Supporting Information

The *N*-silylation of sulfoximines

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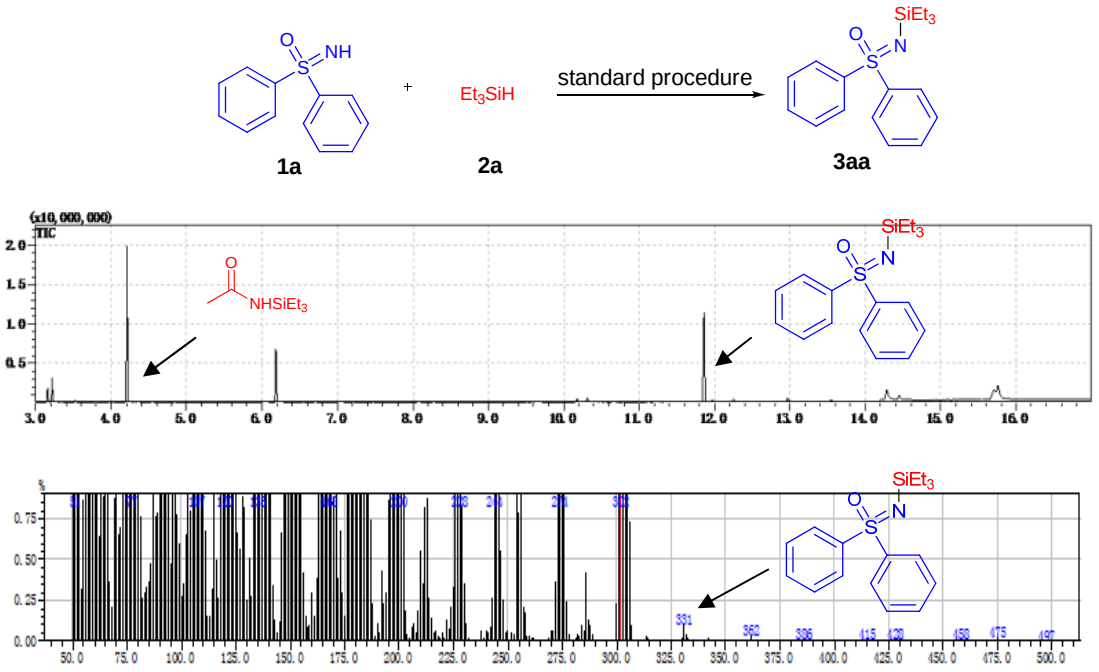
Table of Contents

1 General Experimental Details

Dry CH_3CN was distilled from CaH_2. Chemicals were used as received without special purification unless stated otherwise. ^1H and ^{13}C NMR spectra were recorded at ambient temperature on a 400 MHz NMR spectrometer (100 MHz for ^{13}C NMR). NMR results were reported in δ units, parts per million (ppm), and were referenced to $CDCl_3$ (δ 7.26 or 77.0 ppm) as the internal standard. The coupling constants J are given in Hz. IR spectra was recorded on a spectrometer using KBr discs.

General Procedure:

A sealed tube was charged with sulfoximine (0.2 mmol), triethylsilane (0.8 mmol, 4.0 equiva.), DTBP (0.6 mmol), CuI (0.02 mmol), H_2O (1.0 equiv.), CH_3CN (dry, 1.0 mL). The mixture was purged with nitrogen and kept stirring under nitrogen at 110 ^oC for 12 h. The reaction mixture was analyzed using GC-MS spectrometer, as shown in Figure S1. Then the mixture was concentrated in vacuum and the residue was purified by preparative TLC on GF254 (petroleum/ethyl acetate) to afford the desired product.



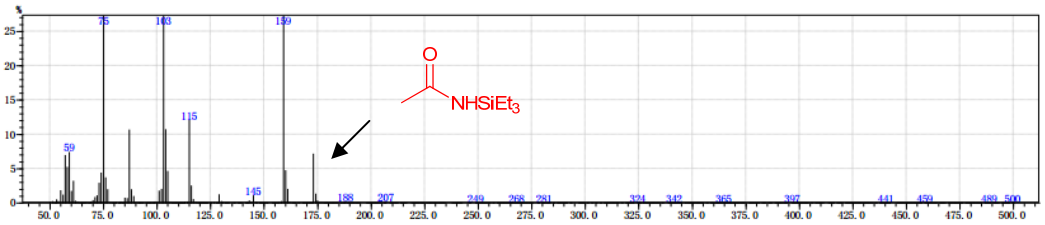


Figure S1 GC-MS spectra of **3aa**.

2 Mechanism Study Experiments

2.1 The Radical Capture Experiment

Under standard procedure, a sealed tube was charged with **1a** (0.2 mmol), **2a** (0.8 mmol), DTBP (0.6 mmol), CuI (0.02 mmol), galvinoxyl free gadical (0.6 mmol), H_2O (1.0 equiv.), CH_3CN (dry, 1.0 mL). The reaction was conducted under nitrogen at 110 °C for 12 h. The reaction mixture was analyzed using GC spectrometer, as shown in Figure S2.

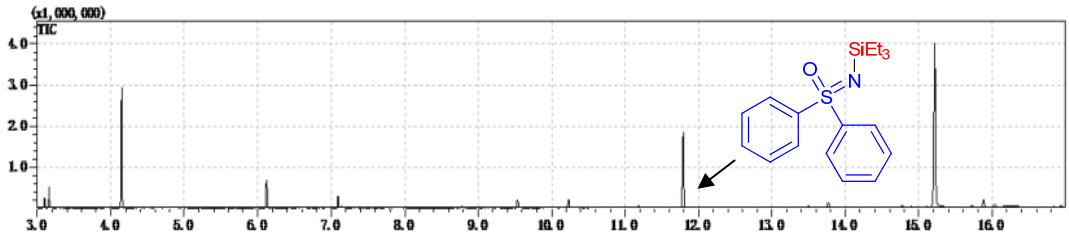


Figure S2 GC spectra of free radical capture result.

2.2 Determination of Reaction Intermediates.

Under standard procedure, a sealed tube was charged with **2e** (0.8 mmol), DTBP (0.6 mmol), CuI (0.2 mmol), CH_3CN (dry, 1.0 mL). The reaction was conducted under nitrogen at 110 °C for 12 h. Then, the reaction mixture was analyzed using GC-MS spectrometer, as shown in Figure S3.

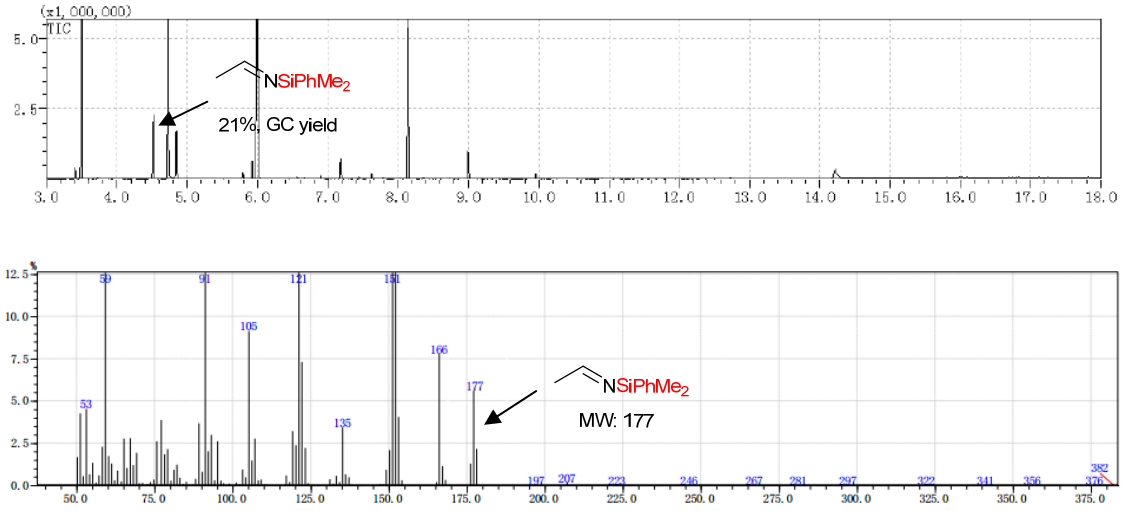
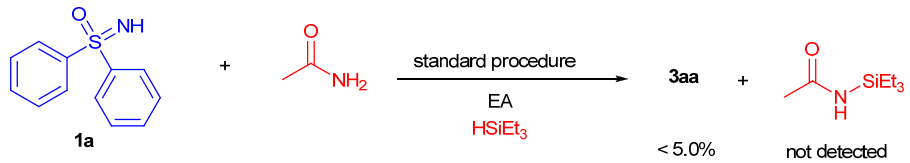


Figure S3

Under standard procedure, a sealed tube was charged with **1a** (0.2 mmol), **2a** (0.8 mmol), DTBP (0.6 mmol), CuI (0.2 mmol), acetamide (0.8 mmol), ethyl acetate (dry, 1.0 mL), H_2O (1.0 equiv). The reaction was conducted under nitrogen at 110 °C for 12 h. Then, the reaction mixture was analyzed using GC spectrometer, as shown in Figure S4.



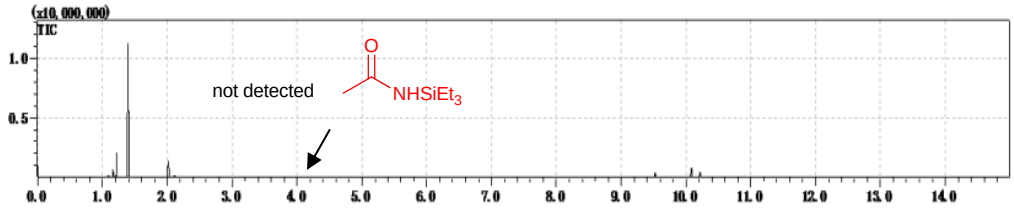


Figure S4

Under standard procedure, a sealed tube was charged with **1a** (0.2 mmol), DTBP (0.6 mmol), *N*-(trimethylsilyl)acetamide (0.8 mmol), H_2O (1.0 equiv.), CH_3CN (dry, 1.0 mL). The reaction was conducted under nitrogen at 110 °C for 12 h. Then, the reaction mixture was analyzed using GC-MS spectrometer, as shown in Figure S5.

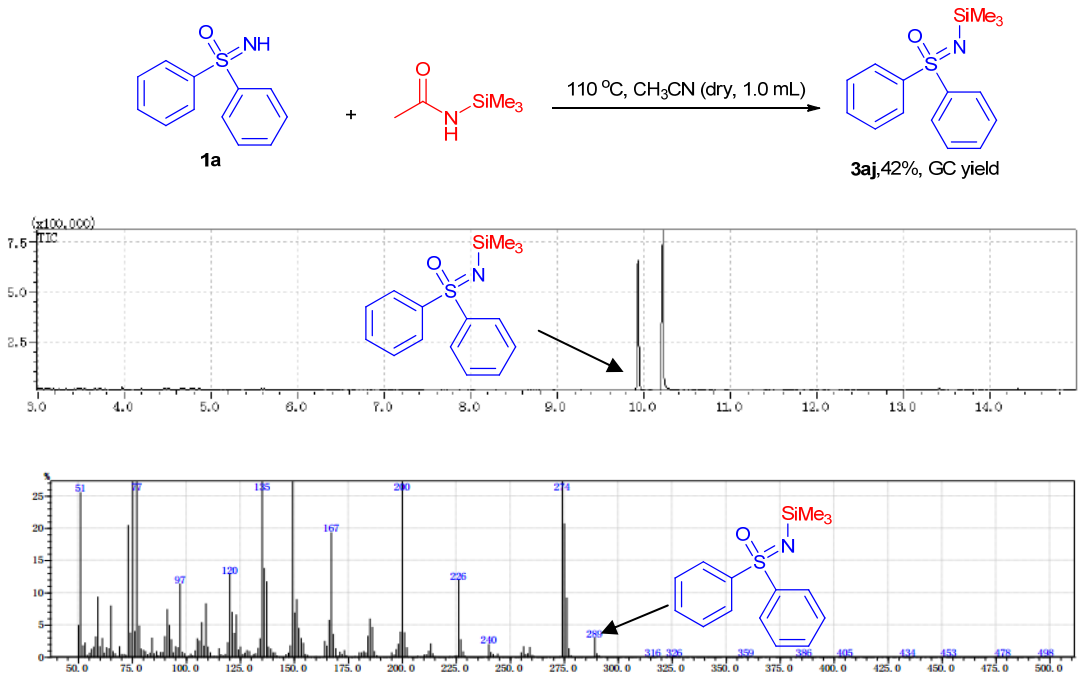
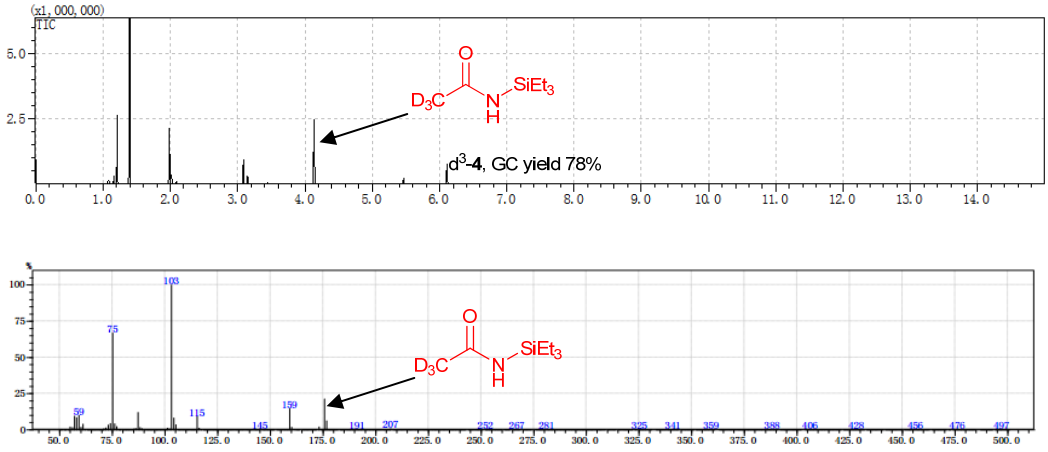
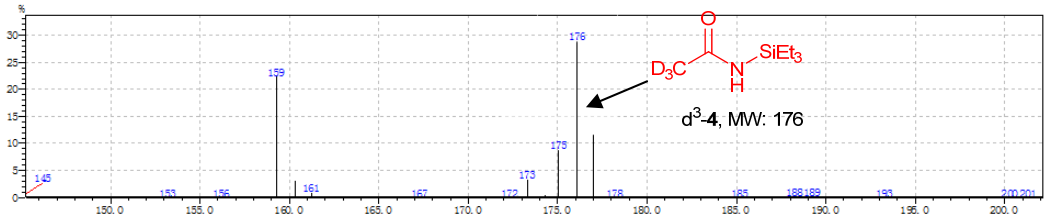


Figure S5 GC-MS spectra of **3aj**.

Under standard procedure, a sealed tube was charged with **2a** (0.8 mmol) DTBP (0.6 mmol), CuI (0.2 mmol), solvent (1.0 mL). The reaction was conducted under nitrogen at 110 °C for 12 h. Then, the reaction mixture was analyzed using GC-MS spectrometer, as shown in Figure S6.

$CD_3CN + H_2O$ (1.0 equiv.)





