Support Information for:

Stereoselective Synthesis of Conjugated Trienes via 1,4-Palladium Migration/Heck Sequence

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Table of Contents

1. General Information:

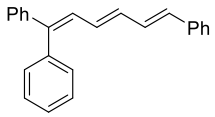
All reactions were carried out with standard Schlenk techniques under an argon atmosphere. All the solvents were dried using standard procedure and distilled before use. All commercially available chemical resources were used as received. Reactions were monitored by thin layer chromatography (TLC) supplied by Yantai Jiangyou Silicon Material Company (China). Visualization was accomplished with UV light or basic aqueous potassium permangante ($KMnO_4$). Chromatography was achieved using forced flow (flash chromatography) of the indicated solvent system on 300-400 mesh silica gel (Silicycle flash F60). Nuclear Magnetic Resonance (**NMR**) spectra were acquired on Agilent 400 or Bruker 400 instrument operating at 400, 100 and 376 MHz for ^{1}H, ^{13}C and ^{19}F, respectively. Chemical shifts are reported in δ ppm referenced to an internal $SiMe_4$ standard (TMS: δ 0.000 ppm) for **^{1}H NMR**, $CDCl_3$ (δ 77.16) for **^{13}C NMR**. Multiplicities are reported using the following abbreviations: s = singlet, d = doublet, t = triplet, q = quartet, quintet = quint, heptet = hept, m = multiplet, br = broad resonance. High-resolution mass spectra (**HRMS**) and Low resolution mass spectrometry (**LRMS**) were acquired through the National Center for Organic Mass Spectrometry in Shanghai, Shanghai Institute of Organic Chemistry (CAS) and determined on a Waters Micromass GCT Premie spectrometer.

The *ortho*-vinyl bromobenzenes (**1a-r**) were prepared according to the literatures.[1] Spectral data are in accordance with the literature references. The diene (**2a-g)** were prepared Wittig olefination of the commercially available α,β-unsaturated aldehydes with methyltriphenylphosphonium bromide and potassium *tert*-butoxide in tetrahydrofuran.[2] Spectral data are in accordance with the literature references.

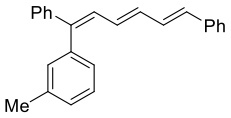
2. General Procedure for 1,4-Palladium Migration/Heck Sequence:

In a 10 mL sealed tube, a mixture of *ortho*-vinyl bromobenzene **1a** (0.2 mmol, 1.0 equiv), diene **2a** (0.40 mmol, 2.0 equiv), $Pd(OAc)_2$ (2.2 mg, 0.010 mmol, 5.0 mol %), $(2\text{-MeOPh})_3P$ (7.0 mg, 0.020 mmol, 10 mol %) and CsOPiv (94 mg, 2.0 equiv) in 1,4-dioxane (2.0 mL) was stirred at 70 ^{o}C under Ar in dark for 7 h. After cooling to room temperature, the mixture was filtered through a celite pad and concentrated under vacuum. The residue was purified by flash chromatography (elute: hexane / DCM = 100:1) in dark to afford product **3a**.

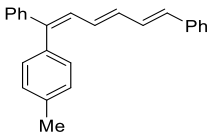
3. Characterization of the Obtained Products 3



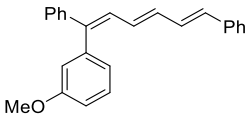
((3*E*,5*E*)-hexa-1,3,5-triene-1,1,6-triyl)tribenzene (3a): Yellow solid. 60.3 mg, 98% yield. $\mathbf{R_f}$ = 0.5 (PE). **Melting point**: 151-153 °C. **IR** (neat, cm^{-1}): 3025, 2960, 2925, 1597, 1493, 1446, 1261, 1078, 1028, 991, 765, 749, 700. **^{1}H NMR** (400 MHz, $CDCl_3$) δ 7.45 - 7.35 (m, 5H), 7.30 - 7.25 (m, 9H), 7.21 - 7.17 (m, 1H), 6.85 - 6.72 (m, 2H), 6.62 - 6.56 (m, 2H), 6.44 (dd, *J* = 15.0, 11.3 Hz, 1H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ 143.07, 142.26, 139.90, 137.50, 134.78, 132.74, 131.71, 130.71, 129.55, 128.74, 128.39, 128.36, 128.29, 127.65, 127.61, 127.58, 126.48 ppm. **HRMS** (EI) m/z Calcd for $C_{24}H_{20}$ $[M]^+$ 308.1560, found 308.1556.



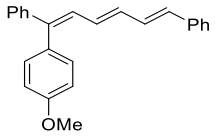
((1*Z*,3*E*,5*E*)-1-(*m*-tolyl)hexa-1,3,5-triene-1,6-diyl)dibenzene (3b) (It contains about 10% inseparable geometrical isomer **3h**, which was generated during the purification process.): Yellow oil. 54.7 mg, 85% yield. $\mathbf{R_f}$ = 0.5 (PE). **IR** (neat, cm^{-1}): 3411, 3028, 2924, 1721, 1657, 1600, 1493, 1448, 1279, 1071, 765, 700. **^{1}H NMR** (400 MHz, $CDCl_3$) δ 7.36 - 7.31 (m, 3H), 7.30 - 7.21 (m, 7H), 7.19 - 7.14 (m, 2H), 7.07 - 7.02 (m, 2H), 6.86 - 6.69 (m, 2H), 6.64 - 6.49 (m, 2H), 6.44 (dd, *J* = 14.9, 11.0 Hz, 1H), 2.36 (s, 3H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ 143.26, 142.31, 139.82, 137.98, 137.52, 134.58, 132.63, 131.85, 131.18, 129.60, 128.73, 128.33, 128.25, 128.15, 127.82, 127.62, 127.58, 127.52, 126.47, 21.60 ppm. **HRMS** (DART) m/z Calcd for $C_{25}H_{22}$ $[M]^+$ 322.1716, found 322.1713.



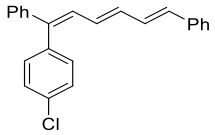
((1*Z*,3*E*,5*E*)-1-(*p*-tolyl)hexa-1,3,5-triene-1,6-diyl)dibenzene (3c): Yellow solid. 60.5 mg, 94% yield. $\mathbf{R_f}$ = 0.5 (PE). **Melting point**: 104-107 ℃. **IR** (neat, cm^{-1}): 3024, 2922, 1595, 1510, 1492, 1447, 1182, 1079, 990, 825, 765, 748, 692, 645. **^{1}H NMR** (400 MHz, $CDCl_3$) δ 7.36 (d, *J* = 7.6 Hz, 2H), 7.31 - 7.17 (m, 10H), 7.14 (d, *J* = 7.7 Hz, 2H), 6.85 - 6.70 (m, 2H), 6.66 - 6.36 (m, 3H), 2.42 (s, 3H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ 143.19, 142.52, 137.57, 137.34, 136.91, 134.51, 132.53, 131.96, 130.63, 129.65, 129.09, 128.75, 128.33, 128.12, 127.73, 127.58, 127.55, 126.47, 21.46 ppm. **HRMS** (EI) m/z Calcd for $C_{25}H_{22}$ $[M]^+$ 322.1722, found 322.1723.



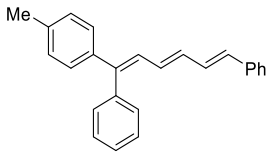
((1*Z*,3*E*,5*E*)-1-(3-methoxyphenyl)hexa-1,3,5-triene-1,6-diyl)dibenzene (3d) (It contains about 10% inseparable geometrical isomer **3m**, which was generated during the purification process.): Yellow oil. 48.0 mg, 71% yield. $\mathbf{R_f}$ = 0.4 (PE/EA = 100/1). **IR** (neat, cm^{-1}): 3025, 2926, 1595, 1575, 1486, 1448, 1285, 1232, 1048, 991, 765, 748, 692. **^{1}H NMR** (400 MHz, $CDCl_3$) δ 7.37 - 7.22 (m, 10H), 7.20 - 7.14 (m, 1H), 6.91 (ddd, *J* = 8.4, 2.6, 1.0 Hz, 1H), 6.87 - 6.72 (m, 4H), 6.60 - 6.51 (m, 2H), 6.45 (dd, *J* = 15.0, 10.9 Hz, 1H), 3.78 (s, 1H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ 159.64, 142.83, 141.96, 141.27, 137.49, 134.78, 132.77, 131.69, 129.55, 129.38, 128.73, 128.36, 128.24, 127.61, 127.58, 127.52, 126.48, 123.19, 116.01, 113.20, 55.37 ppm. **HRMS** (EI) m/z Calcd for $C_{25}H_{22}O$ $[M]^+$ 338.1671, found 338.1674.



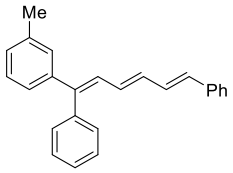
((1*Z*,3*E*,5*E*)-1-(4-methoxyphenyl)hexa-1,3,5-triene-1,6-diyl)dibenzene (3e): Yellow oil. 56.7 mg, 84% yield. $\mathbf{R_f}$ = 0.4 (PE/EA = 100/1). **IR** (neat, cm^{-1}): 3028, 2928, 2837, 1724, 1655, 1601, 1509, 1447, 1250, 1177, 1030, 833, 766, 700. **^{1}H NMR** (400 MHz, $CDCl_3$) δ 7.38 - 7.33 (m, 3H), 7.31 - 7.22 (m, 6H), 7.21 - 7.15 (m, 3H), 6.98 - 6.92 (m, 2H), 6.85 - 6.71 (m, 2H), 6.61 - 6.49 (m, 3H), 3.86 (s, 3H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ 159.10, 142.85, 142.66, 137.54, 134.40, 132.45, 132.14, 131.98, 131.94, 129.63, 128.74, 128.35, 128.32, 128.01, 127.79, 127.56, 126.44, 113.73, 55.41 ppm. **HRMS** (EI) m/z Calcd for $C_{25}H_{22}O$ $[M]^+$ 338.1671, found 338.1676.



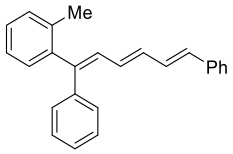
((1*Z*,3*E*,5*E*)-1-(4-chlorophenyl)hexa-1,3,5-triene-1,6-diyl)dibenzene (3f): Yellow solid. 49.4 mg, 72% yield. $\mathbf{R_f}$ = 0.4 (PE). **Melting point**: 96-99 °C. **IR** (neat, cm^{-1}): 3025, 2924, 1594, 1488, 1447, 1088, 1015, 990, 832, 758, 747, 691, 507, 404. **^{1}H NMR** (400 MHz, $CDCl_3$) δ 7.42 - 7.35 (m, 4H), 7.33 - 7.24 (m, 7H), 7.23 - 7.17 (m, 3H), 6.86 - 6.70 (m, 2H), 6.67 - 6.52 (m, 2H), 6.40 (dd, *J* = 15.0, 11.3 Hz, 1H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ 141.86, 141.67, 138.33, 137.39, 135.32, 133.51, 133.17, 132.08, 131.16, 129.35, 128.78, 128.72, 128.68, 128.47, 127.78, 127.76, 127.61, 126.53 ppm. **HRMS** (EI) m/z Calcd for $C_{24}H_{19}Cl$ $[M]^+$ 342.1175, found 342.1181.



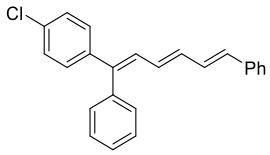
((1*E*,3*E*,5*E*)-1-(*p*-tolyl)hexa-1,3,5-triene-1,6-diyl)dibenzene (3g): Yellow solid. 52.7 mg, 82% yield. $\mathbf{R_f}$ = 0.5 (PE). **Melting point**: 102-103 °C. **IR** (neat, cm^{-1}): 3055, 3023, 2920, 1508, 1491, 1447, 1072, 990, 817, 777, 748, 701, 691. **^{1}H NMR** (400 MHz, $CDCl_3$) δ 7.43 - 7.30 (m, 5H), 7.30 - 7.21 (m, 4H), 7.21 - 7.13 (m, 3H), 7.08 (d, *J* = 8.0 Hz, 2H), 6.82 - 6.70 (m, 2H), 6.60 - 6.49 (m, 2H), 6.42 (dd, *J* = 14.9, 11.1 Hz, 1H), 2.32 (s, 3H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ 143.07, 140.05, 139.46, 137.57, 137.49, 134.33, 132.46, 131.86, 130.69, 129.63, 129.10, 128.73, 128.34, 127.55, 127.51, 126.45, 21.29 ppm. (Two carbon signals overlapped) **HRMS** (EI) m/z Calcd for $C_{25}H_{22}$ $[M]^+$ 322.1716, found 322.1714.



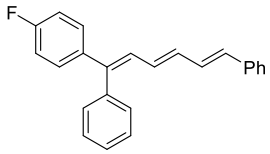
((1*E*,3*E*,5*E*)-1-(*m*-tolyl)hexa-1,3,5-triene-1,6-diyl)dibenzene (3h): Yellow oil. 51.5 mg, 80% yield. $\mathbf{R_f}$ = 0.5 (PE). **IR** (neat, cm^{-1}): 3439, 3058, 3028, 2921, 1725, 1660, 1599, 1493, 1448, 1278, 1175, 1071, 1027, 758, 700. **^{1}H NMR** (600 MHz, $CDCl_3$) δ 7.44 - 7.41 (m, 2H), 7.39 - 7.34 (m, 2H), 7.32 - 7.23 (m, 6H), 7.22 - 7.16 (m, 2H), 7.13 - 7.03 (m, 2H), 6.83 - 6.75 (m, 2H), 6.62 - 6.53 (m, 2H), 6.44 (dd, *J* = 14.8, 11.2 Hz, 1H), 2.32 (s, 3H) ppm. **^{13}C NMR** (150 MHz, $CDCl_3$) δ 143.26, 142.30, 140.00, 137.91, 137.55, 134.61, 132.62, 131.80, 130.71, 129.61, 128.75, 128.43, 128.35, 128.29, 128.25, 128.20, 127.60, 127.54, 126.48, 124.95, 21.62 ppm. **HRMS** (EI) m/z Calcd for $C_{25}H_{22}$ $[M]^+$ 322.1722, found 322.1730.



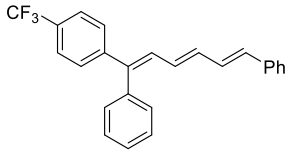
((1*E*,3*E*,5*E*)-1-(*o*-tolyl)hexa-1,3,5-triene-1,6-diyl)dibenzene (3i): Yellow solid. 58.6 mg, 91% yield. $\mathbf{R_f}$ = 0.5 (PE). **Melting point**: 105-107 °C. **IR** (neat, cm^{-1}): 3446, 3059, 3027, 2928, 1667, 1598, 1493, 1448, 1267, 1192, 1097, 977, 763, 734, 699. **^{1}H NMR** (400 MHz, $CDCl_3$) δ 7.41 - 7.15 (m, 13H), 7.15 - 7.09 (m, 1H), 6.90 - 6.70 (m, 2H), 6.61 - 6.47 (m, 2H), 6.40 (d, *J* = 11.4 Hz, 1H), 2.02 (s, 3H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ 143.58, 143.53, 140.43, 137.54, 136.63, 135.04, 132.75, 131.04, 130.68, 130.58, 130.35, 130.00, 129.51, 128.76, 128.24, 127.62, 127.34, 126.50, 125.75, 20.79 ppm. **HRMS** (ESI) m/z Calcd for $C_{25}H_{23}$ $[M+H]^+$ 323.1794, found 323.1793.



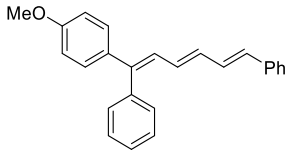
((1*E*,3*E*,5*E*)-1-(4-chlorophenyl)hexa-1,3,5-triene-1,6-diyl)dibenzene (3j): Yellow solid. 55.6 mg, 81% yield. $\mathbf{R_f}$ = 0.4 (PE). **Melting point**: 131-133 °C. **IR** (neat, cm^{-1}): 3056, 3025, 2924, 1600, 1487, 1446, 1404, 1092, 1011, 990, 830, 747, 705, 691, 509. **^{1}H NMR** (400 MHz, $CDCl_3$) δ 7.44 - 7.32 (m, 5H), 7.31 - 7.16 (m, 9H), 6.84 - 6.71 (m, 2H), 6.63 - 6.52 (m, 2H), 6.41 (dd, *J* = 14.9, 11.2 Hz, 1H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ 141.75, 140.76, 139.43, 137.40, 135.27, 133.35, 133.11, 132.08, 131.40, 130.63, 129.40, 128.85, 128.77, 128.61, 128.52, 127.79, 127.72, 126.52 ppm. **HRMS** (DART) m/z Calcd for $C_{24}H_{19}Cl$ $[M]^+$ 342.1170, found 342.1170.



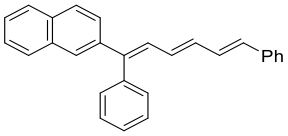
((1*E*,3*E*,5*E*)-1-(4-fluorophenyl)hexa-1,3,5-triene-1,6-diyl)dibenzene (3k): Yellow solid. 42.3 mg, 65% yield. $\mathbf{R_f}$ = 0.4 (PE). **Melting point**: 112-115 ℃. **IR** (neat, cm^{-1}): 3435, 3061, 3031, 1726, 1660, 1599, 1507, 1448, 1277, 1228, 1158, 837, 763, 738, 700, 600. **^{1}H NMR** (400 MHz, $CDCl_3$) δ 7.45 - 7.32 (m, 5H), 7.31 - 7.15 (m, 7H), 7.02 - 6.91 (m, 2H), 6.82 - 6.70 (m, 2H), 6.61 – 6.52 (m, 2H), 6.42 (dd, *J* = 14.9, 11.2 Hz, 1H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ 162.46 (d, *J* = 247.5 Hz), 141.96, 139.72, 138.48 (d, *J* = 3.4 Hz), 137.46, 134.83, 132.84, 131.53, 130.63, 129.47, 129.25 (d, *J* = 8.0 Hz), 128.76, 128.48, 128.10 (d, *J* = 1.7 Hz), 127.73, 127.66, 126.49, 115.26 (d, *J* = 21.4 Hz) ppm. **^{19}F NMR** (376 MHz, $CDCl_3$) δ -119.46 ppm. **HRMS** (EI) m/z Calcd for $C_{24}H_{19}F$ $[M]^+$ 326.1471, found 326.1476.



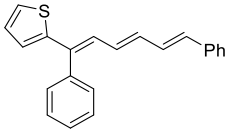
((1*E*,3*E*,5*E*)-1-(4-(trifluoromethyl)phenyl)hexa-1,3,5-triene-1,6-diyl)dibenzene (3l): Yellow solid. 68.4 mg, 91% yield. $\mathbf{R_f}$ = 0.4 (PE). **Melting point**: 87-89 ℃. **IR** (neat, cm^{-1}): 3434, 3061, 2927, 1726, 1666, 1616, 1494, 1449, 1409, 1325, 1167, 1125, 1067, 1017, 843, 752, 700. **^{1}H NMR** (400 MHz, $CDCl_3$) δ 7.53 (d, *J* = 8.2 Hz, 2H), 7.47 - 7.35 (m, 7H), 7.32 - 7.18 (m, 7H), 6.86 (d, *J* = 11.2 Hz, 1H), 6.79 (dd, *J* = 15.6, 10.5 Hz, 1H), 6.67 - 6.57 (m, 2H), 6.44 (dd, *J* = 14.6, 11.2 Hz, 1H) ppm. **^{13}C NMR** (150 MHz, $CDCl_3$) δ 145.76, 141.50, 139.17, 137.32, 136.16, 133.69, 131.11, 130.62, 130.08, 129.27, 129.23(q, *J* = 32.4 Hz), 128.80, 128.63, 127.94, 127.87, 127.76, 126.60, 125.30 (q, *J* = 3.7 Hz), 124.39(q, *J* = 269.9 Hz), 77.37, 77.16, 76.95 ppm. **^{19}F NMR** (376 MHz, $CDCl_3$) δ -67.17 (d, *J* = 14.3 Hz) ppm. **HRMS** (EI) m/z Calcd for $C_{25}H_{19}F_3$ $[M]^+$ 376.1439, found 376.1429.



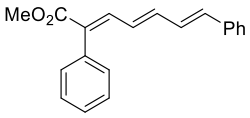
((1*E*,3*E*,5*E*)-1-(4-methoxyphenyl)hexa-1,3,5-triene-1,6-diyl)dibenzene (3m): Yellow solid. 54.8 mg, 81% yield. $\mathbf{R_f}$ = 0.4 (PE/EA = 100/1). **Melting point**: 135-136 ℃. **IR** (neat, cm^{-1}): 3438, 3058, 3029, 2931, 1724, 1651, 1601, 1510, 1447, 1251, 1177, 1031, 833, 740, 700. **^{1}H NMR** (400 MHz, $CDCl_3$) δ 7.44 - 7.31 (m, 5H), 7.31 - 7.19 (m, 6H), 7.19 - 7.14 (m, 1H), 6.85 - 6.79 (m, 2H), 6.78 - 6.70 (m, 2H), 6.59 - 6.54 (m, 1H), 6.54 - 6.49 (m, 1H), 6.41 (dd, *J* = 14.8, 11.1 Hz, 1H), 3.79 (s, 3H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ 159.35, 142.74, 140.09, 137.60, 134.92, 133.89, 132.21, 131.97, 130.68, 129.69, 128.84, 128.73, 128.35, 127.53, 127.49, 126.68, 126.42, 113.79, 55.43 ppm. **HRMS** (EI) m/z Calcd for $C_{25}H_{22}O$ $[M]^+$ 338.1671, found 338.1677.



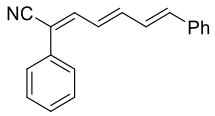
2-((1*E*,3*E*,5*E*)-1,6-diphenylhexa-1,3,5-trien-1-yl)naphthalene (3n): Yellow solid. 69.5 mg, 97% yield. $\mathbf{R_f}$ = 0.5 (PE). **Melting point**: 160-162 ℃. **IR** (neat, cm^{-1}): 3055, 3024, 2960, 1596, 1492, 1447, 1189, 1081, 990, 857, 816, 747, 700, 476. **^{1}H NMR** (400 MHz, $CDCl_3$) δ 7.83 - 7.65 (m, 3H), 7.61 (s, 1H), 7.51 (d, *J* = 8.7 Hz, 1H), 7.47 - 7.23 (m, 11H), 7.23 - 7.13 (m, 1H), 6.95 (d, *J* = 11.1 Hz, 1H), 6.79 (dd, *J* = 15.6, 10.4 Hz, 1H), 6.66 - 6.53 (m, 2H), 6.53 - 6.42 (m, 1H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ 143.02, 139.87, 139.60, 137.50, 134.96, 133.47, 132.91, 132.85, 131.76, 130.80, 129.57, 128.83, 128.75, 128.47, 128.39, 127.89, 127.68, 127.65, 127.06, 126.50, 126.32, 126.11, 125.42 ppm. **HRMS** (EI) m/z Calcd for $C_{28}H_{22}$ $[M]^+$ 358.1722, found 358.1726.



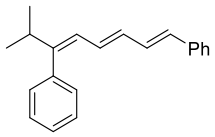
2-((1*E*,3*E*,5*E*)-1,6-diphenylhexa-1,3,5-trien-1-yl)thiophene (3o): Yellow solid. 57.7 mg, 92% yield. $\mathbf{R_f}$ = 0.3 (PE/EA = 100/1). **Melting point**: 103-105 ℃. **IR** (neat, cm^{-1}): 3057, 3025, 2924, 1676, 1598, 1492, 1447, 1263, 1072, 1027, 990, 828, 748, 698. **^{1}H NMR** (400 MHz, $CDCl_3$) δ 7.46 - 7.39 (m, 3H), 7.34 (td, *J* = 7.6, 1.7 Hz, 4H), 7.31 - 7.23 (m, 3H), 7.21 - 7.14 (m, 2H), 6.92 (dd, *J* = 5.1, 3.6 Hz, 1H), 6.84 (d, *J* = 11.3 Hz, 1H), 6.79 - 6.68 (m, 2H), 6.60 - 6.50 (m, 2H), 6.29 (dd, *J* = 14.9, 11.3 Hz, 1H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ 147.14, 138.90, 137.53, 136.97, 134.49, 132.78, 131.01, 130.29, 129.54, 128.75, 128.44, 127.96, 127.75, 127.63, 127.03, 126.50, 126.25, 124.95 ppm. **HRMS** (EI) m/z Calcd for $C_{22}H_{18}S$ $[M]^+$ 314.1129, found 314.1136.



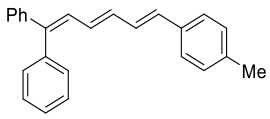
methyl (2*E*,4*E*,6*E*)-2,7-diphenylhepta-2,4,6-trienoate (3p): Yellow solid. 55.1 mg, 95% yield. $\mathbf{R_f}$ = 0.2 (PE/EA = 100/1). **Melting point**: 115-117 ℃. **IR** (neat, cm^{-1}): 3027, 2948, 1706, 1601, 1588, 1494, 1433, 1299, 1240, 1134, 1039, 1023, 994, 750, 712, 691. **^{1}H NMR** (400 MHz, $CDCl_3$) δ 7.56 (d, *J* = 11.7 Hz, 1H), 7.44 - 7.32 (m, 5H), 7.33 - 7.18 (m, 5H), 6.81 - 6.65 (m, 3H), 6.41 - 6.29 (m, 1H), 3.76 (s, 3H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ 167.99, 141.19, 140.70, 136.78, 136.54, 135.35, 132.05, 130.40, 129.04, 128.82, 128.55, 128.43, 128.14, 127.81, 126.88, 52.24 ppm. **HRMS** (EI) m/z Calcd for $C_{20}H_{18}O_2$ $[M]^+$ 290.1301, found 290.1301.



