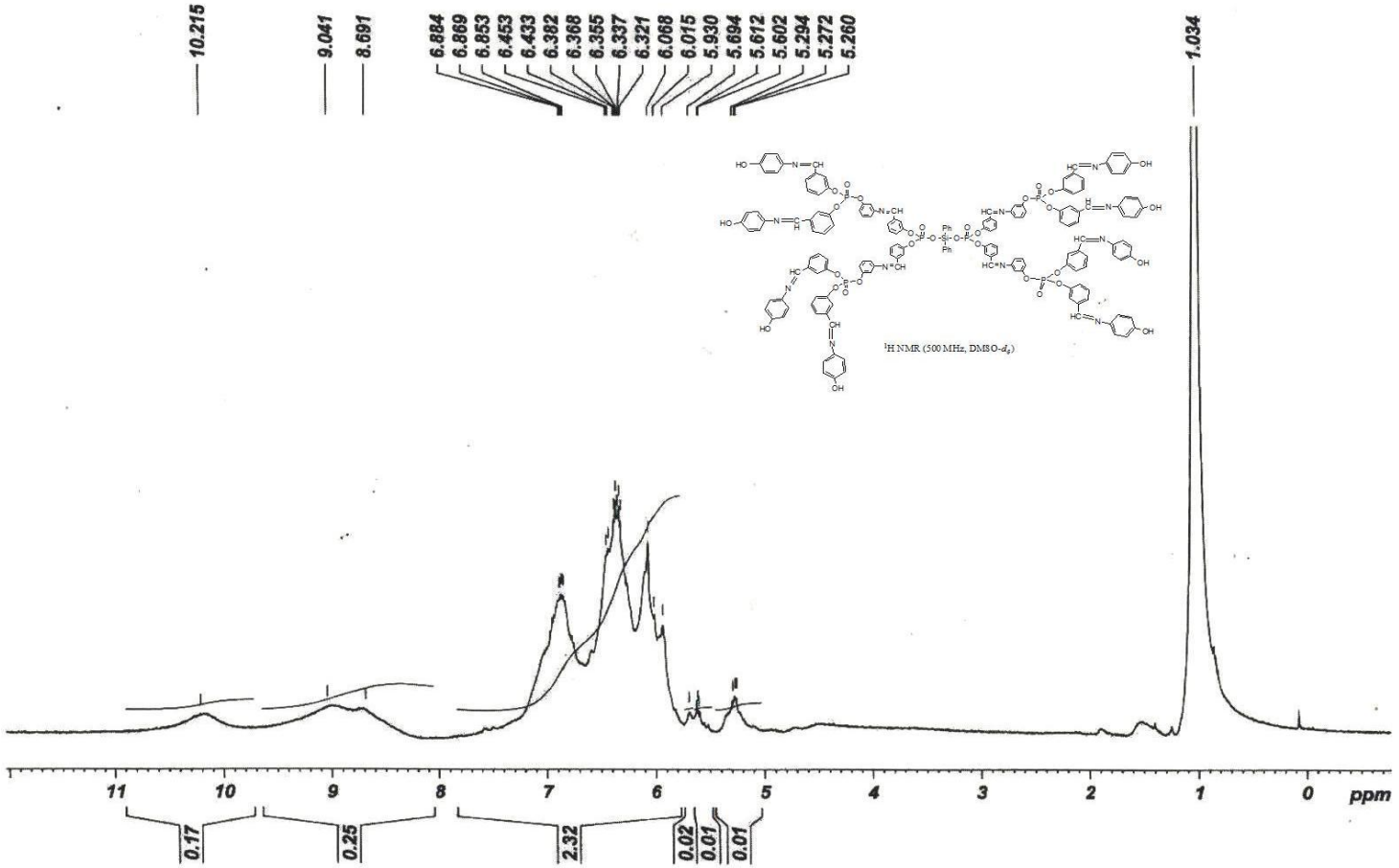
Condition

upper 55.16 lower 29.69 depth 2.00

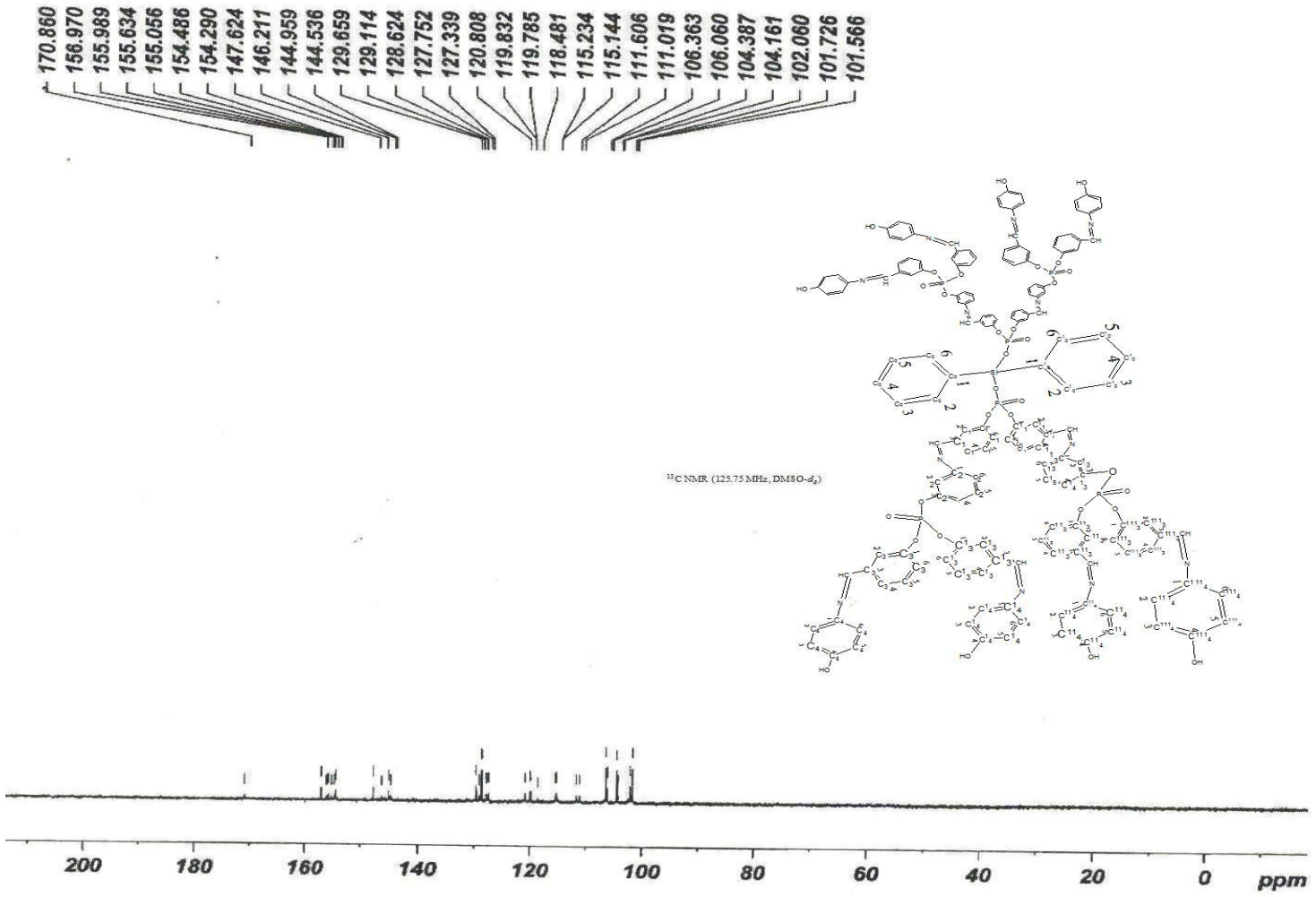
Peak table

1.	3360.30 (33.0)	2.	2953.28 (36.0)	3.	2706.37 (39.6)	4.	1699.44 (49.4)
5.	1616.49 (31.8)	6.	1597.20 (33.1)	7.	1510.40 (36.2)	8.	1446.74 (33.3)
9.	1367.65 (41.4)	10.	1307.85 (38.5)	11.	1197.90 (35.0)	12.	1078.31 (39.2)
13.	970.28 (41.0)	14.	842.97 (39.4)	15.	787.03 (39.6)	16.	696.37 (41.1)
17.	621.13 (43.6)	18.	534.33 (43.9)	19.	466.82 (46.0)		