CH_3CN (dry) + $H_2{}^{18}O$ (0.1 mL)

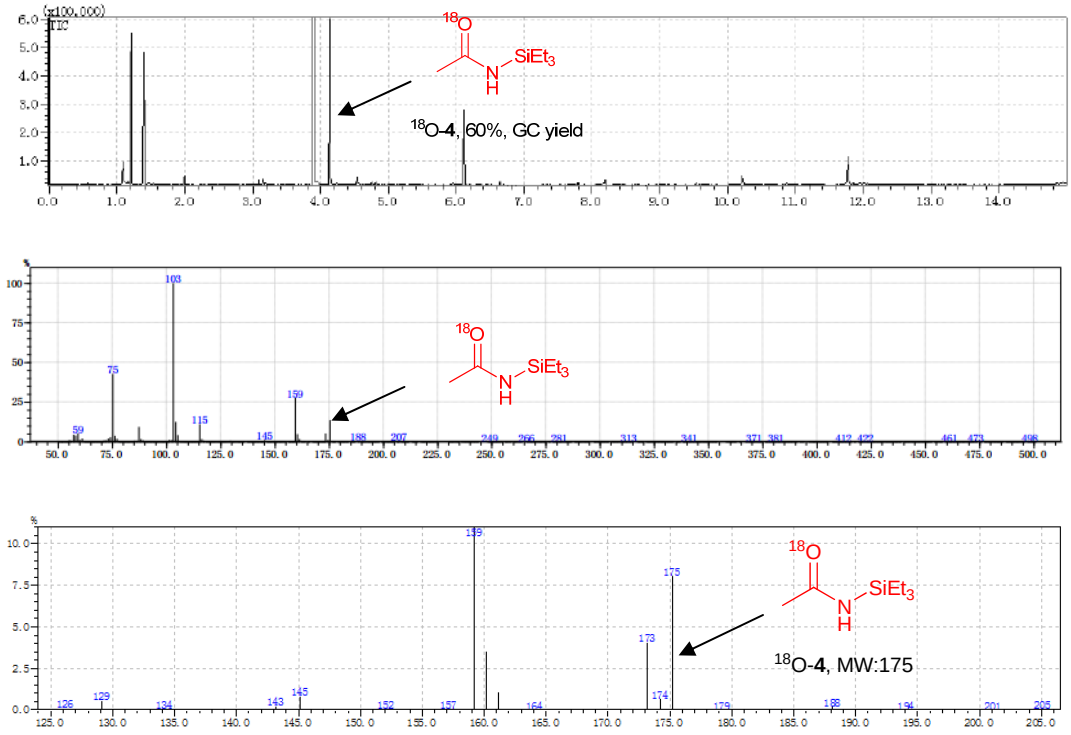


Figure S6. Results of deuterium-labeling experiments

3 Determination of ee value.

(*R*)-(-)-1i', > 99.5% ee

(*R*)-(-)-3i'a, 92.1% ee

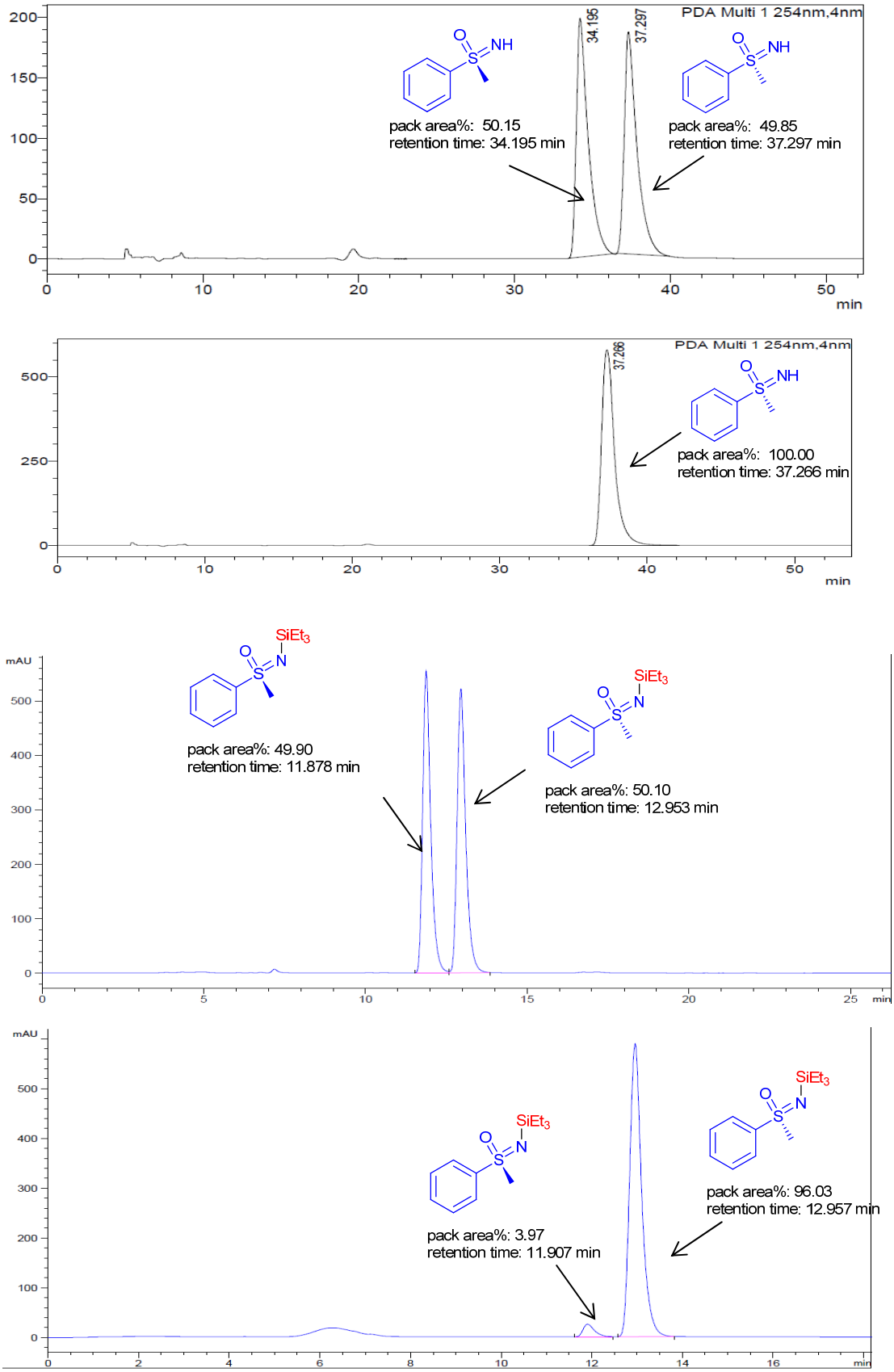
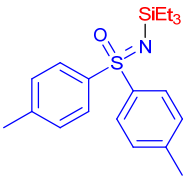
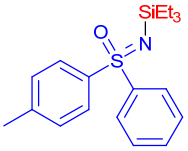


Figure S7. The ee value of (*R*)-(-)-**3i'a** detected by HPLC.

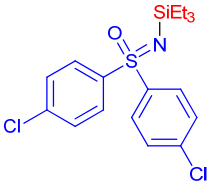
4 Characterization Data for the Products



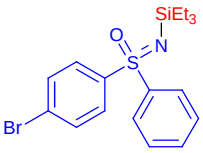
***N*-(Triethylsilyl)-4,4'-dimethyldiphenyl sulfoximine** (**3ba**): TLC on GF254 (ethyl acetate: petroleum, 1: 20) give the product (54.3 mg, 76% yield) as a colorless liquid. ^{1}H NMR ($CDCl_3$, 400 MHz): δ 7.81-7.79 (m, 4H), 7.20 (s, 4H), 2.34 (s, 6H), 0.96-0.92 (m, 9H), 0.60-0.54 (m, 6H); ^{13}C NMR ($CDCl_3$, 100 MHz): δ 143.7, 142.0, 129.3, 127.2, 21.3, 7.8, 6.6. MS (EI): 359 (M^+); HRMS (ESI-TOF) m/z calcd for $C_{20}H_{30}NOSSi$ $(M+H)^+$ 360.1812, found 360.1812. IR (KBr) ν 3059, 1597, 1490, 1457, 1412, 1159, 1096 cm^{-1}.



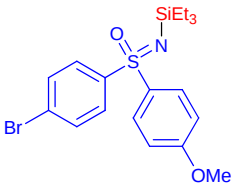
***N*-(Triethylsilyl)-4-methyldiphenyl sulfoximine** (**3ca**): TLC on GF254 (ethyl acetate: petroleum, 1: 20) give the product (56.8 mg, 82% yield) as a yellowish liquid. ^{1}H NMR ($CDCl_3$, 400 MHz): δ 7.93-7.91 (m, 2H), 7.81 (d, J = 8.2 Hz, 2H), 7.41-7.39 (m, 3H), 7.20 (d, J = 8.1 Hz, 2H), 2.34 (s, 3H), 0.94 (t, J = 7.9 Hz, 9H), 0.58 (q, J = 7.8 Hz, 6H); ^{13}C NMR ($CDCl_3$, 100 MHz): δ 146. 5, 143.3, 142.2, 131.4, 129.3, 128.6, 127.3, 127.1, 21.3, 7.2, 6.6. MS (EI): 345 (M^+); HRMS (ESI-TOF) m/z calcd for $C_{19}H_{28}NOSSi$ $(M+H)^+$ 346.1655, found 346.1657. IR (KBr) ν 3062, 1598, 1457, 1318, 1294, 1095 cm^{-1}.



***N*-(Triethylsilyl)-4,4'-dichlorodiphenyl sulfoximine (3da):** TLC on GF254 (ethyl acetate: petroleum, 1: 20) give the product (62.5 mg, 78% yield) as a yellowish liquid. ^{1}H NMR ($CDCl_3$, 400 MHz): δ 7.85 (d, J = 8.6 Hz, 4H), 7.39 (d, J = 8.6 Hz, 4H), 0.93 (t, J = 7.9 Hz, 9H), 0.58 (q, J = 7.8 Hz, 6H); ^{13}C NMR ($CDCl_3$, 100 MHz): δ 144.4, 138.4, 129.1, 128.7, 7.1, 6.5. MS (EI): 399 (M^+); HRMS (ESI-TOF) m/z calcd for $C_{18}H_{24}Cl_2NOSSi$ $(M+H)^+$ 400.0719, found 400.0719. IR (KBr) ν 3087, 1643, 1577, 1474, 1320, 1163, 1013 cm^{-1}.

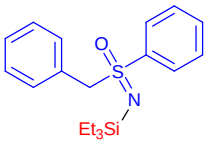


***N*-(Triethylsilyl)-4-bromodiphenyl sulfoximine (3ea):** TLC on GF254 (ethyl acetate: petroleum, 1: 20) give the product (61.3 mg, 75% yield) as a colorless liquid. ^{1}H NMR ($CDCl_3$, 400 MHz): δ 7.92-7.90 (m, 2H), 7.80 (d, J = 8.5 Hz, 2H), 7.55 (d, J = 8.6 Hz, 2H), δ 7.46-7.40 (m, 2H), 0.93 (t, J = 7.9 Hz, 9H), 0.58 (q, J = 7.8 Hz, 6H); ^{13}C NMR ($CDCl_3$, 100 MHz): δ 145.7, 145.3, 131.9, 131.9, 128.9, 128.8, 127.2, 126.6, 7.2, 6.6. MS (EI): 409 (M^+); HRMS (ESI-TOF) m/z calcd for $C_{18}H_{25}BrNOSSi$ (M+H) 410.0604, found 410.0603. IR (KBr) ν 3064, 1641, 1573, 1470, 1320, 1237, 1163, 1009 cm^{-1}.

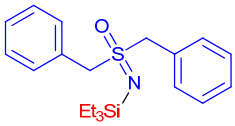


***N*-(Triethylsilyl)-4-bromo-4'-methoxy-diphenyl sulfoximine (3fa):** TLC on GF254 (ethyl acetate: petroleum, 1: 15) give the product (59.7 mg, 68% yield) as a yellowish liquid. ^{1}H NMR ($CDCl_3$, 400 MHz): δ 7.83 (d, J = 8.9 Hz, 2H), 7.76 (d, J = 8.6 Hz, 2H), 7.53 (d, J = 8.6 Hz, 2H), 6.90 (d, J = 8.9 Hz, 2H), 3.82 (s, 3H), 0.93 (t, J = 7.9 Hz, 9H), 0.57 (q, J = 7.9 Hz, 6H); ^{13}C NMR ($CDCl_3$, 100 MHz): δ 162.4, 146.0, 137.5, 131.9, 129.4, 128.6, 126.2,

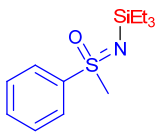
114.0, 55.5, 7.2, 6.6. MS (EI): 439 (M^+); HRMS (ESI-TOF) m/z calcd for $C_{19}H_{27}BrNO_2SSi$ $(M+H)^+$ 440.0710, found 440.0710. IR (KBr) *v* 3071, 1727, 1593, 1495, 1463, 1310, 1158, 1095, 1009 cm^{-1}.



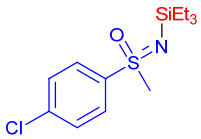
***S*–Benzyl-*N*-triethylsilyl-*S*-phenylsulfoximine (3ga):** TLC on GF254 (ethyl acetate: petroleum, 1: 20) give the product (49.3 mg, 71% yield) as a colorless liquid. ^1H NMR ($CDCl_3$, 400 MHz): δ 7.68-7.64 (m, 2H), 7.51-7.47 (m, 1H), 7.42-7.38 (m, 2H), 7.28-7.20 (m, 3H), 7.05 (m, 2H), 4.17 (s, 2H), 0.92-0.86 (m, 1H), 0.56-0.48 (m, 6H); ^{13}C NMR ($CDCl_3$, 100 MHz): δ 142.8, 132.2, 131.1, 129.9, 128.4, 128.1, 128.0, 67.3, 7.1, 6.6. MS (EI): 345 (M^+); HRMS (ESI-TOF) m/z calcd for $C_{19}H_{28}NOSSi$ $(M+H)^+$ 346.1655, found 346.1655. IR (KBr) *v* 3063, 1639, 1456, 1445, 1316, 1298, 1165 cm^{-1}.



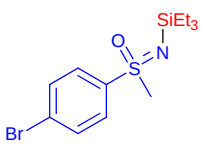
***N*-(Triethylsilyl) dibenzyl sulfoximine (3ha):** TLC on GF254 (ethyl acetate: petroleum, 1: 20) give the product (33.7 mg, 47% yield) as a colorless liquid. ^1H NMR ($CDCl_3$, 400 MHz): δ 7.41-7.36 (m, 10H), 4.12-4.03 (m, 4H), 0.77 (t, J = 8.0 Hz, 9H), 0.34 (t, J = 7.9 Hz, 6H); ^{13}C NMR ($CDCl_3$, 100 MHz): δ 131.1, 129.3, 128.4, 128.5, 62.7, 7.0, 6.5. MS (EI): 359 (M^+); HRMS (ESI-TOF) m/z calcd for $C_{20}H_{30}NOSSi$ $(M+H)^+$ 360.1812, found 360.1811. IR (KBr) *v* 3064, 1603, 1495, 1455, 1314, 1170, 1118 cm^{-1}.



***S*–Methyl-*N*–triethylsilyl-*S*-benzylsulfoximine (3ia):** TLC on GF254 (ethyl acetate: petroleum, 1: 20) give the product (27.2 mg, 51% yield) as a colorless liquid. ^1H NMR ($CDCl_3$, 400 MHz): δ 8.30-7.95 (m, 2H), 7.57-7.49 (m, 3H), 3.00 (s, 3H), 0.94 (t, J = 7.9 Hz, 9H), 0.58 (q, J = 7.8 Hz, 6H); ^{13}C NMR ($CDCl_3$, 100 MHz): δ 145.3, 132.1, 128.8, 126. 9, 49.6, 7.1, 6.5. MS (EI): 269 (M^+); HRMS (ESI-TOF) m/z calcd for $C_{13}H_{24}NOSSi$ $(M+H)^+$ 270.1342, found 270.1341. IR (KBr) *v* 3087, 1643, 1576, 1474, 1320, 1162, 1088, 1012 cm^{-1}.

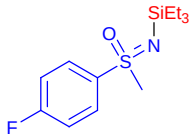


***S*–Methyl-*N*–triethylsilyl-*S*-4-chorolbenzyl sulfoximine (3ja):** TLC on GF254 (ethyl acetate: petroleum, 1: 20) give the product (44.8 mg, 74% yield) as a yellow liquid. ^1H NMR ($CDCl_3$, 400 MHz): δ 7.83 (d, J = 8.4 Hz, 2H), 7.41 (d, J = 8.4 Hz, 2H), 2.93 (s, 3H), 0.87 (t, J = 7.9 Hz, 9H), 0.50 (q, J = 7.8 Hz, 6H); ^{13}C NMR ($CDCl_3$, 100 MHz): δ 143.8, 138.6, 129.1, 128.5, 49.7, 7.1, 6.5. MS (EI): 303 (M^+); HRMS (ESI-TOF) m/z calcd for $C_{13}H_{23}ClNOSSi$ $(M+H)^+$ 304.0953, found 304.0953. IR (KBr) *v* 2957, 1635, 1581, 1434, 1312, 1170, 1001 cm^{-1}.

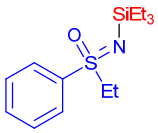


***S*–Methyl-*N*–triethylsilyl-*S*-4-bromophenylsulfoximine (3ka):** TLC on GF254 (ethyl acetate: petroleum, 1: 20) give the product (48.1 mg, 69% yield) as a colorless liquid. ^1H NMR ($CDCl_3$, 400 MHz): δ 7.83 (d, J = 8.5 Hz, 2H), 7.65 (d, J = 8.5 Hz, 2H), 3.00 (s, 3H), 0.94 (t, J = 7.9 Hz, 9H), 0.57 (q, J = 7.8 Hz, 6H); ^{13}C NMR ($CDCl_3$, 100 MHz): δ 144.4, 132.1, 128.7, 127.1, 49.7, 7.1, 6.5.

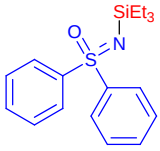
MS (EI): 347 (M^+); HRMS (ESI-TOF) m/z calcd for $C_{13}H_{23}BrNOSSi$ $(M+H)^+$ 348.0448, found 348.0448. IR (KBr) ν 2953, 1640, 1573, 1464, 1322, 1157, 1009 cm^{-1}.