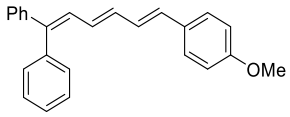
(2*E*,4*E*,6*E*)-2,7-diphenylhepta-2,4,6-trienenitrile (3q): Yellow oil. 19.1 mg, 37% yield. $\mathbf{R_f}$ = 0.3 (PE/EA = 100/1). **IR** (neat, cm^{-1}): 2926, 2853, 1731, 1583, 1472, 1444, 1242, 1211, 1187, 1046, 1029, 985, 802, 749, 698. **^{1}H NMR** (400 MHz, $CDCl_3$) δ 7.49 - 7.37 (m, 6H), 7.36 - 7.22 (m, 4H), 7.05 (d, *J* = 11.1 Hz, 1H), 6.87 - 6.63 (m, 4H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ 143.61, 142.37, 138.22, 136.55, 133.12, 129.15, 128.99, 128.95, 128.89, 127.95, 127.17, 127.11, 125.73, 120.61, 112.47 ppm. **HRMS** (ESI) m/z Calcd for $C_{19}H_{16}N$ $[M+H]^+$ 258.1277, found 258.1276.



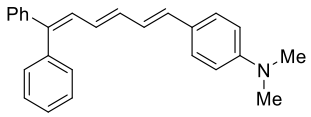
((1*E*,3*E*,5*Z*)-7-methylocta-1,3,5-triene-1,6-diyl)dibenzene (3r): White solid. 23.5 mg, 43% yield. $\mathbf{R_f}$ = 0.6 (PE). **Melting point**: 46-48 °C. **IR** (neat, cm^{-1}): 3435, 2963, 2928, 1722, 1688, 1599, 1493, 1449, 1286, 1177, 1071, 1026, 978, 759, 701. **^{1}H NMR** (400 MHz, $CDCl_3$) δ 7.41 - 7.30 (m, 5H), 7.30 - 7.22 (m, 2H), 7.20 - 7.13 (m, 3H), 6.70 (dd, *J* = 15.5, 10.6 Hz, 1H), 6.49 (d, *J* = 15.6 Hz, 1H), 6.45 - 6.33 (m, 1H), 6.26 - 6.16 (m, 2H), 2.69 (hept, *J* = 6.9 Hz, 1H), 1.08 (d, *J* = 6.8 Hz, 6H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ 151.19, 141.10, 137.71, 132.18, 131.61, 131.52, 129.76, 129.19, 128.68, 128.12, 127.33, 126.92, 126.33, 124.68, 36.19, 21.96 ppm. **HRMS** (EI) m/z Calcd for $C_{21}H_{22}$ $[M]^+$ 274.1722, found 274.1727.



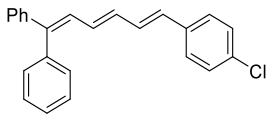
((3*E*,5*E*)-6-(*p*-tolyl)hexa-1,3,5-triene-1,1-diyl)dibenzene (3s): Yellow solid. 63.1 mg, 98% yield. $\mathbf{R_f}$ = 0.5 (PE). **Melting point**: 100-104 °C. **IR** (neat, cm^{-1}): 2957, 2924, 1725, 1662, 1606, 1494, 1446, 1276, 1182, 1079, 989, 970, 765, 701. **^{1}H NMR** (400 MHz, $CDCl_3$) δ 7.44 - 7.33 (m, 3H), 7.31 - 7.19 (m, 9H), 7.08 (d, *J* = 7.9 Hz, 2H), 6.81 (d, *J* = 11.2 Hz, 1H), 6.73 (dd, *J* = 15.6, 10.4 Hz, 1H), 6.62 - 6.49 (m, 2H), 6.41 (dd, *J* = 14.6, 11.2 Hz, 1H), 2.31 (s, 3H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ 142.71, 142.31, 139.94, 137.58, 134.99, 134.74, 132.78, 131.17, 130.72, 129.48, 128.62, 128.38, 128.35, 127.62, 127.52, 126.42, 21.39 ppm. **HRMS** (EI) m/z Calcd for $C_{25}H_{22}$ $[M]^+$ 322.1722, found 322.1728.



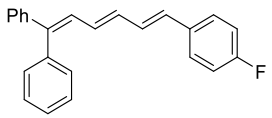
((3*E*,5*E*)-6-(4-methoxyphenyl)hexa-1,3,5-triene-1,1-diyl)dibenzene (3t): Yellow solid. 60.8 mg, 90% yield. $\mathbf{R_f}$ = 0.4 (PE/EA = 100/1). **Melting point**: 127-129 ℃. **IR** (neat, cm^{-1}): 3025, 2930, 1608, 1584, 1509, 1443, 1298, 1251, 1174, 1031, 989, 839, 766, 701. **^{1}H NMR** (400 MHz, $CDCl_3$) δ 7.44 - 7.35 (m, 3H), 7.32 - 7.22 (m, 9H), 6.87 - 6.77 (m, 3H), 6.71 - 6.61 (m, 1H), 6.60 - 6.49 (m, 2H), 6.39 (dd, *J* = 14.4, 11.2 Hz, 1H), 3.79 (s, 3H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ 159.35, 142.38, 142.35, 139.99, 135.14, 132.42, 130.73, 130.62, 130.36, 128.47, 128.37, 128.35, 127.74, 127.60, 127.56, 127.50, 127.46, 114.23, 55.41 ppm. **HRMS** (ESI) m/z Calcd for $C_{25}H_{23}O$ $[M+H]^+$ 339.1743, found 339.1745.



4-((1*E*,3*E*)-6,6-diphenylhexa-1,3,5-trien-1-yl)-*N*,*N*-dimethylaniline (3u): Yellow solid. 30.2 mg, 43% yield. $\mathbf{R_f}$ = 0.3 (PE/EA = 20/1). **Melting point**: 214-216 ℃. **IR** (neat, cm^{-1}): 3019, 2920, 1608, 1578, 1522, 1442, 1357, 1189, 1149, 988, 766, 701, 689. **^{1}H NMR** (400 MHz, $CDCl_3$) δ 7.44 - 7.32 (m, 3H), 7.30 - 7.22 (m, 10H), 6.81 (d, *J* = 11.3 Hz, 1H), 6.68 - 6.47 (m, 4H), 6.35 (dd, *J* = 13.9, 11.3 Hz, 1H), 2.95 (s, 6H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ 150.14, 142.51, 141.47, 140.16, 135.81, 133.34, 130.78, 129.30, 128.78, 128.35, 128.32, 127.68, 127.53, 127.38, 127.27, 125.47, 112.49, 40.54 ppm. **HRMS** (ESI) m/z Calcd for $C_{26}H_{26}N$ $[M+H]^+$ 352.2060, found 352.2061.

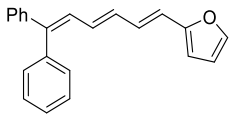


((3*E*,5*E*)-6-(4-chlorophenyl)hexa-1,3,5-triene-1,1-diyl)dibenzene (3v): Yellow solid. 46.6 mg, 68% yield. $\mathbf{R_f}$ = 0.4 (PE). **Melting point**: 130-132 ℃. **IR** (neat, cm^{-1}): 3055, 3026, 1600, 1489, 1443, 1404, 1090, 1011, 989, 840, 803, 765, 701, 636, 511. **^{1}H NMR** (400 MHz, $CDCl_3$) δ 7.45 - 7.36 (m, 3H), 7.32 - 7.21 (m, 11H), 6.85 - 6.79 (m, 1H), 6.79 - 6.70 (m, 1H), 6.61 - 6.39 (m, 3H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ 143.51, 142.17, 139.80, 136.03, 134.32, 133.07, 132.28, 131.21, 130.68, 130.14, 128.91, 128.38, 128.12, 127.67, 127.64, 127.57 ppm. (Two carbon signal overlapped) **HRMS** (EI) m/z Calcd for $C_{24}H_{19}Cl$ $[M]^+$ 342.1175, found 342.1177.

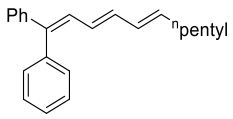


((3*E*,5*E*)-6-(4-fluorophenyl)hexa-1,3,5-triene-1,1-diyl)dibenzene (3w): Yellow solid. 49.6 mg, 76% yield. $\mathbf{R_f}$ = 0.4 (PE). **Melting point**: 120-122 ℃. **IR** (neat, cm^{-1}): 3435, 3058, 2925, 1726, 1659, 1600, 1509, 1447, 1277, 1227, 1157, 836, 765, 701. **^{1}H NMR** (400 MHz, $CDCl_3$) δ 7.45 - 7.33 (m, 3H), 7.33 - 7.20 (m, 9H), 7.00 - 6.91 (m, 2H), 6.80 (d, *J* = 11.0 Hz, 1H), 6.67 (dd, *J* = 15.5, 10.3 Hz, 1H), 6.60 - 6.38 (m, 3H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ 162.36 (d, *J* = 247.5 Hz), 143.20, 142.25, 139.90, 134.51,

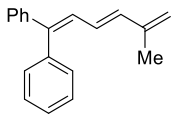
133.76 (d, *J* = 3.4 Hz), 131.75, 131.39, 130.70, 129.35 (d, *J* = 2.7 Hz), 128.39 (d, *J* = 2.3 Hz), 128.21, 127.97, 127.89, 127.66, 127.61, 115.72 (d, *J* = 21.6 Hz) ppm. **^{19}F NMR** (376 MHz, $CDCl_3$) δ -114.11 ppm. **HRMS** (EI) m/z Calcd for $C_{24}H_{19}F$ $[M]^+$ 326.1471, found 326.1470.



2-((1*E*,3*E*)-6,6-diphenylhexa-1,3,5-trien-1-yl)furan (3x): Yellow oil. 13.1 mg, 22% yield. **R_f** = 0.4 (PE). **IR** (neat, cm^{-1}): 3055, 3026, 2923, 2851, 1590, 1493, 1444, 1259, 1151, 1074, 1013, 988, 926, 883, 765, 733, 700, 592. **^{1}H NMR** (400 MHz, $CDCl_3$) δ 7.42 - 7.33 (m, 3H), 7.32 - 7.18 (m, 8H), 6.79 (d, *J* = 10.3 Hz, 1H), 6.67 (dd, *J* = 15.4, 10.1 Hz, 1H), 6.54 - 6.30 (m, 4H), 6.23 (d, *J* = 3.3 Hz, 1H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ 153.55, 143.03, 142.34, 142.28, 139.85, 134.27, 131.85, 130.69, 128.35, 128.27, 128.23, 127.65, 127.57, 127.55, 119.99, 111.89, 108.65 ppm. **HRMS** (ESI) m/z Calcd for $C_{22}H_{19}O$ $[M+H]^+$ 299.1430, found 299.1431.

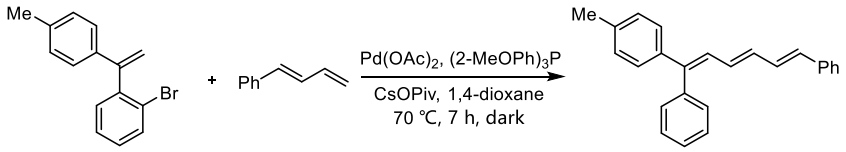


((3*E*,5*E*)-undeca-1,3,5-triene-1,1-diyl)dibenzene (3y): Colorless oil. 25.4 mg, 55% yield. **R_f** = 0.6 (PE). **IR** (neat, cm^{-1}): 3432, 3057, 2928, 2858, 1724, 1663, 1598, 1493, 1447, 1277, 1028, 764, 700. **^{1}H NMR** (400 MHz, Chloroform-*d*) δ 7.42 – 7.32 (m, 3H), 7.31 – 7.19 (m, 7H), 6.73 (d, *J* = 11.2 Hz, 1H), 6.39 (dd, *J* = 14.9, 10.5 Hz, 1H), 6.21 (dd, *J* = 14.9, 11.1 Hz, 1H), 6.07 – 5.95 (m, 1H), 5.83 – 5.67 (m, 1H), 2.07 (dt, *J* = 7.1 Hz, 7.1 Hz, 2H), 1.46 – 1.20 (m, 6H), 0.94 – 0.80 (m, 3H) ppm. **^{13}C NMR** (100 MHz, cdcl$_3$) δ 142.47, 141.83, 140.06, 136.28, 135.08, 130.87, 130.79, 130.68, 128.80, 128.48, 128.30, 127.53, 127.37, 127.31, 32.98, 31.54, 29.07, 22.66, 14.17 ppm. **HRMS** (EI) m/z Calcd for $C_{23}H_{26}$ $[M]^+$ 302.2029, found 302.2026.



(*E*)-(5-methylhexa-1,3,5-triene-1,1-diyl)dibenzene (3z): Colorless oil. 15.3 mg, 31% yield. **R_f** = 0.6 (PE). **IR** (neat, cm^{-1}): 3432, 3058, 2926, 2854, 1720, 1661, 1598, 1493, 1447, 1277, 1177, 1074, 1031, 764, 701. **^{1}H NMR** (400 MHz, $CDCl_3$) δ 7.42 - 7.31 (m, 3H), 7.29 - 7.23 (m, 7H), 6.76 (d, *J* = 10.9 Hz, 1H), 6.51 (d, *J* = 15.3 Hz, 1H), 6.34 (dd, *J* = 15.3, 11.0 Hz, 1H), 5.02 (s, 1H), 4.98 (s, 1H), 1.74 (s, 3H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ 143.06, 142.60, 142.54, 139.96, 137.19, 130.65, 128.44, 128.34, 128.31, 127.72, 127.55, 127.51, 127.49, 117.20, 18.64 ppm. **HRMS** (EI) m/z Calcd for $C_{19}H_{18}$ $[M]^+$ 246.1409, found 246.1405.

4. The Gram-Scale Reaction

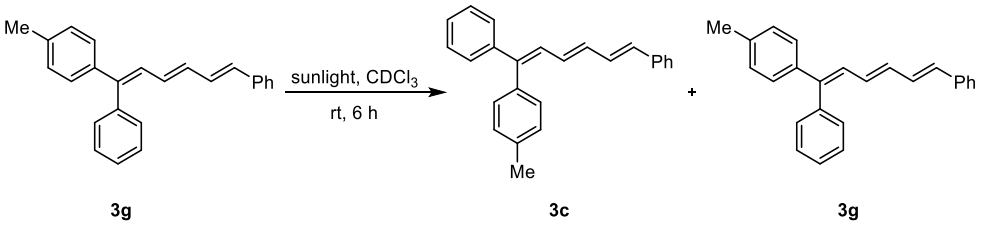


1.37 g, 5 mmol

1.52 g, 94% yield

In a 200 mL sealed tube, a mixture of *ortho*-vinyl bromobenzene **1g** (5.0 mmol, 1.0 equiv), diene **2a** (10 mmol, 2.0 equiv), $Pd(OAc)_2$ (56 mg, 0.25 mmol, 5.0 mol %), $(2\text{-MeOPh})_3P$ (18 mg, 0.50 mmol, 10 mol %) and CsOPiv (2.3 g, 2.0 equiv) in 1,4-dioxane (50 mL) was stirred at 70 ^oC under Ar in dark for 7 hours. After cooling to room temperature, the mixture was filtered through a celite pad and concentrated under vacuum. The residue was purified by flash chromatography on silica gel (elute: hexane / DCM = 100:1) to afford product **3g** 1.52 g (94% yield).

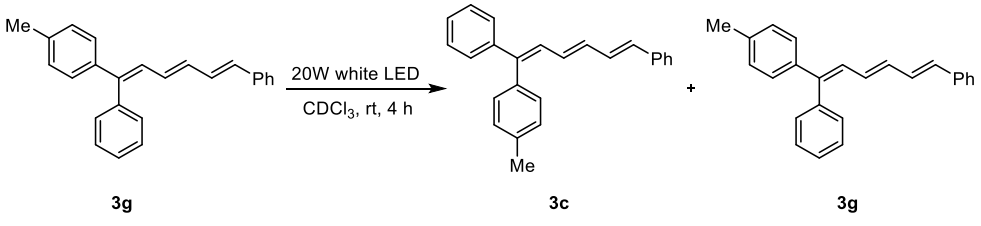
5. Light-Induced *E/Z* Isomerization of 3g



3g **3c** **3g**

3c : **3g** = 1 : 1

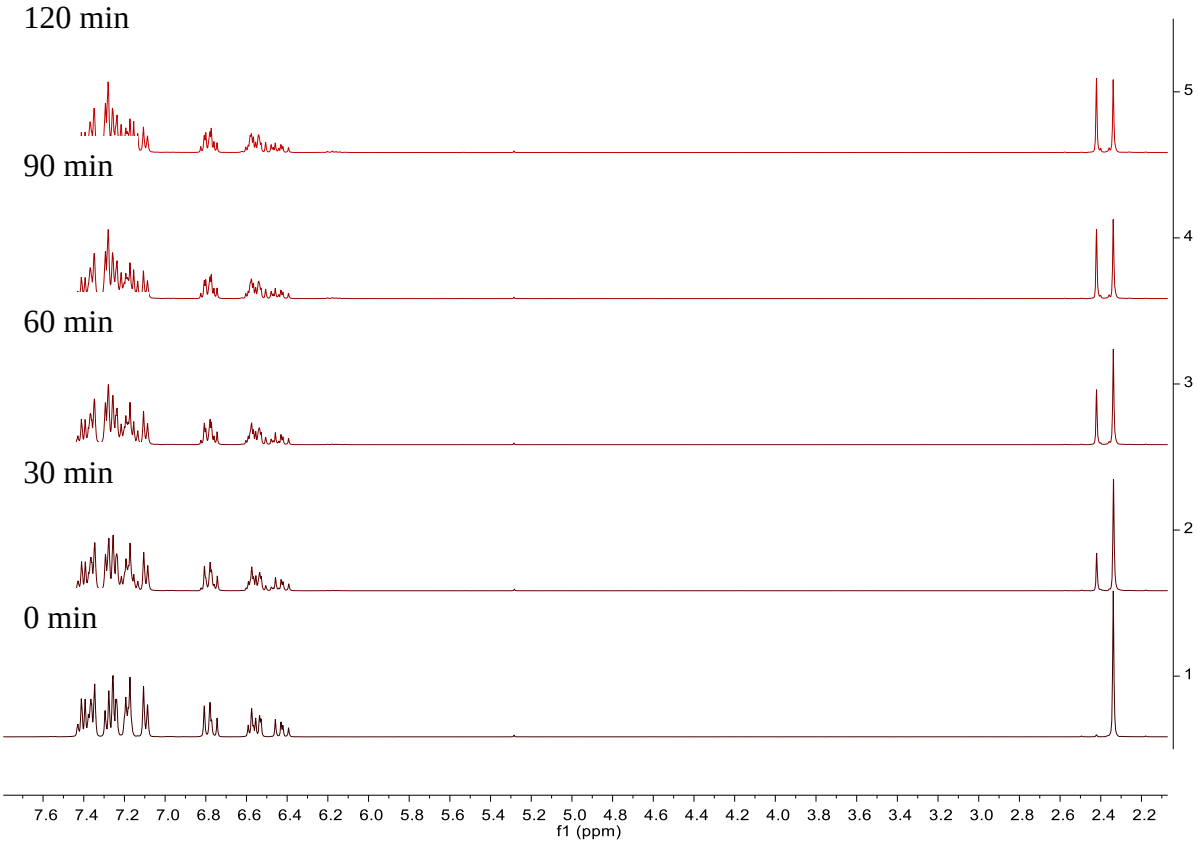
3g (10 mg, 0.031 mmol) in $CDCl_3$ (0.5 mL) was exposed to sunlight under Ar for 6 h. The transformation was detected by **^{1}H NMR**.



3g **3c** **3g**

3g (10 mg, 0.031 mmol) in $CDCl_3$ (0.5 mL) was exposed to 20 W white LED under Ar for 4 h. The ratio of **3c** and **3g** was detected by **^{1}H NMR** at a regular time.

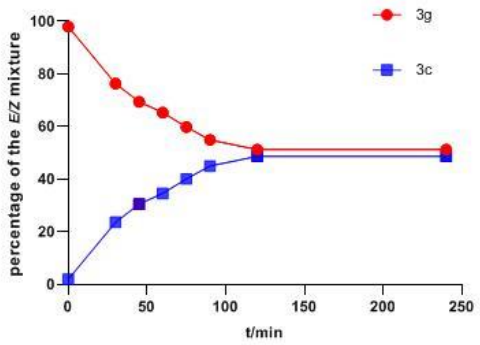
(a)



(b)

entry	time/min	**3g : 3c**
1	0	1:0.02
2	30	1:0.31
3	45	1:0.44
4	60	1:0.53
5	75	1:0.67
6	90	1:0.82
7	120	1:0.95
8	240	1:0.95

(c)



(a) detection of the isomerization by ^{1}H NMR; (b) the ratio of **3g** and **3c** at regular time; (c) kinetic curve of the isomerization.

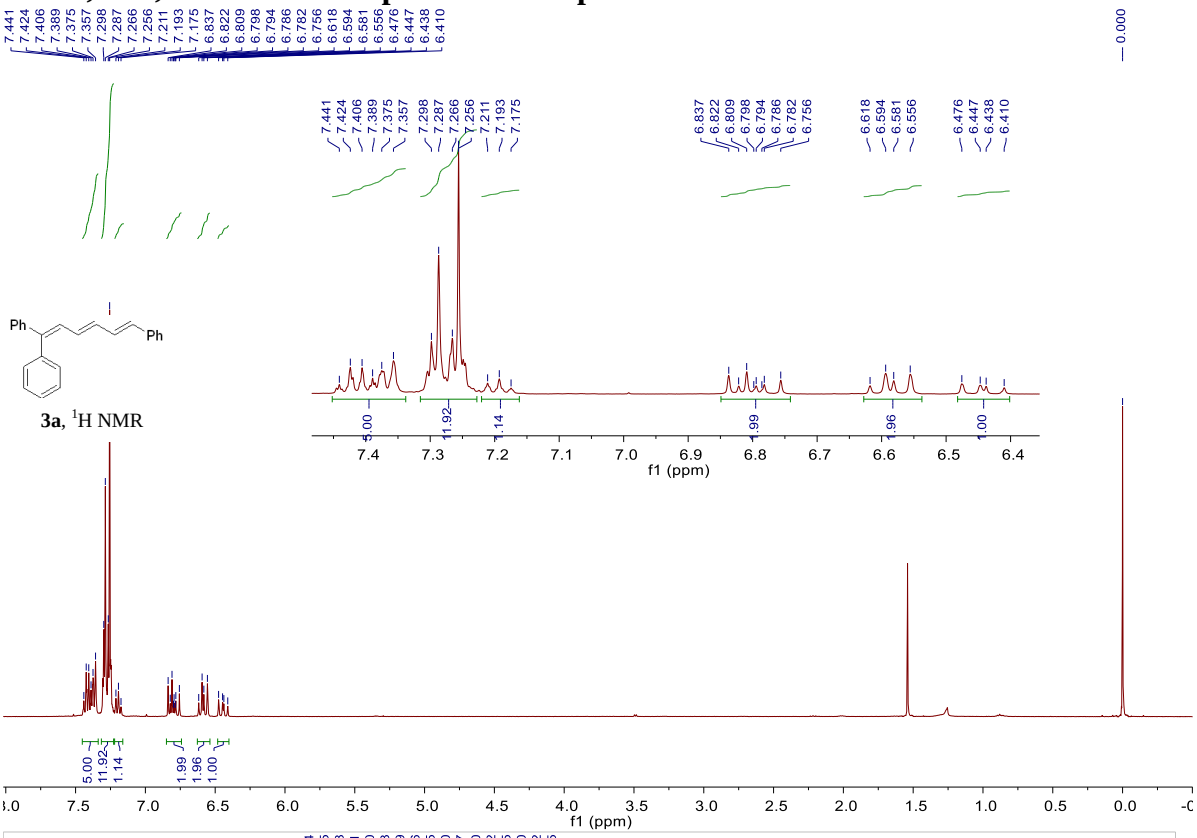
6. References:

(1) (a) D. Wei, M.-Y. Li, B.-B. Zhu, X.-D. Yang, F. Zhang, C.-G. Feng and G.-Q. Lin, *Angew. Chem. Int. Ed.*, 2019, **58**, 16543. (b) D. Wei, T.-J. Hu, C.-G. Feng and G.-Q. Lin, *Chin. J. Chem.*, 2018, **36**, 743. (c) R. Hayashi, A. Shimizu, J. A. Davies, Y. Ishizaki, C. Willis and J.-i. Yoshida, *Angew. Chem. Int. Ed.*, 2018, **57**, 12891. (d) T.-J. Hu, M.-Y. Li, Q. Zhao, C.-G. Feng and G.-Q. Lin, *Angew. Chem. Int. Ed.*, 2018, **57**, 5871. (e) X. Shen, P. Liu, Y. Liu and B. Dai, *Tetrahedron*, 2017, **73**, 6558. (f) R. Rossi, A.

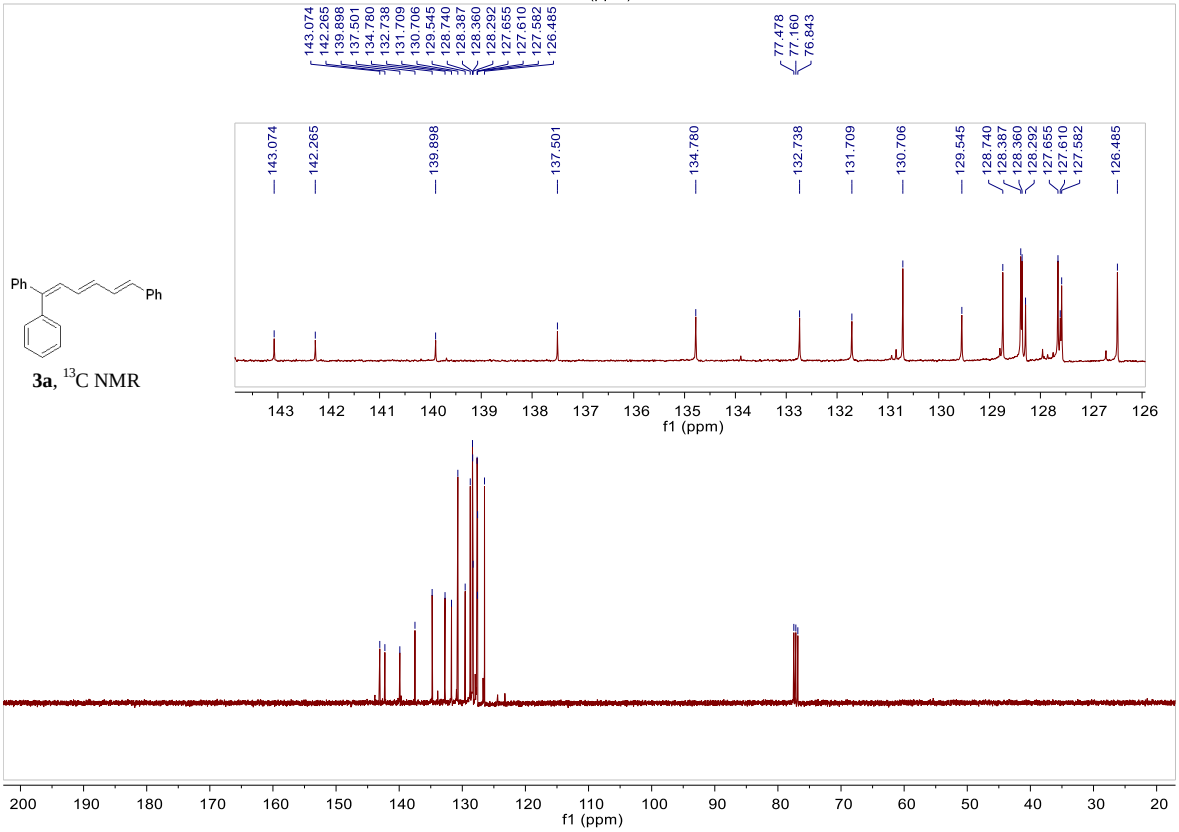
Carpita, A. Ribecai and L. Mannina, *Tetrahedron*, 2001, **57**, 2847. (g) M.-Y. Li, P.-B. Han, T.-J. Hu, D. Wei, G. Zhang, A.-J. Qin, C.-G. Feng, B. Tang and G.-Q. Lin, *iscience*, 2020, **23**, 100966.

