

Supporting Information

Synthesis of Azines in Solid State: Reactivity of Solid Hydrazine with Aldehydes and Ketones

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Fig. S9 ^1H NMR Spectrum of **3b**

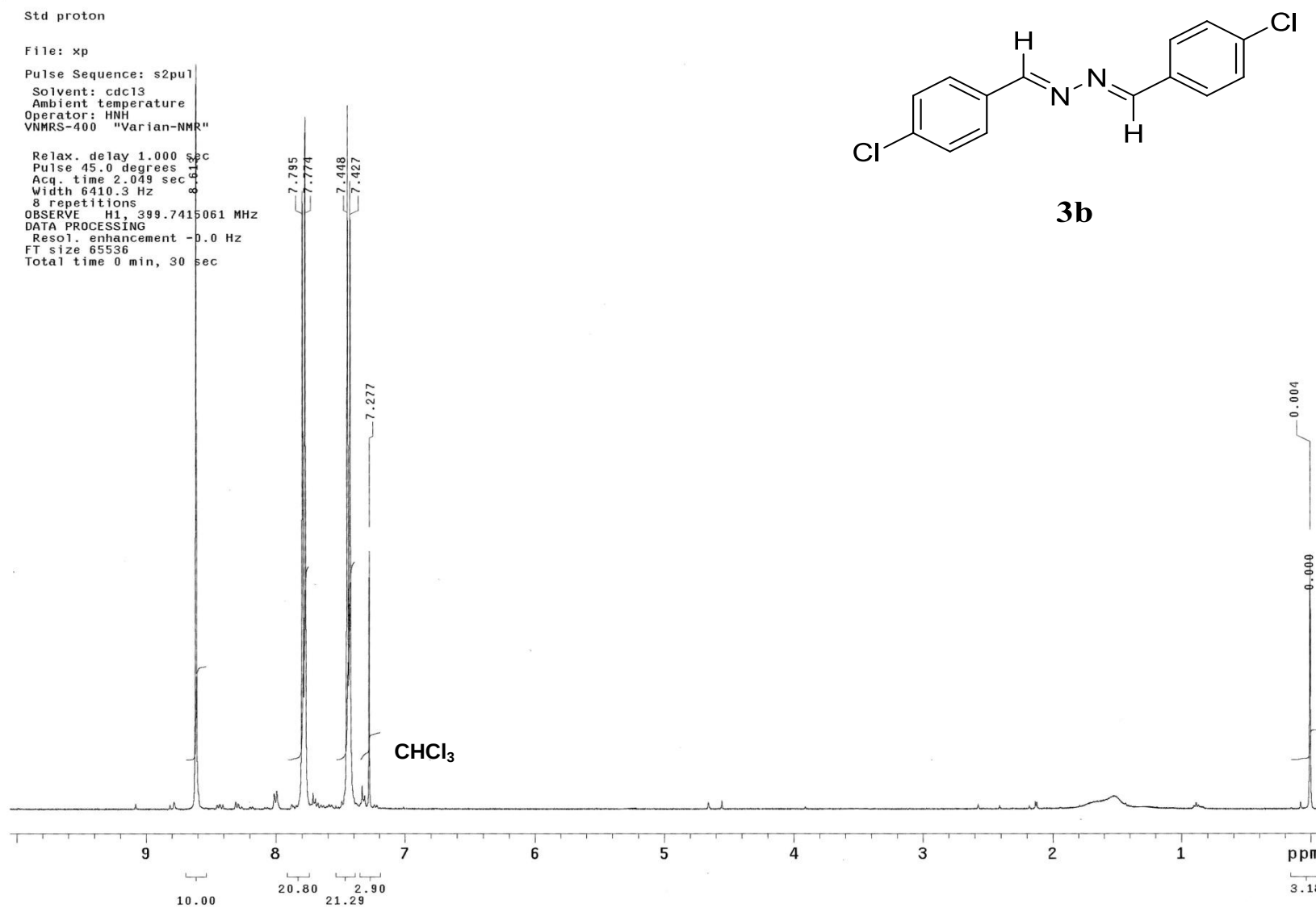


Fig. S10 ^{13}C NMR Spectrum of **3b**

Std carbon

File: xp

Pulse Sequence: s2pu1

Solvent: cdc13

Ambient temperature

Operator: HNH

VNMRS-400 "Varian-NMR"