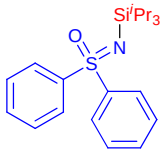
***S*–Methyl-*N*–triethylsilyl-*S*-4-fluorophenylsulfoximine (3la):** TLC on GF254 (ethyl acetate: petroleum, 1: 20) give the product (36.0 mg, 63% yield) as a yellowish liquid. ^1H NMR ($CDCl_3$, 400 MHz): δ 7.99-7.95 (m, 2H), 7.21-7.16 (m, 2H), 3.00 (s, 1H), 0.94 (t, J = 7.9 Hz, 9H), 0.57 (q, J = 7.8 Hz, 6H); ^{13}C NMR ($CDCl_3$, 100 MHz): δ 164.9 (d, $J_{C\text{-}F}$ = 251.7 Hz), 141.4 (d, $J_{C\text{-}F}$ = 5.7 Hz), 129.6 (d, $J_{C\text{-}F}$ = 9.2 Hz), 115.9 (d, $J_{C\text{-}F}$ = 22.3 Hz), 49.8, 7.1, 6.5. MS (EI): 287 (M^+); HRMS (ESI-TOF) m/z calcd for $C_{13}H_{23}FNOSSi$ $(M+H)^+$ 288.1248, found 288.1246 IR (KBr) ν 3066, 1594, 1496, 1442, 1309, 1154, 1027 cm^{-1}.



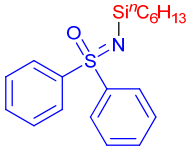
***S*–Ethyl-*N*–triethylsilyl-*S*-benzylsulfoximine (3ma):** TLC on GF254 (ethyl acetate: petroleum, 1: 20) give the product (34.0 mg, 60% yield) as a coroless liquid. ^1H NMR ($CDCl_3$, 400 MHz): δ 7.98-7.90 (m, 2H), 7.57-7.48 (m, 3H), 3.00 (q, J = 7.2 Hz, 2H), 1.19 (t, J = 7.4 Hz, 3H); ^{13}C NMR ($CDCl_3$, 100 MHz): δ 143.2, 132.1, 128.7, 127.8, 54.7, 8.1, 7.1, 6.6. MS (EI): 283 (M^+); HRMS (ESI-TOF) m/z calcd for $C_{14}H_{26}NOSSi$ $(M+H)^+$ 284.1499, found 284.1499. IR (KBr) ν 3064, 1583, 1476, 1445, 1237, 1095 cm^{-1}.



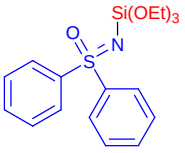
***N*-(Triethylsilyl) diphenyl sulfoximine (3aa)**: TLC on GF254 (ethyl acetate: petroleum, 1: 20) give the product (53.0 mg, 80% yield) as a colorless liquid. ^1H NMR ($CDCl_3$, 400 MHz): δ 7.95-7.92 (m, 4H), 7.43-7.38 (m, 6H), 0.94 (t, J = 7.9 Hz, 9H), 0.58 (q, J = 7.8 Hz, 6H); ^{13}C NMR ($CDCl_3$, 100 MHz): δ 146.1, 131.6, 128.7, 127.5, 7.1, 6.5. MS (EI): 331 (M^+); HRMS (ESI-TOF) m/z calcd for $C_{18}H_{26}NOSSi$ $(M+H)^+$ 332.1499, found 332.1500. IR (KBr) ν 3064, 1583, 1475, 1457, 1446, 1162, 1095 cm^{-1}.



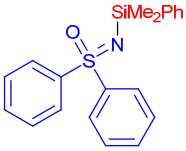
***N*-(Triisopropylsilyl) diphenyl sulfoximine (3ab):** TLC on GF254 (ethyl acetate: petroleum, 1: 20) give the product (56.3 mg, 75% yield) as a yellow liquid. ^1H NMR ($CDCl_3$, 400 MHz): δ 7.97-7.94 (m, 4H), 7.42-7.40 (m, 6H), 1.08-1.03 (m, 21H); ^{13}C NMR ($CDCl_3$, 100 MHz): δ 146.6, 131.5, 128.7, 127.2, 18.2, 18.3, 13.2. MS (EI): 373 (M^+); HRMS (ESI-TOF) m/z calcd for $C_{21}H_{32}NOSSi$ $(M+H)^+$ 374.1968, found 374.1969. IR (KBr) ν 3065, 1639, 1463, 1327, 1168, 1095 cm^{-1}.



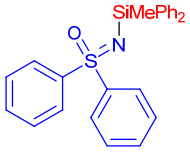
***N*-(Tri-*n*-hexylammoniumsilyl) diphenyl sulfoximine (3ac):** TLC on GF254 (ethyl acetate: petroleum, 1: 20) give the product (84.4 mg, 85% yield) as a colorless liquid. ^1H NMR ($CDCl_3$, 400 MHz): δ 7.93-7.91 (m, 4H), 7.43-7.38 (m, 6H), 1.32-1.21 (m, 24H), 0.85 (t, J = 6.6 Hz, 9H), 0.59-0.55 (m, 6H); ^{13}C NMR ($CDCl_3$, 100 MHz): δ 146.2, 131.5, 128.6, 127.3, 33.3, 31.5, 23.5, 22.6, 15.8, 14.1. MS (EI): 499 (M+); HRMS (ESI-TOF) m/z calcd for $C_{30}H_{50}NOSSi$ $(M+H)^+$ 500.3377, found 500.3378. IR (KBr) ν 3064, 1584, 1466, 1446, 1319, 1296, 1164, 1095 cm^{-1}.



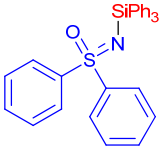
***N*-(Triethoxylsilyl) diphenyl sulfoximine (3ad):** TLC on GF254 (ethyl acetate: petroleum, 1: 15) give the product (33.4 mg, 44% yield) as a colorless liquid. ^{1}H NMR ($CDCl_3$, 400 MHz): δ 8.00-7.97 (m, 4H), 7.48-7.43 (m, 6H), 3.82 (q, J = 7.0 Hz, 6H), 1.15 (q, J = 7.0 Hz, 9H); ^{13}C NMR ($CDCl_3$, 100 MHz): δ 144.8, 132.1, 128.2, 127.4, 58.8, 18.0. MS (EI): 379 (M^+); HRMS (ESI-TOF) m/z calcd for $C_{18}H_{26}NO_4SSi$ $(M+H)^+$ 380.1346, found 380.1346. IR (KBr) ν 3067, 1636, 1446, 1428, 1286, 1164 cm^{-1}.



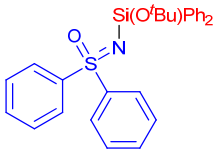
***N*-(Dimethylphenylsilyl) diphenyl sulfoximine (3ae):** TLC on GF254 (ethyl acetate: petroleum, 1: 20) give the product (42.3 mg, 60% yield) as a colorless liquid. ^{1}H NMR ($CDCl_3$, 400 MHz): δ 7.85 (d, J = 8.8 Hz, 1H), 7.67 (d, J = 6.6 Hz, 5H), 7.36-7.30 (m, 9H), 6.88 (d, J = 8.8 Hz, 1H), 3.82 (s, 3H), 2.86 (s, 3H); ^{13}C NMR ($CDCl_3$, 100 MHz): δ 136.6, 135.3, 135.2, 129.8, 129.3, 129.1, 127.6, 113.9, 55.6, 49.3. MS (EI): 351 (M^+); HRMS (ESI-TOF) m/z calcd for $C_{20}H_{22}NOSSi$ $(M+H)^+$ 352.1186, found 352.1185. IR (KBr) ν 3048, 1594, 1497, 1442, 1309, 1258, 1154, 1112, 1027 cm^{-1}.



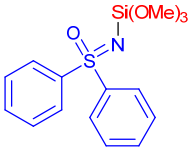
***N*-(Diphenylmethylsilyl) diphenyl sulfoximine (3af):** TLC on GF254 (ethyl acetate: petroleum, 1: 15) give the product (61.7 mg, 75% yield) as a colorless liquid. ^{1}H NMR ($CDCl_3$, 400 MHz): δ 7.89 (d, J = 7.2 Hz, 4H), 7.62 (d, J = 7.3 Hz, 4H), 7.40-7.26 (m, 12H); ^{13}C NMR ($CDCl_3$, 100 MHz): δ 145.1, 138.4, 134.2, 129. 0, 128.7, 127.5, 127.3, 0.2. MS (EI): 413 (M^+); HRMS (ESI-TOF) m/z calcd for $C_{25}H_{24}NOSSi$ $(M+H)^+$ 414.1342, found 414.1344. IR (KBr) ν 3066, 1636, 1475, 1446, 1296, 1164, 1096 cm^{-1}.



***N*-(Triphenylsilyl) diphenyl sulfoximine (3ag):** TLC on GF254 (ethyl acetate: petroleum, 1: 15) give the product (63.4 mg, 67% yield) as a colorless liquid. ^{1}H NMR ($CDCl_3$, 400 MHz): δ 7.86-7.84 (m, 4H), 7.63-7.61 (m, 6H), 7.37-7.22 (m, 15H); ^{13}C NMR ($CDCl_3$, 100 MHz): δ 144.84, 136.33, 135.3, 131.7, 129.2, 128. 7, 127.5, 127.3. MS (EI): 475 (M^+); HRMS (ESI-TOF) m/z calcd for $C_{30}H_{26}NOSSi$ $(M+H)^+$ 476.1499, found 476.1501. IR (KBr) ν 2953, 1640, 1573, 1464, 1321, 1157, 1010 cm^{-1}.

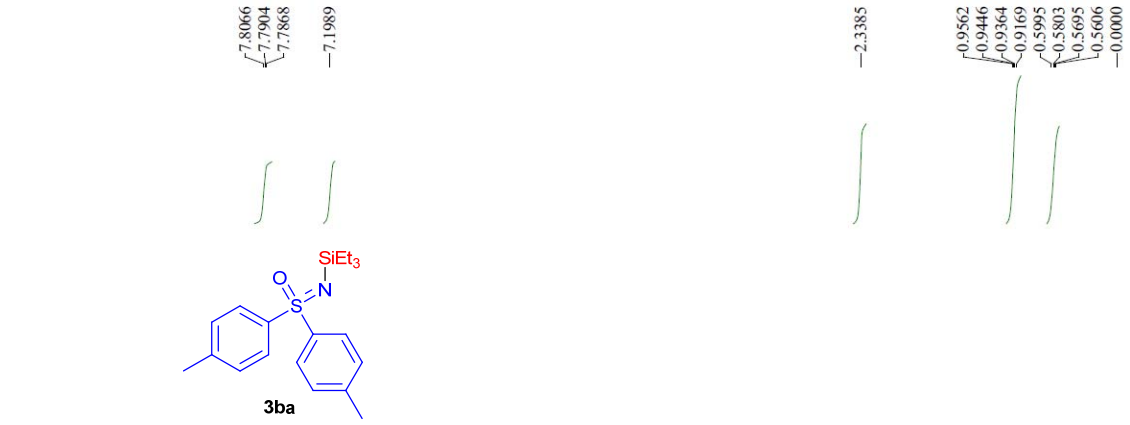


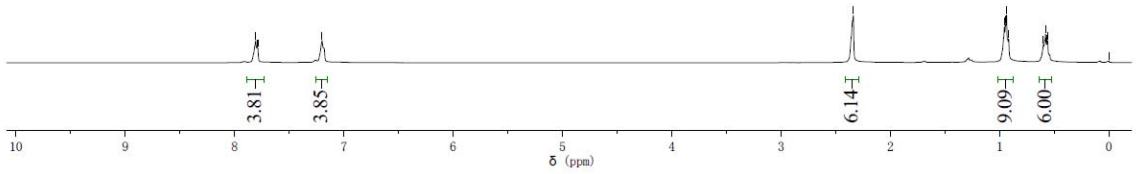
***N*-(Dipheny-*tert*-butoxylsilyl) diphenyl sulfoximine (3ah):** TLC on GF254 (ethyl acetate: petroleum, 1: 10) give the product (43.5 mg, 46% yield) as a yellowish liquid. ^{1}H NMR ($CDCl_3$, 400 MHz): δ 7.87-7.85 (m, 3H), 7.67-7.65 (m, 4H), 7.40-7.21 (m, 13H), 1.26 (s, 9H); ^{13}C NMR ($CDCl_3$, 100 MHz): δ 145.0, 137.9, 134.7, 131.7, 129.0, 128.7, 127.3, 127.3, 31.9. MS (EI): 471 (M^+); HRMS (ESI-TOF) m/z calcd for $C_{28}H_{30}NO_2SSi$ $(M+H)^+$ 472.1761, found 472.1761. IR (KBr) ν 3067, 1590, 1446, 1364, 1296, 1052 cm^{-1}.

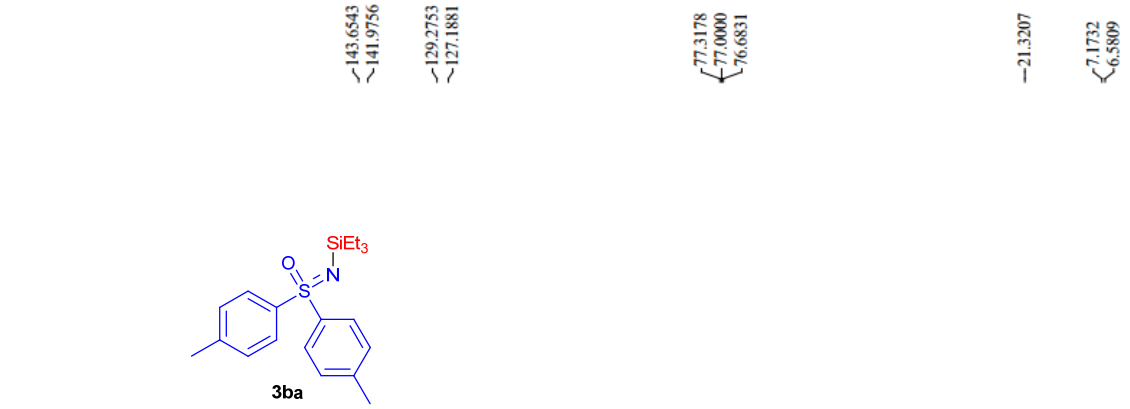


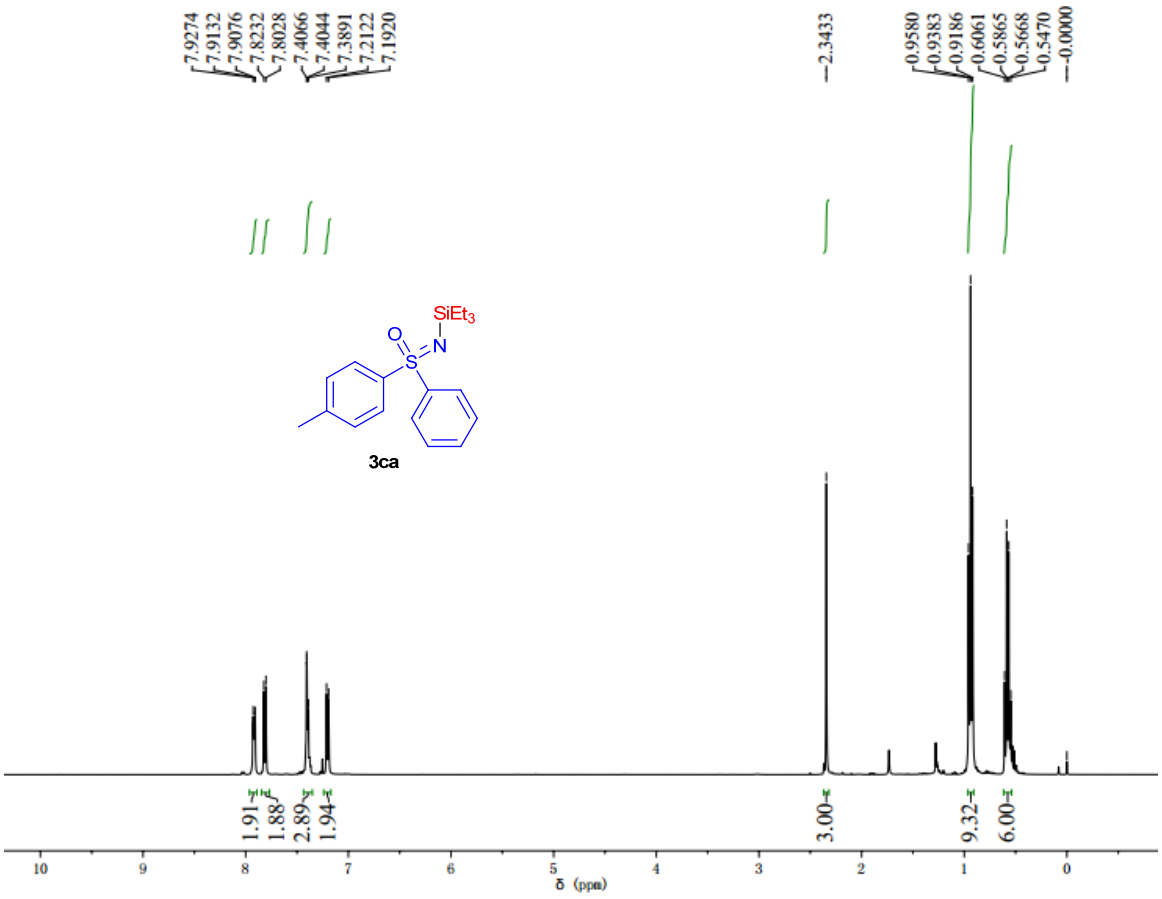
***N*-(Trimethoxylsilyl) diphenyl sulfoximine (3ai):** TLC on GF254 (ethyl acetate: petroleum, 1: 15) give the product (35.2 mg, 52% yield) as a yellowish liquid .^{1}H NMR ($CDCl_3$, 400 MHz): δ 8.00-7.98 (m, 3H), 7.49-7.45 (m, 7H), 3.53 (s, 9H); ^{13}C NMR ($CDCl_3$, 100 MHz): δ 144.6, 132.2, 128.9, 127.3, 51.0. MS (EI): 337 (M^+); HRMS (ESI-TOF) m/z calcd for $C_{15}H_{19}NO_4SSi$ $(M+H)^+$ 338.0877, found 338.0879. IR (KBr) ν 3061, 1644, 1446, 1301, 1232, 1184, 1094 cm^{-1}.

