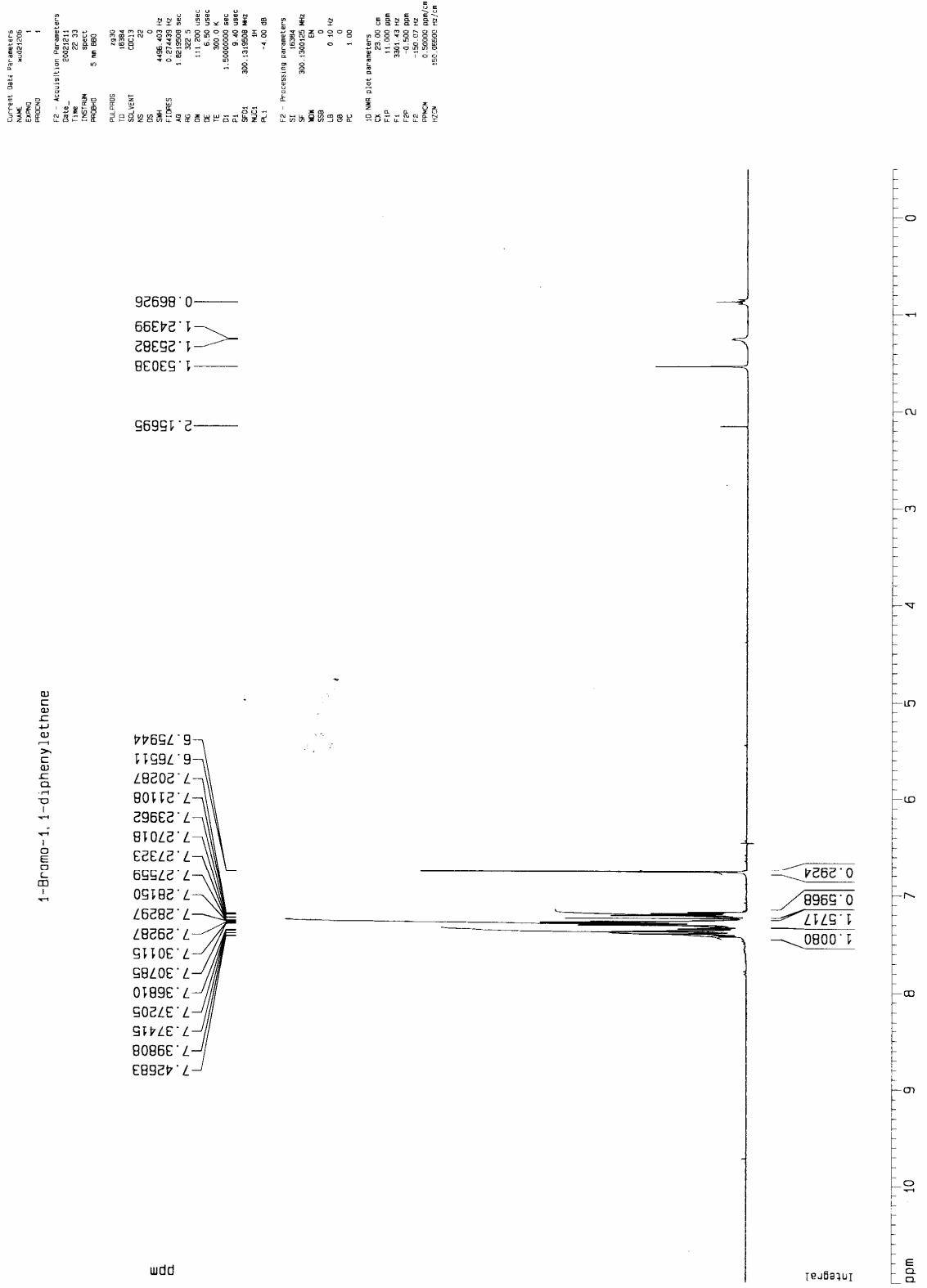


# 附圖



附圖 1 化合物 3-1 之 <sup>1</sup>H-NMR 光譜

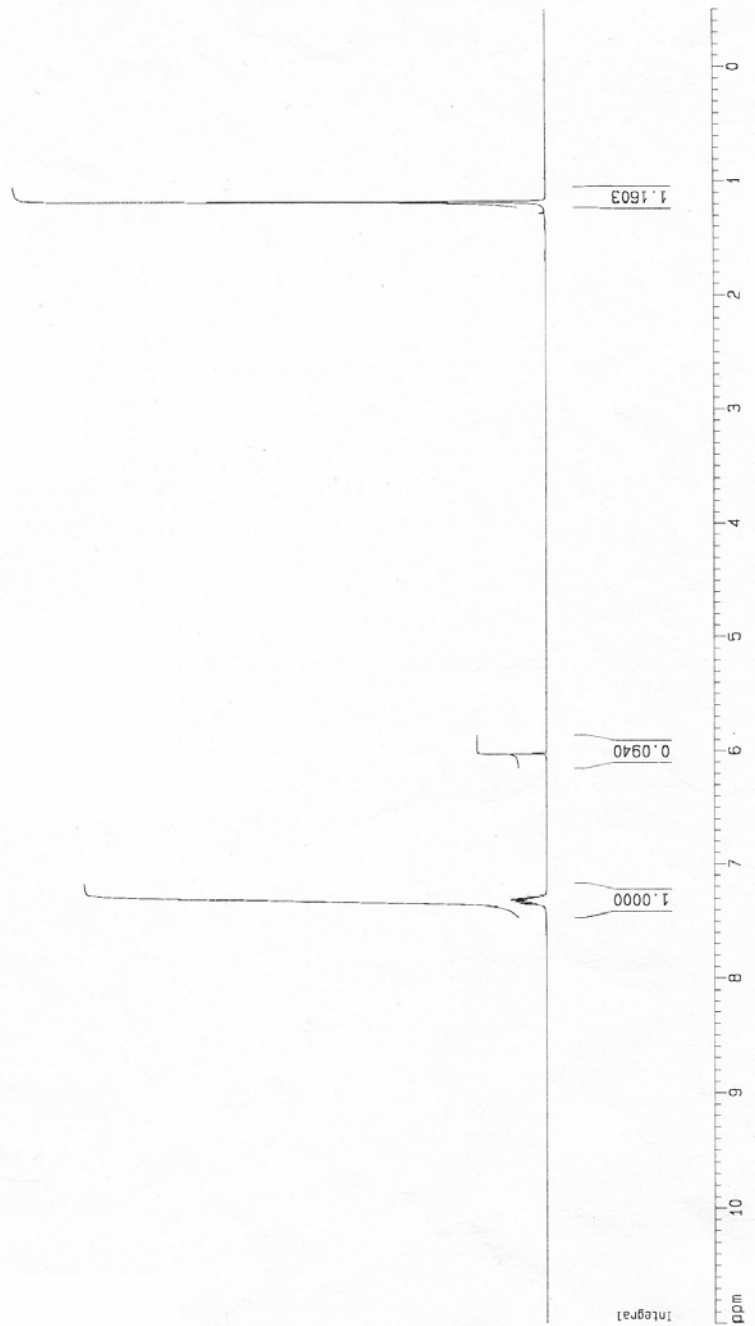
Current Date: 2016/07/27  
 Name: 20160727  
 INSTRUM: spect  
 PULPROG: zgpg30  
 TD: 65536  
 SFO: 500.135400  
 AQ: 1.00000000  
 RG: 1999.9999  
 DQ: 0.00000000  
 EQ: 0.00000000  
 F2 - Acquisition Parameters  
 Date\_ : 20160727  
 Time : 09:51:11  
 INSTRUM : spect  
 PULPROG : zgpg30  
 TD : 65536  
 SFO : 500.135400  
 AQ : 1.00000000  
 RG : 1999.9999  
 DQ : 0.00000000  
 EQ : 0.00000000  
 F2 - Processing parameters  
 Date\_ : 20160727  
 Time : 10:00:00  
 INSTRUM : spect  
 PULPROG : zgpg30  
 TD : 65536  
 SFO : 500.135400  
 AQ : 1.00000000  
 RG : 1999.9999  
 DQ : 0.00000000  
 EQ : 0.00000000  
 F2 - NMR file parameters  
 Date\_ : 20160727  
 Time : 10:00:00  
 INSTRUM : spect  
 PULPROG : zgpg30  
 TD : 65536  
 SFO : 500.135400  
 AQ : 1.00000000  
 RG : 1999.9999  
 DQ : 0.00000000  
 EQ : 0.00000000

