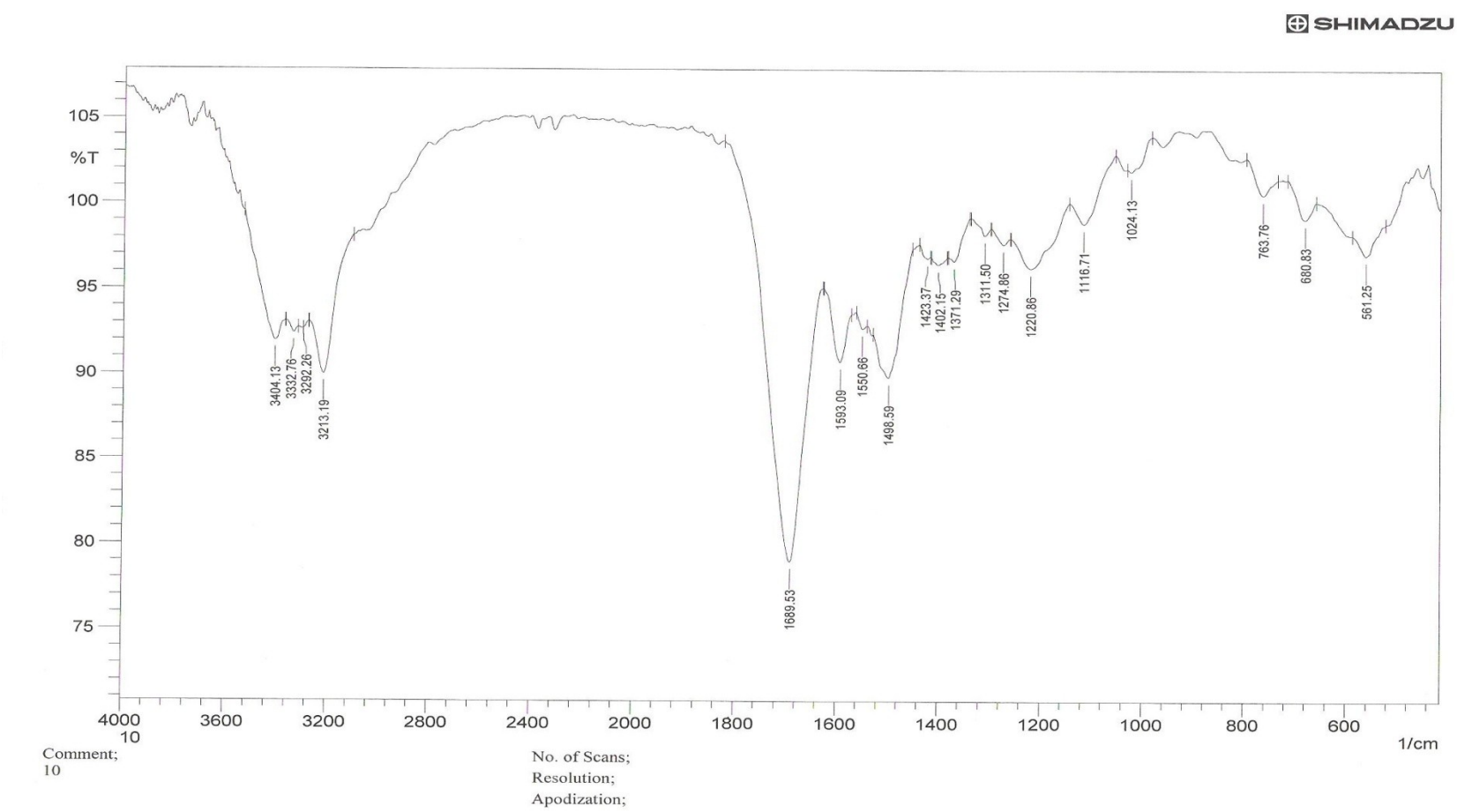


Figure (3.9) - IR spectrum of compound number XIV

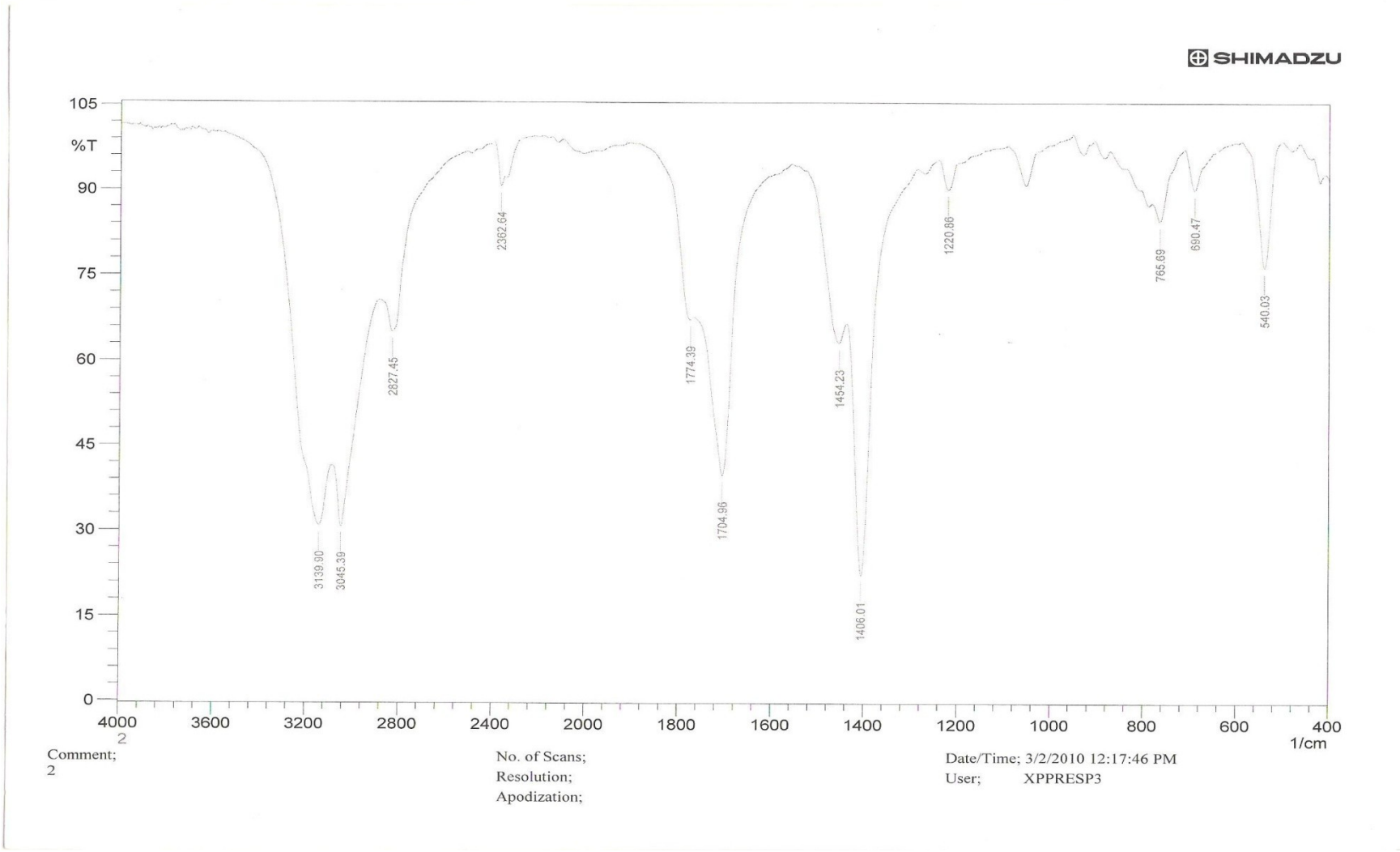

SHIMADZU
105
%T
90
75
60
45
30
15
0
4000
3600
3200
2800
2400
2000
1800
1600
1400
1200
1000
800
600
400
1/cm
3139.90
3045.39
2827.45
2362.64
1774.39
1704.96
1454.23
1406.01
1220.86
765.69
690.47
540.03
Comment;
2
No. of Scans;
Resolution;
Apodization;
Date/Time; 3/2/2010 12:17:46 PM
User; XPPRESP3

