

## **ESPECTROS DE RMN**

Hojal60[4/19-20/19-26y3/12-18/19-26]

Pulse Sequence: s2pu1

Solvent: CDCl<sub>3</sub>  
Ambient temperature  
INOVA-300 "inova1"

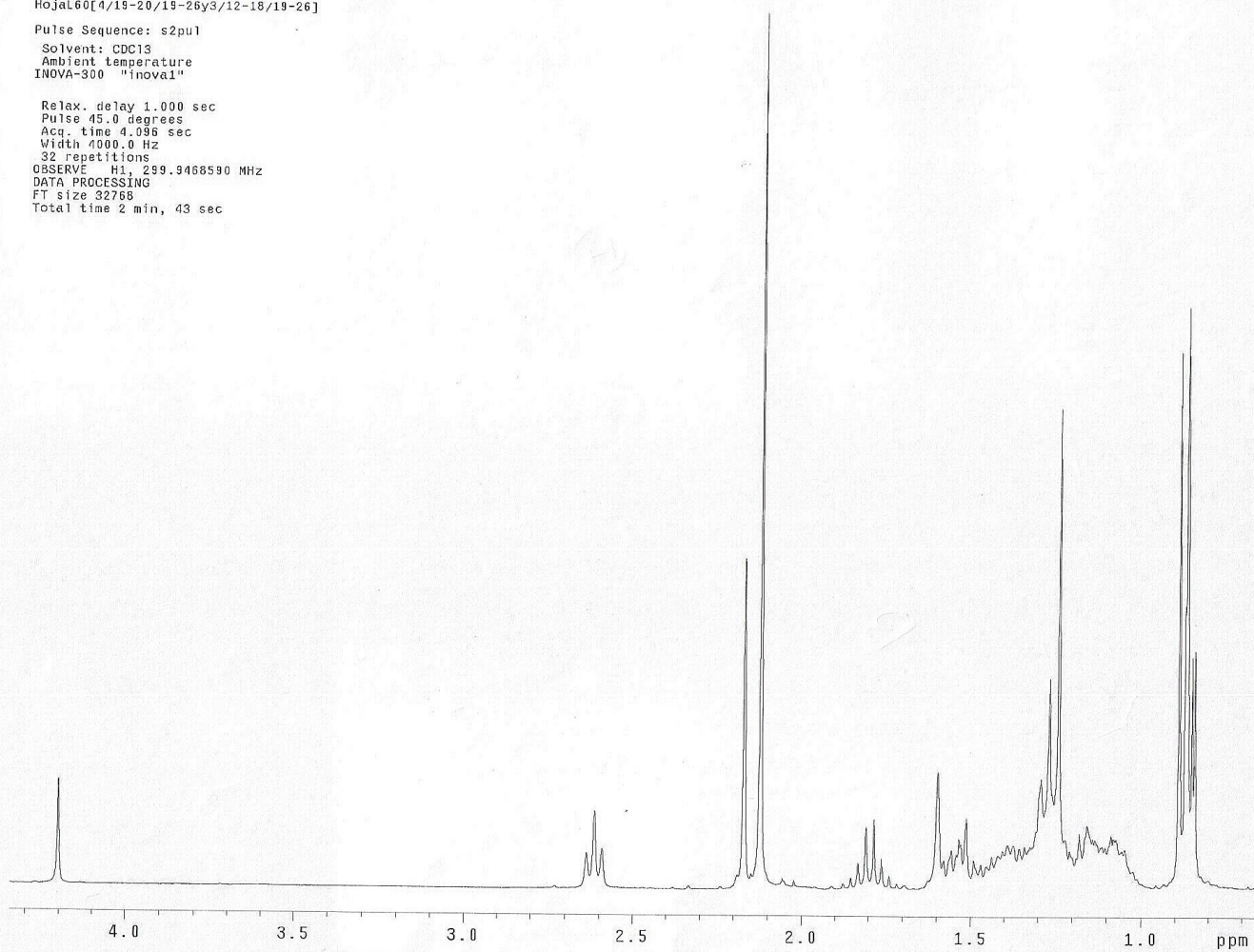
Relax. delay 1.000 sec  
Pulse 45.0 degrees  
Acq. time 4.096 sec  
Width 4000.0 Hz  
32 repetitions