Relax. delay 1.000 sec

Pulse 45.0 degrees

Acq. time 1.300 sec

Width 24509.8 Hz

80 repetitions

OBSERVE C13, 100.5150857 MHz

DECOUPLE H1, 399.7435210 MHz

Power 37 dB

continuously on

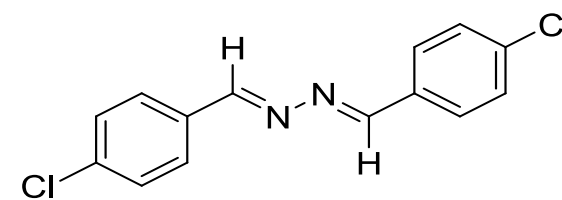
WALTZ-16 modulated

DATA PROCESSING

Line broadening 0.5 Hz

FT size 65536

Total time 19 min, 38 sec



3b

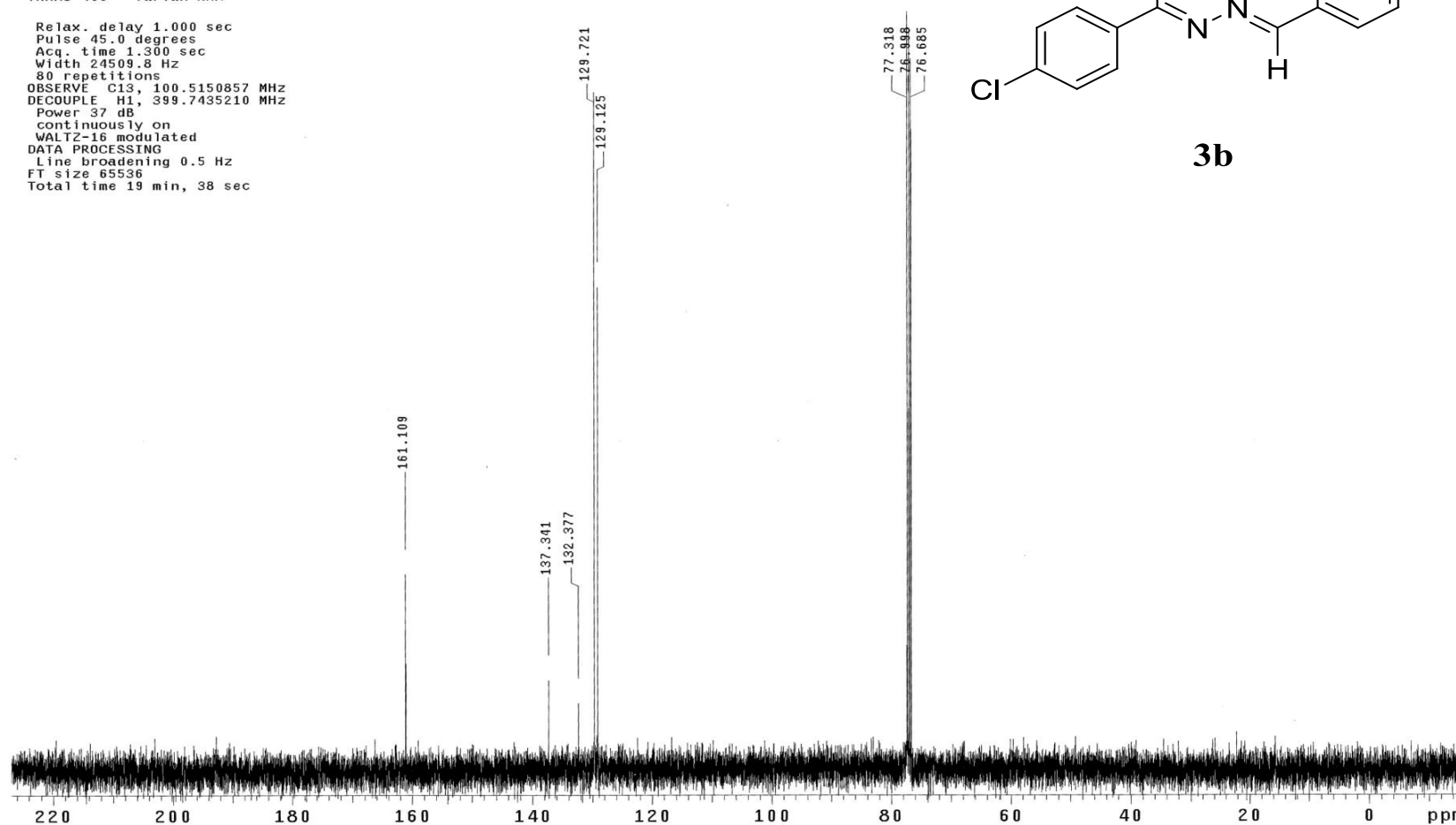


Fig. S11 ^1H NMR Spectrum of **3c**

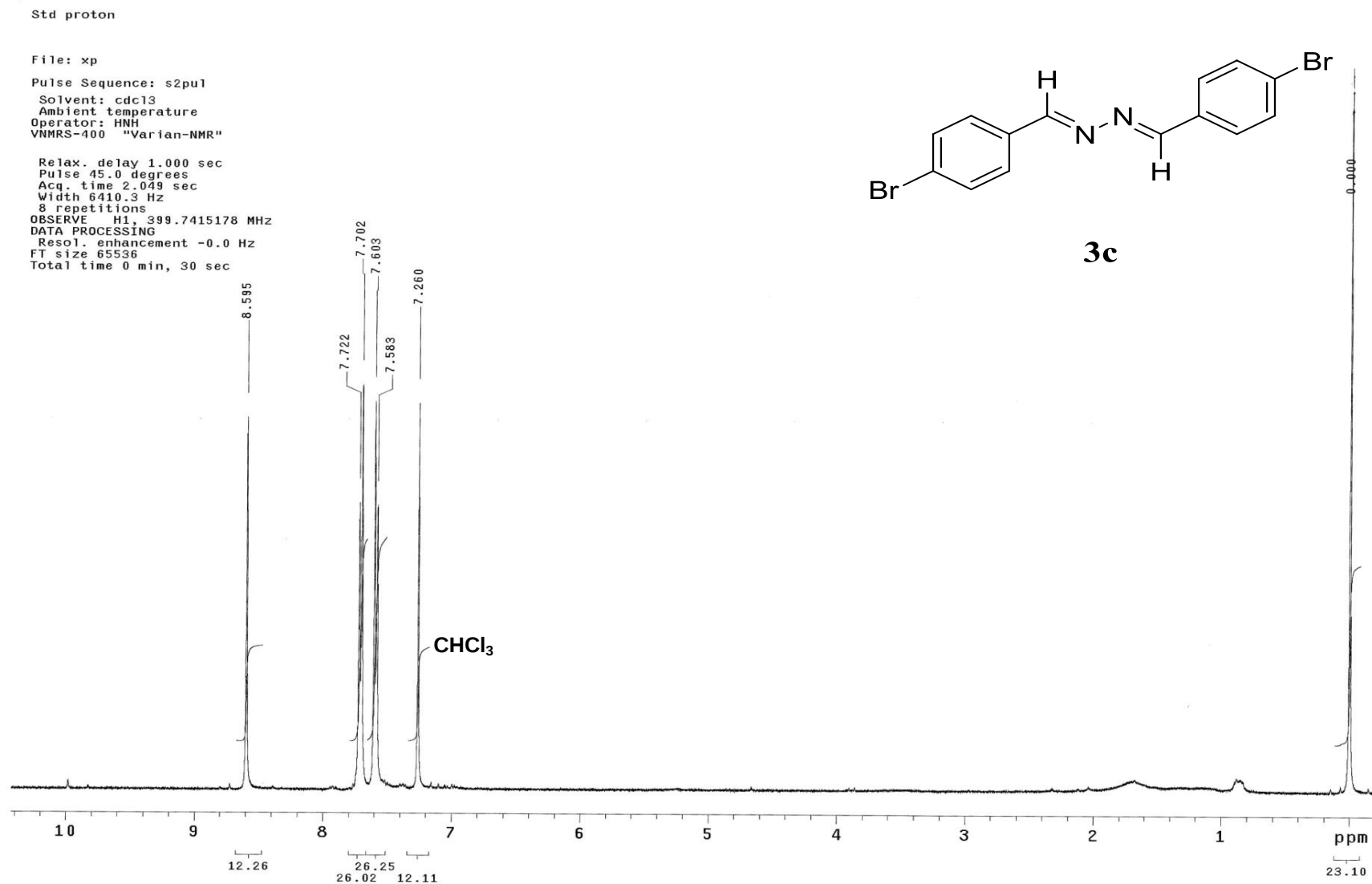


Fig. S12 ^{13}C NMR Spectrum of **3c**

Std carbon

File: xp

Pulse Sequence: s2pu1

Solvent: cdc13

Ambient temperature

Operator: HNH

VNMRS-400 "Varian-NMR"

