

Supporting Information

Synthesis of *N*-alkyl pyrroles via decarboxylation/ dehydration in neutral ionic liquid under catalyst-free condition

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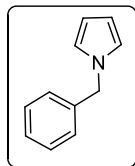
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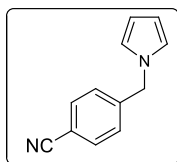
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Spectroscopic data

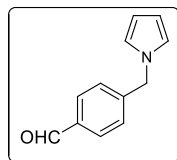
1-Benzyl-1H-pyrrole¹ (2b). Yield: 56% (0.082 g from 0.1 g); a light yellow oil; $R_f = 0.52$ (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max} : 761, 968, 1085, 1282, 1447, 1498, 2924, 3020 cm^{-1} . ^1H NMR (400 MHz, CDCl_3): $\delta = 4.95$ (s, 2H), 6.16 (t, $J = 2.1$ Hz, 2H), 6.62 (t, $J = 2.1$ Hz, 2H), 7.04 (d, $J = 7.1$ Hz, 2H), 7.21-7.25 (m, 3H); ^{13}C NMR (100 MHz, CDCl_3): $\delta = 53.5, 108.9, 121.5, 127.3, 127.9, 129.1, 138.6$. MS (ESI+): $m/z = 158.0$. ESI-HR-MS calculated for $\text{C}_{11}\text{H}_{11}\text{N}$ ($\text{M}^+\text{+H}$): 158.0970, found: 158.0976.



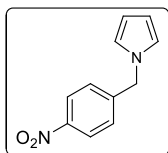
4-((1H-pyrrol-1-yl)methyl)benzonitrile (2c). Yield: 78% (0.108 g from 0.1 g); yellow solid; mp 70-72 $^{\circ}\text{C}$; $R_f = 0.44$ (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max} : 762, 1216, 1391, 1670, 2421, 3020, cm^{-1} . ^1H NMR (400 MHz, CDCl_3): $\delta = 5.12$ (s, 2H), 6.22 (t, $J = 2.1$ Hz, 2H), 6.67 (t, $J = 2.1$ Hz, 2H), 7.13 (d, $J = 8.3$ Hz, 2H), 7.56 (d, $J = 8.3$ Hz, 2H); ^{13}C NMR (100 MHz, CDCl_3): $\delta = 52.7, 111.5, 118.6, 121.3, 127.4, 132.6, 143.9$. MS (ESI+): $m/z = 183.0$. ESI-HR-MS calculated for $\text{C}_{12}\text{H}_{10}\text{N}_2$ ($\text{M}^+\text{+H}$): 183.0922, found: 183.0924.



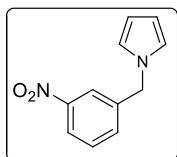
4-((1H-pyrrol-1-yl)methyl)benzaldehyde (2d). Yield: 65% (0.089 g from 0.1 g); a light brown oil; $R_f = 0.40$ (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max} : 742, 1214, 1528, 1621, 1665, 3020 cm^{-1} . ^1H NMR (400 MHz, CDCl_3): $\delta = 5.03$ (s, 2H), 6.15 (t, $J = 1.84$ Hz, 2H), 6.66 (t, $J = 1.84$ Hz, 2H), 7.56 (d, $J = 8.1$ Hz, 2H), 6.98 (d, $J = 7.8$ Hz, 2H) 9.91 (s, 1H); ^{13}C NMR (100 MHz, CDCl_3): δ (ppm) = 52.8, 108.4, 120.9, 122.2, 123.7, 127.3, 136.7, 187.5. MS (ESI+): $m/z = 186.1$. ESI-HR-MS calculated for $\text{C}_{12}\text{H}_{11}\text{NO}$ ($\text{M}^+\text{+H}$): 186.0919, found: 186.0921.



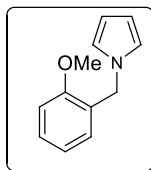
1-(4-Nitrobenzyl)-1H-pyrrole² (2e). Yield: 80% (0.118 g from 0.1 g); yellow solid; mp 88-90 $^{\circ}\text{C}$; $R_f = 0.42$ (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max} : 761, 1216, 1523, 1652, 3021 cm^{-1} . ^1H NMR (400 MHz, CDCl_3): $\delta = 5.26$ (s, 2H), 6.21 (t, $J = 2.1$ Hz, 2H), 6.77 (t, $J = 2.1$ Hz, 2H), 7.27 (d, $J = 8.6$ Hz, 2H), 8.23 (d, $J = 8.7$ Hz, 2H); ^{13}C NMR (100 MHz, CDCl_3): $\delta = 52.6, 109.4, 121.3, 124.1, 127.4, 145.7, 147.5$. MS (ESI+): $m/z = 203.0$. ESI-HR-MS calculated for $\text{C}_{11}\text{H}_{10}\text{N}_2\text{O}_2$ ($\text{M}^+\text{+H}$): 203.0821, found: 203.0822.



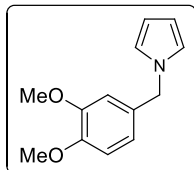
1-(3-Nitrobenzyl)-1H-pyrrole (2f). Yield: 69% (0.092 g from 0.1 g); a yellow solid; mp 70-72 $^{\circ}\text{C}$; $R_f = 0.40$ (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max} : 789, 1225, 1401, 1538, 1602, 2488, 2986, 3019 cm^{-1} . ^1H NMR (400 MHz, CDCl_3): $\delta = 5.71$ (s, 2H), 6.24 (t, $J = 2.1$ Hz, 2H), 6.70 (t, $J = 2.1$ Hz, 2H), 7.36 (dd, $J_1 = 0.6$ Hz, $J_2 = 0.6$ Hz, 1H), 7.51 (t, $J = 7.8$ Hz, 1H), 7.97 (s, 1H), 8.12 (dd, $J_1 = 1.2$ Hz, $J_2 = 1.3$ Hz, 1H); ^{13}C NMR (100 MHz, CDCl_3): $\delta = 52.5, 119.4, 121.2, 121.8, 122.7, 129.8, 132.9, 140.6, 148.5$. MS (ESI+): $m/z = 203.0$. ESI-HR-MS calculated for $\text{C}_{11}\text{H}_{10}\text{N}_2\text{O}_2$ ($\text{M}^+\text{+H}$): 203.0821, found: 203.0822.



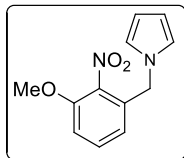
1-(2-Methoxybenzyl)-1H-pyrrole¹ (2g). Yield: 59% (0.083 g from 0.1 g); a colourless oil; $R_f = 0.44$ (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max} : 766, 901, 1221, 1570, 1608, 2995, 3012 cm^{-1} . $^1\text{H NMR}$ (400 MHz, CDCl_3): $\delta = 3.69$ (s, 3H), 4.94 (s, 2H), 6.06 (t, $J = 2.1$ Hz, 2H), 6.58 (t, $J = 2.1$ Hz, 2H), 6.68-6.77 (m, 3H), 7.09-7.14 (m, 1H); $^{13}\text{C NMR}$ (100 MHz, CDCl_3): δ (ppm) = 48.3, 55.3, 108.1, 110.2, 120.7, 121.3, 128.3, 128.8, 135.9, 156.9. MS (ESI+): $m/z = 187.9$. ESI-HR-MS calculated for $\text{C}_{12}\text{H}_{13}\text{NO}$ ($\text{M}^+\text{+H}$): 188.1075, found: 188.1078.



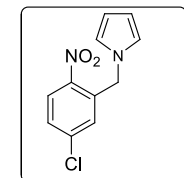
1-(3,4-Dimethoxybenzyl)-1H-pyrrole (2h). Yield: 64% (0.083 g from 0.1 g); a sea green oil; $R_f = 0.38$ (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max} : 761, 1086, 1144, 1263, 1459, 1515, 1599, 2935, 3018 cm^{-1} . $^1\text{H NMR}$ (400 MHz, CDCl_3): $\delta = 3.86$ (s, 3H), 3.96 (s, 3H), 5.04 (s, 2H), 6.23 (t, $J = 2.1$ Hz, 2H), 6.69 (d, $J = 1.9$ Hz, 1H), 6.73 (t, $J = 2.2$ Hz, 2H), 6.76 (d, $J = 2.1$ Hz, 1H), 6.86 (d, $J = 8.2$ Hz, 1H); $^{13}\text{C NMR}$ (100 MHz, CDCl_3): $\delta = 52.6, 55.4, 55.5, 108.1, 110.2, 110.9, 119.2, 120.6, 130.4, 148.3, 148.8$. MS (ESI+): $m/z = 217.8$. ESI-HR-MS calculated for $\text{C}_{13}\text{H}_{15}\text{NO}_2$ ($\text{M}^+\text{+H}$): 218.1181, found: 218.1184.



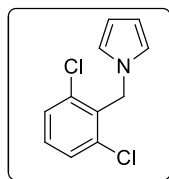
1-(3-Methoxy-2-nitrobenzyl)-1H-pyrrole (2i). Yield: 65% (0.078 g from 0.1 g); a pale white solid; mp 96-98 °C; $R_f = 0.40$ (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max} : 758, 1215, 1384, 1403, 1533, 1654, 3019 cm^{-1} . $^1\text{H NMR}$ (400 MHz, CDCl_3): $\delta = 3.93$ (s, 3H), 5.09 (s, 2H), 6.23 (t, $J = 2.1$ Hz, 2H), 6.46 (d, $J = 7.8$ Hz, 1H), 6.69 (t, $J = 2.1$ Hz, 2H), 6.99 (d, $J = 8.3$ Hz, 2H), 7.37 (t, $J = 8.2$ Hz, 1H); $^{13}\text{C NMR}$ (100 MHz, CDCl_3): $\delta = 48.4, 56.6, 109.2, 112.0, 119.5, 121.5, 131.6, 131.9, 151.1$. MS (ESI+): $m/z = 233.0$. ESI-HR-MS calculated for $\text{C}_{12}\text{H}_{12}\text{N}_2\text{O}_3$ ($\text{M}^+\text{+H}$): 233.0926, found: 233.0924.



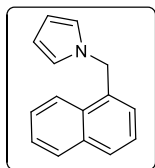
1-(5-Chloro-2-nitrobenzyl)-1H-pyrrole (2j). Yield: 88% (0.111 g from 0.1 g); a light brown solid; mp 76-78 °C; $R_f = 0.39$ (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max} : 760, 889, 1216, 1344, 1570, 1605, 3020 cm^{-1} . $^1\text{H NMR}$ (400 MHz, CDCl_3): $\delta = 5.02$ (s, 2H), 6.32 (t, $J = 2.1$ Hz, 2H), 6.54 (t, $J = 1.2$ Hz, 1H), 6.72 (t, $J = 2.1$ Hz, 2H), 7.42 (dd, $J_1 = 2.2$ Hz, $J_2 = 2.2$ Hz, 1H), 8.11 (d, $J = 8.7$ Hz, 1H); $^{13}\text{C NMR}$ (100 MHz, CDCl_3): $\delta = 50.5, 109.9, 121.6, 126.5, 128.5, 128.6, 137.6, 141.3, 144.9$. MS (ESI+): $m/z = 236.9$. ESI-HR-MS calculated for $\text{C}_{11}\text{H}_9\text{ClN}_2\text{O}_2$ ($\text{M}^+\text{+H}$): 237.0431, found: 237.0434.



1-(2,6-Dichlorobenzyl)-1H-pyrrole (2k). Yield: 86% (0.114 g from 0.1 g); a white solid; $R_f = 0.39$ (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max} : 761, 1091, 1274, 1438, 1650, 3018 cm^{-1} . $^1\text{H NMR}$ (400 MHz, CDCl_3): $\delta = 5.37$ (s, 2H), 6.13 (t, $J = 2.2$ Hz, 2H), 6.81 (t, $J = 2.2$ Hz, 2H), 7.17-7.22 (m, 1H), 7.34 (d, $J = 8.1$ Hz, 2H); $^{13}\text{C NMR}$ (100 MHz, CDCl_3): $\delta = 47.9, 108.2, 121.3, 130.2, 133.2, 136.6$. MS (ESI+): $m/z = 226.1$. ESI-HR-MS calculated for $\text{C}_{11}\text{H}_9\text{Cl}_2\text{N}$ ($\text{M}^+\text{+H}$): 226.0190, found: 226.0192.

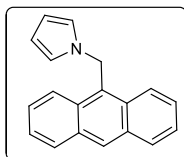


1-(Naphthalen-1-ylmethyl)-1H-pyrrole (2l). Yield: 77% (0.102 g from 0.1 g); a white solid;



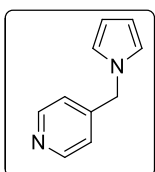
mp 62-64 °C; $R_f = 0.41$ (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max} : 668, 758, 929, 1067, 1160, 1291, 1384, 1482, 1598, 1654, 2926, 3019 cm^{-1} . ^1H NMR (400 MHz, CDCl_3): $\delta = 5.59$ (s, 2H), 6.33 (d, $J = 1.8$ Hz, 2H), 6.82 (d, $J = 1.7$ Hz, 2H), 7.12 (d, $J = 7.0$ Hz, 2H), 7.51 (t, $J = 7.2$ Hz, 1H), 7.59-7.63 (m, 2H), 7.88 (d, $J = 8.3$ Hz, 1H), 7.97 (d, $J = 7.5$ Hz, 1H), 8.02 (d, $J = 8.1$ Hz, 1H); ^{13}C NMR (100 MHz, CDCl_3): $\delta = 51.3, 108.6, 121.5, 122.7, 125.6, 125.7, 126.1, 126.7, 128.6, 128.9, 131.1, 133.6, 133.7$. MS (ESI+): $m/z = 208.1$. ESI-HR-MS calculated for $\text{C}_{15}\text{H}_{13}\text{N}$ (M^+H): 208.1126, found: 208.1121.

1-(Anthracen-9-ylmethyl)-1H-pyrrole² (2m). Yield: 82% (0.102 g from 0.1 g); a yellow solid;



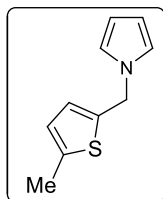
mp 150-152 °C, (Lit. 152-155 °C); $R_f = 0.39$ (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max} : 758, 1215, 1384, 1659, 3019 cm^{-1} . ^1H NMR (400 MHz, CDCl_3): δ (ppm) 6.07 (s, 2H), 6.13 (t, $J = 2.1$ Hz, 2H), 6.68 (t, $J = 2.1$ Hz, 2H), 7.52-7.58 (m, 4H), 8.07-8.12 (m, 2H), 8.31 (d, $J = 8.6$ Hz, 2H), 8.55 (s, 1H); ^{13}C NMR (100 MHz, CDCl_3): $\delta = 45.3, 108.2, 120.5, 123.6, 125.2, 125.7, 126.9, 128.8, 129.3, 131.1, 131.5$. MS (ESI+): $m/z = 257.9$. ESI-HR-MS calculated for $\text{C}_{19}\text{H}_{15}\text{N}$ (M^+H): 258.1283, found: 258.1280.

4-((1H-pyrrol-1-yl)methyl)pyridine² (2n). Yield: 64% (0.044 g from 0.1 g); a brown oil; $R_f =$

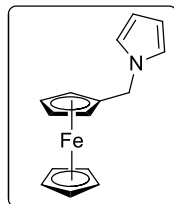


0.26 (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max} : 770, 1216, 1384, 1652, 3019 cm^{-1} . ^1H NMR (400 MHz, CDCl_3): $\delta = 5.03$ (s, 2H), 6.23 (t, $J = 1.9$ Hz, 2H), 6.65 (d, $J = 1.6$ Hz, 2H), 6.91 (d, $J = 4.6$ Hz, 2H), 8.51 (d, $J = 4.6$ Hz, 2H); ^{13}C NMR (100 MHz, CDCl_3): $\delta = 52.1, 109.3, 121.3, 147.5, 150.2$. MS (ESI+): $m/z = 159.09$. ESI-HR-MS calculated for $\text{C}_{10}\text{H}_{10}\text{N}_2$ (M^+H): 159.0922, found: 159.0922.

1-((5-Methylthiophen-2-yl)methyl)-1H-pyrrole (2o). Yield: 66% (0.092 g from 0.1 g); a brown

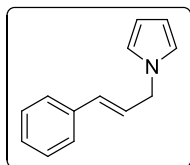


oil; $R_f = 0.39$ (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max} : 760, 967, 1084, 1217, 1275, 1397, 1440, 1495, 1679, 2404, 2862, 2922, 3012 cm^{-1} . ^1H NMR (400 MHz, CDCl_3): $\delta = 2.39$ (s, 3H), 5.08 (s, 2H), 6.16 (t, $J = 2.2$ Hz, 2H), 6.55-6.56 (m, 1H), 6.68-6.69 (m, 3H); ^{13}C NMR (100 MHz, CDCl_3): $\delta = 15.5, 48.4, 118.8, 120.7, 125.1, 126.1, 138.4, 140.4$. MS (ESI+): $m/z = 177.8$. ESI-HR-MS calculated for $\text{C}_{10}\text{H}_{11}\text{NS}$ (M^+H): 178.0690, found: 178.0693.

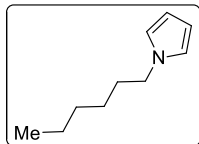


Ferrocene-1H-pyrrole (2p). Yield: 68% (0.083 g from 0.1 g); a brown oil; $R_f =$ 0.56 (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max} : 492, 668, 761, 1086, 1217, 1272, 1390, 1631, 2926, 3015 cm^{-1} . ^1H NMR (400 MHz, CDCl_3): $\delta = 4.17$ -4.19 (m, 7H), 4.22 (t, $J = 1.7$ Hz, 2H), 4.83 (s, 2H), 6.14 (t, $J = 2.2$ Hz, 2H), 6.69 (t, $J = 2.1$ Hz, 2H); ^{13}C NMR (100 MHz, CDCl_3): $\delta = 49.1, 68.4, 68.5, 68.7, 84.5, 107.9, 120.4$. MS (ESI+): $m/z = 266.0$. ESI-HR-MS calculated for $\text{C}_{15}\text{H}_{15}\text{NFe}$ (M^+H): 266.0632, found: 266.0637.

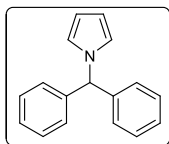
1-Cinnamyl-1H-pyrrole (2q). Yield: 60% (0.083 g from 0.1 g); a brown oil; $R_f = 0.43$ (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max} : 669, 758, 1215, 1384, 1637, 3019 cm^{-1} . ^1H NMR (400 MHz, CDCl_3): $\delta = 4.64$ (d, $J = 5.9$ Hz, 2H), 6.18 (bs, 2H), 6.48 (d, $J = 15.9$ Hz, 1H), 6.71 (bs, 2H), 7.24-7.36 (m, 6H); ^{13}C NMR (100 MHz, CDCl_3): $\delta = 51.6, 108.4, 120.7, 125.5, 126.6, 127.9, 128.6, 132.6$. MS (ESI+): $m/z = 183.9$. ESI-HR-MS calculated for $\text{C}_{13}\text{H}_{13}\text{N}$ ($\text{M}^+\text{+H}$): 184.1126, found: 184.1125.



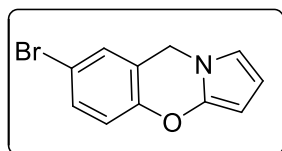
1-Hexyl-1H-pyrrole (2r). Yield: 58% (0.087 g from 0.1 g); a brown oil; $R_f = 0.53$ (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max} : 732, 930, 1210, 1569, 2995 cm^{-1} . ^1H NMR (400 MHz, CDCl_3): $\delta = 0.86$ -0.91 (m, 3H), 1.25-1.33 (m, 6H), 2.03 (q, $J = 7.3$ Hz, 2H), 4.36 (bs, 2H), 6.13 (t, $J = 2.1$ Hz, 2H), 6.61 (t, $J = 2.1$ Hz, 2H); ^{13}C NMR (100 MHz, CDCl_3): $\delta = 14.1, 22.6, 27.6, 29.4, 30.5, 31.6, 55.7, 107.8, 120.8$. MS (ESI+): $m/z = 152.1$. ESI-HR-MS calculated for $\text{C}_{10}\text{H}_{17}\text{N}$ ($\text{M}^+\text{+H}$): 152.1439, found: 152.1444.



1-Benzhydryl-1H-pyrrole¹ (2s). Yield: 90% (0.115 g from 0.1 g); a white solid; mp 72-74 $^{\circ}\text{C}$, (Lit. 70-74 $^{\circ}\text{C}$); $R_f = 0.38$ (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max} : 880, 1214, 1356, 1578, 1625, 3042 cm^{-1} . ^1H NMR (400 MHz, CDCl_3): $\delta = 6.17$ (t, $J = 2.0$ Hz, 2H), 6.44 (s, 1H), 6.59 (t, $J = 2.0$ Hz, 2H), 7.05-7.07 (m, 4H), 7.26-7.31 (m, 6H); ^{13}C NMR (100 MHz, CDCl_3): $\delta = 66.9, 108.4, 121.2, 127.9, 128.3, 128.6, 140.8$. MS (ESI+): $m/z = 234.1$. ESI-HR-MS calculated for $\text{C}_{17}\text{H}_{15}\text{N}$ ($\text{M}^+\text{+H}$): 234.1283, found: 234.1285.



7-Bromo-9H-benzo[e]pyrrolo[2,1-b][1,3]oxazine (3B). Yield: 35% (0.043 g from 0.1 g); a dark brown solid; mp 126-128 $^{\circ}\text{C}$; $R_f = 0.28$ (Hexanes: EtOAc, 9:1, v/v); IR (KBr) ν_{max} : 916, 1240, 1598, 1625 cm^{-1} . ^1H NMR (400 MHz, CDCl_3): $\delta = 4.76$ (d, $J = 15.5$ Hz, 1H), 4.91 (d, $J = 15.3$ Hz, 1H), 6.84 (d, $J = 8.8$ Hz, 2H), 7.52-7.61 (m, 4H); ^{13}C NMR (100 MHz, CDCl_3): $\delta = 51.4, 108.5, 111.4, 119.8, 121.7, 132.2, 134.4, 135.6, 139.7, 147.7, 156.4$. MS (ESI+): $m/z = 250.1$. ESI-HR-MS calculated for $\text{C}_{11}\text{H}_8\text{BrNO}$ ($\text{M}^+\text{+H}$): 249.9868, found: 249.9870.



References:

1. I. Deb, D. J. Coiro, D. Seidel, *Chem. Commun*, 2011, **47**, 6473.
2. V. Kumar, K. R. Rao. *Tetrahedron Lett.*, 2011, **52**, 3237.