OBSERVE H1, 299.9468590 MHz

DATA PROCESSING

FT size 32768

Total time 2 min, 43 sec

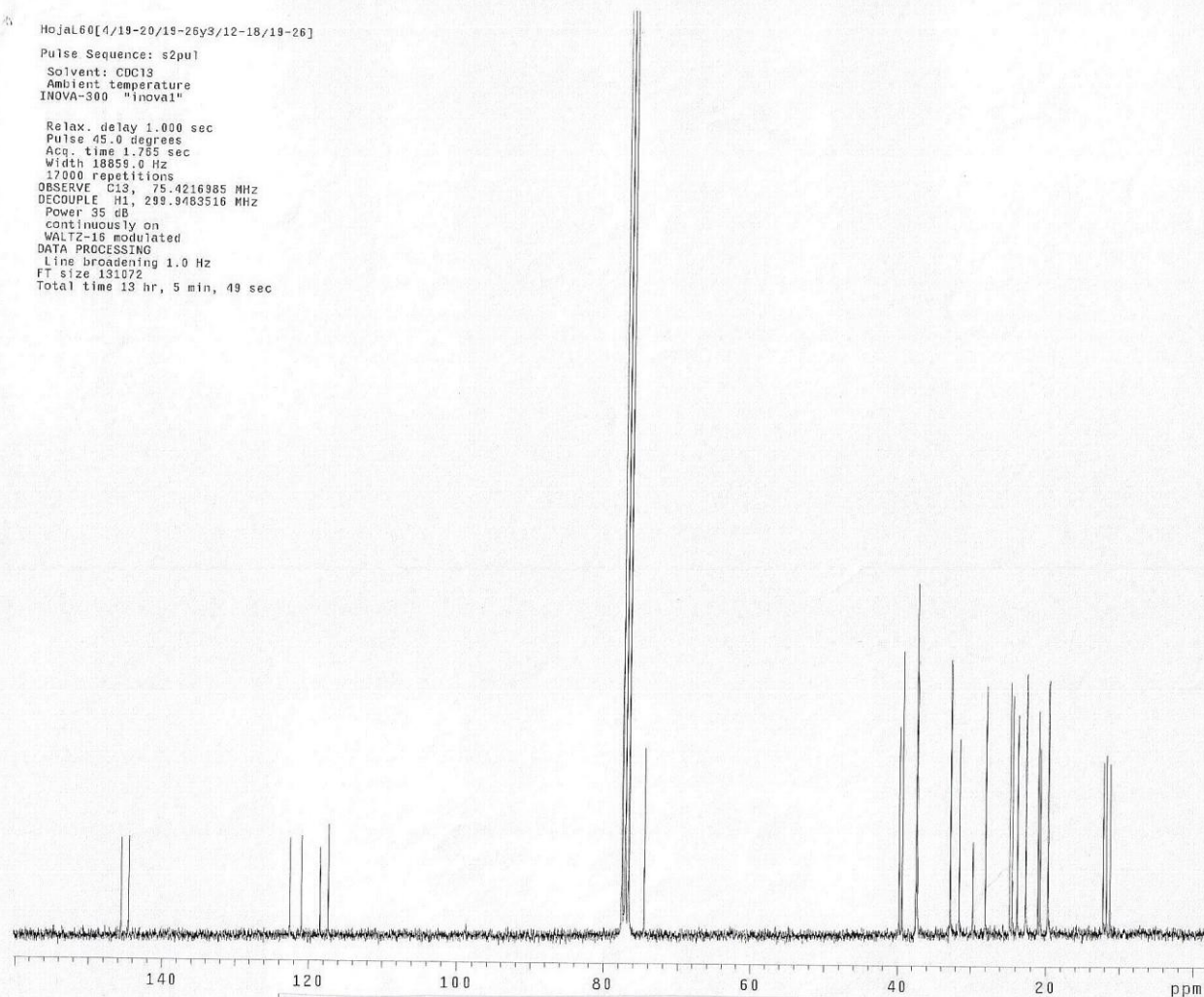


**Espectro 1.** Espectro de RMN de <sup>1</sup>H (300 MHz, CDCl<sub>3</sub>) da substância I.

Hojal60[4/19-20/19-26y3/12-18/19-26]

Pulse Sequence: s2pu1  
Solvent: CDCl3  
Ambient temperature  
INOVA-300 "Inova1"