1, 1-diphenyl-2-bromoethene

- 7.35875
- 7.35391
- 7.34564
- 7.33975
- 7.33392
- 7.33183
- 7.32995
- 7.32375
- 7.31851
- 7.31617
- 7.31012
- 7.29973
- 7.28654
- 6.026944

1.18113

ppm

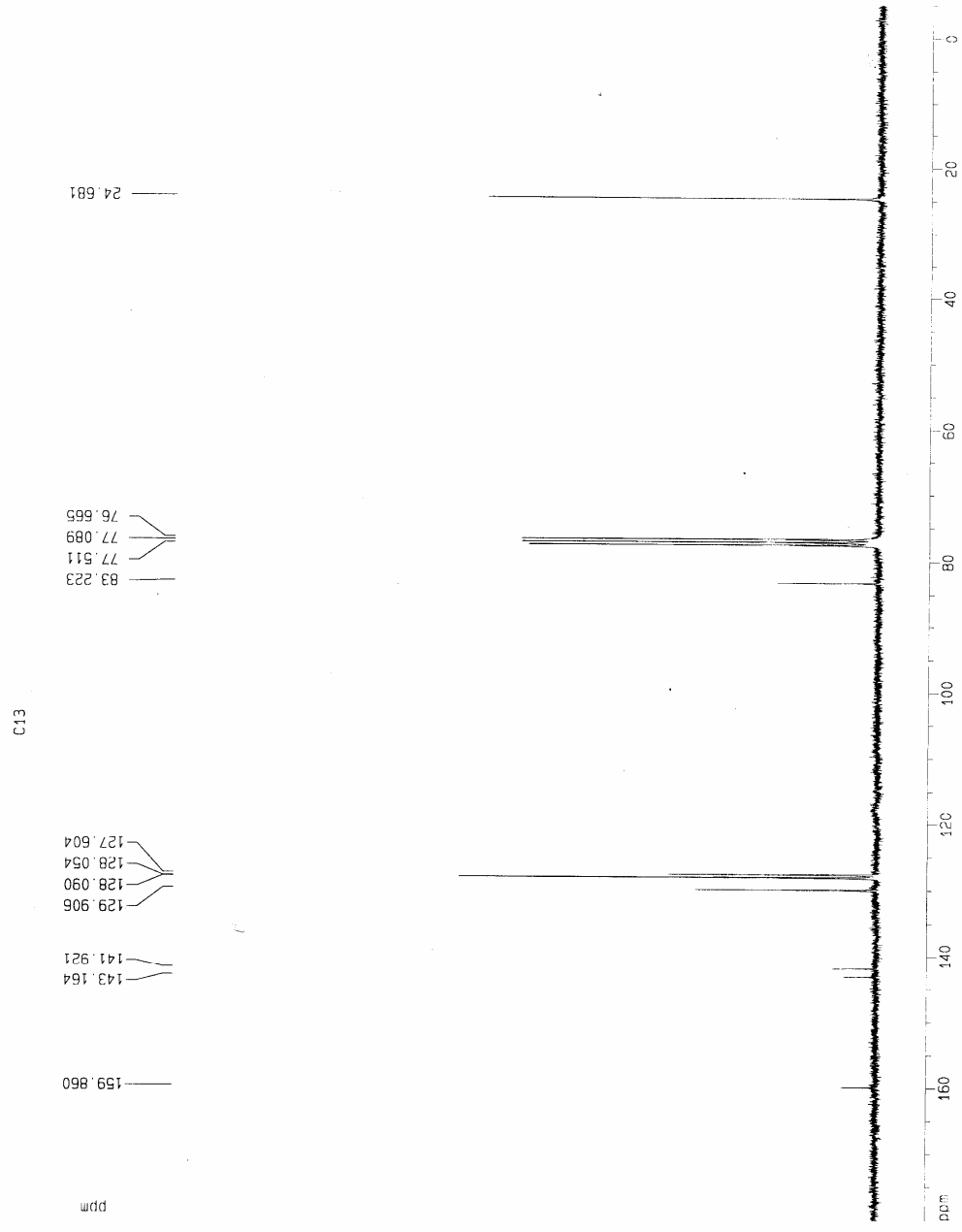


附圖 2 化合物 3-2 之 <sup>1</sup>H-NMR 光譜

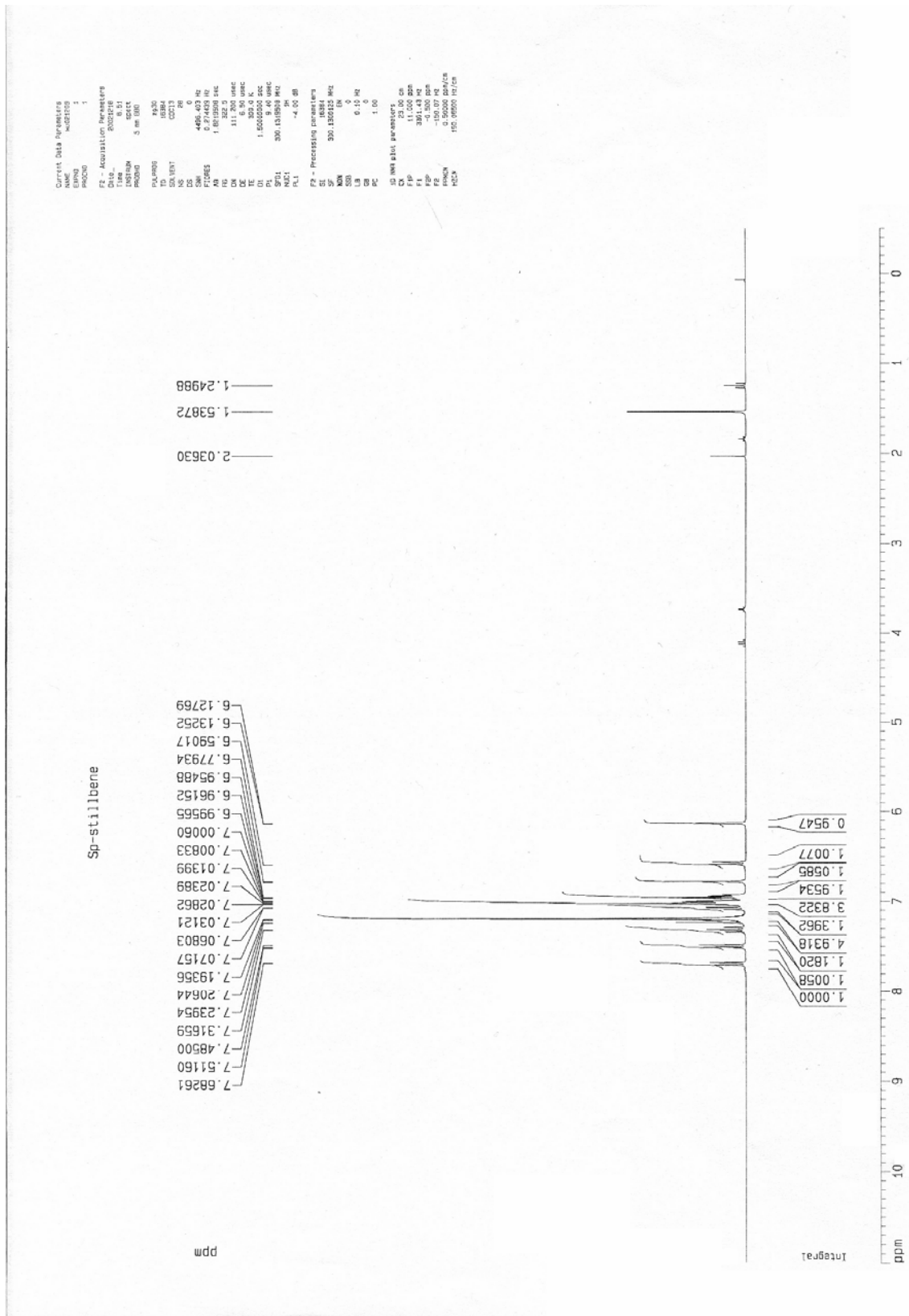
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NAME: 3-2
EXPNO: 1
PROCNO: 1
PROCPS: 1
F2 - F1: 120.111000 MHz
SFO1: 125.7613500 MHz
AQ: 0.50000000
RG: 327.50000000
AQ1: 0.50000000
RG1: 327.50000000
SI: 3275
SF: 125.76135000
WDW: EM
SSB: 0
GB: 0
PC: 1.00000000
