J. Braz. Chem. Soc., Vol. 19, No. 5, S1-S23, 2008.
Printed in Brazil - ©2008 Sociedade Brasileira de Química
0103 - 5053 $6.00+0.00

Indium(III)-catalyzed Synthesis of *N*-Substituted Pyrroles under Solvent-free Conditions

Jiu-Xi Chen, Miao-Chang Liu, Xiao-Liang Yang, Jin-Chang Ding and Hua-Yue Wu*

College of Chemistry and Materials Engineering, Wenzhou University, Wenzhou, 325027, P. R. China

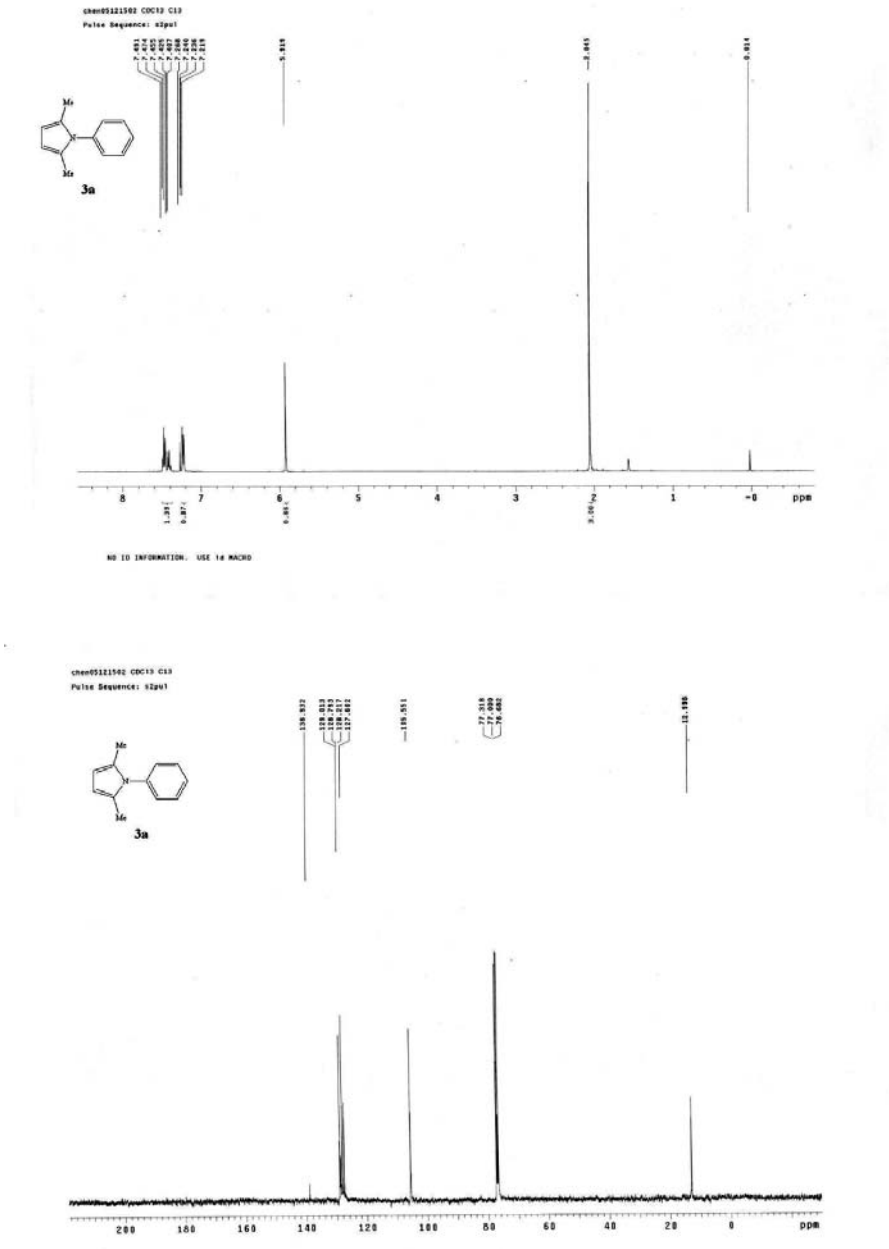


Figure S1. ^{1}H NMR of **3a** (400 MHz, $CDCl_3$) and ^{13}C NMR of **3a** (100 MHz, $CDCl_3$).

*e-mail: huayuewu@wzu.edu.cn

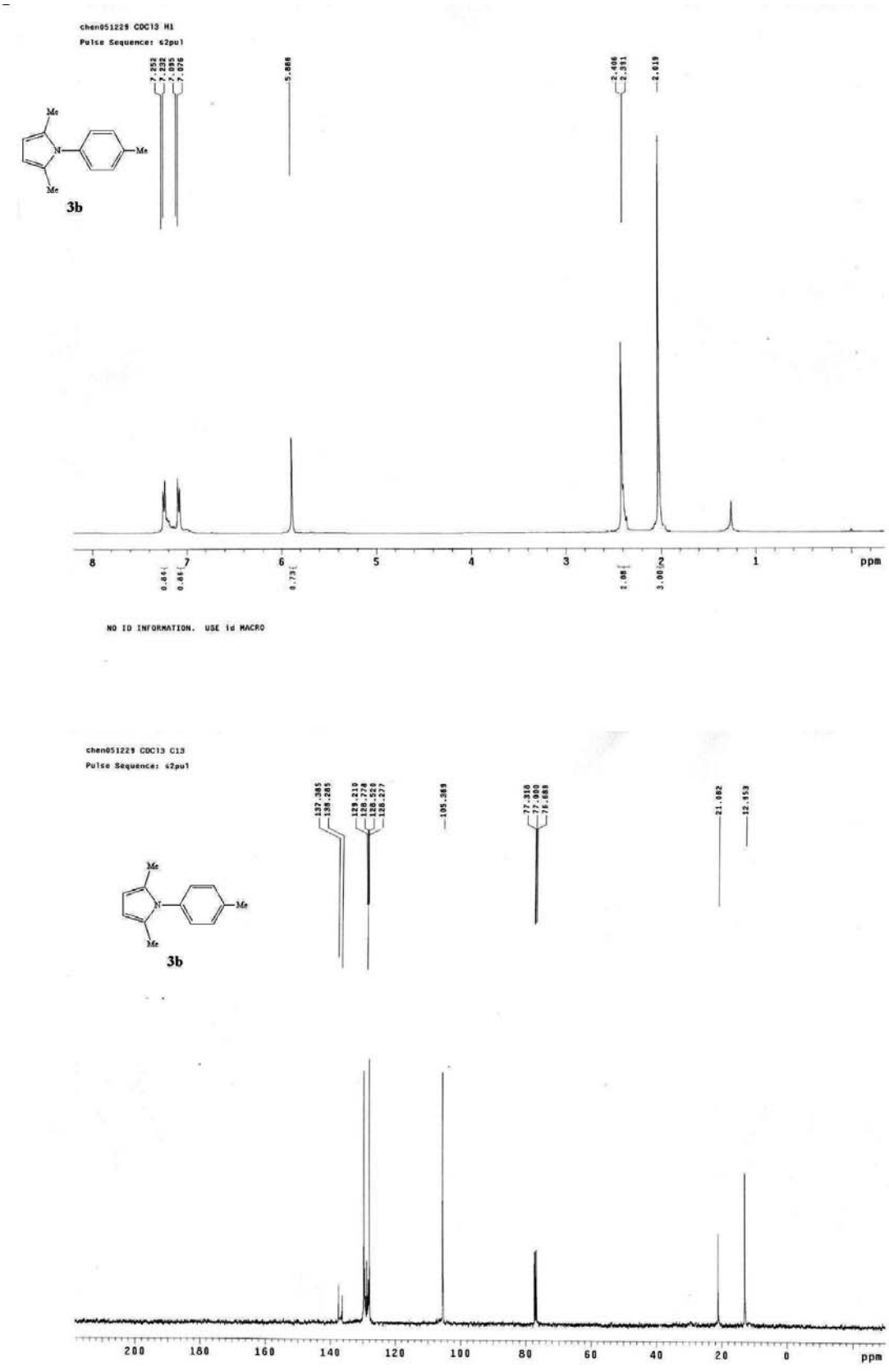


Figure S2. ^{1}H NMR of **3b** (400 MHz, $CDCl_3$) and ^{13}C NMR of **3b** (100 MHz, $CDCl_3$).

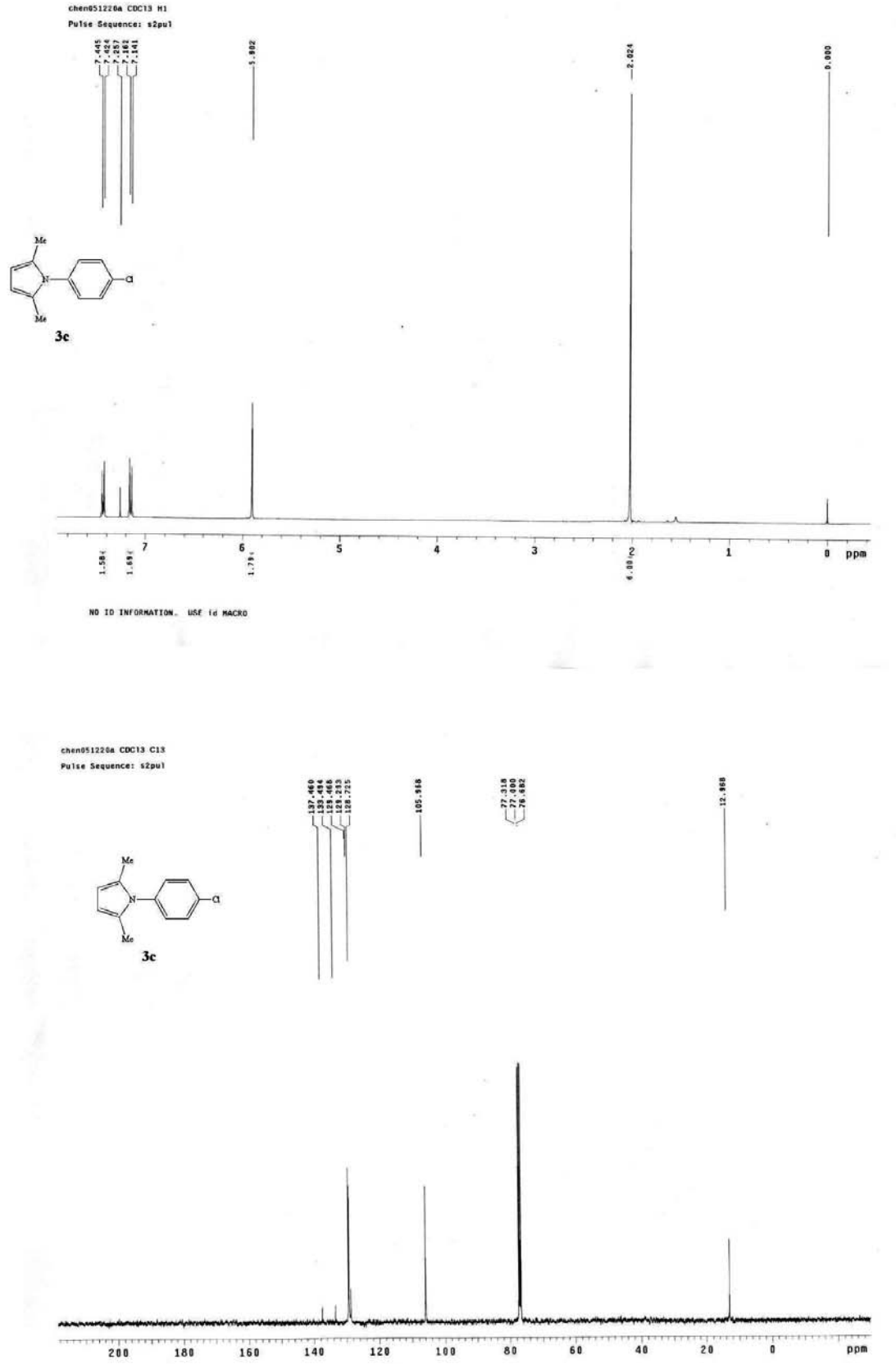


Figure S3. ^{1}H NMR of **3c** (400 MHz, $CDCl_3$) and ^{13}C NMR of **3c** (100 MHz, $CDCl_3$).