5 Copies of ^{1}H NMR and ^{13}C NMR spectra





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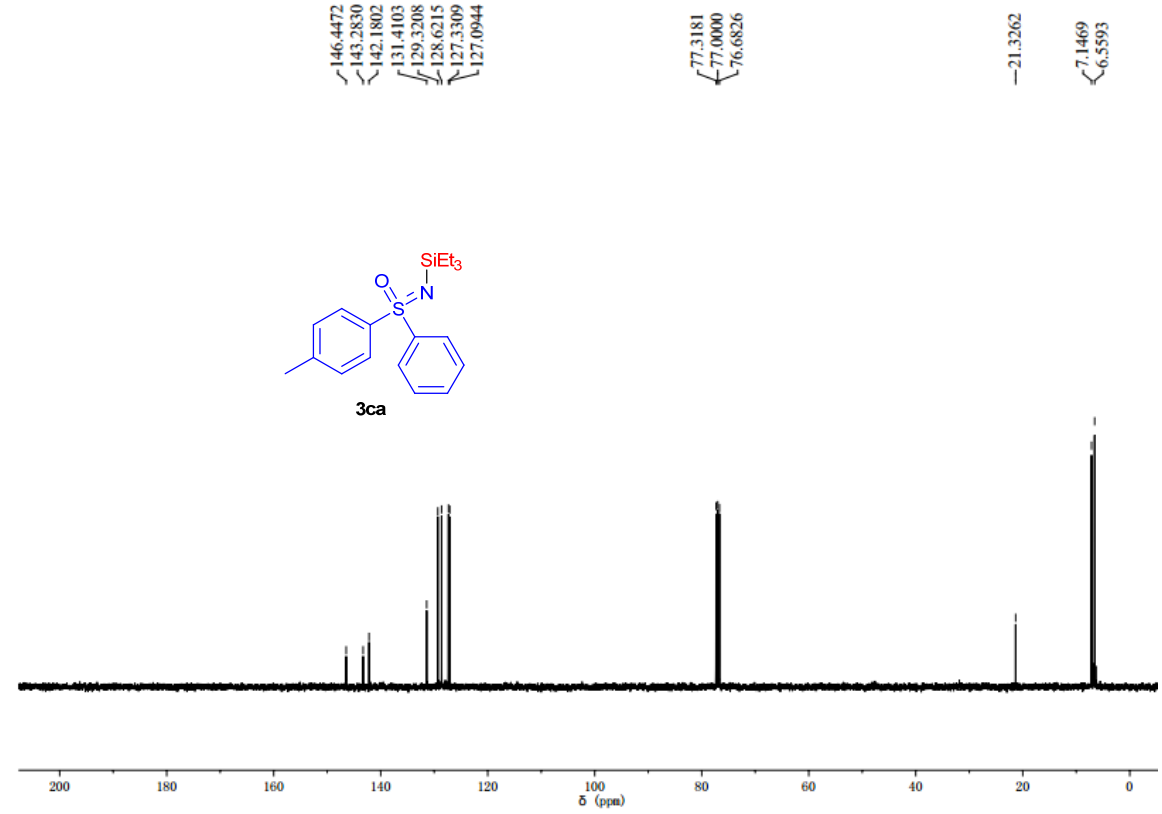
δ (ppm)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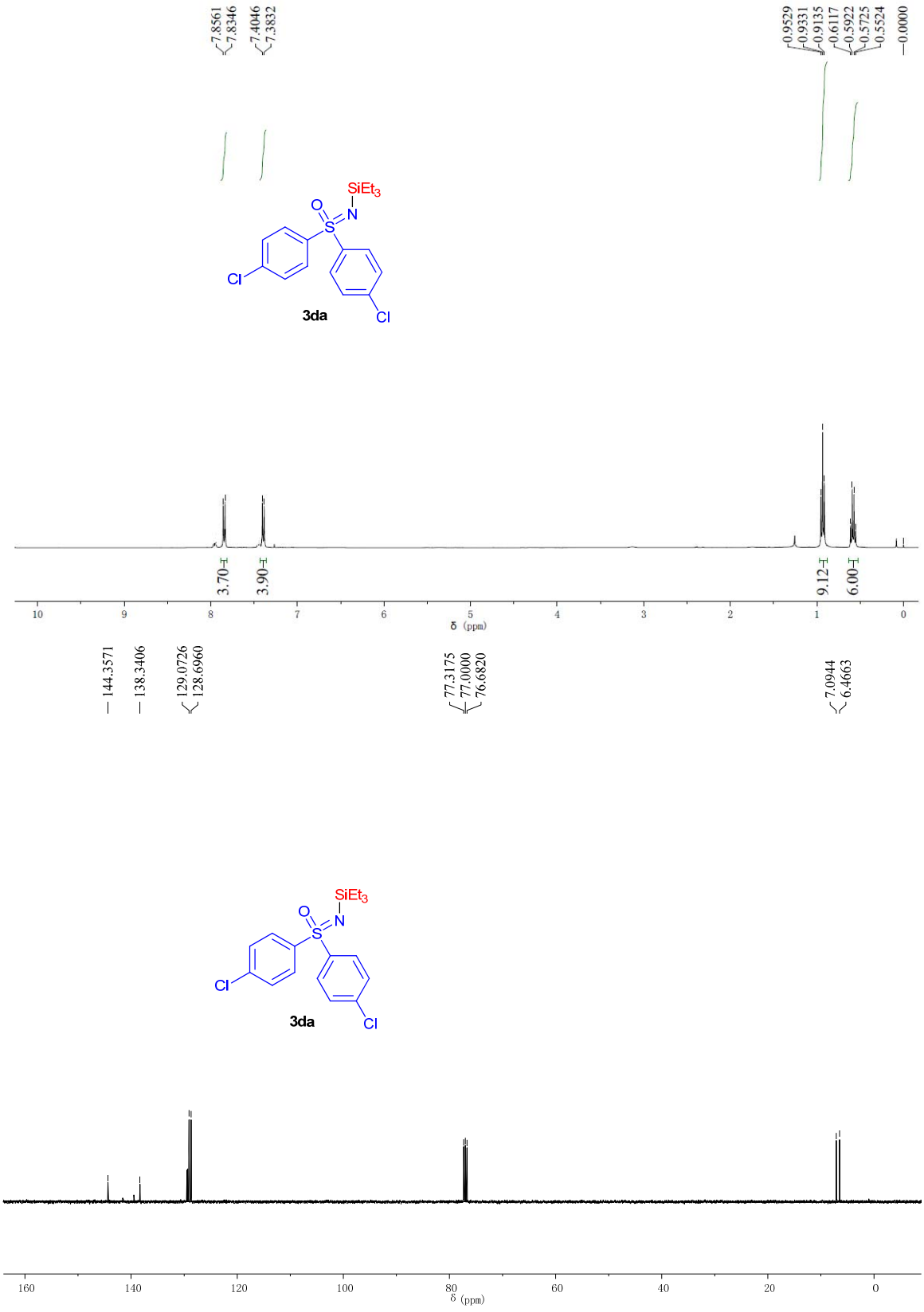
δ (ppm)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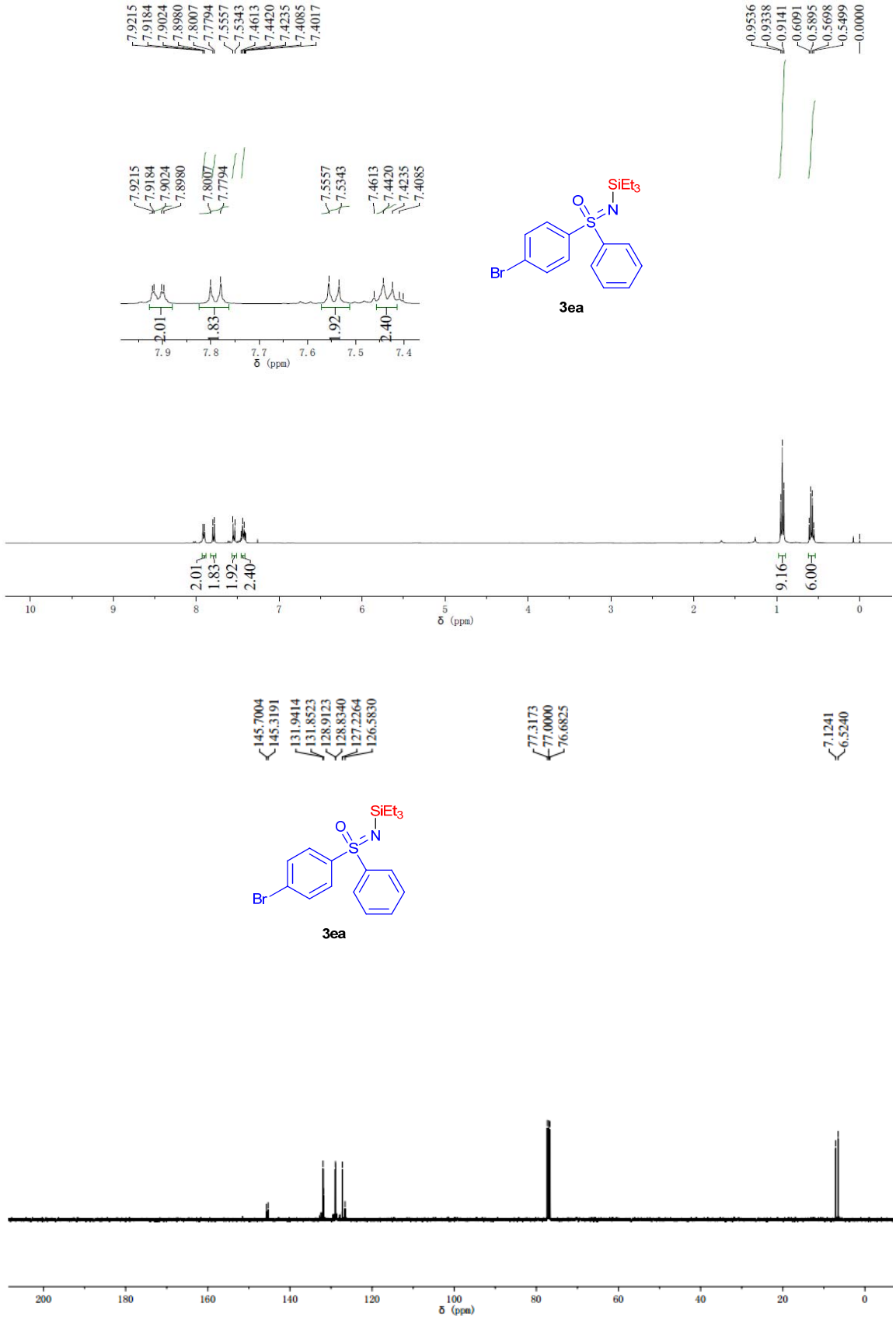
δ (ppm)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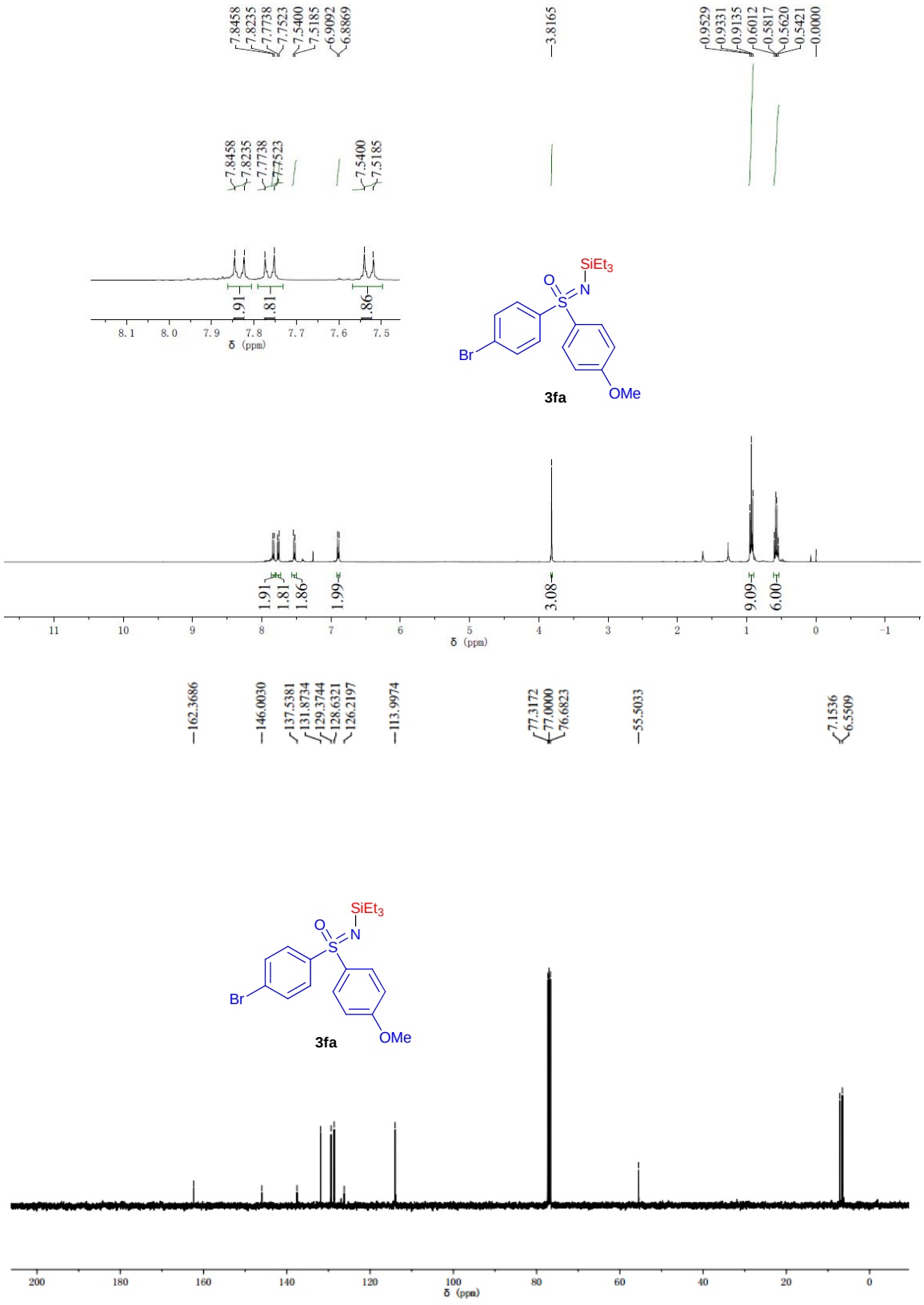
δ (ppm)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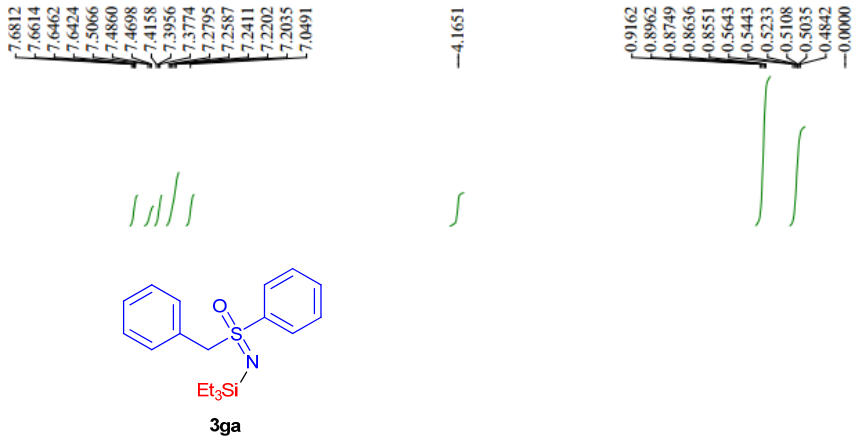
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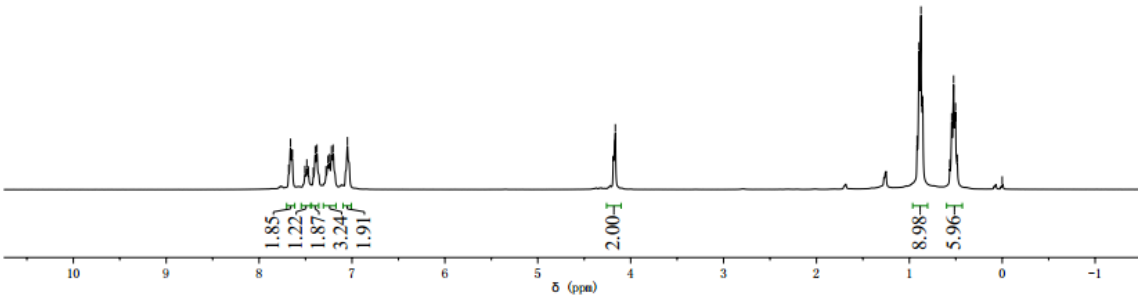
N
Et3Si