^1H NMR and ^{13}C NMR Spectra of Compounds:

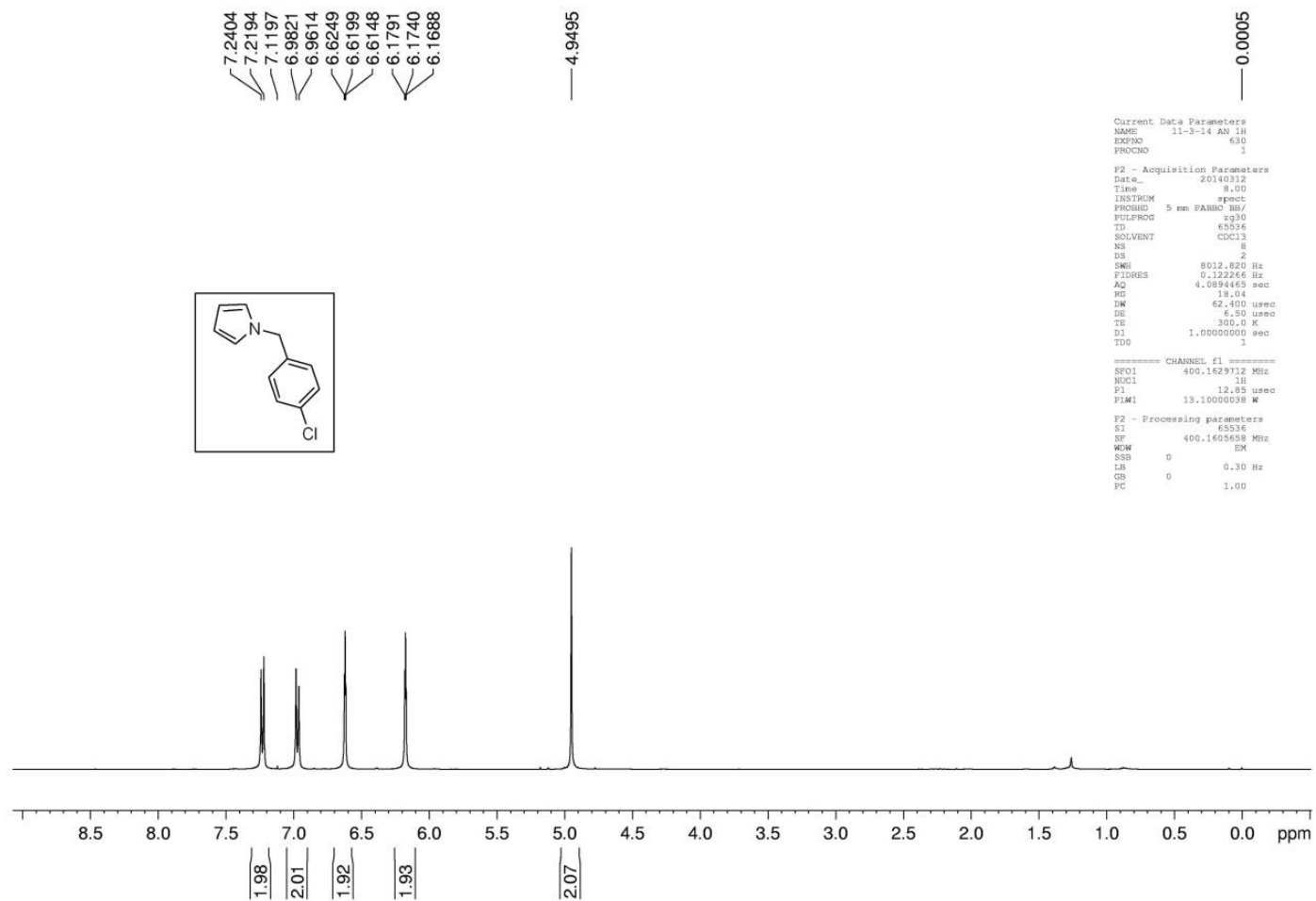


Fig: S-1 ^1H -NMR spectrum of 1-(4-Chlorobenzyl)-1H-pyrrole (2a).

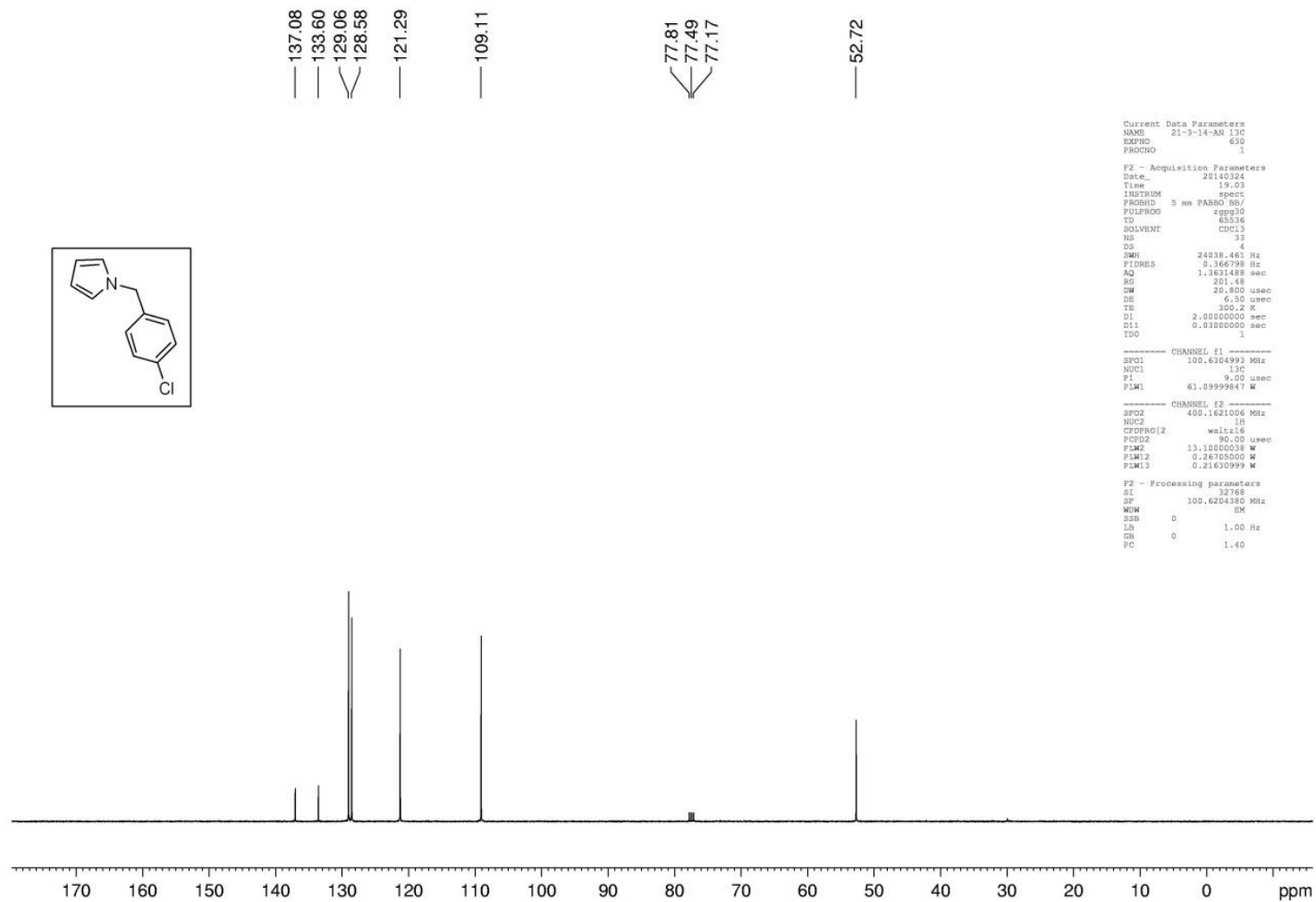


Fig: S-2 ¹³C-NMR spectrum of 1-(4-Chlorobenzyl)-1H-pyrrole (2a).

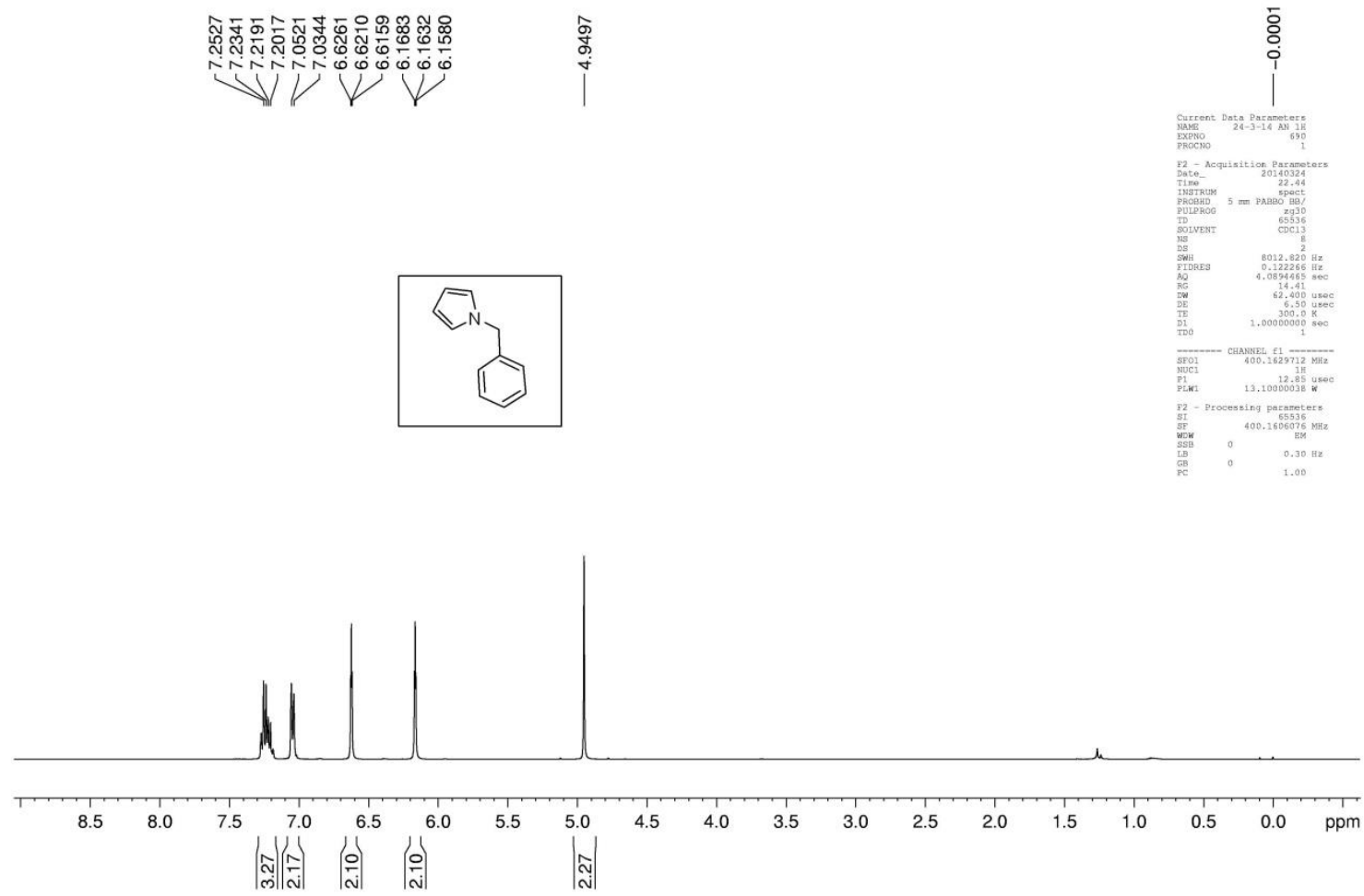


Fig: S-3 ¹H-NMR spectrum of 1-Benzyl-1H-pyrrole (**2b**).

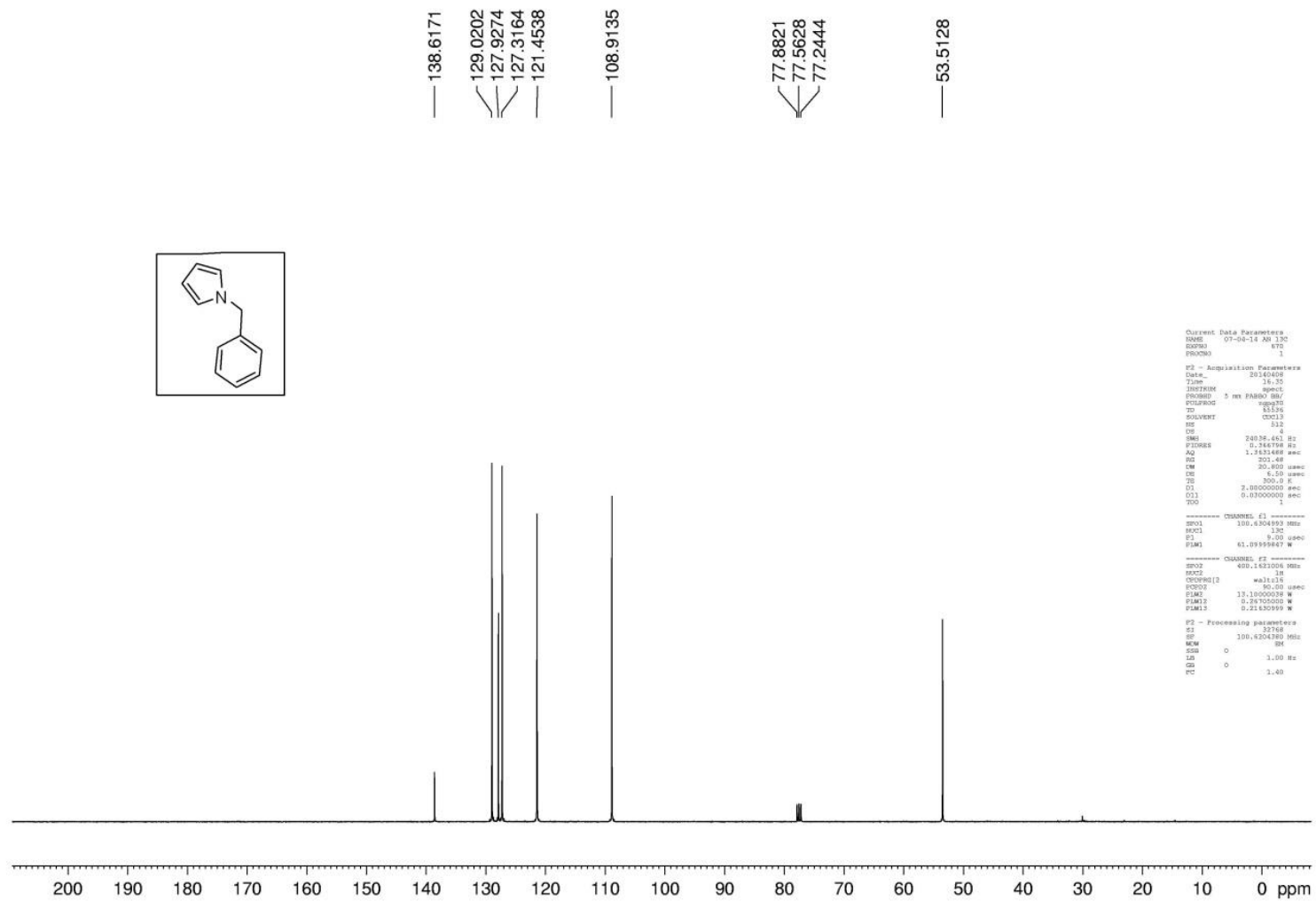


Fig: S-4 ^{13}C -NMR spectrum of 1-Benzyl-1H-pyrrole (**2b**).

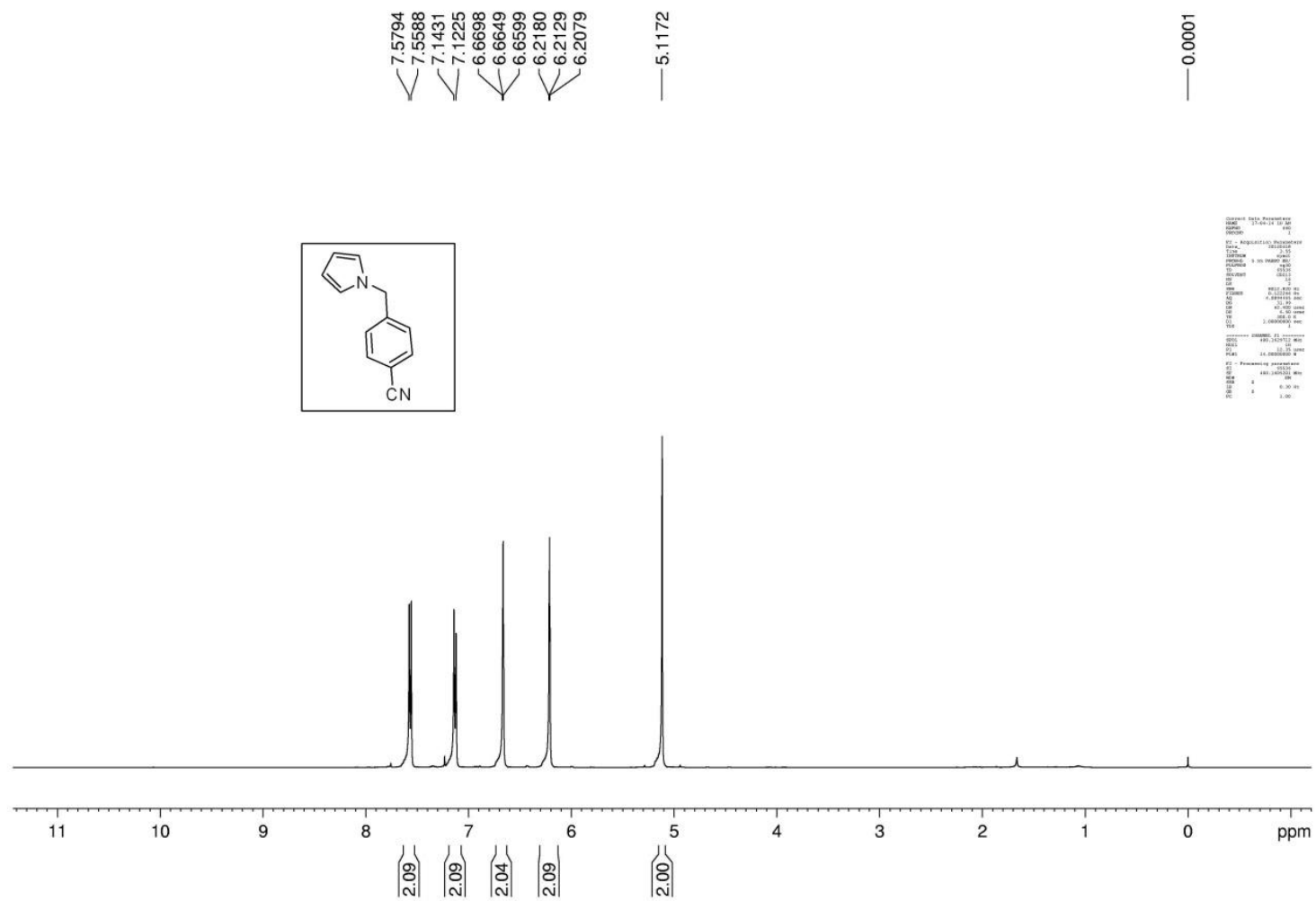
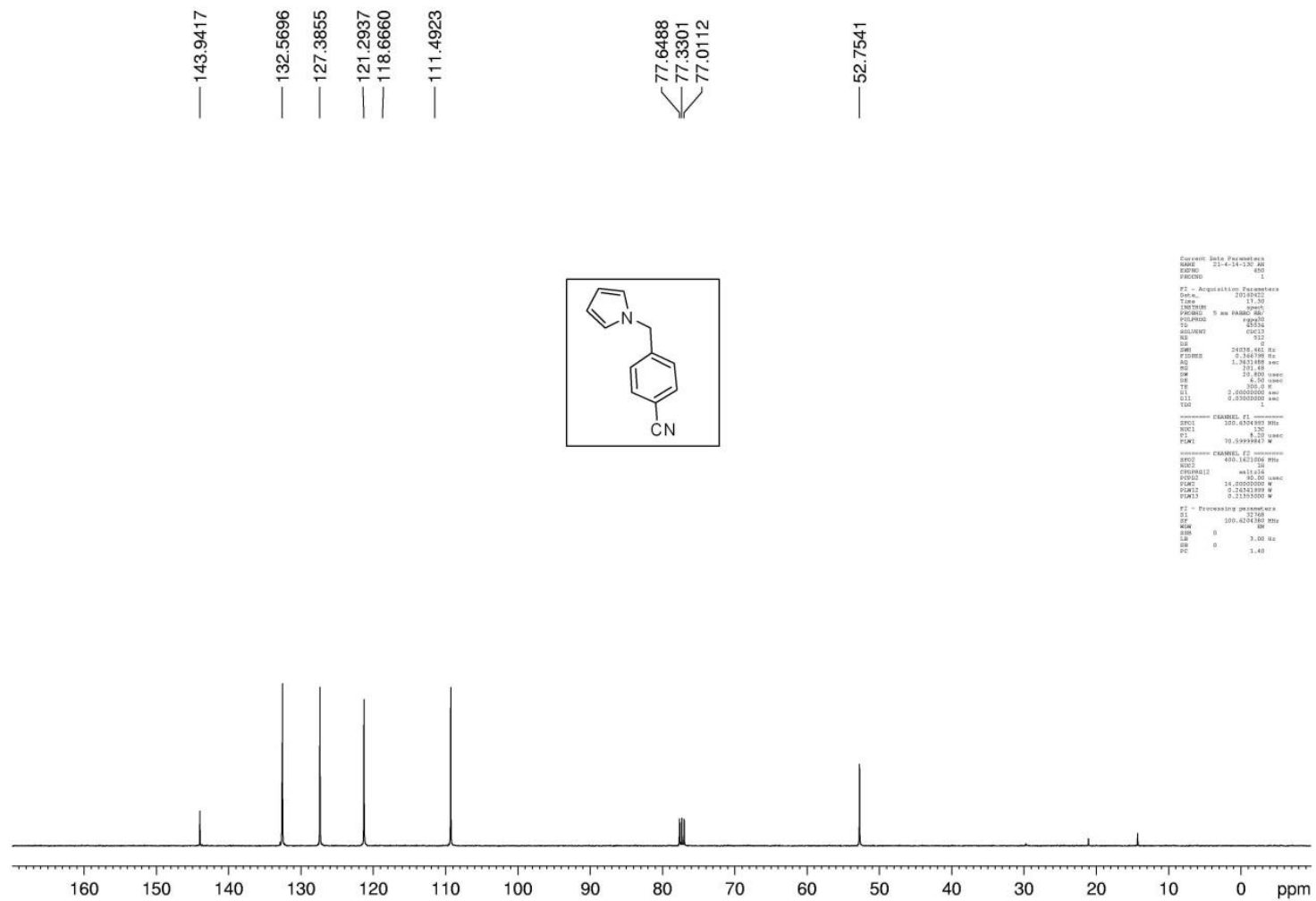


Fig: S-5 ¹H-NMR spectrum of 4-((1H-pyrrol-1-yl)methyl)benzonitrile (**2c**).



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PROCNO: 1

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Fig: S-6 ¹³C-NMR spectrum of 4-((1H-pyrrol-1-yl)methyl)benzotrile (2c).