Figure (3.10) - IR spectrum of compound number XV

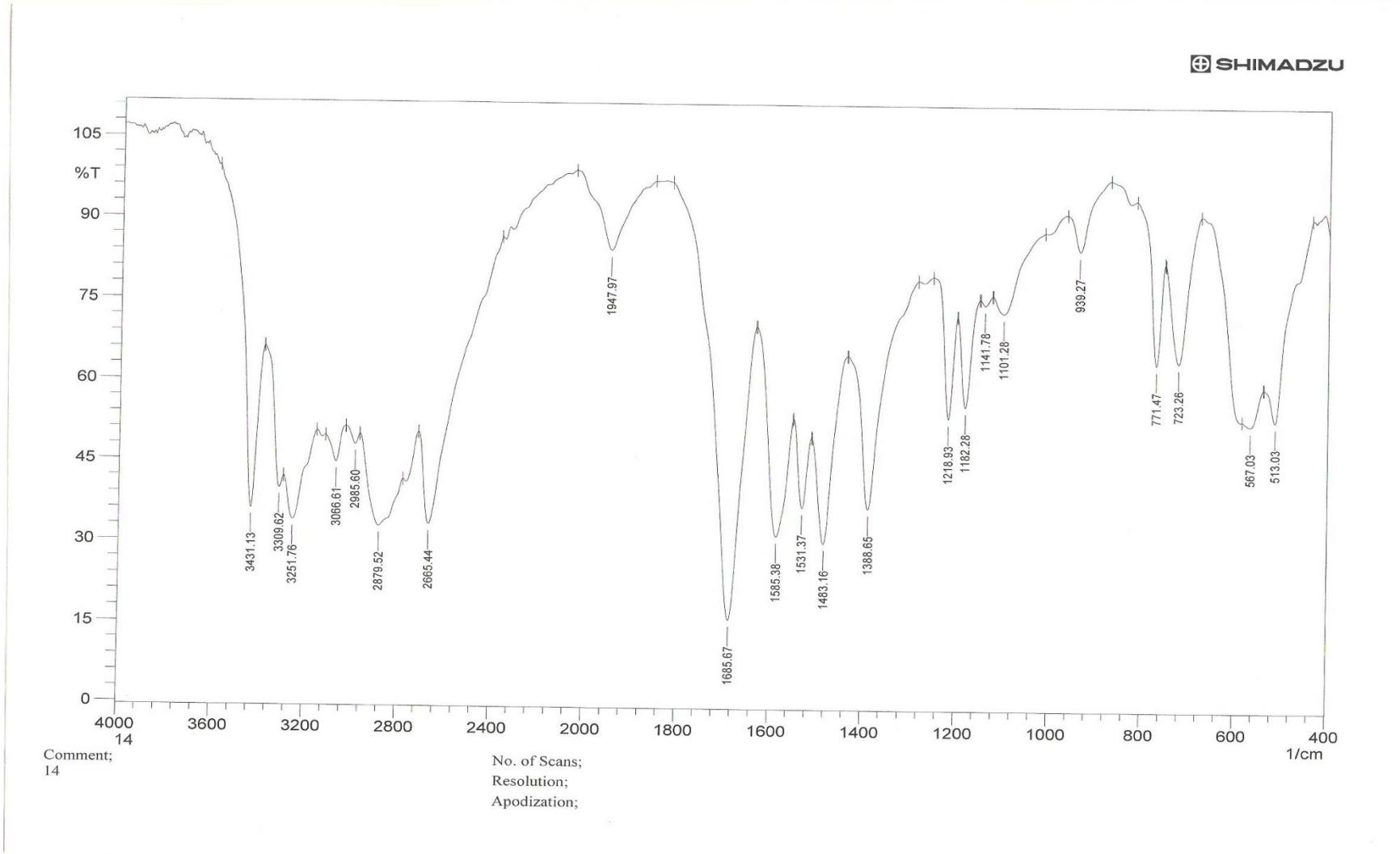


Figure (3.11) - IR spectrum of compound number XVI

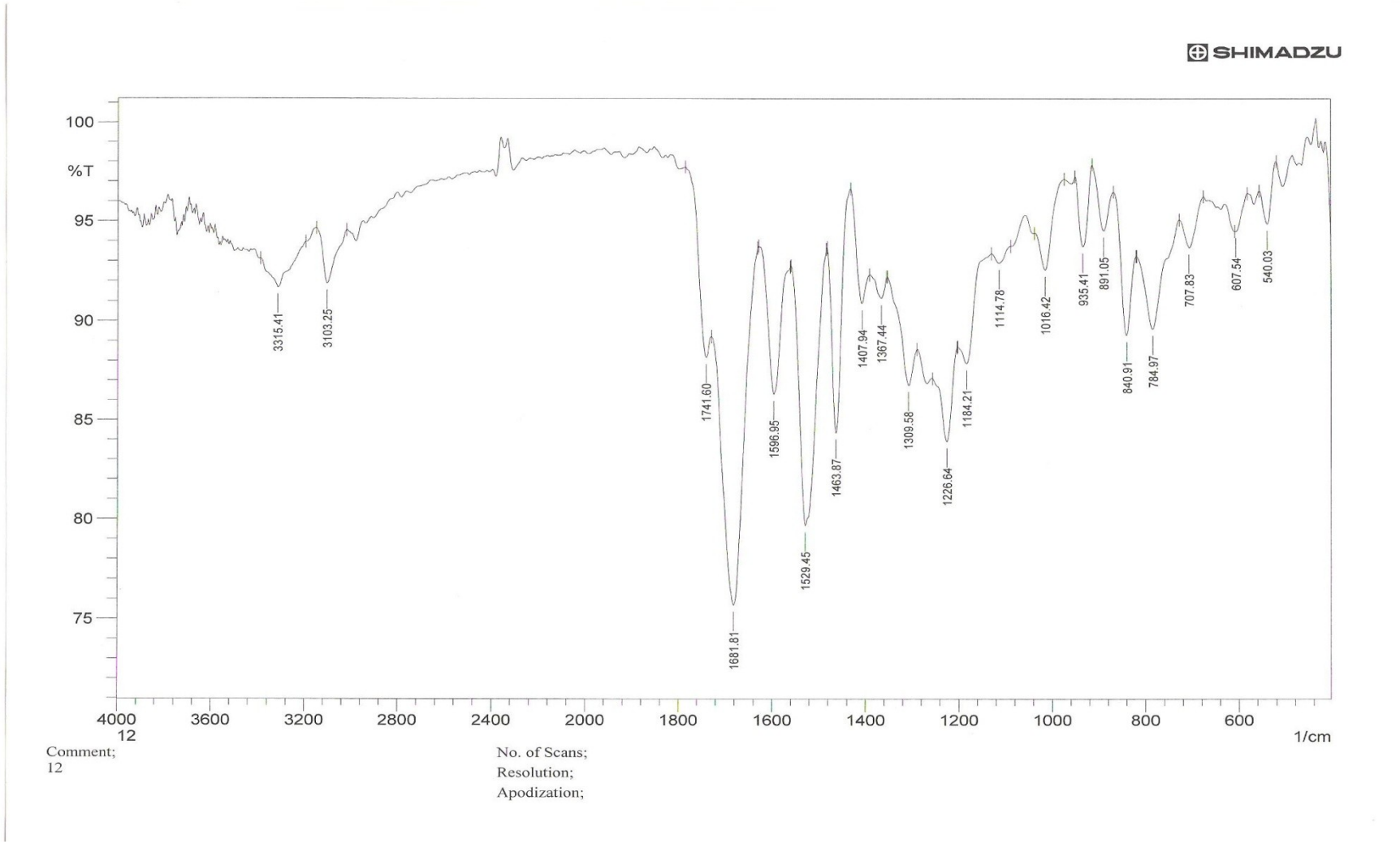


Figure (3.12) - IR spectrum of compound number XVII

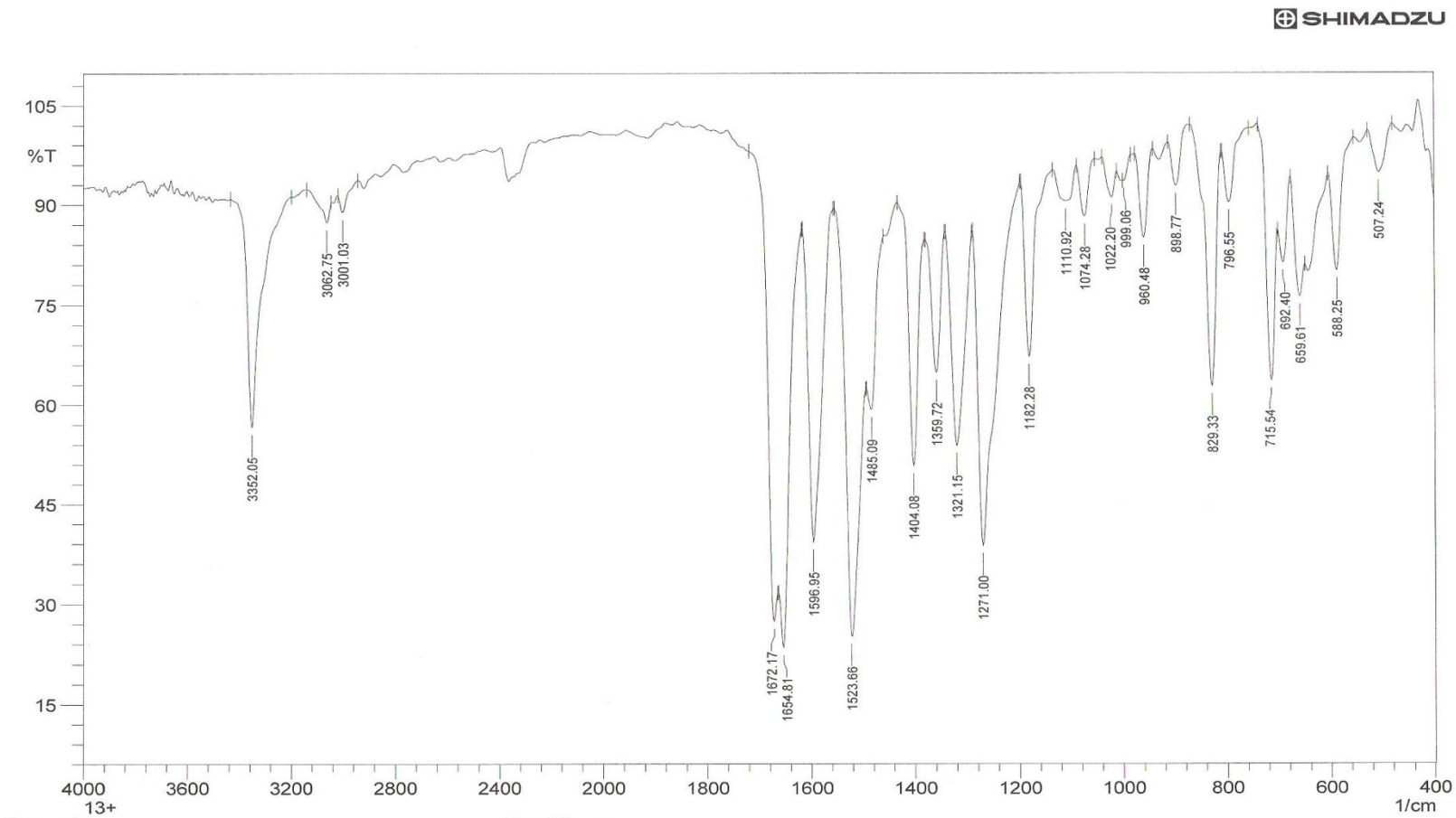
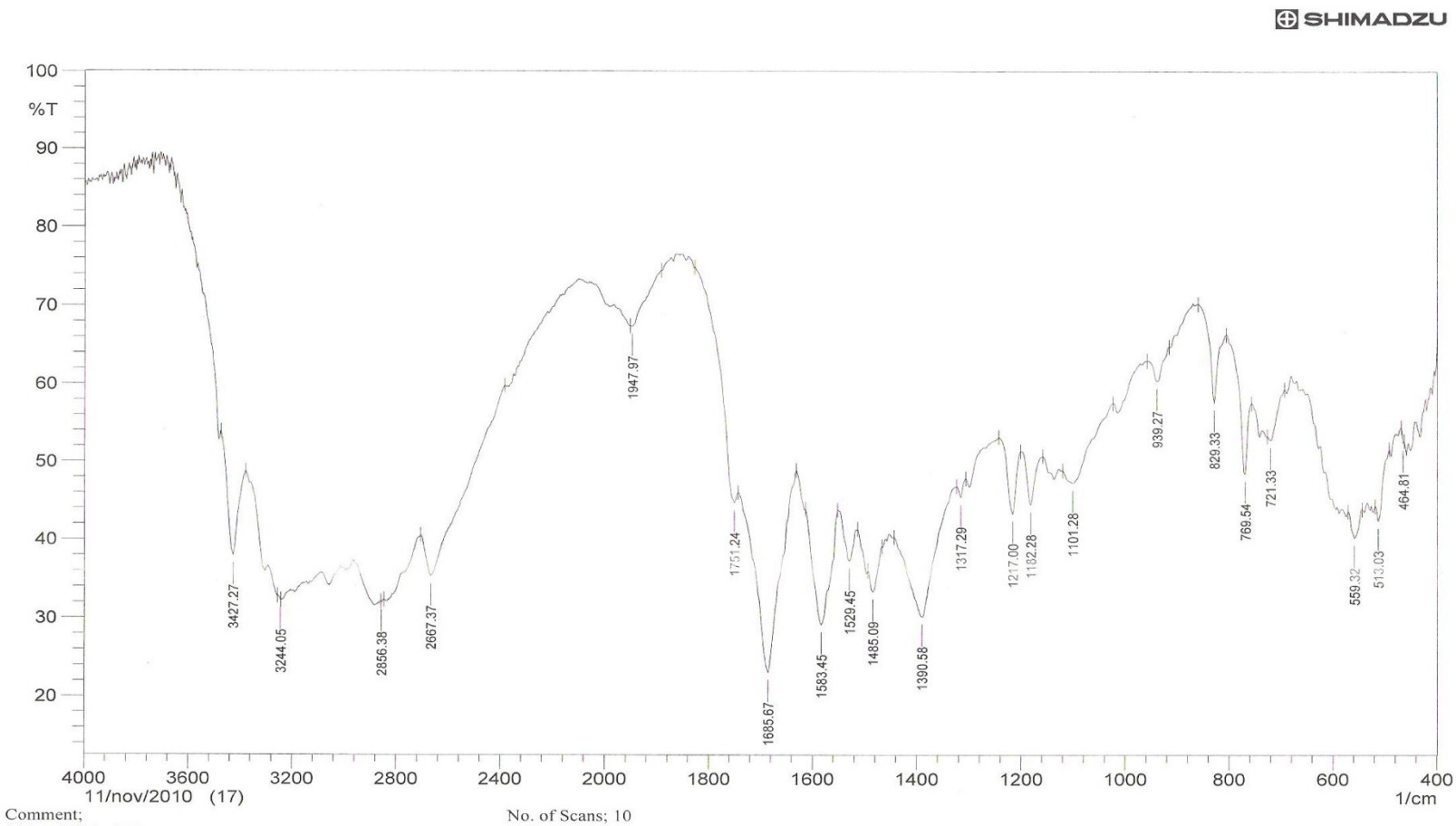

SHIMADZU
105
%T
90
75
60
45
30
15
3352.05
3062.75
3001.03
1672.17
1654.81
1596.95
1523.66
1485.09
1404.08
1359.72
1321.15
1271.00
1182.28
1110.92
1074.28
1022.20
999.06
960.48
898.77
829.33
796.55
715.54
692.40
659.61
588.25
507.24
4000
3600
3200
2800
2400
2000
1800
1600
1400
1200
1000
800
600
400
1/cm
13+
Comment;
13+
No. of Scans;
Resolution;
Apodization;