3ga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δ (ppm)


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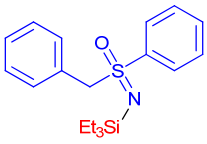
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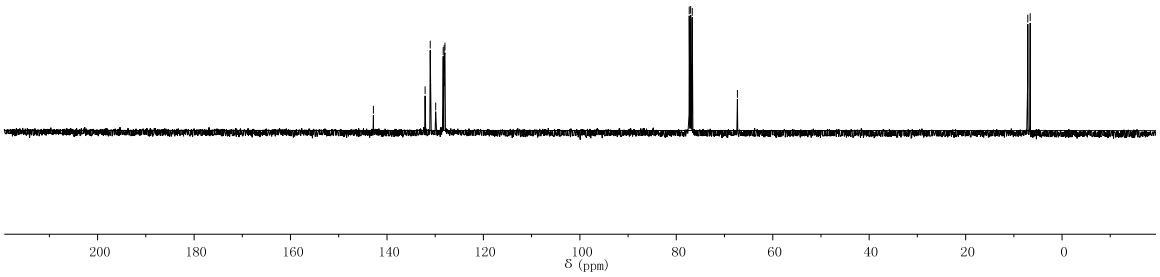
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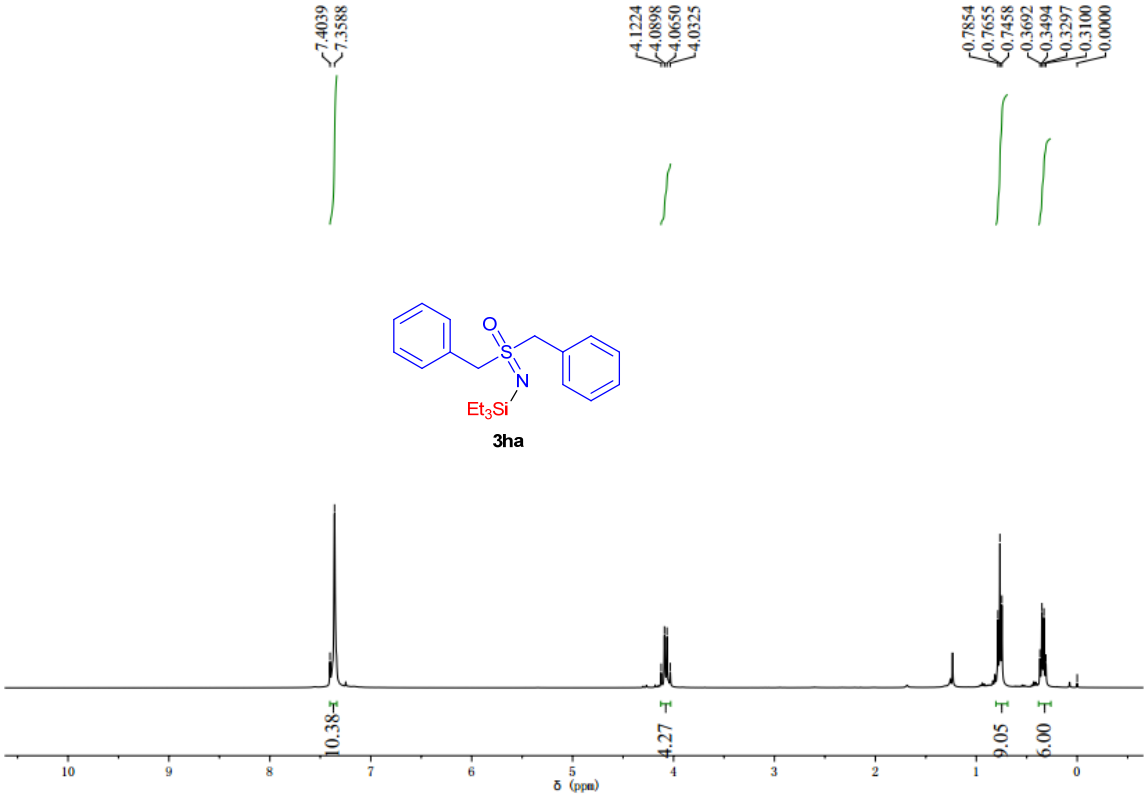
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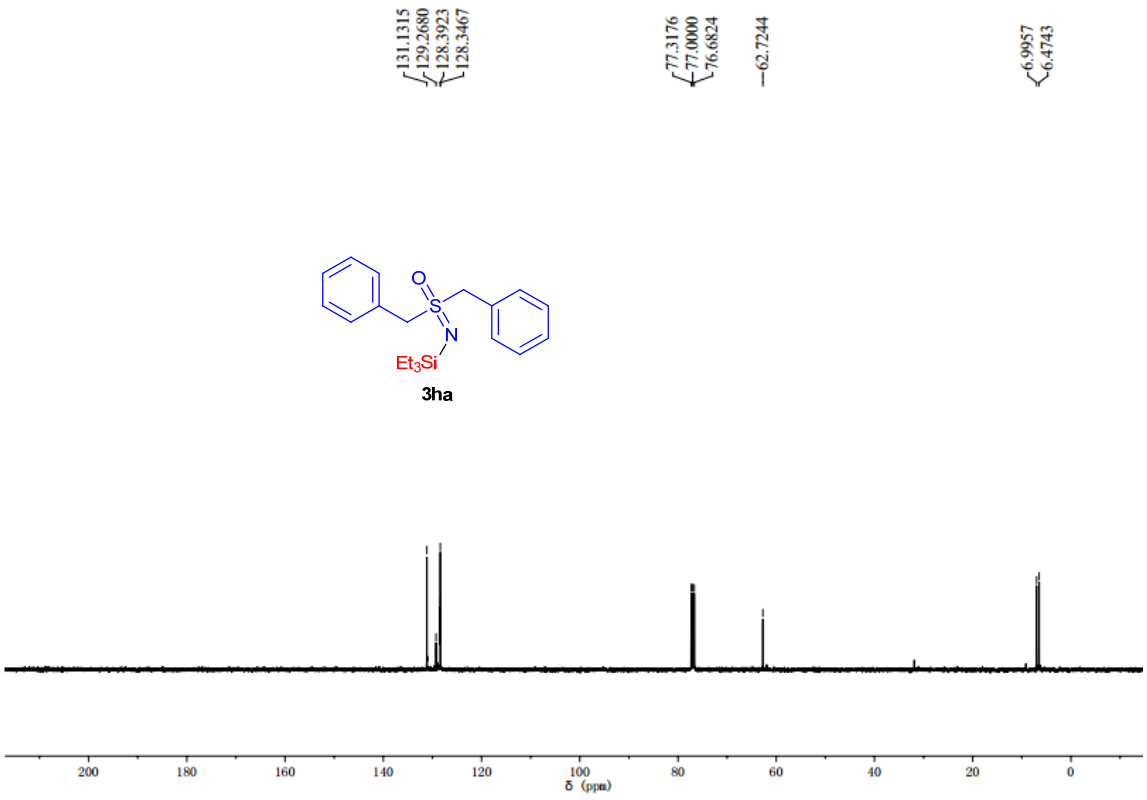
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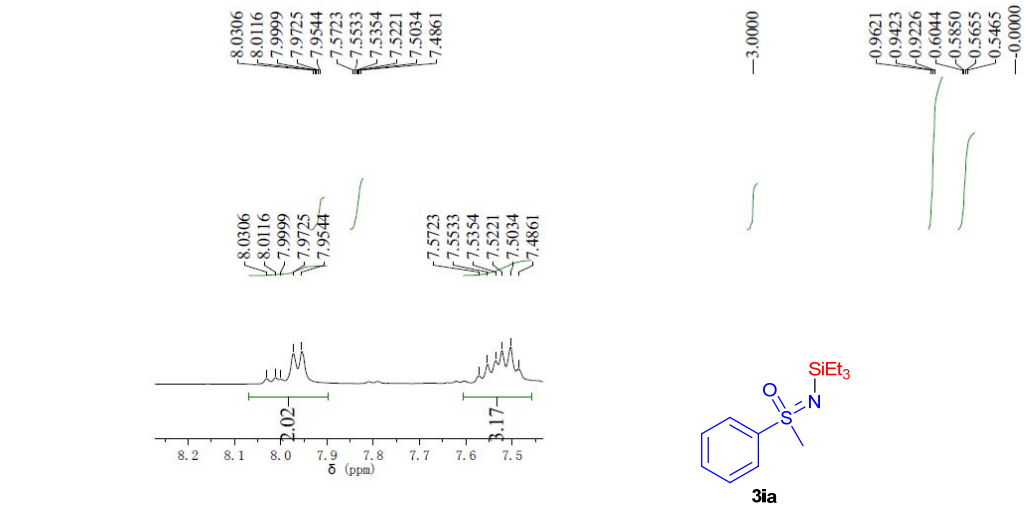
δ (ppm)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N
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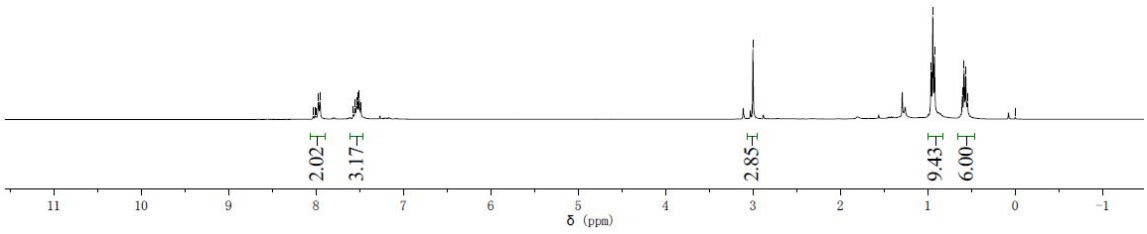
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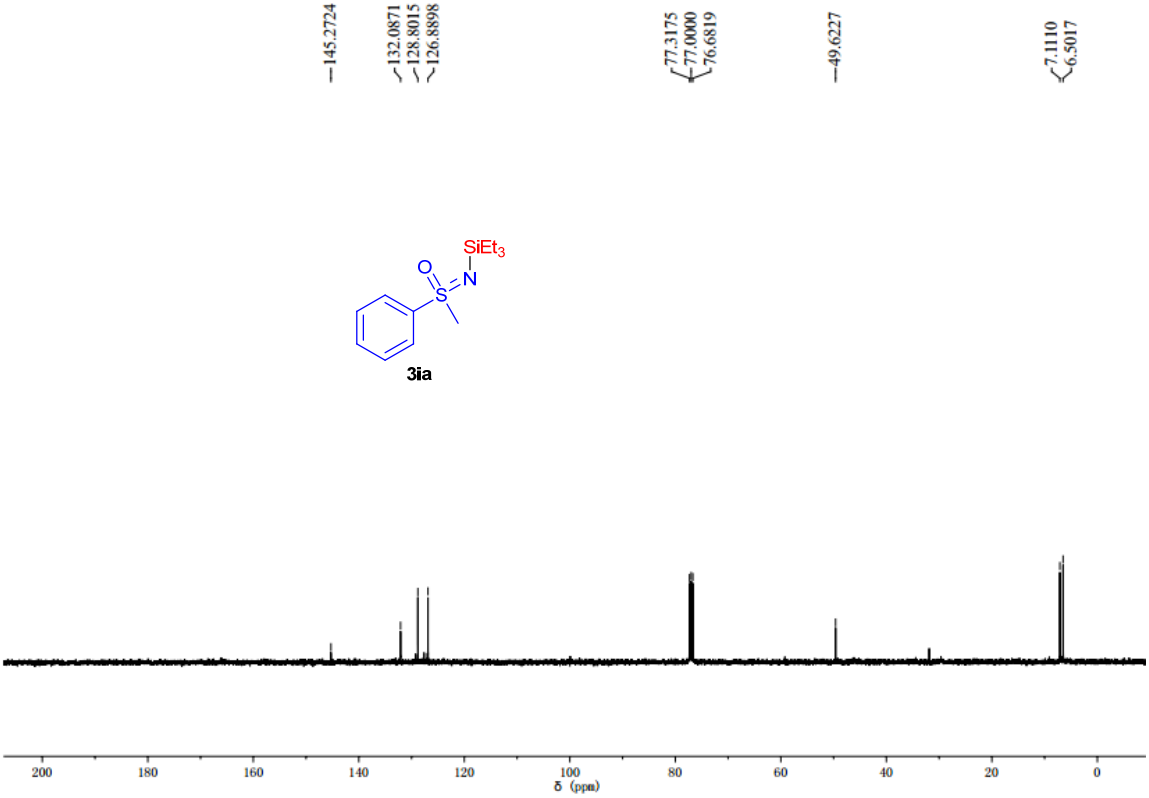
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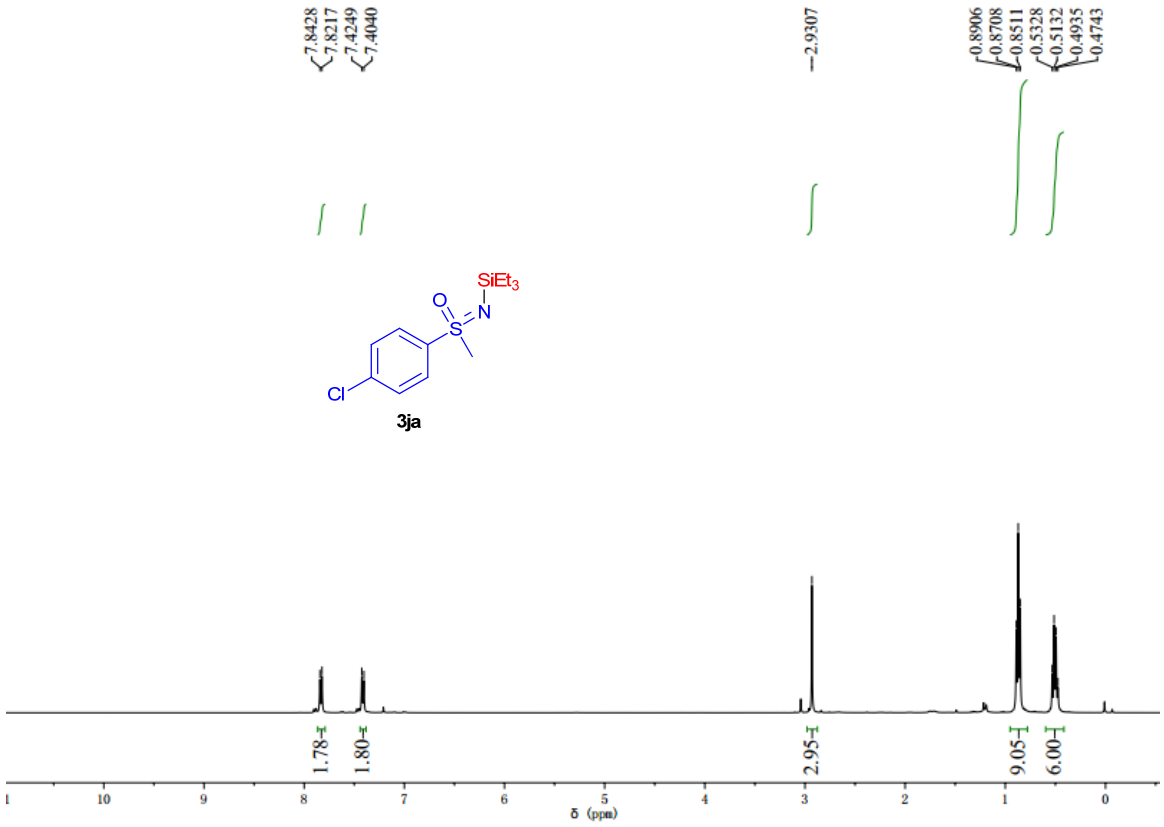
δ (ppm)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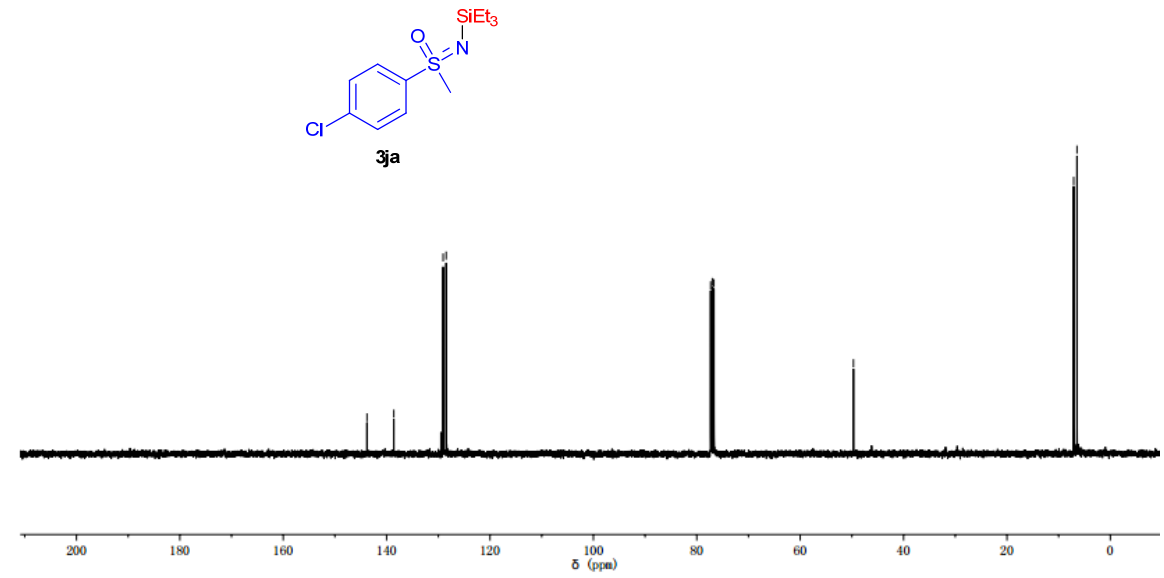
3ja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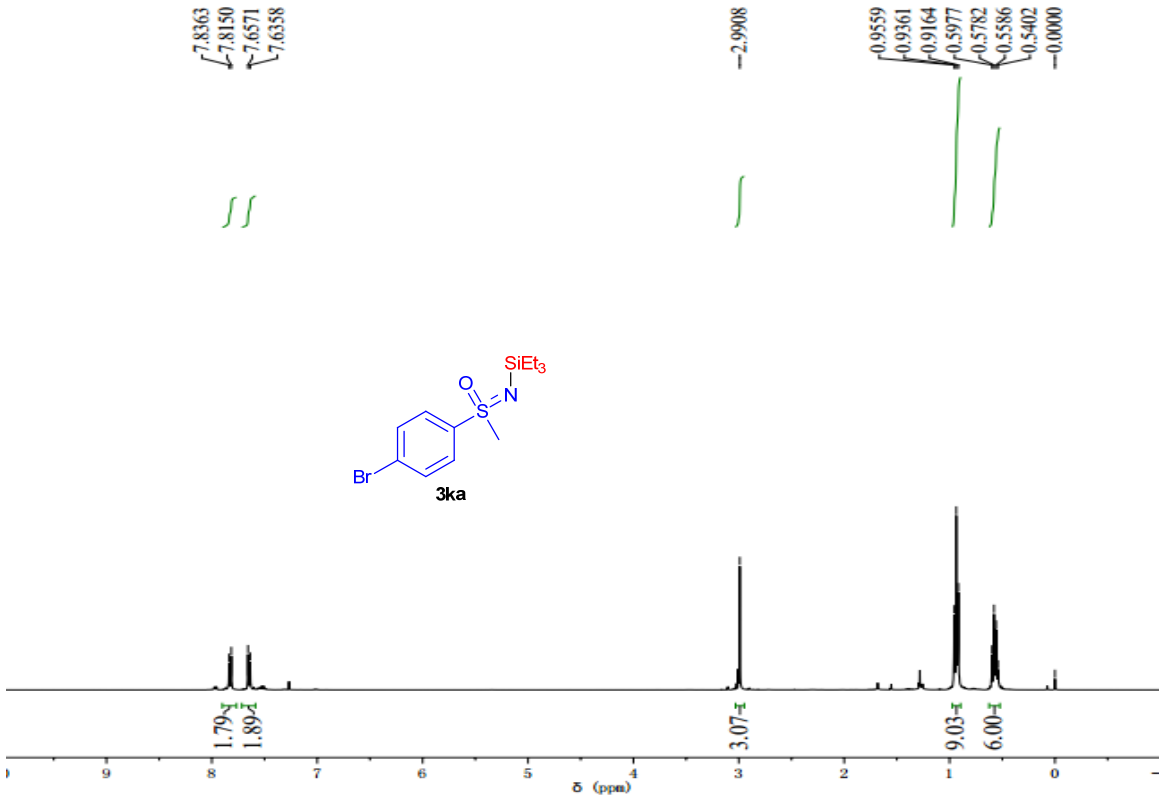
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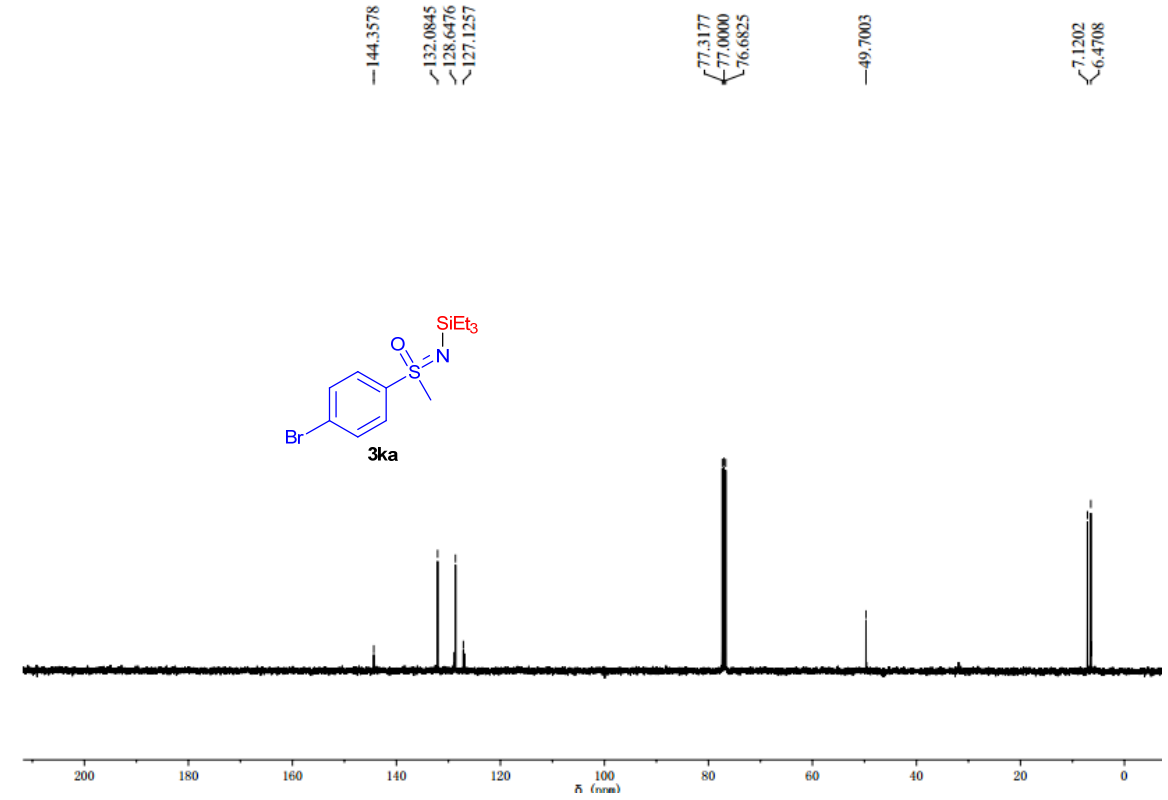
0.5977
0.5782
0.5586
0.5402
0.0000
SiEt3
O
S
N
Br
3ka
1.79
1.89
3.07
9.03
6.00
δ (ppm)