(2) (a) N. Yasukawa, H. Yokoyama, M. Masuda, Y. Monguchi, H. Sajiki and Y. Sawama, *Green Chem.*, 2018, **20**, 1213. (b) R.J. Maza, E. Davenport, N. Miralles, J.J. Carbo and E. Fernandez *Org. Lett.*, 2019, **21**, 2251. (c) B.T. Sargent and E.J. Alexanian *J. Am. Chem. Soc.*, 2017, **139**, 12438.

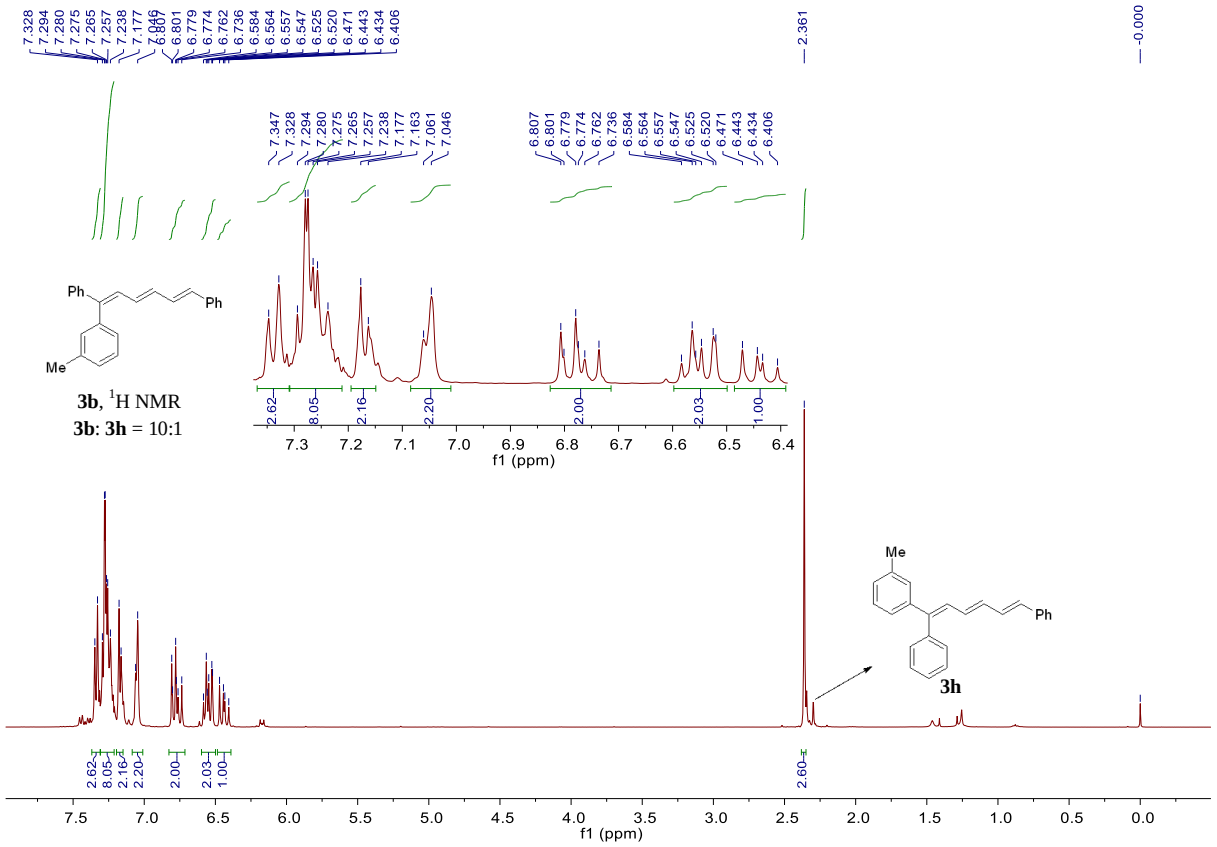
7. ^{1}H, ^{13}C, and ^{19}F NMR Spectra of Compounds

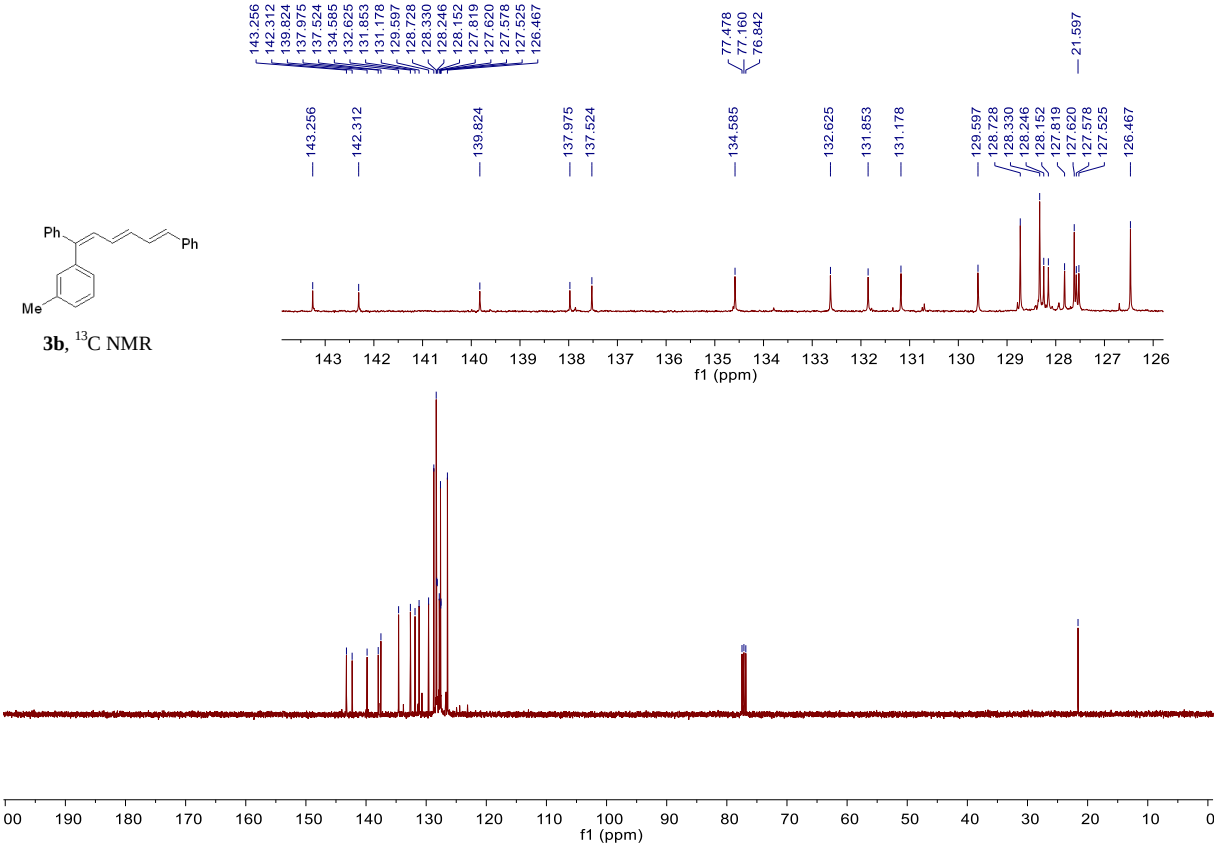


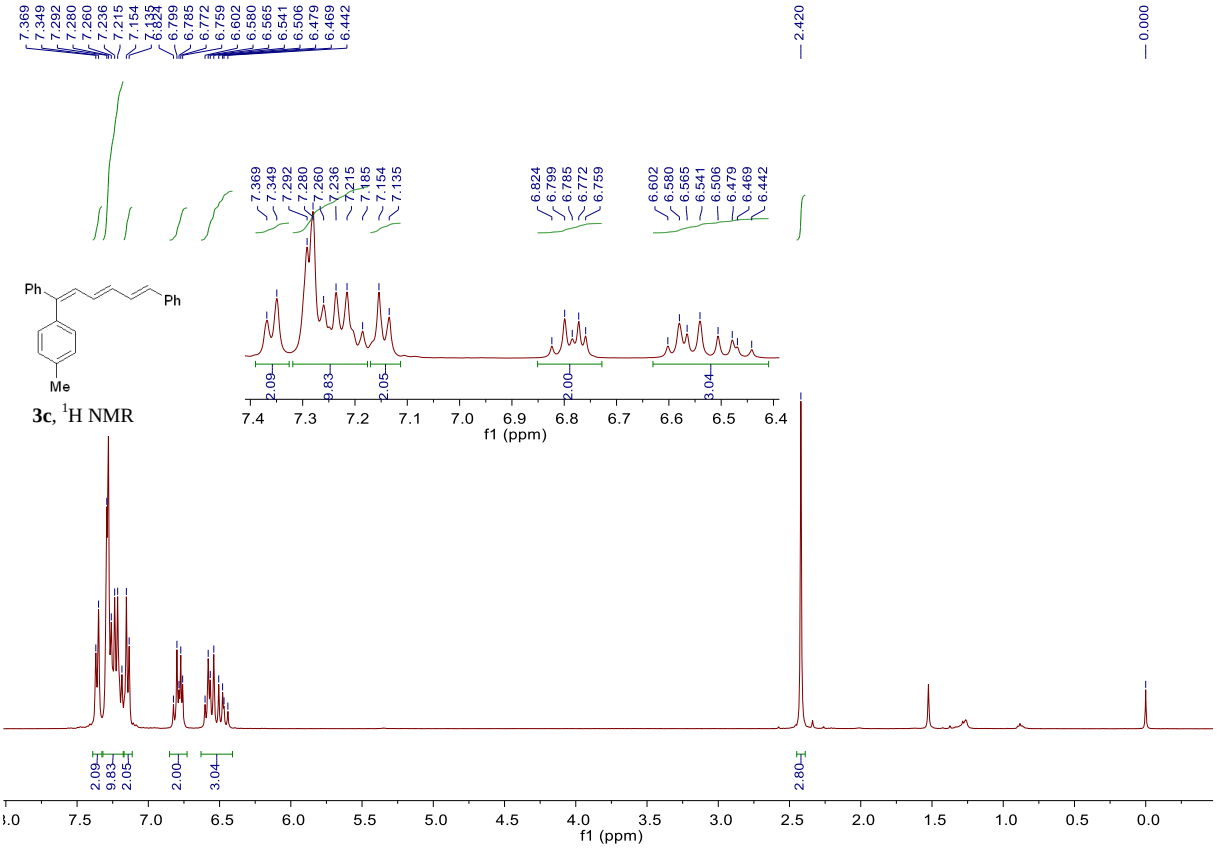
3a, ^{1}H NMR



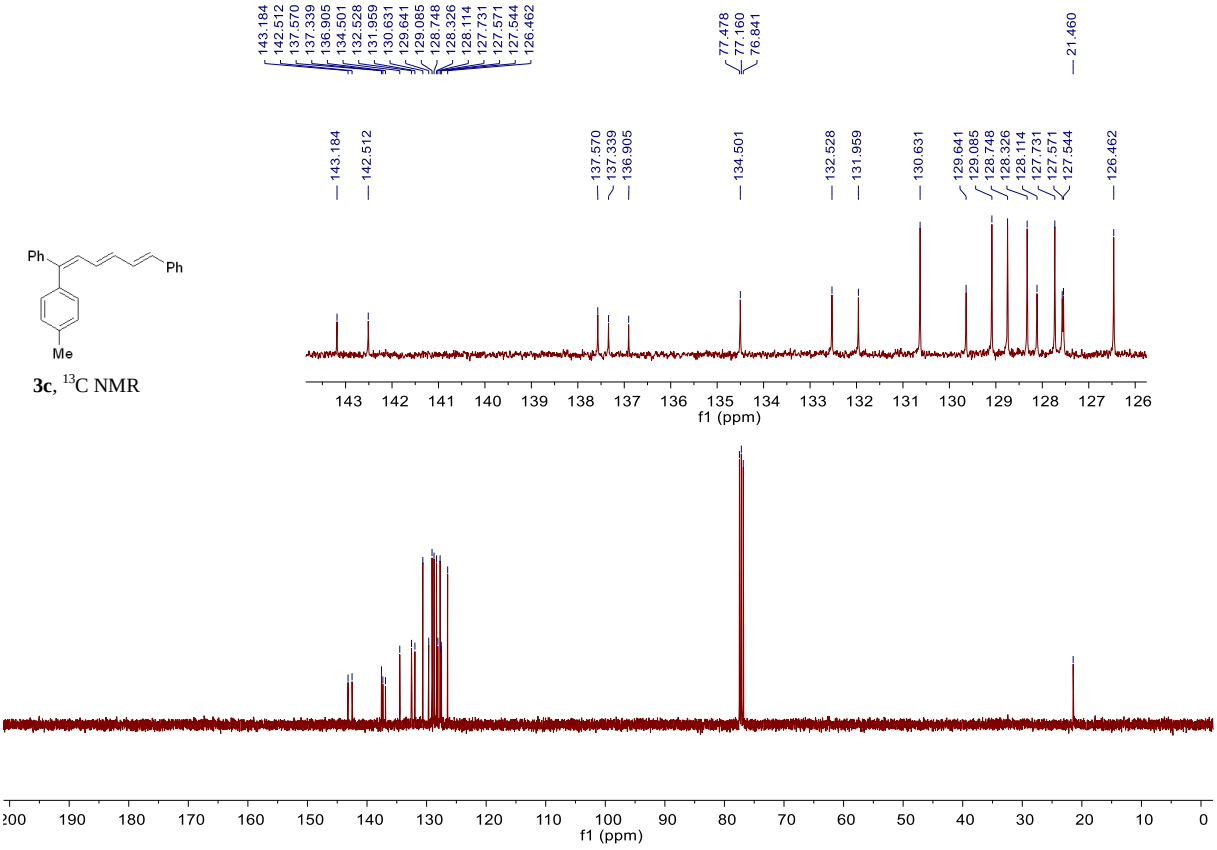
3a, ^{13}C NMR


Ph
Ph
Me
3b, 1H NMR
3b: 3h = 10:1
f1 (ppm)
Me
Ph
3h

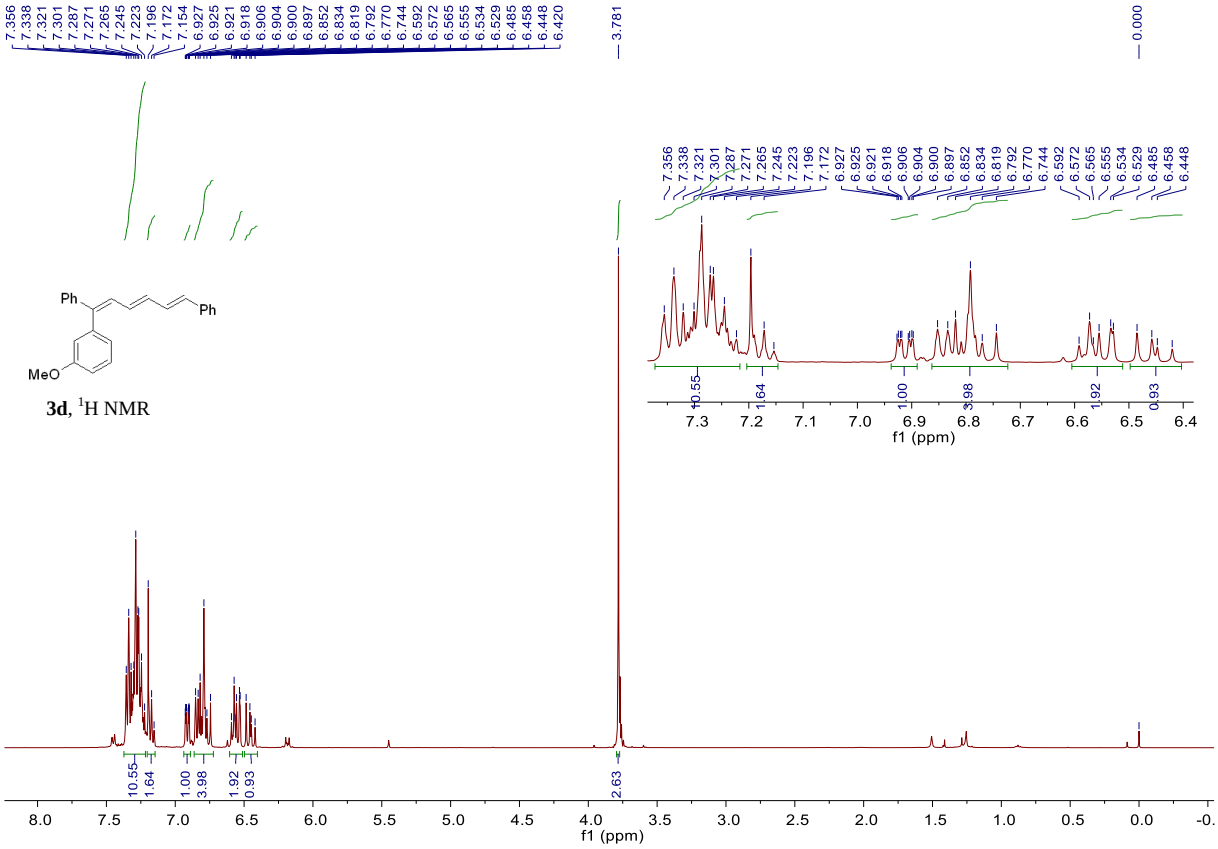

Ph
Ph
Me
3b, 13C NMR
f1 (ppm)