Relax. delay 1.000 sec

Pulse 45.0 degrees

Acq. time 1.300 sec

Width 24509.8 Hz

240 repetitions

OBSERVE C13, 100.5150857 MHz

DECOUPLE H1, 399.7435210 MHz

Power 37 dB

Continuously on

WALTZ-16 modulated

DATA PROCESSING

Line broadening 0.5 Hz

FT size 65536

Total time 19 min, 38 sec

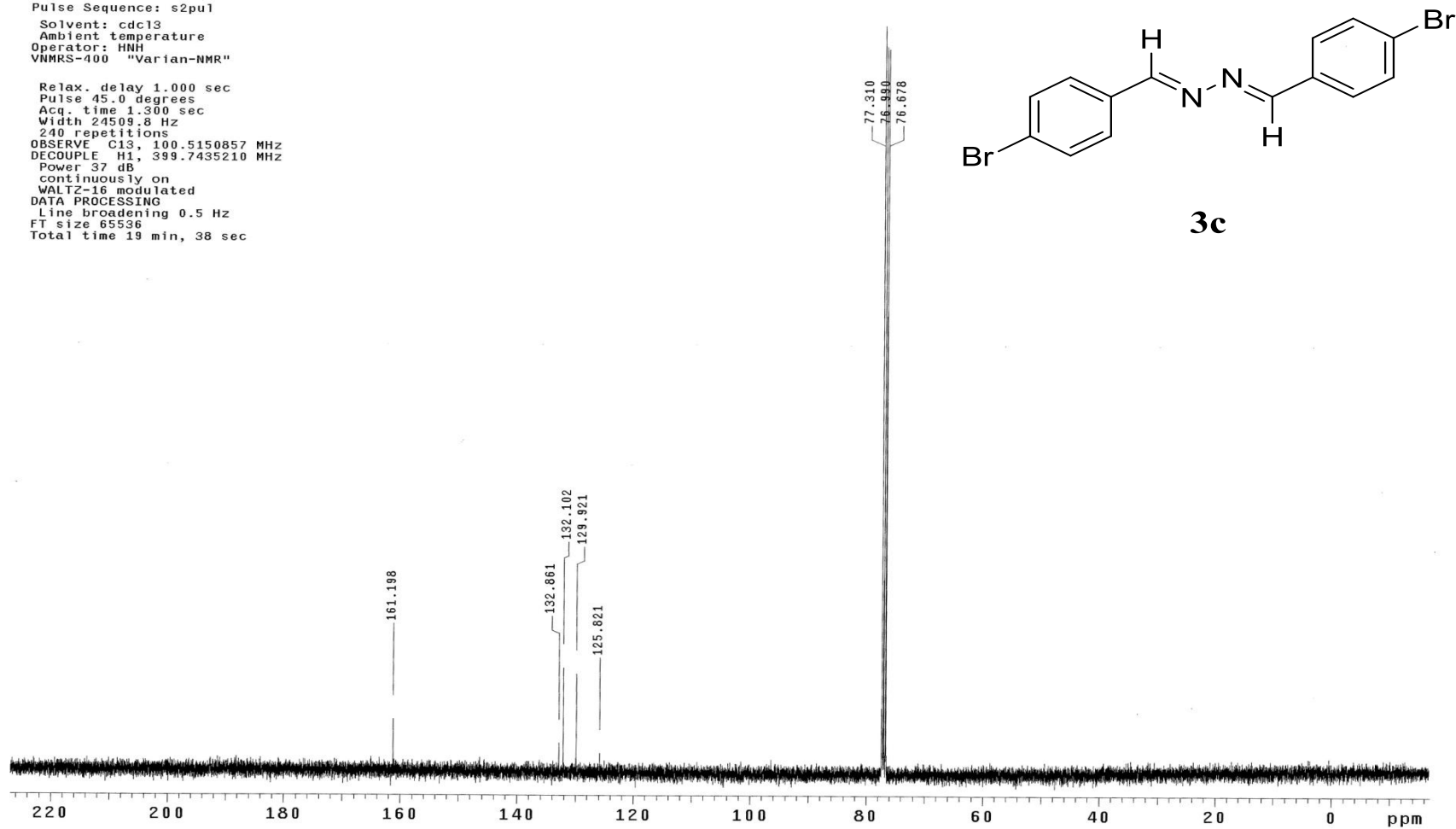


Fig. S13 ^1H NMR Spectrum of **3d**

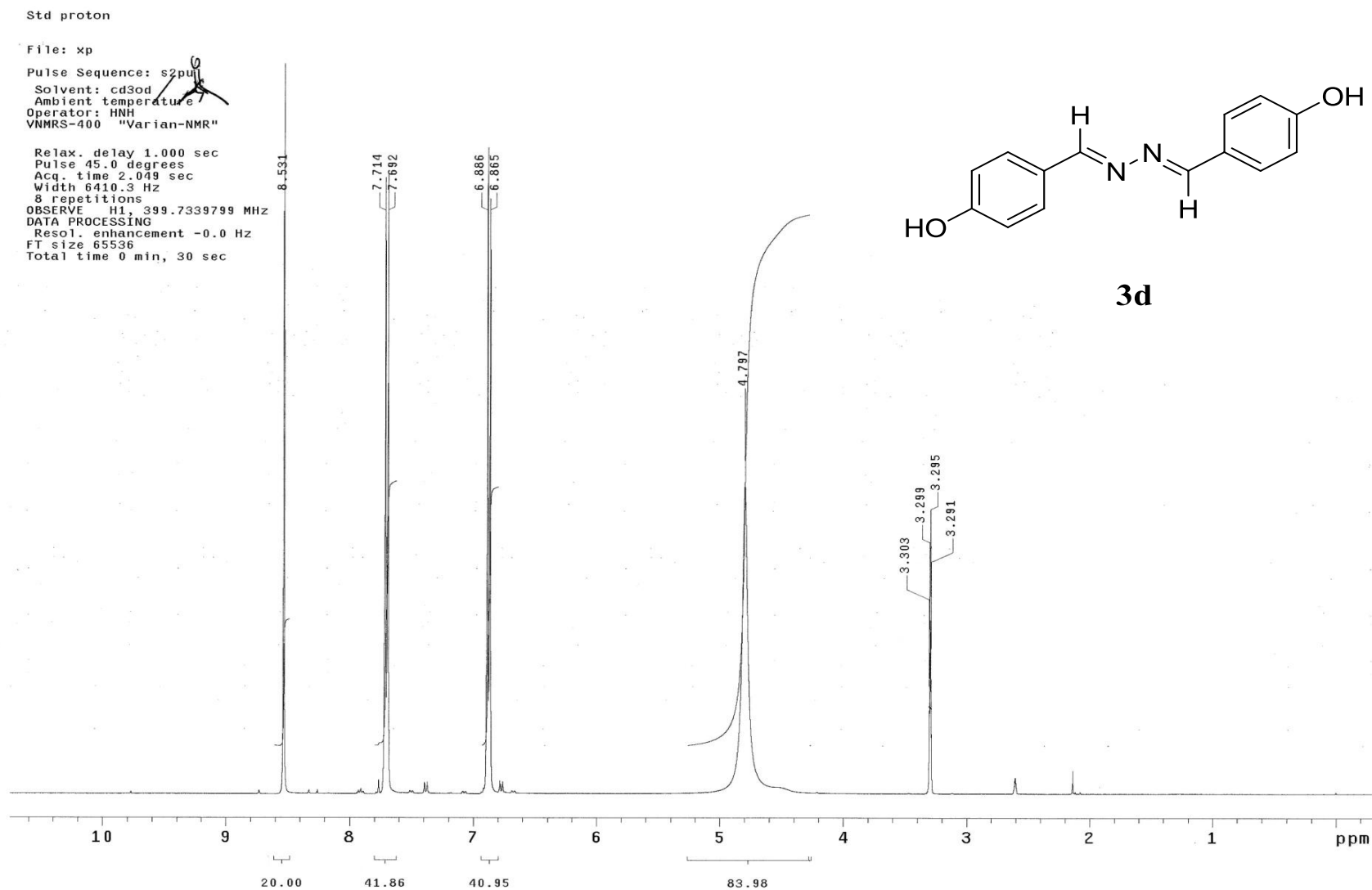


Fig. S14 ^{13}C NMR Spectrum of **3d**

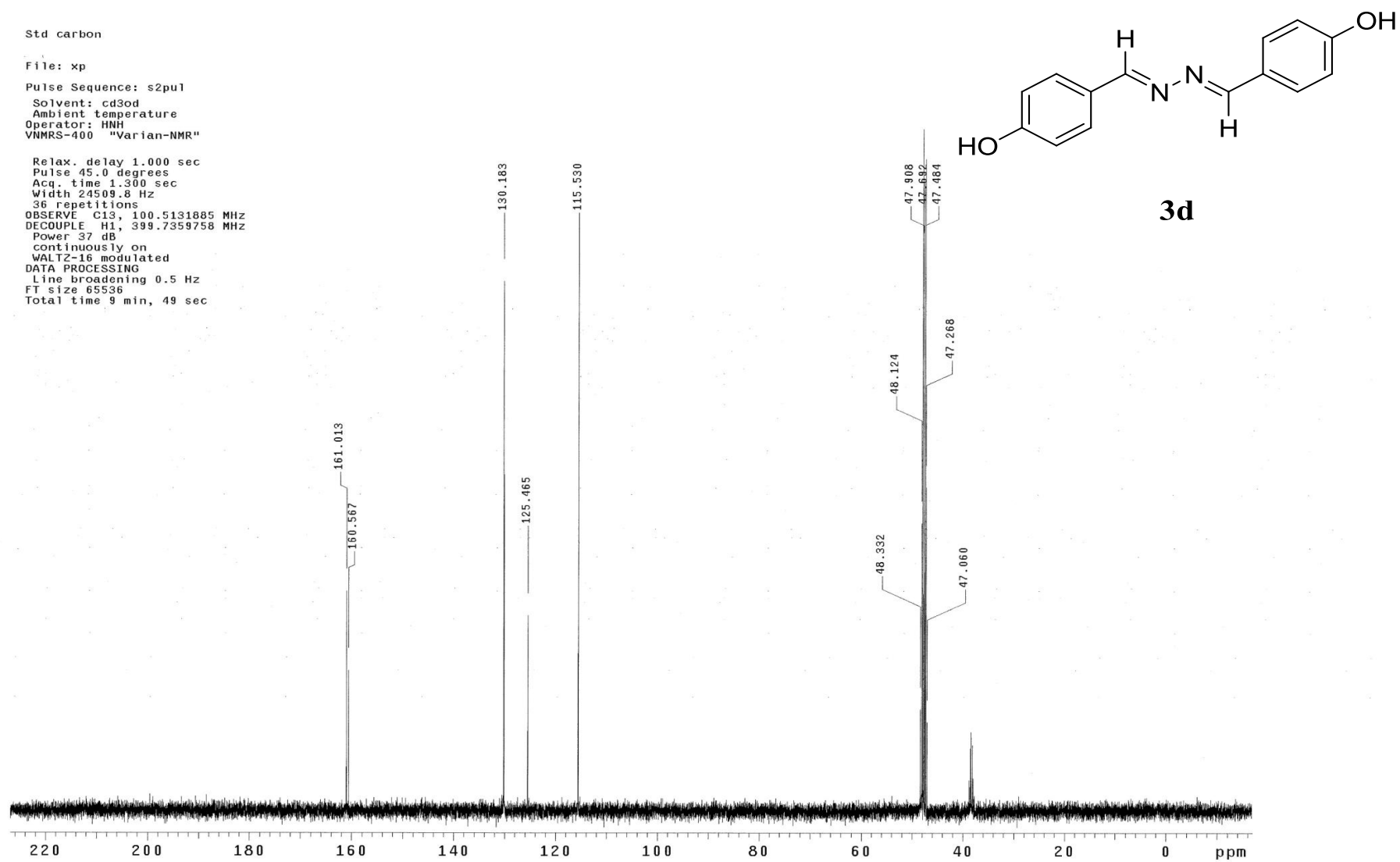


Fig. S15 ^1H NMR Spectrum of **3e**

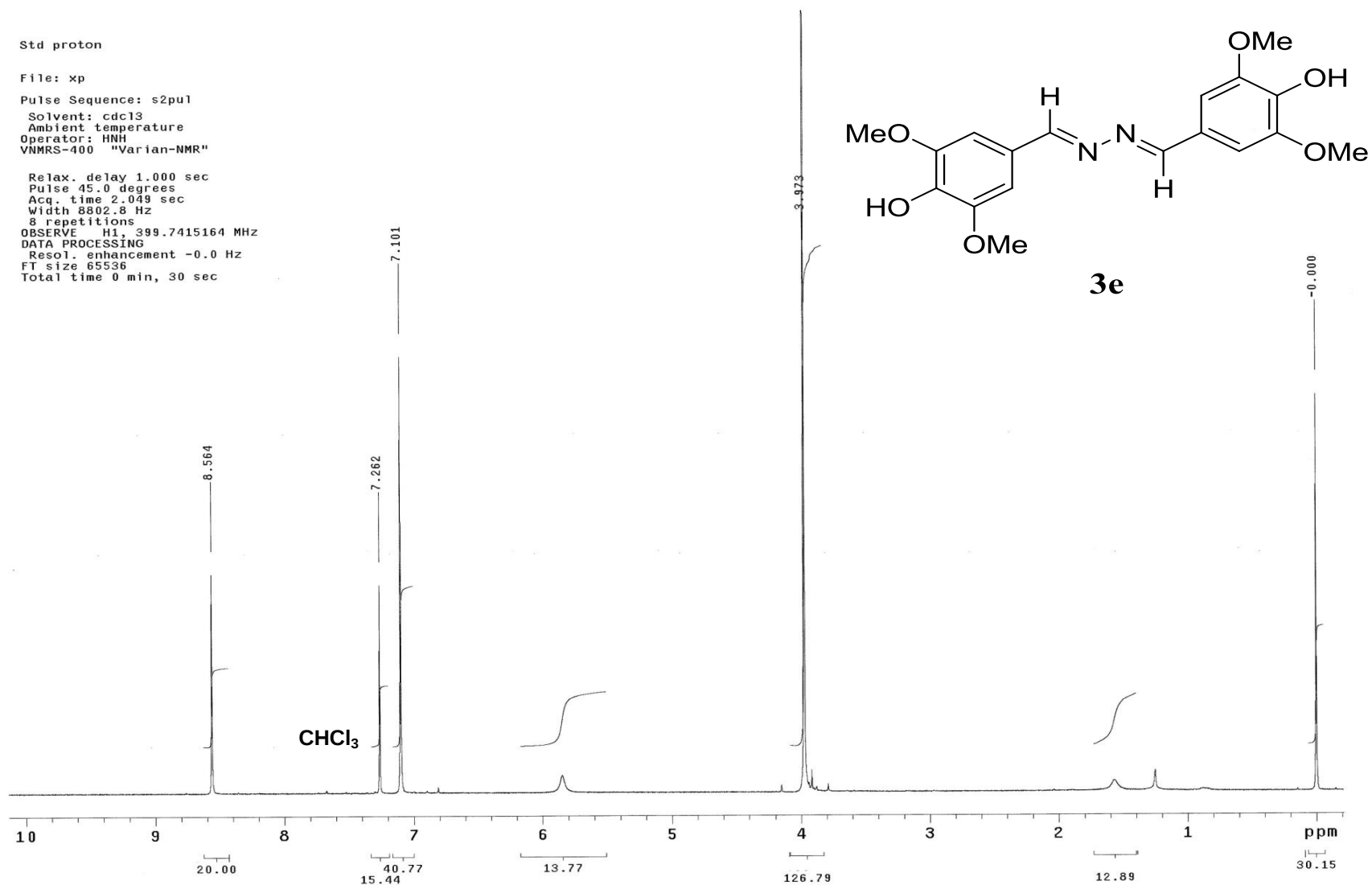


Fig. S16 ^{13}C NMR Spectrum of **3e**

Std carbon

File: xp

Pulse Sequence: s2pu1

Solvent: cdc13

Ambient temperature

Operator: HNH

VNMR-400 "Varian-NMR"

Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 24503.8 Hz
176 repetitions
OBSERVE C13, 100.5150856 MHz
DECOUPLE H1, 399.7435210 MHz
Power 37 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 0.5 Hz
FT size 65536
Total time 19 min, 38 sec