SC: 0.00000000
RC: 0.00000000
IC: 0.00000000
GC: 0.00000000
EC: 0.00000000
AC: 0.00000000
MC1: 0.00000000
MC2: 0.00000000
MC3: 0.00000000
MC4: 0.00000000
MC5: 0.00000000
MC6: 0.00000000
MC7: 0.00000000
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MC10: 0.00000000
MC11: 0.00000000
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MC95: 0.00000000
MC96: 0.00000000
MC97: 0.00000000
MC98: 0.00000000
MC99: 0.00000000
MC100: 0.00000000

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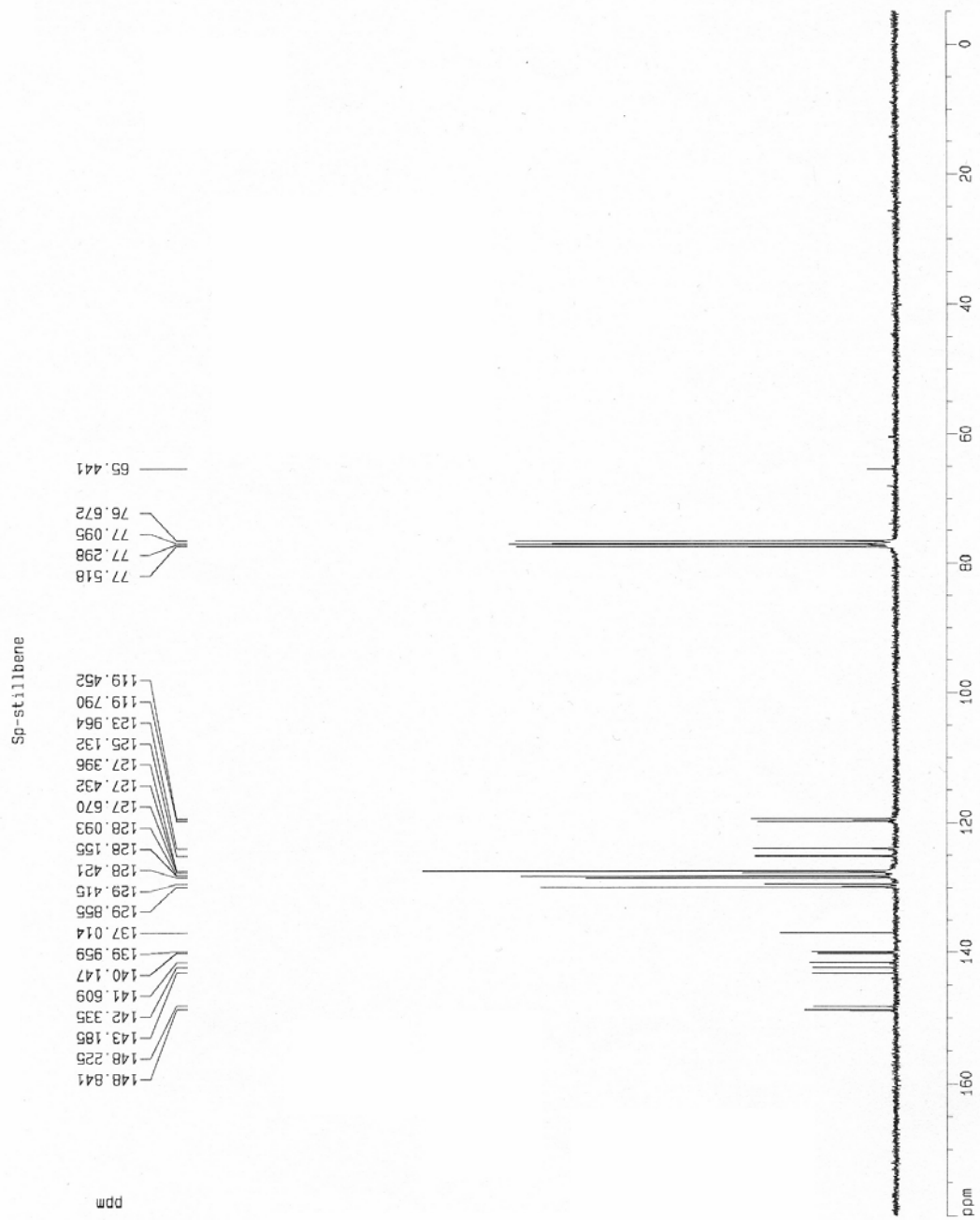
附圖 3 化合物 3-2 之 <sup>13</sup>C-NMR 光譜