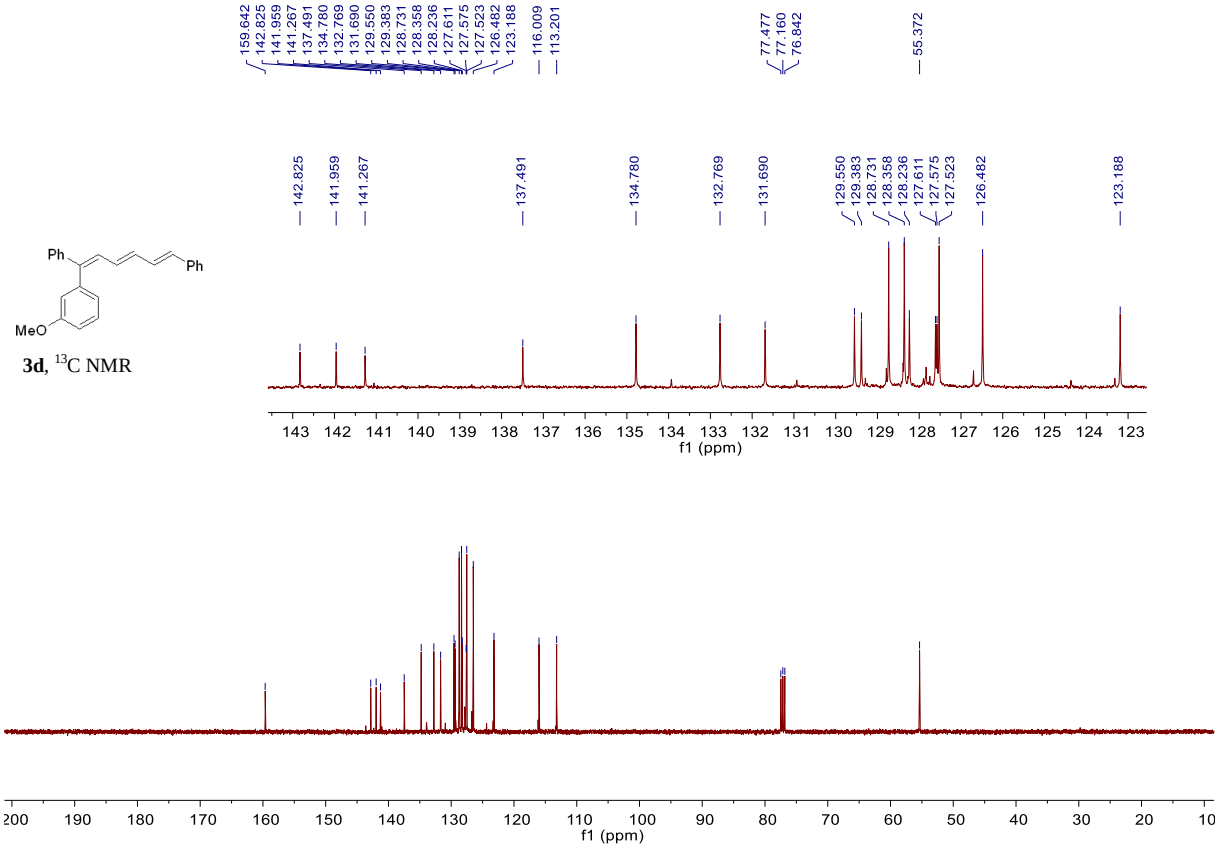
3c, ^{1}H NMR



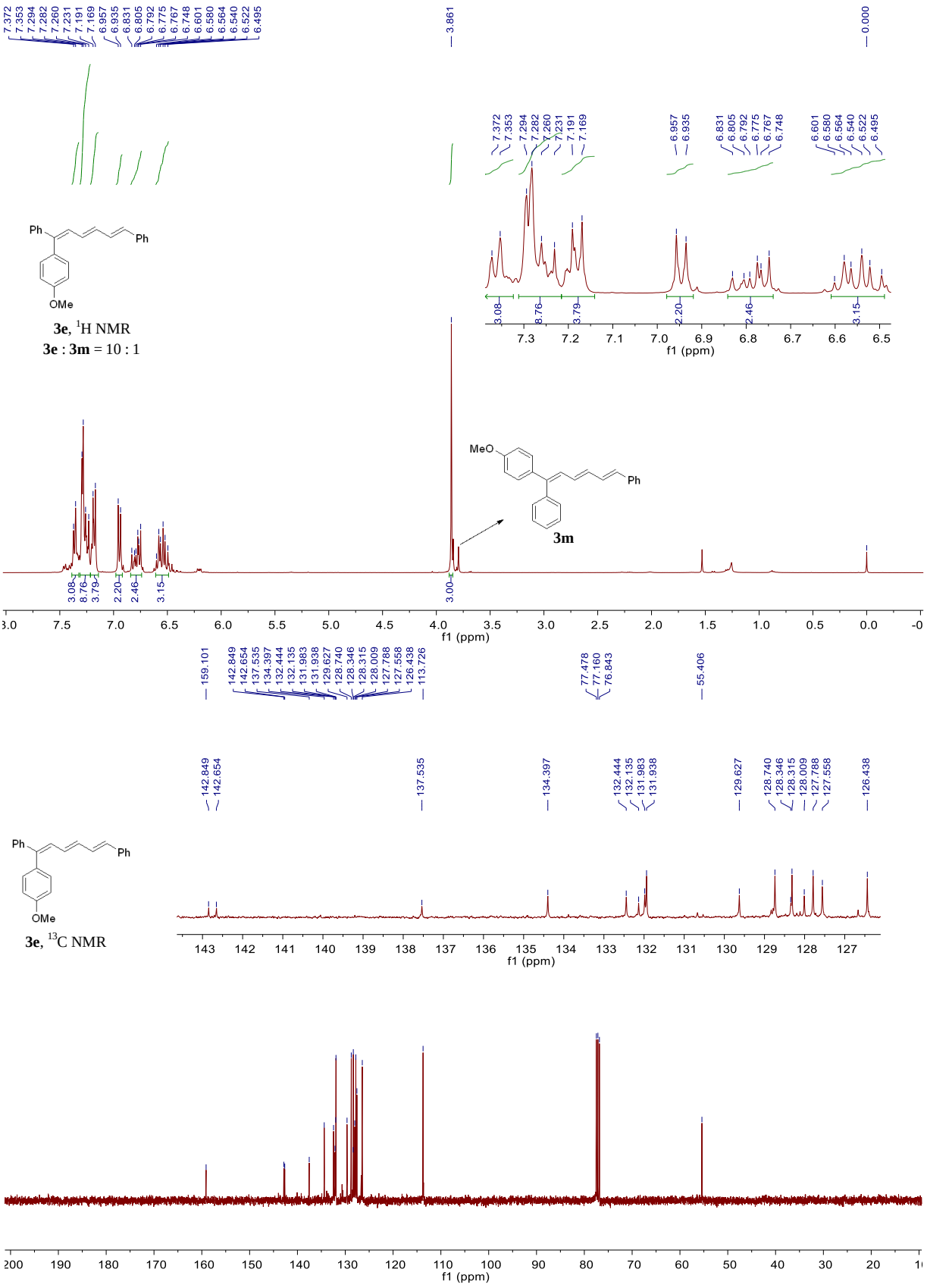
3c, ^{13}C NMR

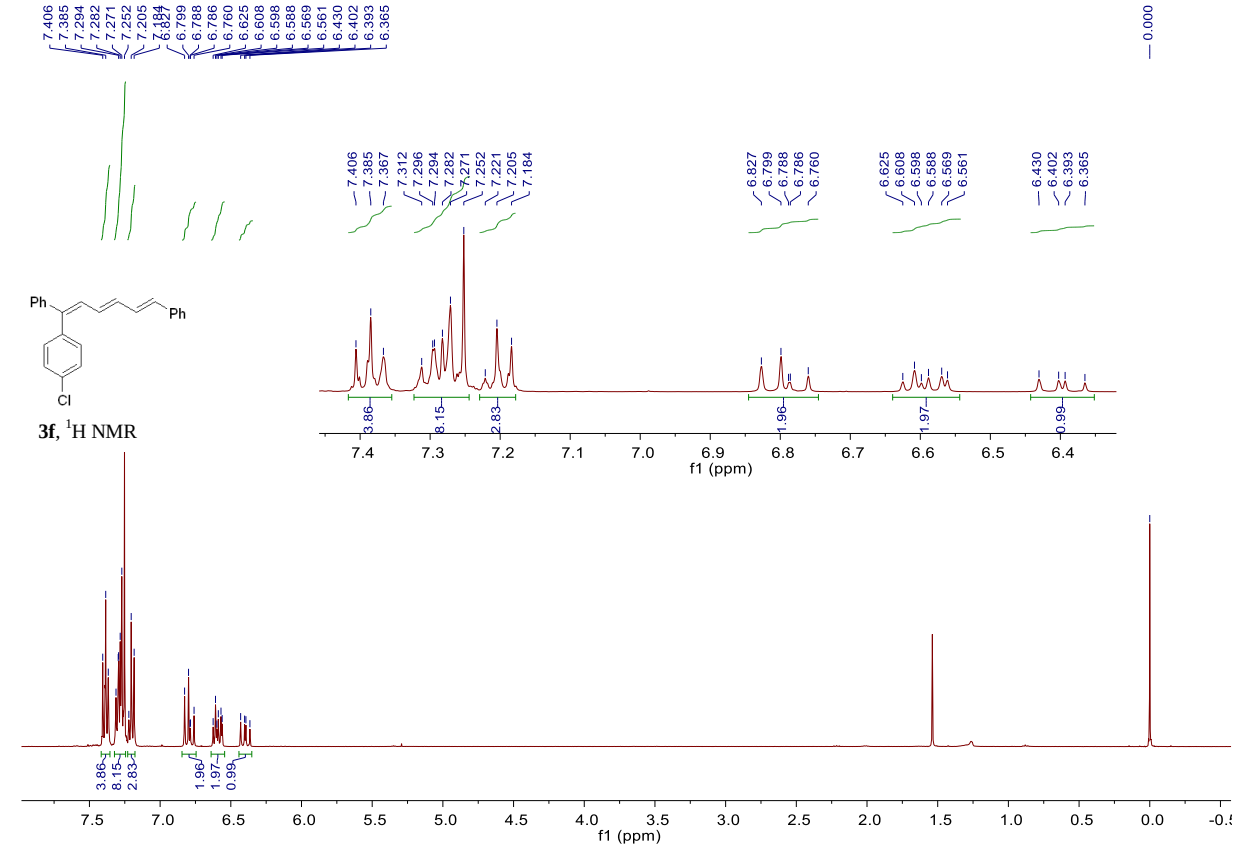


3d, ^{1}H NMR

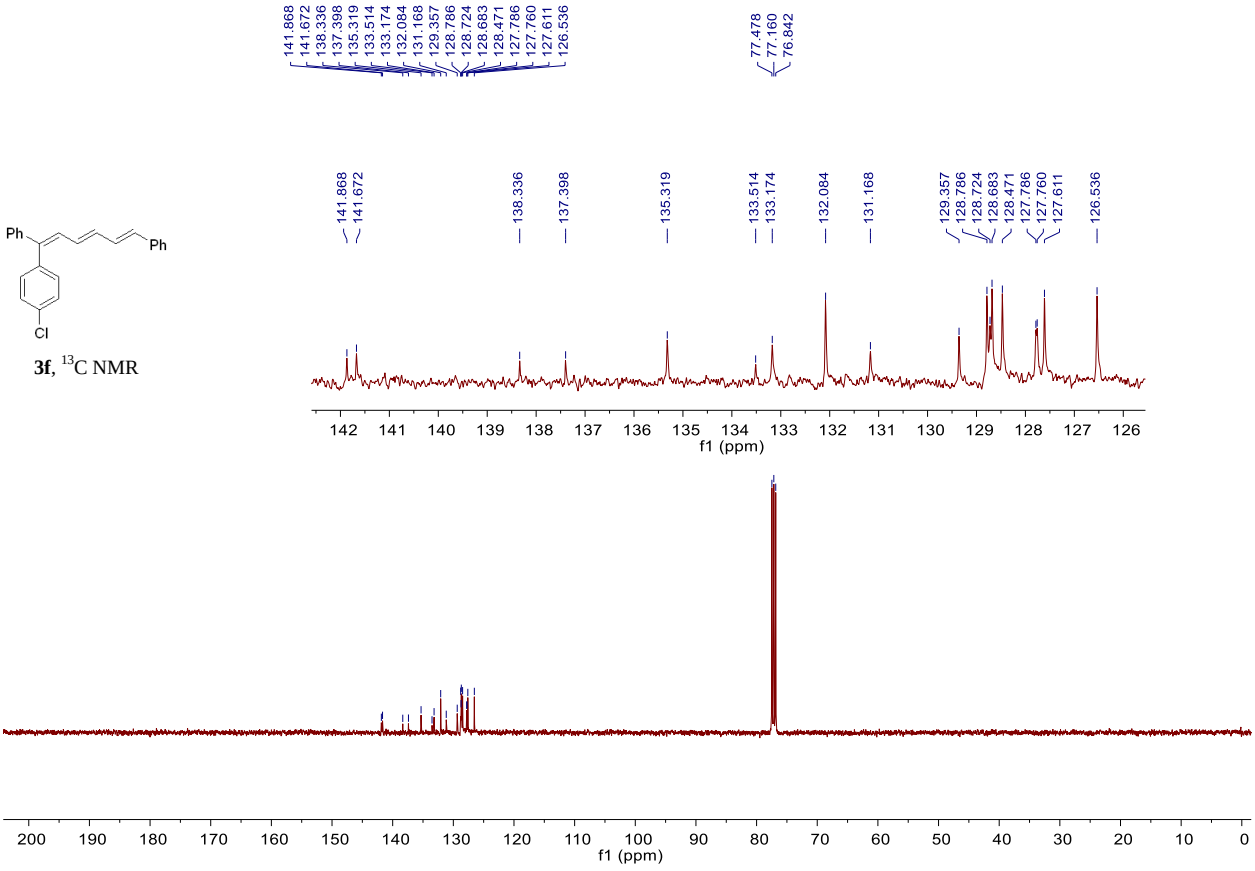


3d, ^{13}C NMR

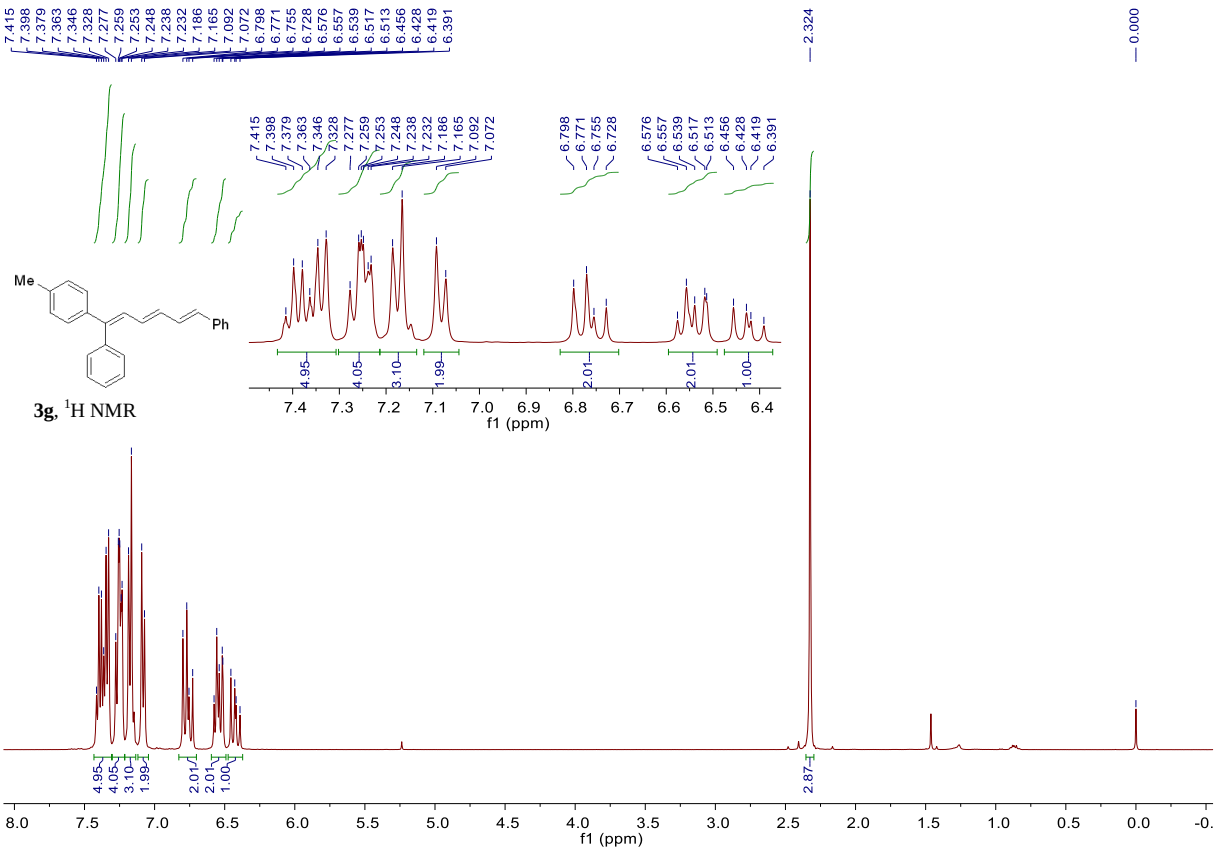

7.372
7.353
7.294
7.282
7.260
7.231
7.191
7.169
6.957
6.935
6.831
6.805
6.792
6.775
6.767
6.748
6.601
6.580
6.564
6.540
6.522
6.495
3.861
0.000
Ph
Ph
OMe
3e, 1H NMR
3e : 3m = 10 : 1
3.08
8.76
3.79
2.20
2.46
3.15
3.00
f1 (ppm)
MeO
Ph
3m
159.101
142.849
142.654
137.535
134.397
132.444
132.135
131.983
131.938
129.627
128.740
128.346
128.315
128.009
127.788
127.558
126.438
113.726
77.478
77.160
76.843
55.406
Ph
Ph
OMe
3e, 13C NMR
f1 (ppm)