144.3578
132.0845
128.6476
127.1257
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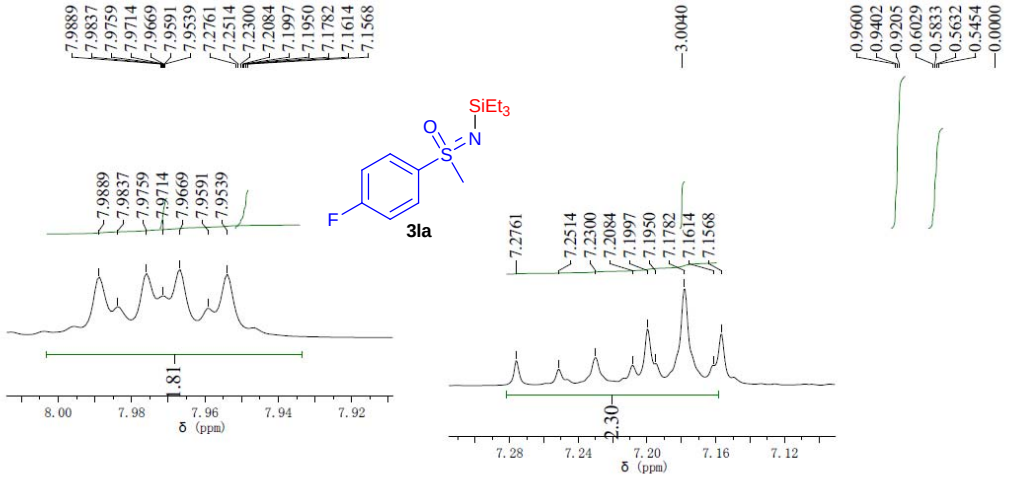
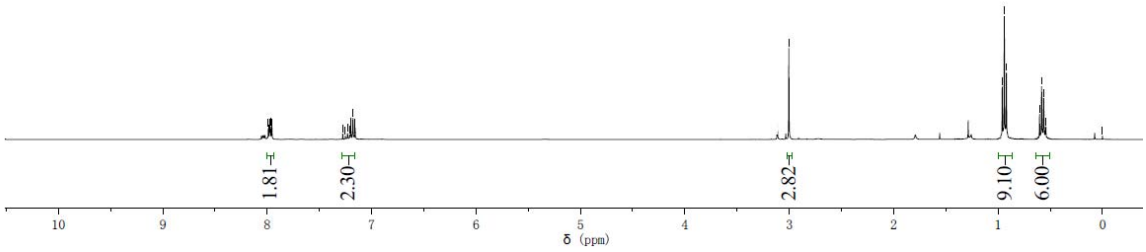
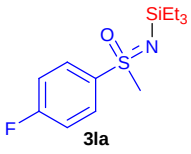
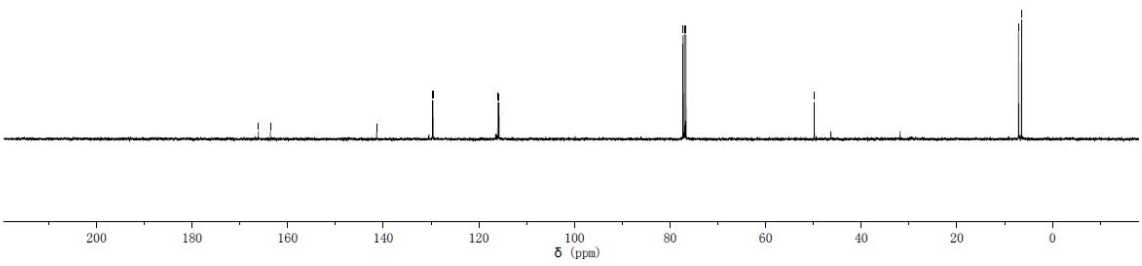
77.0000
76.6825
49.7003
7.1202
6.4708
SiEt3
O
S
N
Br
3ka
δ (ppm)

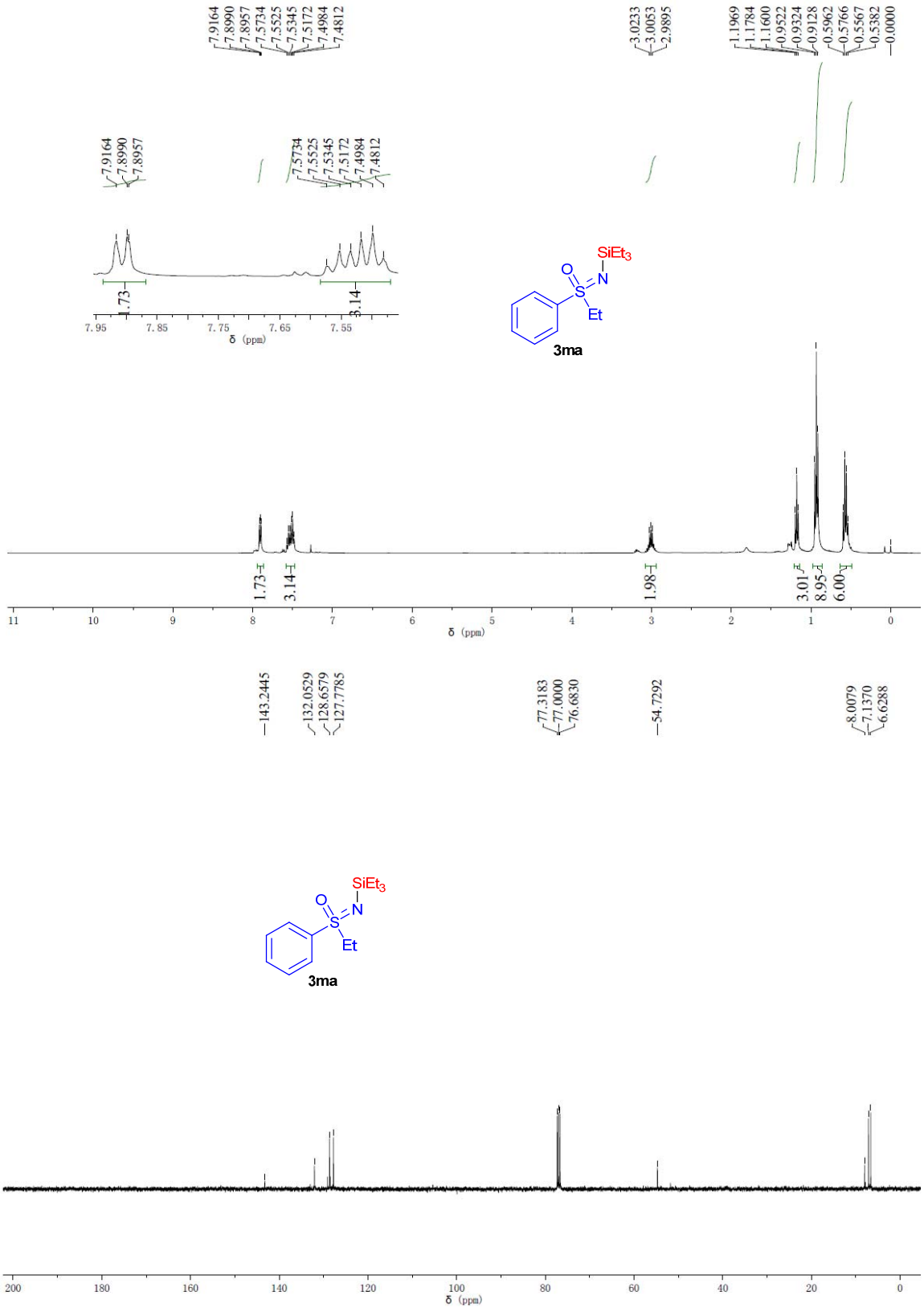

7.9889
7.9837
7.9759
7.9714
7.9669
7.9591
7.9539
7.2761
7.2514
7.2300
7.2084
7.1997
7.1950
7.1782
7.1614
7.1568
3.0040
0.9600
0.9402
0.9205
0.6029
0.5833
0.5632
0.5454
0.0000
SiEt3
O
S
N
F
3la
1.81
2.30
δ (ppm)


1.81
2.30
2.82
9.10
6.00
δ (ppm)


166.1388
163.6202
141.3954
141.3646
129.6796
129.5876
116.0056
115.7830
77.3176
77.0000
76.6820
49.8406
7.0997
6.4700