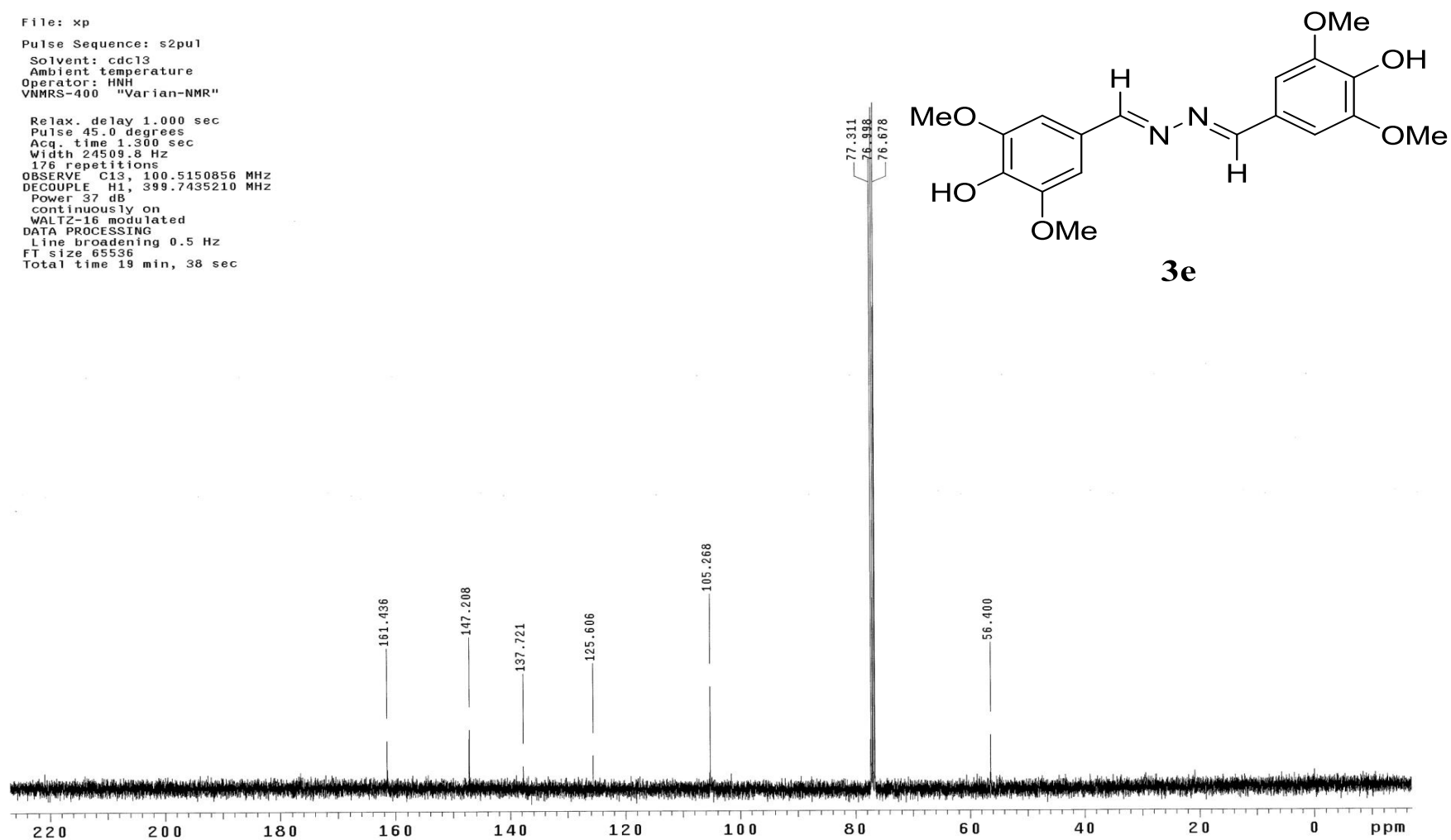


Fig. S17 ^1H NMR Spectrum of **3f**

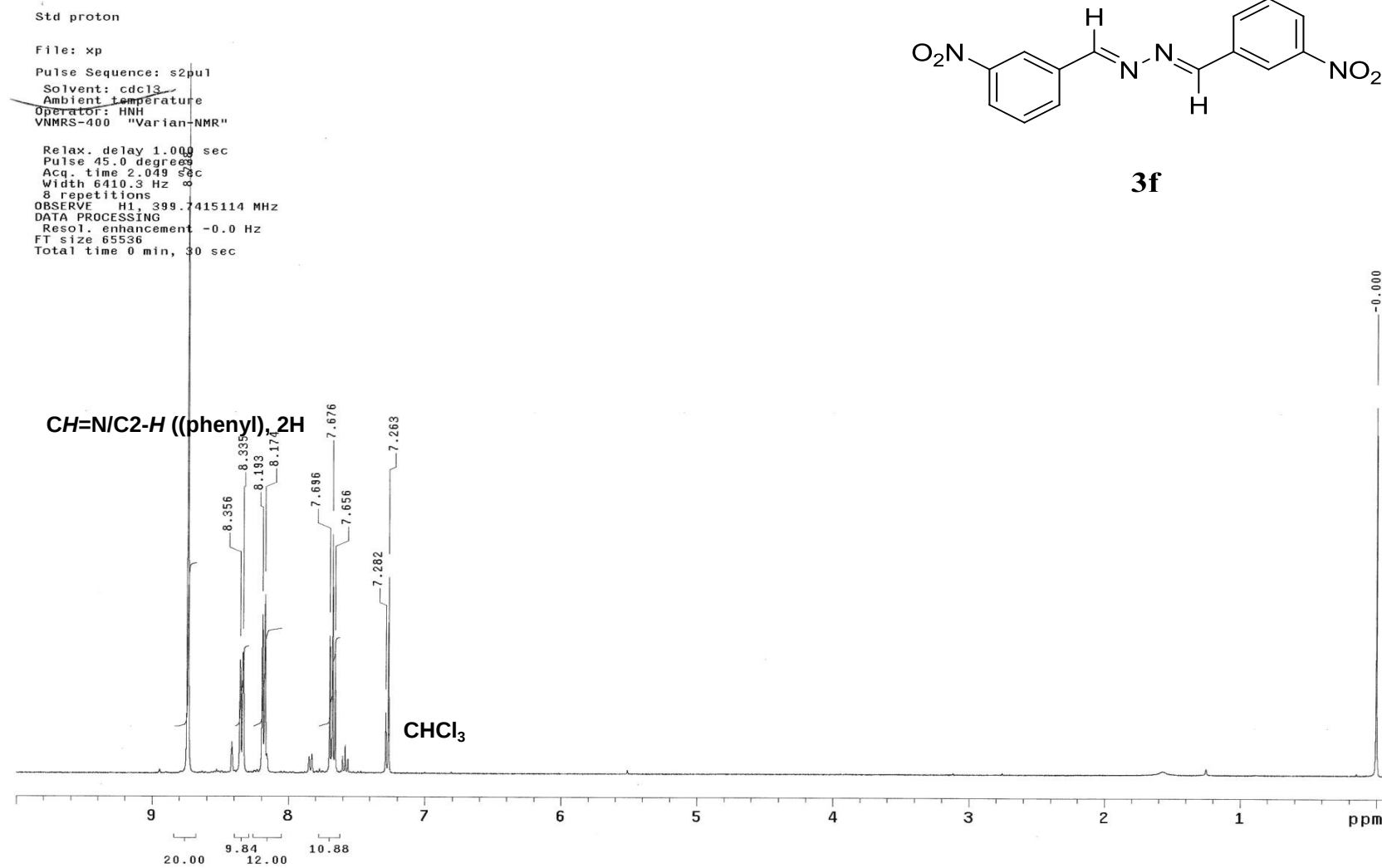


Fig. S18 ^{13}C NMR Spectrum of **3f**

Std carbon

File: xp

Pulse Sequence: s2pu1

Solvent: cdc13

Ambient temperature

Operator: HNH

VNMRS-400 "Varian-NMR"

Relax. delay 1.000 sec

Pulse 45.0 degrees

Acq. time 1.300 sec

Width 24509.8 Hz

128 repetitions

OBSERVE C13, 100.5150857 MHz

DECOUPLE H1, 399.7435210 MHz

Power 37 dB

continuously on

WALTZ-16 modulated

DATA PROCESSING

Line broadening 0.5 Hz

FT size 65536

Total time 19 min, 38 sec