Figure (3.13) - IR spectrum of compound number XVIII



Comment;
11/nov/2010 (17)

No. of Scans; 10
Resolution; 4 [1/cm]
Apodization; Happ-Genzel

Figure (3.14) - IR spectrum of compound number XIX

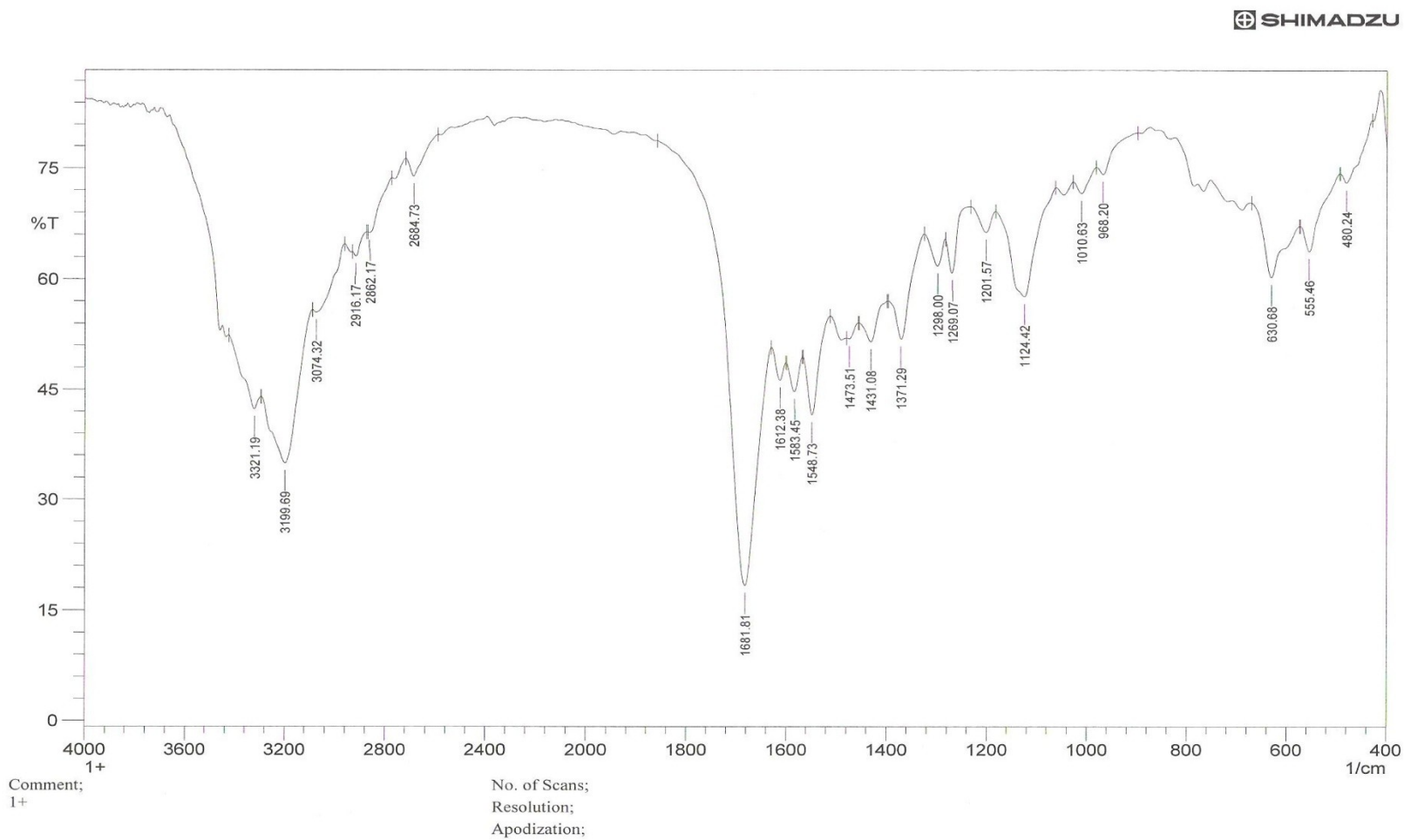

SHIMADZU
%T
75
60
45
30
15
0
4000
3600
3200
2800
2400
2000
1800
1600
1400
1200
1000
800
600
400
1/cm
1+
3321.19
3199.69
3074.32
2916.17
2862.17
2684.73
1681.81
1612.38
1583.45
1548.73
1473.51
1431.08
1371.29
1298.00
1269.07
1201.57
1124.42
1010.63
968.20
630.68
555.46
480.24
Comment;
1+
No. of Scans;
Resolution;
Apodization;

Figure (3.15) - IR spectrum of compound number VIII

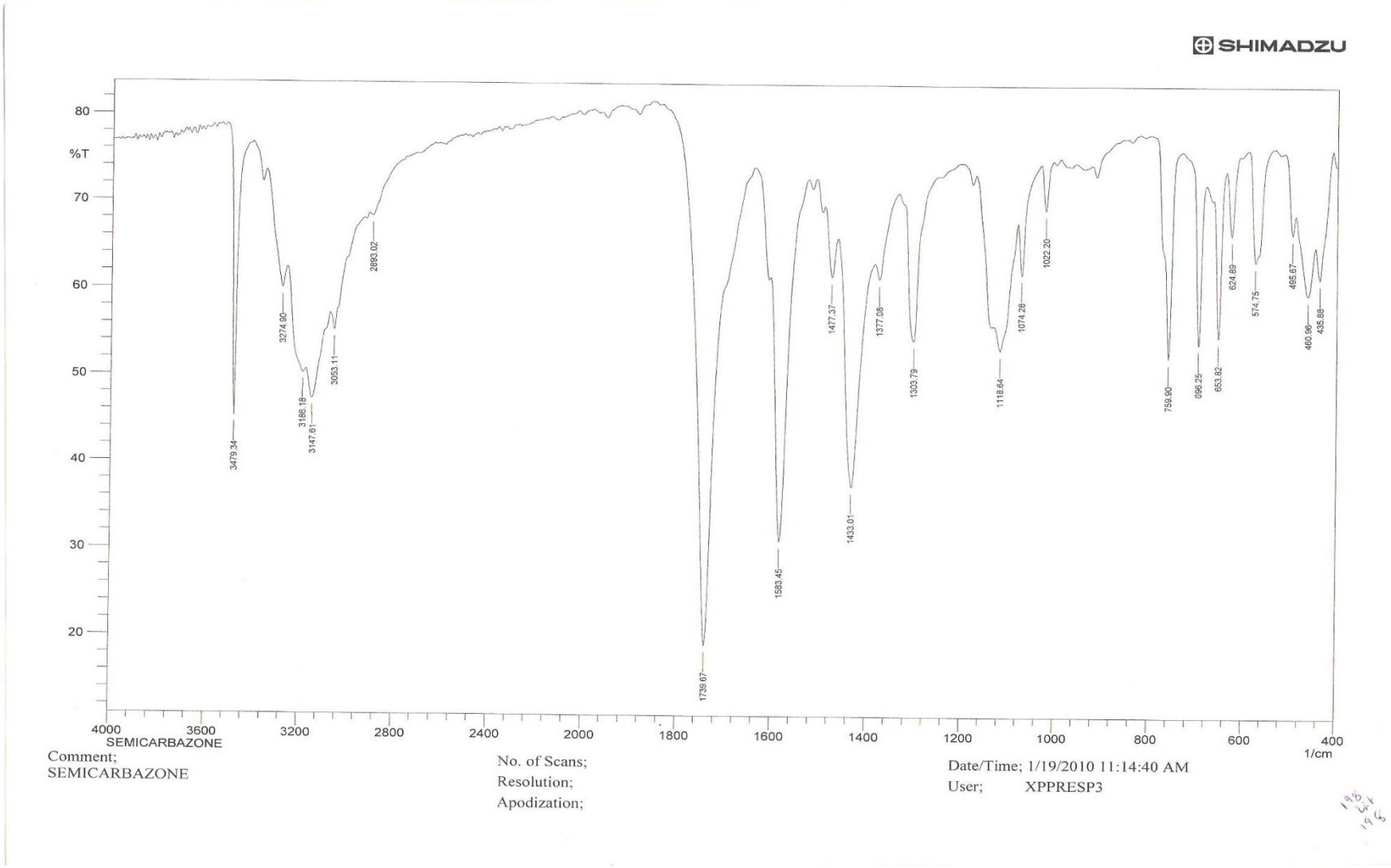

SHIMADZU
%T
80
70
60
50
40
30
20
3479.34
3274.90
3186.18
3147.61
3053.11
2893.02
1739.67
1583.45
1477.37
1433.01
1377.08
1303.79
1118.64
1074.28
1022.20
759.90
696.25
653.82
624.89
574.75
495.67
460.96
435.88
4000
3600
3200
2800
2400
2000
1800
1600
1400
1200
1000
800
600
400
1/cm
SEMICARBAZONE
Comment;
SEMICARBAZONE
No. of Scans;
Resolution;
Apodization;
Date/Time; 1/19/2010 11:14:40 AM
User; XPPRESP3

Figure (3.16) - IR spectrum of compound number IX

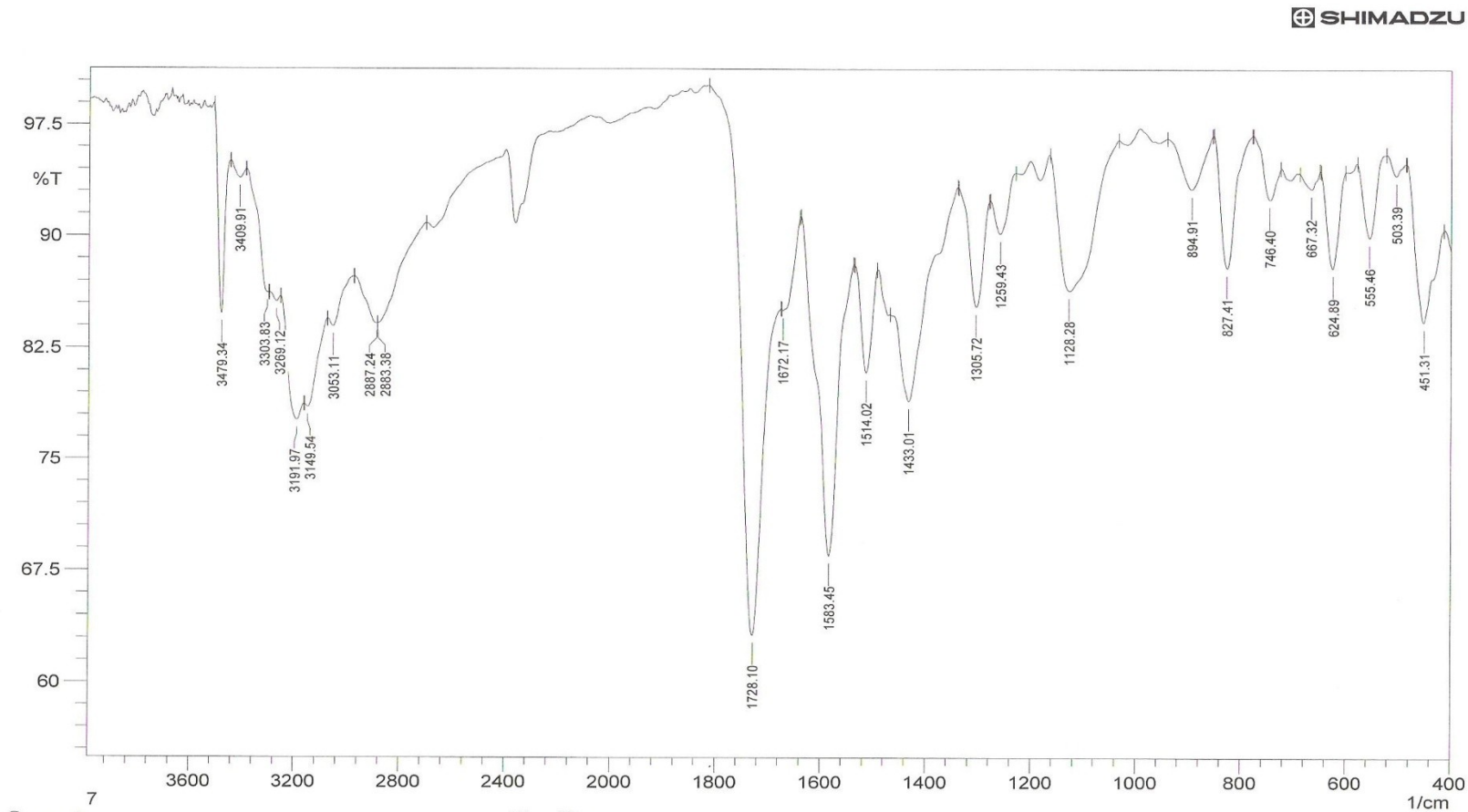

SHIMADZU
97.5
%T
90
82.5
75
67.5
60
3479.34
3409.91
3303.83
3269.12
3191.97
3149.54
3053.11
2887.24
2883.38
1728.10
1672.17
1583.45
1514.02
1433.01
1305.72
1259.43
1128.28
894.91
827.41
746.40
667.32
624.89
555.46
503.39
451.31
3600
3200
2800
2400
2000
1800
1600
1400
1200
1000
800
600
400
1/cm
7
Comment;
7
No. of Scans;
Resolution;
Apodization;