附圖 4 DPVSBF 之 <sup>1</sup>H-NMR 光譜

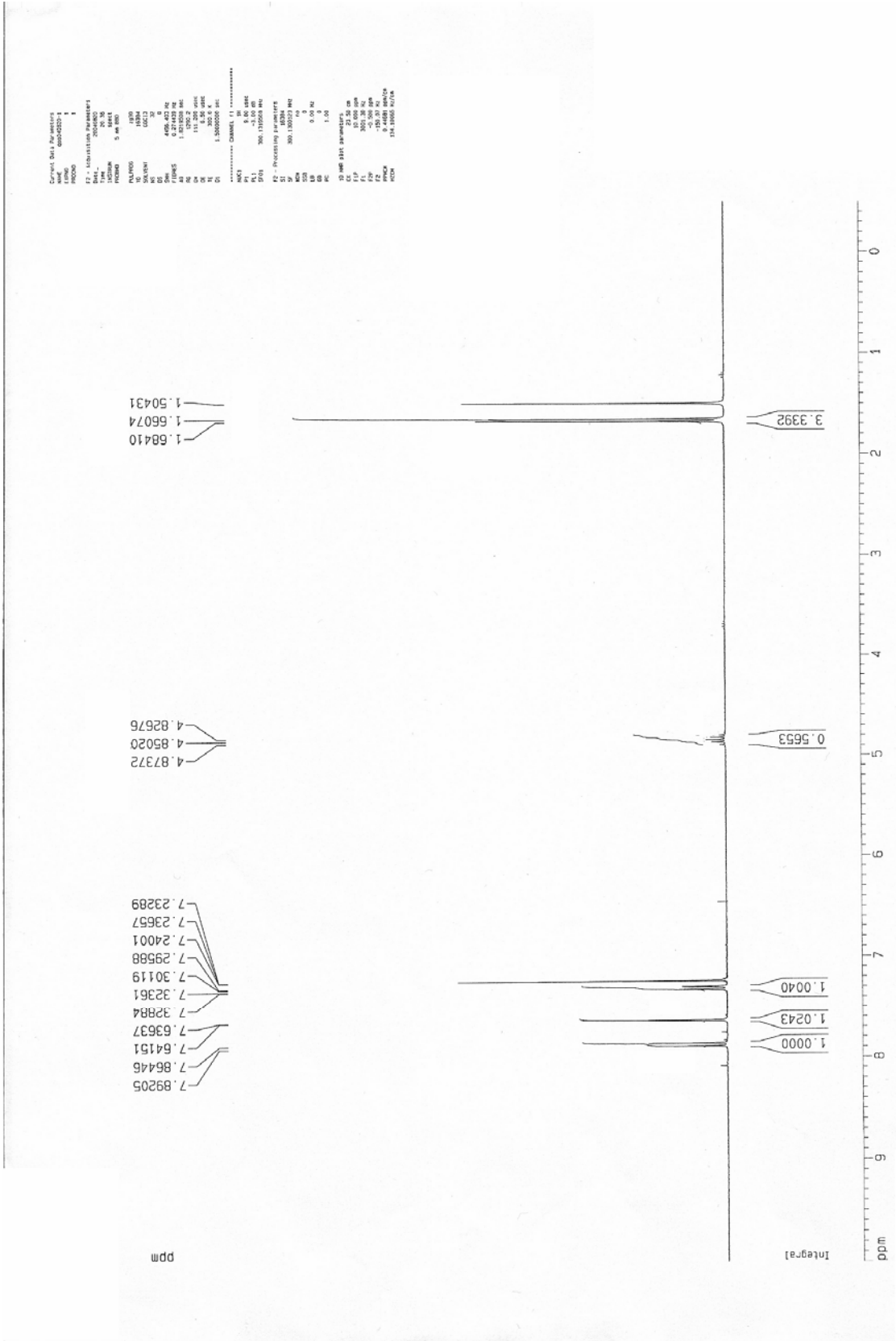
Current Data Parameters  
 Name: 20022248  
 EXPNO: 2  
 PROCNO: 1

F2 - Acquisition Parameters  
 Date\_: 20022248  
 Time: 8:55  
 INSTRUM: spect  
 PROBR1: 5 mm BBO  
 PULPROG: zgpg30  
 TD: 65536  
 SOLVENT: CDCl3  
 NS: 724  
 DS: 4  
 SWH: 20385.263 Hz  
 AQ: 0.331338 Hz  
 RG: 1.174818 Hz  
 RB: 4.871.5  
 DM: 24.630 MHz  
 DE: 6.000000 Hz  
 TE: 300.0 K  
 FIDRES: 0.000000 Hz  
 AQ13: 1.500000 Hz  
 OPRD02: null:16  
 P002: 34.60 usec  
 P003: 30.00 usec  
 P004: 30.00 usec  
 P1P: 10.00 usec  
 P12: 13.00 usec  
 P13: 13.00 usec  
 P14: 13.00 usec  
 P15: 13.00 usec  
 P16: 13.00 usec  
 P17: 13.00 usec  
 P18: 13.00 usec  
 P19: 13.00 usec  
 P20: 13.00 usec  
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 P100: 13.00 usec