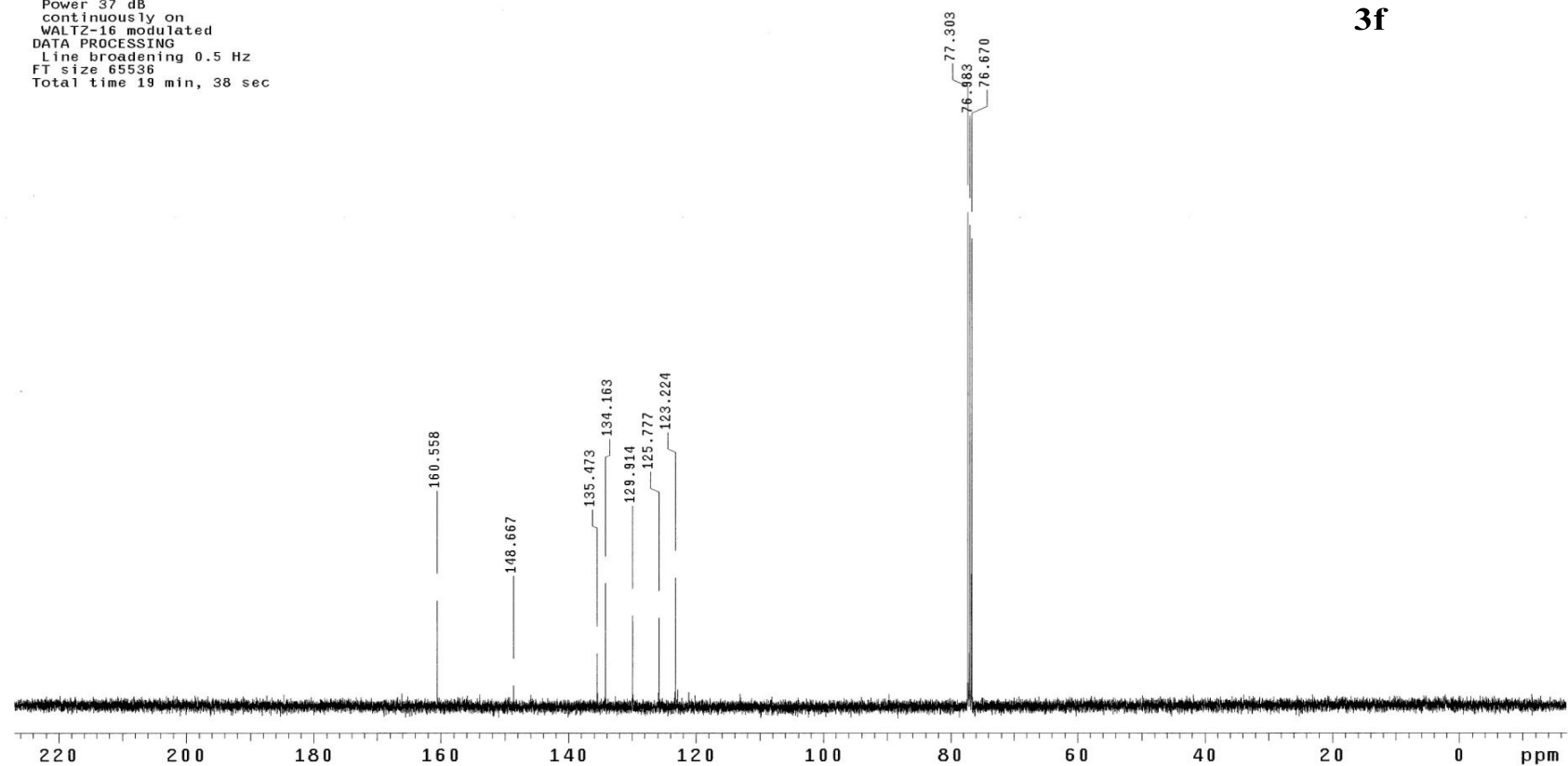
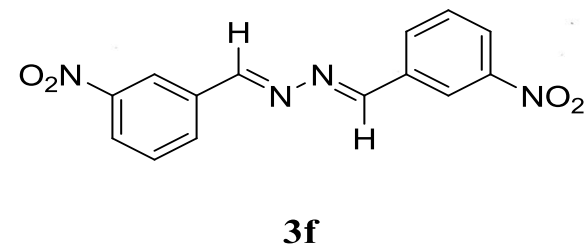


Fig. S19 ^1H NMR Spectrum of **3g**

Std proton

File: xp

Pulse Sequence: s2pu1

Solvent: cdc13

Ambient temperature

Operator: HNH

VNMRS-400 "Varian-NMR"

Relax. delay 1.000 sec

Pulse 45.0 degrees

Acq. time 2.049 sec

Width 6410.3 Hz

8 repetitions

OBSERVE H1, 399.7345621 MHz

DATA PROCESSING

Resol. enhancement -0.0 Hz

FT size 65536

Total time 0 min, 30 sec

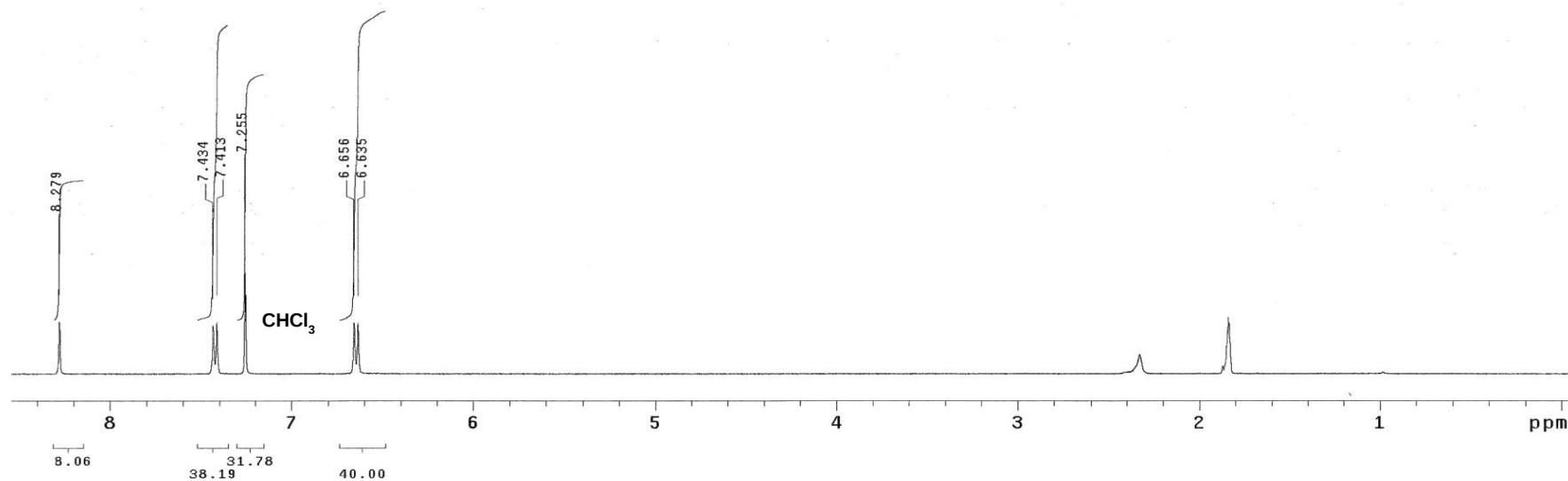
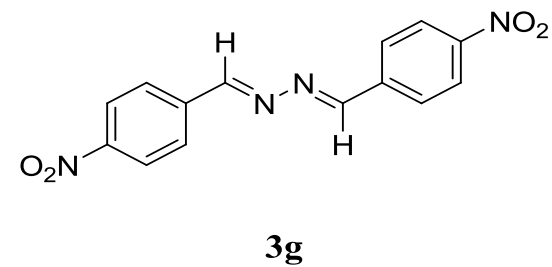
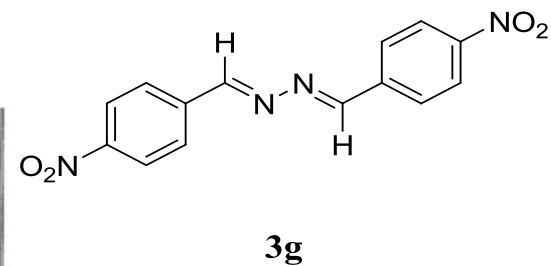