Relax. delay 1.000 sec  
Pulse 45.0 degrees  
Acq. time 1.785 sec  
Width 18859.0 Hz  
17000 repetitions  
OBSERVE C13, 75.4216985 MHz  
DECOUPLE H1, 299.9483516 MHz  
Power 35 dB  
continuously on  
WALTZ-16 modulated  
DATA PROCESSING  
Line broadening 1.0 Hz  
FT size 131072  
Total time 13 hr, 5 min, 49 sec



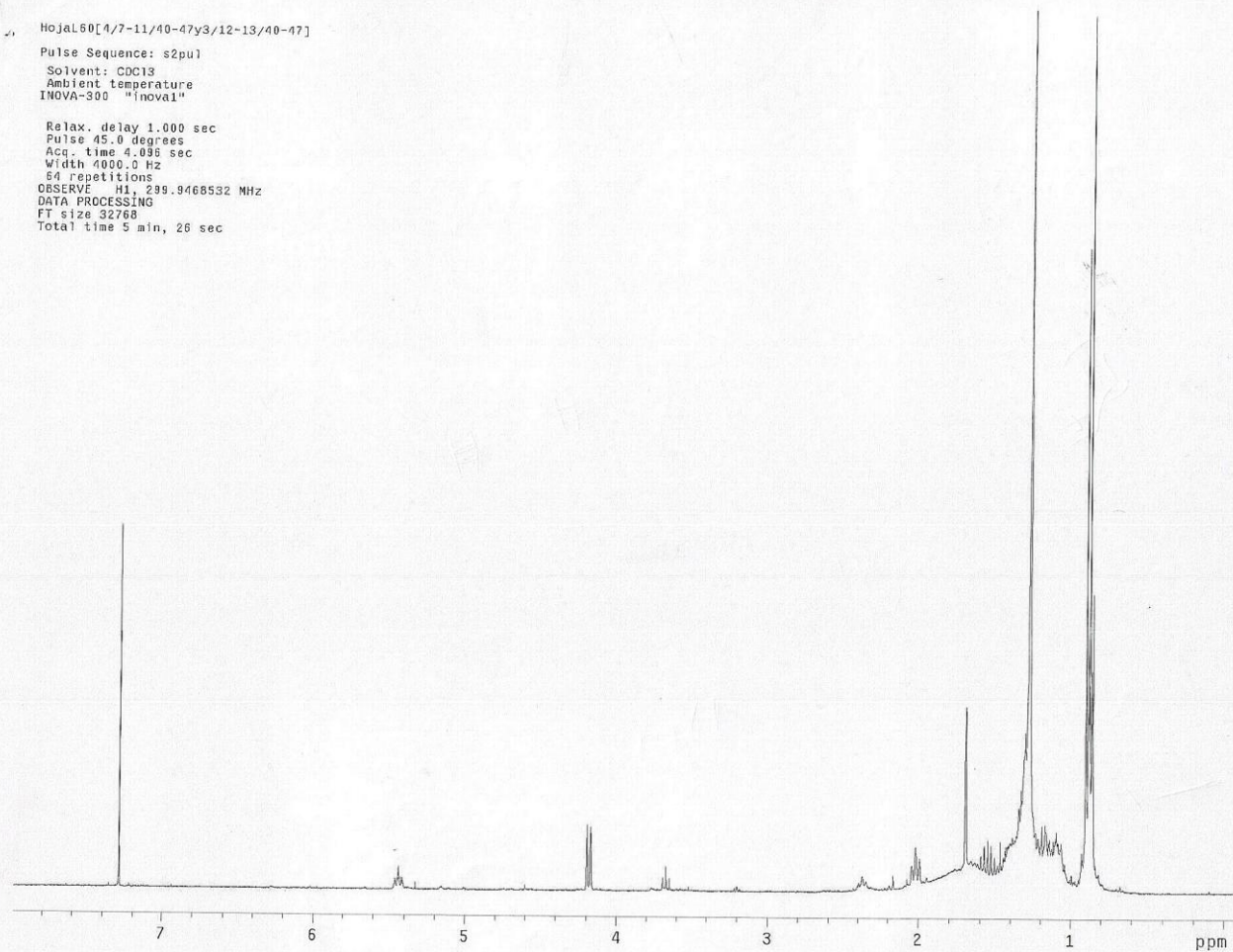
113

Espectro 2. Espectro de RMN de  $^{13}\text{C}$  (75 MHz,  $\text{CDCl}_3$ ) da substância I.