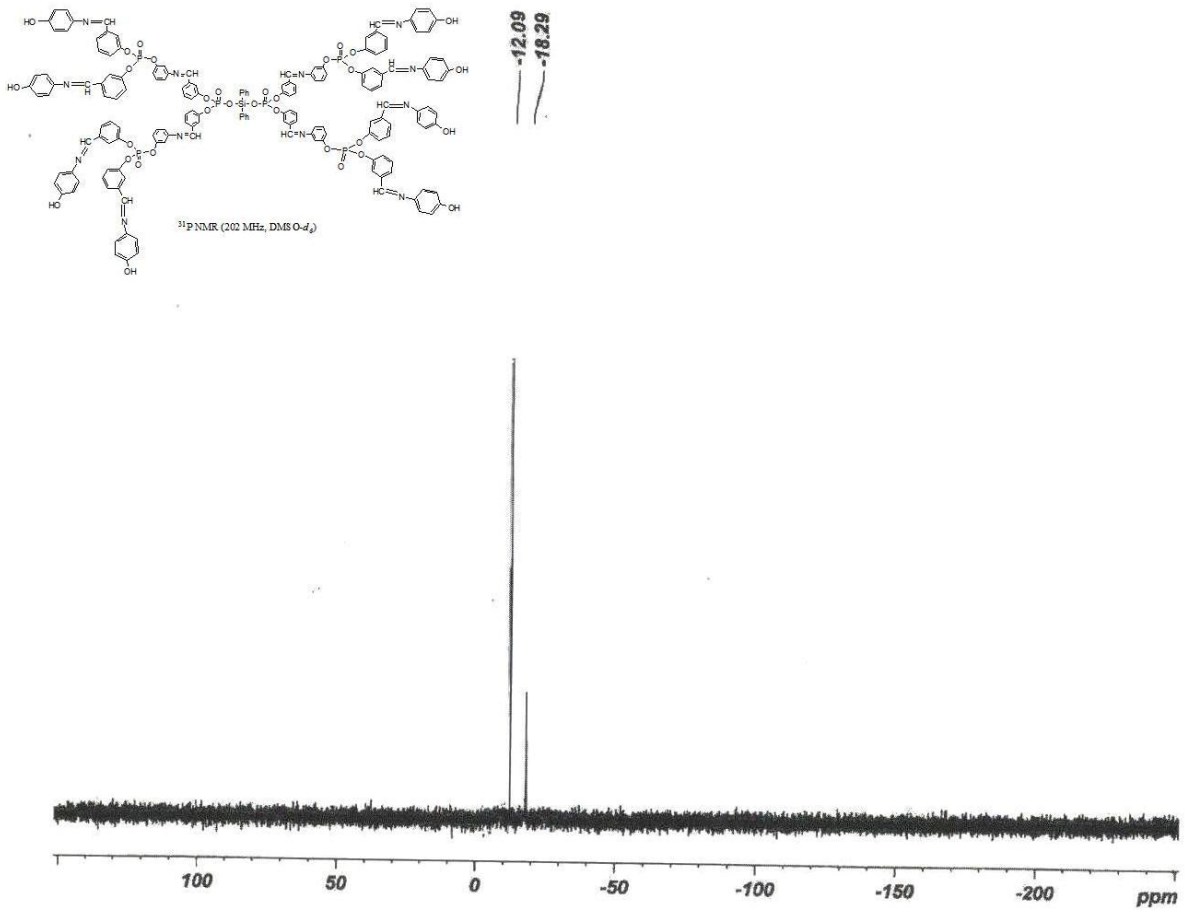
G_6 IR Spectrum



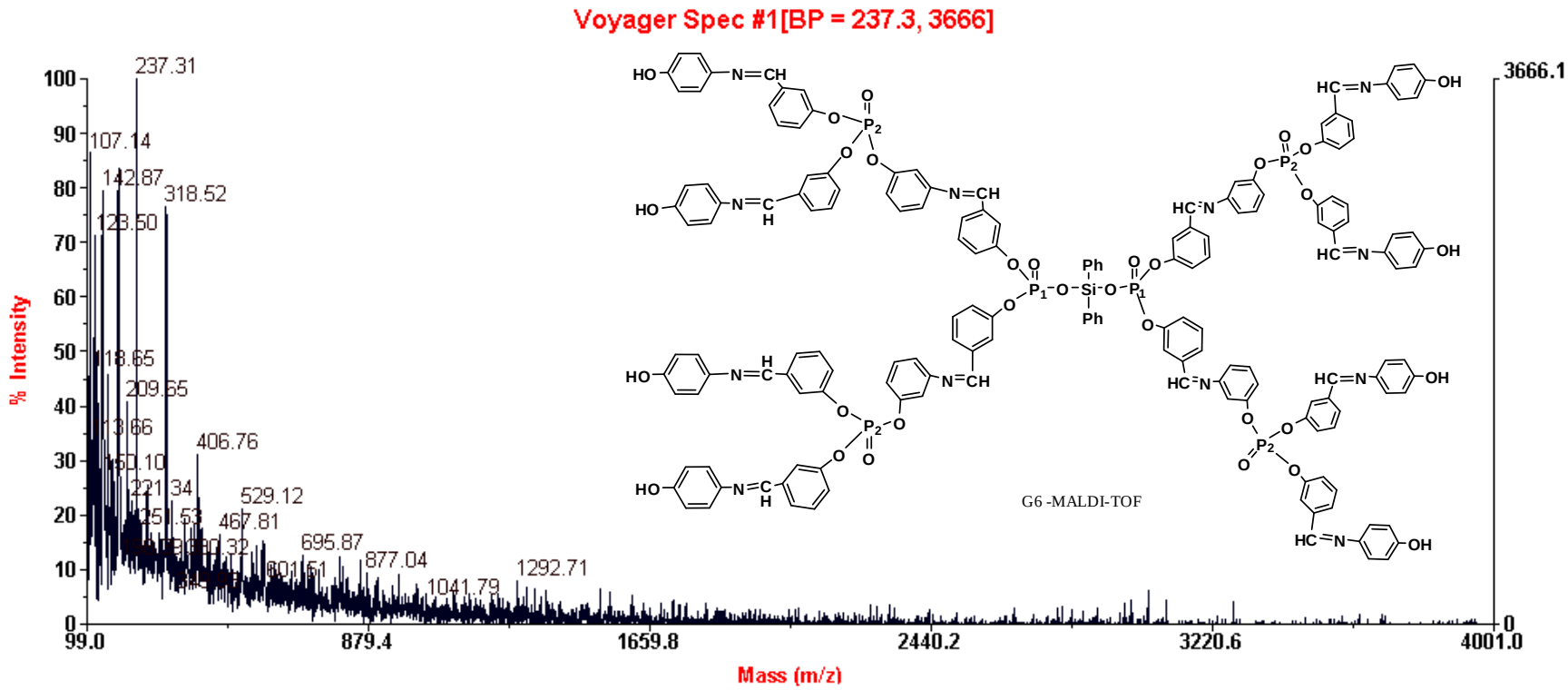
G_6 ^{1}H-NMR Spectrum



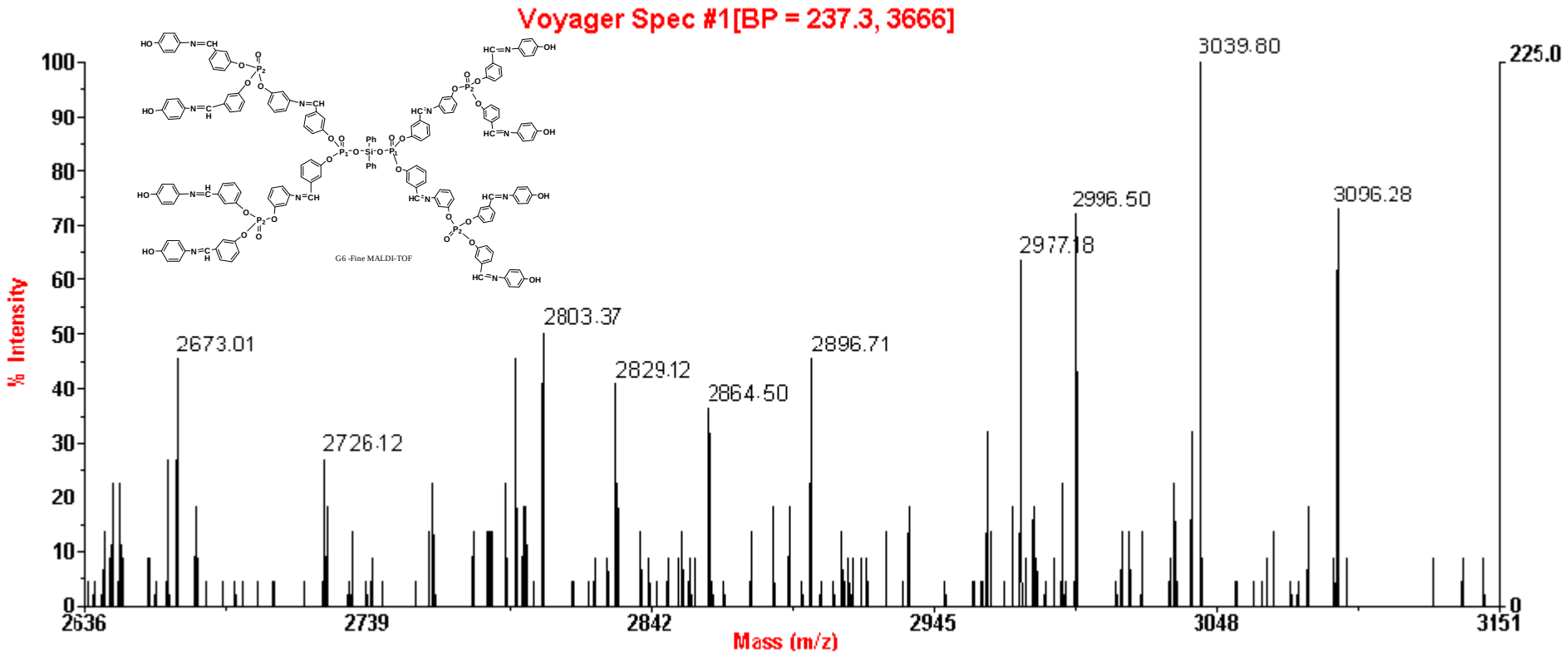
G_6 ^{13}C-NMR Spectrum