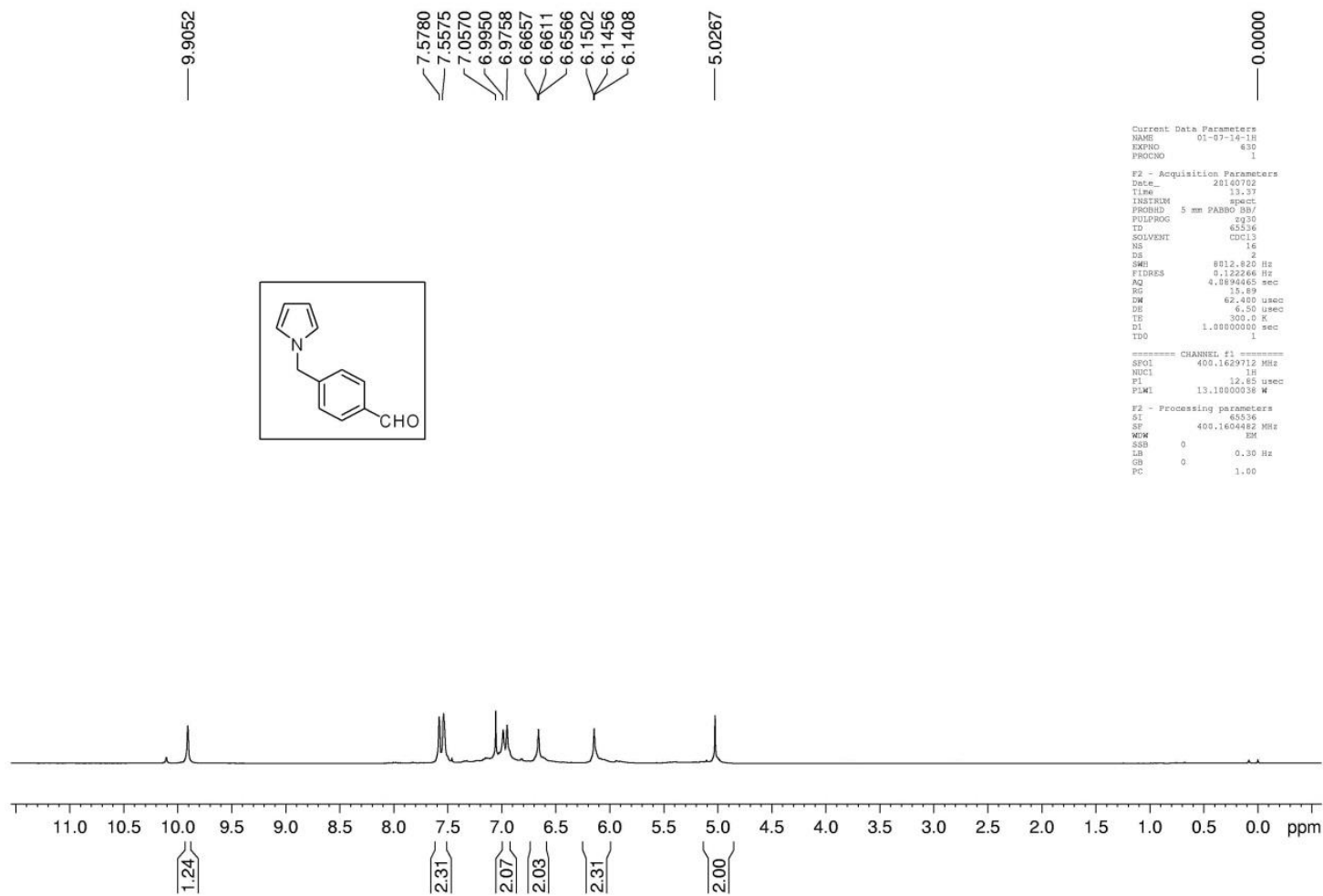


Fig: S-7 $^1\text{H-NMR}$ spectrum of 4-((1H-pyrrol-1-yl)methyl)benzaldehyde (**2d**).

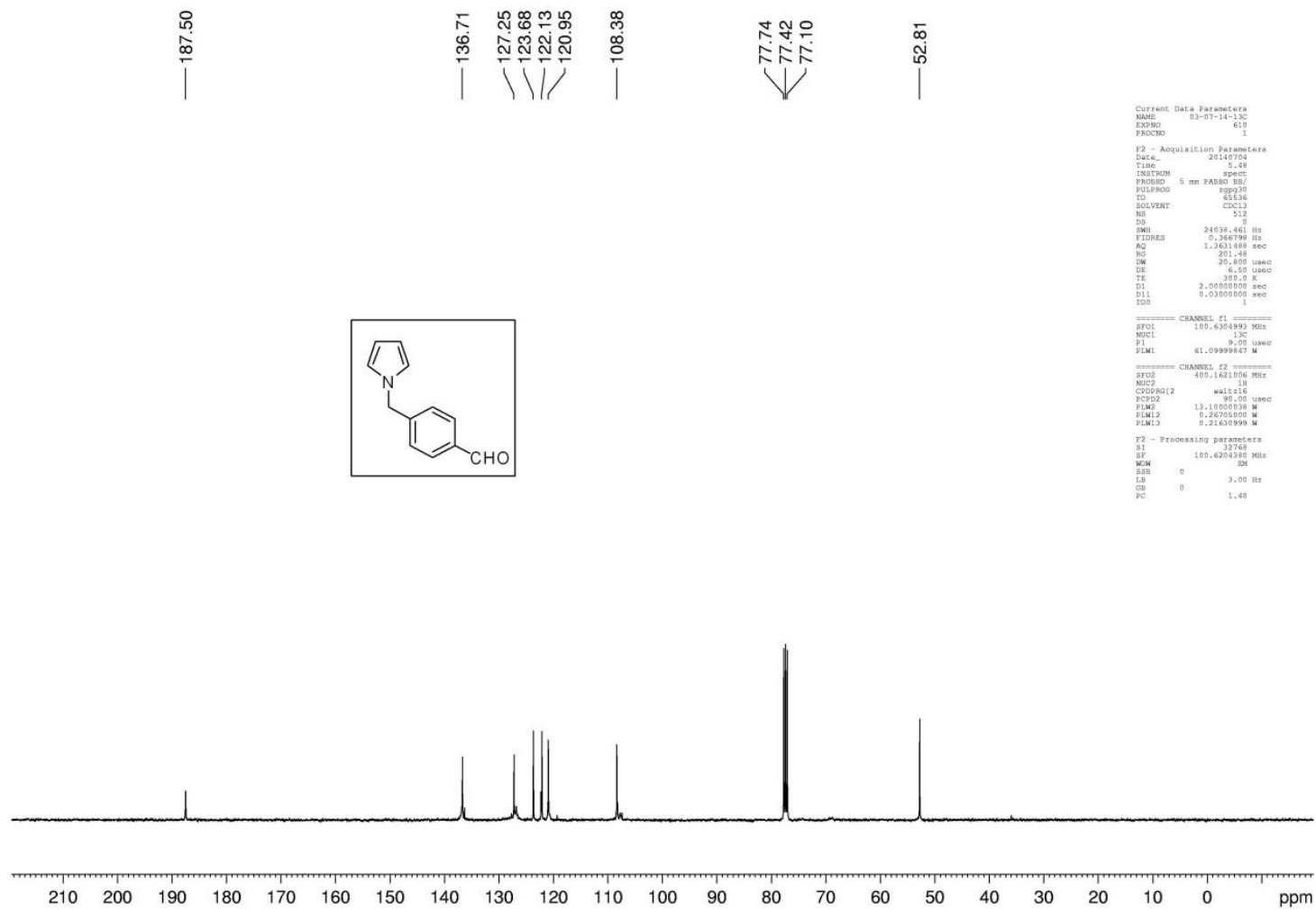


Fig: S-8 ¹³C-NMR spectrum of 4-((1H-pyrrol-1-yl)methyl)benzaldehyde (**2d**).

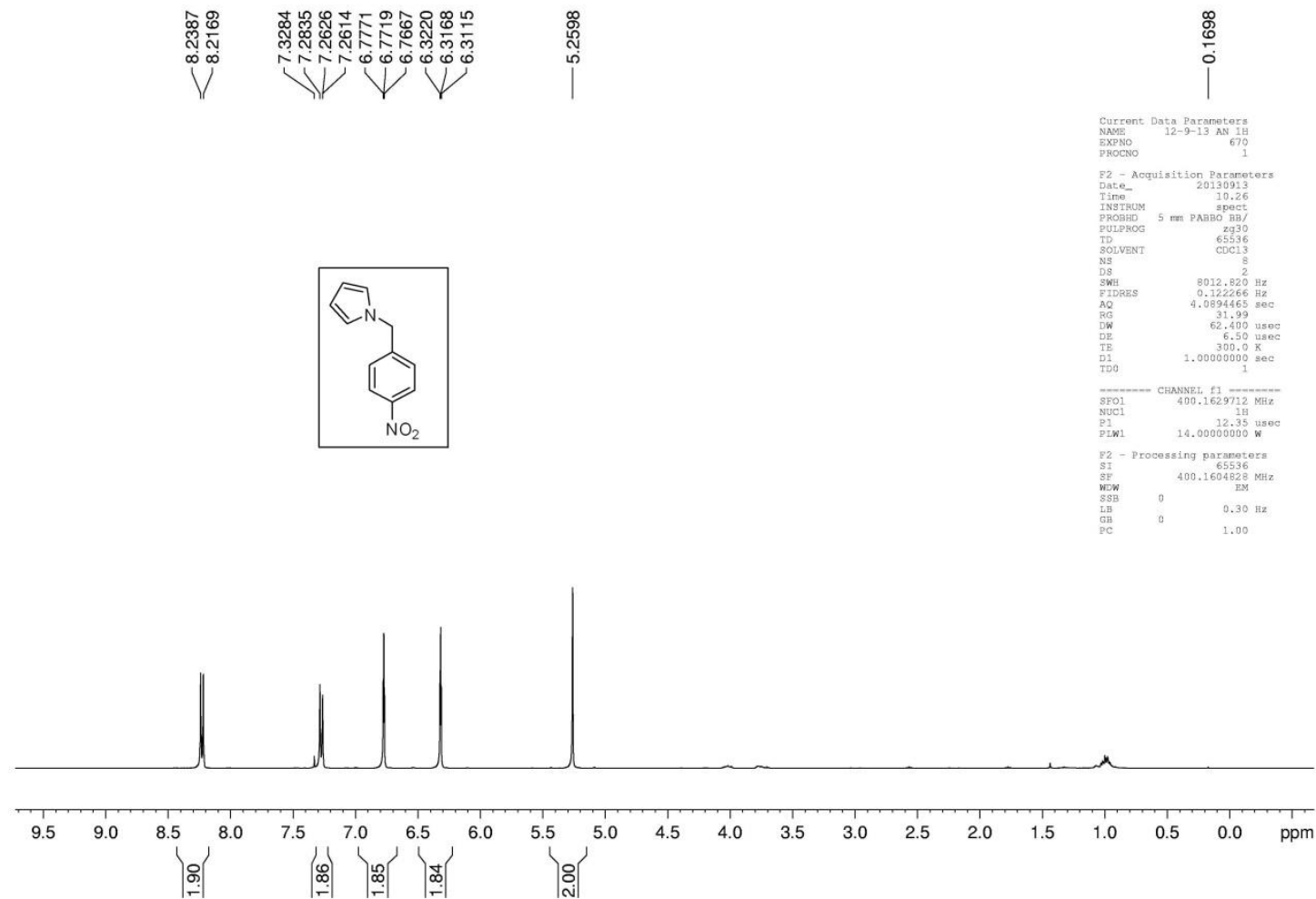


Fig: S-9 ¹H-NMR spectrum of 1-(4-nitrobenzyl)-1H-pyrrole (**2e**).

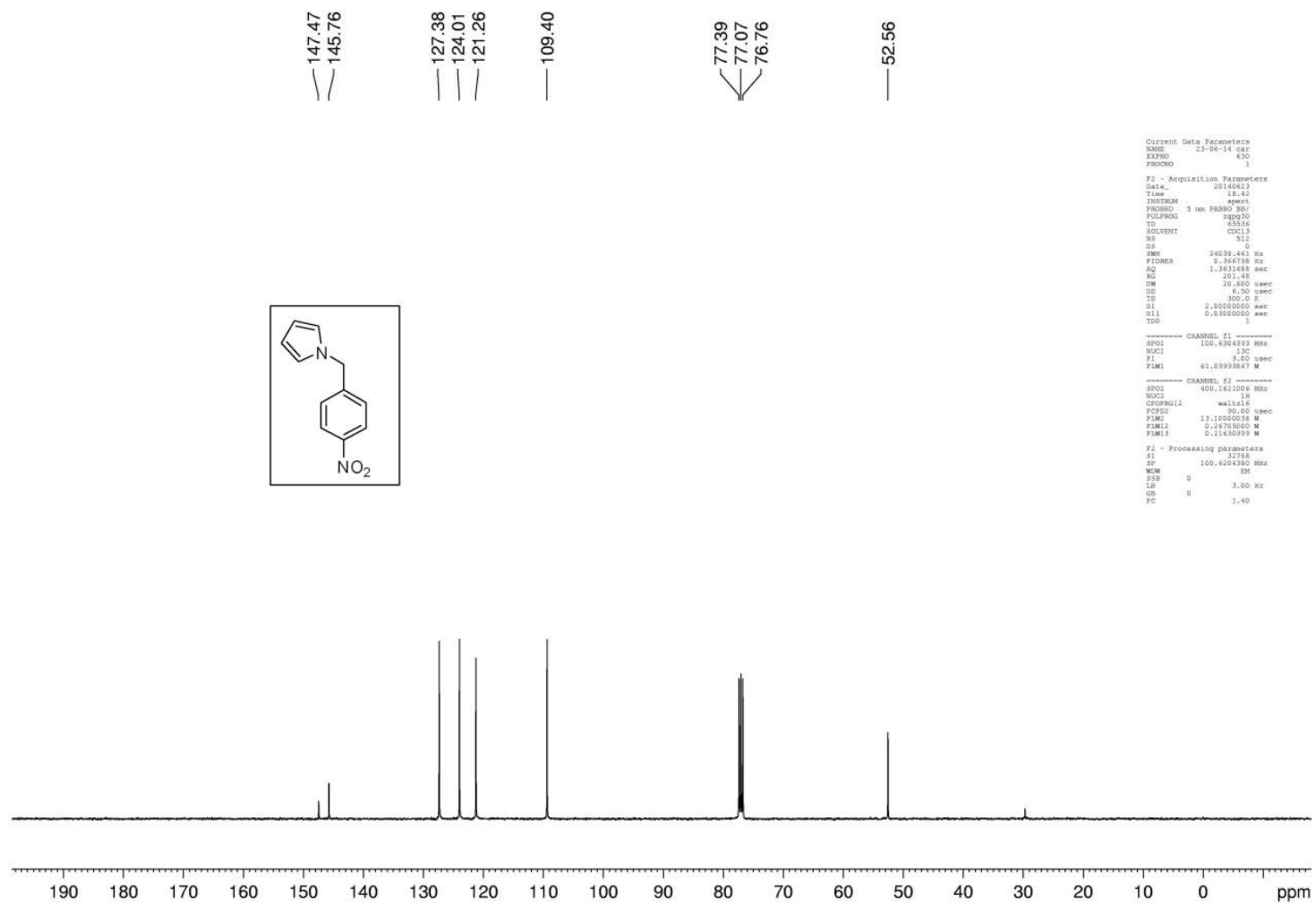


Fig: S-10 ¹³C-NMR spectrum of 1-(4-nitrobenzyl)-1H-pyrrole (**2e**).

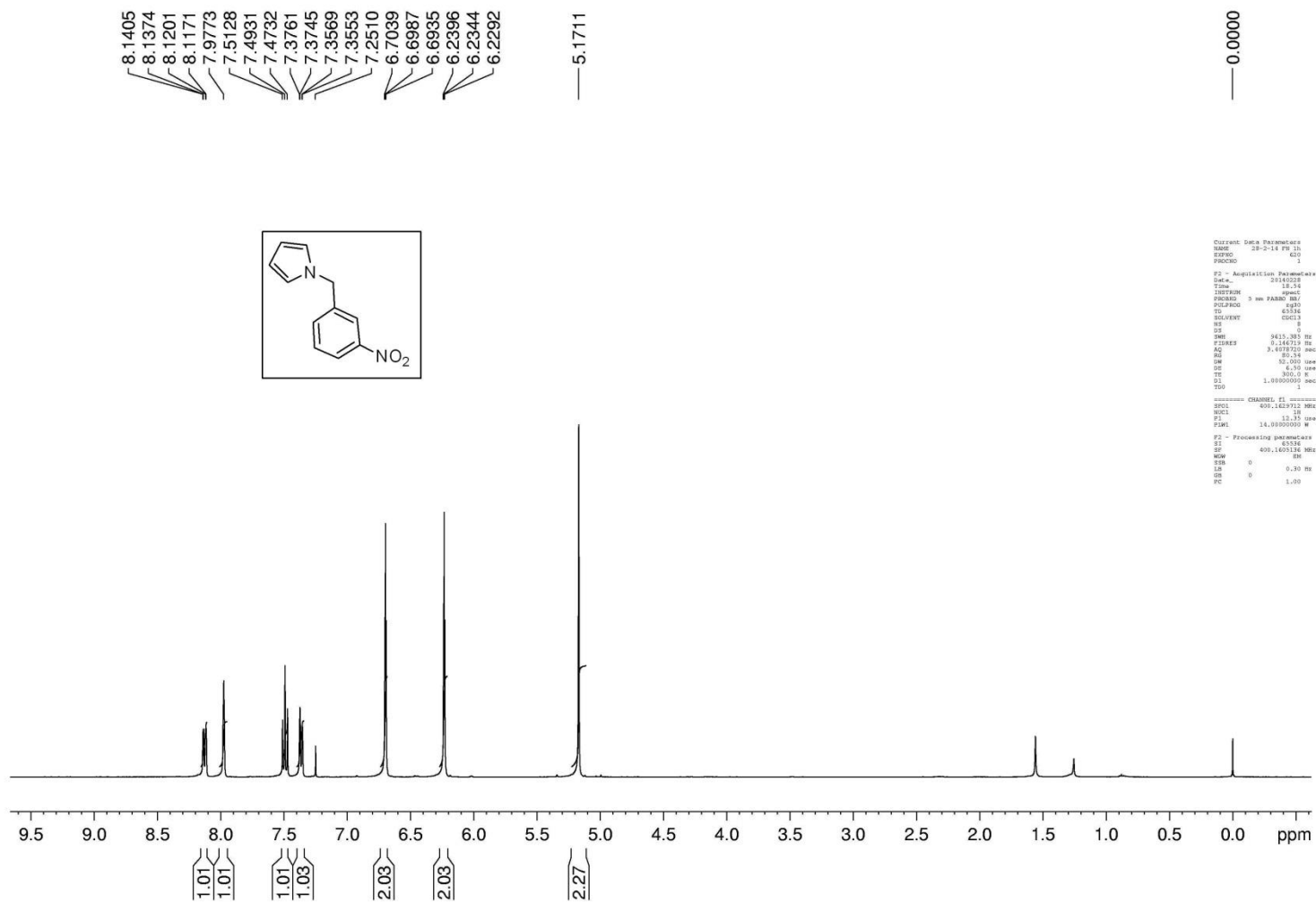


Fig: S-11 ¹H-NMR spectrum of 1-(3-Nitrobenzyl)-1H-pyrrole (2f).

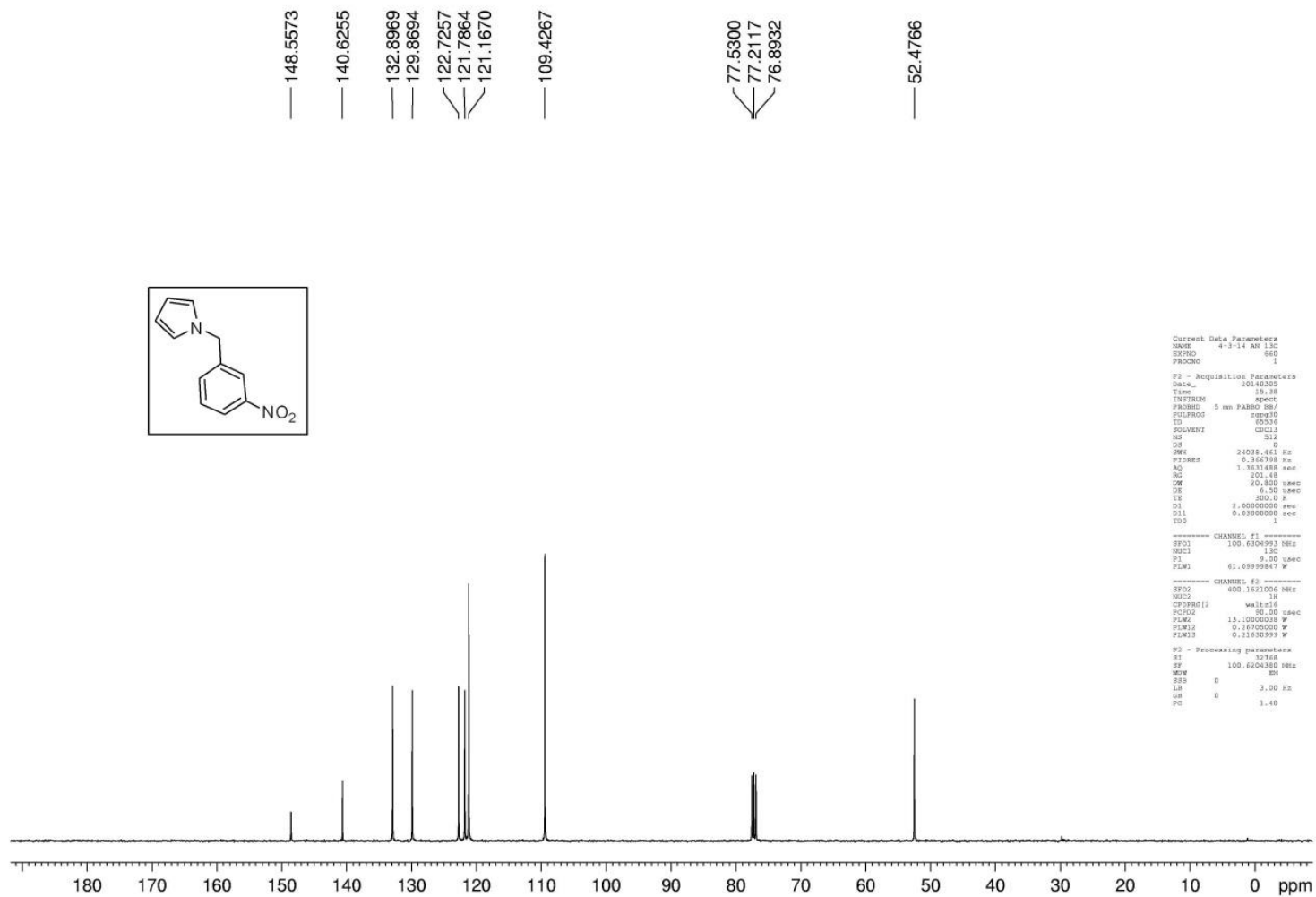


Fig: S-12 ¹³C-NMR spectrum of 1-(3-Nitrobenzyl)-1H-pyrrole (2f).