SiEt3
O
S
N
F
3la


δ (ppm)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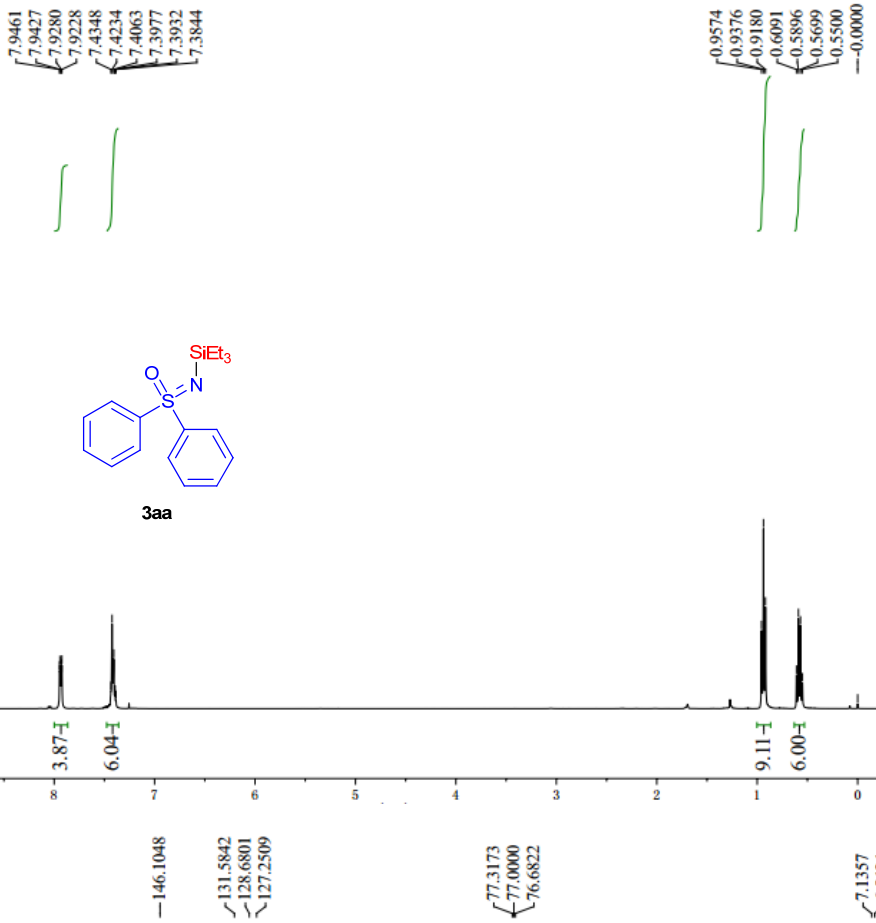
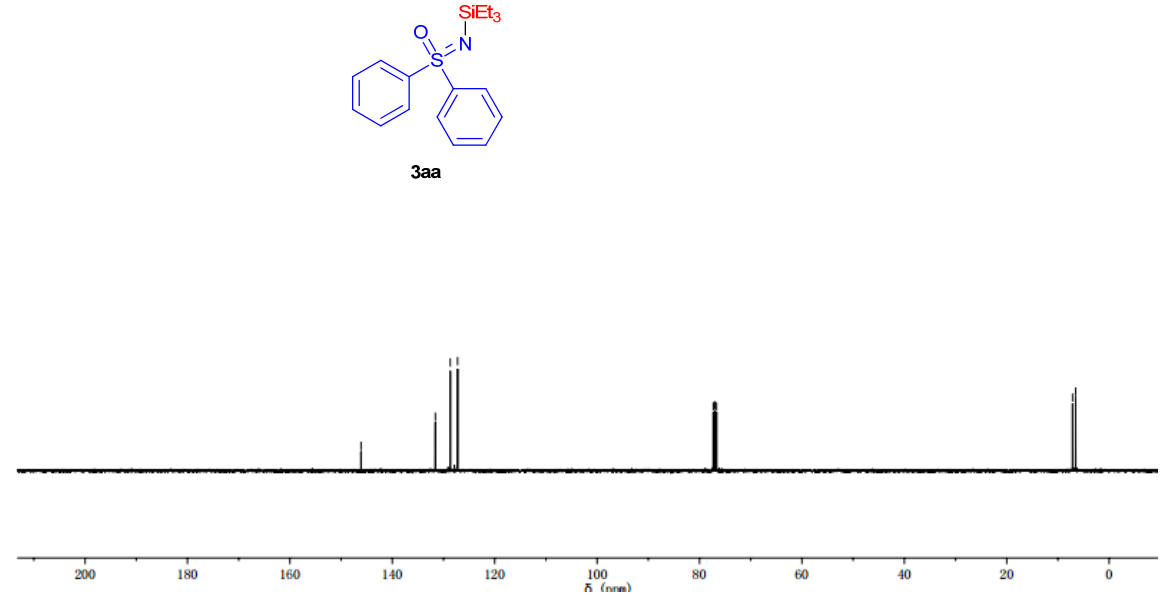
7.8990
7.8957
7.5734
7.5525
7.5345
7.5172
7.4984
7.4812
3.0233
3.0053
2.9895
1.1969
1.1784
1.1600
0.9522
0.9324
0.9128
0.5962
0.5766
0.5567
0.5382
0.0000
1.73
3.14
δ (ppm)
SiEt3
O
S
N
Et
3ma
1.73
3.14
1.98
3.01
8.95
6.00
δ (ppm)
143.2445
132.0529
128.6579
127.7785
77.3183
77.0000
76.6830
54.7292
8.0079
7.1370
6.6288
SiEt3
O
S
N
Et
3ma
δ (ppm)


7.9461
7.9427
7.9280
7.9228
7.4348
7.4234
7.4063
7.3977
7.3932
7.3844
0.9574
0.9376
0.9180
0.6091
0.5896
0.5699
0.5500
-0.0000
SiEt3
O
S
N
3aa
3.87
6.04
9.11
6.00
10
9
8
7
6
5
4
3
2
1
0
-1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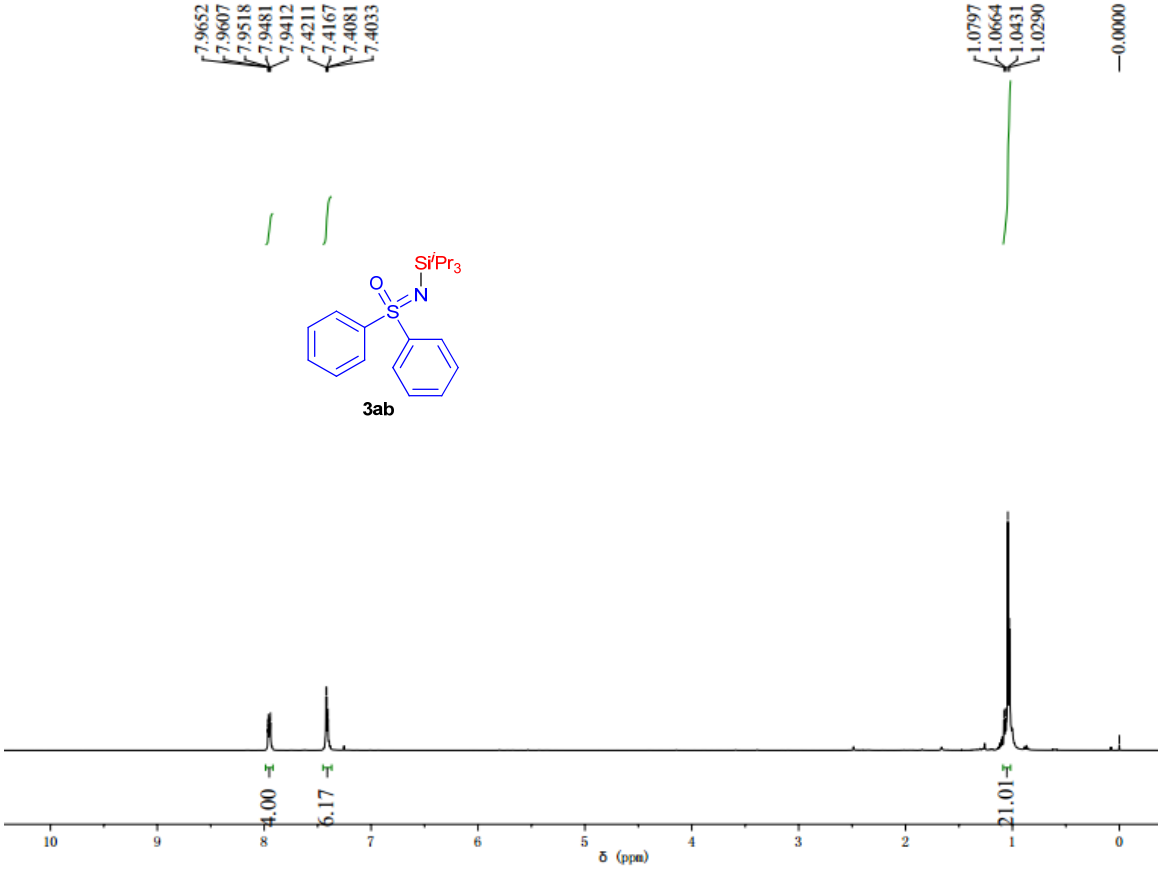
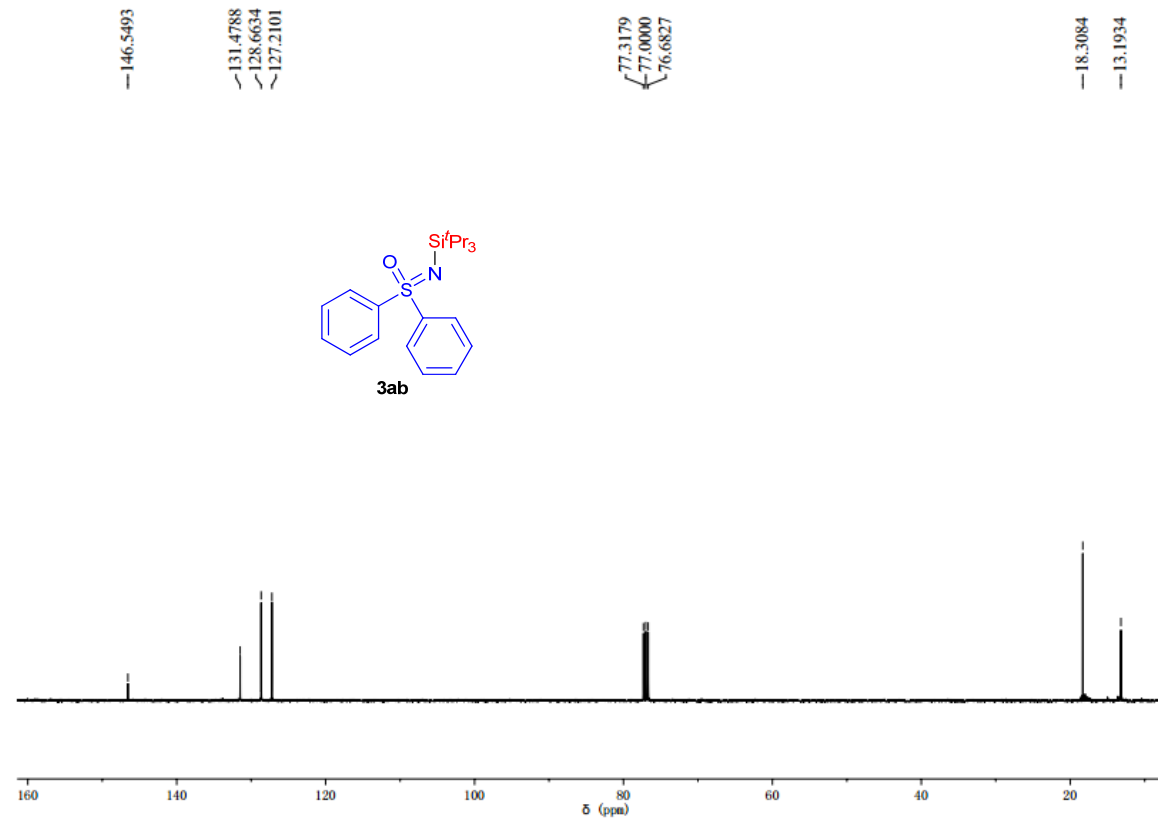
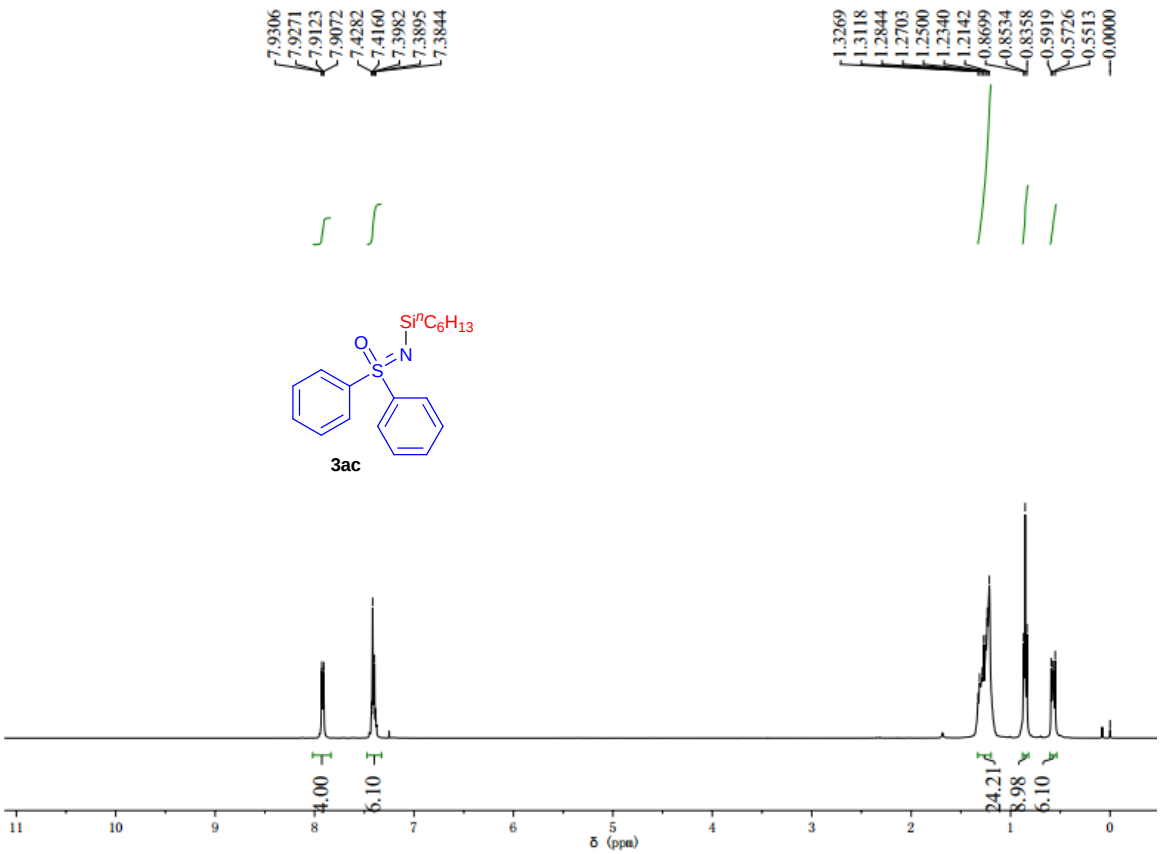
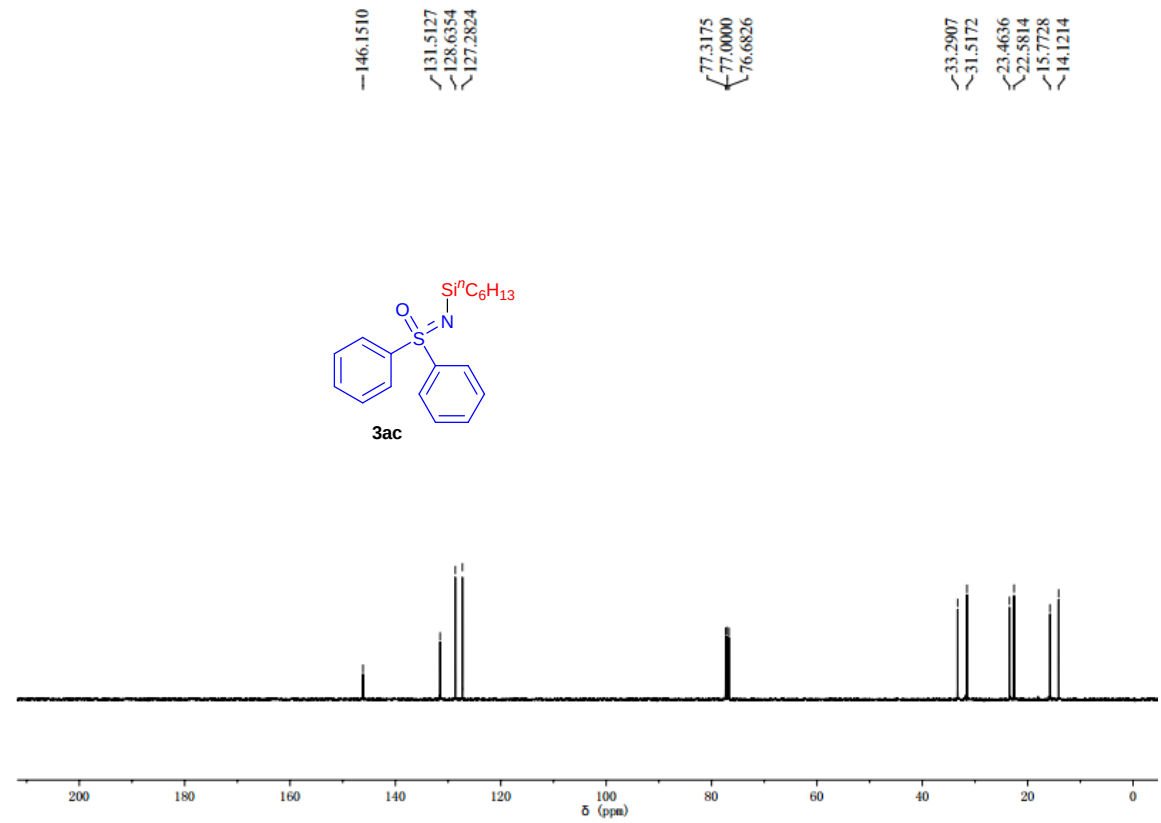
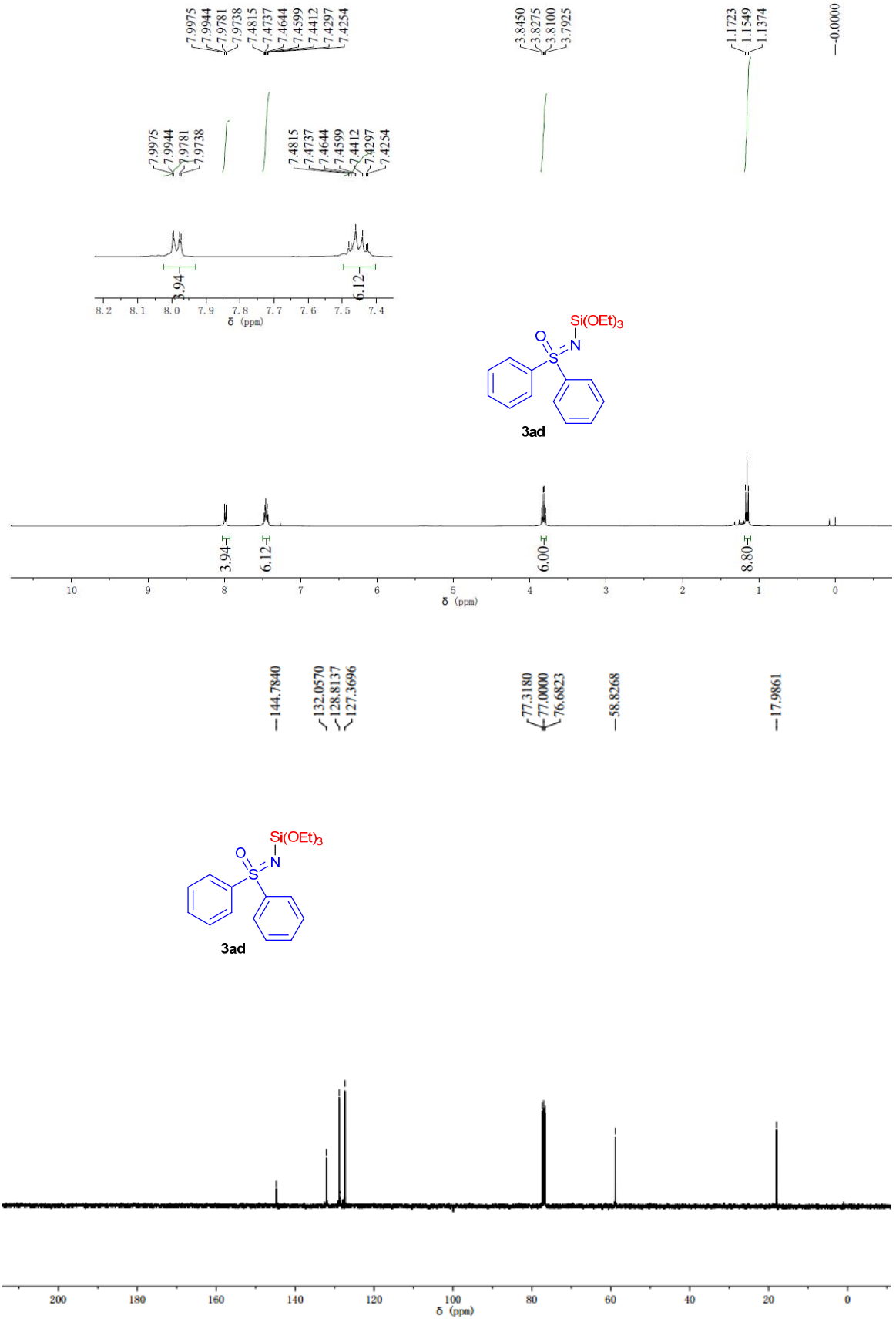
131.5842
128.6801
127.2509
77.3173
77.0000
76.6822
7.1357
6.5424
SiEt3
O
S
N
3aa
200
180
160
140
120
100
80
60
40
20
0