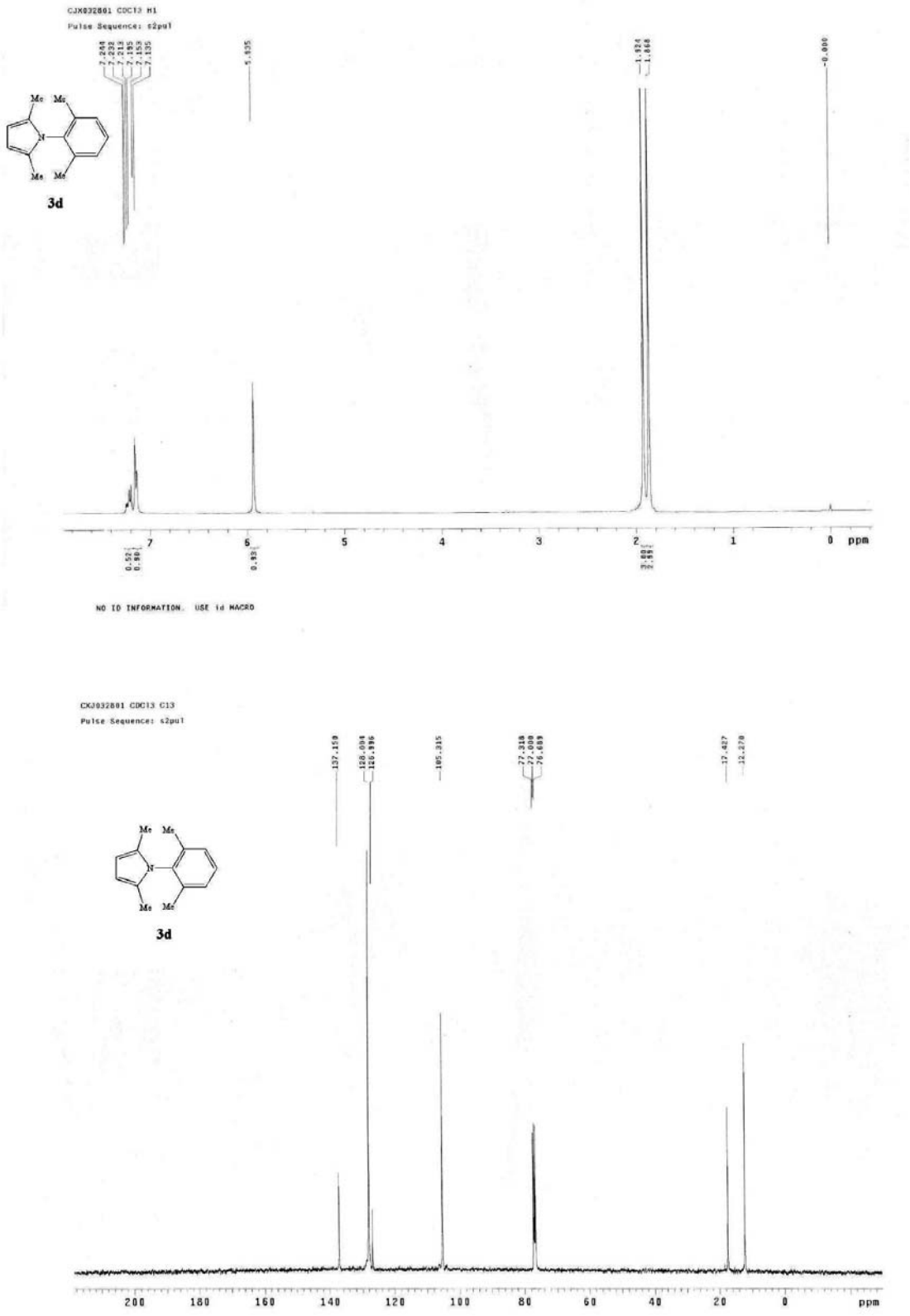


Figure S4. ^{1}H NMR of **3d** (400 MHz, $CDCl_3$) and ^{13}C NMR of **3d** (100 MHz, $CDCl_3$).

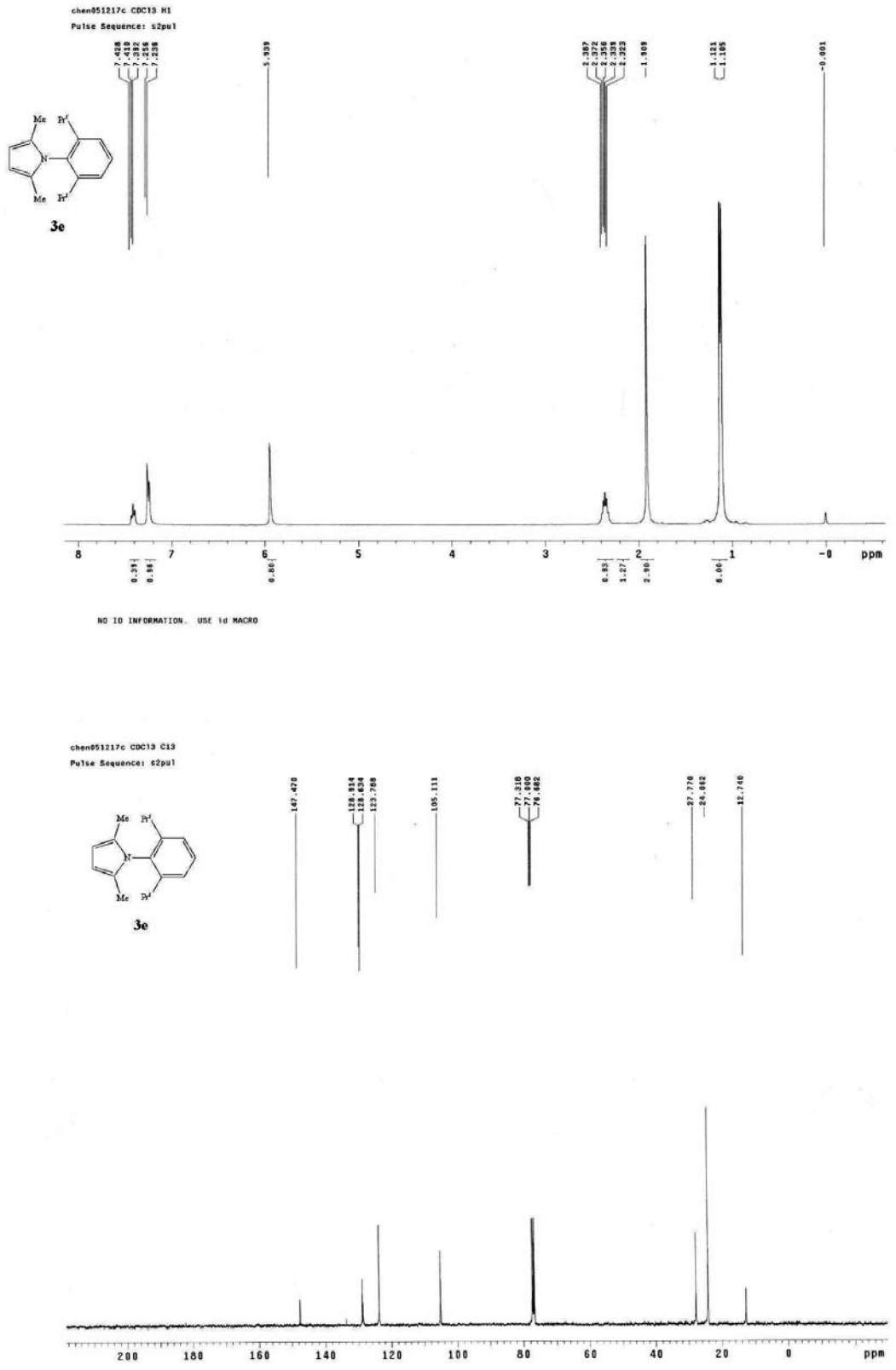


Figure S5. ^{1}H NMR of **3e** (400 MHz, $CDCl_3$) and ^{13}C NMR of **3e** (100 MHz, $CDCl_3$).