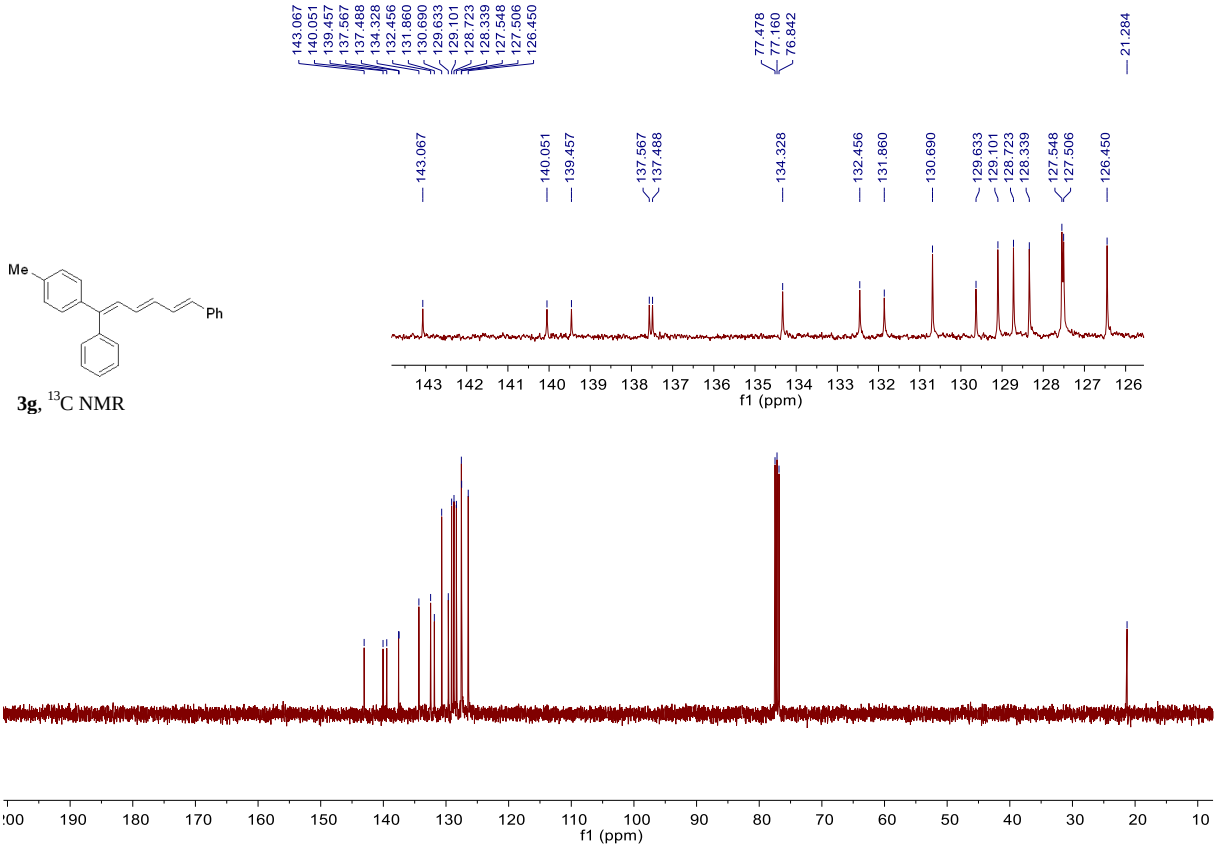
3f, ^{1}H NMR



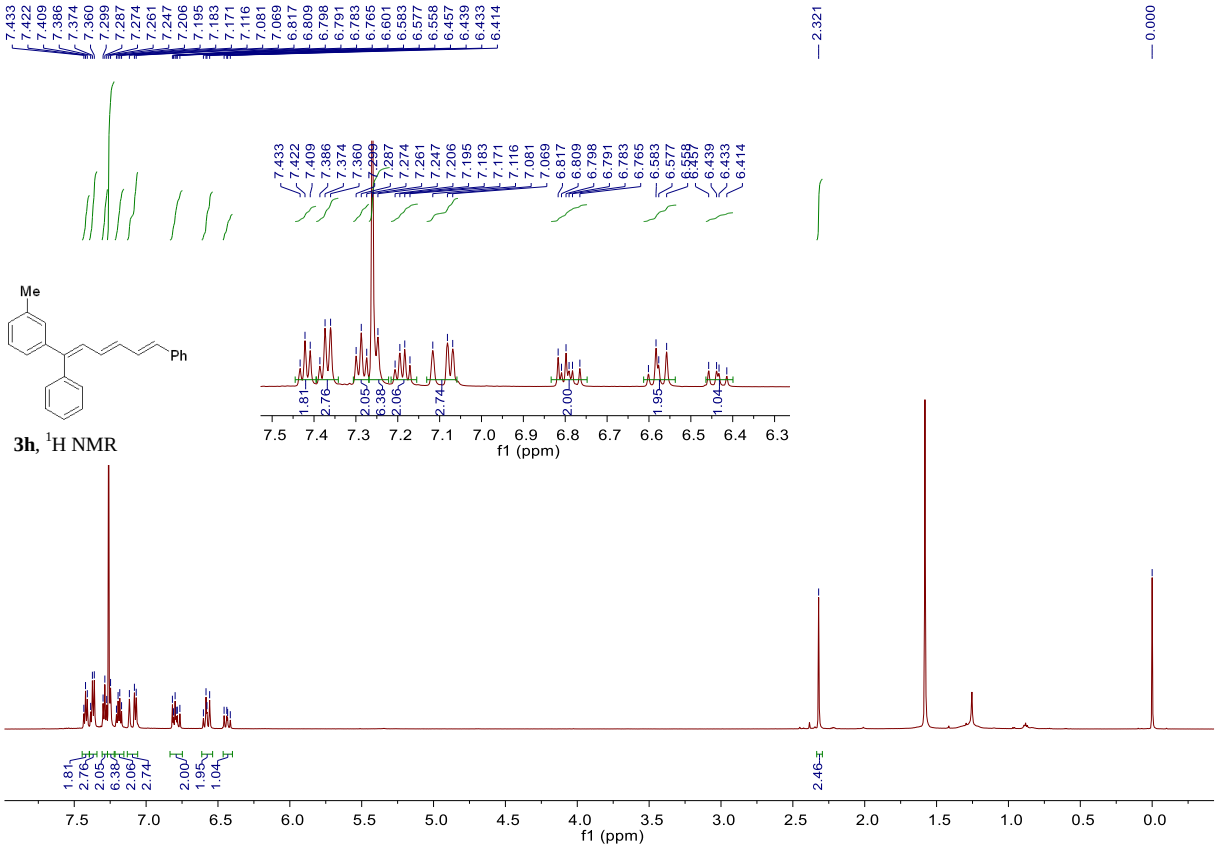
3f, ^{13}C NMR



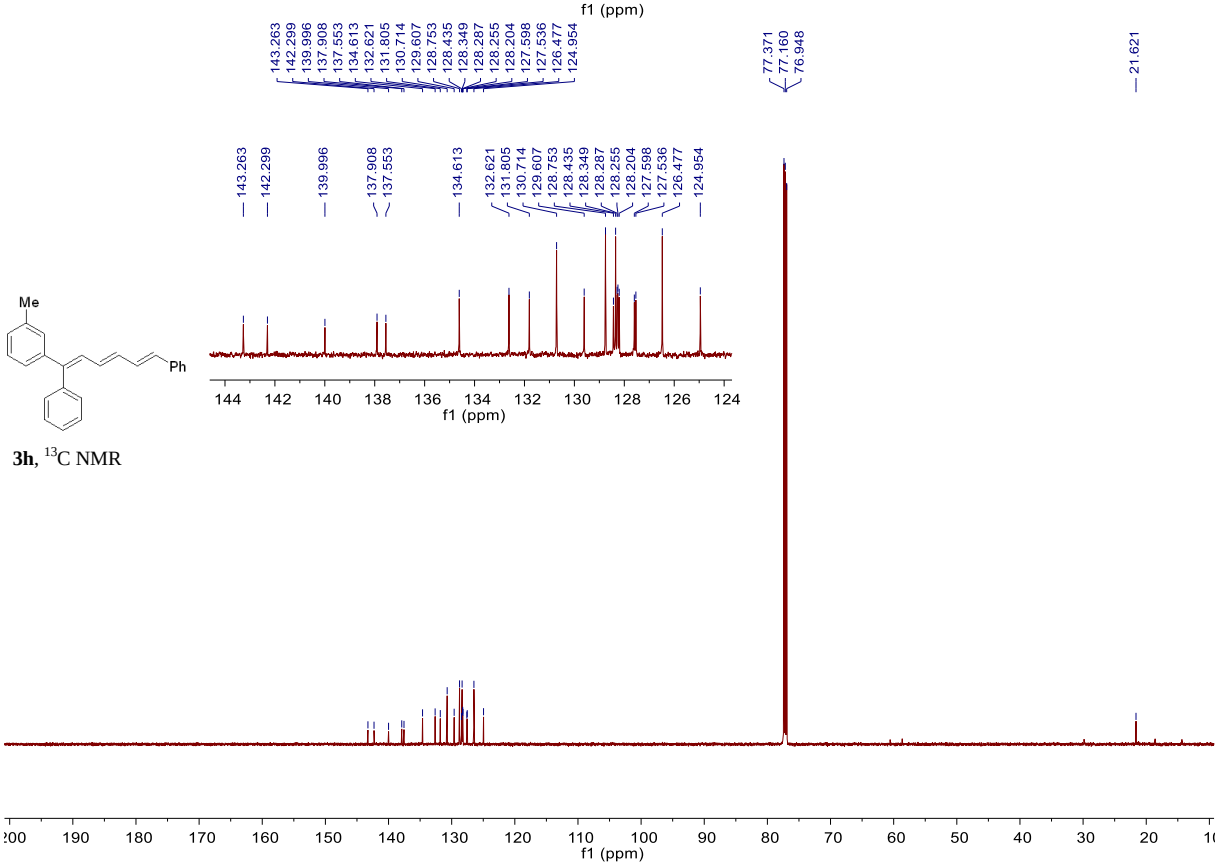
3g, ^{1}H NMR



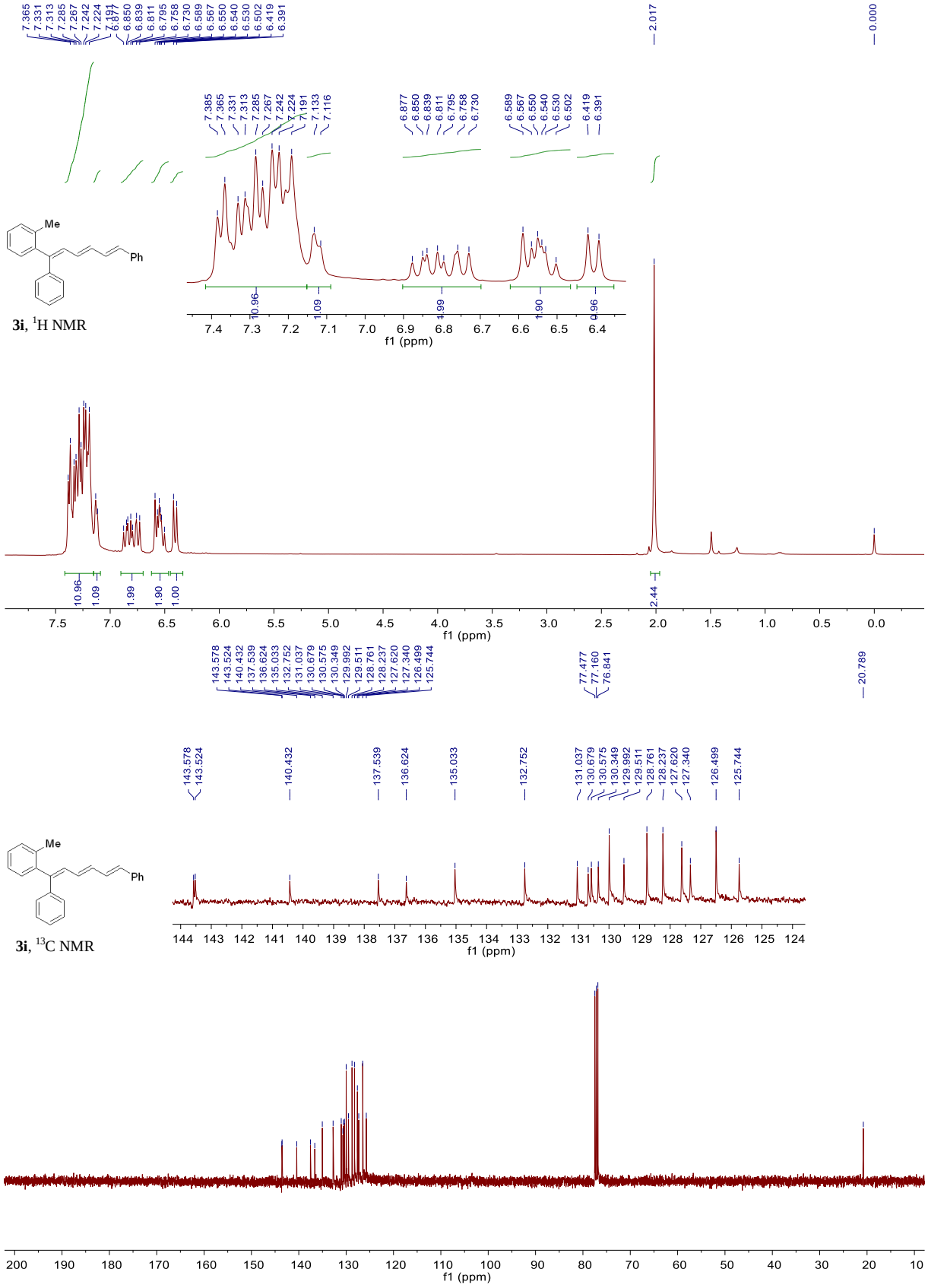
3g, ^{13}C NMR

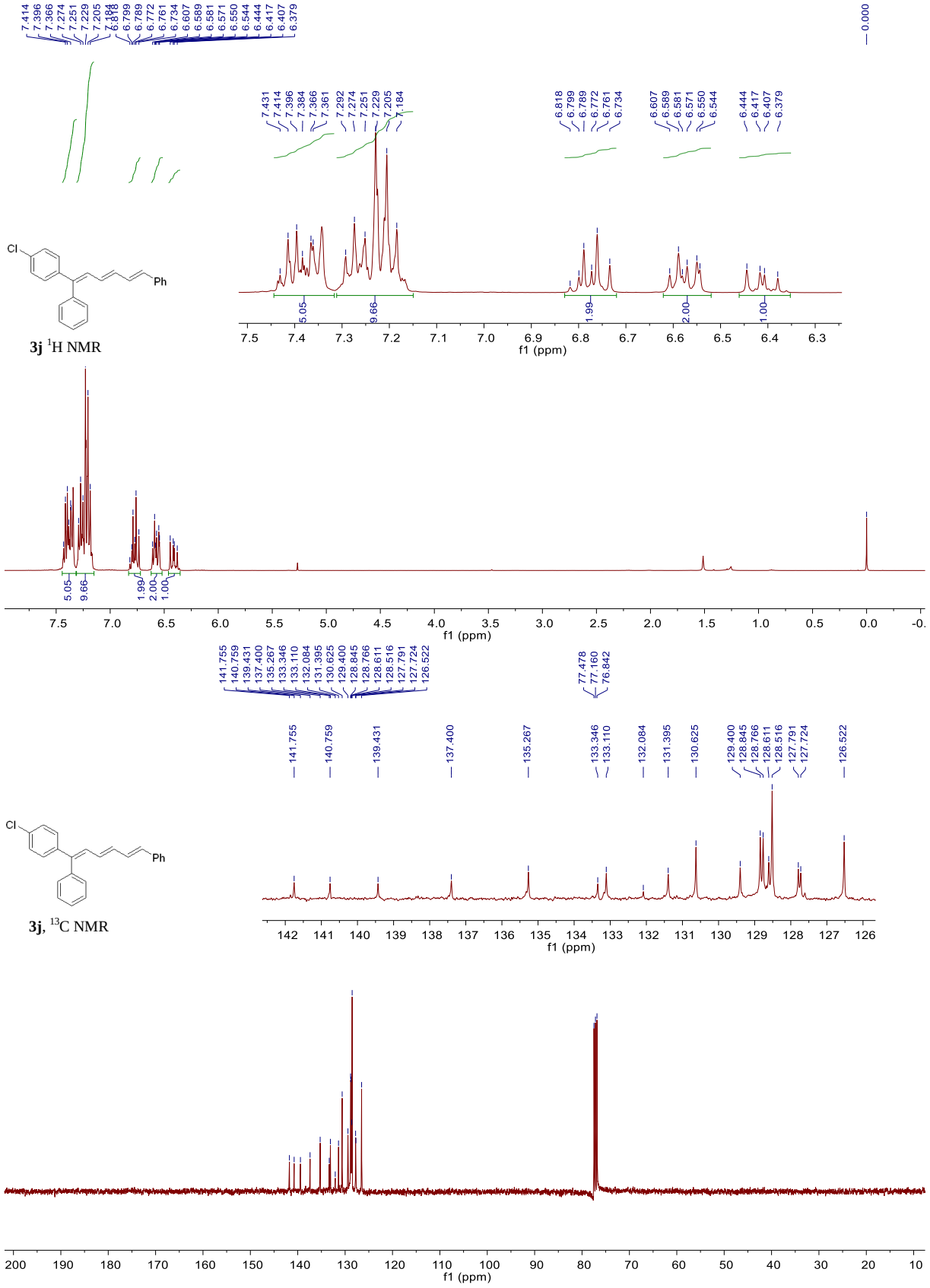


3h, ^{1}H NMR



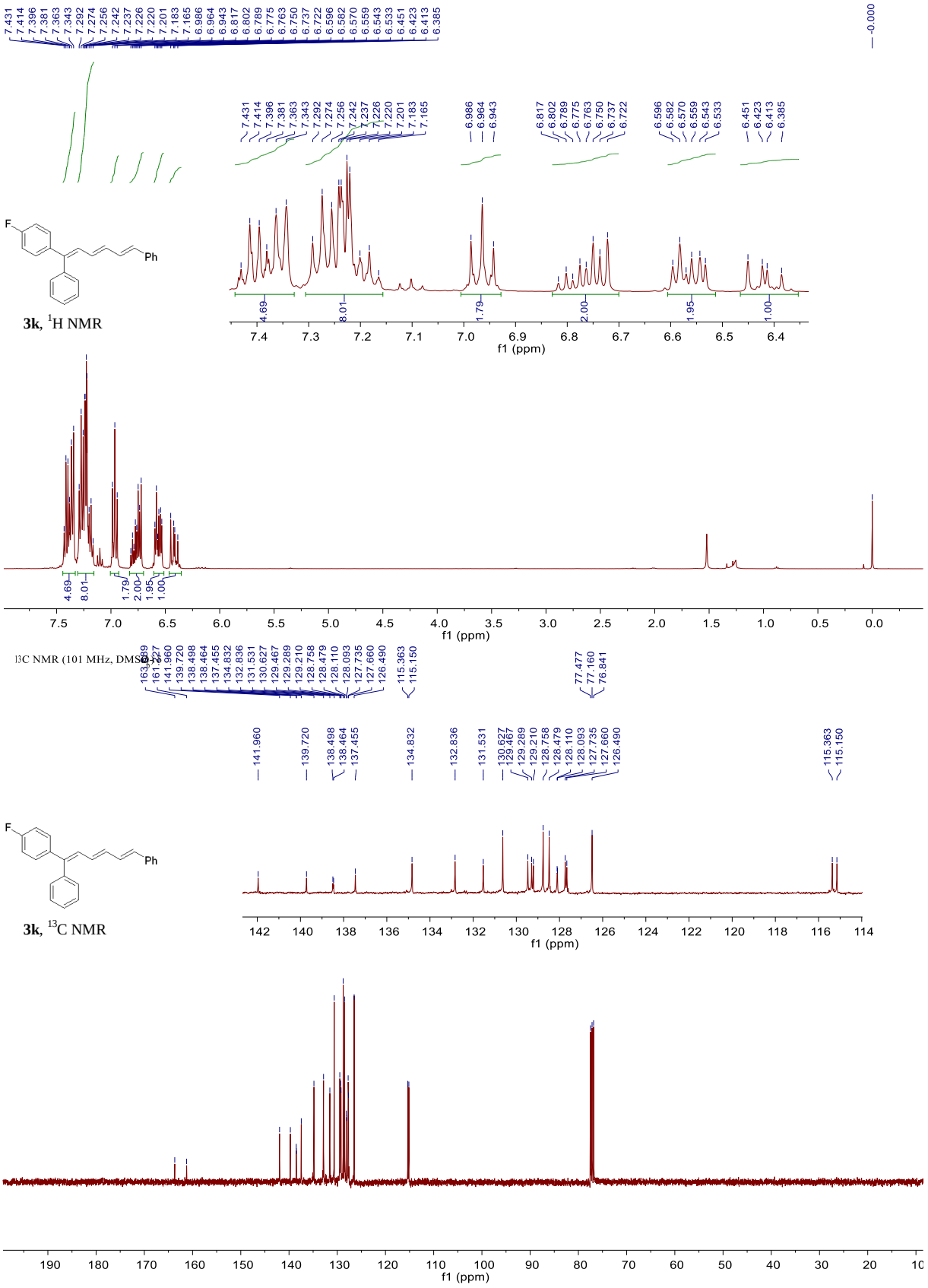
3h, ^{13}C NMR

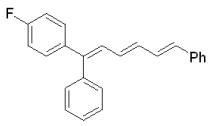

Me
Ph
3i, 1H NMR
f1 (ppm)
Me
Ph
3i, 13C NMR
f1 (ppm)
f1 (ppm)



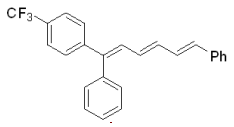
3j ^{1}H NMR

3j, ^{13}C NMR

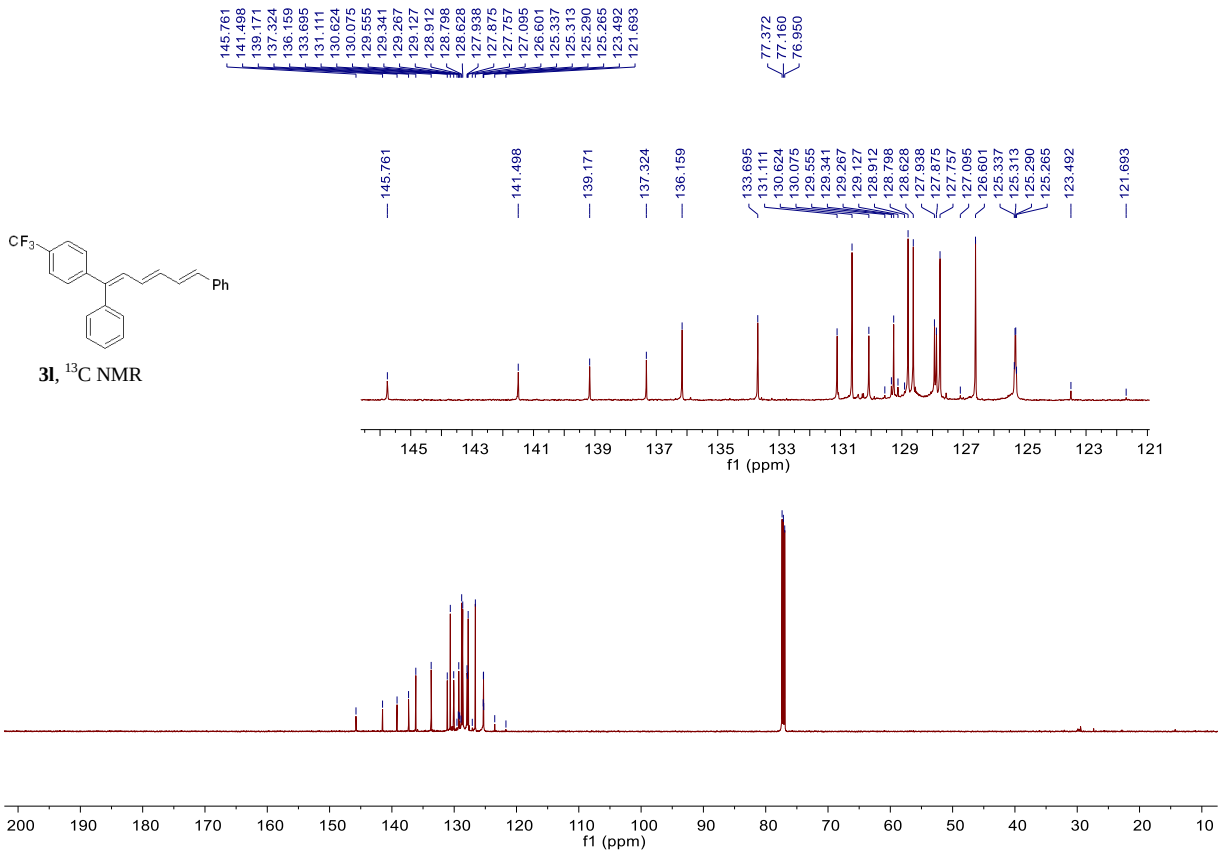

7.431
7.414
7.396
7.381
7.363
7.343
7.292
7.274
7.256
7.242
7.237
7.226
7.220
7.201
7.183
7.165
6.986
6.964
6.943
6.817
6.802
6.789
6.775
6.763
6.750
6.737
6.722
6.596
6.582
6.570
6.559
6.543
6.533
6.451
6.423
6.413
6.385
-0.000
F
Ph
4.69
8.01
1.79
2.00
1.95
1.00
f1 (ppm)
3k, 1H NMR
13C NMR (101 MHz, DMSO-d6)
163.689
161.227
141.960
139.720
138.498
138.464
137.455
134.832
132.836
131.531
130.627
129.467
129.289
129.210
128.758
128.479
128.110
128.093
127.735
127.660
126.490
115.363
115.150
77.477
77.160
76.841
3k, 13C NMR