Fig. S20 ^{13}C NMR Spectrum of **3g**



Std carbon

File: xp

Pulse Sequence: s2pul

Solvent: acetone

Ambient temperature

Operator: HNH

VMRS-400 "Varian-NMR"

Relax. delay 1.000 sec

Pulse 45.0 degrees

Acq. time 1.300 sec

Width 24509.8 Hz

656 repetitions

OBSERVE C13, 100.5133141 MHz

DECOUPLE H1, 399.7364754 MHz

Power 37 dB

continuously on

WALTZ-16 modulated

DATA PROCESSING

Line broadening 0.5 Hz

FT size 65536

Total time 39 min, 16 sec

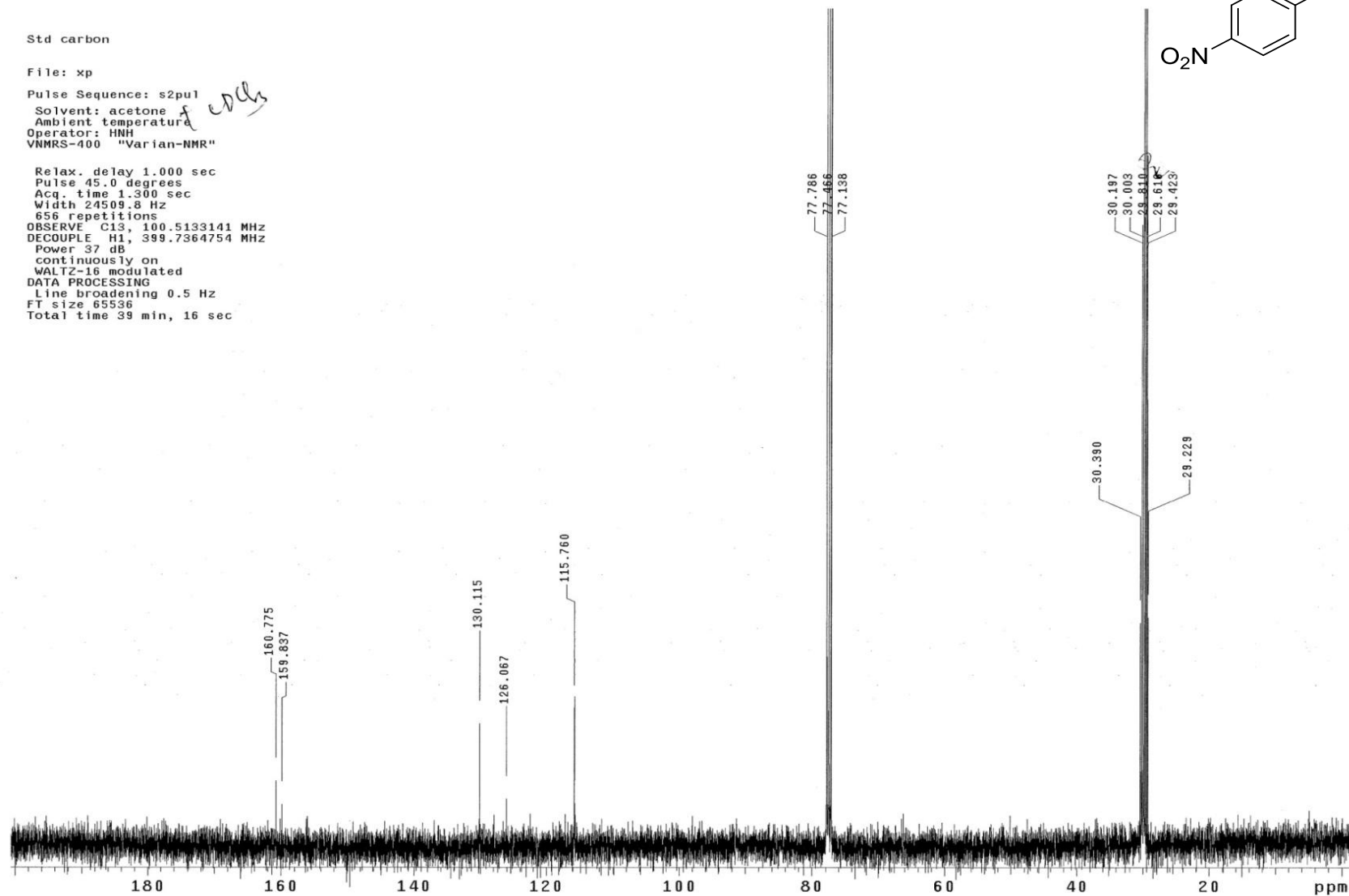


Fig. S21 ^1H NMR Spectrum of **3h**

Std proton

File: xp

Pulse Sequence: s2pu1

Solvent: cdcl3

Ambient temperature

Operator: HNH

VNMRS-400 "Varian-NMR"