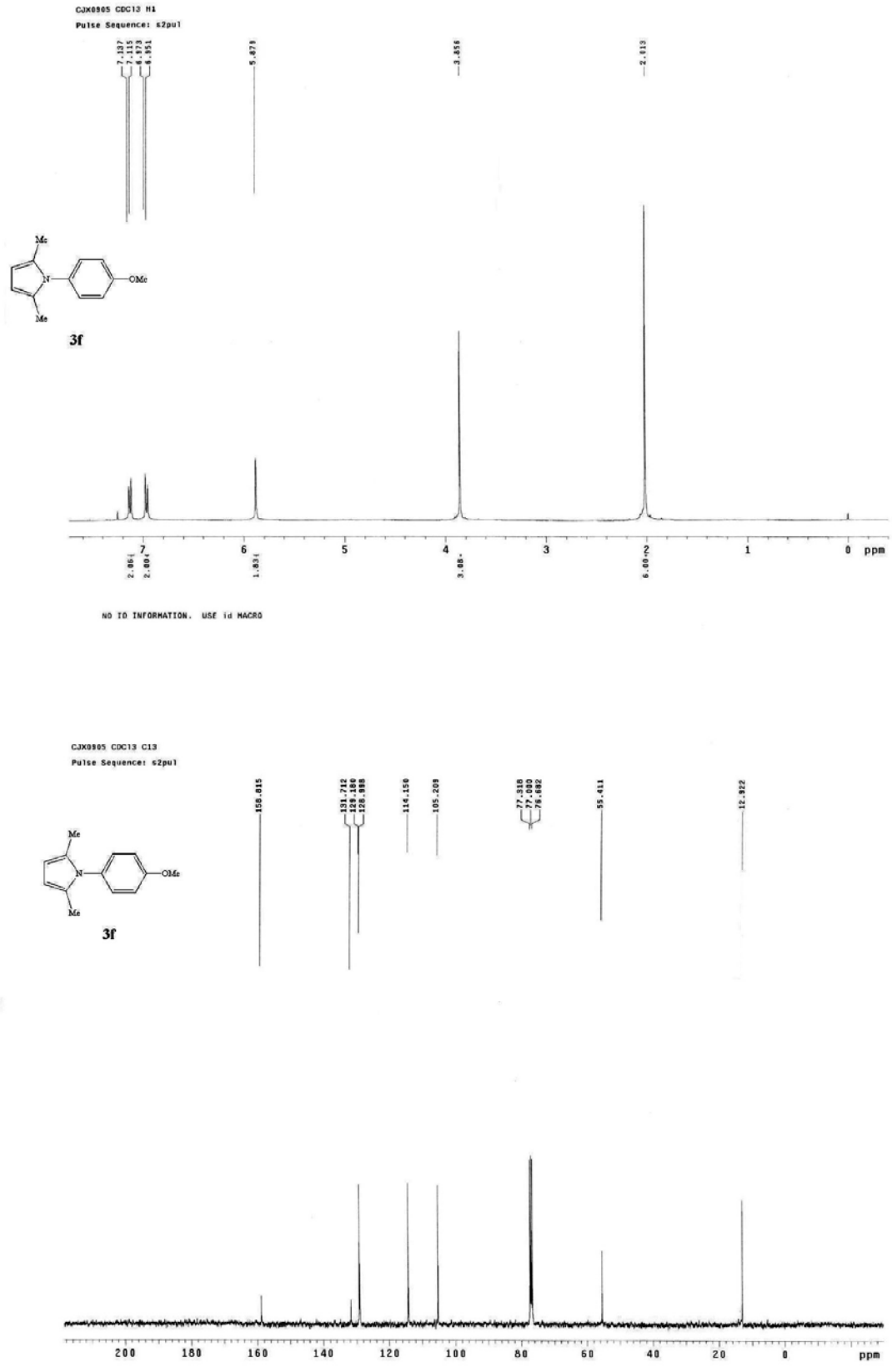


Figure S6. ^{1}H NMR of **3f** (400 MHz, $CDCl_3$) and ^{13}C NMR of **3f** (100 MHz, $CDCl_3$).

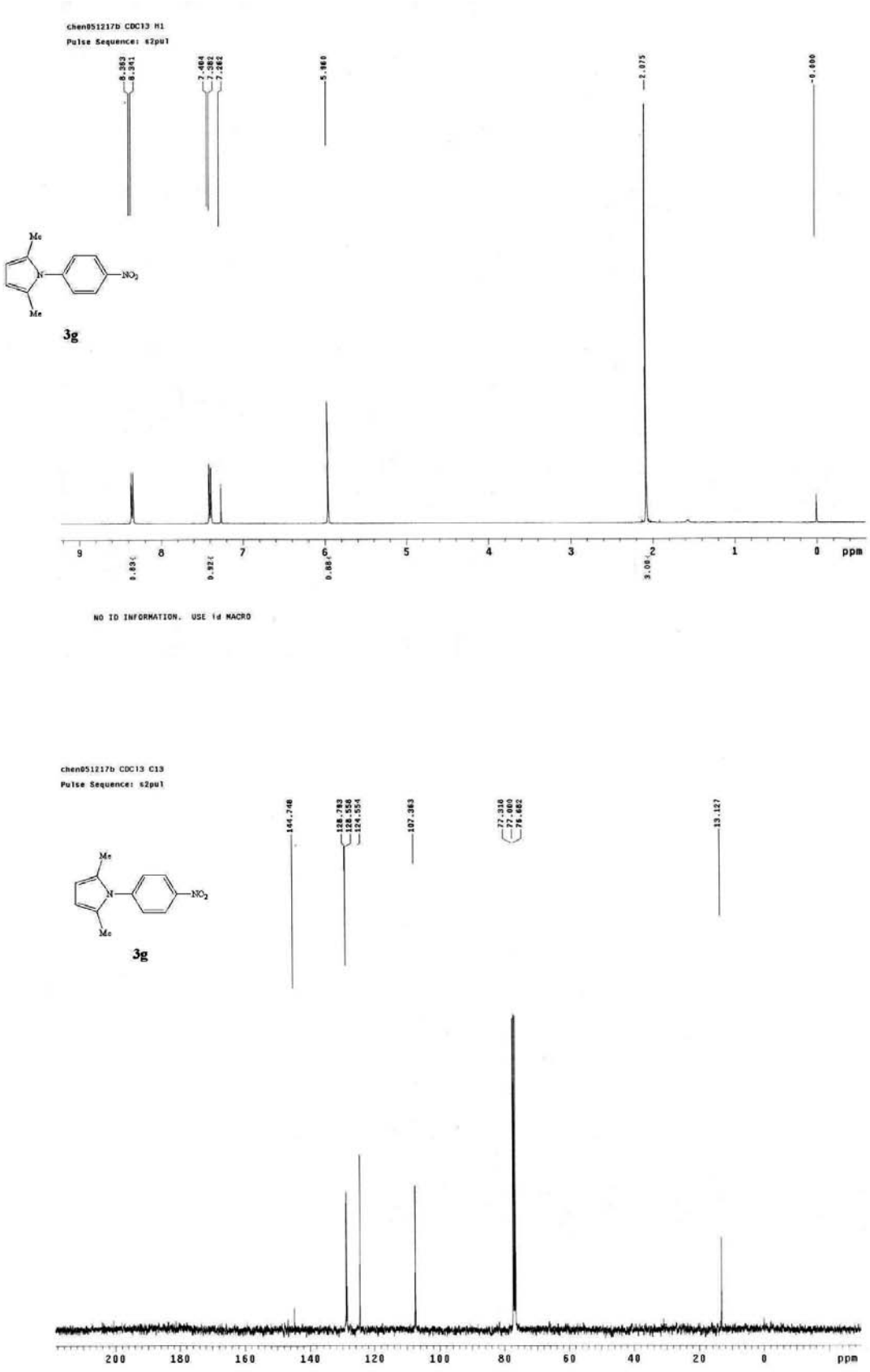


Figure S7. ^{1}H NMR of **3g** (400 MHz, $CDCl_3$) and ^{13}C NMR of **3g** (100 MHz, $CDCl_3$).

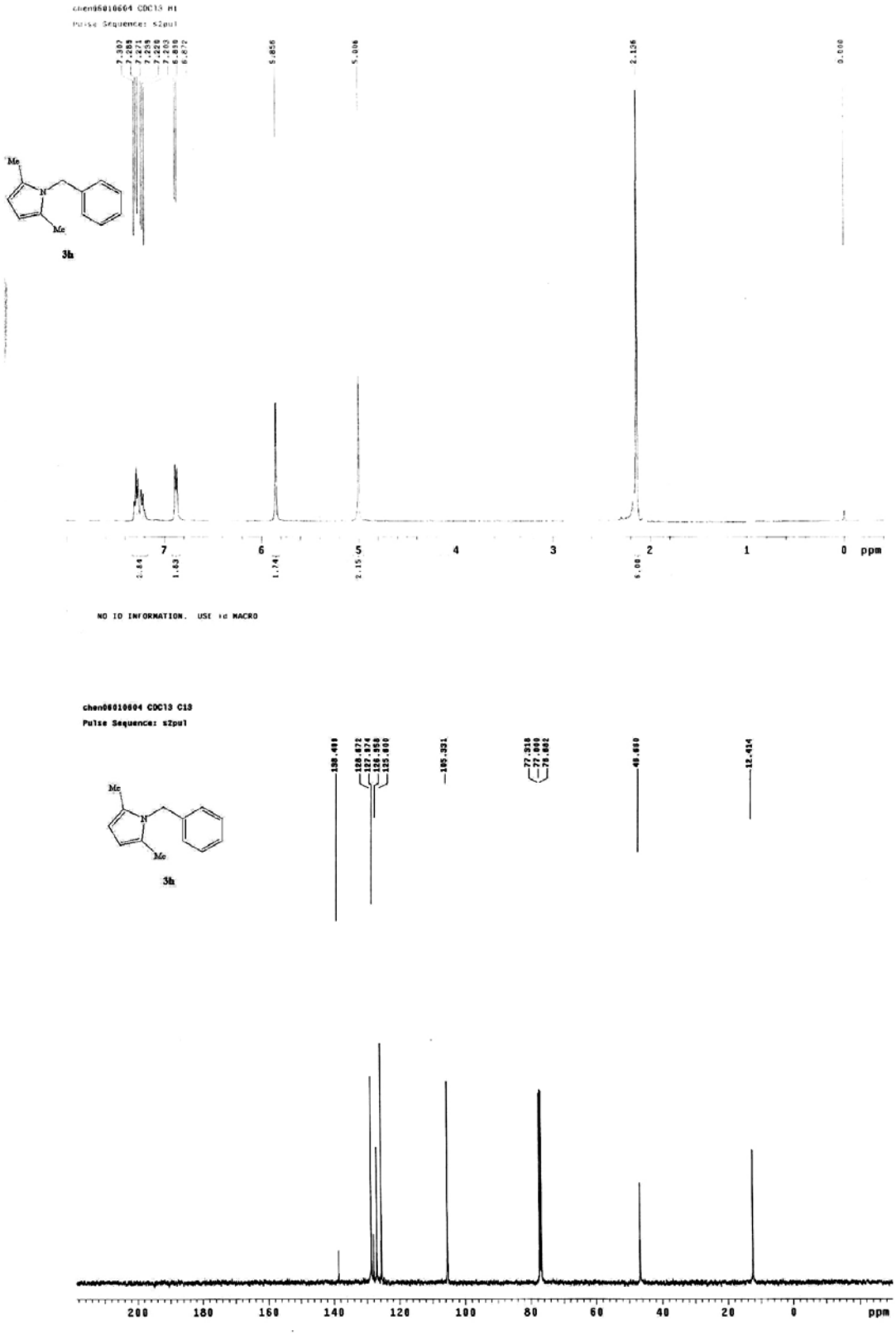


Figure S8. ^{1}H NMR of **3h** (400 MHz, $CDCl_3$) and ^{13}C NMR of **3h** (100 MHz, $CDCl_3$).