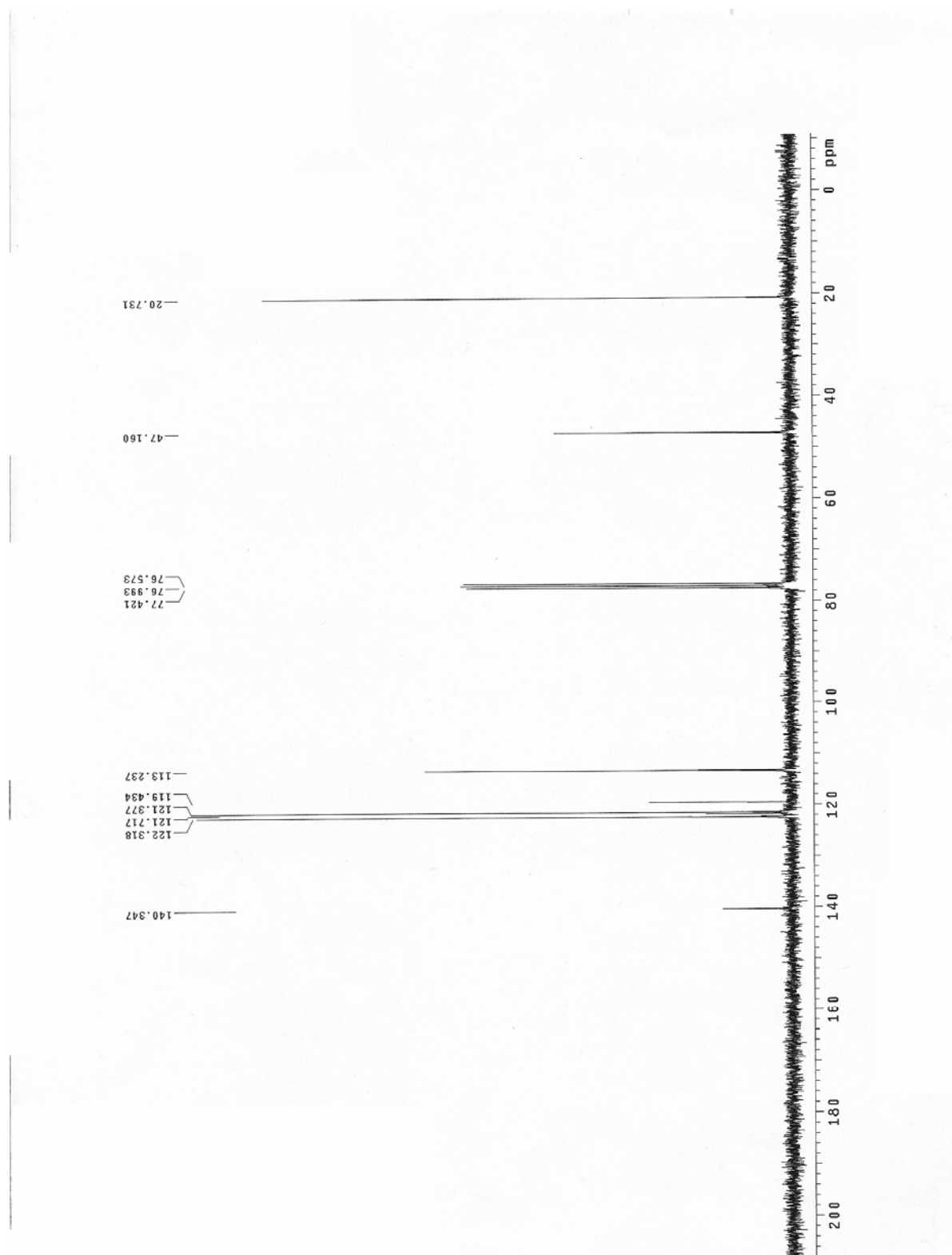


附圖 5 DPVSBF 之 <sup>13</sup>C-NMR 光譜

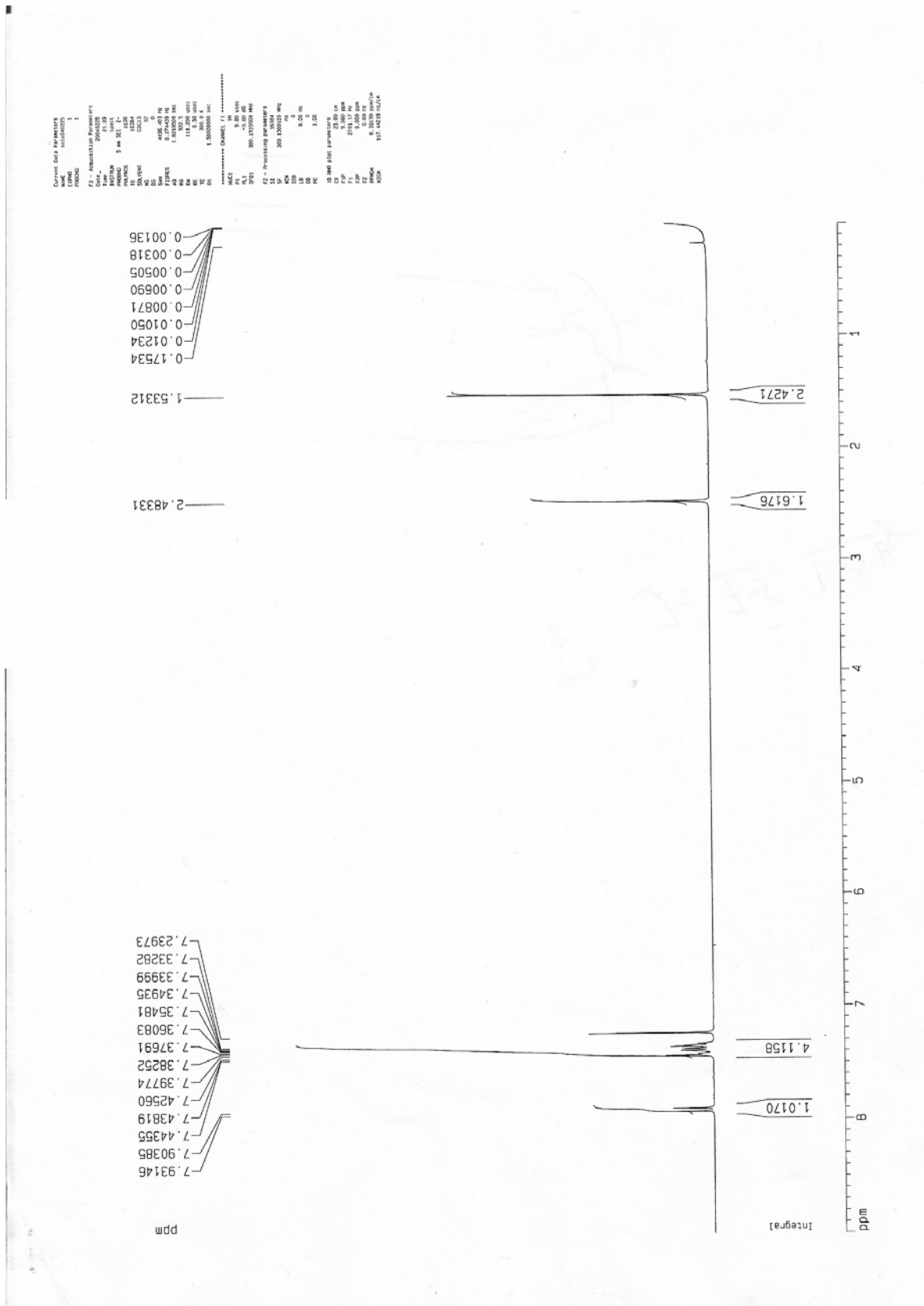
附圖 6 化合物 4-2 之  $^1\text{H-NMR}$  光譜