Relax. delay 1.000 sec

Pulse 45.0 degrees

Acq. time 2.049 sec

Width 6410.3 Hz

8 repetitions

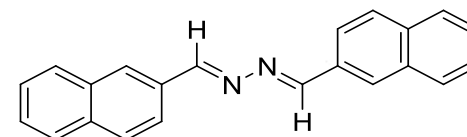
OBSERVE H1, 399.7324022 MHz

DATA PROCESSING

Resol. enhancement -0.0 Hz

FT size 65536

Total time 3 min, 21 sec



3h

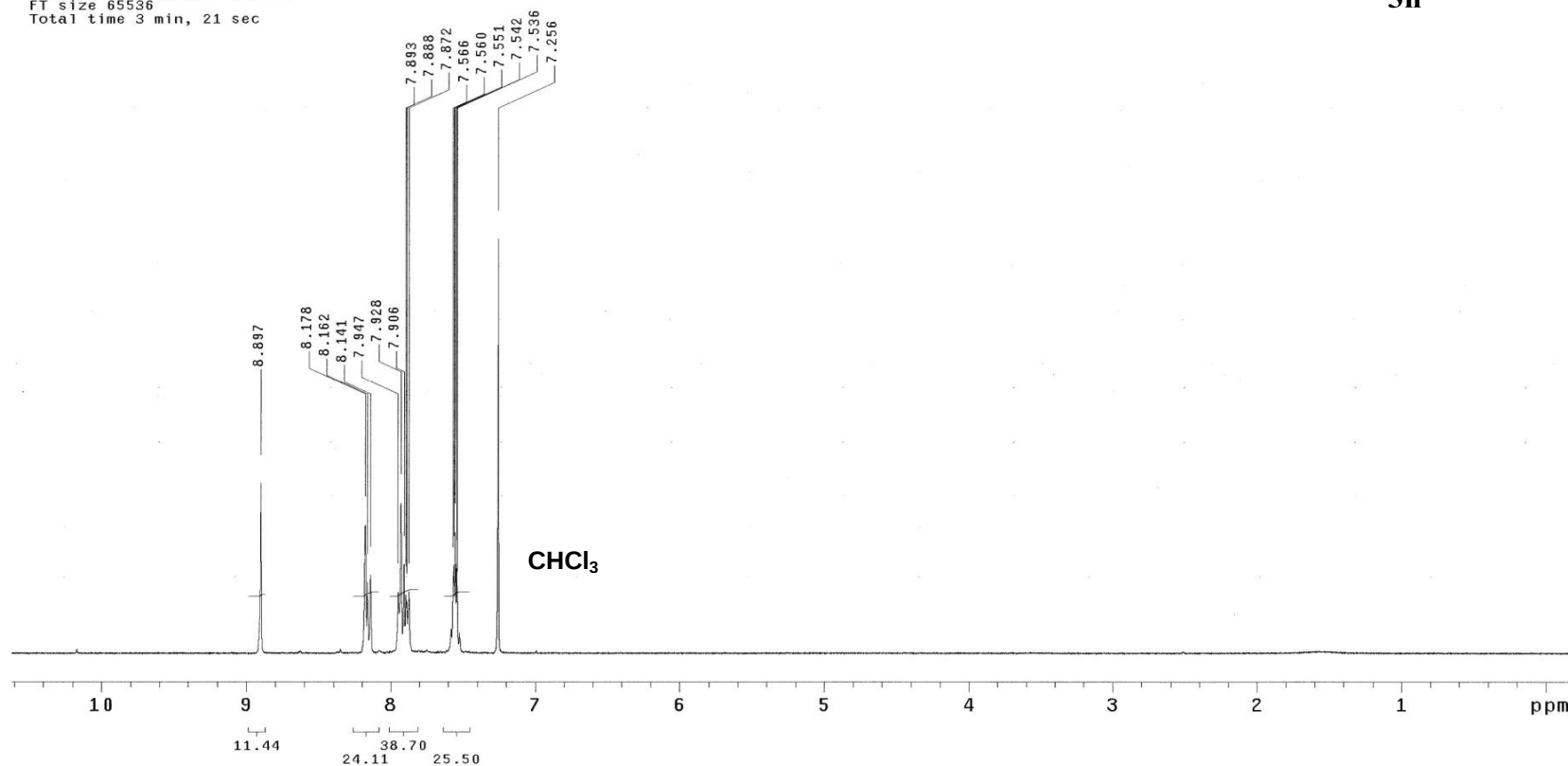


Fig. S22 ^{13}C NMR Spectrum of **3h**

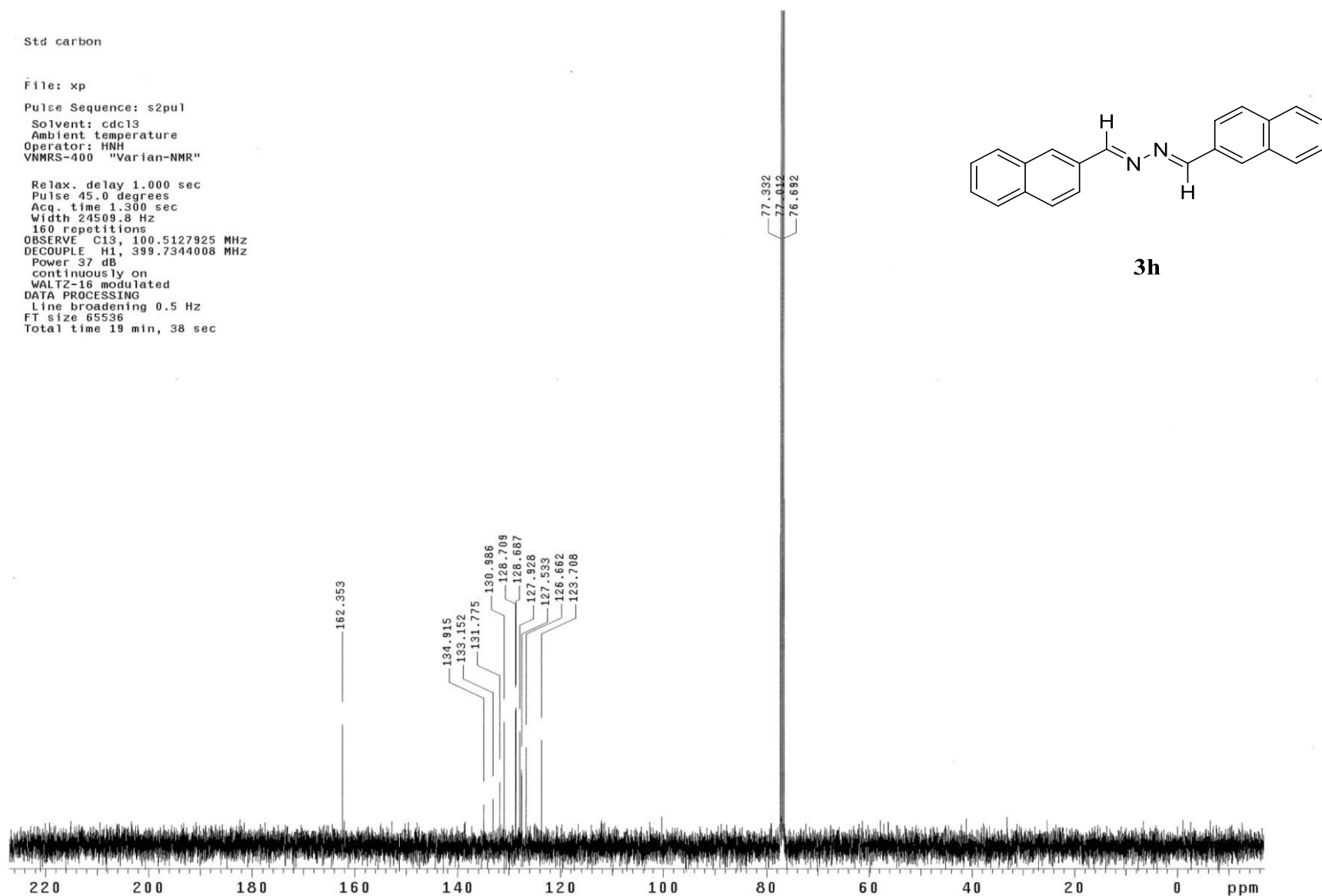


Fig. S23 ¹H NMR Spectrum of **3i**

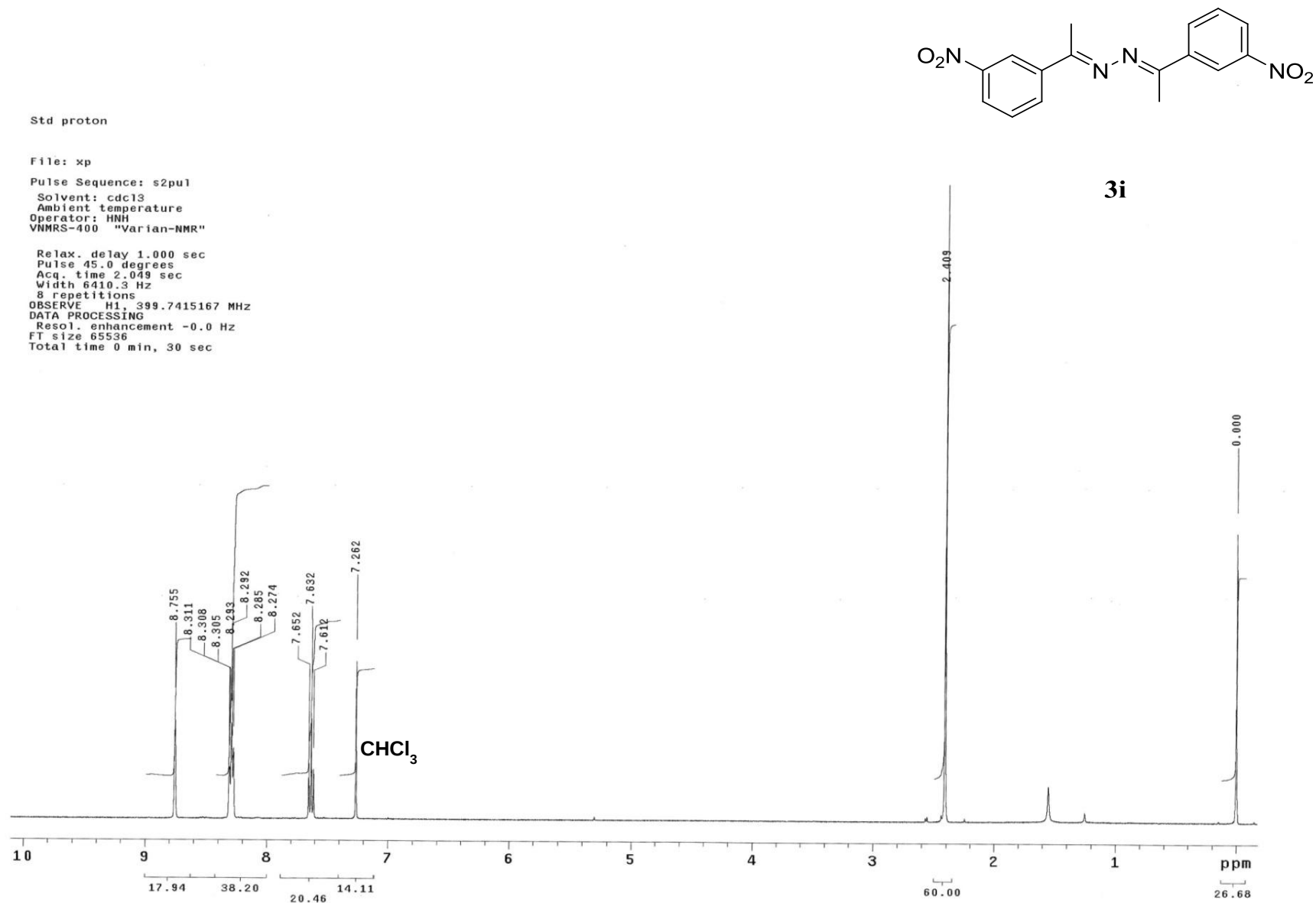


Fig. S24 ^{13}C NMR Spectrum of **3i**