Figure (3.17) - IR spectrum of compound number X

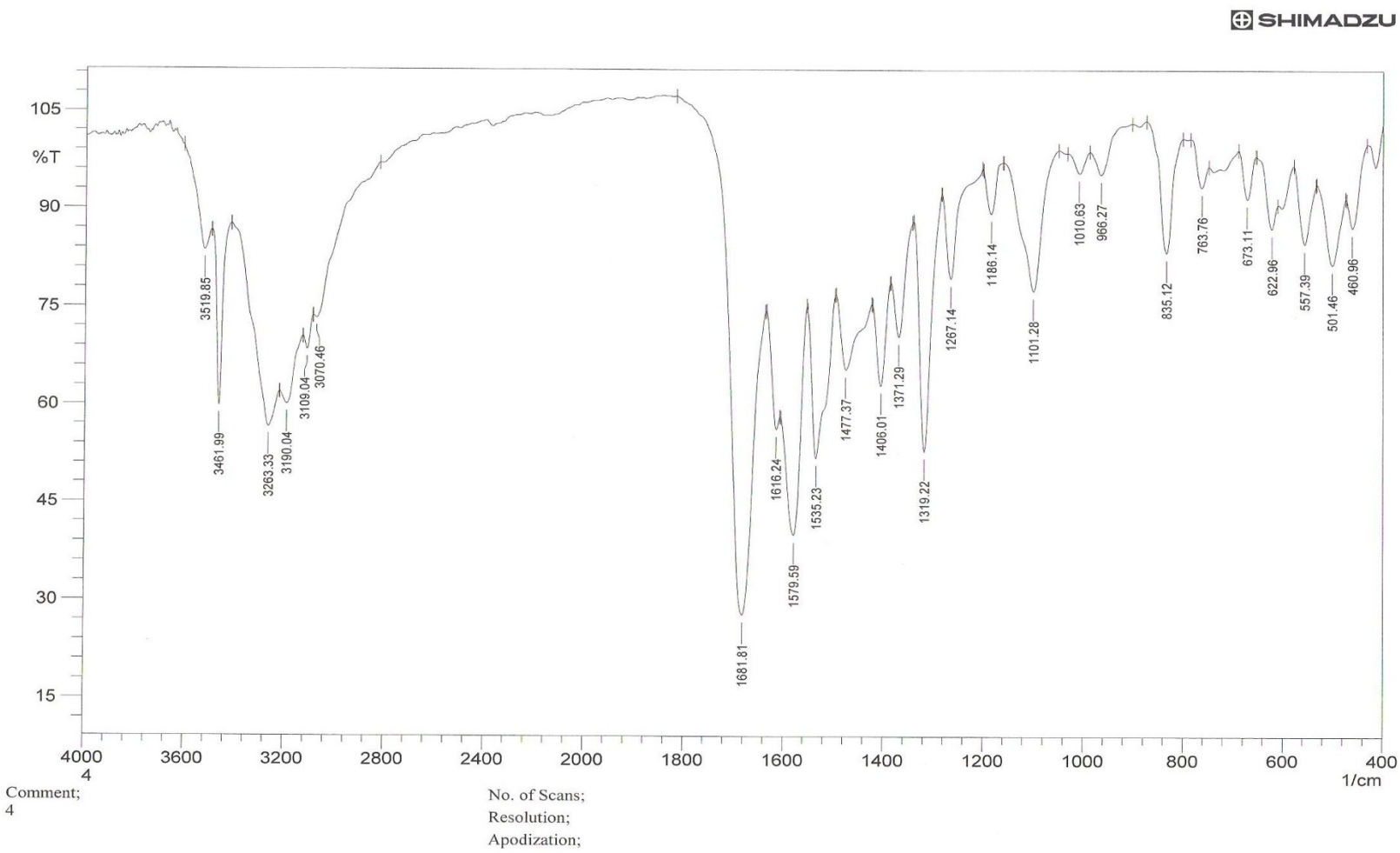

SHIMADZU
105
%T
90
75
60
45
30
15
3519.85
3461.99
3263.33
3190.04
3109.04
3070.46
1681.81
1616.24
1579.59
1535.23
1477.37
1406.01
1371.29
1319.22
1267.14
1186.14
1101.28
1010.63
966.27
835.12
763.76
673.11
622.96
557.39
501.46
460.96
4000
3600
3200
2800
2400
2000
1800
1600
1400
1200
1000
800
600
400
1/cm
4
Comment;
4
No. of Scans;
Resolution;
Apodization;

Figure (3.18) - IR spectrum of compound number XI

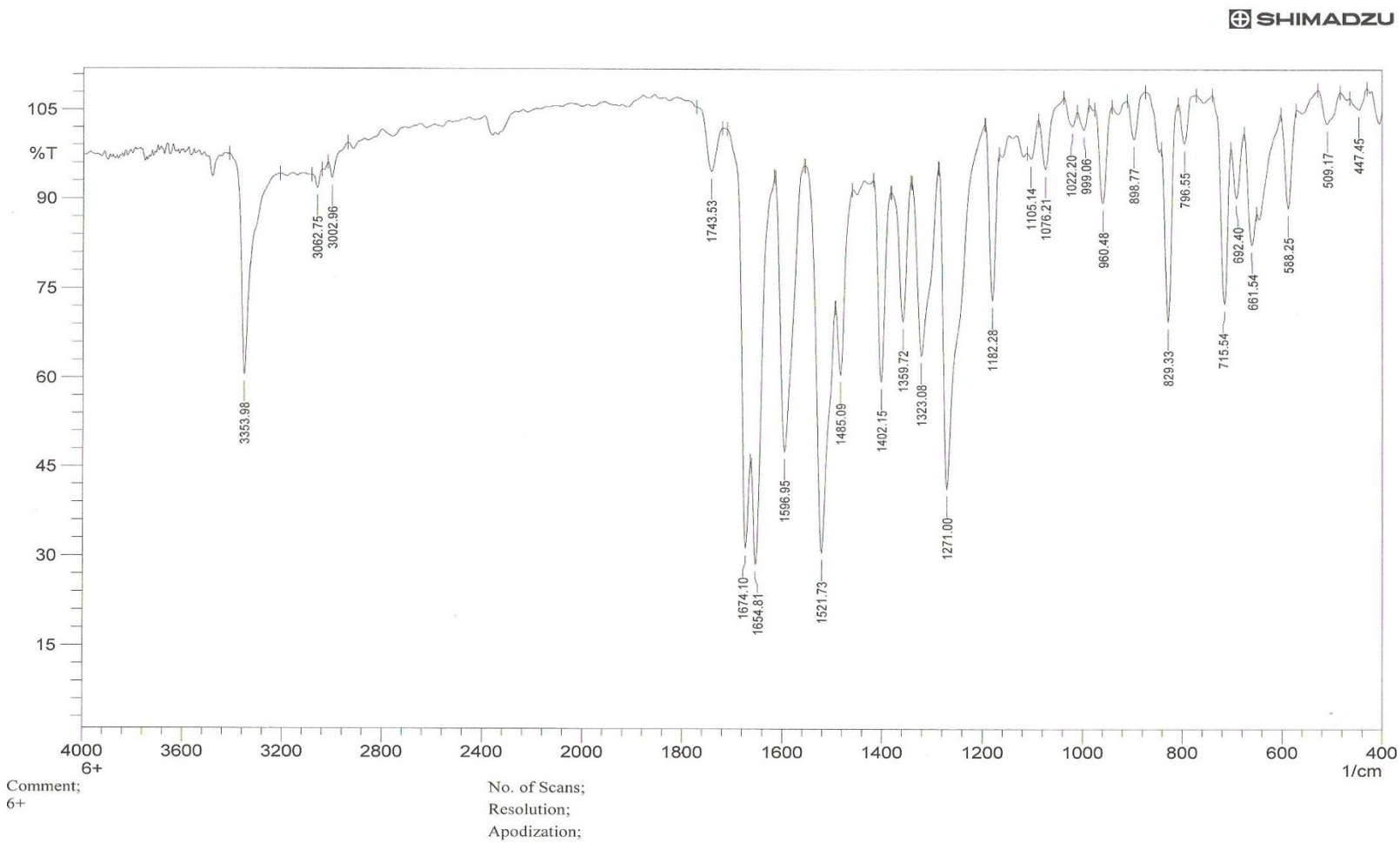

SHIMADZU
%T
105
90
75
60
45
30
15
4000
3600
3200
2800
2400
2000
1800
1600
1400
1200
1000
800
600
400
1/cm
3353.98
3062.75
3002.96
1743.53
1674.10
1654.81
1596.95
1521.73
1485.09
1402.15
1359.72
1323.08
1271.00
1182.28
1105.14
1076.21
1022.20
999.06
960.48
898.77
829.33
796.55
715.54
692.40
661.54
588.25
509.17
447.45
6+
Comment;
6+
No. of Scans;
Resolution;
Apodization;