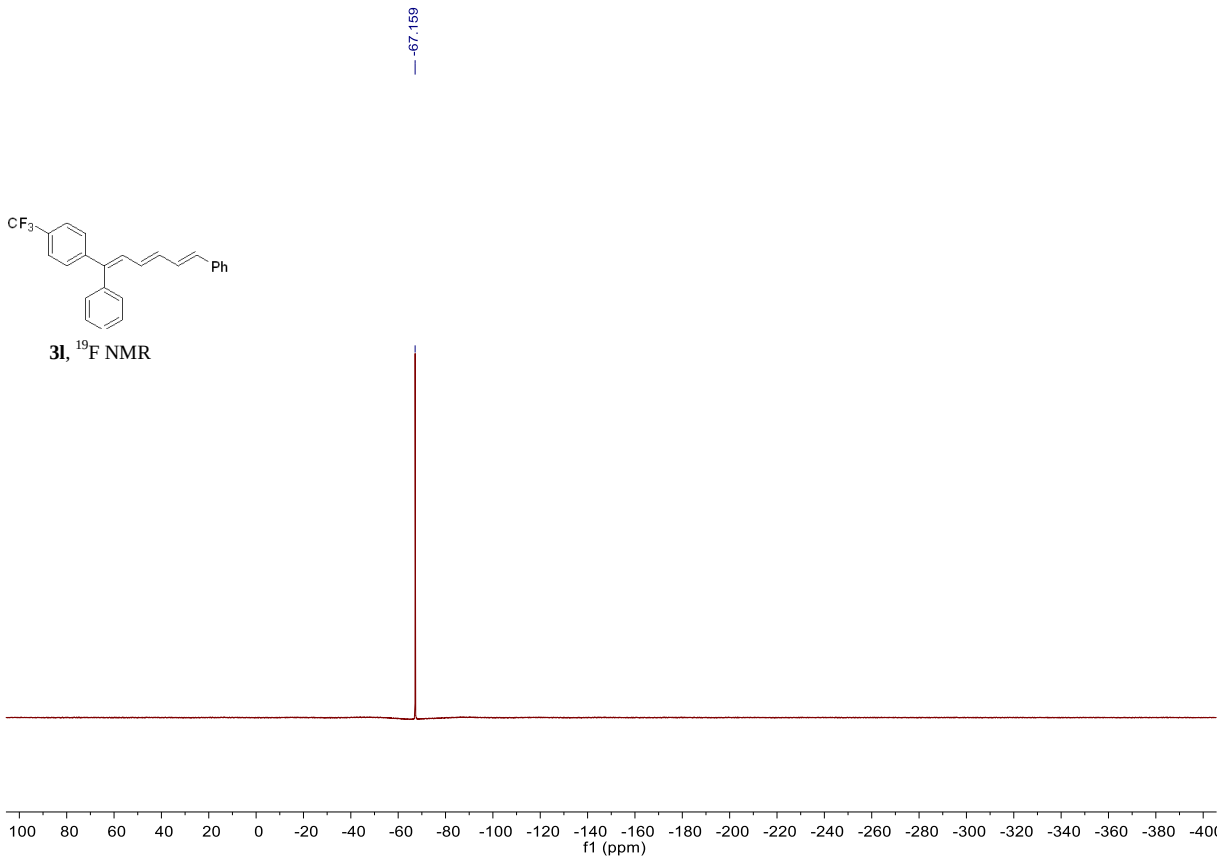
3k, ^{19}F NMR



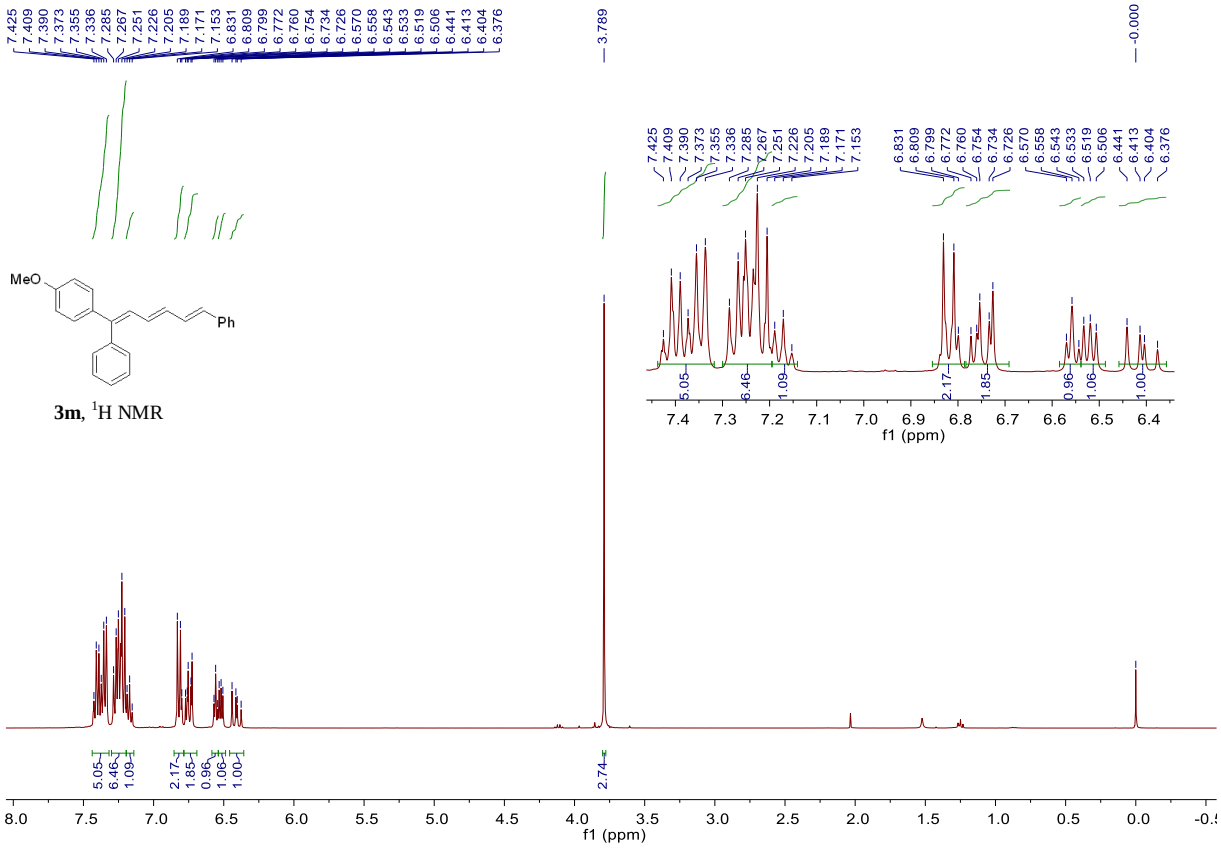
3l, ^{1}H NMR



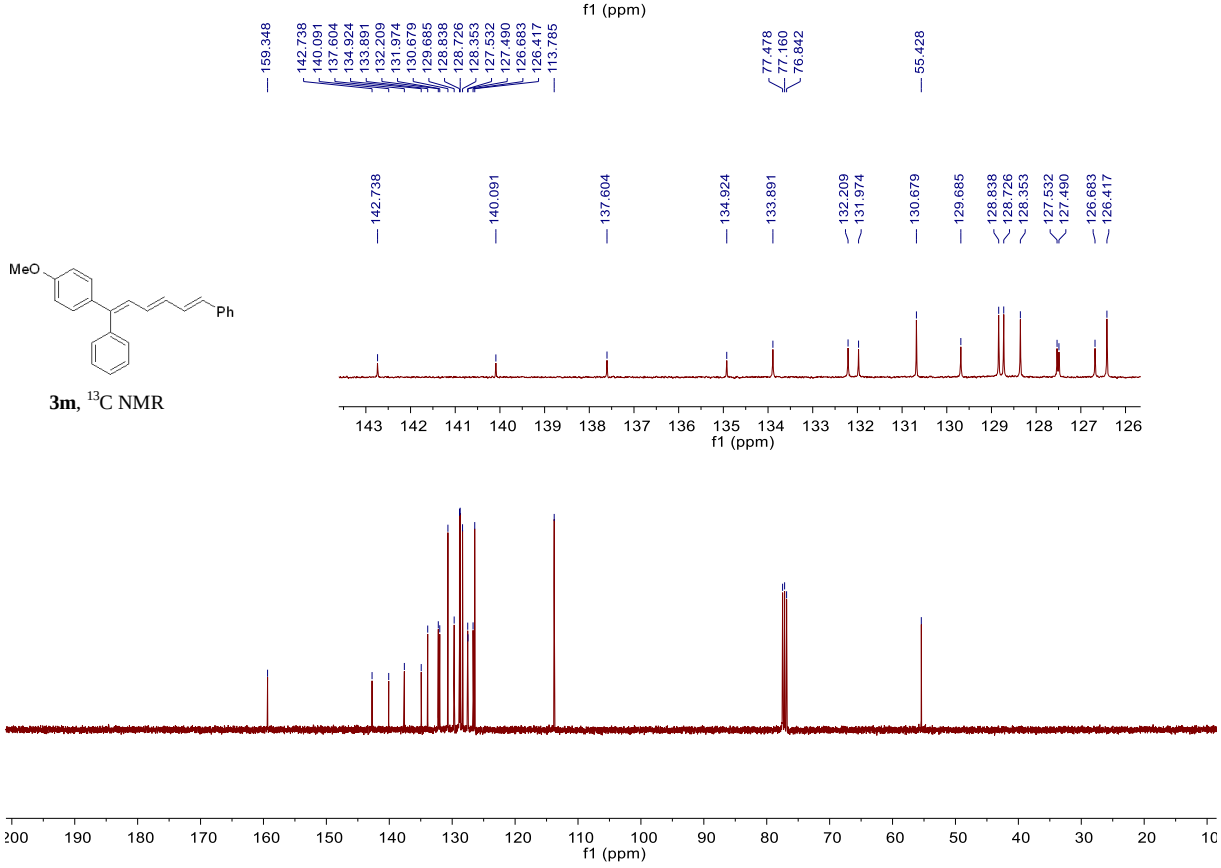
3l, ^{13}C NMR



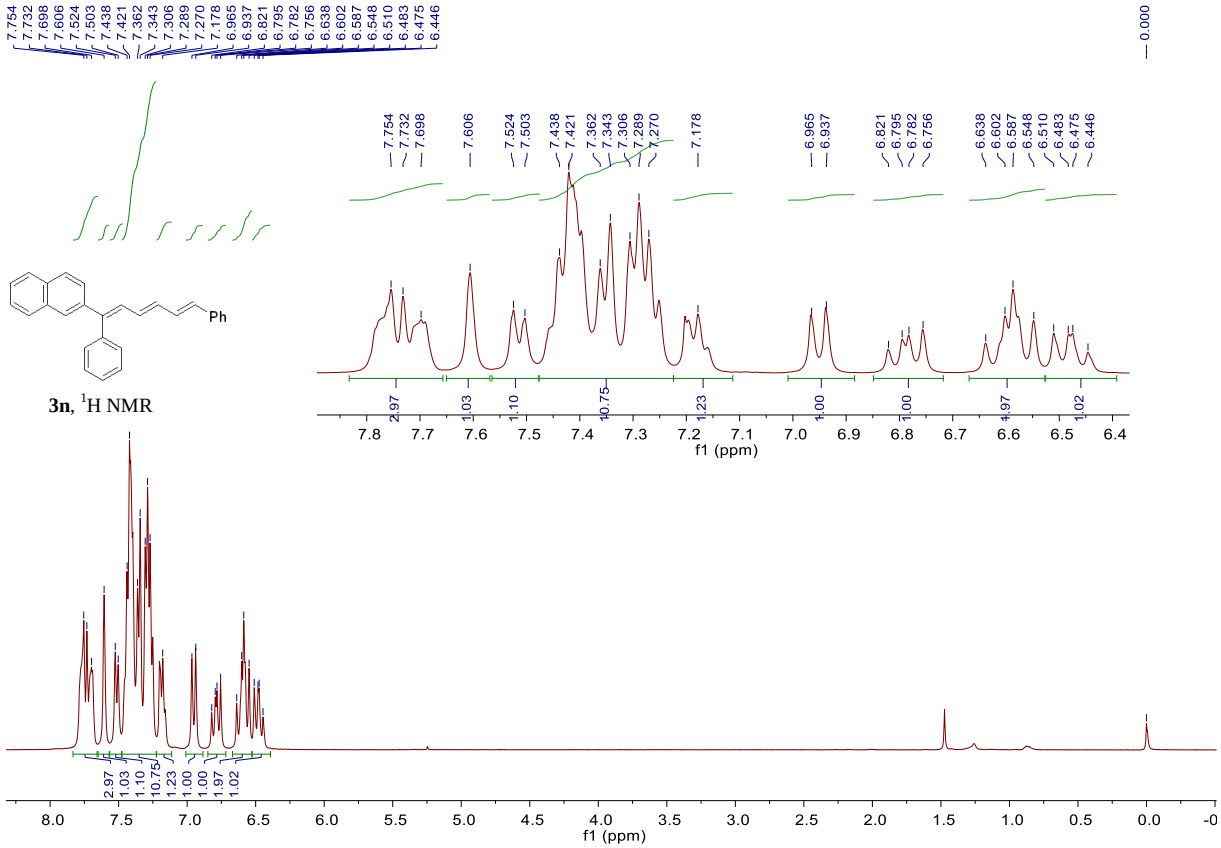
3l, ^{19}F NMR



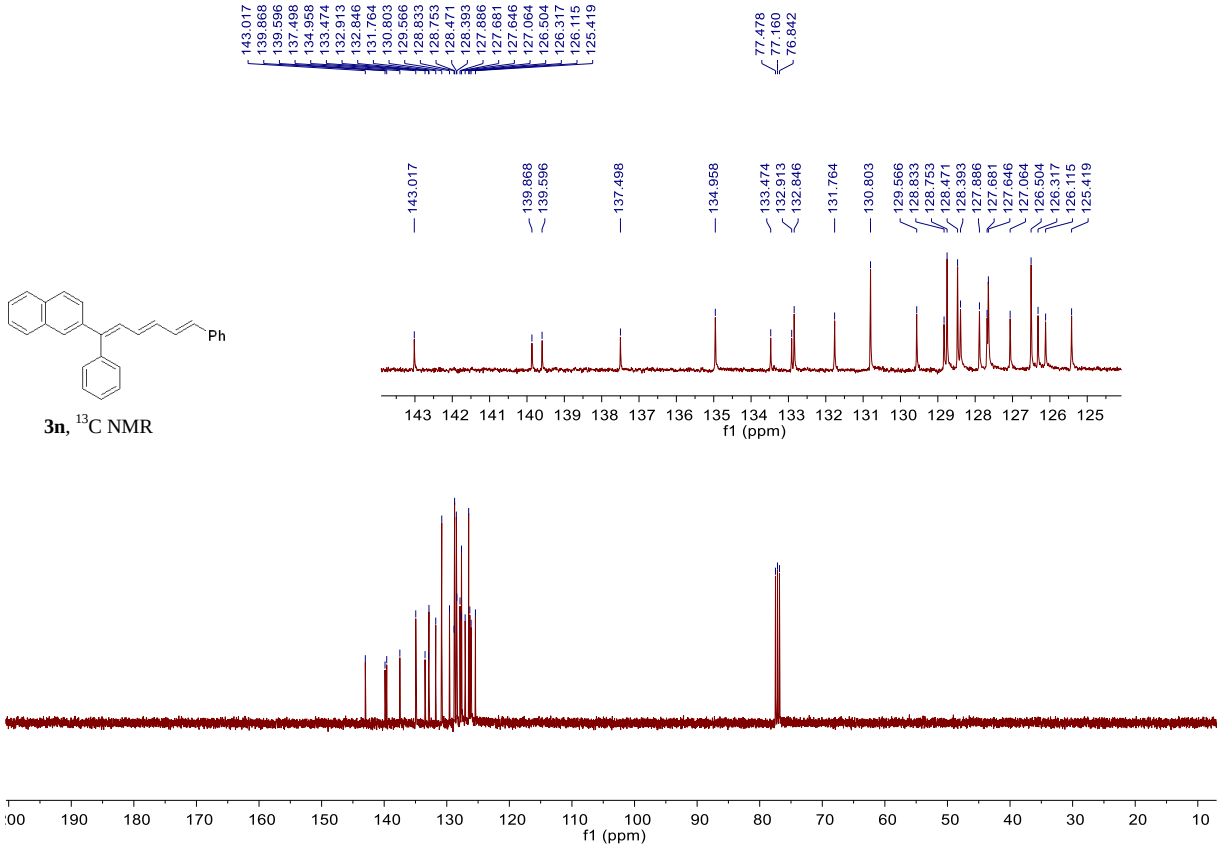
3m, ^{1}H NMR



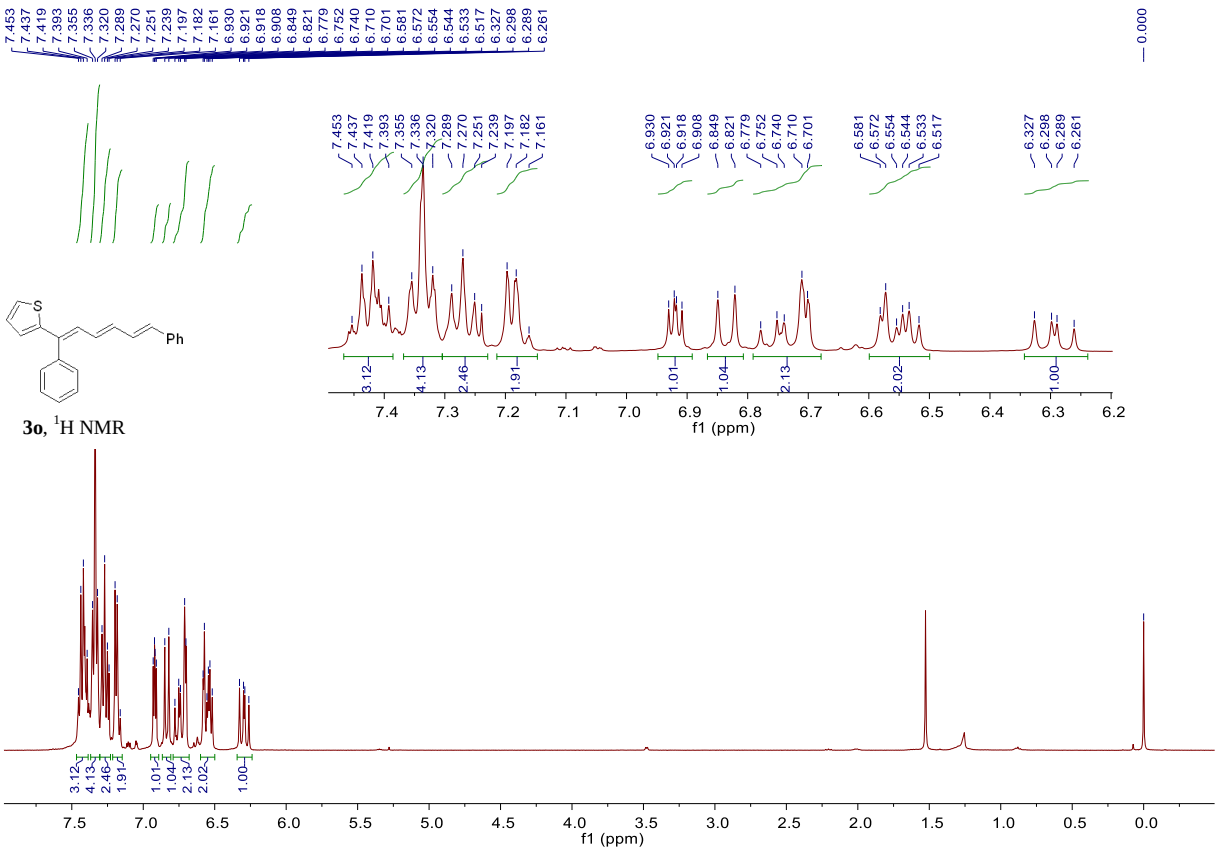
3m, ^{13}C NMR



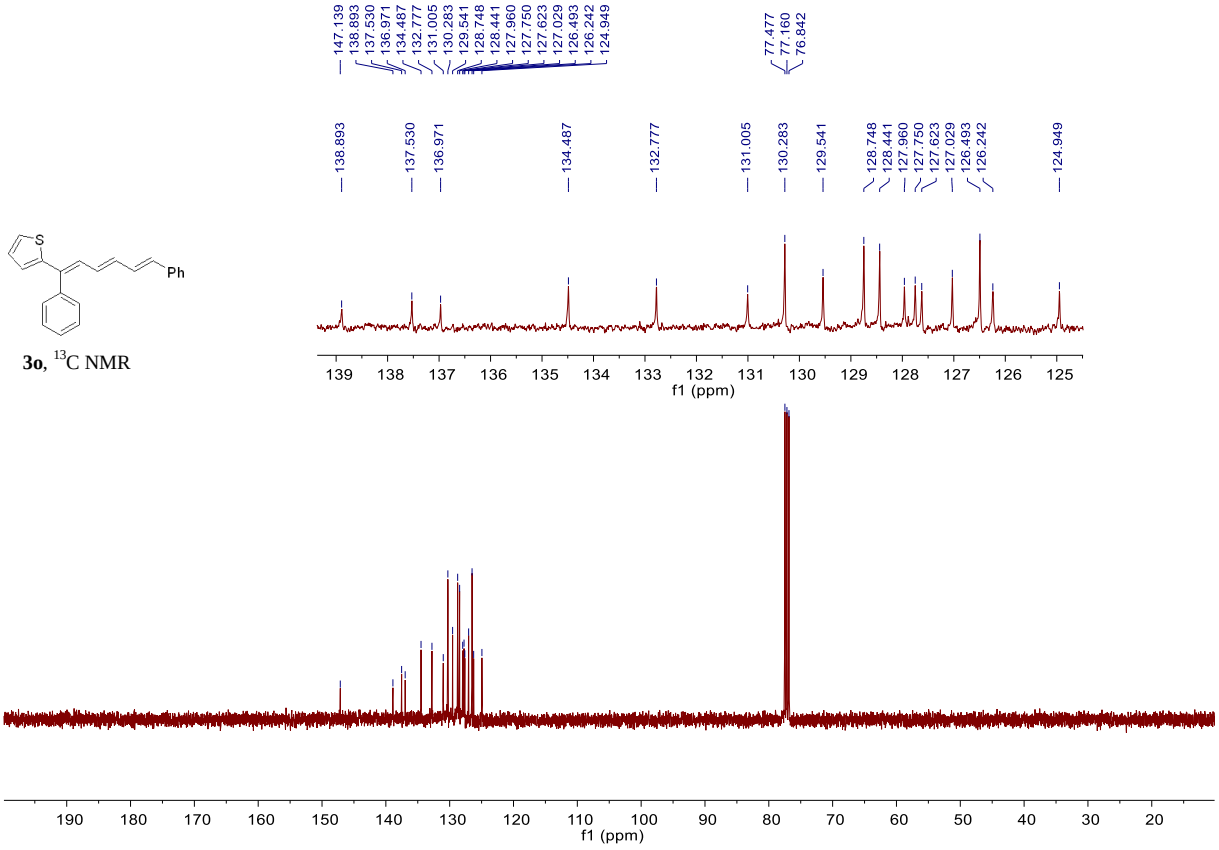
3n, ^{1}H NMR



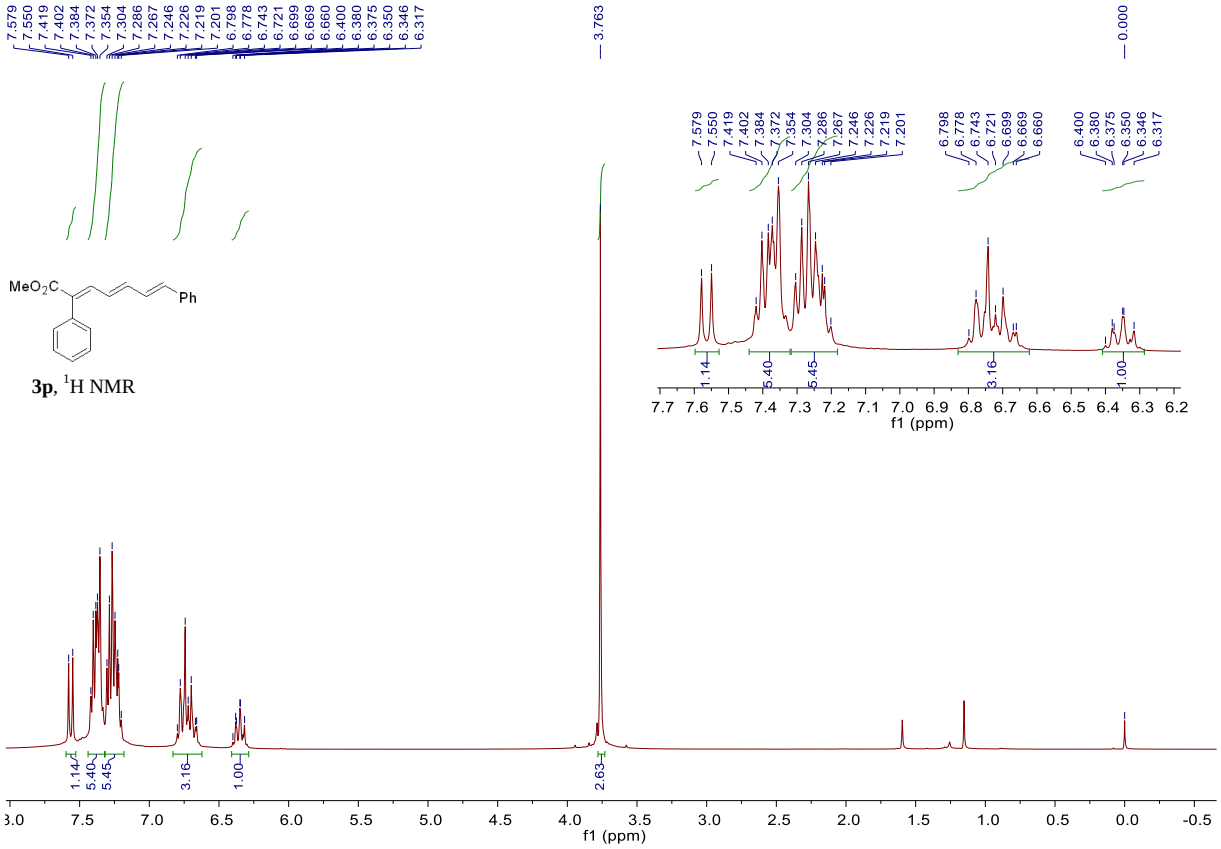
3n, ^{13}C NMR



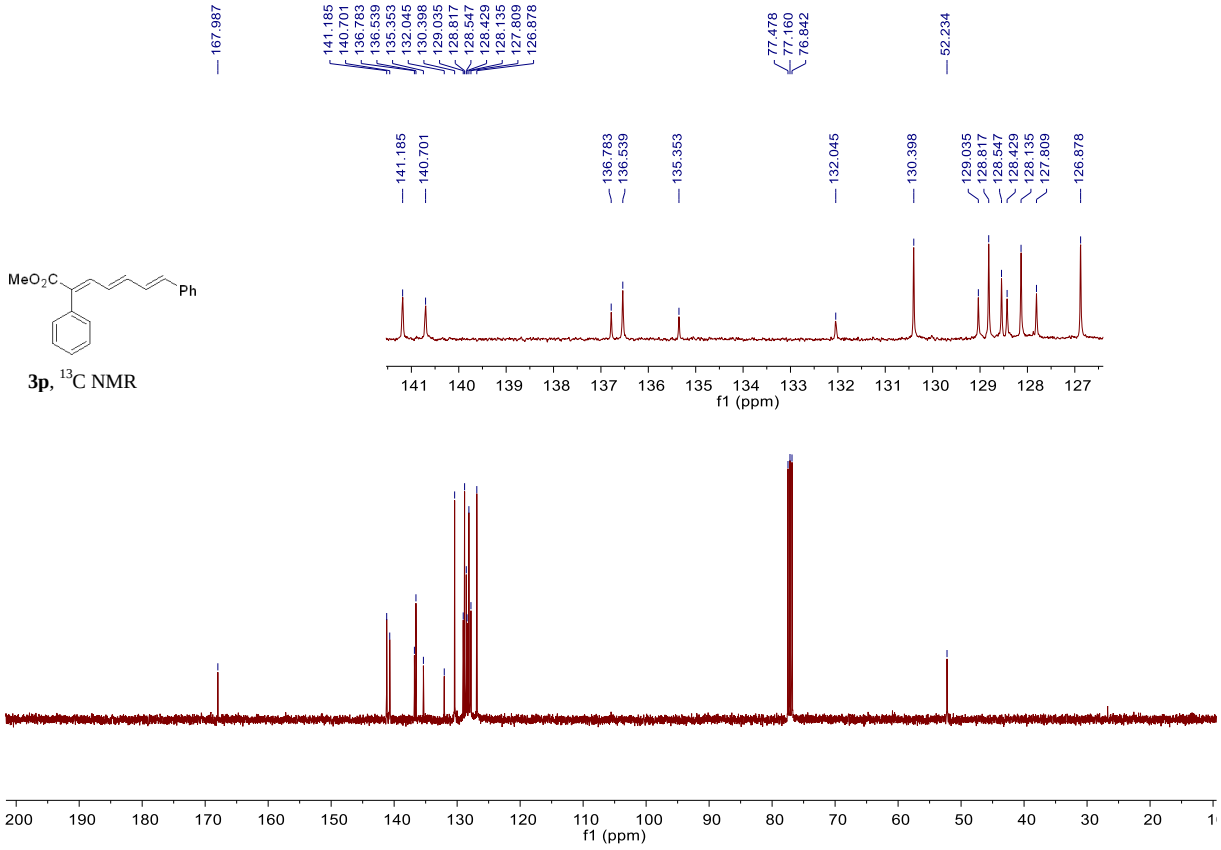
3o, ^{1}H NMR



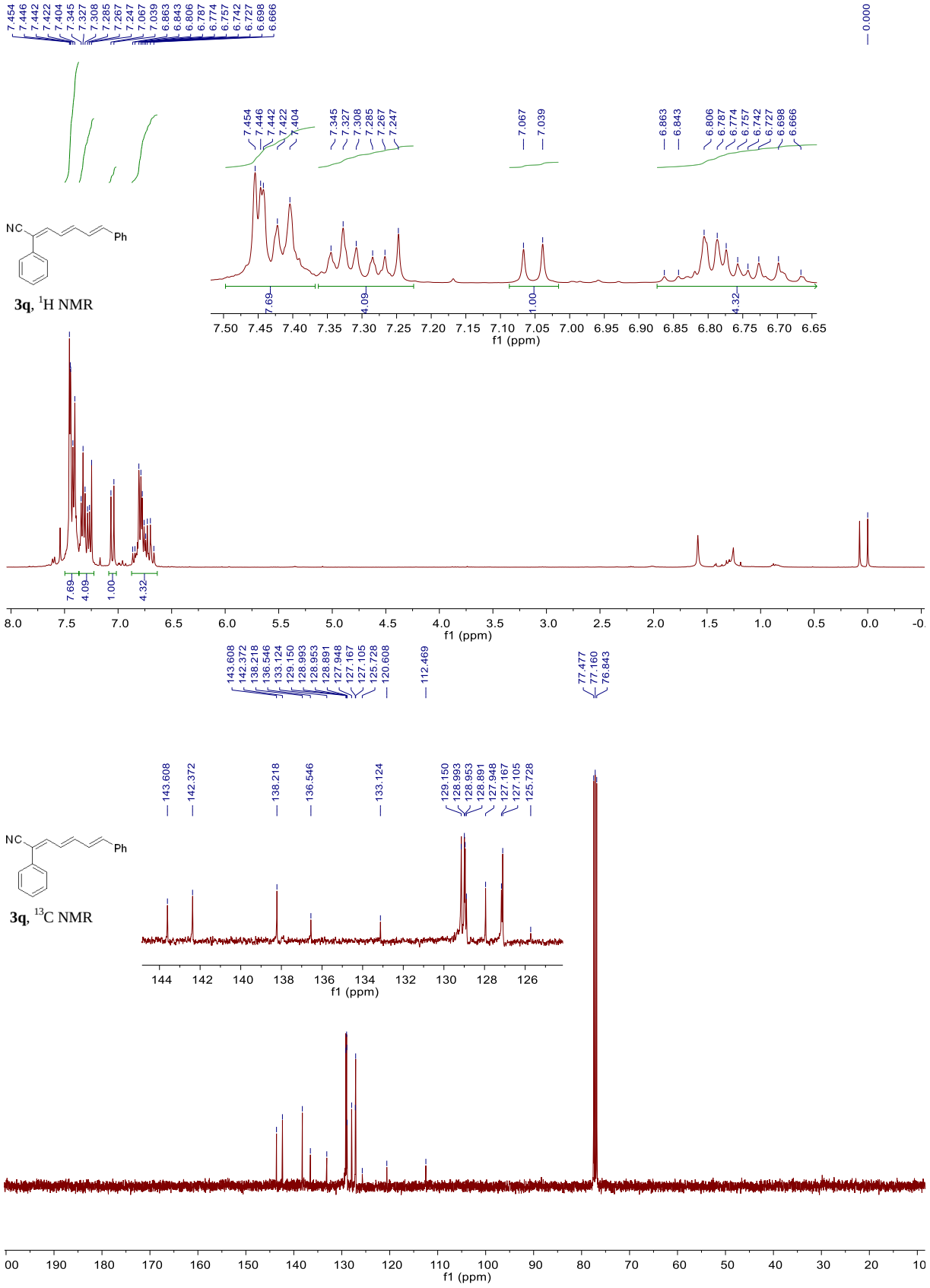
3o, ^{13}C NMR

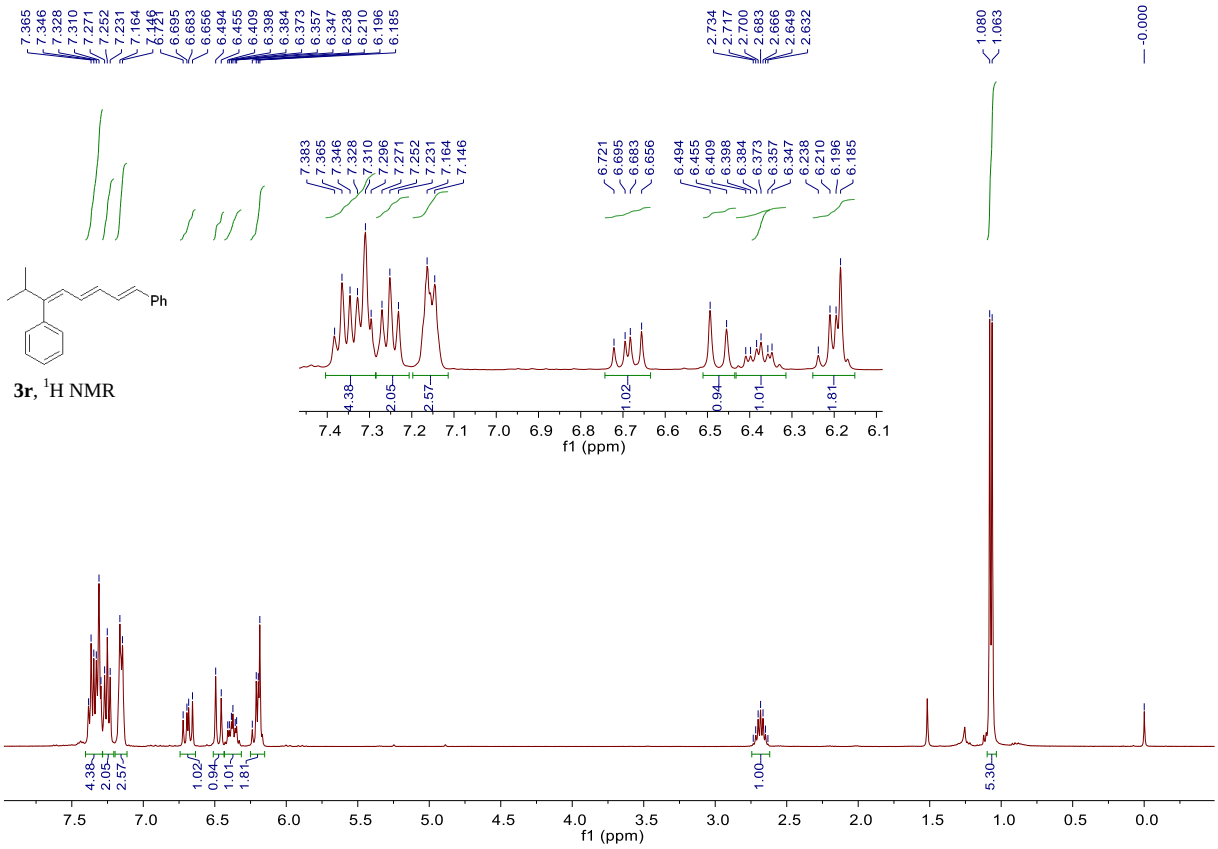


3p, ^{1}H NMR

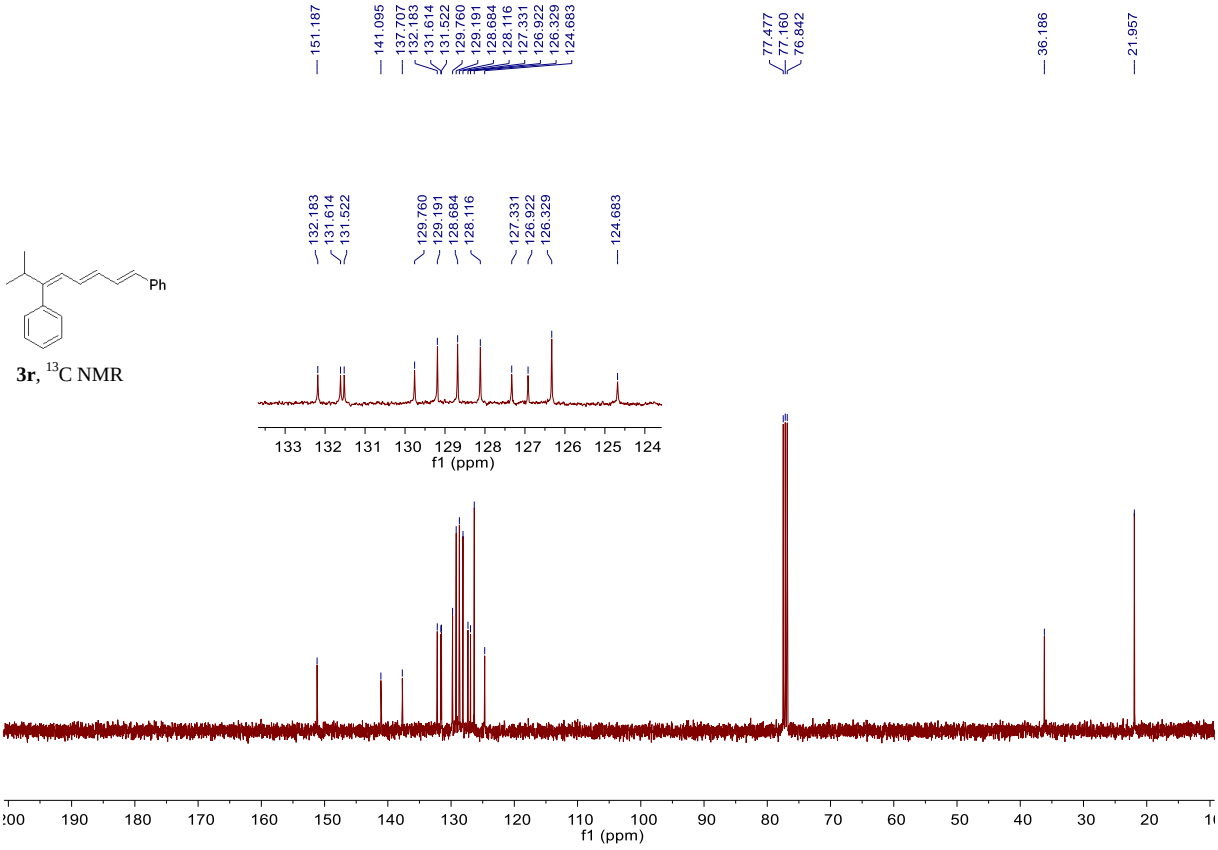


3p, ^{13}C NMR

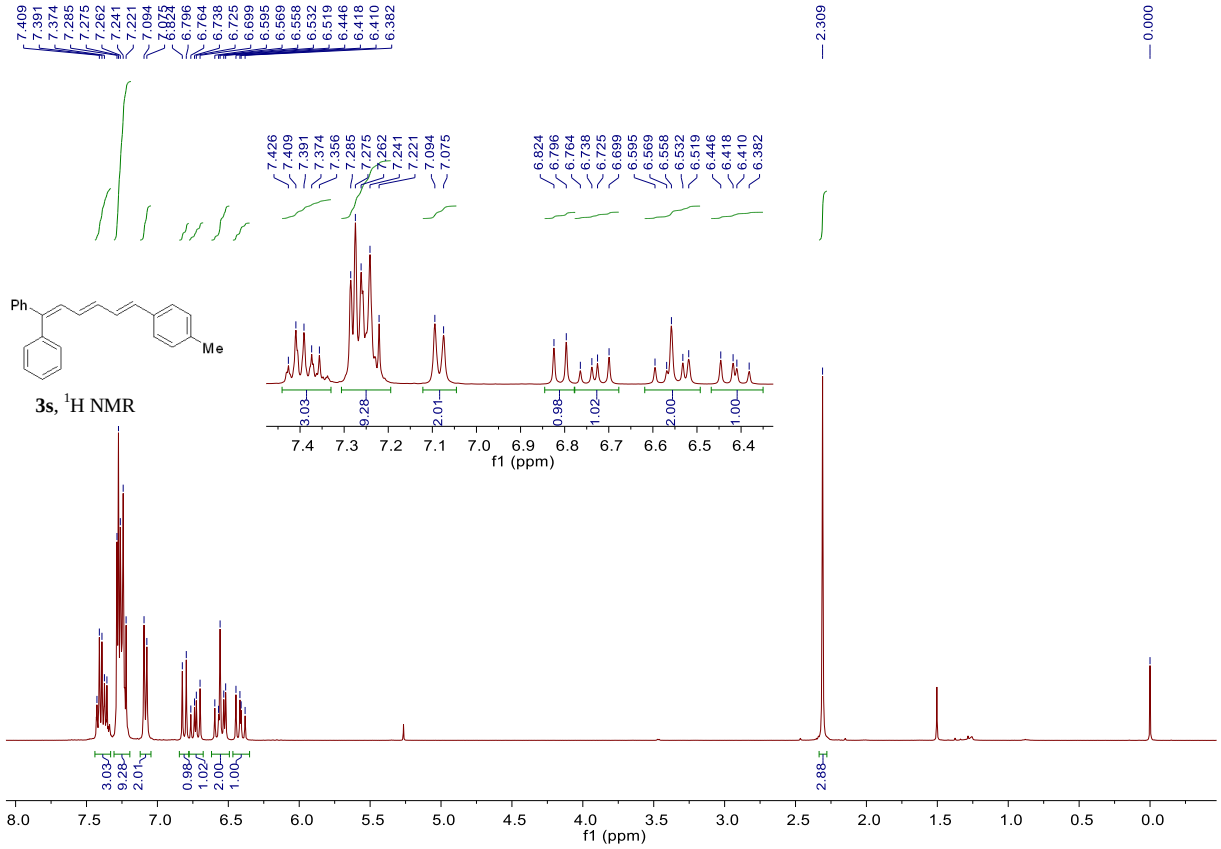

7.454
7.446
7.442
7.422
7.404
7.345
7.327
7.308
7.285
7.267
7.247
7.067
7.039
6.863
6.843
6.806
6.787
6.774
6.757
6.742
6.727
6.698
6.666
0.000
NC
Ph
3q, 1H NMR
7.69
4.09
1.00
4.32
f1 (ppm)
143.608
142.372
138.218
136.546
133.124
129.150
128.993
128.953
128.891
127.948
127.167
127.105
125.728
120.608
112.469
77.477
77.160
76.843
NC
Ph
3q, 13C NMR
f1 (ppm)