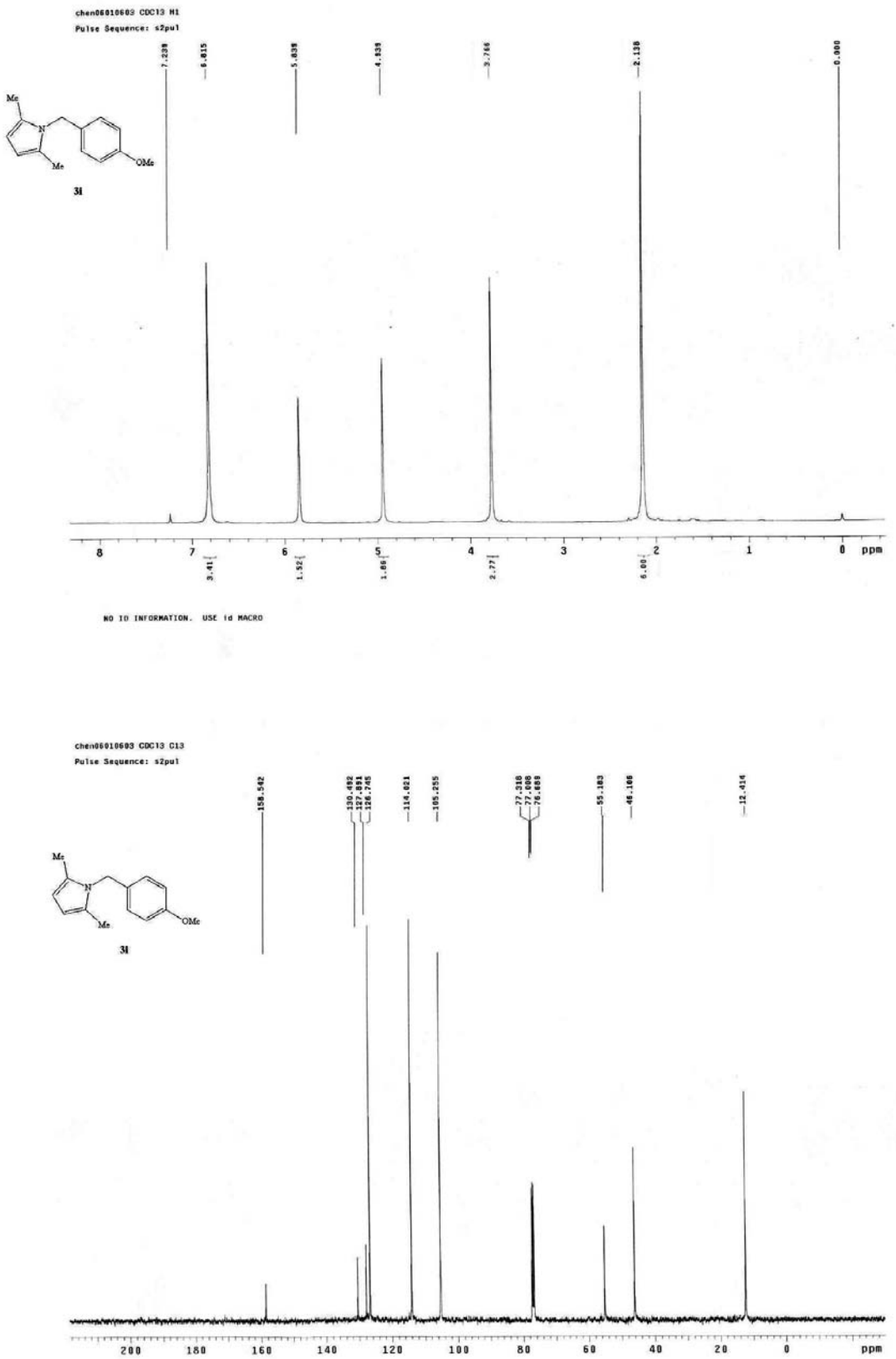


Figure S9. ^{1}H NMR of **3i** (400 MHz, $CDCl_3$) and ^{13}C NMR of **3i** (100 MHz, $CDCl_3$).

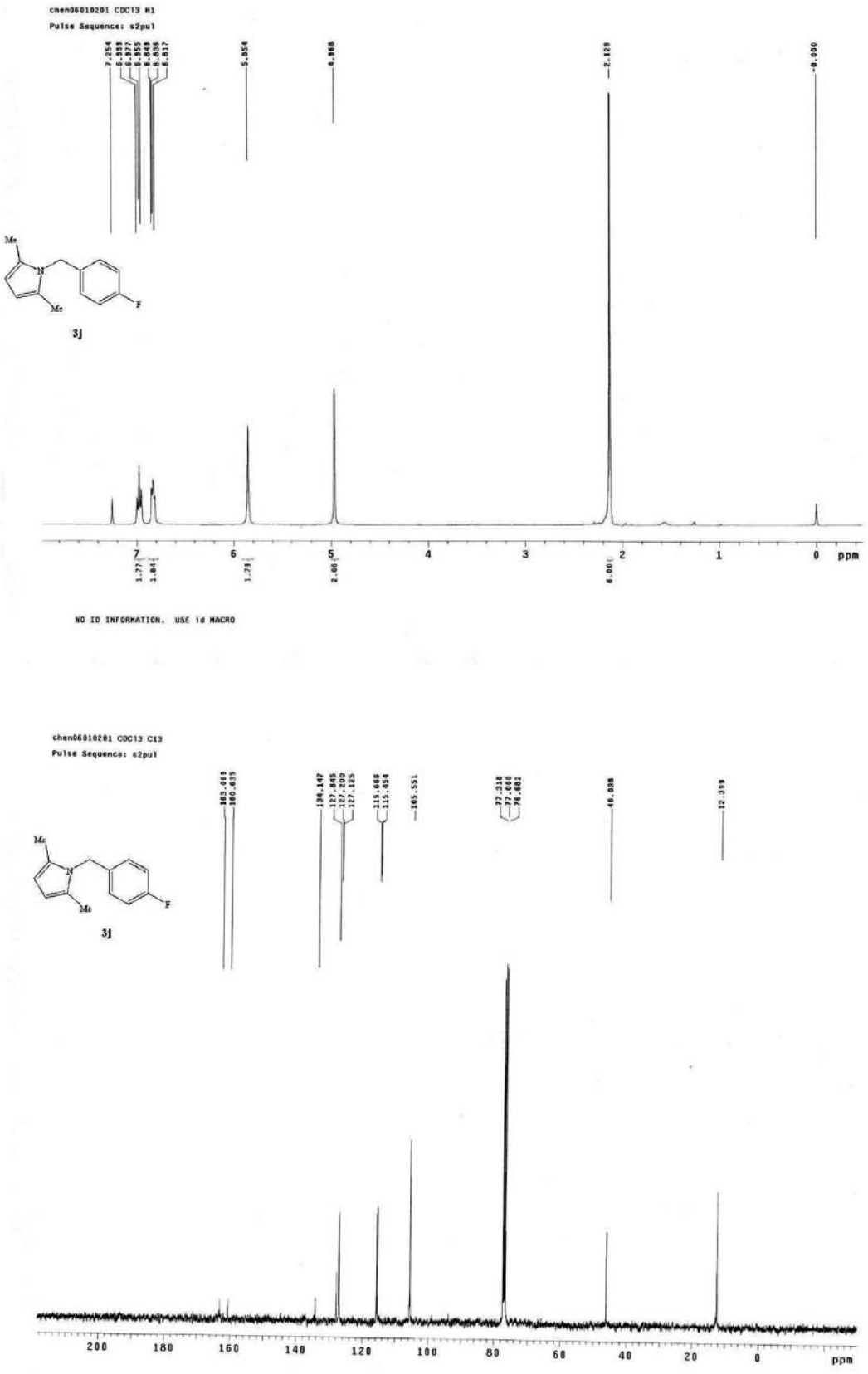


Figure S10. ^{1}H NMR of **3j** (400 MHz, $CDCl_3$) and ^{13}C NMR of **3j** (100 MHz, $CDCl_3$).

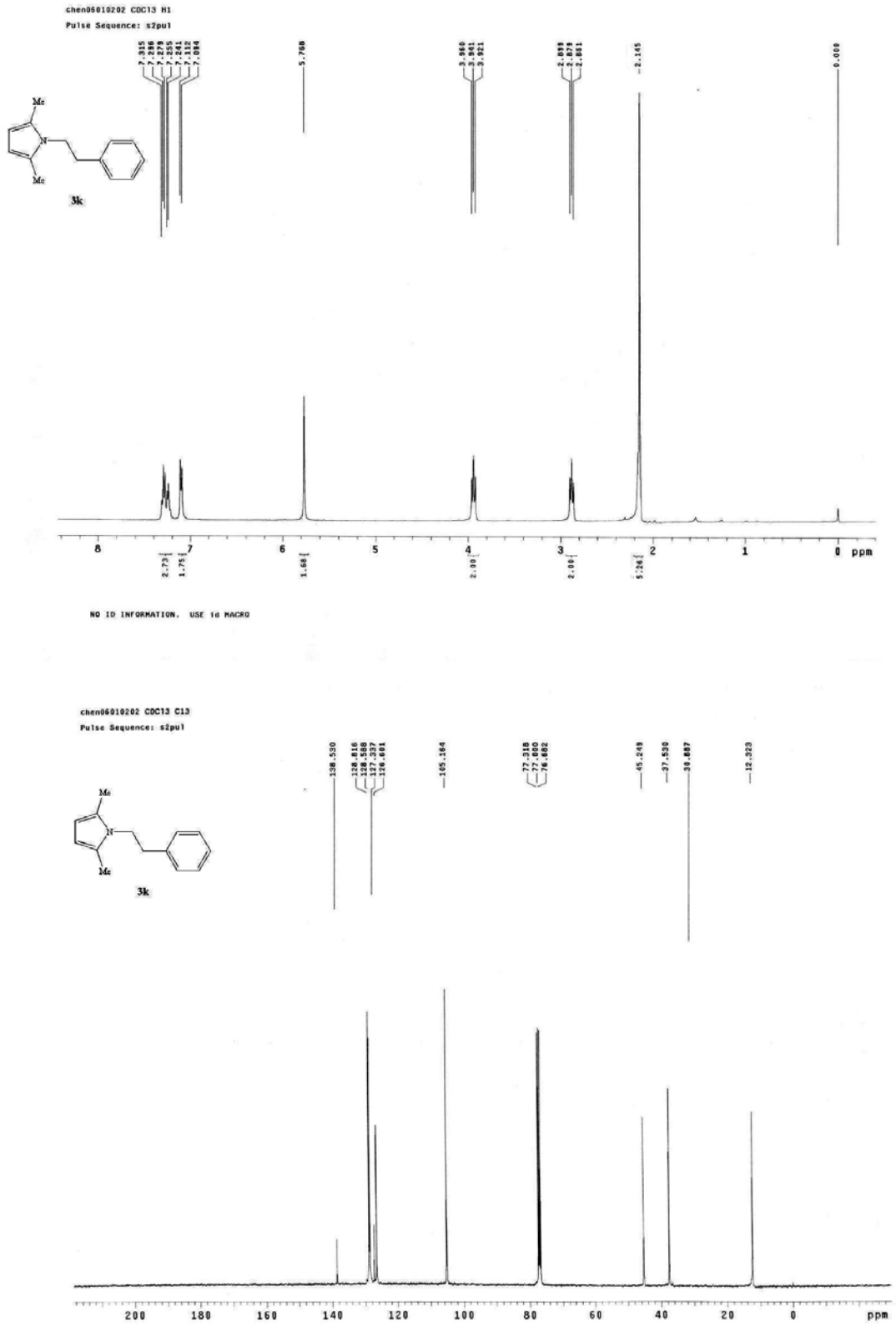


Figure S11. ^{1}H NMR of **3k** (400 MHz, $CDCl_3$) and ^{13}C NMR of **3k** (100 MHz, $CDCl_3$).