Figure (3.19) - IR spectrum of compound number XII

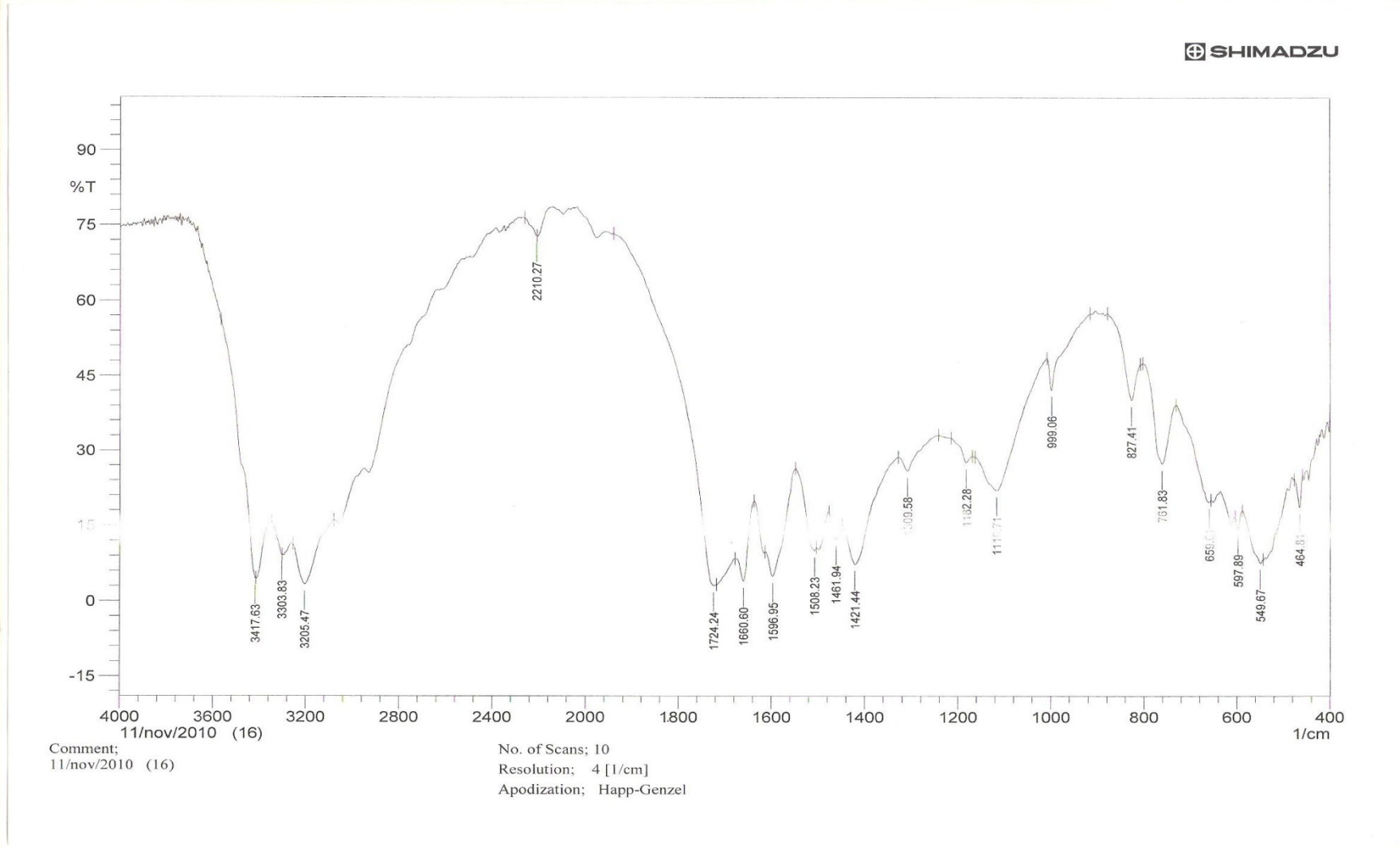
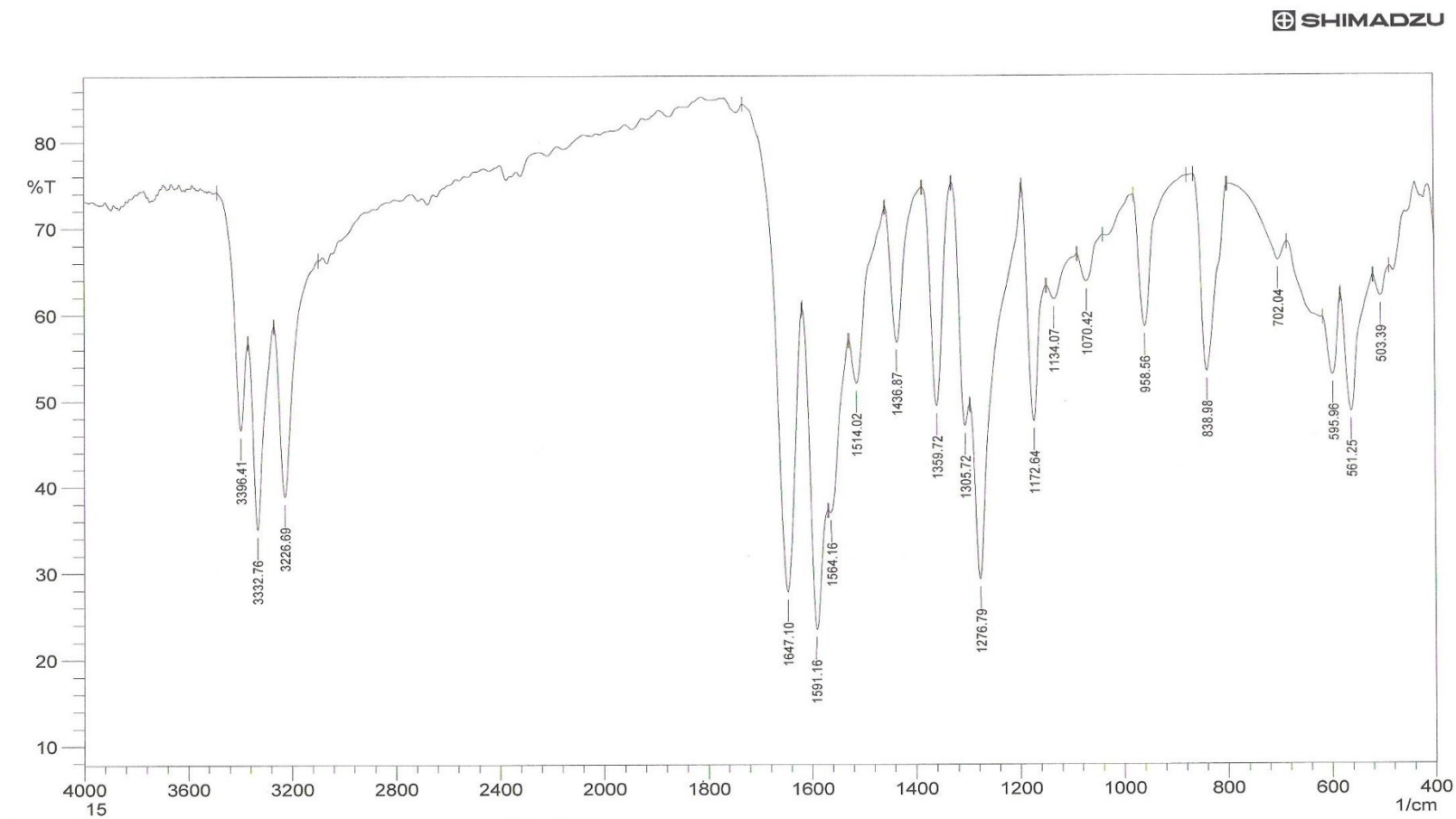


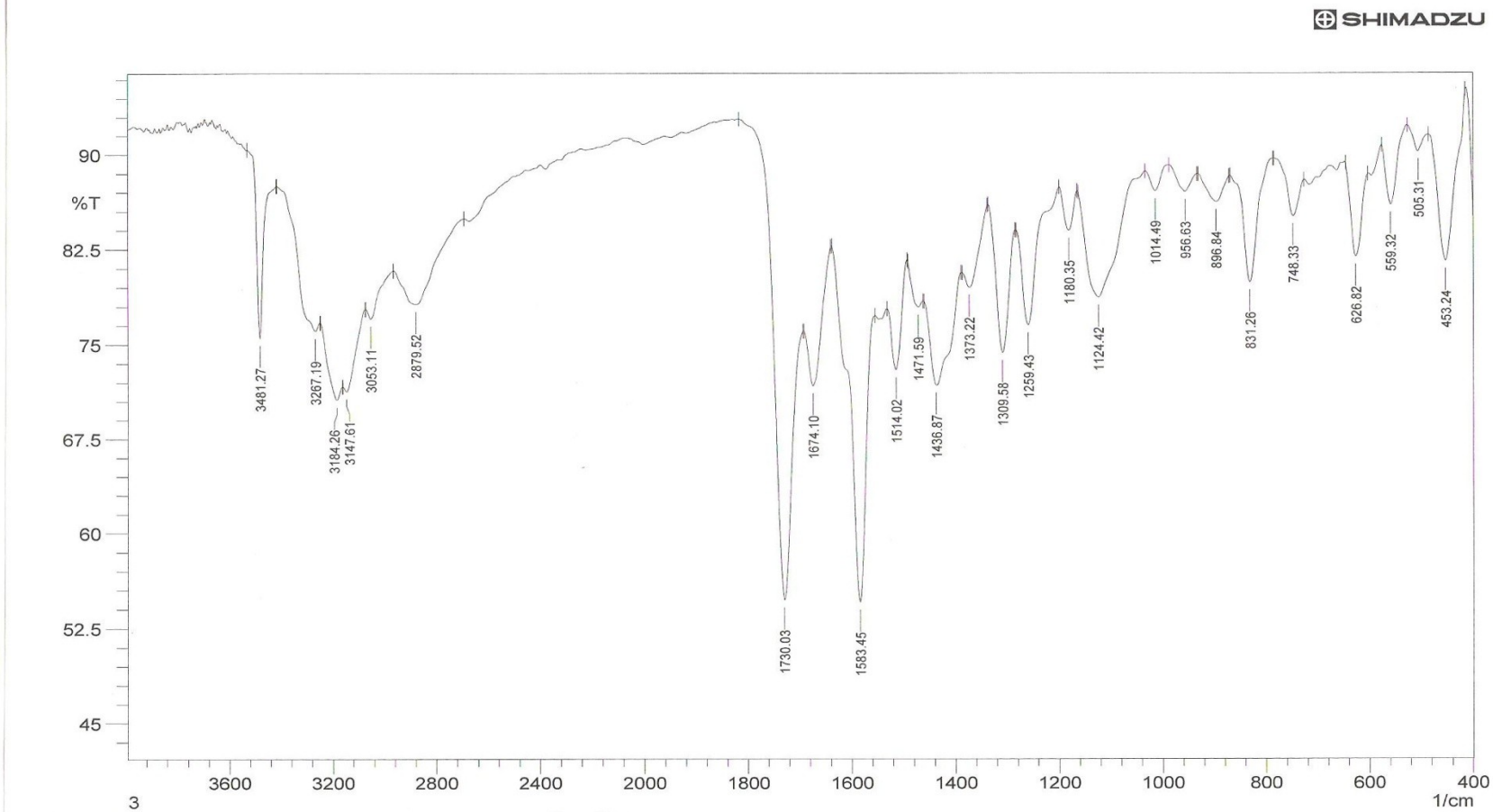
Figure (3.20) - IR spectrum of compound number XIII



Comment;
15

No. of Scans;
Resolution;
Apodization;