附圖 7 化合物 4-2 之  $^{13}\text{C}$ -NMR 光譜

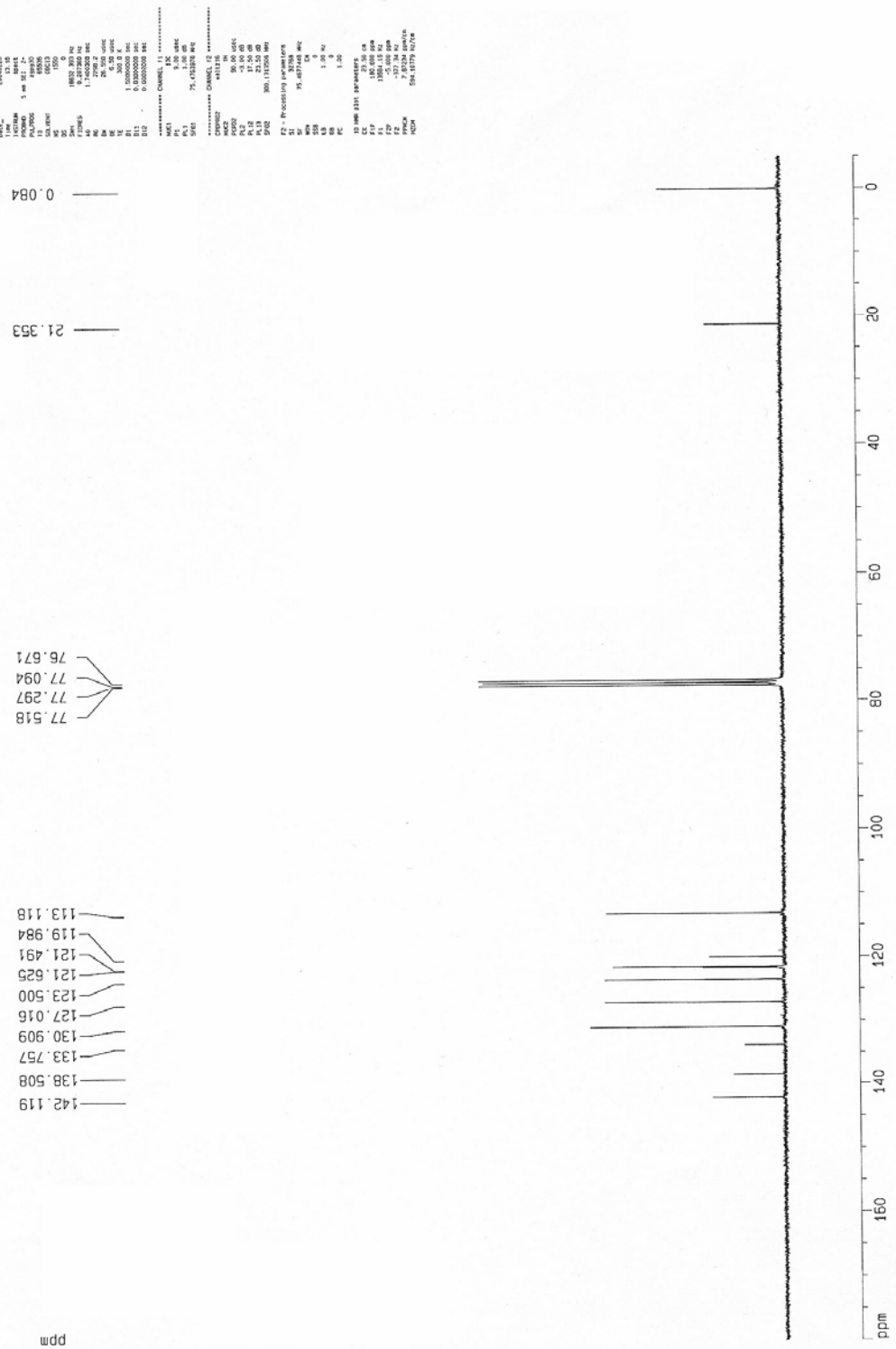


附圖 8 化合物 4-3 之 <sup>1</sup>H-NMR 光譜