HojaL60[4/7-11/40-47y3/12-13/40-47]

Pulse Sequence: s2pu1  
Solvent: CDCl3  
Ambient temperature  
INOVA-300 "inova1"

Relax. delay 1.000 sec  
Pulse 45.0 degrees  
Acq. time 4.095 sec  
Width 4000.0 Hz  
54 repetitions  
OBSERVE H1, 299.9468532 MHz  
DATA PROCESSING  
FT size 32768  
Total time 5 min, 26 sec



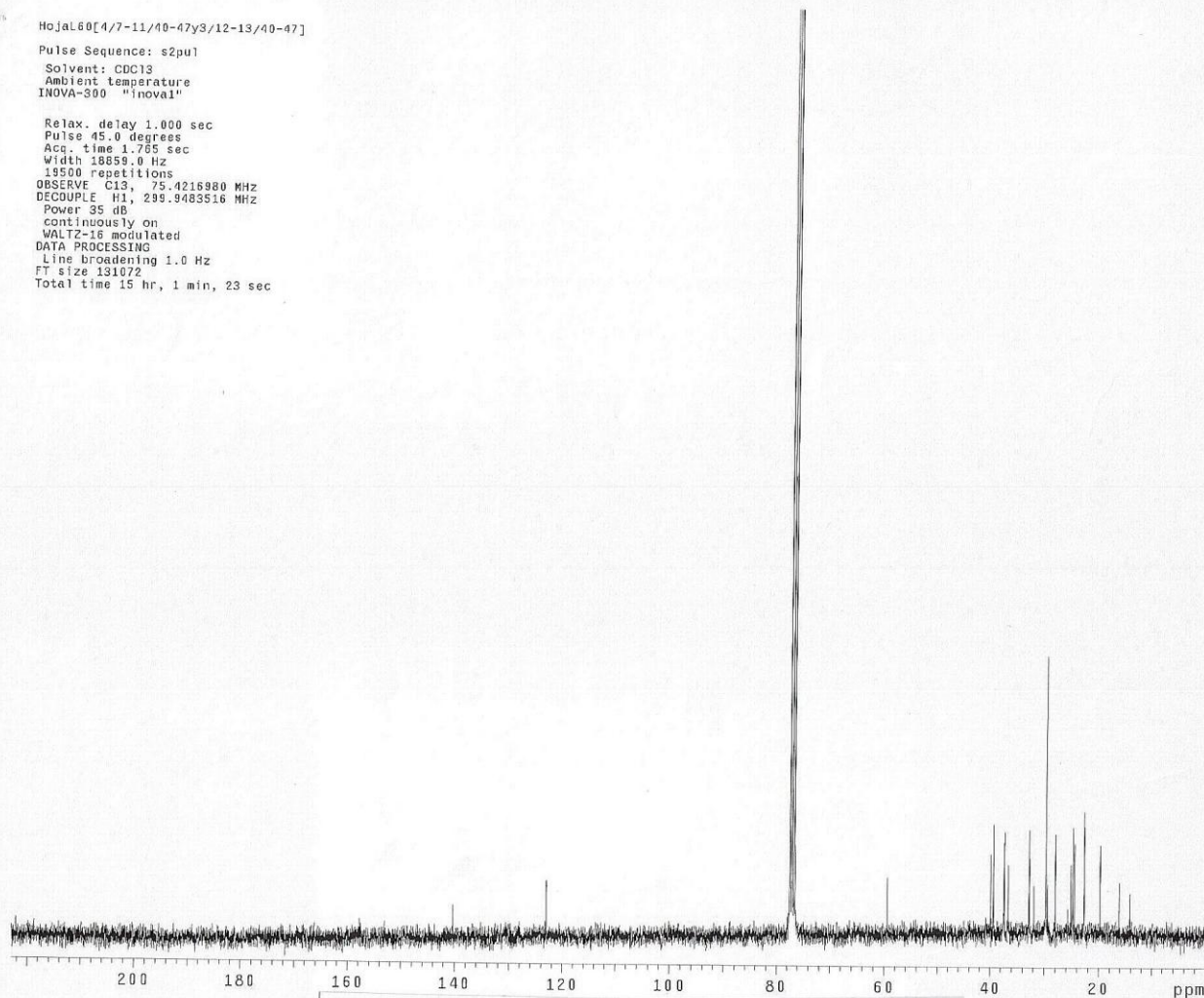
**Espectro 3.** Espectro de RMN de  $^1\text{H}$  (300 MHz,  $\text{CDCl}_3$ ) da substância **II**.