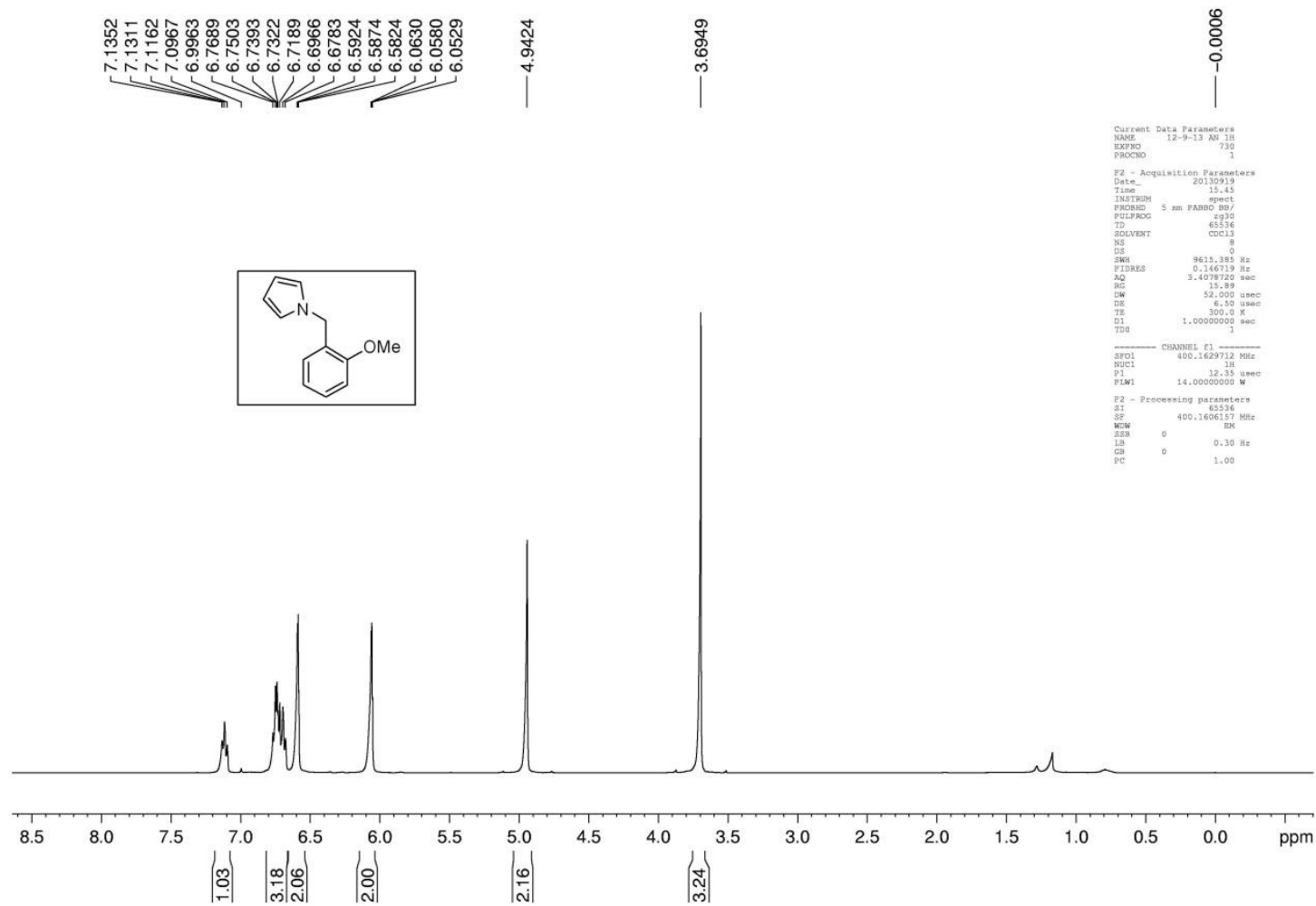


Fig: S-13 ¹H-NMR spectrum of 1-(2-Methoxybenzyl)-1H-pyrrole (2g).

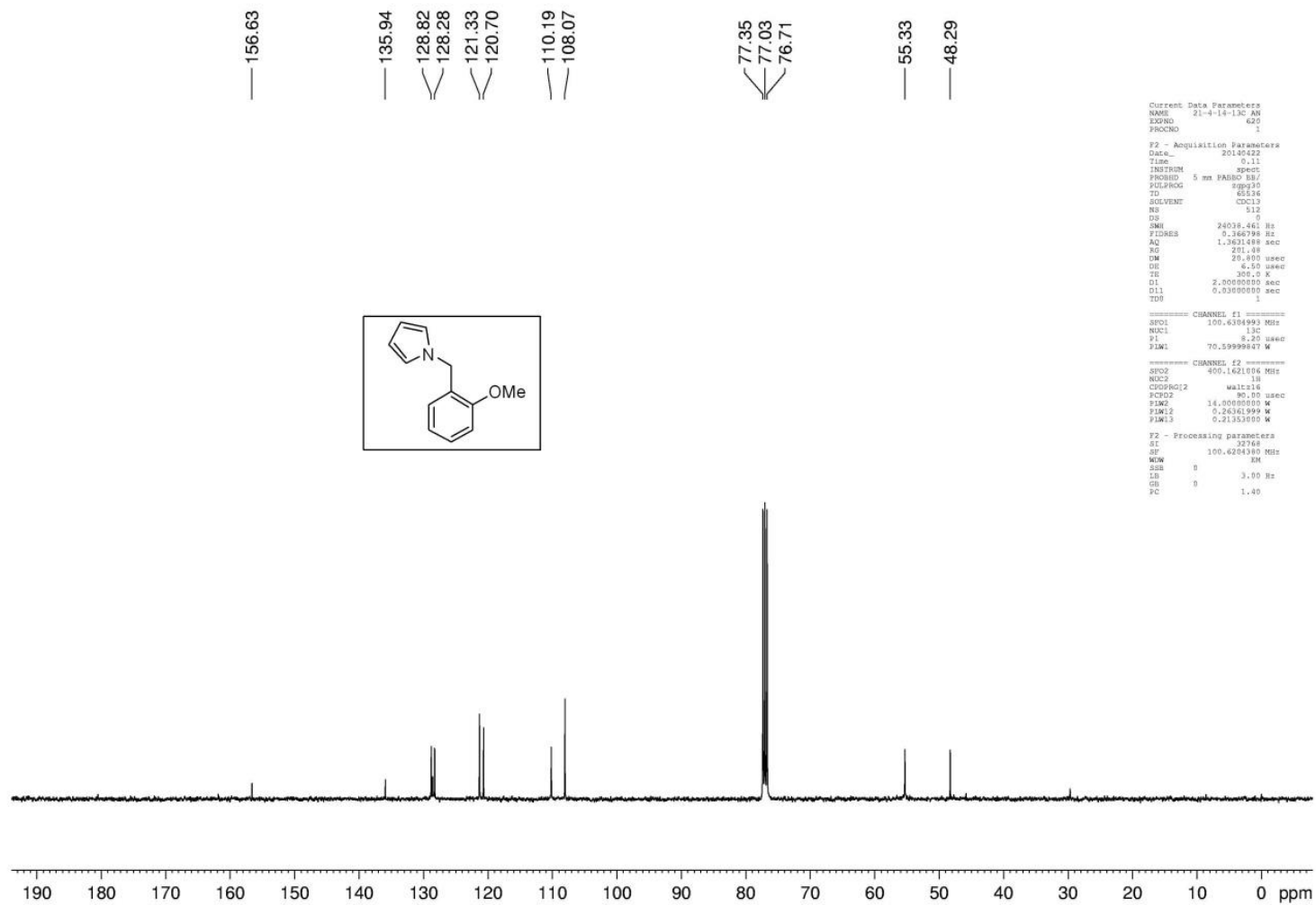


Fig: S-14 ^{13}C -NMR spectrum of 1-(2-Methoxybenzyl)-1H-pyrrole (2g).

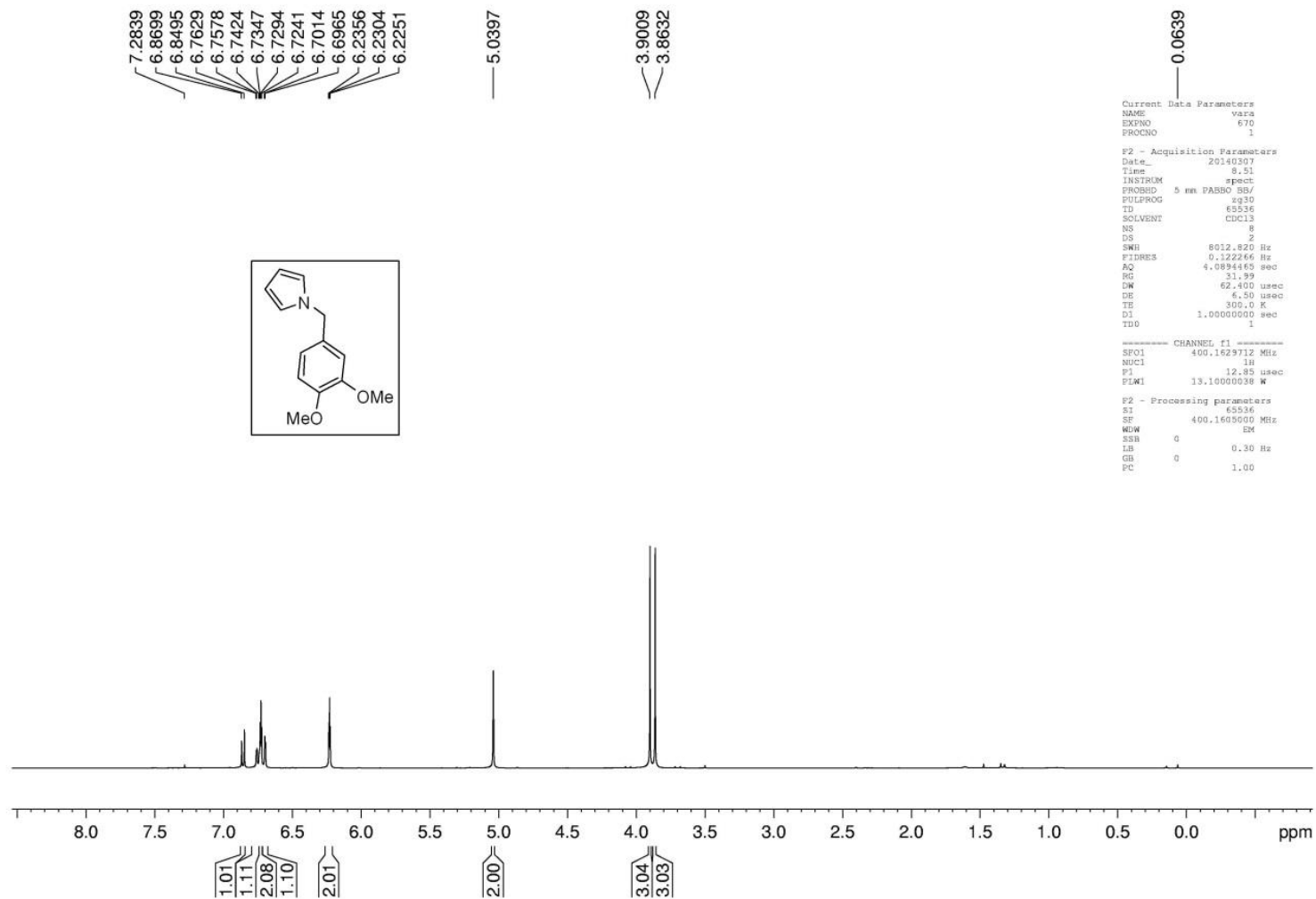


Fig: S-15 ^1H -NMR spectrum of 1-(3,4-Dimethoxybenzyl)-1H-pyrrole (**2h**).

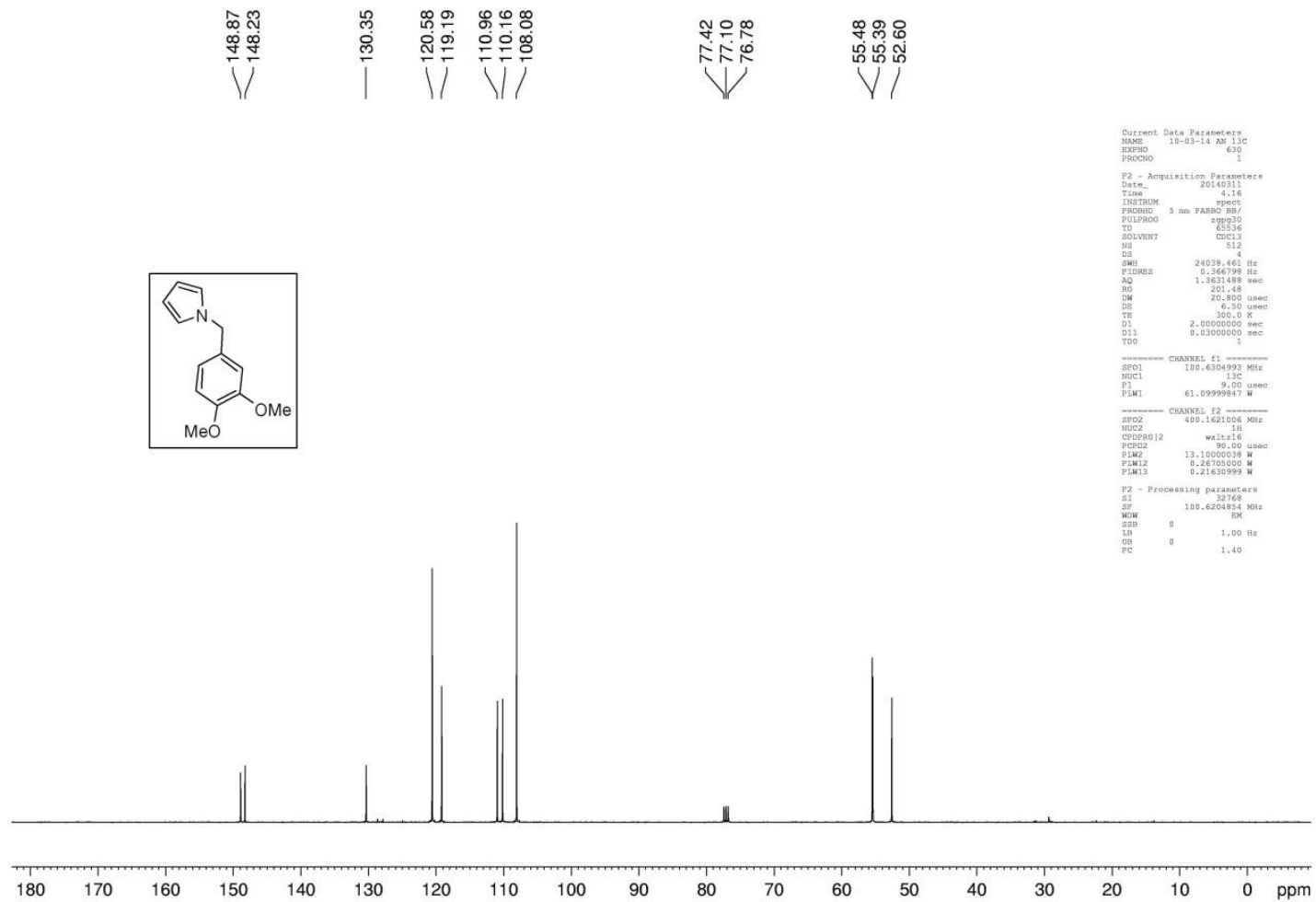


Fig: S-16 ^{13}C -NMR spectrum of 1-(3,4-Dimethoxybenzyl)-1H-pyrrole (**2h**).

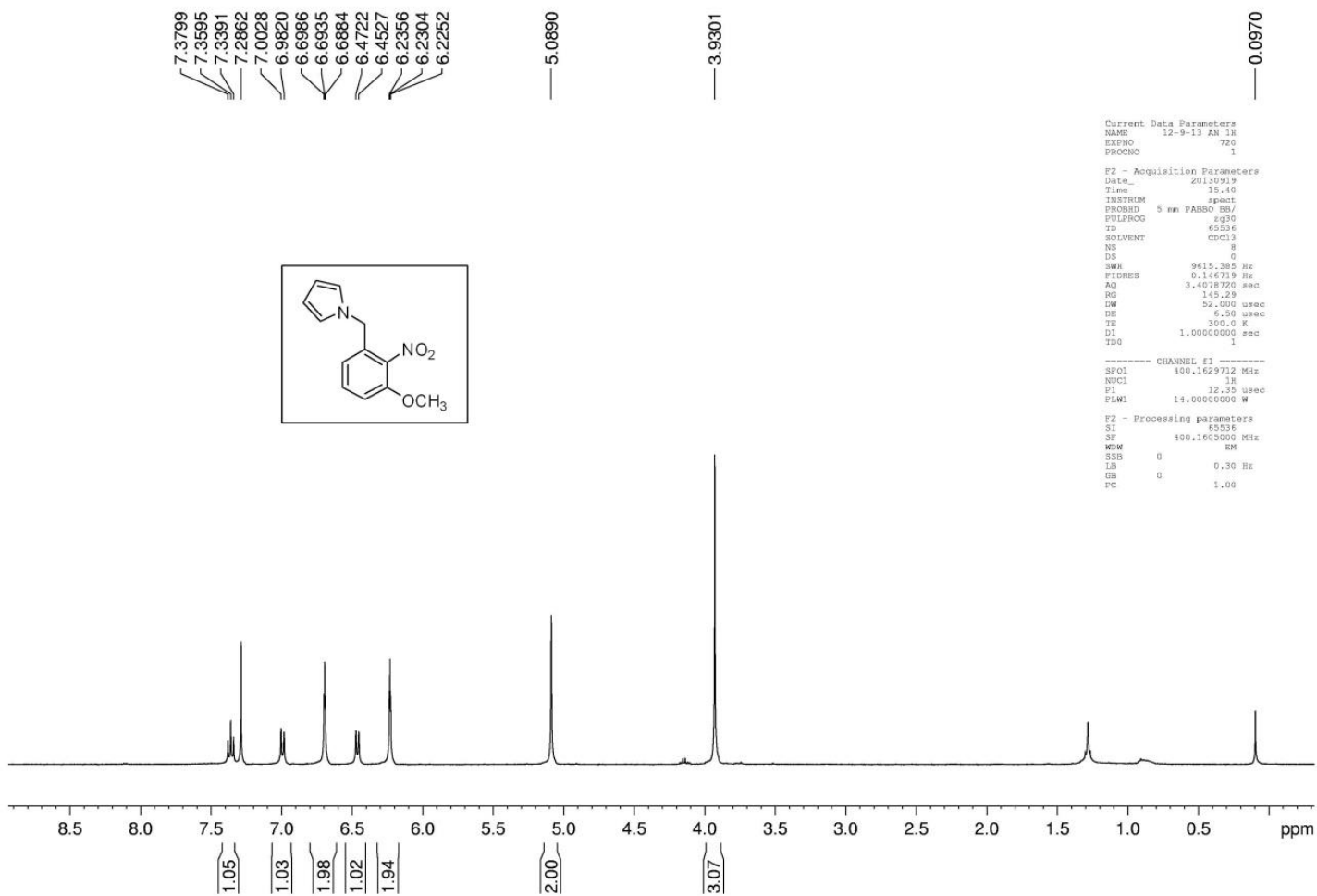


Fig: S-17 ^1H -NMR spectrum of 1-(3-Methoxy-2-nitrobenzyl)-1H-pyrrole (**2i**).

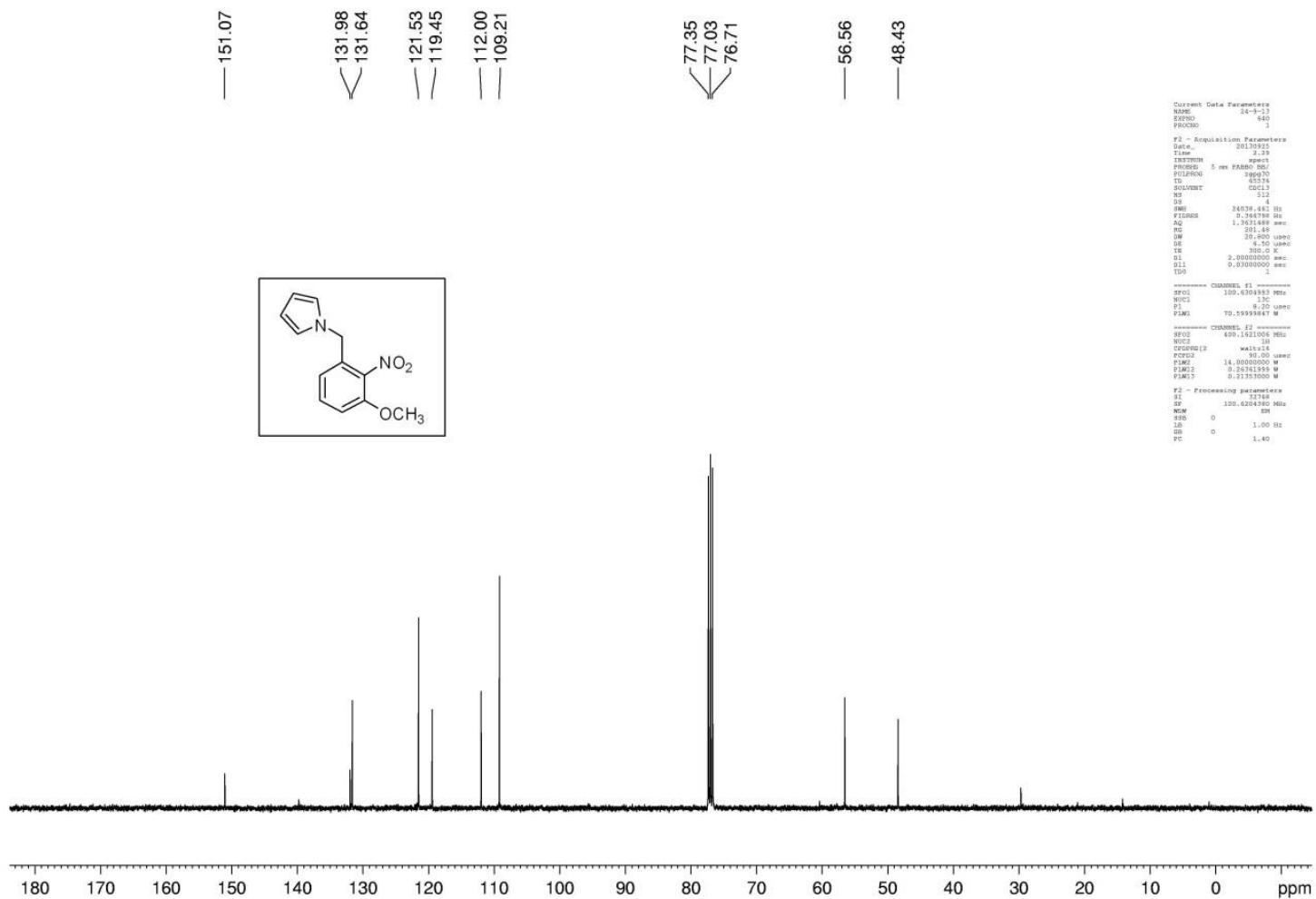


Fig: S-18 ^{13}C -NMR spectrum of 1-(3-Methoxy-2-nitrobenzyl)-1H-pyrrole (**2i**).