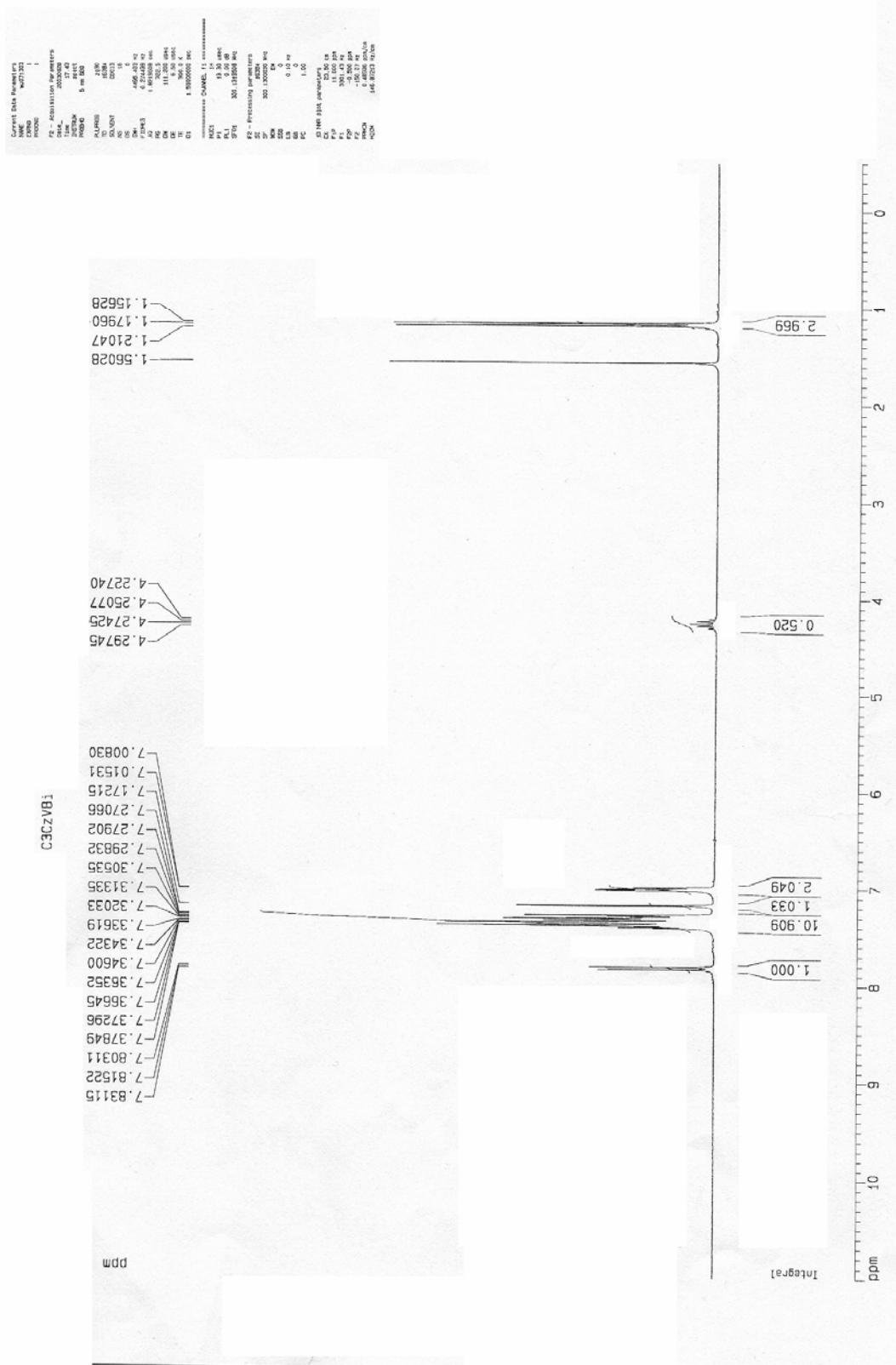


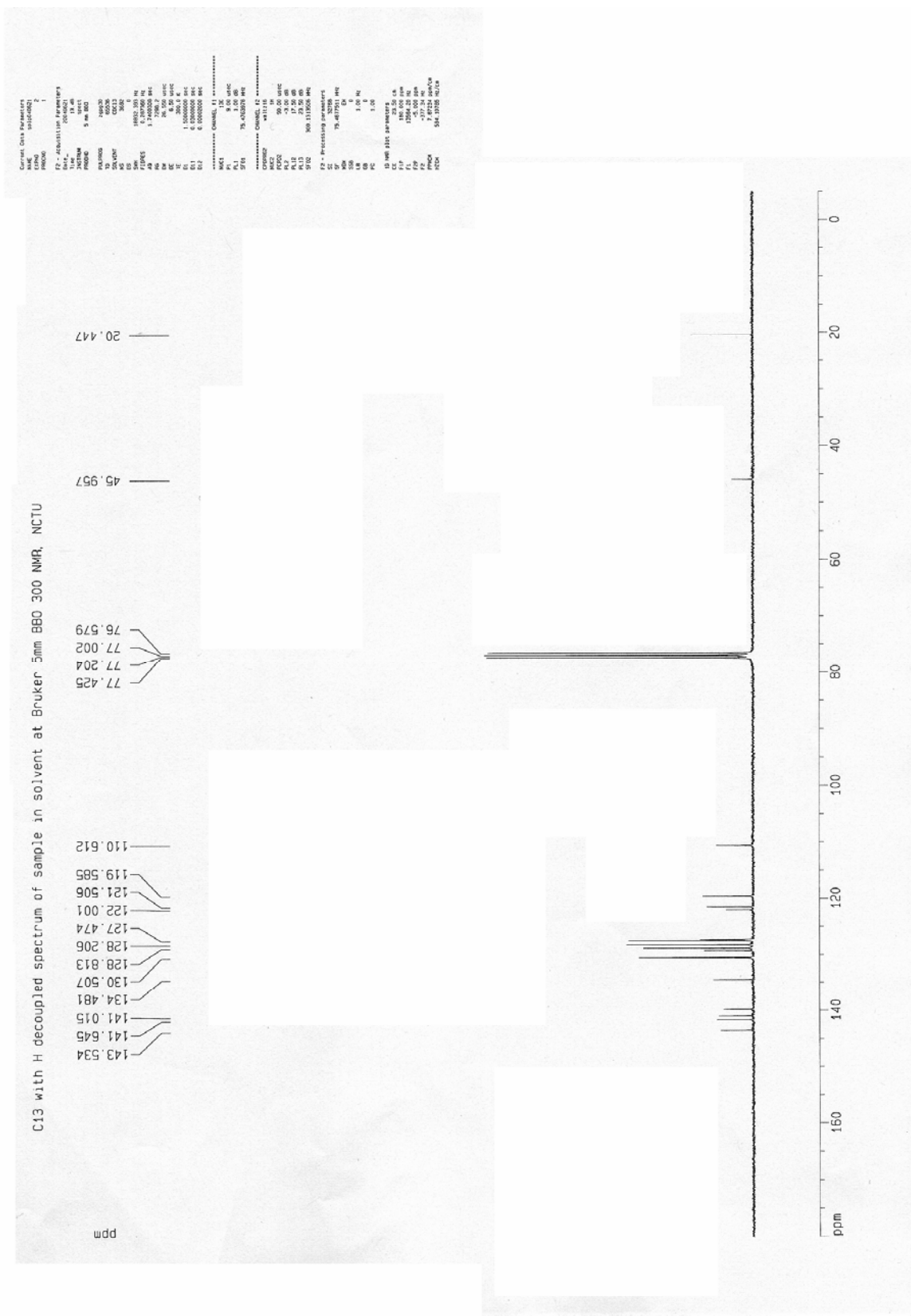
C13 with H decoupled spectrum of sample in solvent at Bruker 5mm BBO 300 NMR, NCTU