HojaL60[4/7-11/40-47y3/12-13/40-47]

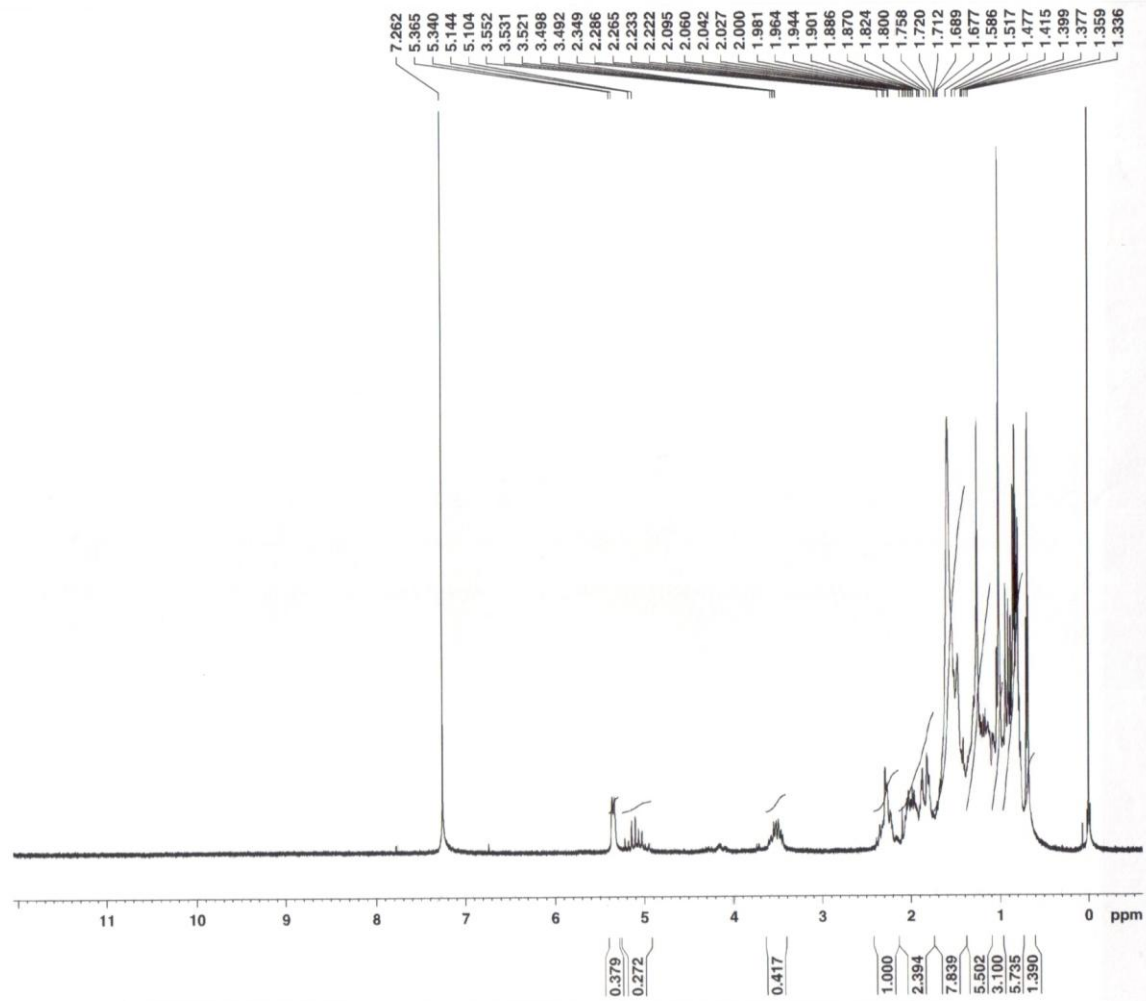
Pulse Sequence: s2pu1  
Solvent: CDCl3  
Ambient temperature  
INOVA-300 "inova1"

Relax. delay 1.000 sec  
Pulse 45.0 degree  
Acq. time 1.765 sec  
Width 18859.0 Hz  
13500 repetitions  
OBSERVE C13, 75.4216980 MHz  
DECOUPLE H1, 299.9483516 MHz  
Power 35 dB  
continuously on  
WALTZ-16 modulated  
DATA PROCESSING  
Line broadening 1.0 Hz  
FT size 131072  
Total time 15 hr, 1 min, 23 sec