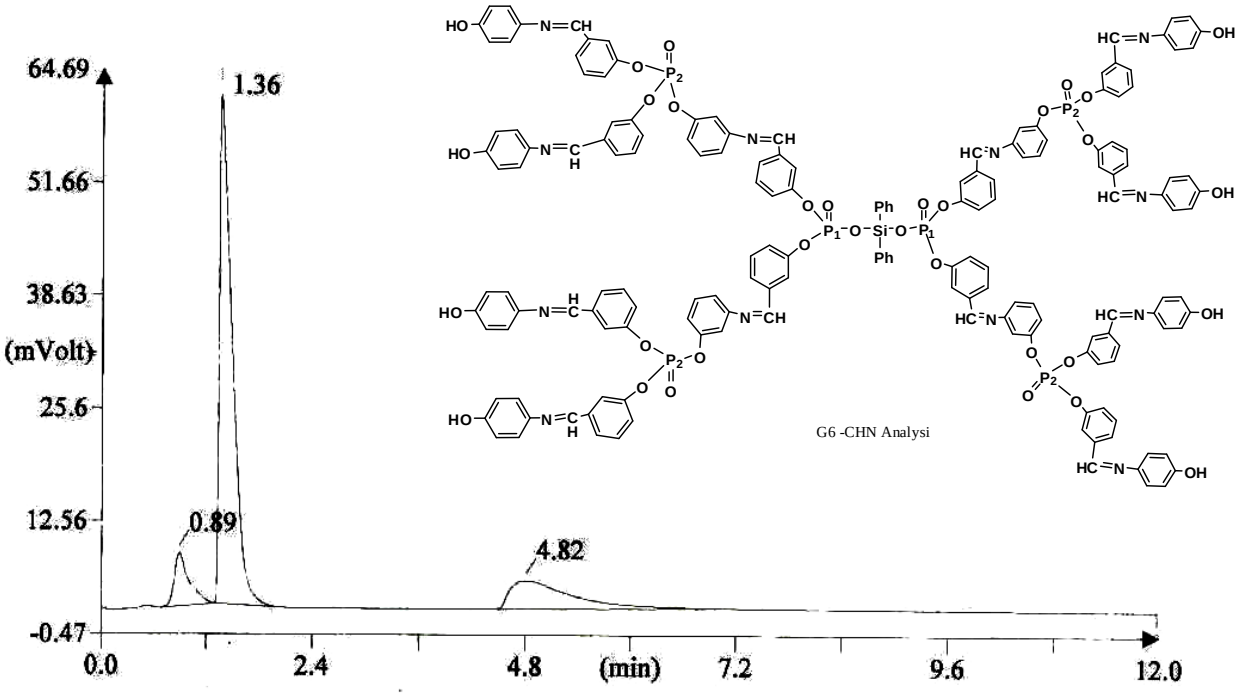
G_6 ^{31}P-NMR Spectrum


Voyager Spec #1[BP = 237.3, 3666]
% Intensity
Mass (m/z)
237.31
107.14
142.87
318.52
406.76
529.12
695.87
877.04
1041.79
1292.71
3666.1
99.0
879.4
1659.8
2440.2
3220.6
4001.0
G6 -MALDI-TOF

G_6 MALDI-TOF



G_6 Fine MALDI-TOF



Element Name	Element %	Ret. Time
Nitrogen	5. 61	0. 89
Carbon	66. 25	1. 36
Hydrogen	4. 22	4. 82

G_6 CHN Analysis