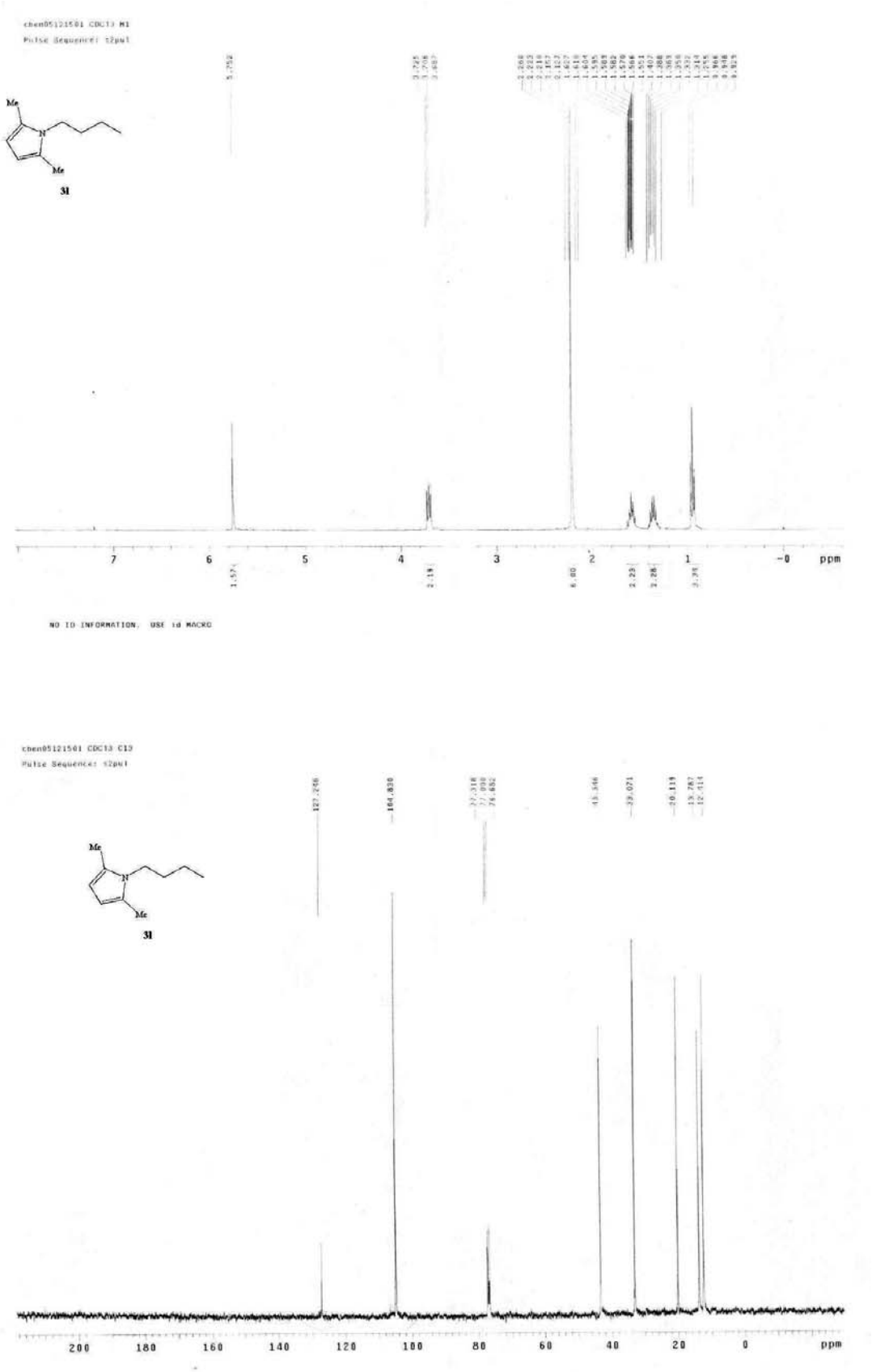


Figure S12. ^{1}H NMR of **3l** (400 MHz, $CDCl_3$) and ^{13}C NMR of **3l** (100 MHz, $CDCl_3$).

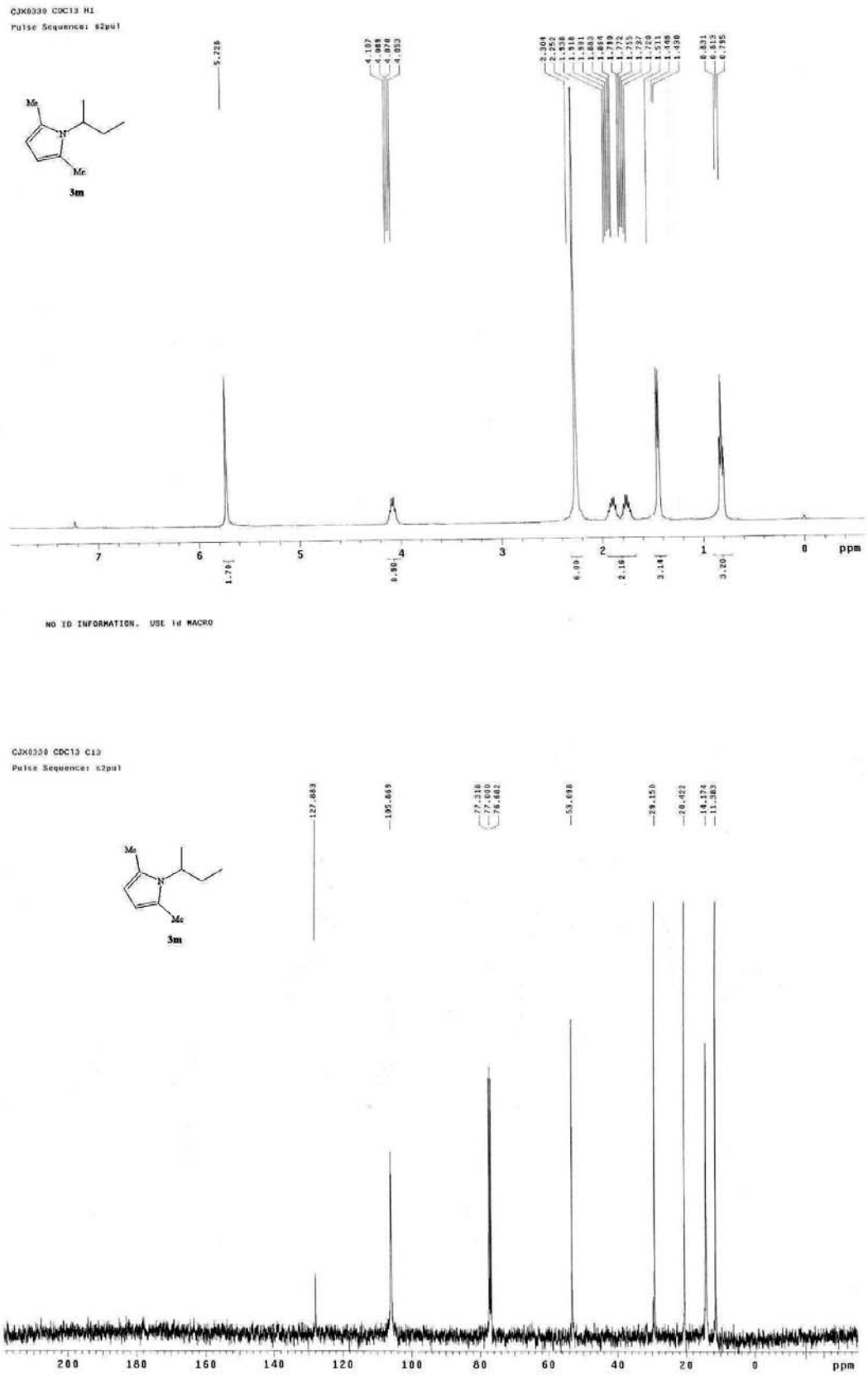


Figure S13. ^{1}H NMR of **3m** (400 MHz, $CDCl_3$) and ^{13}C NMR of **3m** (100 MHz, $CDCl_3$).

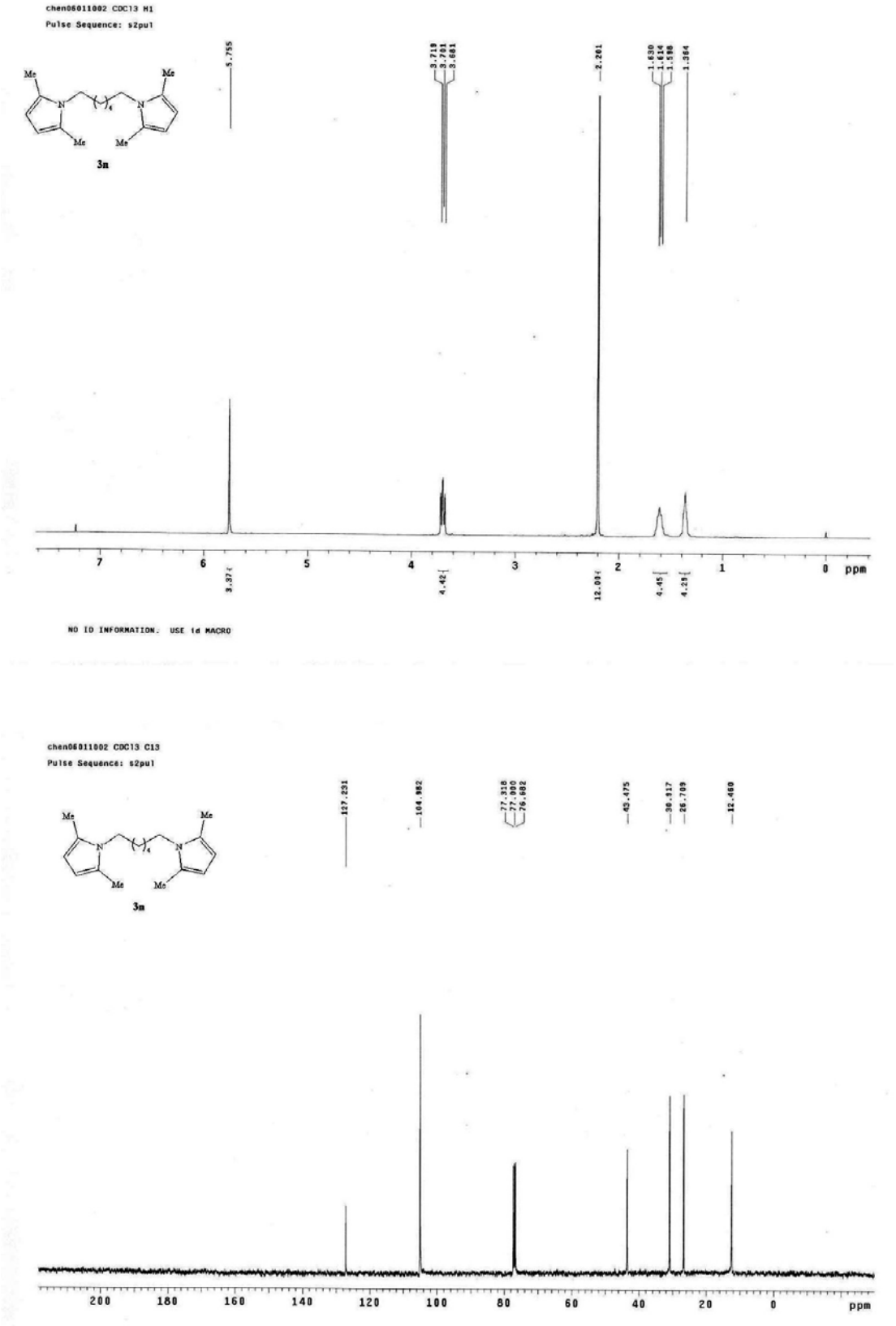


Figure S14. ^{1}H NMR of **3n** (400 MHz, $CDCl_3$) and ^{13}C NMR of **3n** (100 MHz, $CDCl_3$).