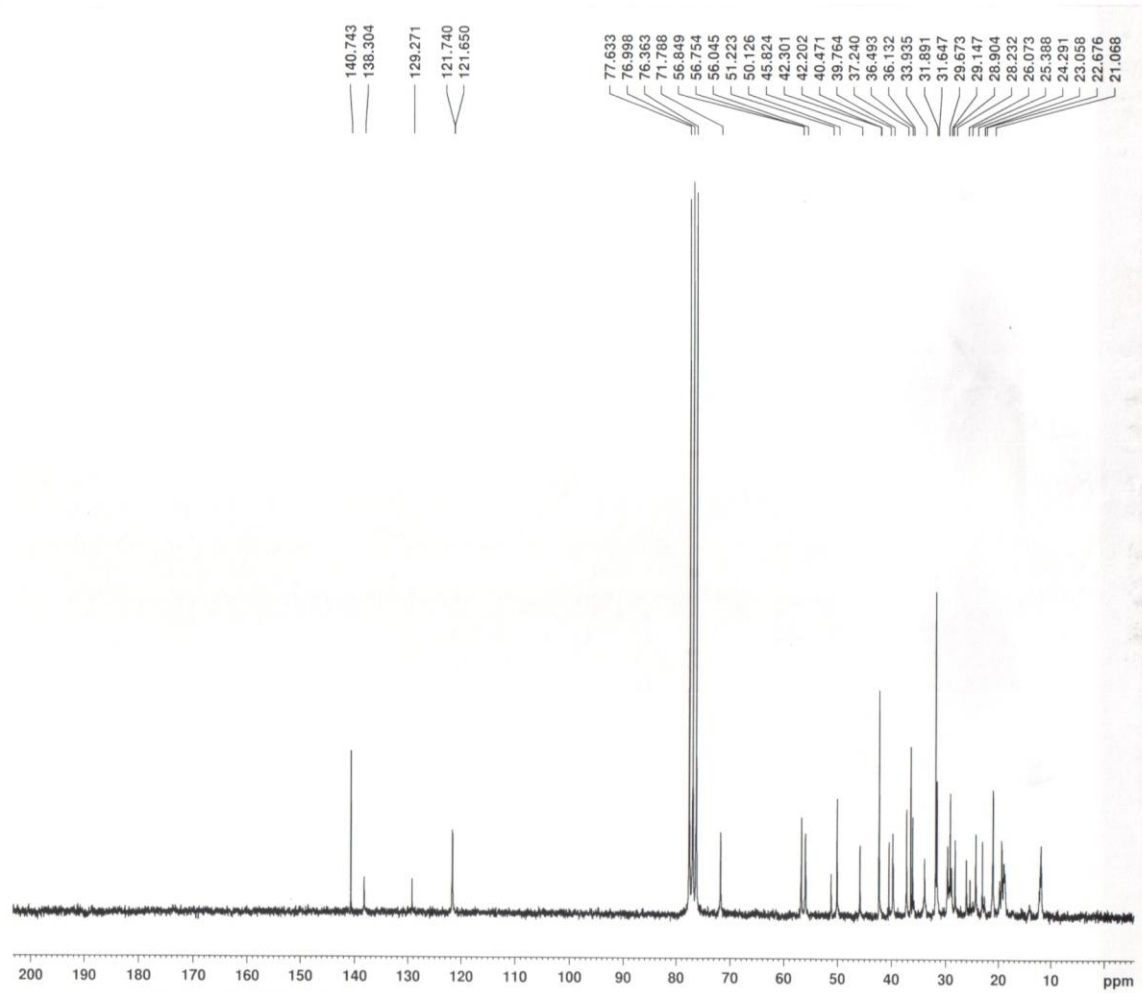


115

**Espectro 4.** Espectro de RMN de  $^{13}\text{C}$  (75 MHz,  $\text{CDCl}_3$ ) da substância **II**.



**Espectro 5.** Espectro de RMN de  $^1\text{H}$  (200 MHz,  $\text{CDCl}_3$ ) da mistura das substância III e IV.



**Espectro 6.** Espectro de RMN de  $^{13}\text{C}$  (50 MHz,  $\text{CDCl}_3$ ) da mistura das substâncias **III** e **IV**.