Figure (3.21) - IR spectrum of compound number III

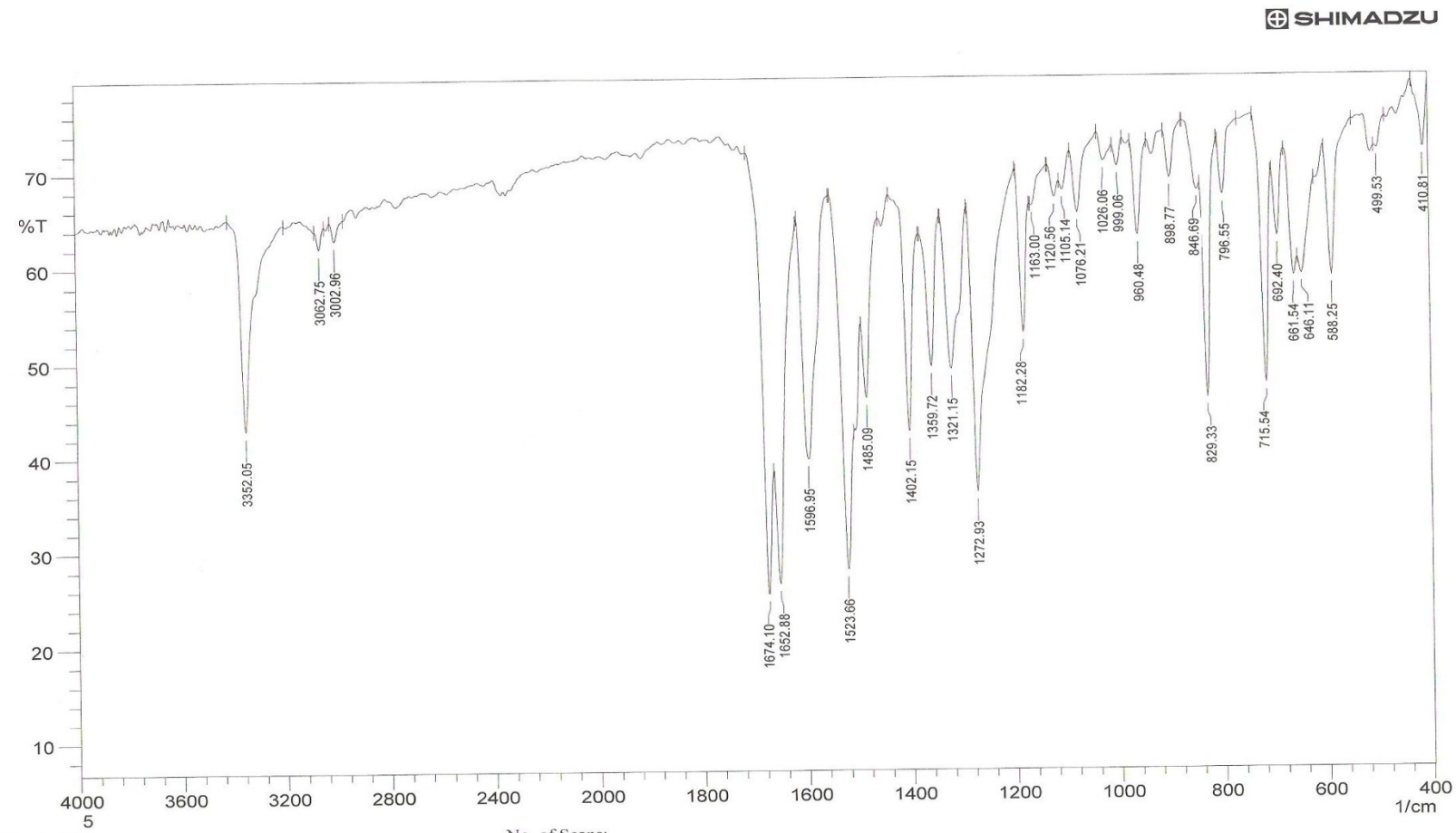


3

Comment;
3

No. of Scans;
Resolution;
Apodization;

Figure (3.22) - IR spectrum of compound number IV



Comment;
5

No. of Scans;
Resolution;
Apodization;

Figure (3.23) - IR spectrum of compound number V

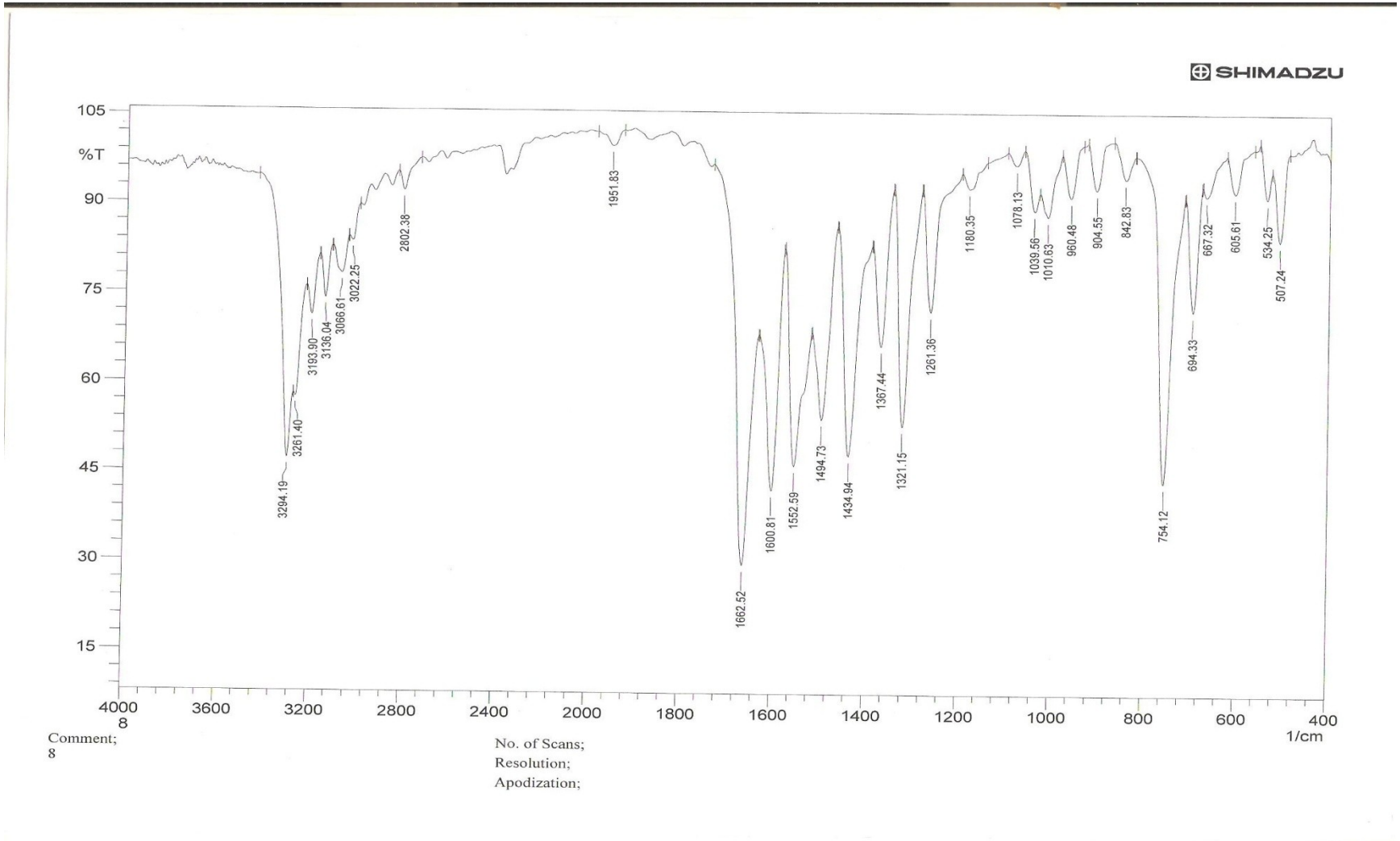


Figure (3.24) - IR spectrum of compound number VI

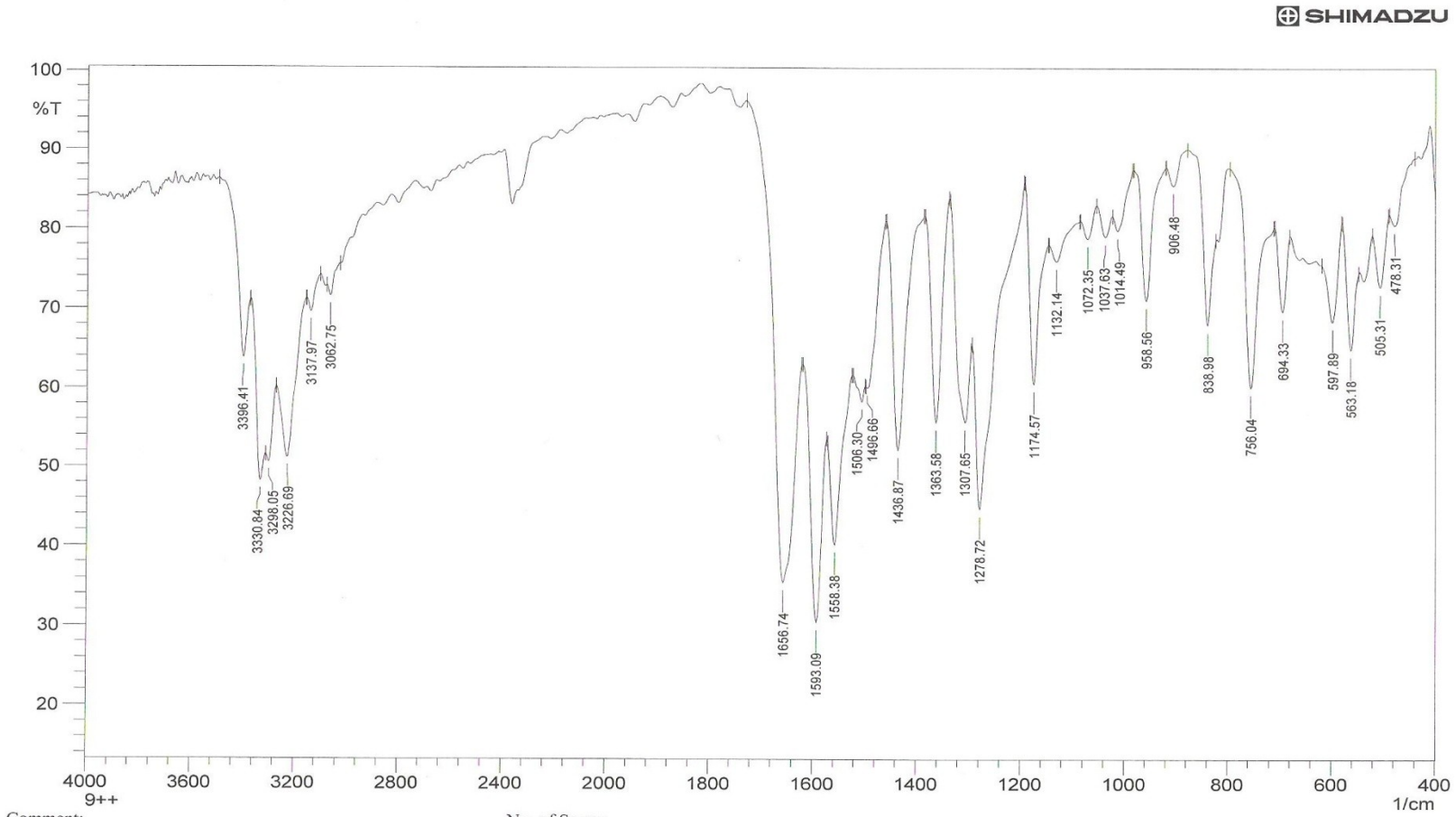

SHIMADZU
100
%T
90
80
70
60
50
40
30
20
3396.41
3330.84
3298.05
3226.69
3137.97
3062.75
1656.74
1593.09
1558.38
1506.30
1496.66
1436.87
1363.58
1307.65
1278.72
1174.57
1132.14
1072.35
1037.63
1014.49
958.56
906.48
838.98
756.04
694.33
597.89
563.18
505.31
478.31
4000
3600
3200
2800
2400
2000
1800
1600
1400
1200
1000
800
600
400
1/cm
9++
Comment;
9++
No. of Scans;
Resolution;
Apodization;