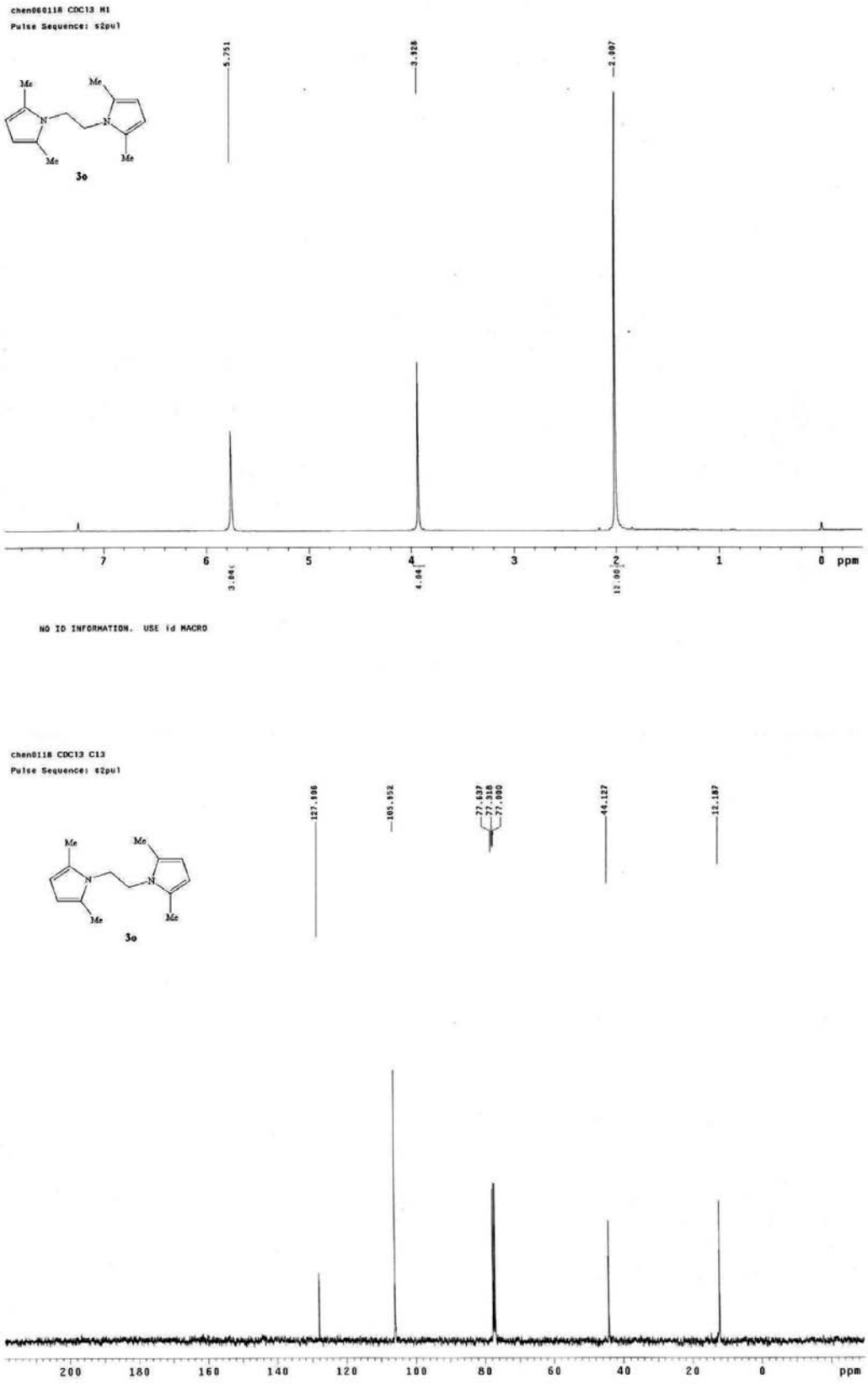


Figure S15. ^{1}H NMR of 3**o** (400 MHz, $CDCl_3$) and ^{13}C NMR of 3**o** (100 MHz, $CDCl_3$).

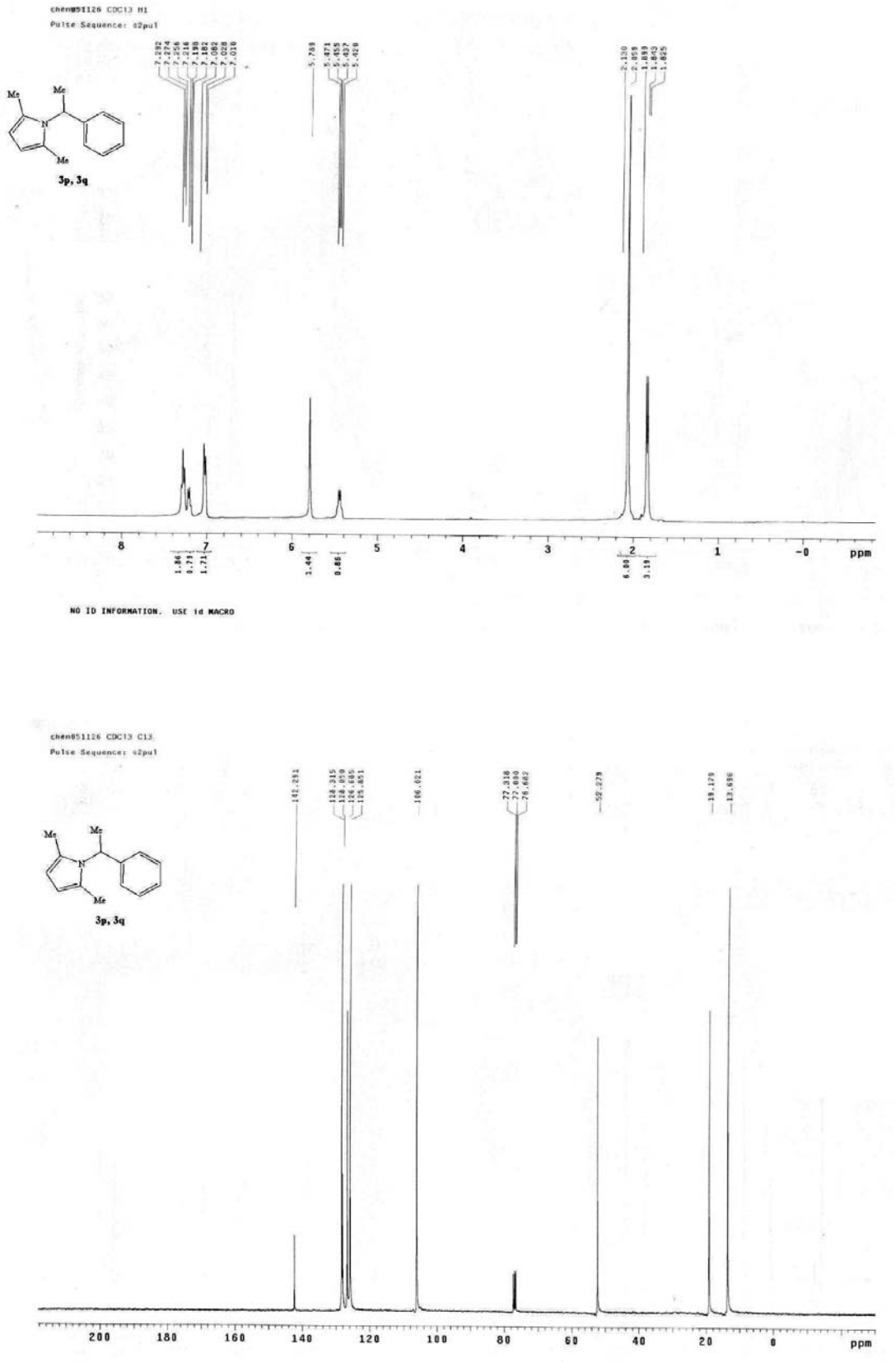
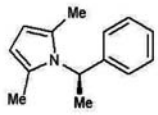


Figure S16. ^{1}H NMR of 3**p or 3q** (400 MHz, $CDCl_3$) and ^{13}C NMR of **3p or 3q** (100 MHz, $CDCl_3$).

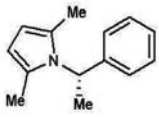
```
Sat Jan   7, 2006
17:12
RUDOLPH RESEARCH
AUTOPOL IV
Serial No. 2513

Meas. Type     : Sp. Rot.
Wavelength     : 589 nm
Concentration  : 0.098%
Cell Length    : 50.000 mm
Response Time  : 2 sec
Sample Name    : Disabled
Temp.-Chamber  : 16.0'C

          Optical      Meas.
  Meas.   Rotation     Limits
 -------  --------  ----------

  42.951     0.021
            deg.Arc

  42.951     0.021
            deg.Arc

  42.951     0.021
            deg.Arc

  42.951     0.021
            deg.Arc

  42.951     0.021
            deg.Arc

  42.951     0.021
            deg.Arc

  42.951     0.021
            deg.Arc

  42.951     0.021
            deg.Arc
```



3p

Figure S17. Optical Rotation of 3p.

```
Sat Jan   7, 2006
16:41
RUDOLPH RESEARCH
AUTOPOL IV
Serial No. 2513

Meas. Type     : Sp. Rot.
Wavelength     : 589 nm
Concentration  : 0.098%
Cell Length    : 50.000 mm
Response Time  : 2 sec
Sample Name    : Disabled
Temp.-Chamber  : 16.9'C

          Optical      Meas.
  Meas.   Rotation     Limits
 -------  --------  ----------

 -42.955    -0.021
            deg.Arc

 -42.955    -0.021
            deg.Arc

 -42.955    -0.021
            deg.Arc

 -42.955    -0.021
            deg.Arc

 -42.955    -0.021
            deg.Arc

 -42.955    -0.021
            deg.Arc

 -42.955    -0.021
            deg.Arc

 -42.955    -0.021
            deg.Arc
```



3q

Figure S18. Optical Rotation of 3q.