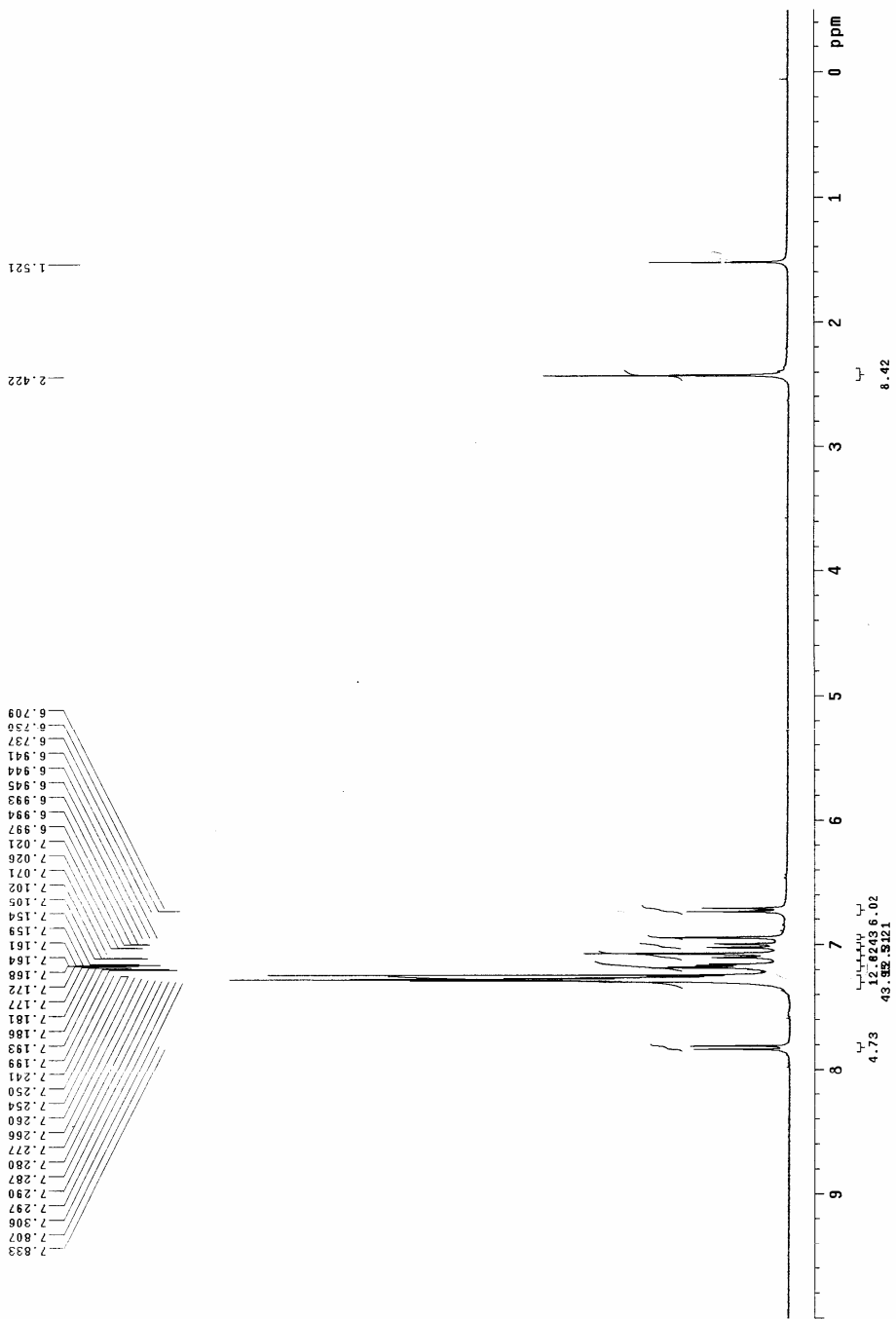
附圖 9 化合物 4-3 之 <sup>13</sup>C-NMR 光譜

附圖 10 DPVICz 之 <sup>1</sup>H-NMR 光譜





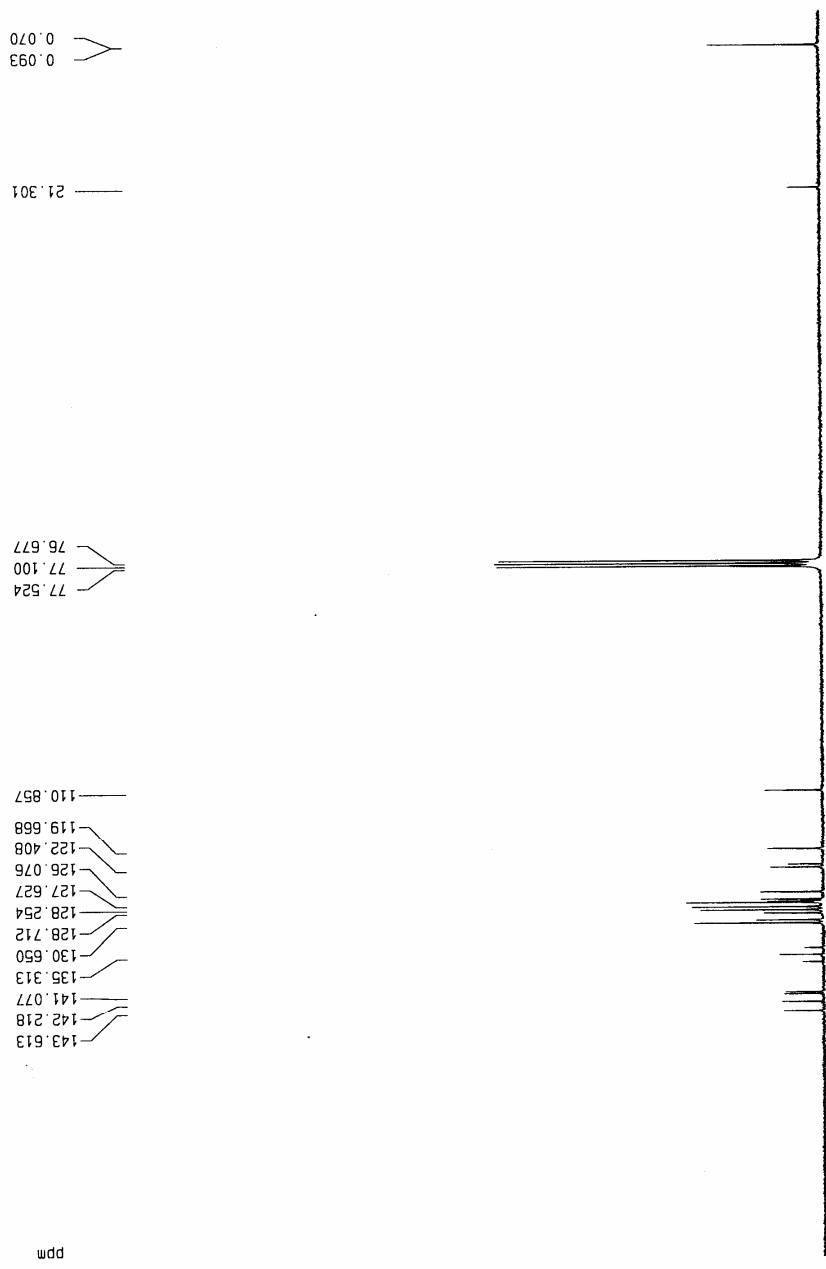
附圖 11 DPVICz 之 <sup>13</sup>C-NMR 光譜



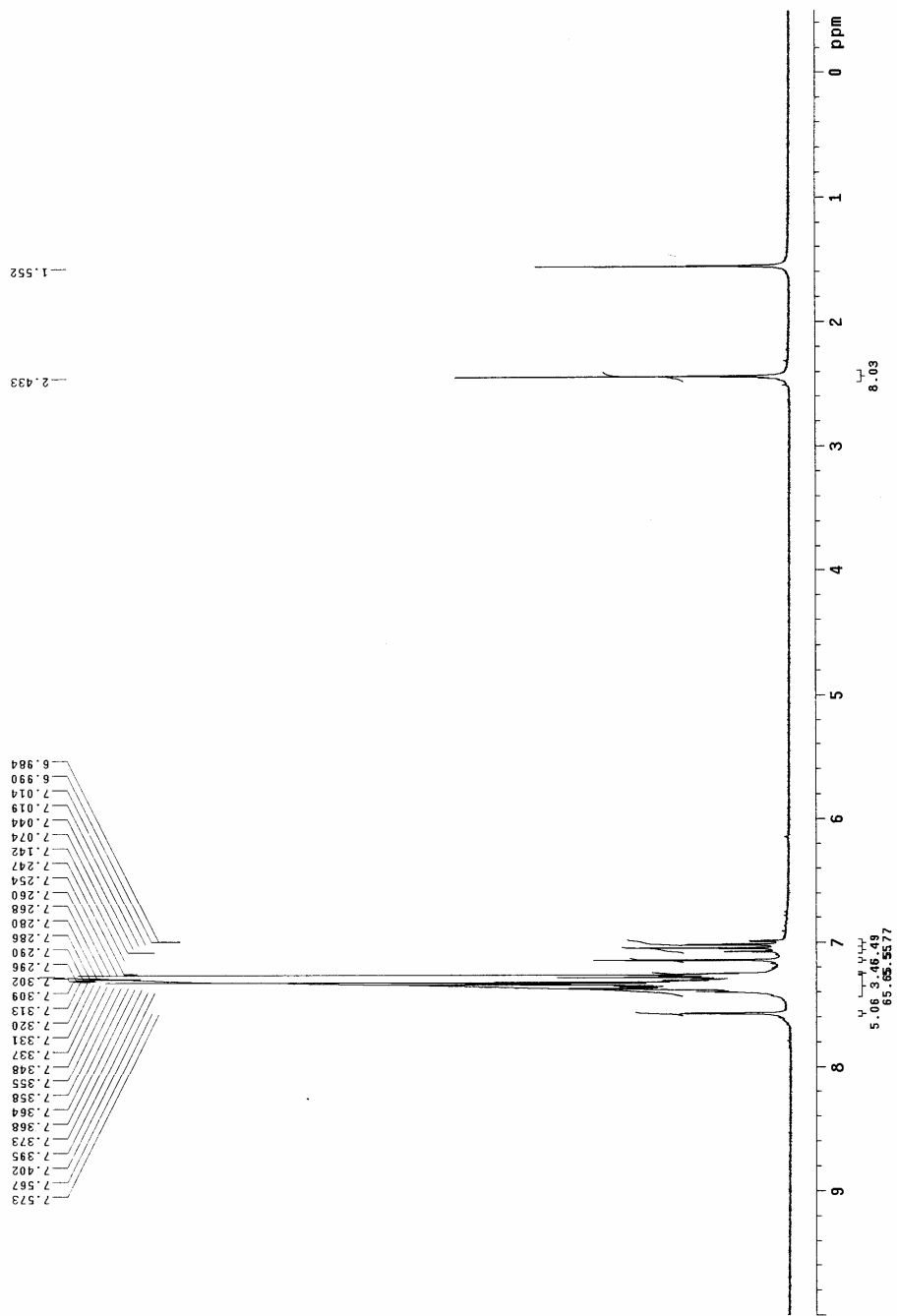
附圖 12 DPVTCz 之  $^1\text{H-NMR}$  光譜

Current Data Parameters  
Name: SolidState 2  
PROCNO: 1  
Date\_Time: 10/31/05 10:28  
PROBHD: 5 mm BBO  
PULPROG: zgpg30  
SOLVENT: CDCl3  
AQ: 4.91  
RG: 1024  
SI: 32768  
SF: 125.760 MHz  
WDW: EM  
SSB: 0  
LB: 1.00000 Hz  
GB: 0  
PC: 0.000000 sec  
DC0: 0  
FIDRES: 0.101464  
AQC: 0.187855  
RG2: 1.000000  
SFO: 75.473300 MHz

C13 with H decoupled spectrum of sample in solvent at Bruker 5mm BBO 300 NMR. NCTU



附圖 13 DPVTCz 之 <sup>13</sup>C-NMR 光譜



附圖 14 3,6-DPVTCz 之  $^1\text{H-NMR}$  光譜