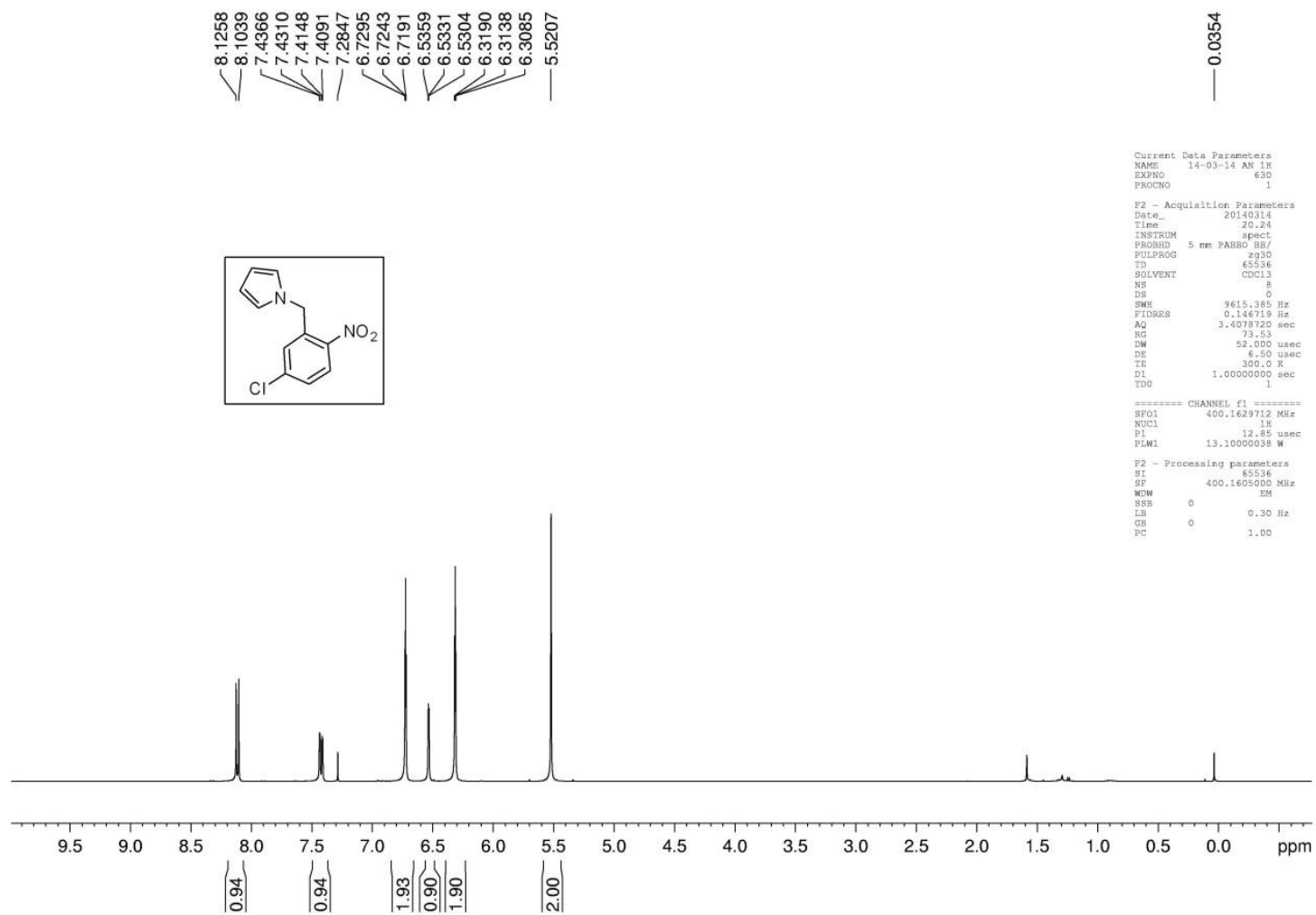


Fig: S-19 $^1\text{H-NMR}$ spectrum of 1-(5-Chloro-2-nitrobenzyl)-1H-pyrrole (**2j**).

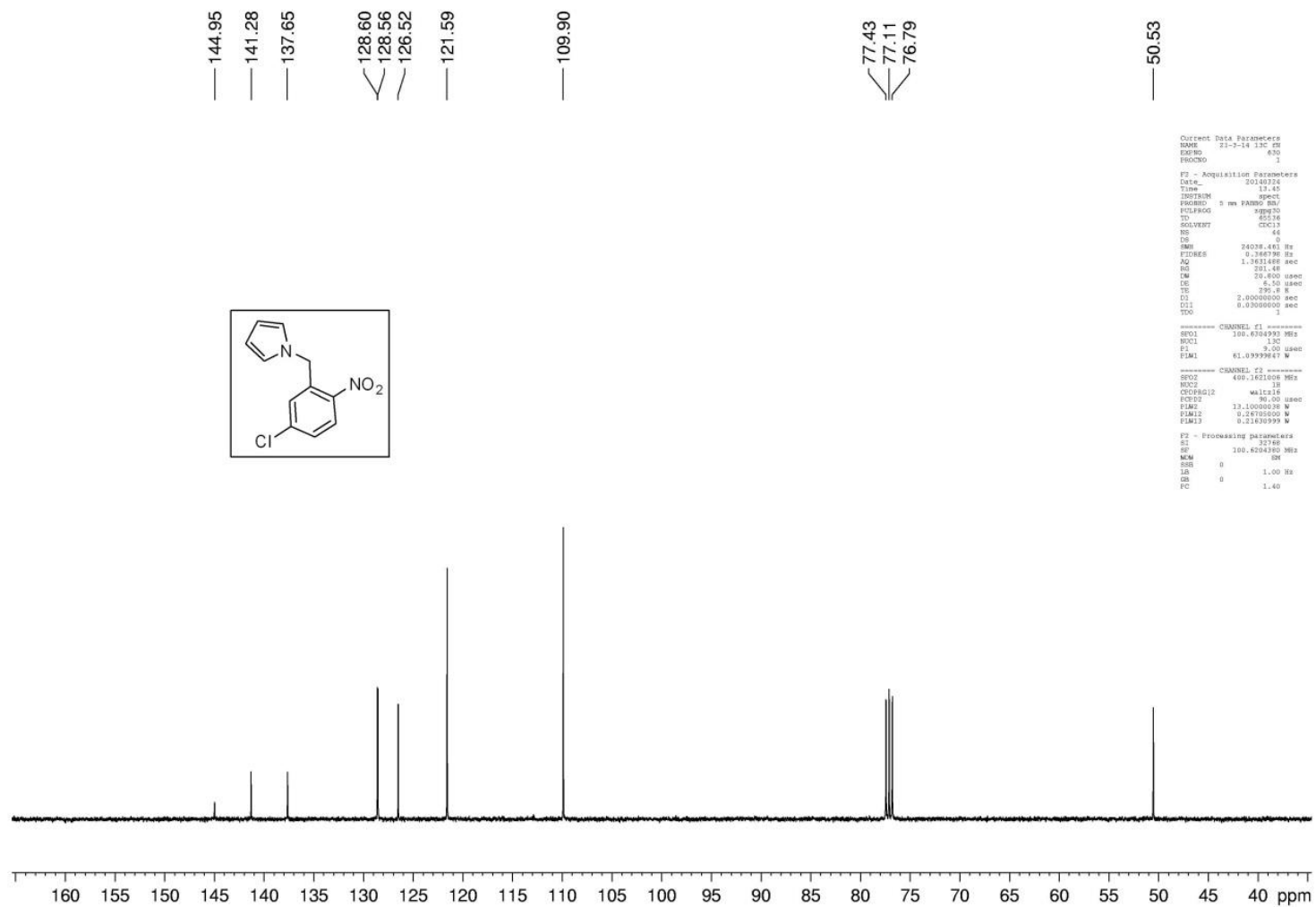


Fig: S-20 ^{13}C -NMR spectrum of 1-(5-Chloro-2-nitrobenzyl)-1H-pyrrole (**2j**).

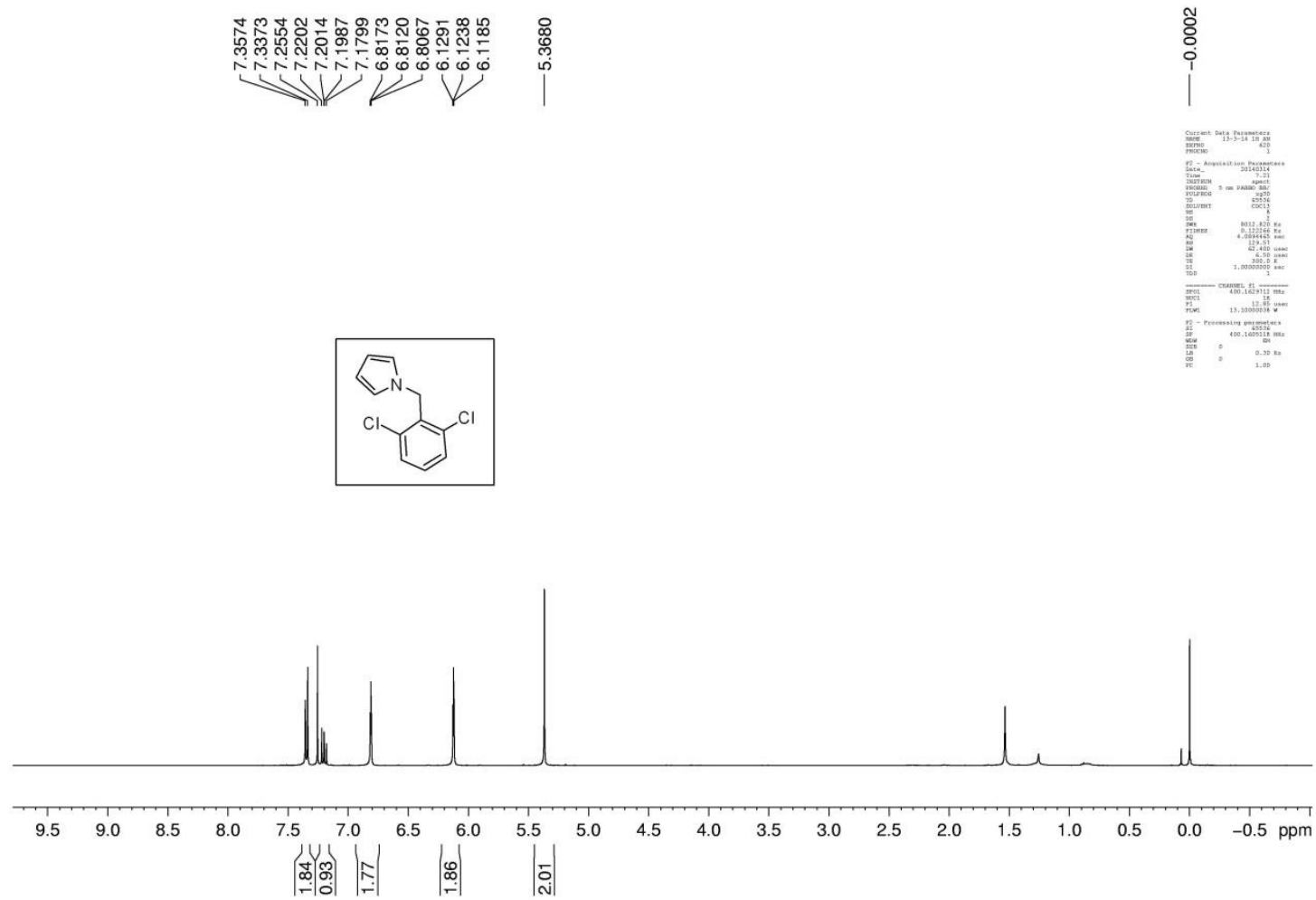
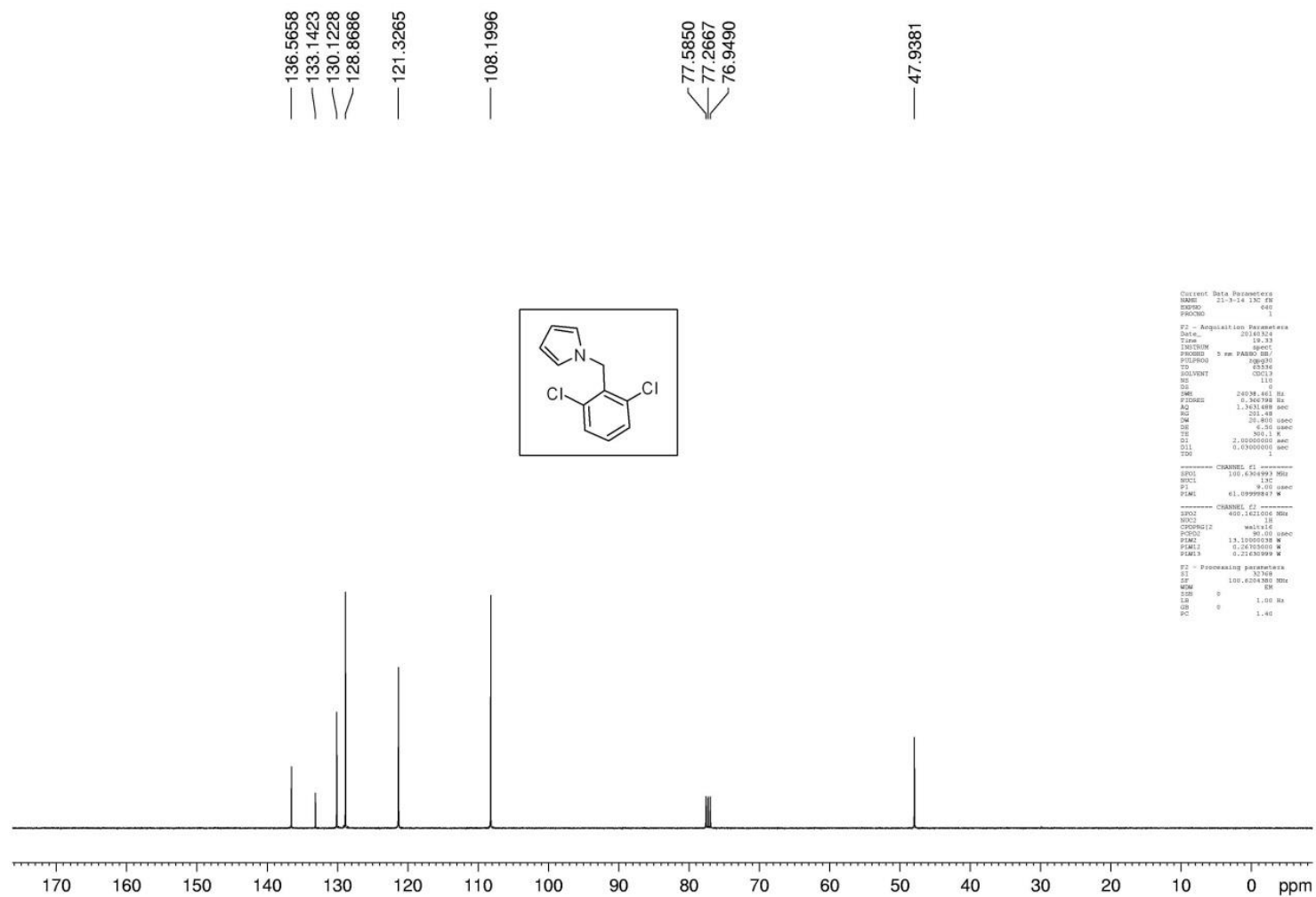


Fig: S-21 ¹H-NMR spectrum of 1-(2,6-Dichlorobenzyl)-1*H*-pyrrole (**2k**).



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Fig: S-22 ¹³C-NMR spectrum of 1-(2,6-Dichlorobenzyl)-1H-pyrrole (**2k**).

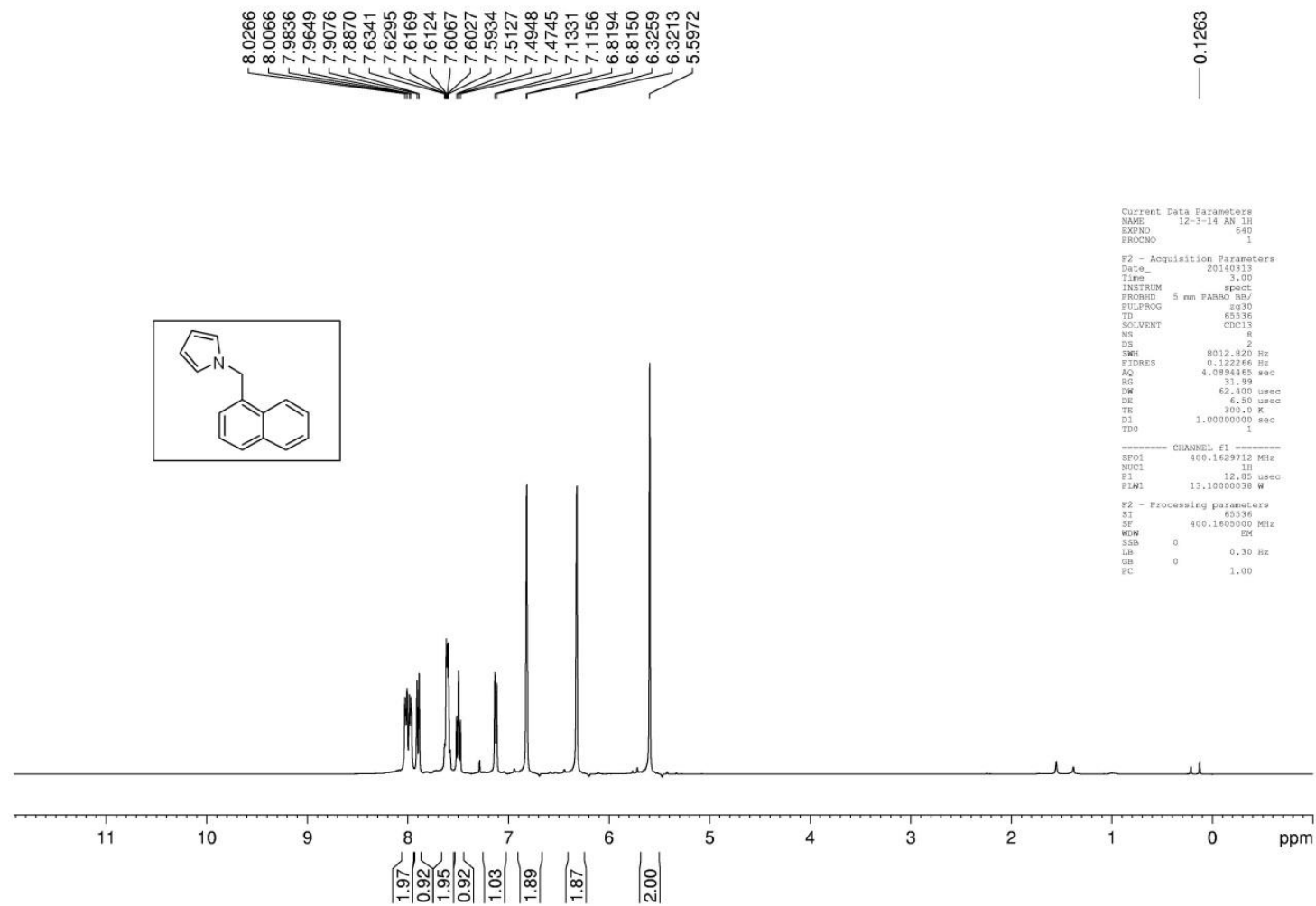


Fig: S-23 ^1H -NMR spectrum of 1-(Naphthalen-1-ylmethyl)-1H-pyrrole (**2l**).

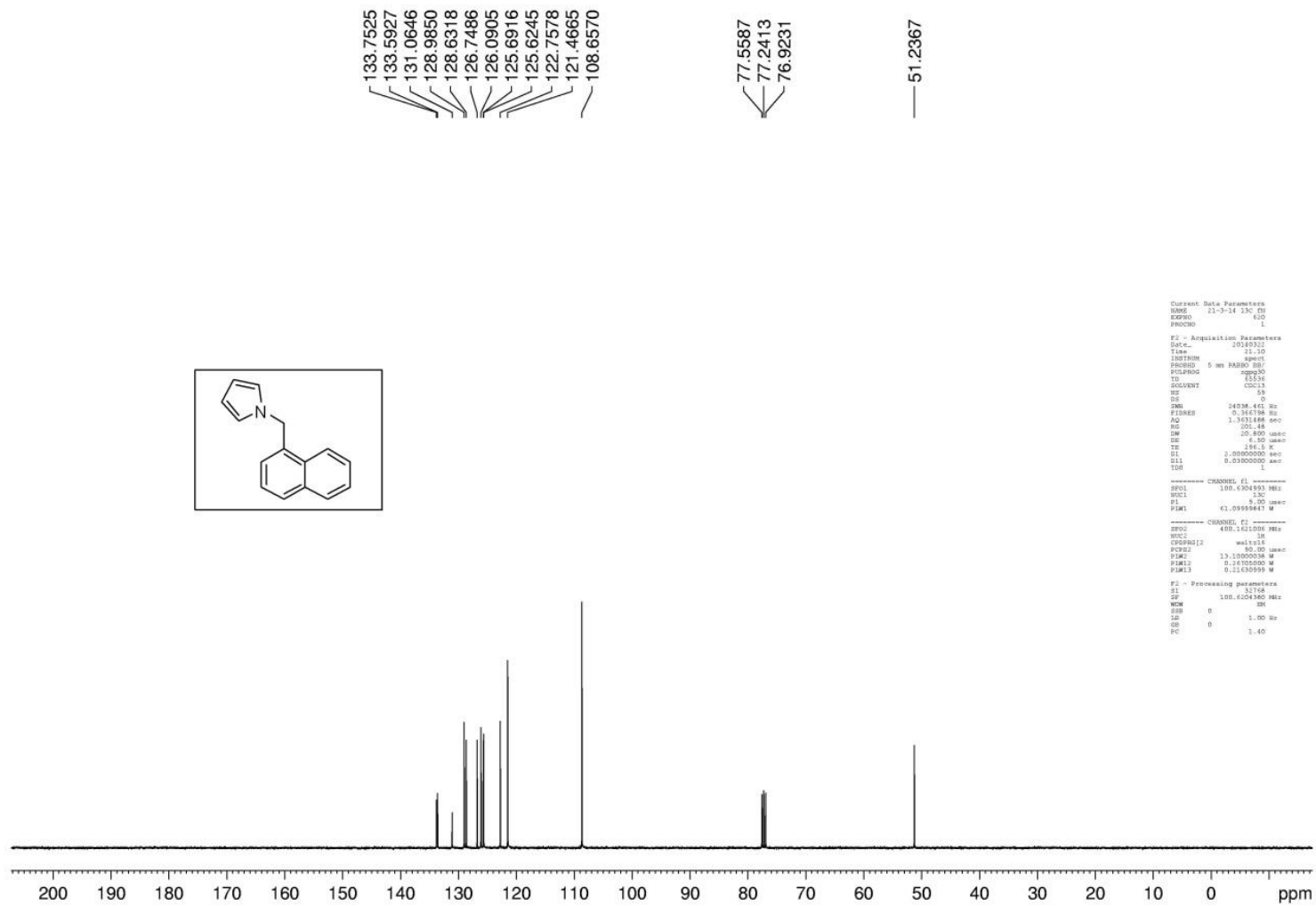


Fig: S-24 ¹³C-NMR spectrum of 1-(Naphthalen-1-ylmethyl)-1H-pyrrole (21).