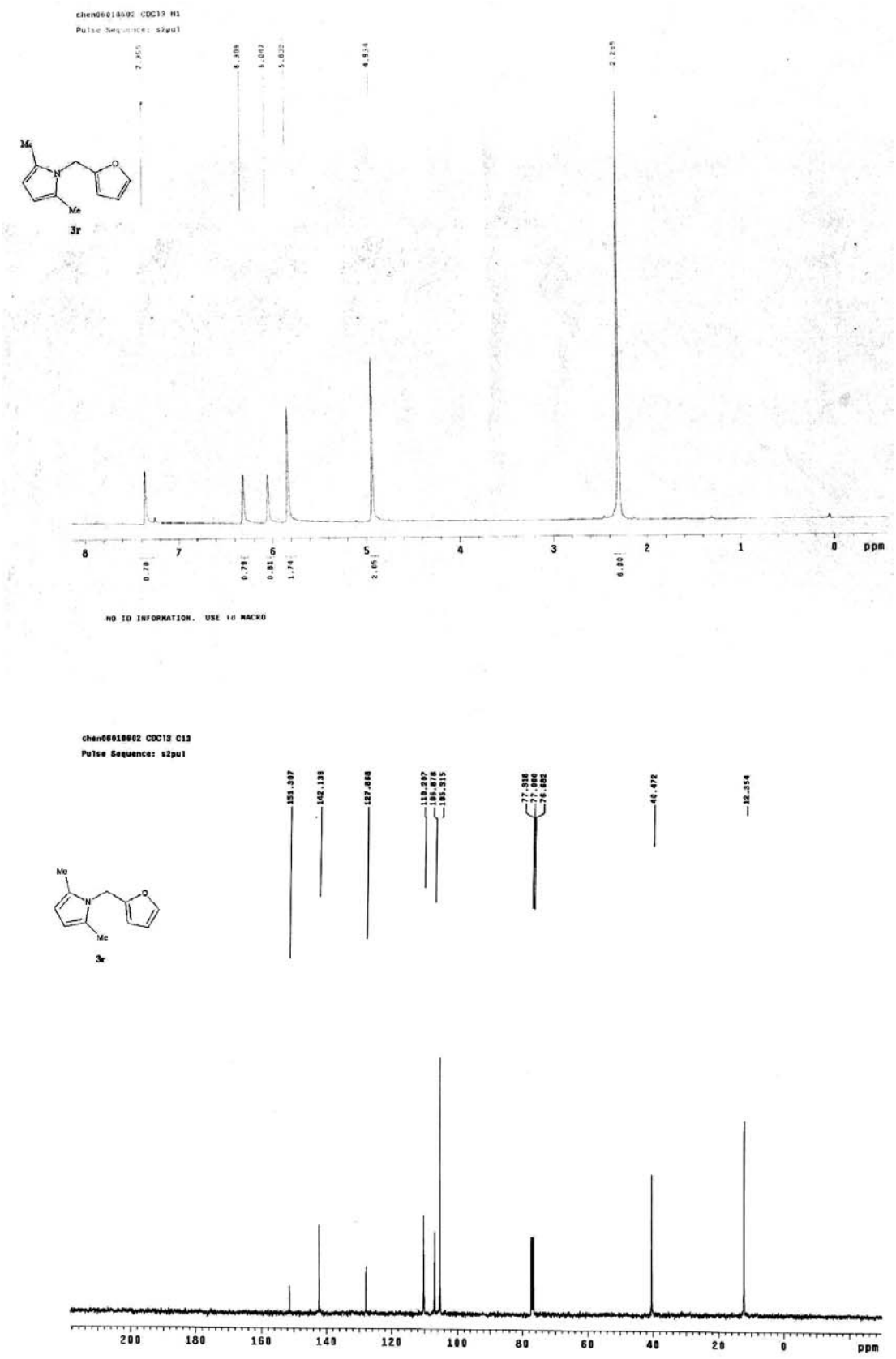


Figure S19. ^{1}H NMR of **3r** (400 MHz, $CDCl_3$) and ^{13}C NMR of **3r** (100 MHz, $CDCl_3$).

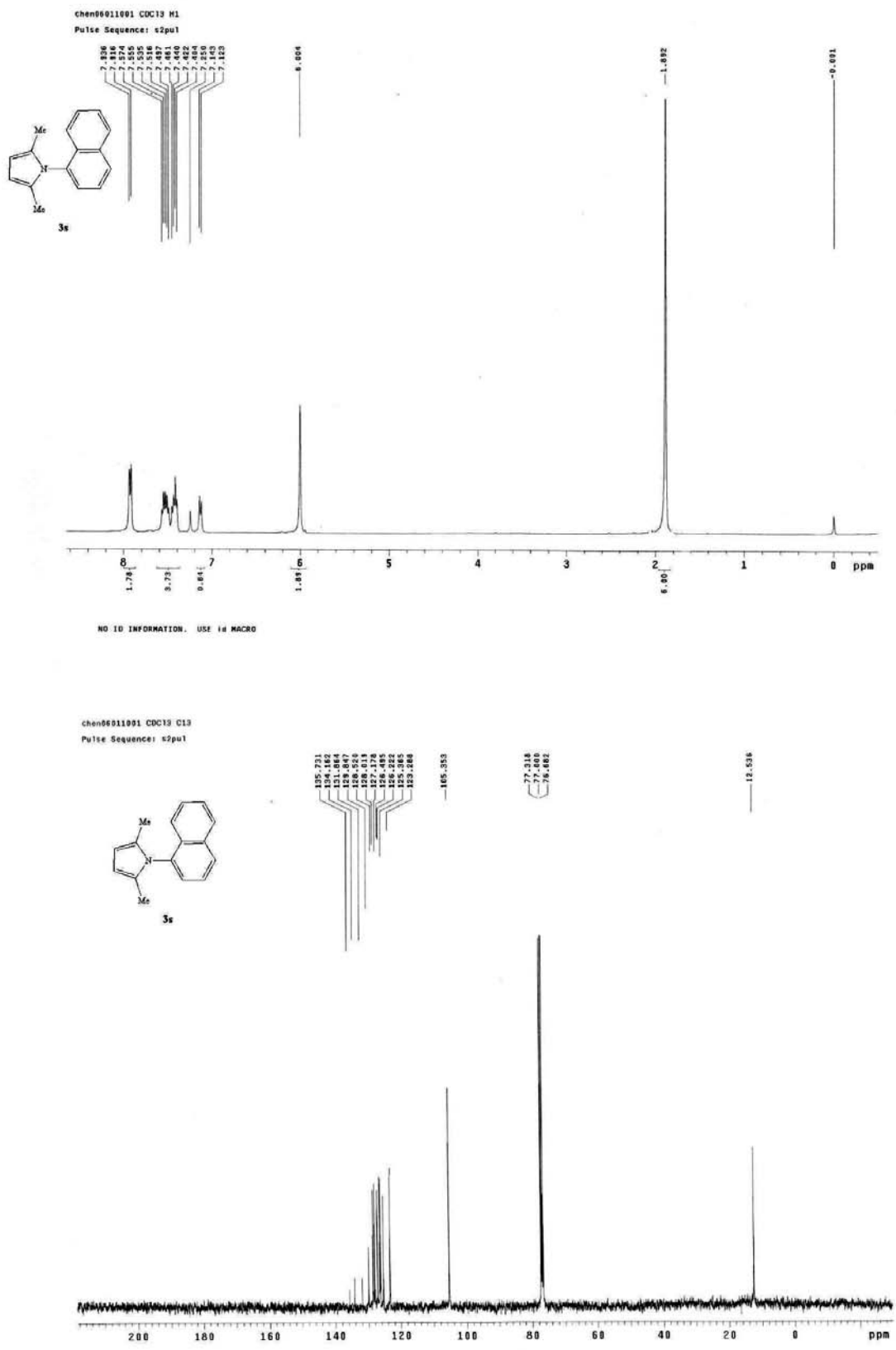


Figure S20. ^{1}H NMR of **3s** (400 MHz, $CDCl_3$) and ^{13}C NMR of **3s** (100 MHz, $CDCl_3$).

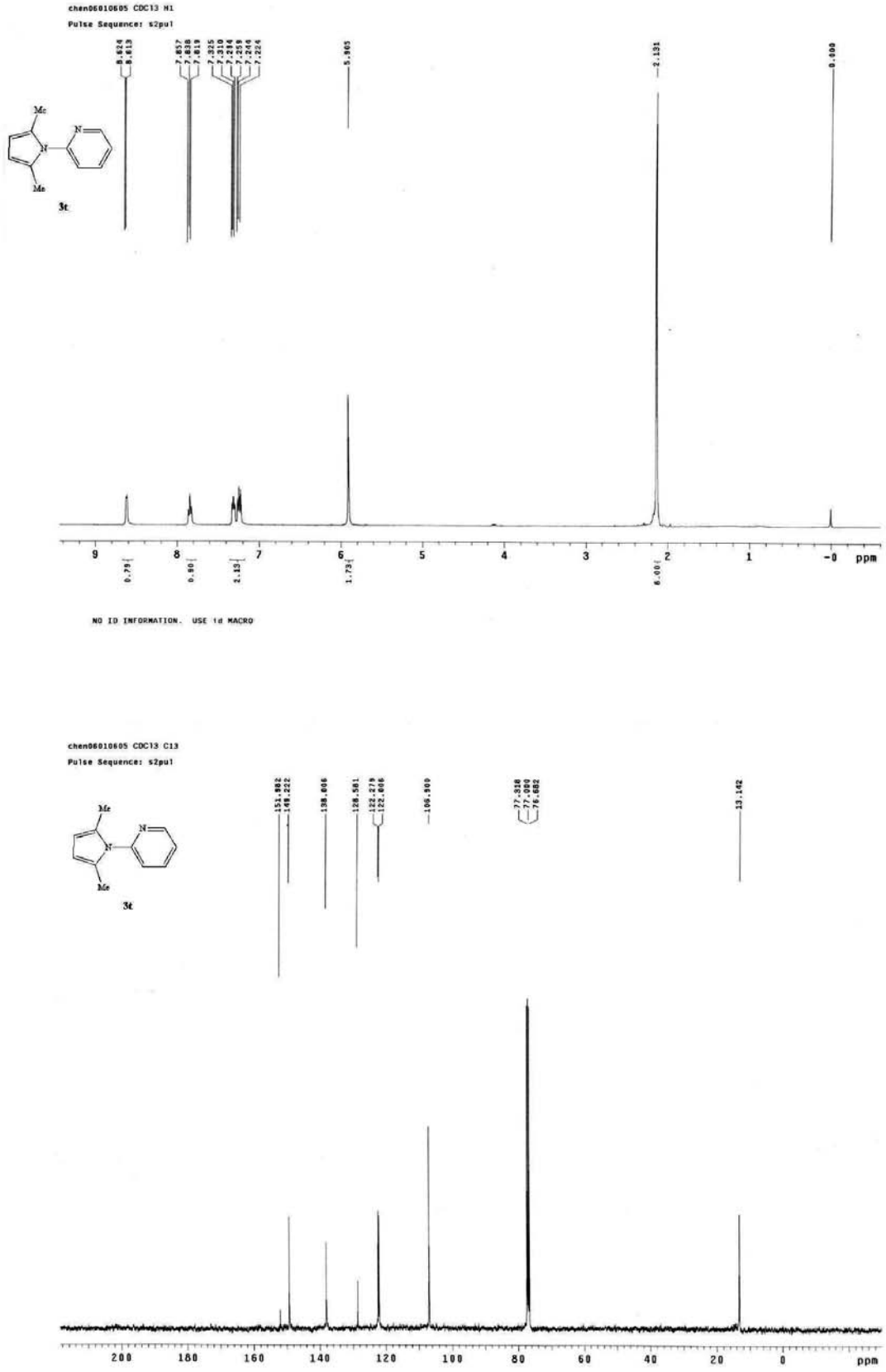


Figure S21. ^{1}H NMR of **3t** (400 MHz, $CDCl_3$) and ^{13}C NMR of **3t** (100 MHz, $CDCl_3$).