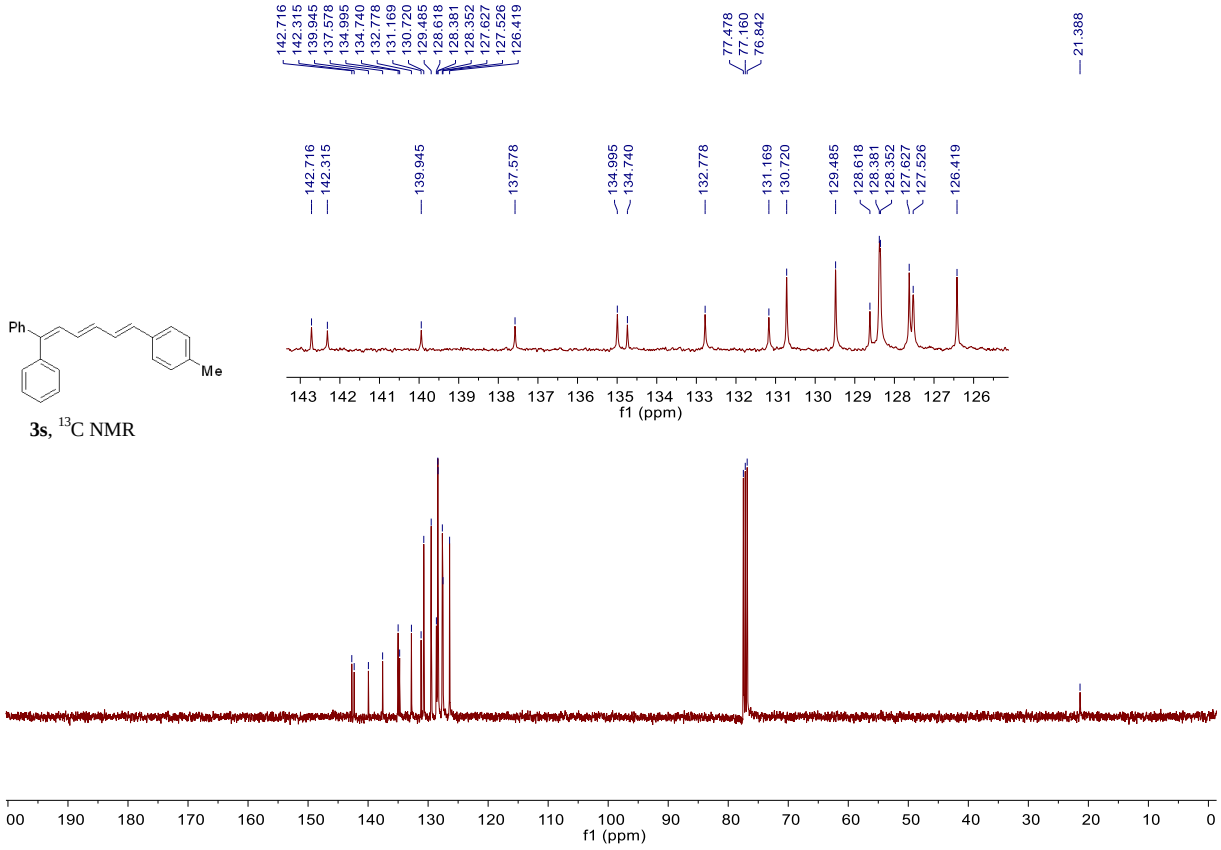
3r, ^{1}H NMR



3r, ^{13}C NMR

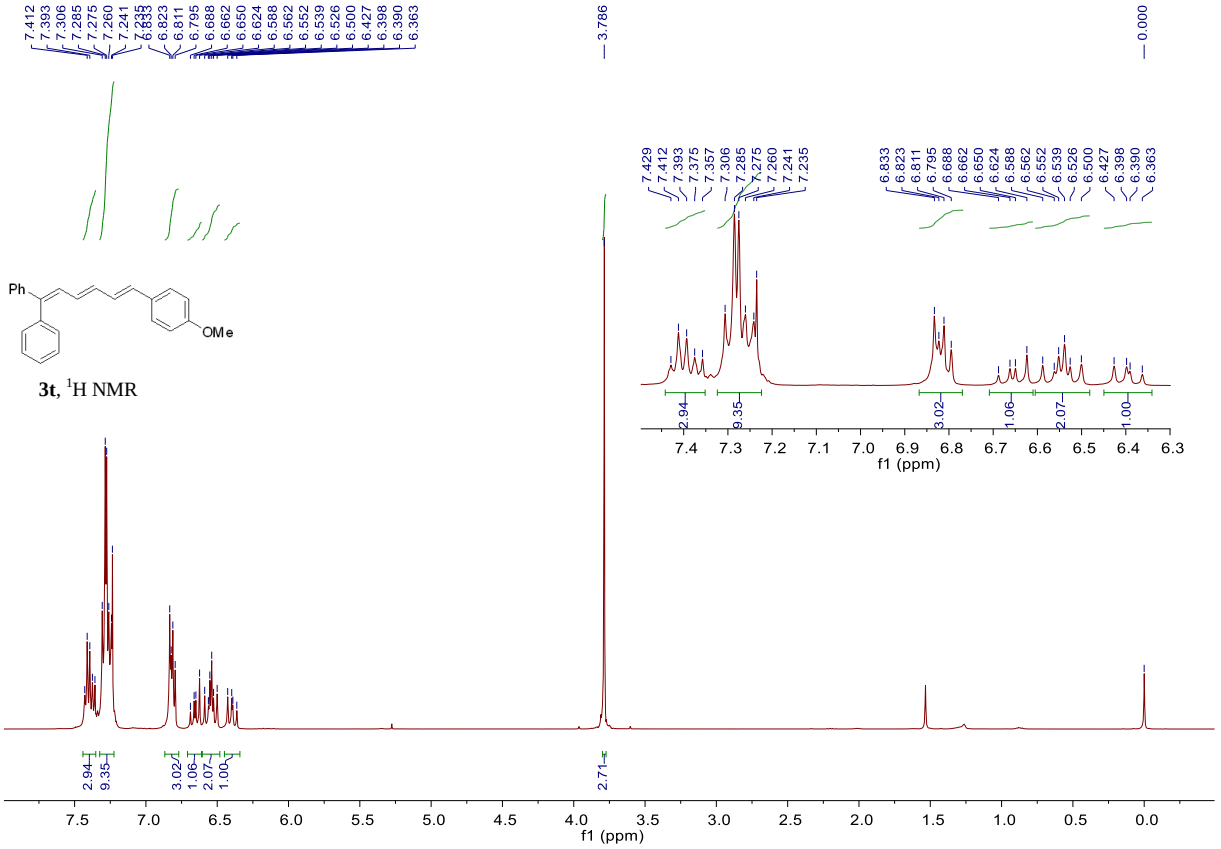


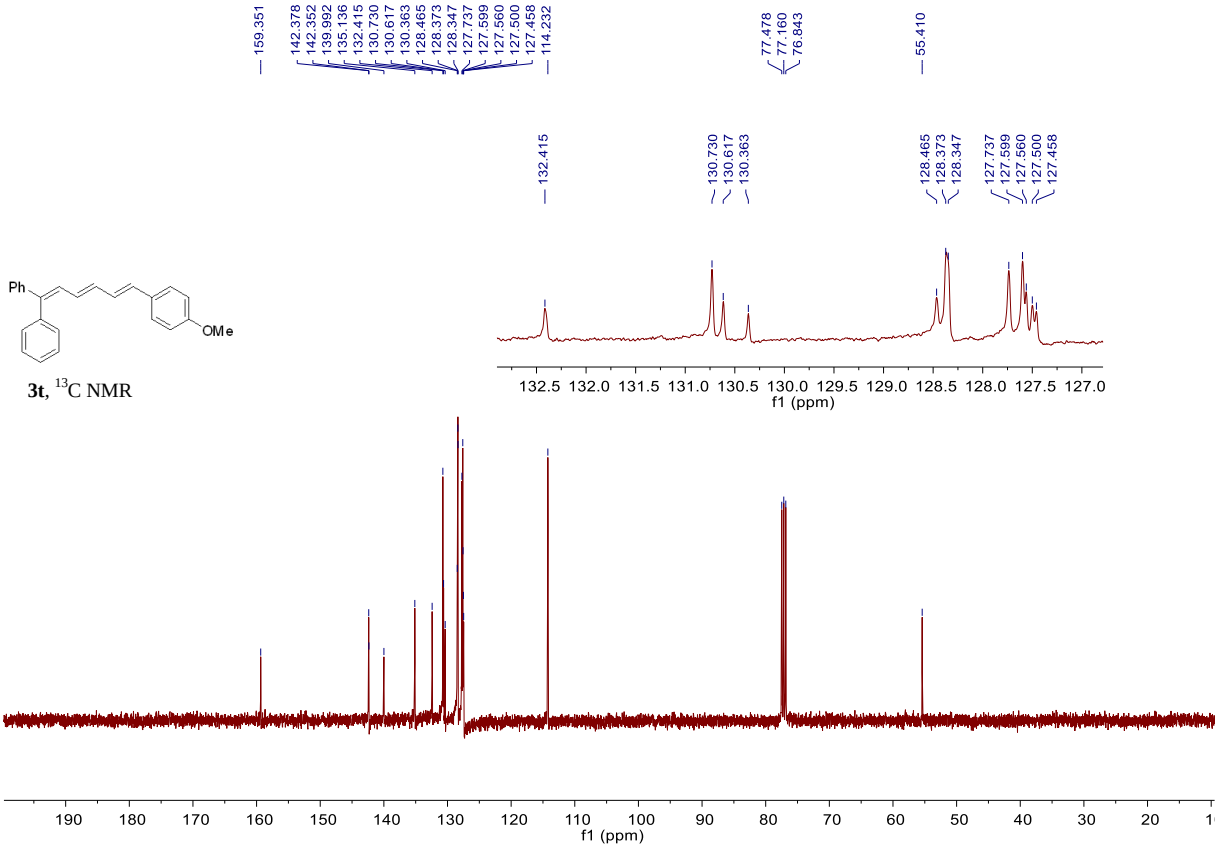
3s, ^{1}H NMR

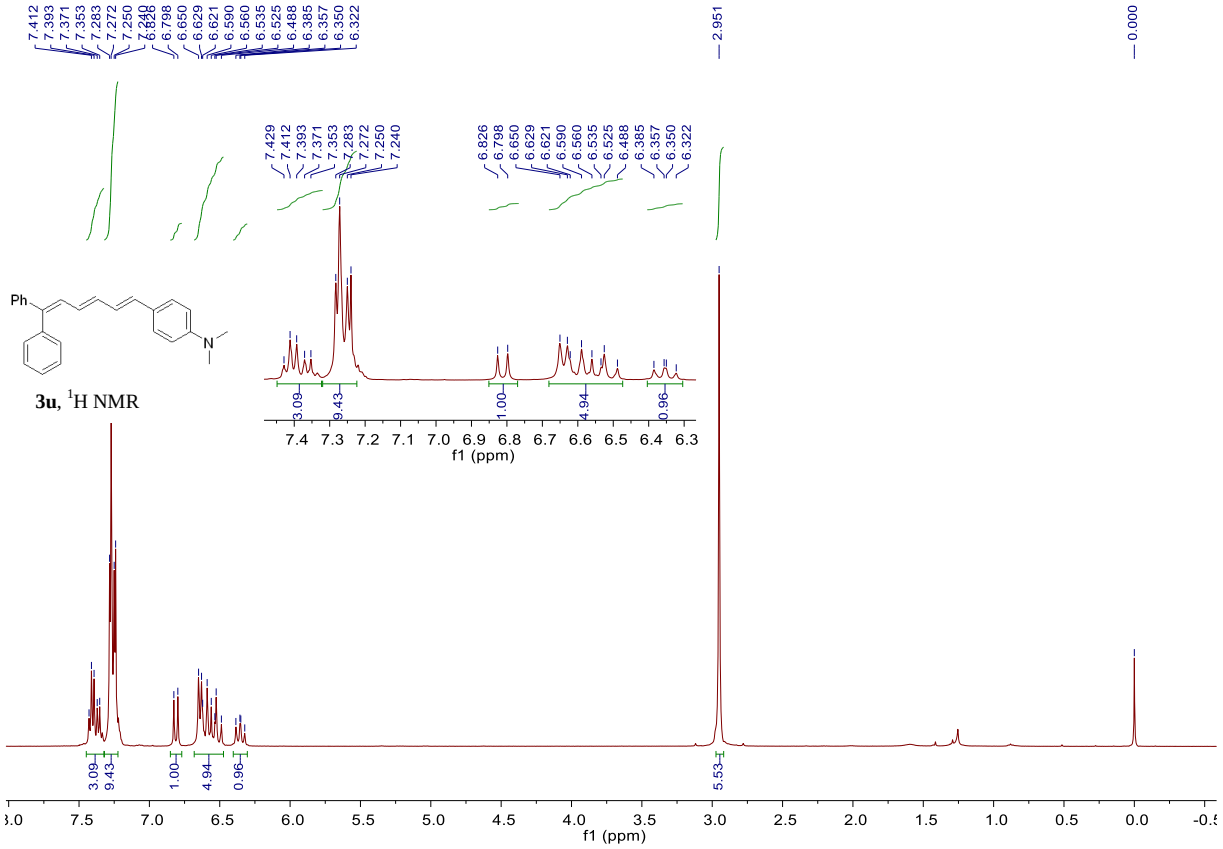


3s, ^{13}C NMR

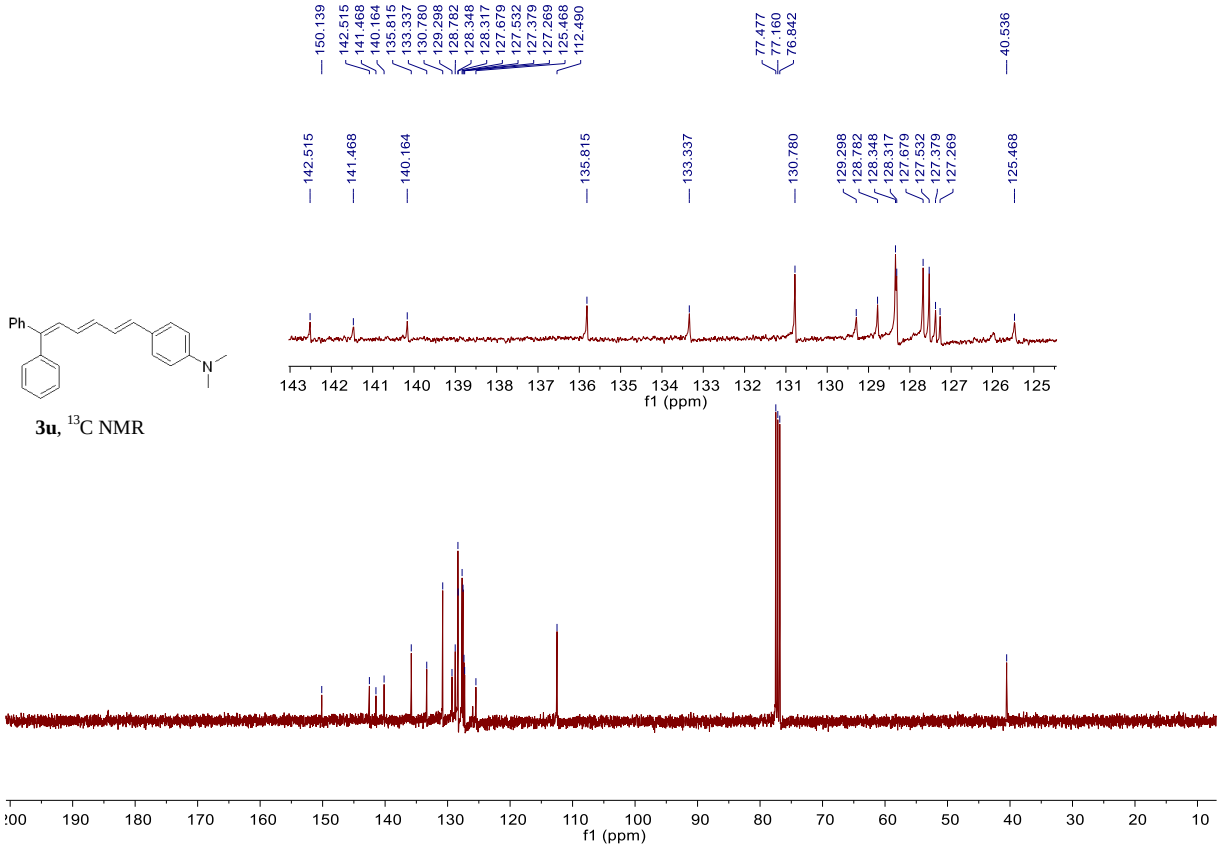
3s, ^{13}C NMR


Ph
OMe
3t, 1H NMR
f1 (ppm)

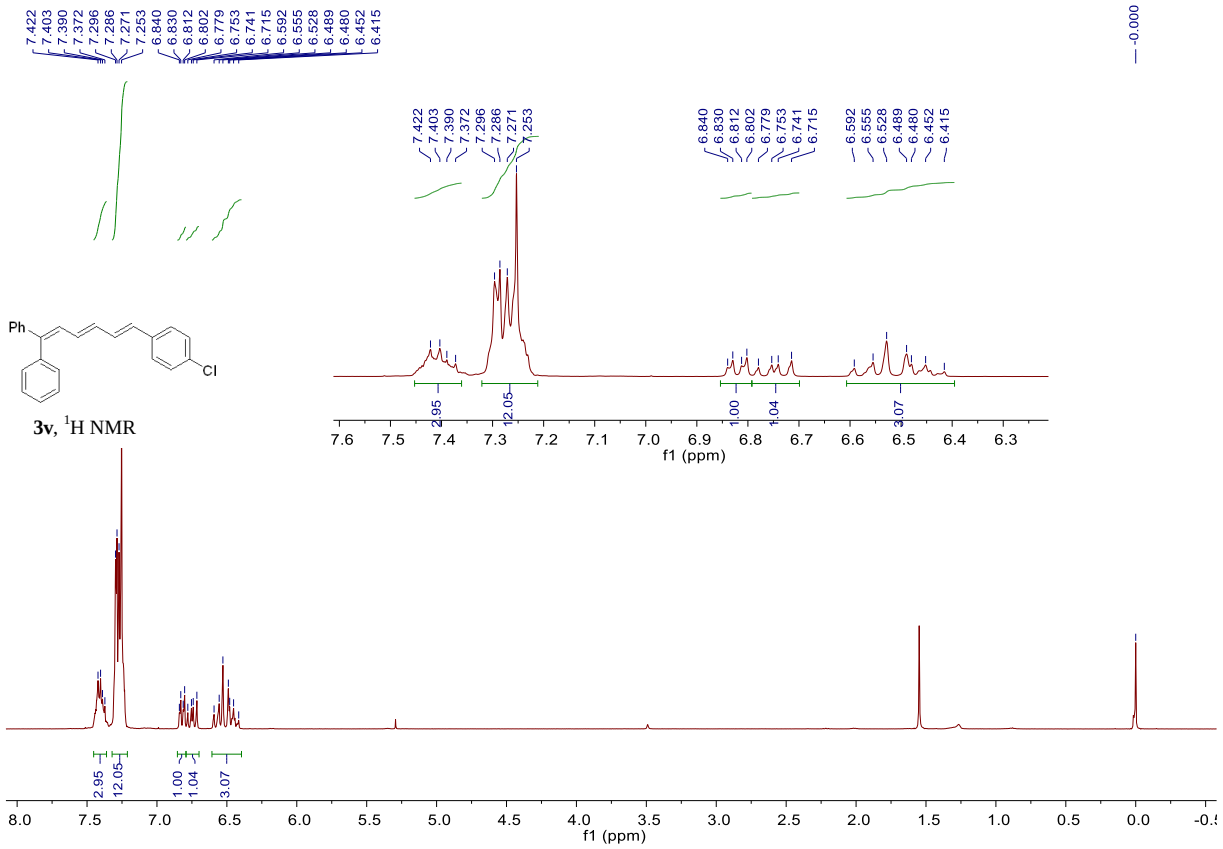

Ph
OMe
3t, 13C NMR
f1 (ppm)