Figure (3.25) - IR spectrum of compound number VII

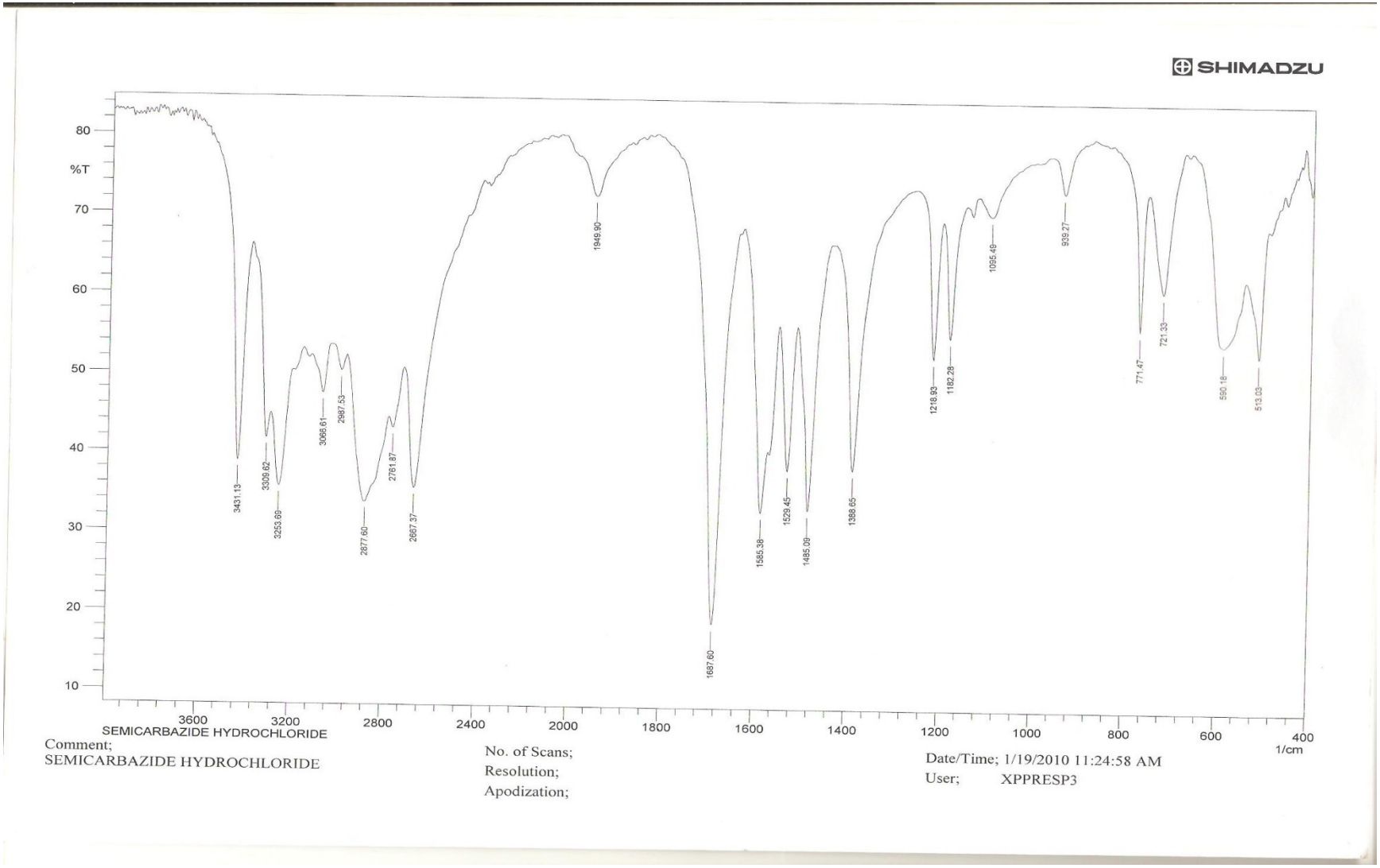


Figure (3.26) - IR spectrum of semicarbazide hydrochloride as starting material.

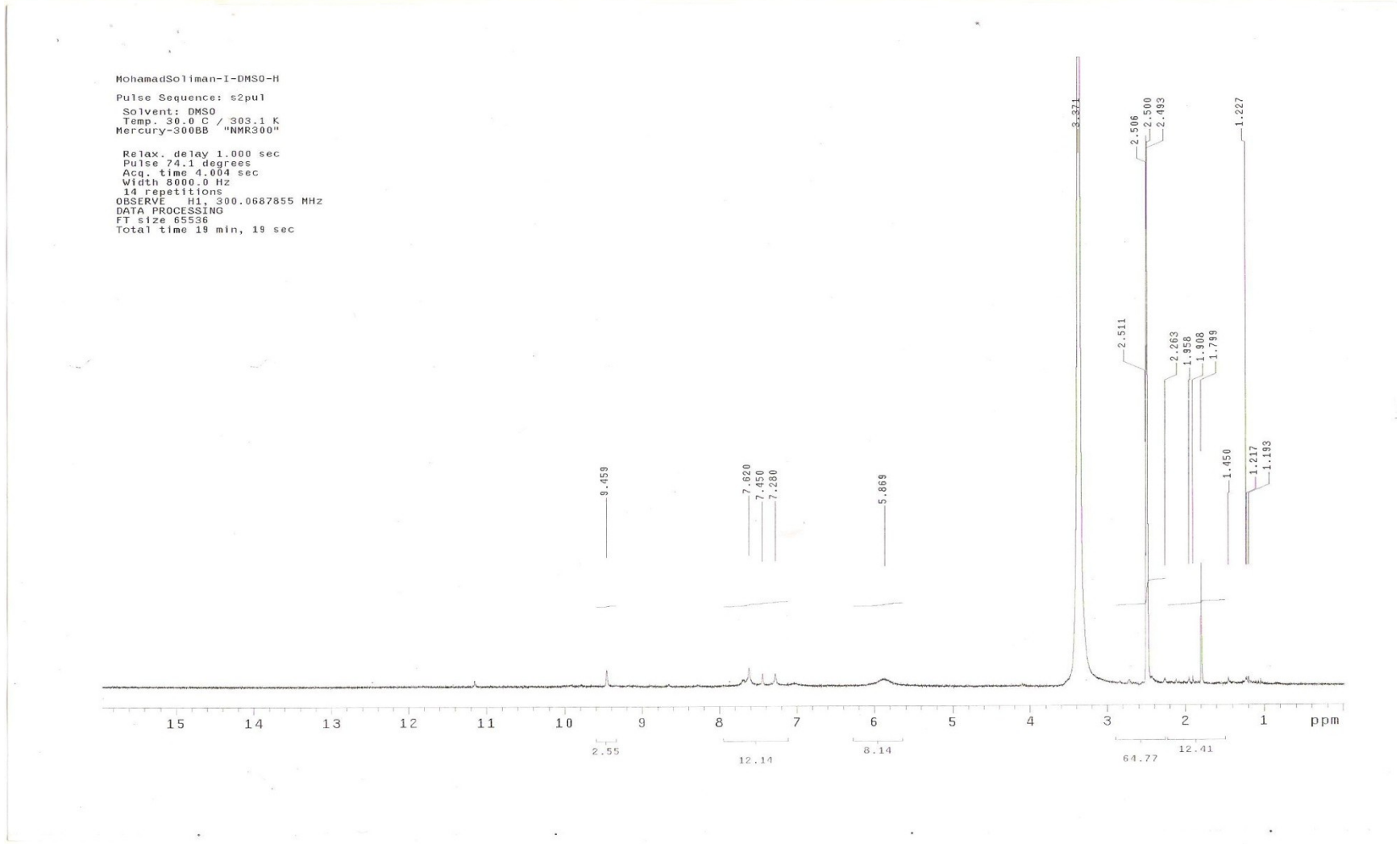


Figure (3.27) – H^1-NMR spectrum of compound number XIV

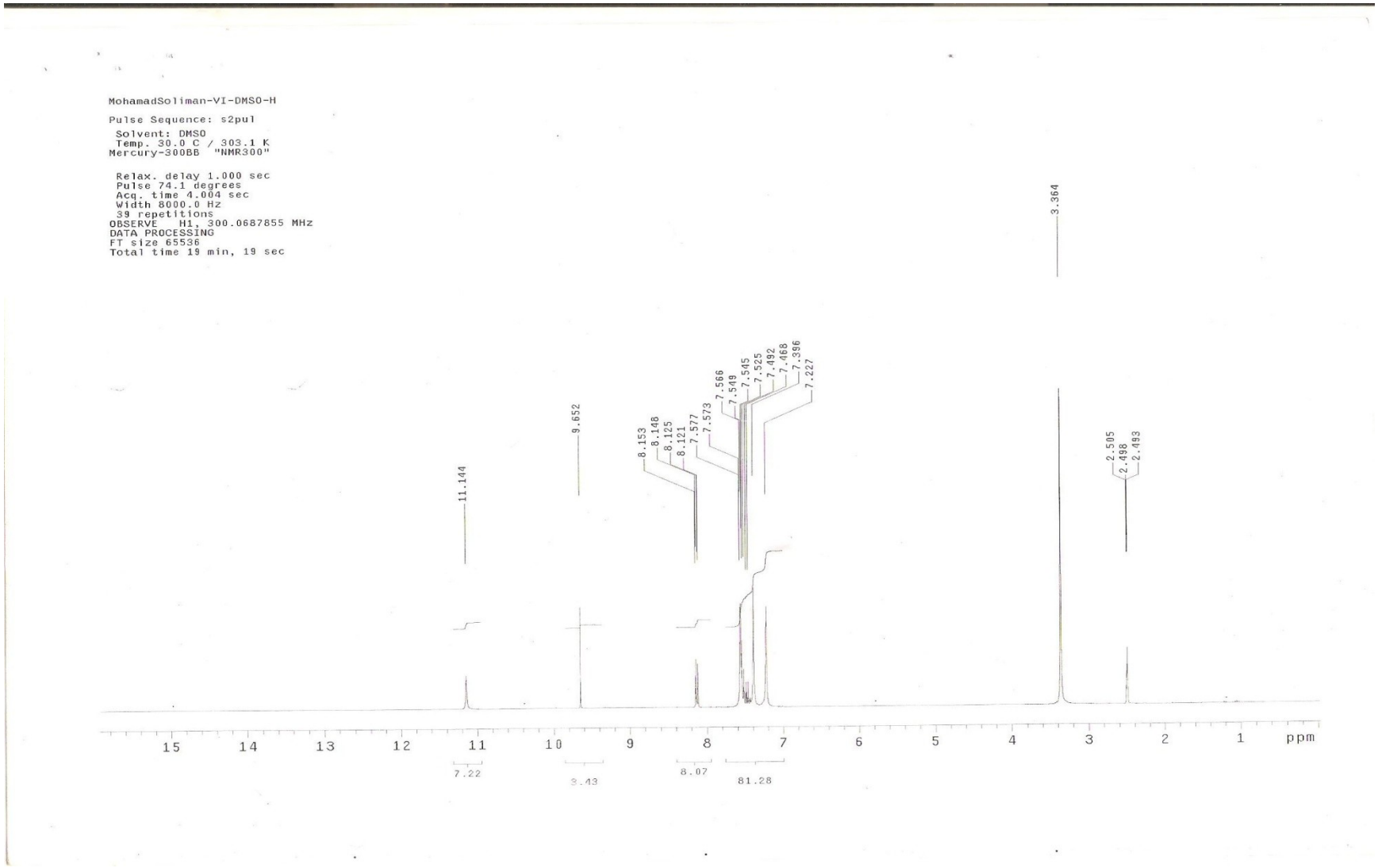

MohamadSoliman-VI-DMSO-H
Pulse Sequence: s2pul
Solvent: DMSO
Temp. 30.0 C / 303.1 K
Mercury-300BB "NMR300"
Relax. delay 1.000 sec
Pulse 74.1 degrees
Acq. time 4.004 sec
Width 8000.0 Hz
39 repetitions
OBSERVE H1, 300.0687855 MHz
DATA PROCESSING
FT size 65536
Total time 19 min, 19 sec
11.144
9.652
8.153
8.148
8.125
8.121
7.577
7.573
7.566
7.549
7.545
7.525
7.492
7.468
7.396
7.227
3.364
2.505
2.498
2.493
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
ppm
7.22
3.43
8.07
81.28