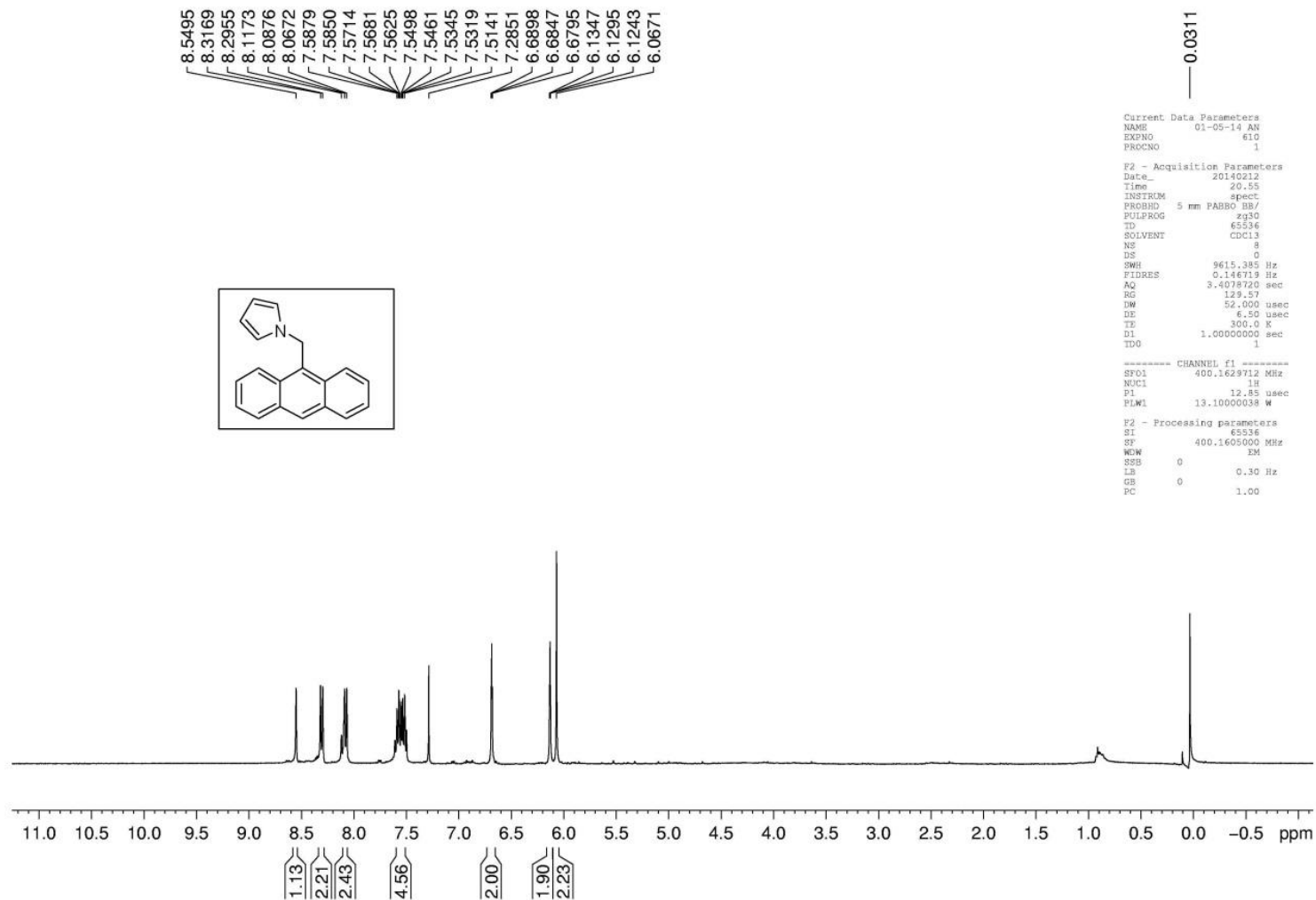


Fig: S-25 ¹H-NMR spectrum of 1-(Anthracen-9-ylmethyl)-1H-pyrrole (2m).

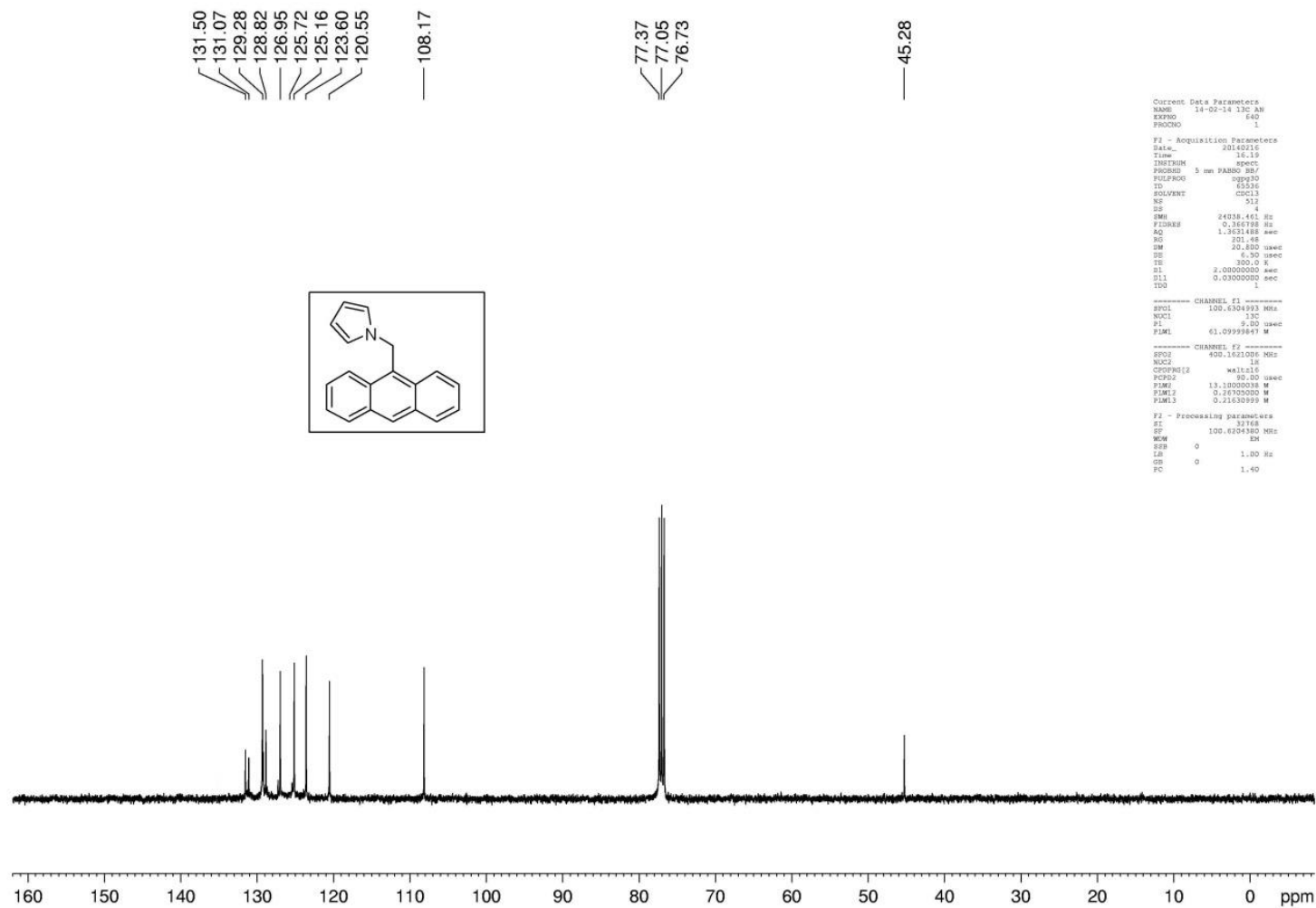


Fig: S-26 ¹³C-NMR spectrum of 1-(Anthracen-9-ylmethyl)-1H-pyrrole (**2m**).

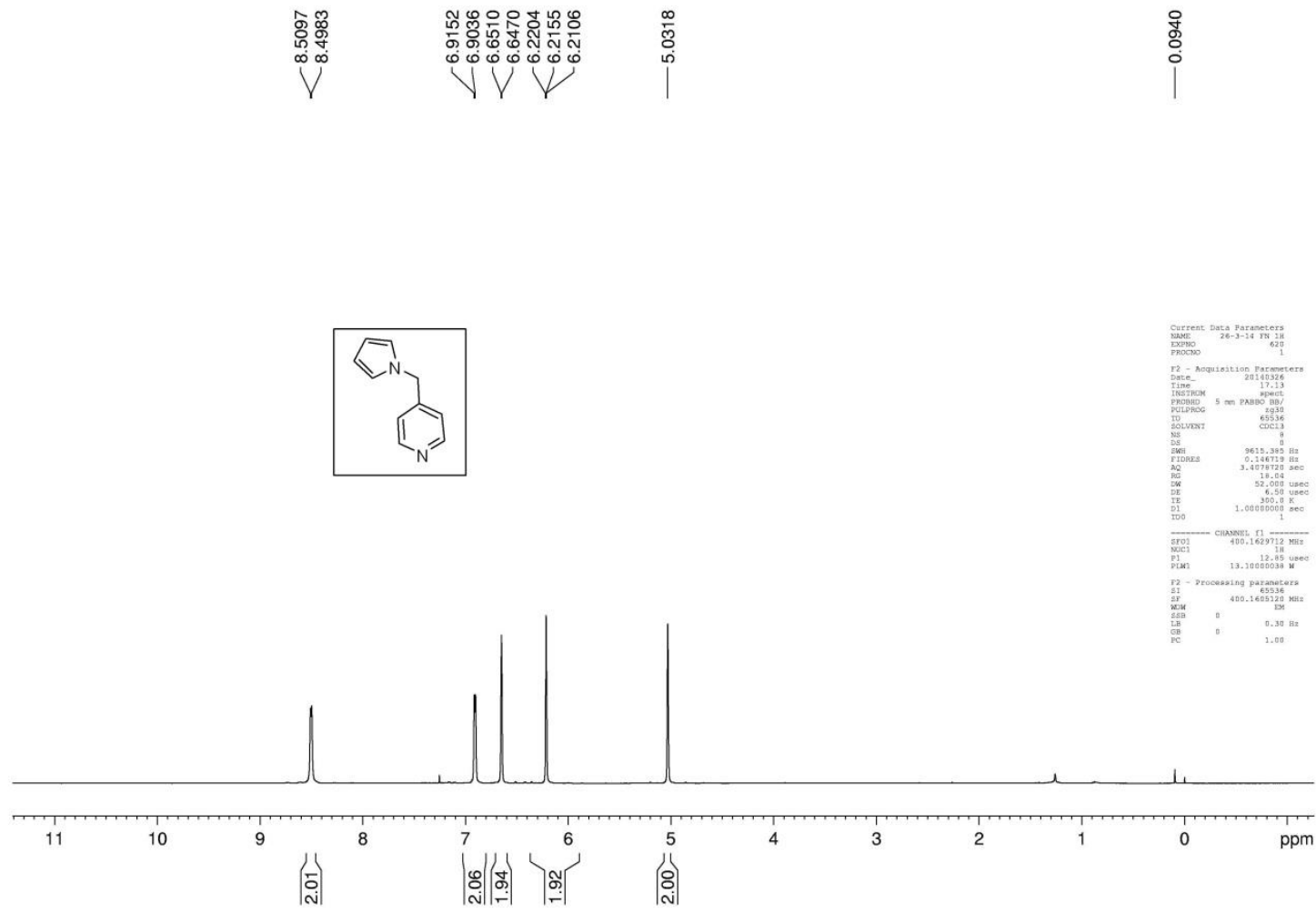


Fig: S-27 ¹H-NMR spectrum of 4-((1*H*-pyrrol-1-yl)methyl)pyridine (**2n**).

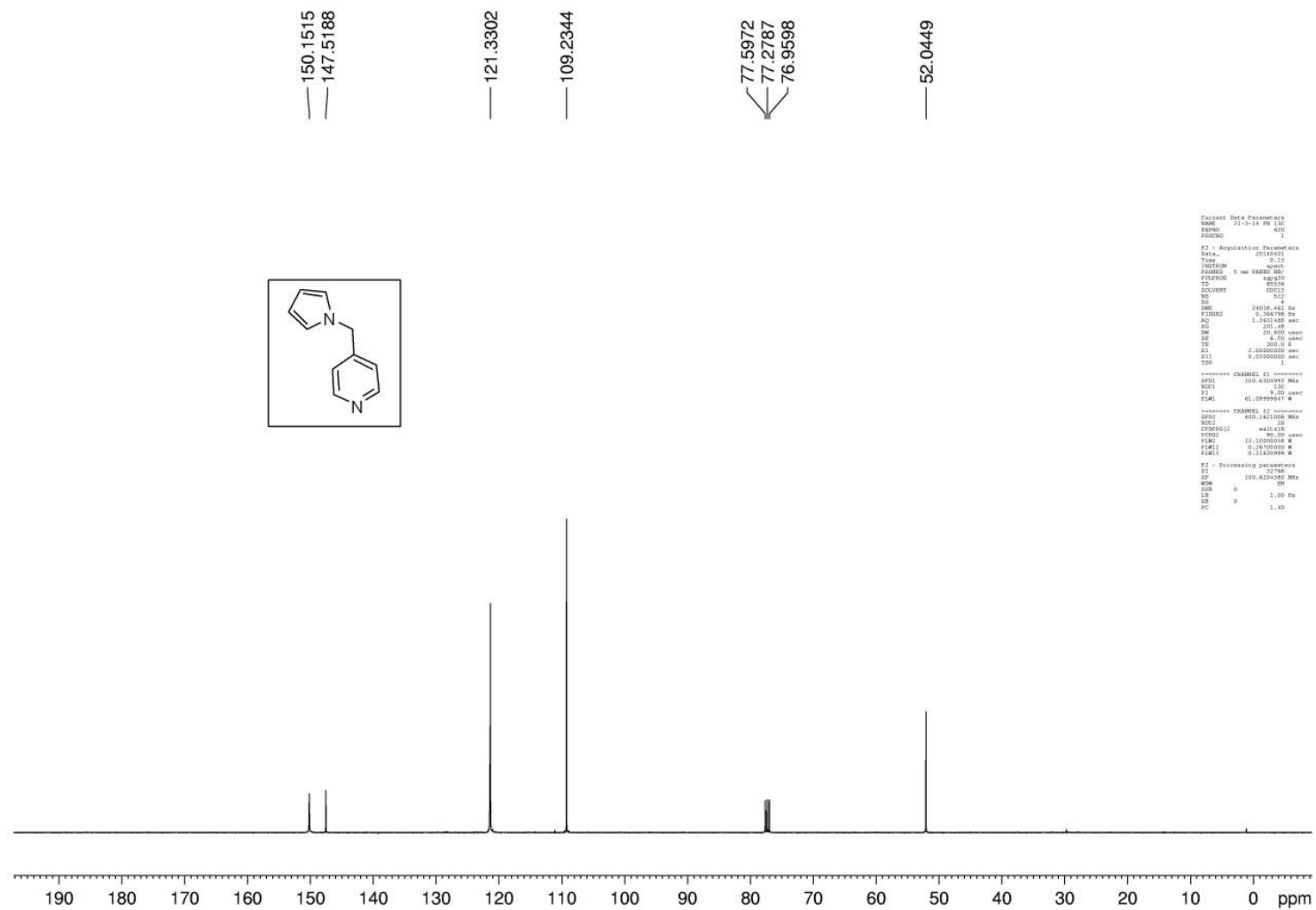


Fig: S-28 ¹³C-NMR spectrum of 4-((1H-pyrrol-1-yl)methyl)pyridine (**2n**).

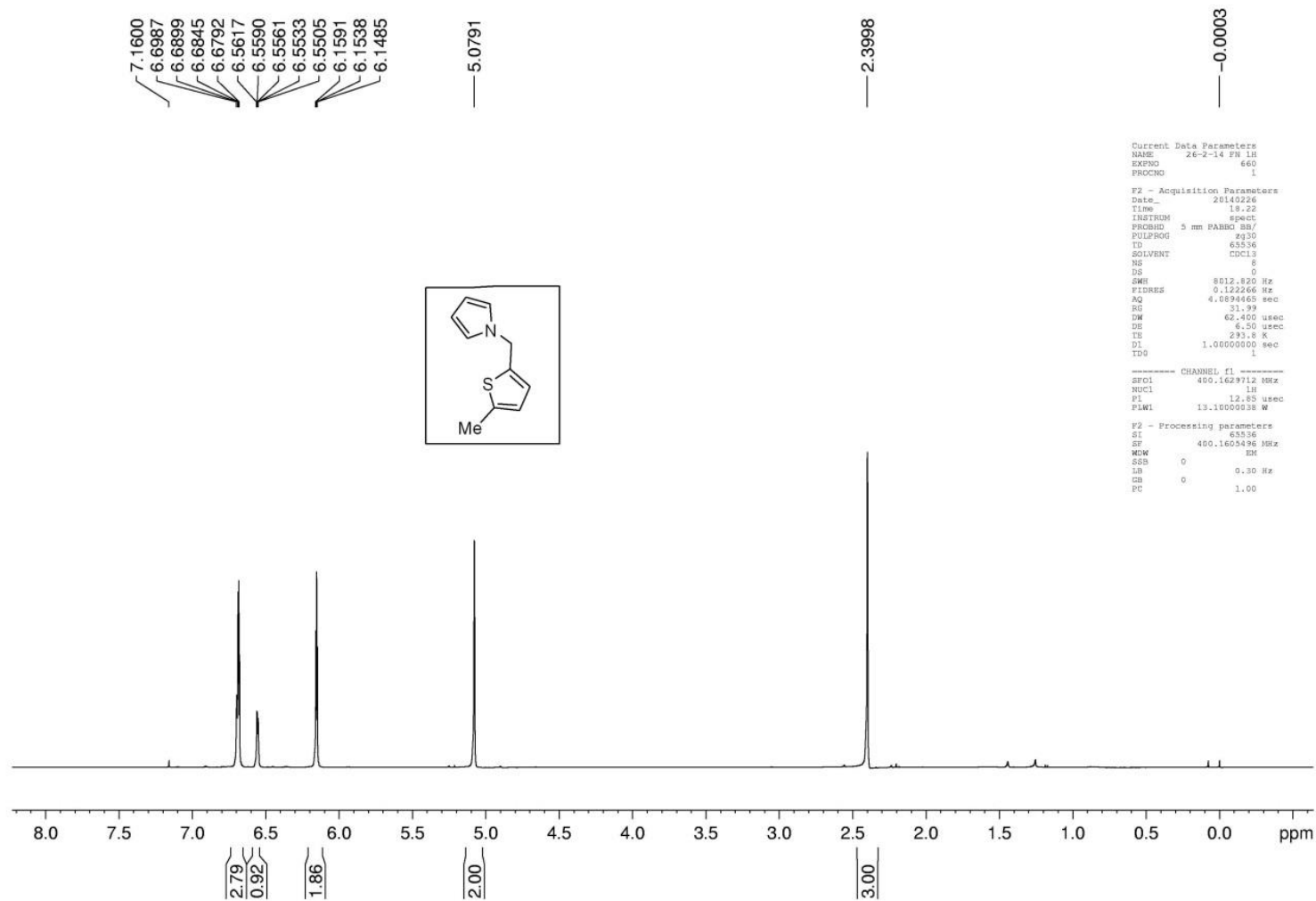


Fig: S-29 ¹H-NMR spectrum of 1-((5-Methylthiophen-2-yl)methyl)-1H-pyrrole (**2o**).

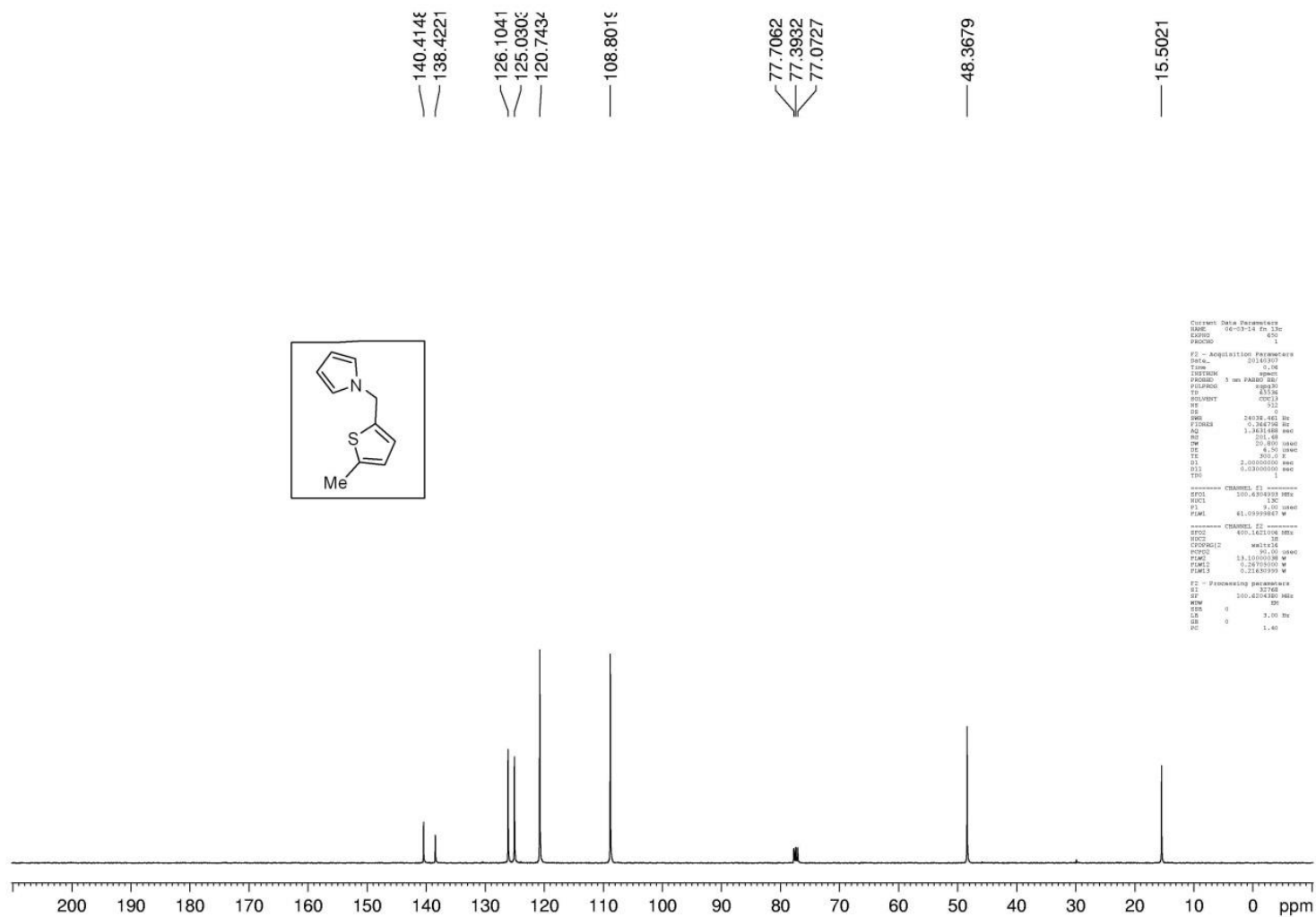


Fig: S-30 ^{13}C -NMR spectrum of 1-((5-Methylthiophen-2-yl)methyl)-1H-pyrrole (**2o**).