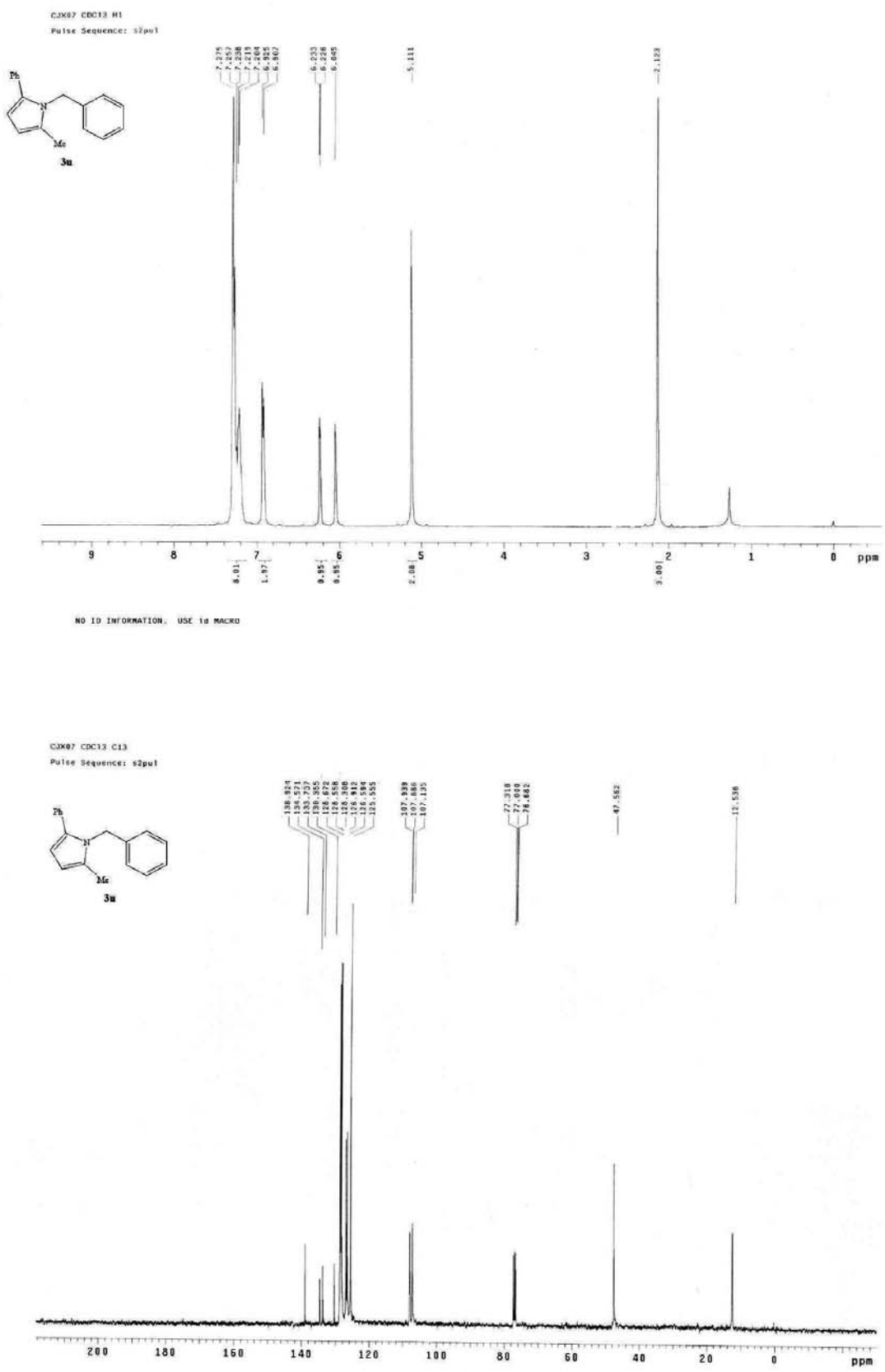


Figure S122. ^{1}H NMR of **3u** (400 MHz, $CDCl_3$) and ^{13}C NMR of **3u** (100 MHz, $CDCl_3$).

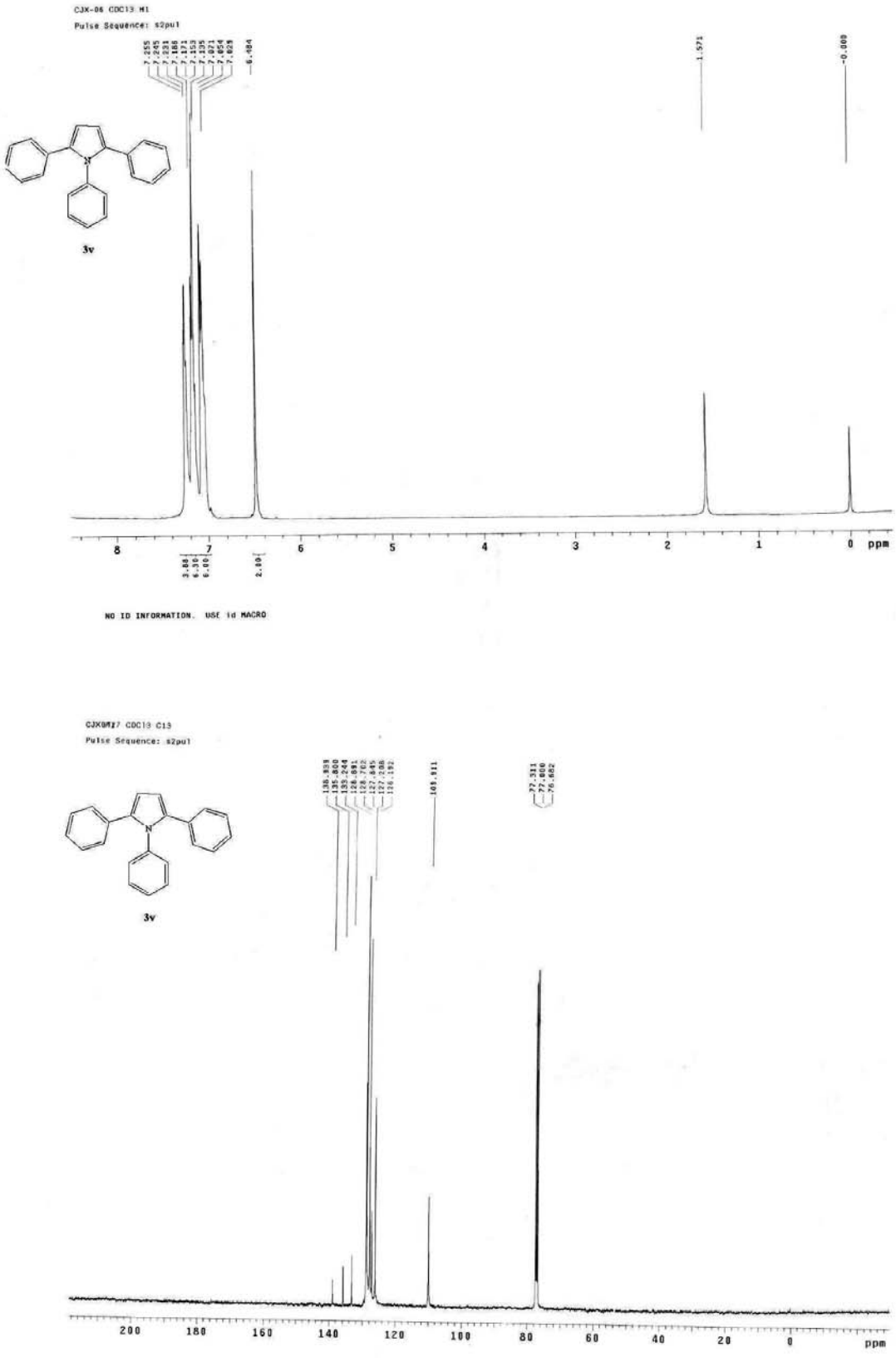


Figure S23. ^{1}H NMR of **3v** (400 MHz, $CDCl_3$) and ^{13}C NMR of **3v** (100 MHz, $CDCl_3$).

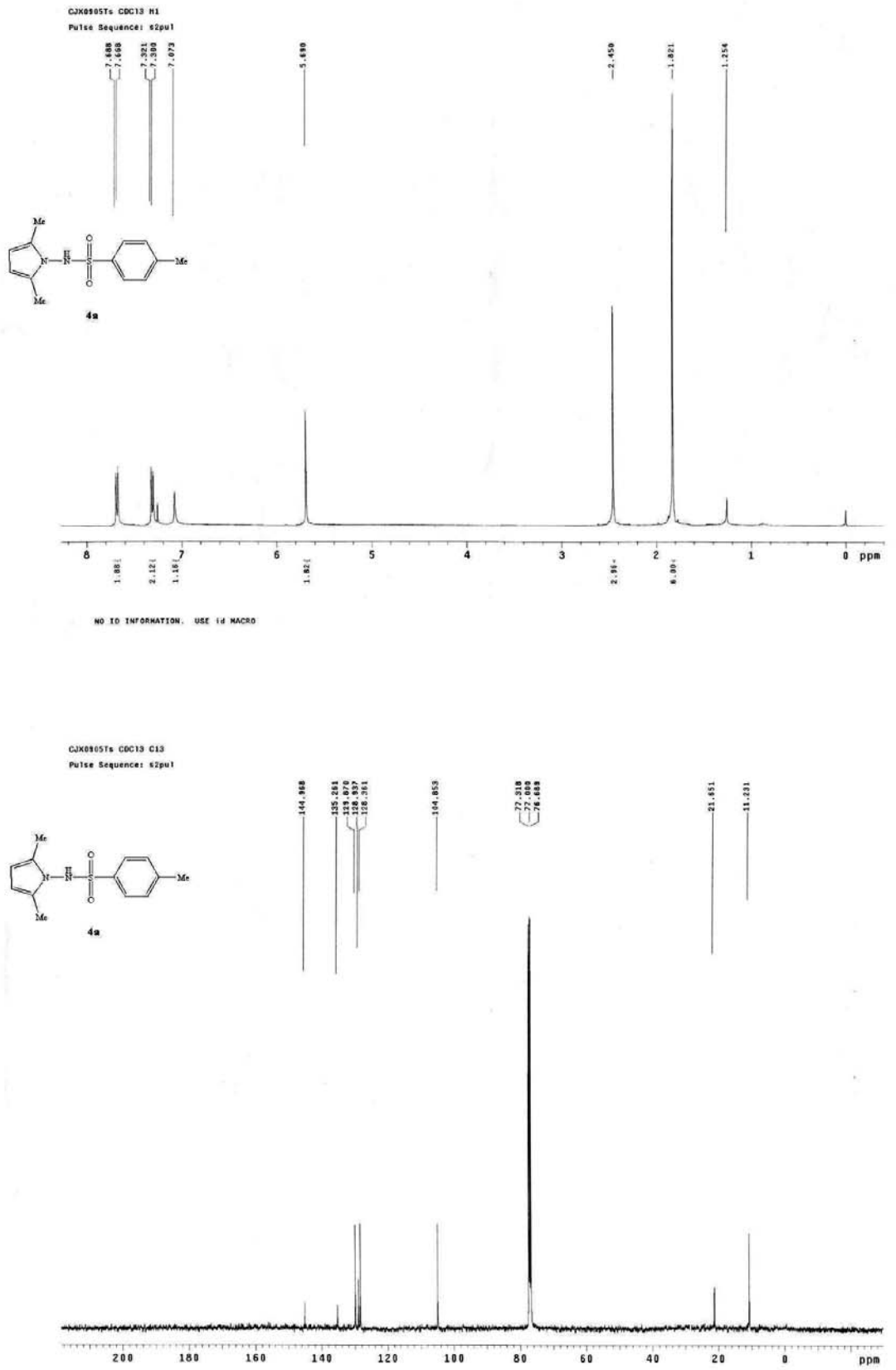


Figure S24. ^{1}H NMR of **4a** (400 MHz, $CDCl_3$) and ^{13}C NMR of **4a** (100 MHz, $CDCl_3$).