Figure (3.28) – H^1-NMR spectrum of compound number XV

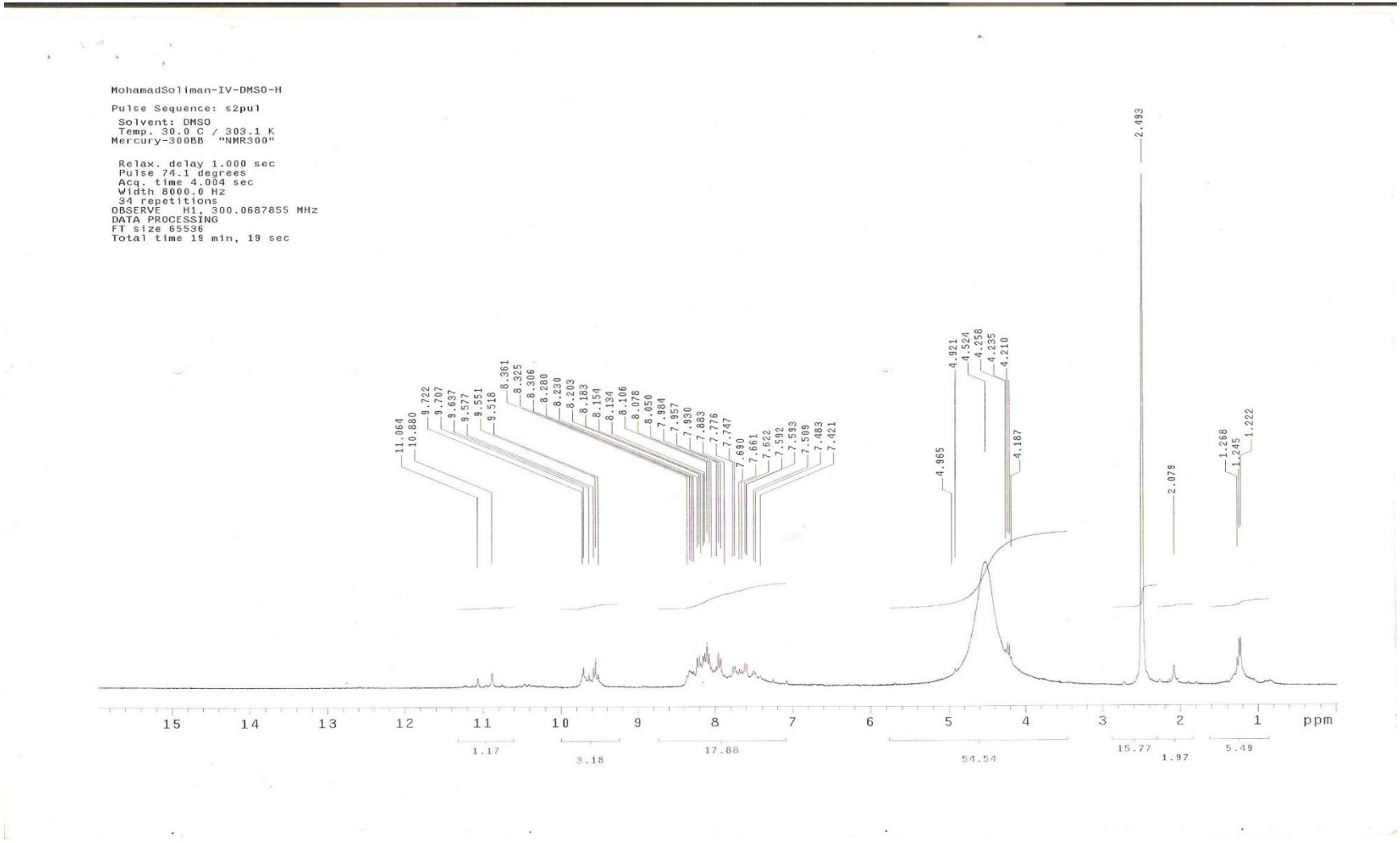


Figure (3.29) – H^1-NMR spectrum of compound number XVII

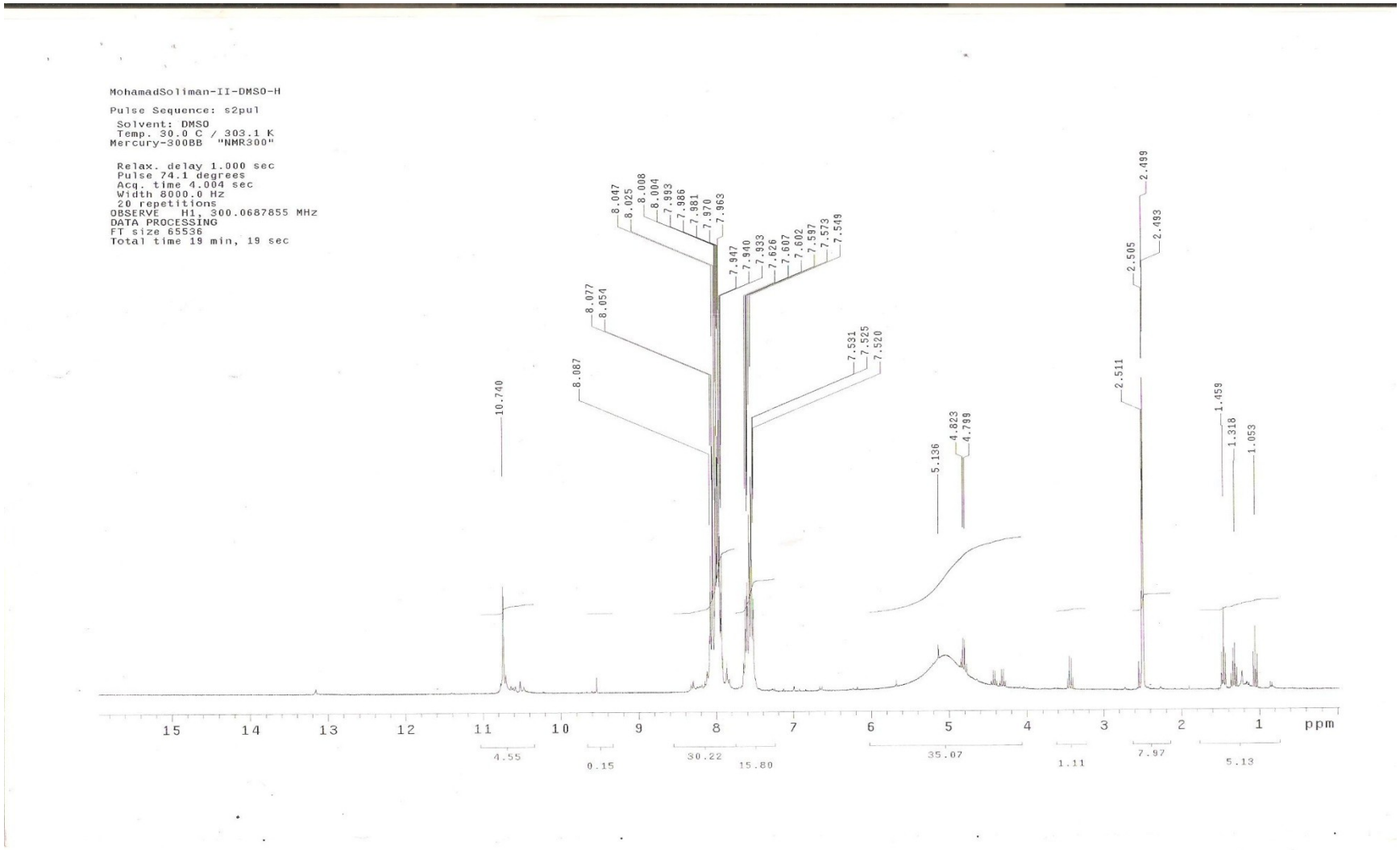


Figure (3.30) – H^1-NMR spectrum of compound number XVIII

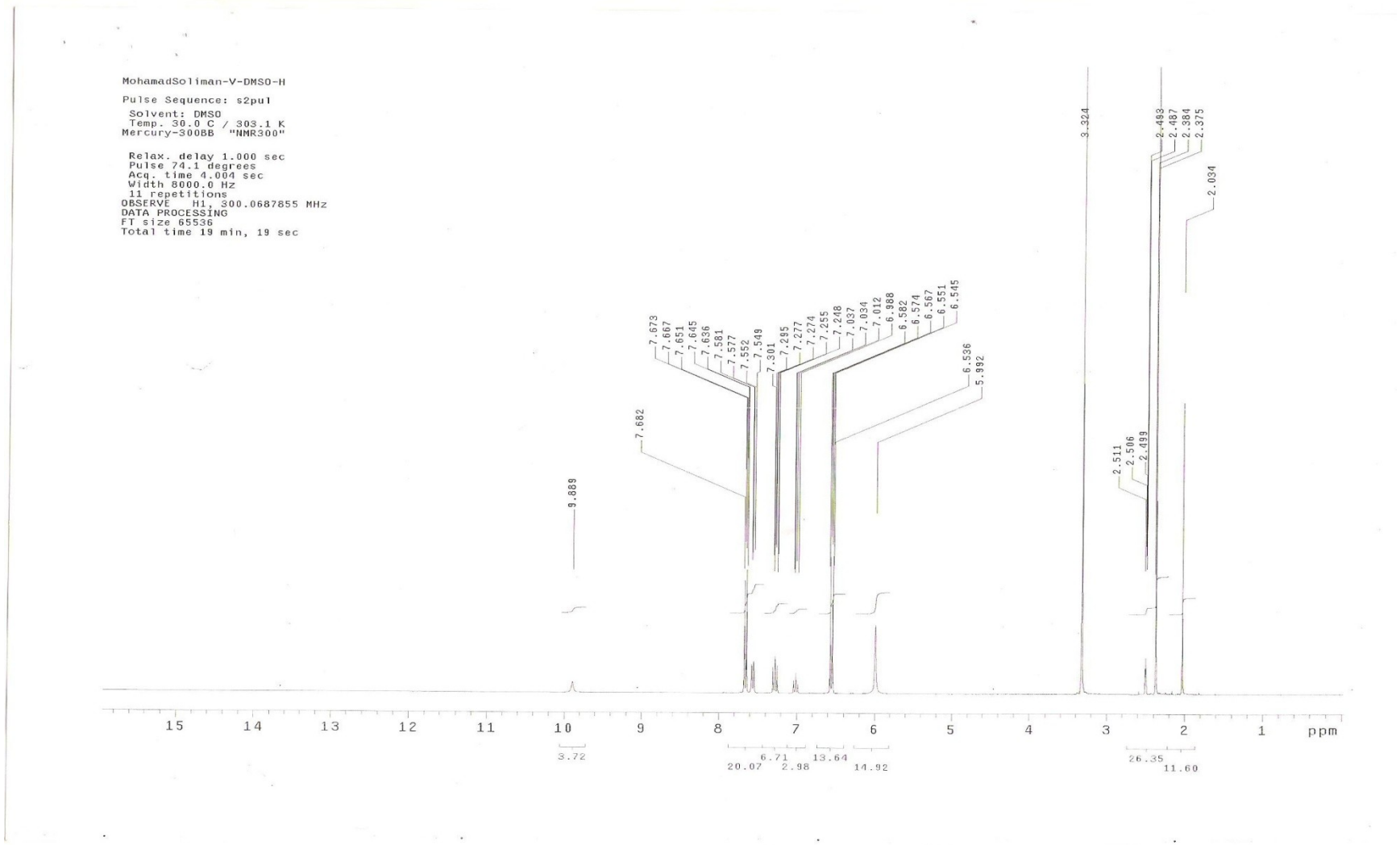

MohamadSoliman-V-DMSO-H
Pulse Sequence: s2pul
Solvent: DMSO
Temp. 30.0 C / 303.1 K
Mercury-300BB "NMR300"
Relax. delay 1.000 sec
Pulse 74.1 degrees
Acq. time 4.004 sec
Width 8000.0 Hz
11 repetitions
OBSERVE H1, 300.0687855 MHz
DATA PROCESSING
FT size 65536
Total time 19 min, 19 sec
9.889
7.682
7.673
7.667
7.651
7.645
7.636
7.581
7.577
7.552
7.549
7.301
7.285
7.277
7.274
7.255
7.248
7.037
7.034
7.012
6.988
6.582
6.574
6.567
6.551
6.545
6.536
5.992
3.324
2.511
2.506
2.499
2.493
2.487
2.384
2.375
2.034
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
ppm
3.72
20.07
6.71
2.98
13.64
14.92
26.35
11.60

Figure (3.31) – H^1-NMR spectrum of compound number VII