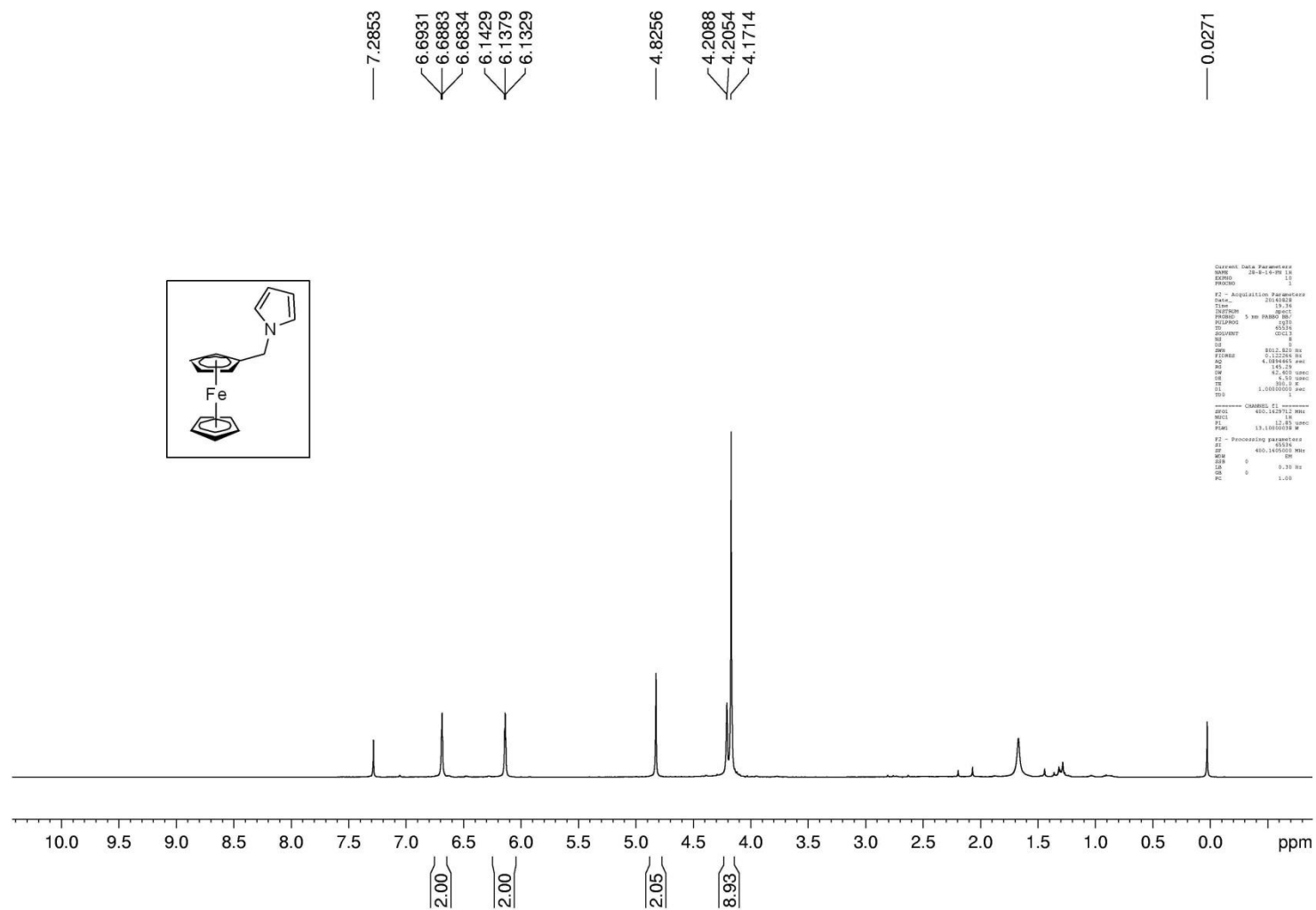


Fig: S-31 ¹H-NMR spectrum of Ferrocene (**2p**).

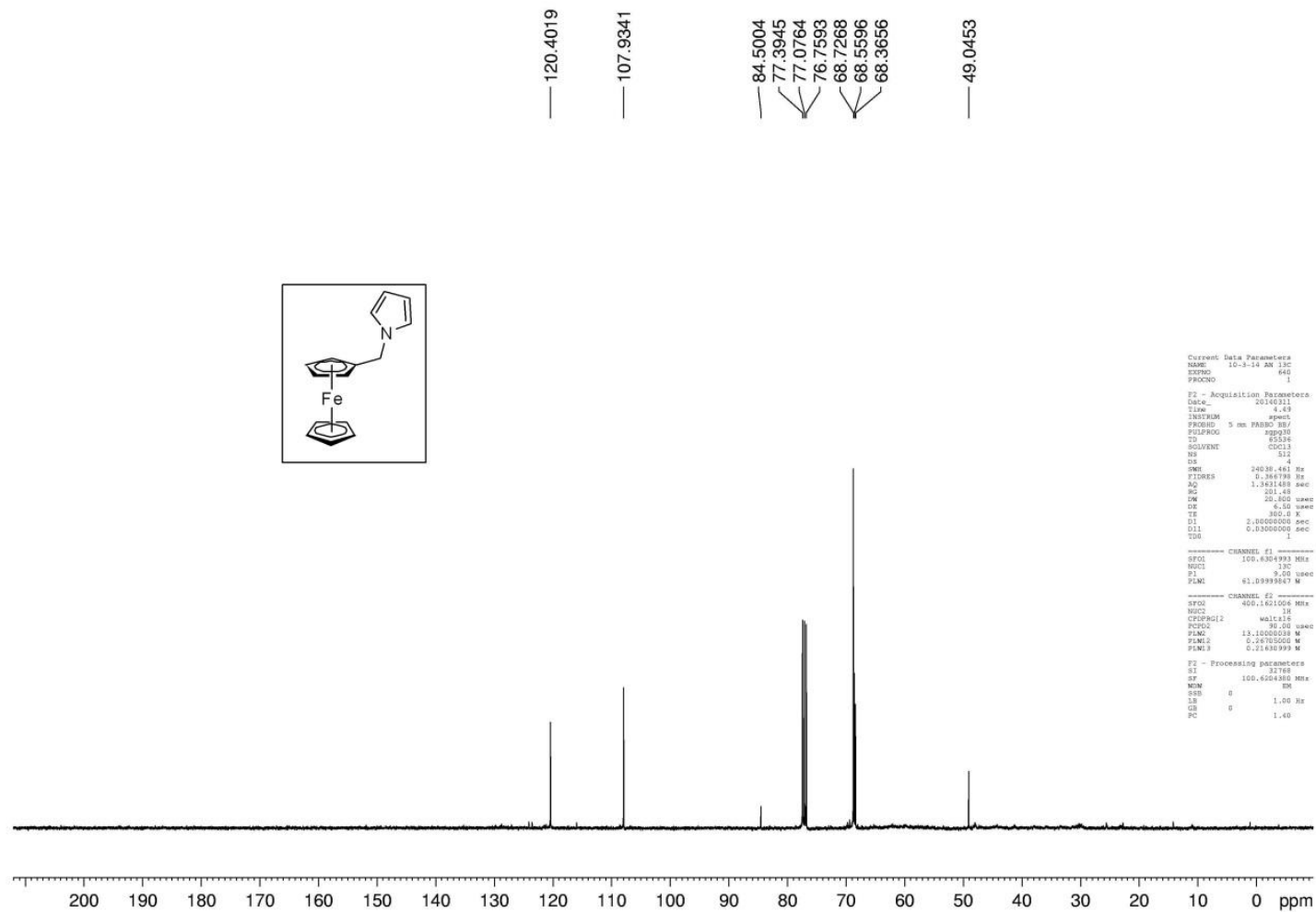


Fig: S-32 ^{13}C -NMR spectrum of Ferrocene (2p).

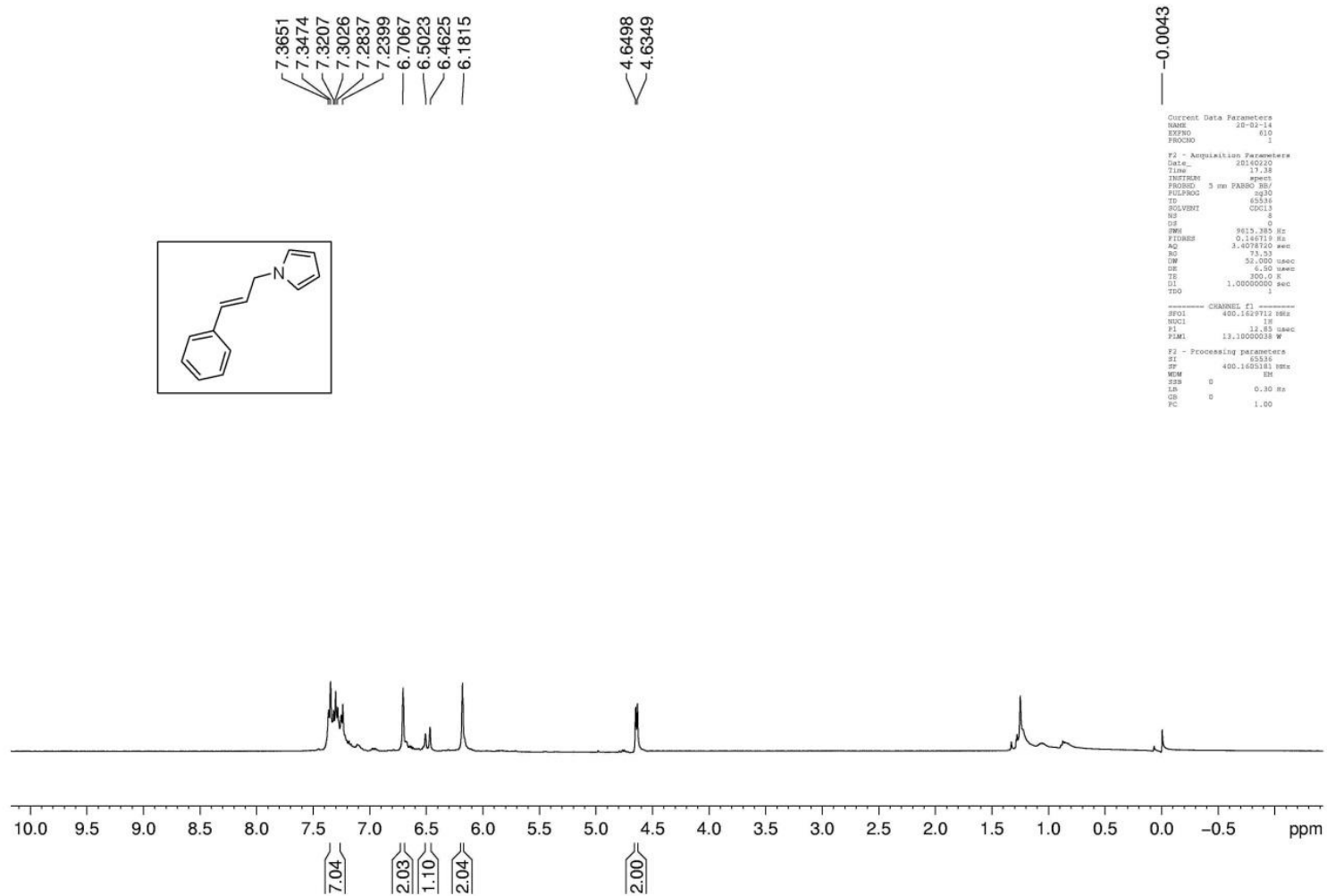


Fig: S-33 ^1H -NMR spectrum of 1-Cinnamyl-1H-pyrrole (2q).

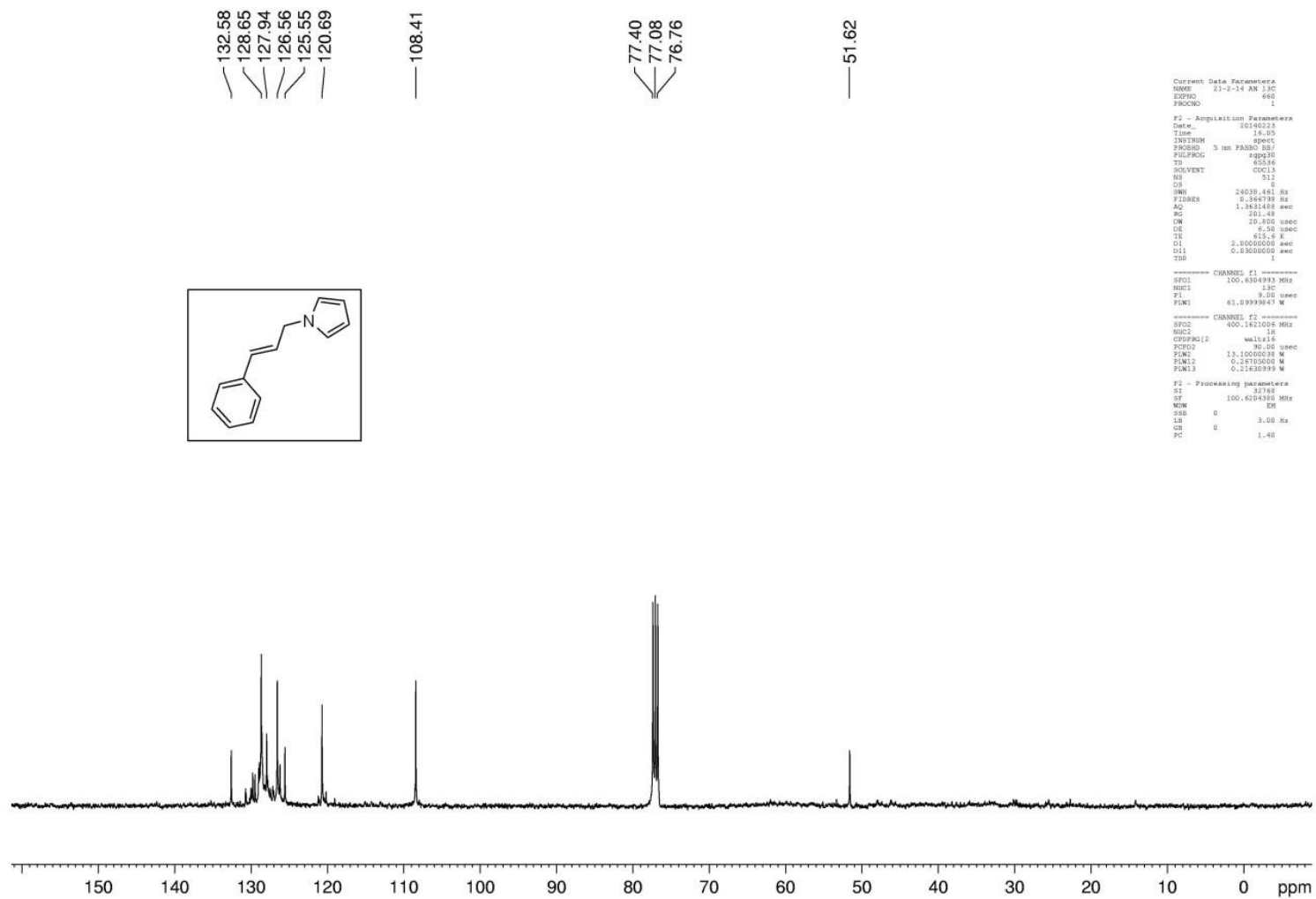


Fig: S-34 ^{13}C -NMR spectrum of 1-Cinnamyl-1H-pyrrole (**2q**).

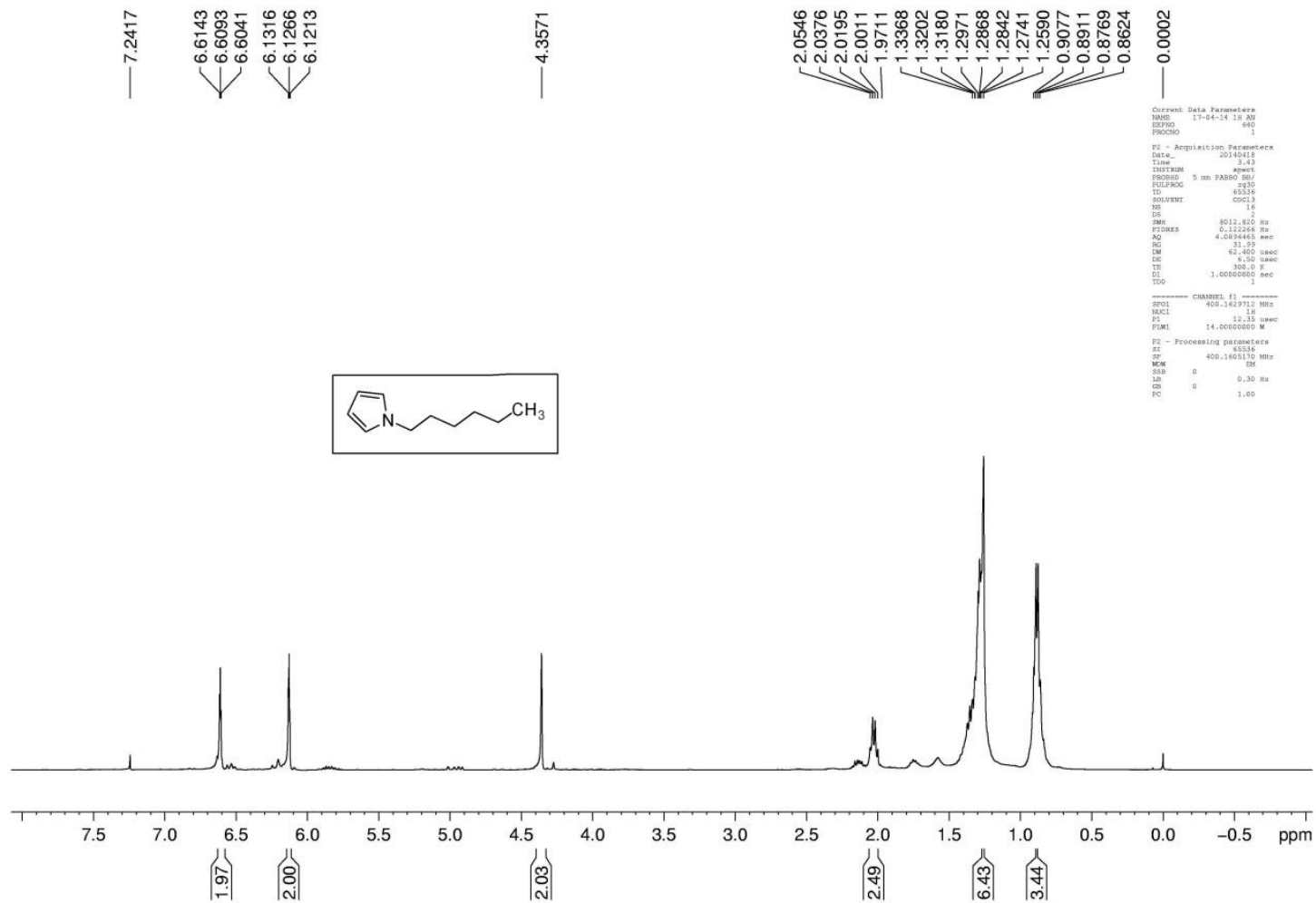


Fig: S-35 ^1H -NMR spectrum of 1-Hexyl-1*H*-pyrrole (**2r**).

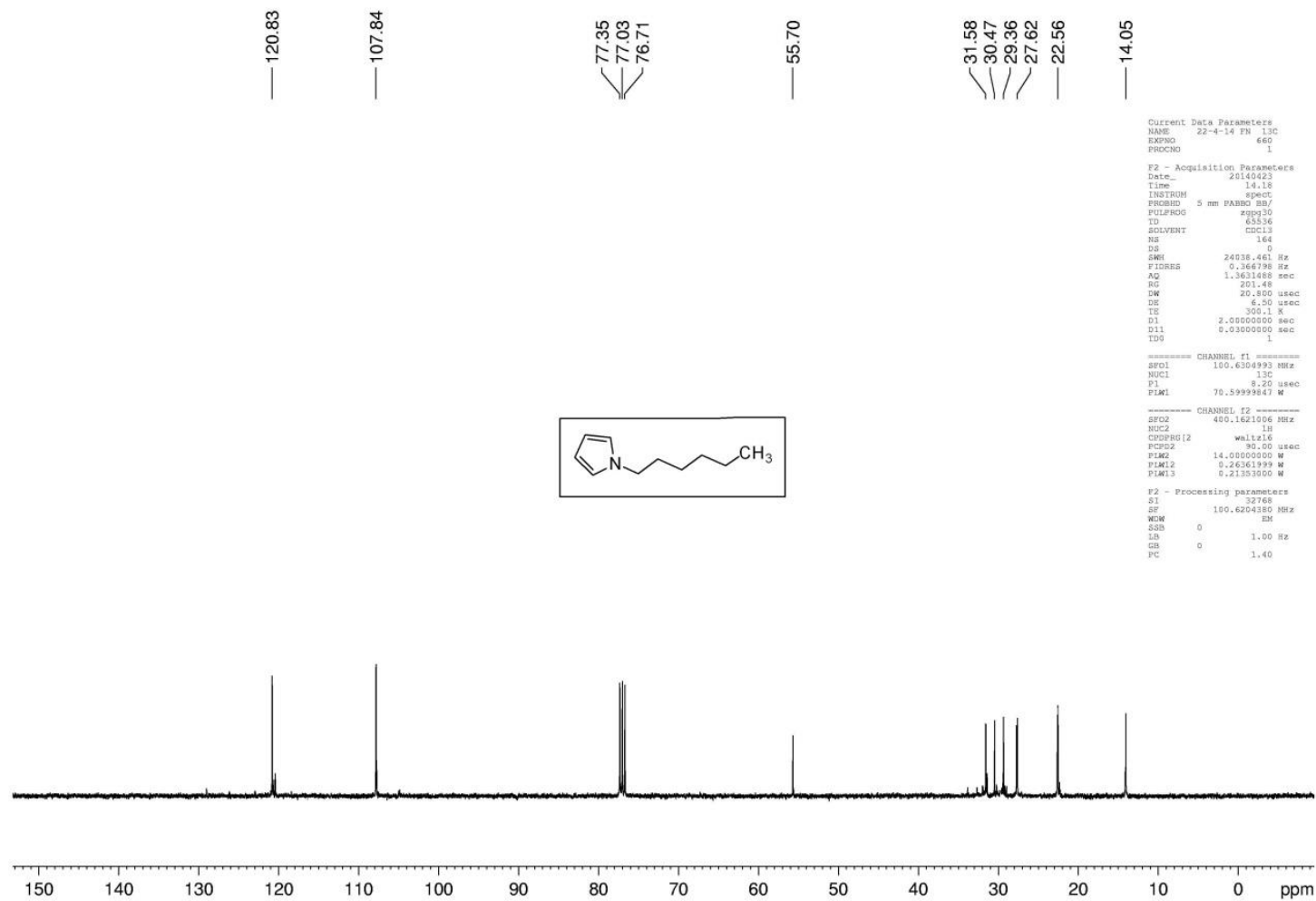


Fig: S-36 ^{13}C -NMR spectrum of 1-Hexyl-1H-pyrrole (**2r**).