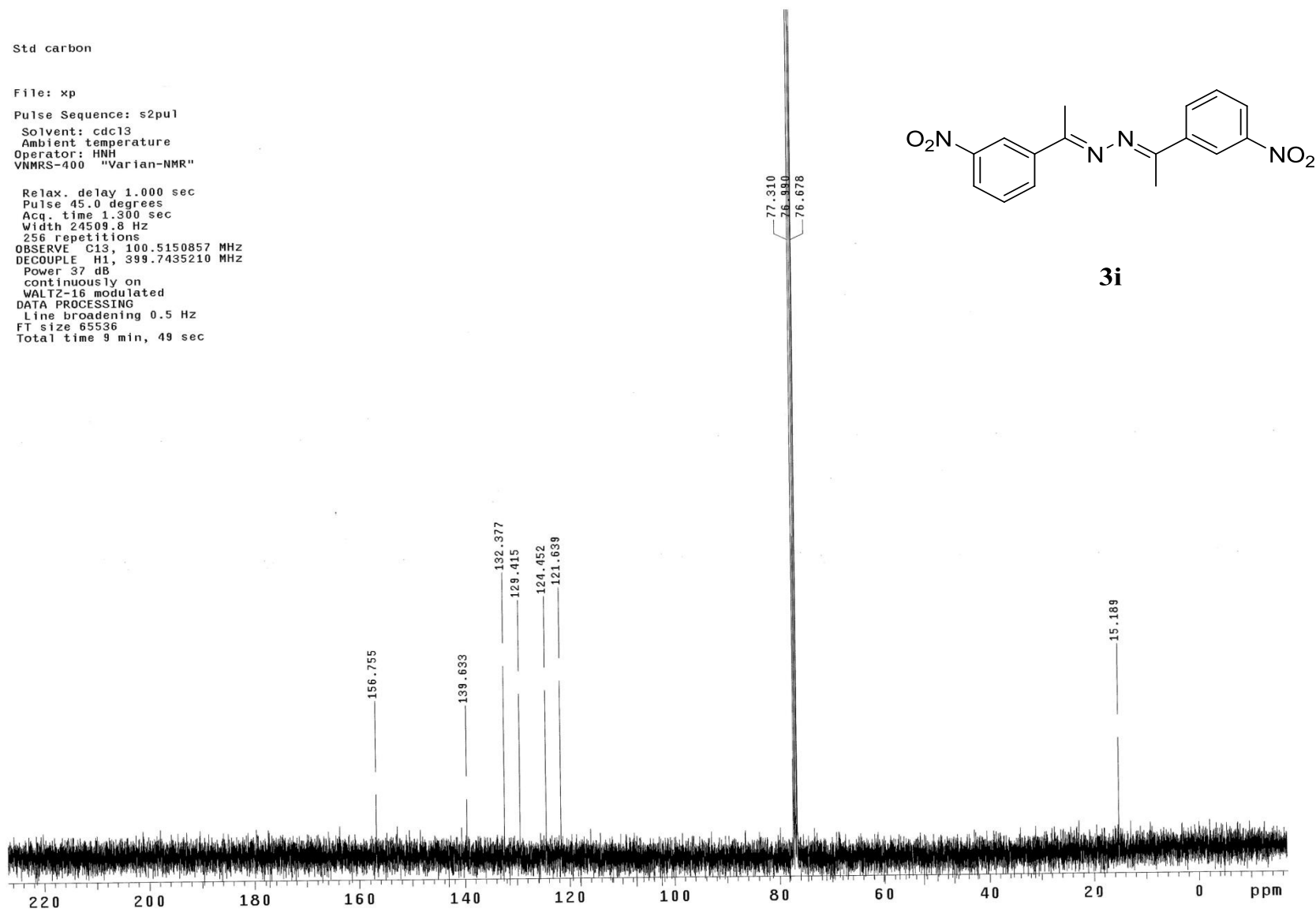


Fig. S25 ^1H NMR Spectrum of **3j**

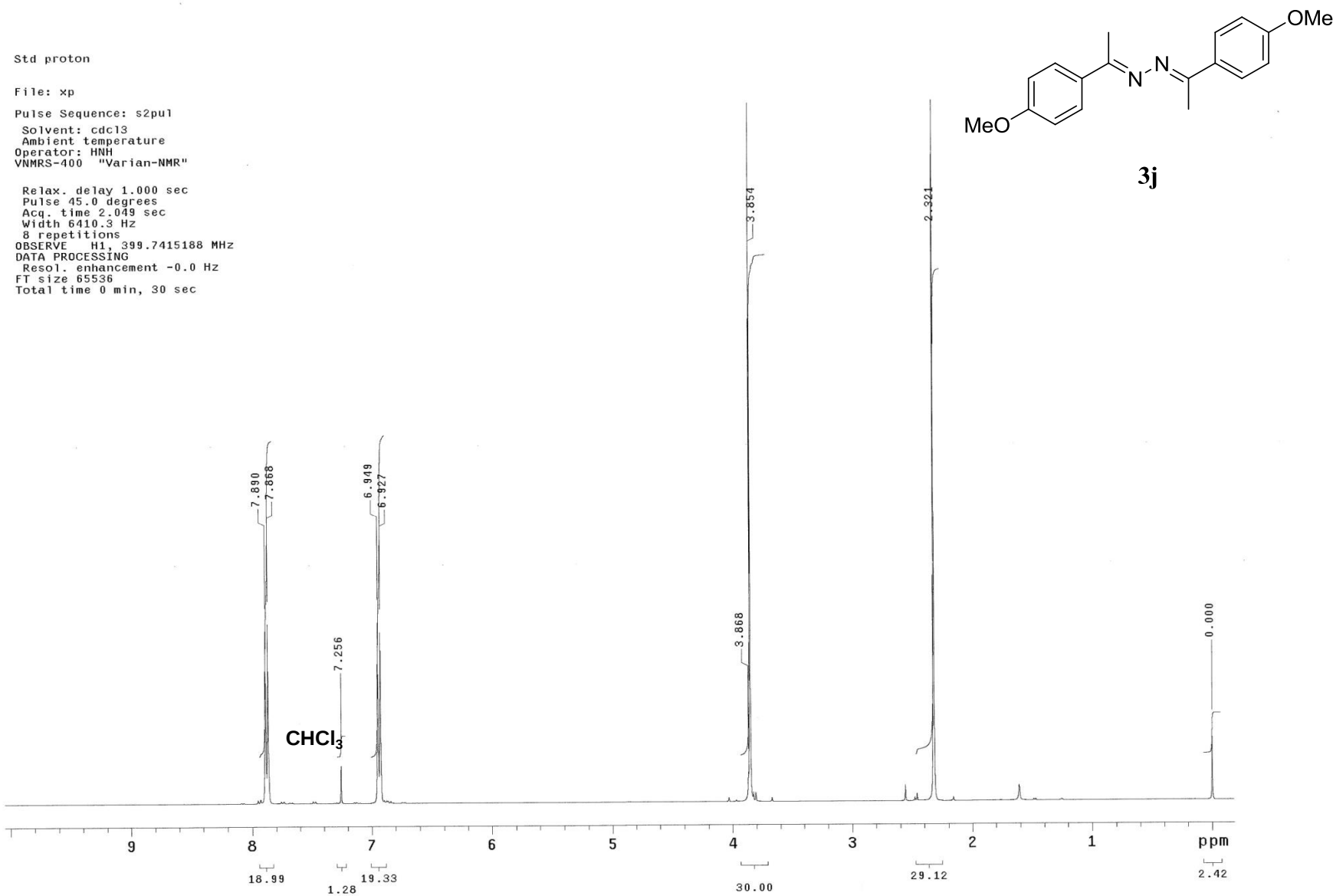


Fig. S26 ¹³C NMR Spectrum of **3j**

Std carbon
File: xp
Pulse Sequence: s2pu1
Solvent: cdcl3
Ambient temperature
Operator: HNH
VNMR-400 "Varian-NMR"

Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 24509.8 Hz
80 repetitions
OBSERVE C13, 100.5150857 MHz
DECOUPLE H1, 399.7435210 MHz
Power 37 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 0.5 Hz
FT size 65536
Total time 9 min, 49 sec