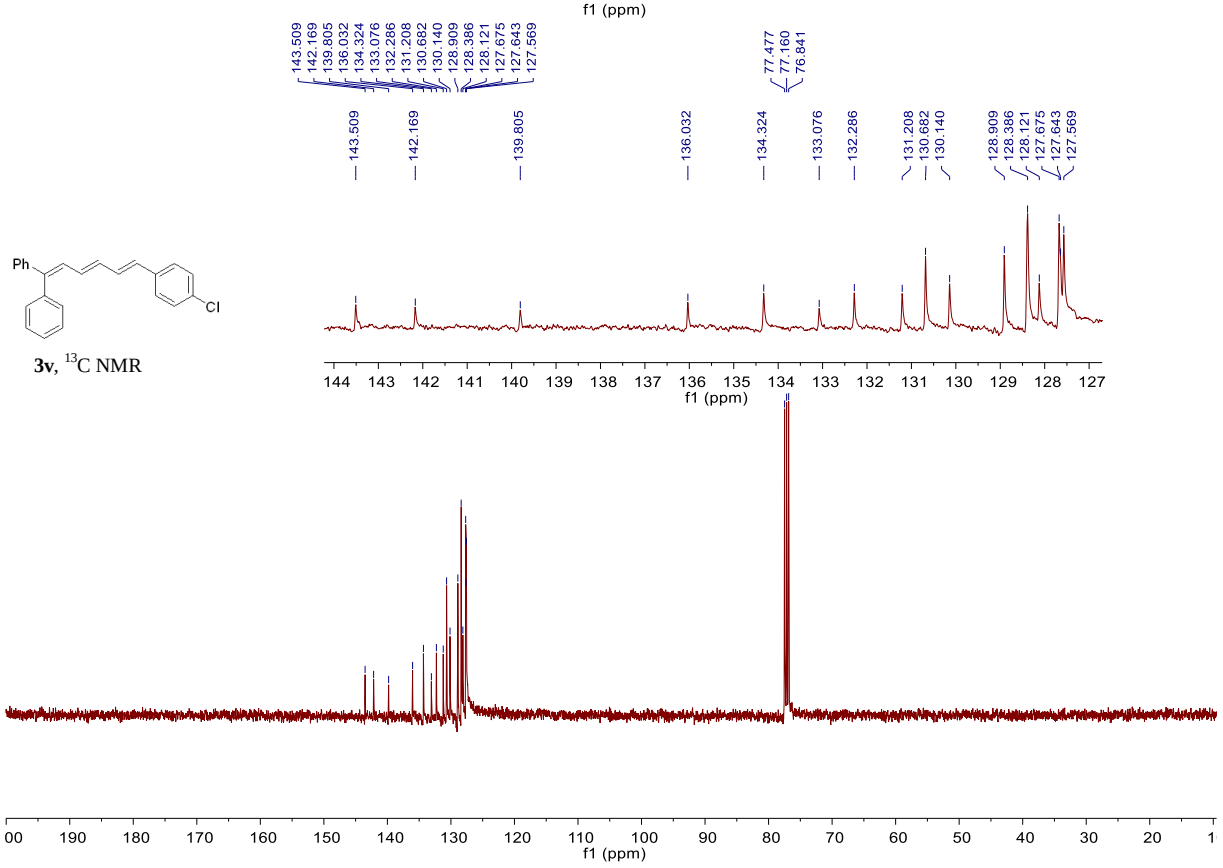
3u, ^{1}H NMR



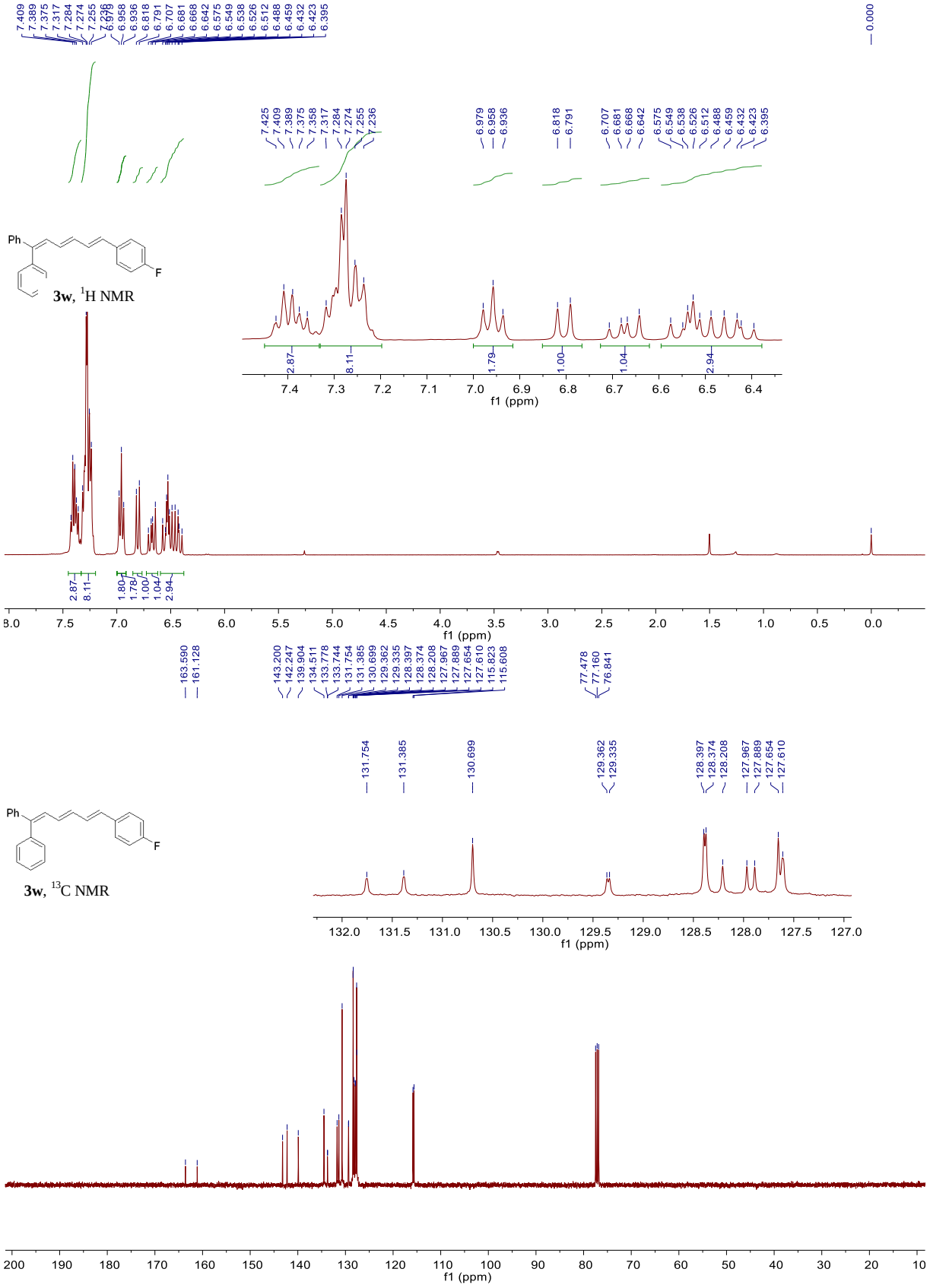
3u, ^{13}C NMR

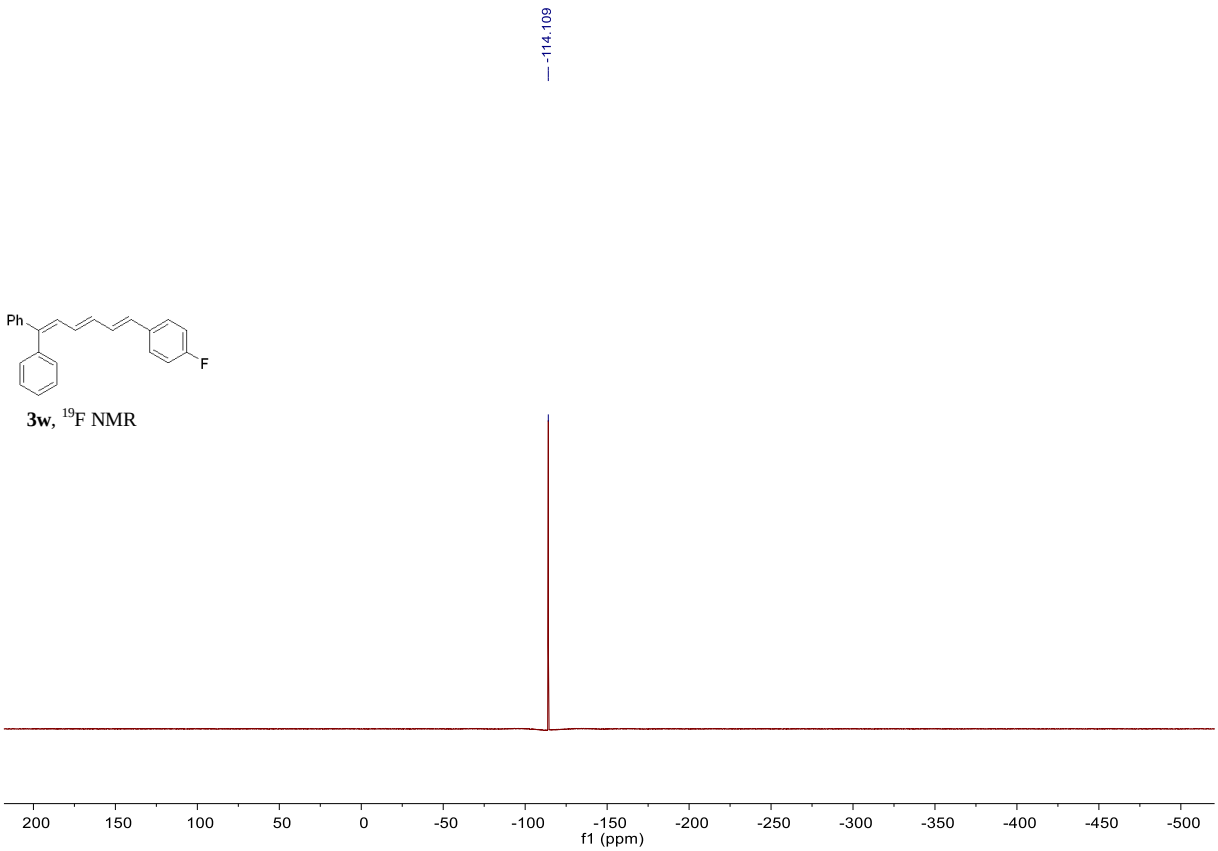


3v, ^{1}H NMR

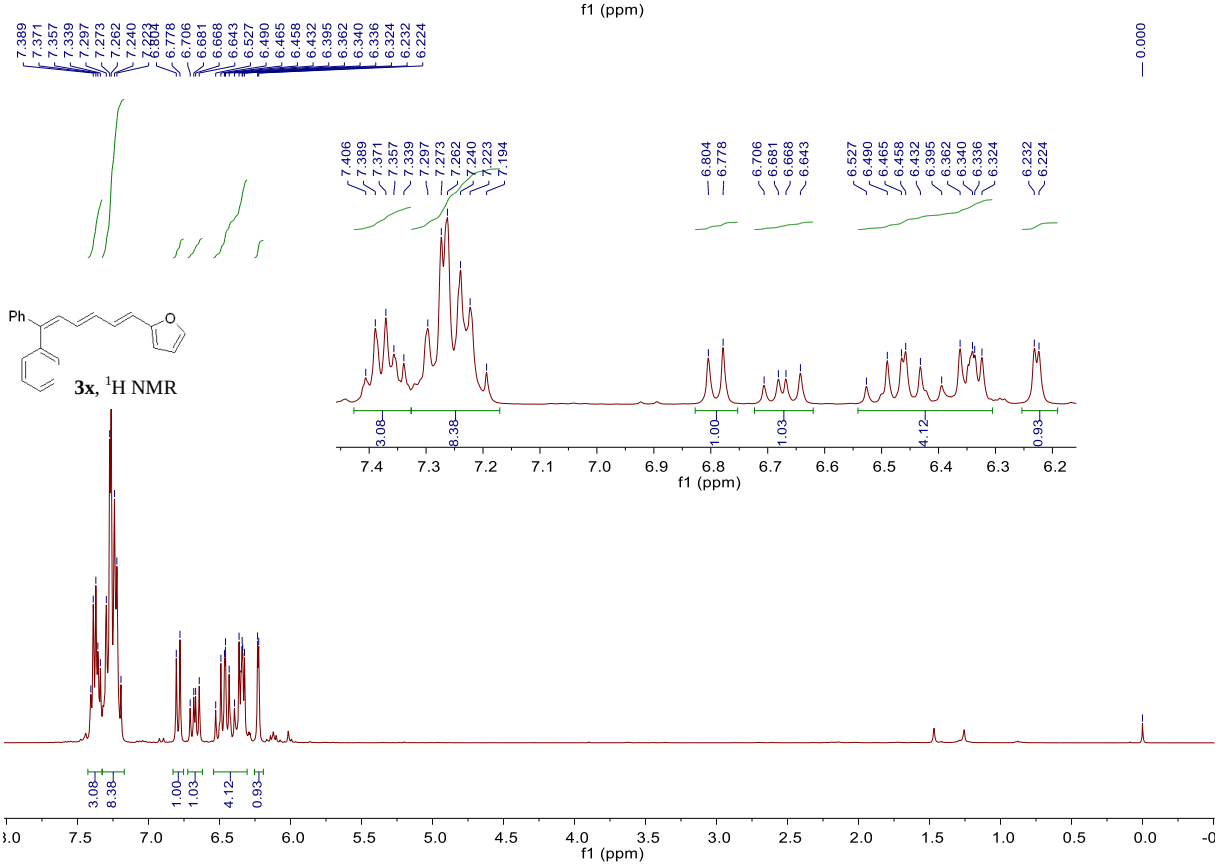


3v, ^{13}C NMR

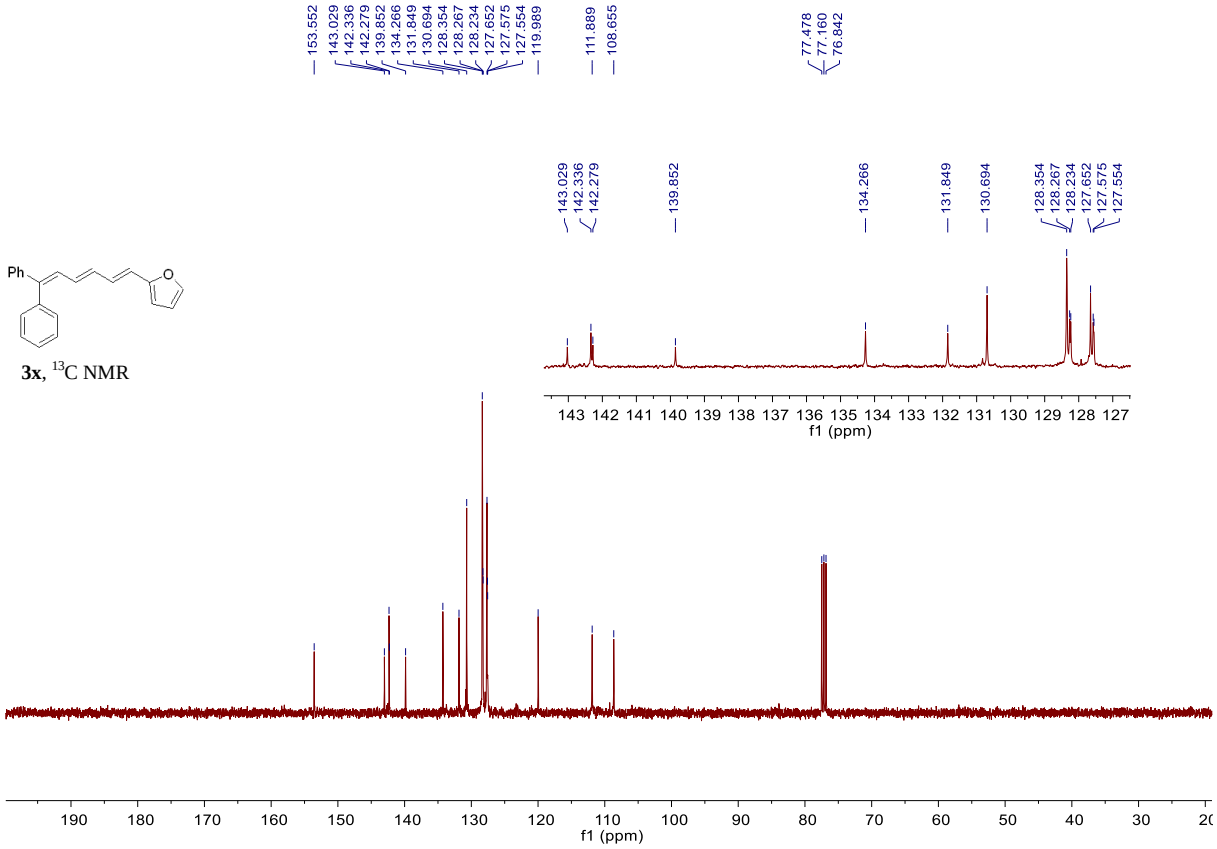

7.409
7.389
7.375
7.317
7.284
7.274
7.255
6.958
6.936
6.818
6.791
6.707
6.681
6.668
6.642
6.575
6.549
6.538
6.526
6.512
6.488
6.459
6.432
6.423
6.395
0.000
Ph
F
3w, 1H NMR
2.87
8.11
1.80
1.78
1.00
1.04
2.94
f1 (ppm)
163.590
161.128
143.200
142.247
139.904
134.511
133.778
133.744
131.754
131.385
130.699
129.362
129.335
128.397
128.374
128.208
127.967
127.889
127.654
127.610
115.823
115.608
77.478
77.160
76.841
3w, 13C NMR
f1 (ppm)

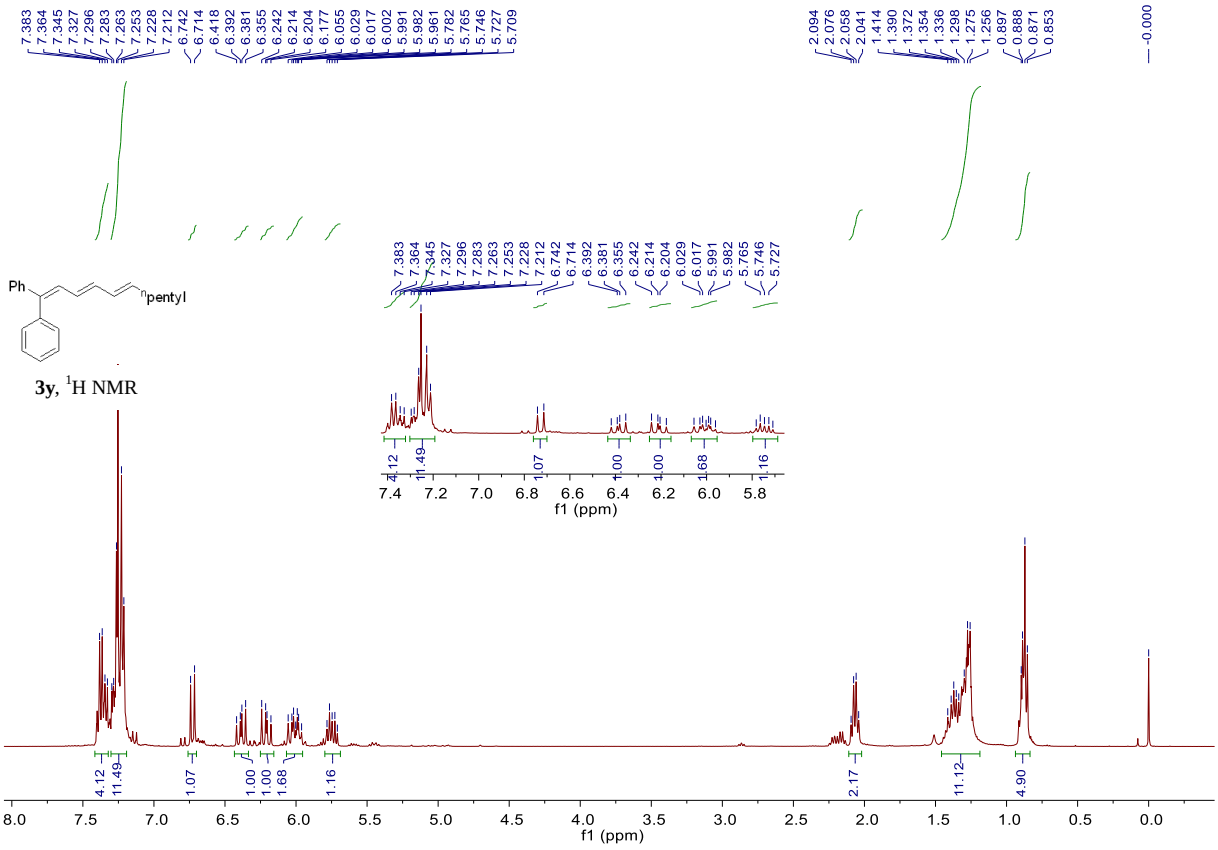


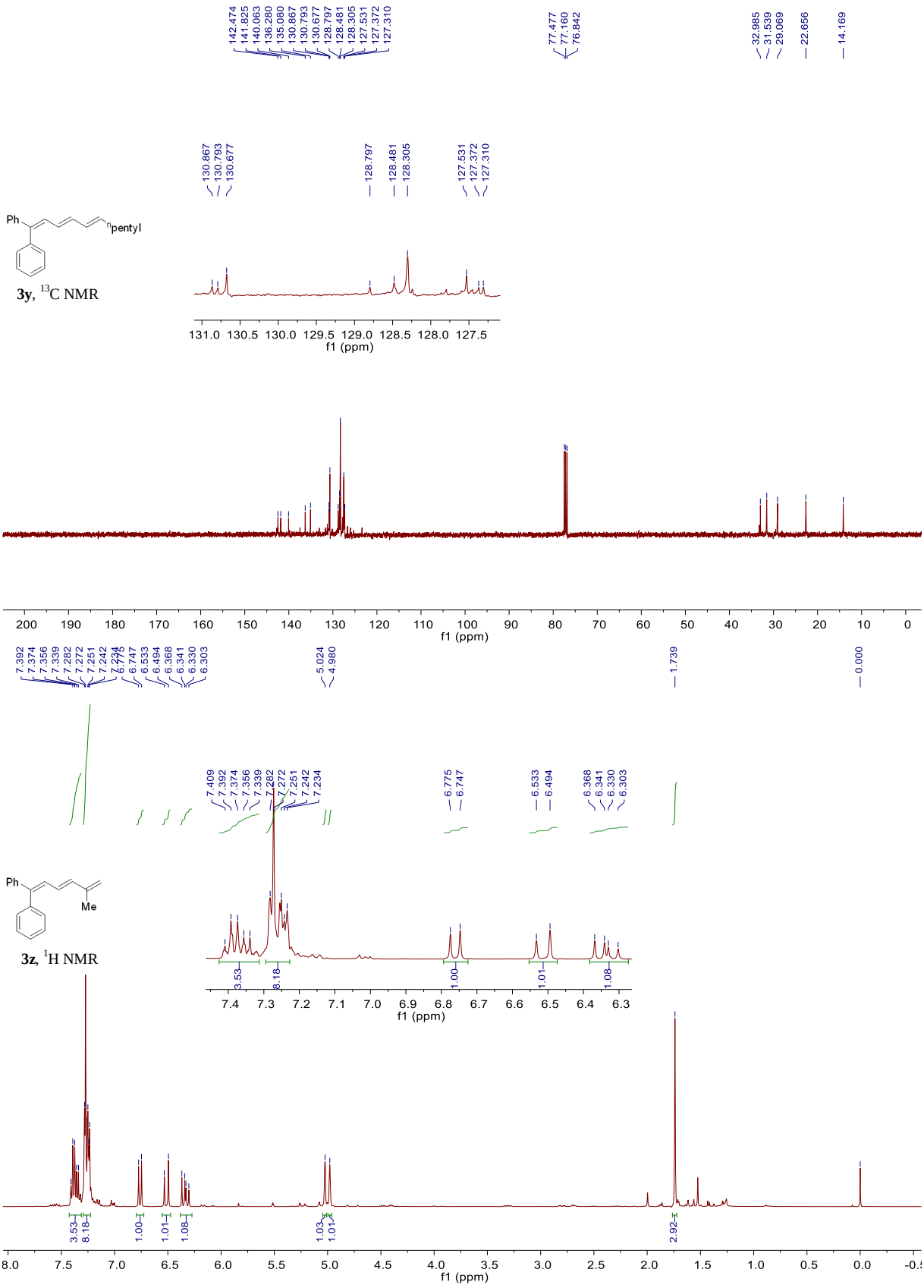
3w, ^{19}F NMR

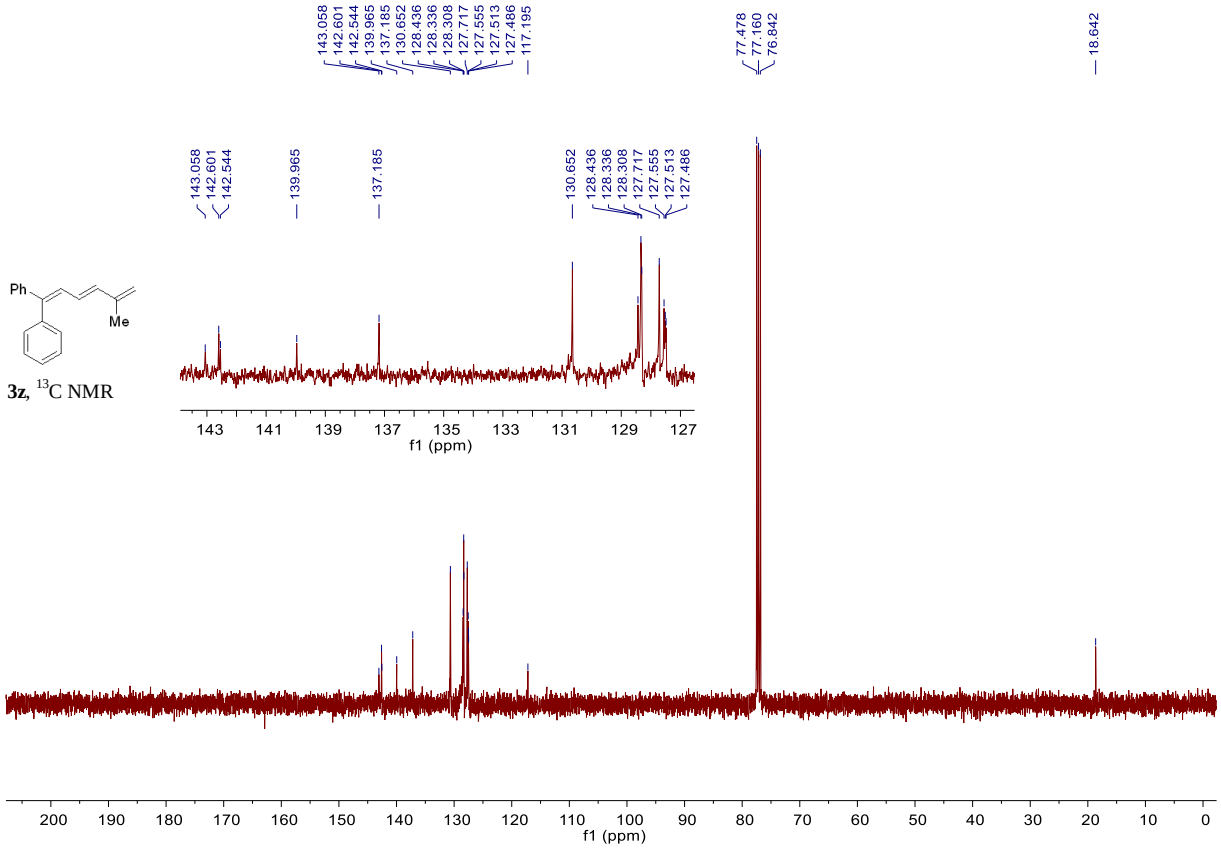


3x, ^{1}H NMR


Ph
O
3x, 13C NMR
153.552
143.029
142.336
142.279
139.852
134.266
131.849
130.694
128.354
128.267
128.234
127.652
127.575
127.554
119.989
111.889
108.655
77.478
77.160
76.842
f1 (ppm)


Ph
npentyl
3y, 1H NMR
7.383
7.364
7.345
7.327
7.296
7.283
7.263
7.253
7.228
7.212
6.742
6.714
6.418
6.392
6.381
6.355
6.242
6.214
6.204
6.177
6.055
6.029
6.017
6.002
5.991
5.982
5.961
5.782
5.765
5.746
5.727
5.709
2.094
2.076
2.058
2.041
1.414
1.390
1.372
1.354
1.336
1.298
1.275
1.256
0.897
0.888
0.871
0.853
-0.000
4.12
11.49
1.07
1.00
1.00
1.68
1.16
2.17
11.12
4.90
f1 (ppm)


142.474
141.825
140.063
136.280
135.080
130.867
130.793
130.677
128.797
128.481
128.305
127.531
127.372
127.310
77.477
77.160
76.842
32.985
31.539
29.069
22.656
14.169
Ph
nPentyl
3y, 13C NMR
f1 (ppm)
7.392
7.374
7.356
7.339
7.282
7.272
7.251
7.242
6.775
6.747
6.533
6.494
6.368
6.341
6.330
6.303
5.024
4.980
1.739
0.000
Ph
Me
3z, 1H NMR
3.53
8.18
1.00
1.01
1.08
1.03
1.01
2.92
f1 (ppm)


143.058
142.601
142.544
139.965
137.185
130.652
128.436
128.336
128.308
127.717
127.555
127.513
127.486
117.195
77.478
77.160
76.842
18.642
Ph
Me
f1 (ppm)
f1 (ppm)

3z, ^{13}C NMR