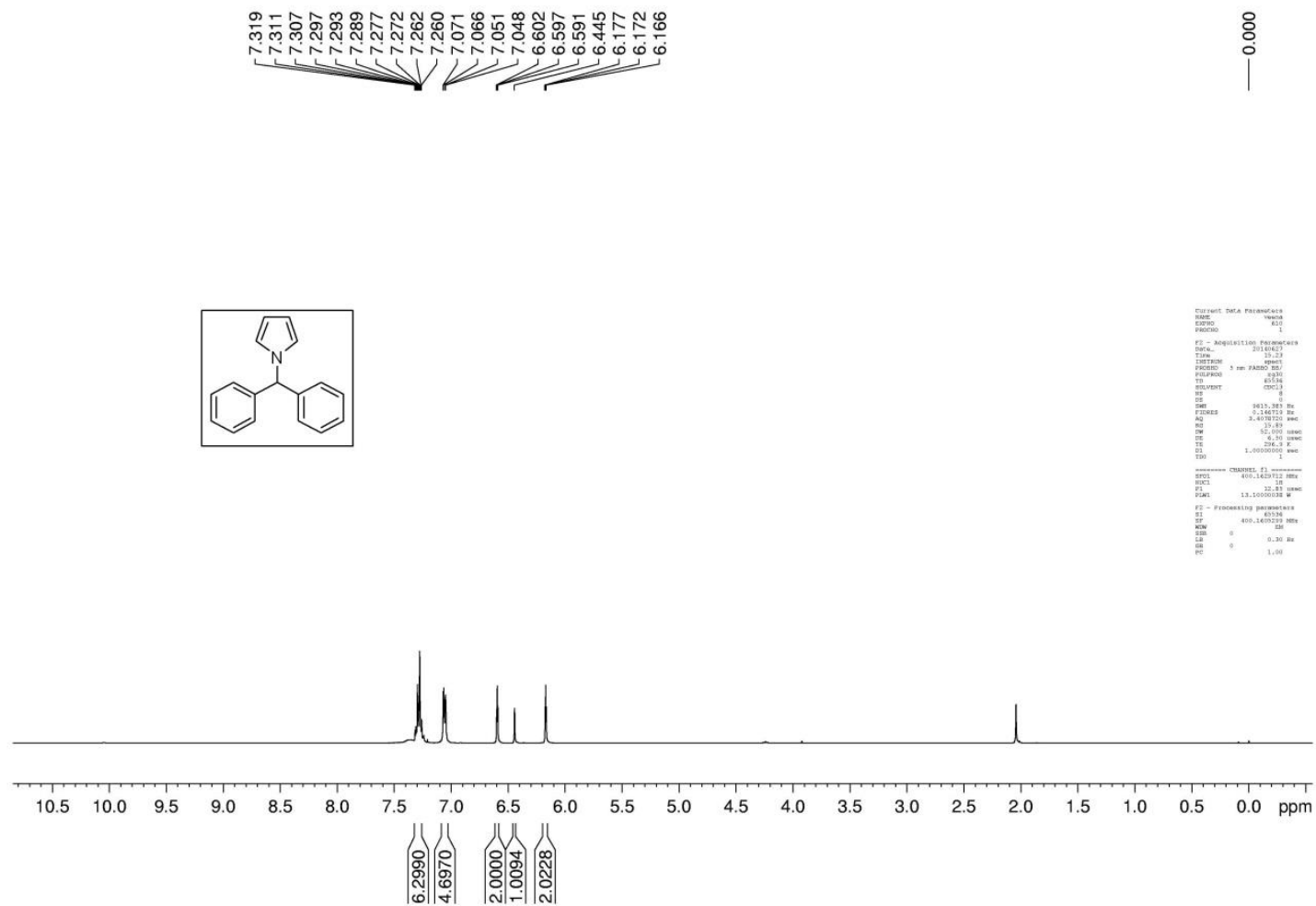


Fig: S-37 ¹H-NMR spectrum of 1-Benzhydryl-1*H*-pyrrole (**2s**).

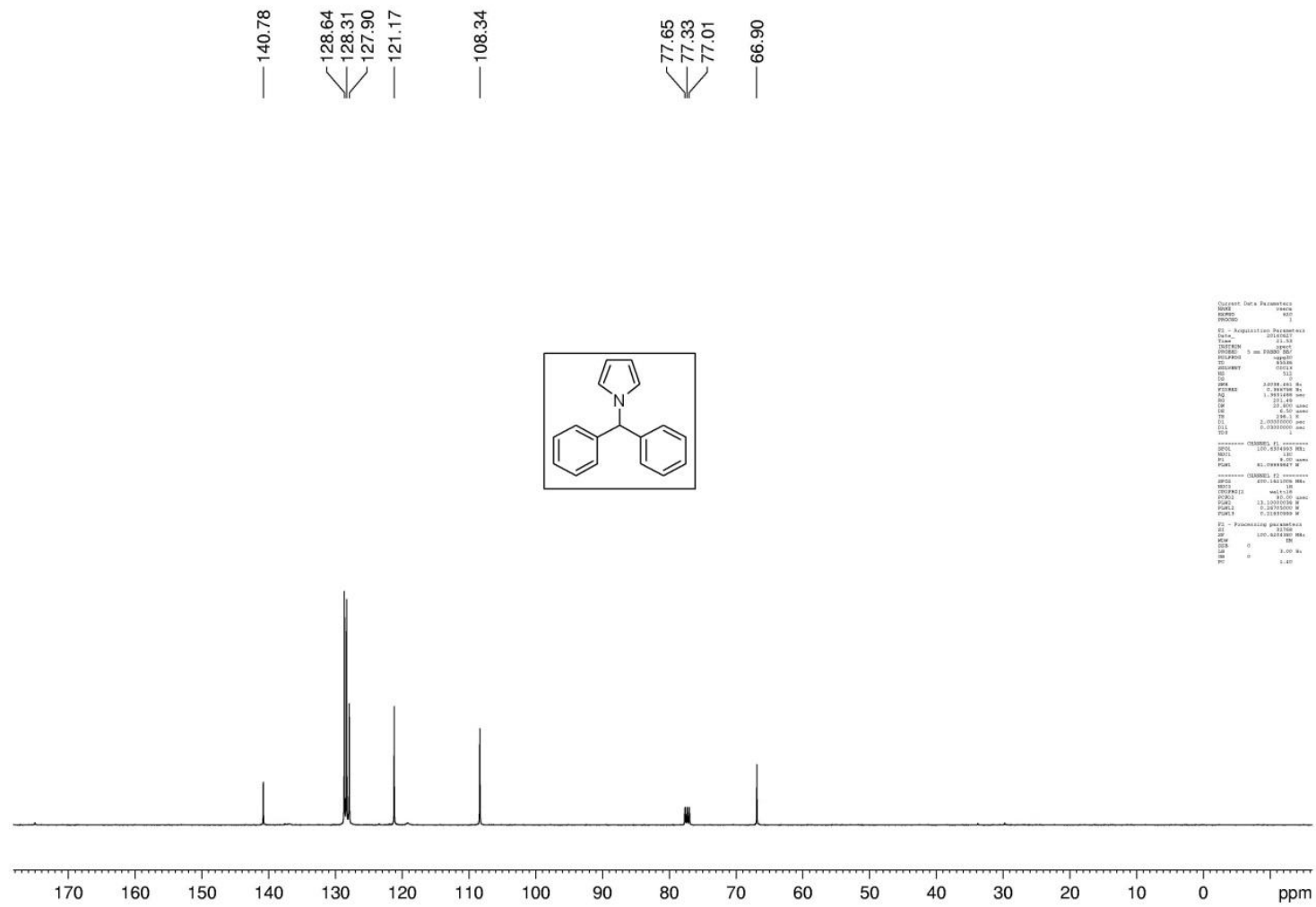


Fig: S-38 ¹³C-NMR spectrum of 1-Benzhydryl-1H-pyrrole (**2s**).

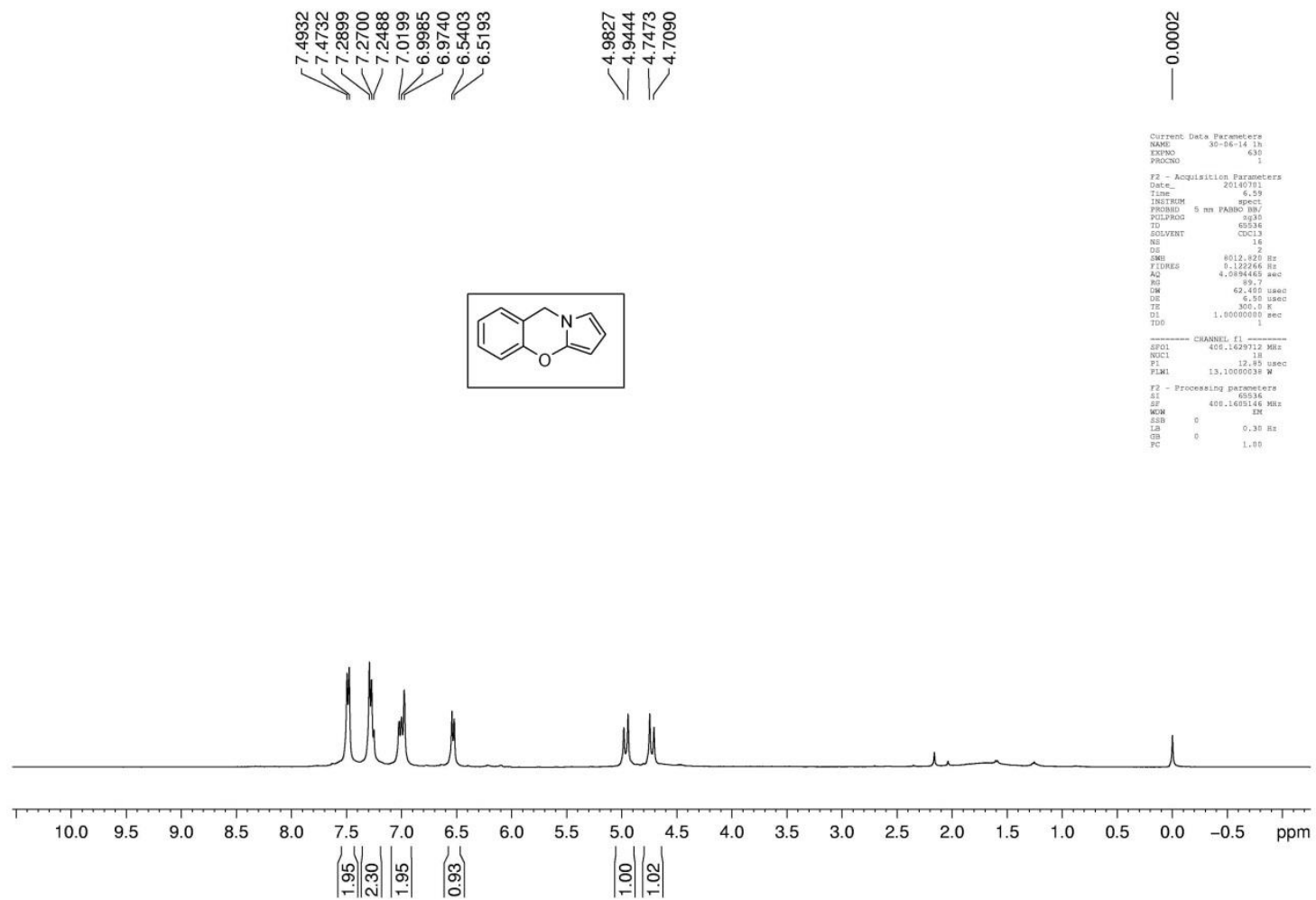


Fig: S-39 $^1\text{H-NMR}$ spectrum of 9H-benzo[e]pyrrolo[2,1-b][1,3]oxazine (**3A**).

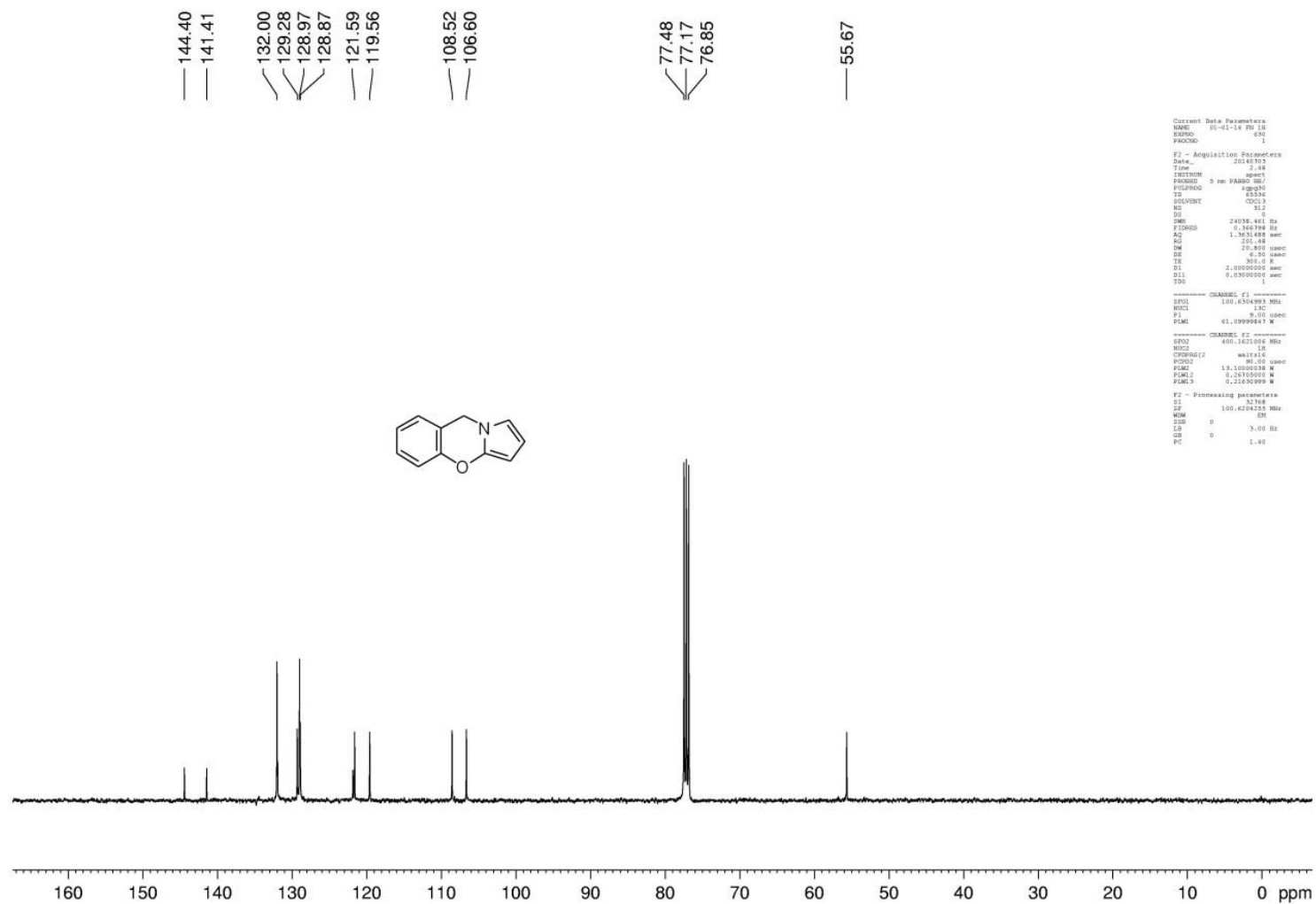


Fig: S-40 ¹³C-NMR spectrum of 9H-benzo[e]pyrrolo[2,1-b][1,3]oxazine (3A).

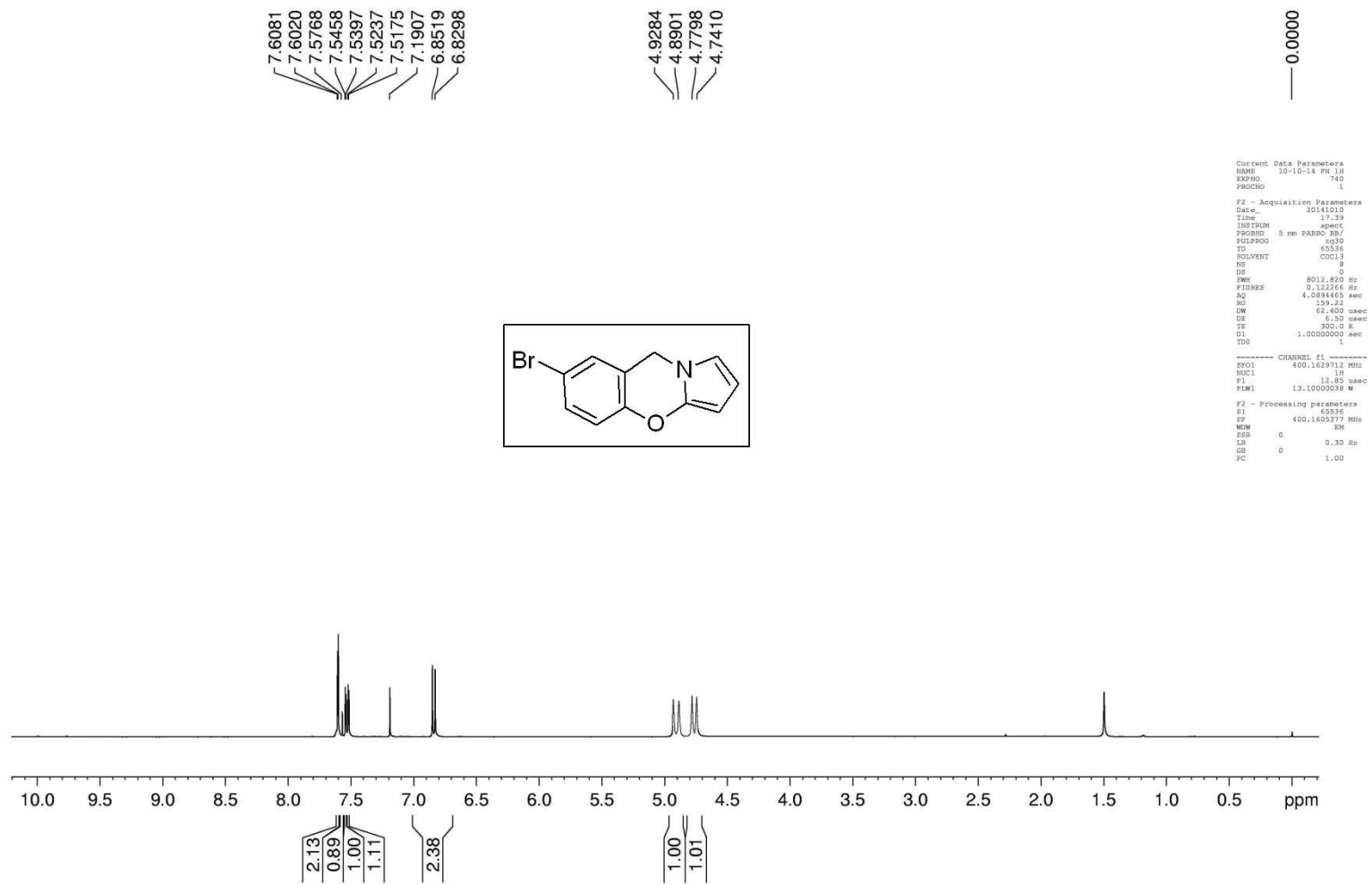


Fig: S-41 ^1H -NMR spectrum of 7-Bromo-9H-benzo[e]pyrrolo[2,1-b][1,3]oxazine (**3B**).

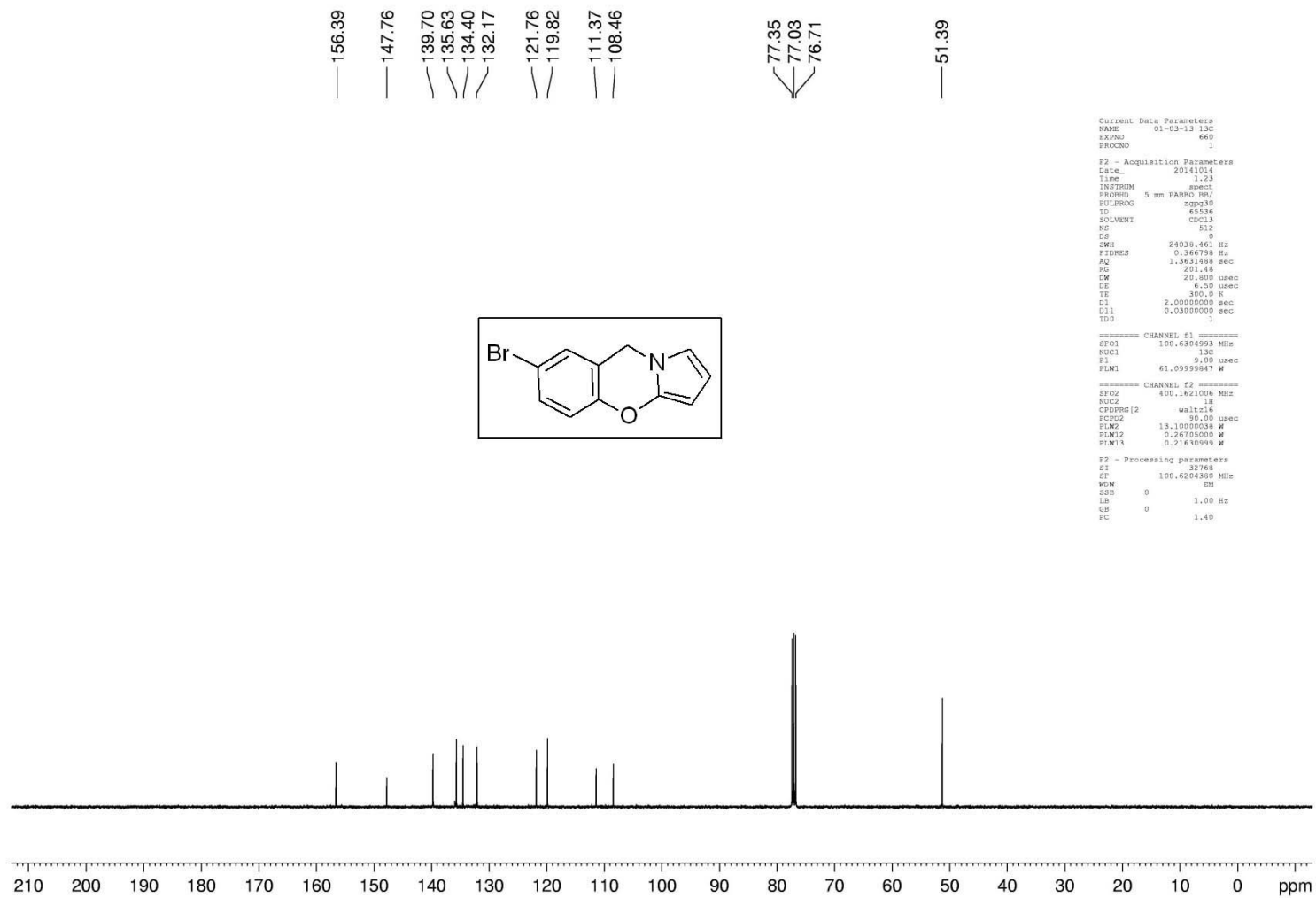


Fig: S-42 ¹³C-NMR spectrum of 7-Bromo-9H-benzo[e]pyrrolo[2,1-b][1,3]oxazine (**3B**).