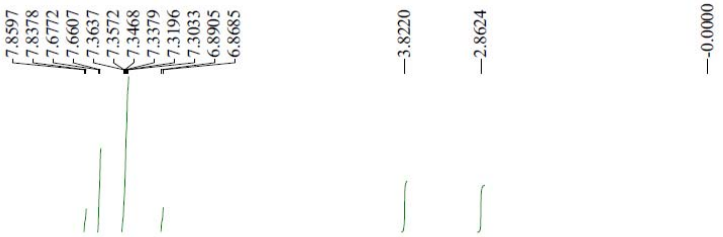

7.9652
7.9607
7.9518
7.9481
7.9412
7.4211
7.4167
7.4081
7.4033
1.0797
1.0664
1.0431
1.0290
0.0000
SiiPr3
O
S
N
3ab
4.00
6.17
21.01
δ (ppm)

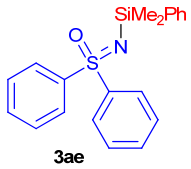

146.5493
131.4788
128.6634
127.2101
77.3179
77.0000
76.6827
18.3084
13.1934
SiiPr3
O
S
N
3ab
δ (ppm)


7.9306
7.9271
7.9123
7.9072
7.4282
7.4160
7.3982
7.3895
7.3844
1.3269
1.3118
1.2844
1.2703
1.2500
1.2340
1.2142
0.8699
0.8534
0.8358
0.5919
0.5726
0.5513
0.0000
Si^{n}C$_6$H$_{13}$
O
S
N
3ac
4.00
6.10
24.21
8.98
6.10
δ (ppm)

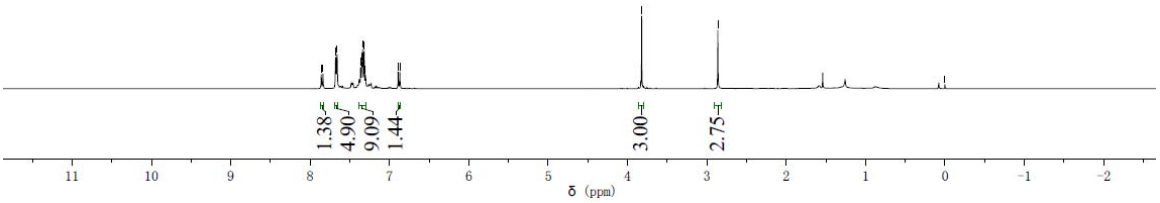

146.1510
131.5127
128.6354
127.2824
77.3175
77.0000
76.6826
33.2907
31.5172
23.4636
22.5814
15.7728
14.1214
Si^{n}C$_6$H$_{13}$
O
S
N
3ac
δ (ppm)


7.9975
7.9944
7.9781
7.9738
7.4815
7.4737
7.4644
7.4599
7.4412
7.4297
7.4254
3.8450
3.8275
3.8100
3.7925
1.1723
1.1549
1.1374
0.0000
3.94
6.12
δ (ppm)
Si(OEt)3
O
S
N
3ad
3.94
6.12
6.00
8.80
δ (ppm)
144.7840
132.0570
128.8137
127.3696
77.3180
77.0000
76.6823
58.8268
17.9861
Si(OEt)3
O
S
N
3ad
δ (ppm)

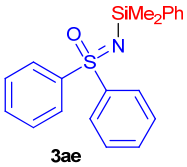

7.8597
7.8378
7.6772
7.6607
7.3637
7.3572
7.3468
7.3379
7.3196
7.3033
6.8905
6.8685
3.8220
2.8624
0.0000


SiMe2Ph
O
S
N

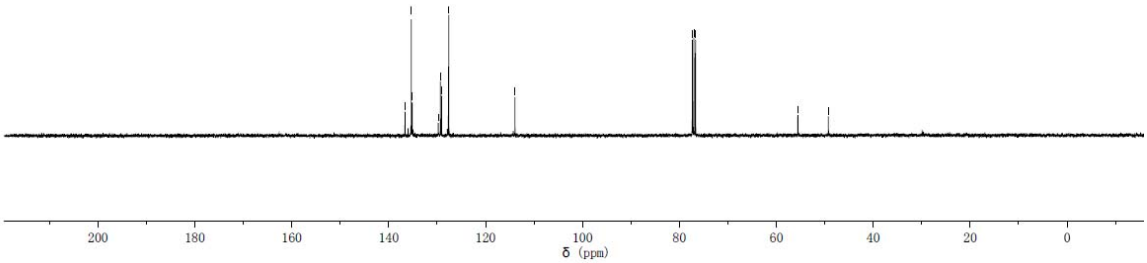
3ae

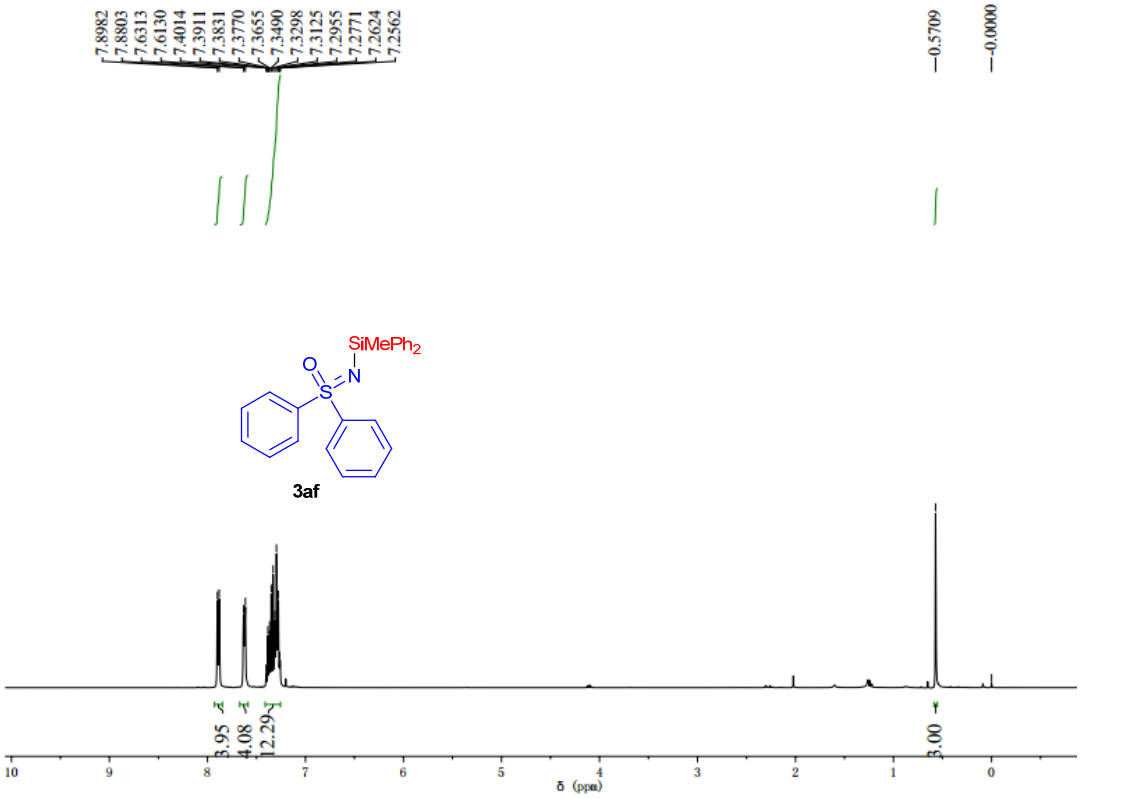

1.38
4.90
9.09
1.44
3.00
2.75
δ (ppm)

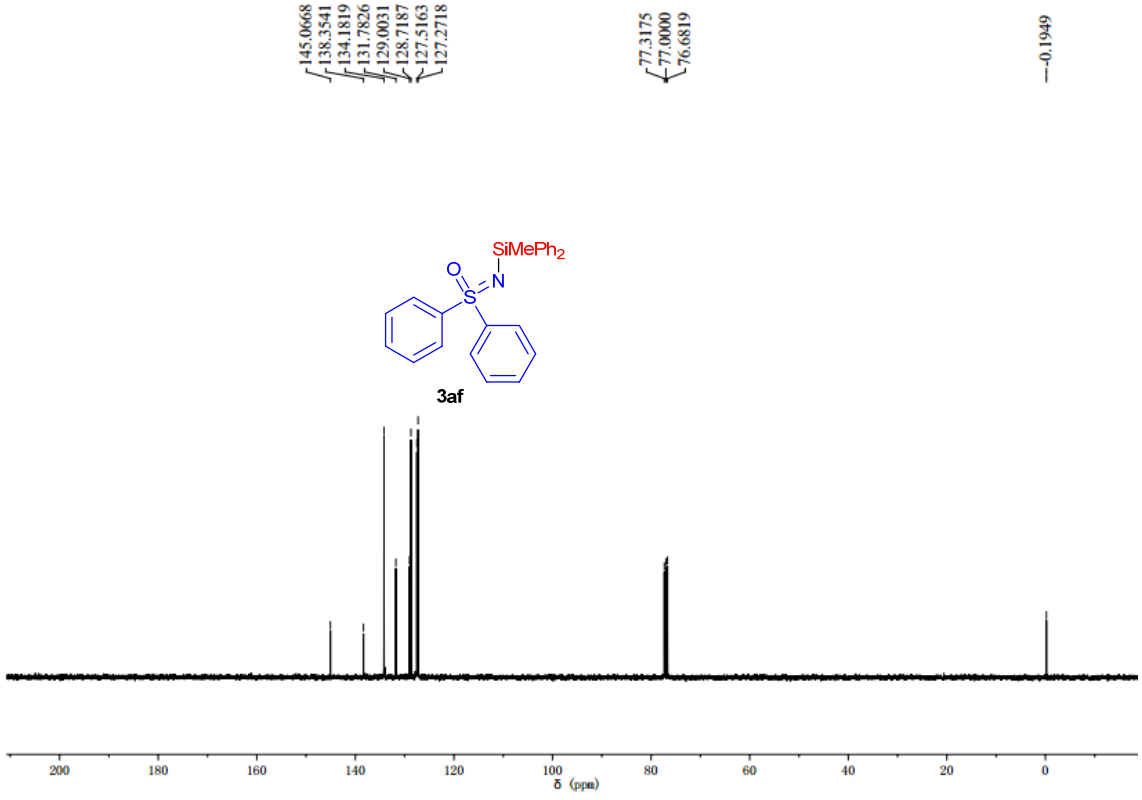

136.6217
135.3304
135.1484
129.7572
129.3138
129.0801
127.6117
113.9379
77.3173
77.0000
76.6822
55.5477
49.2512

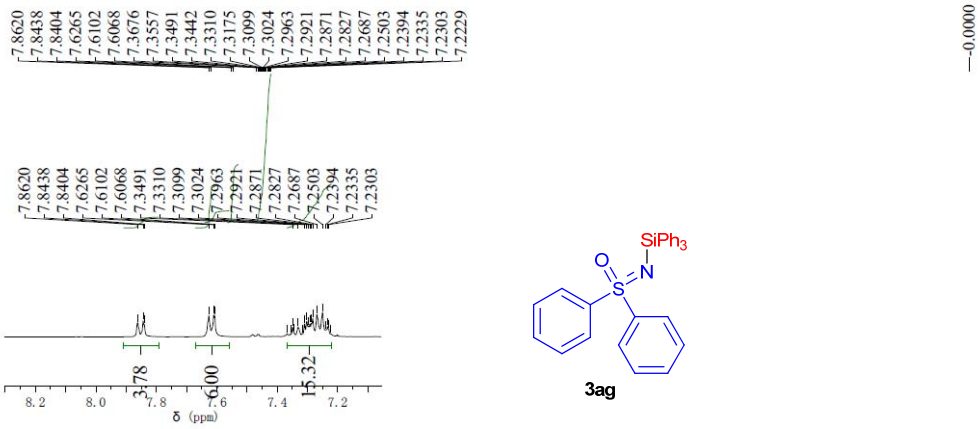

SiMe2Ph
O
S
N

3ae


δ (ppm)


7.8982
7.8803
7.6313
7.6130
7.4014
7.3911
7.3831
7.3770
7.3655
7.3490
7.3298
7.3125
7.2955
7.2771
7.2624
7.2562
0.5709
0.0000
SiMePh2
O
S
N
3af
3.95
4.08
12.29
3.00
10
9
8
7
6
5
4
3
2
1
0
δ (ppm)


145.0668
138.3541
134.1819
131.7826
129.0031
128.7187
127.5163
127.2718
77.3175
77.0000
76.6819
0.1949
SiMePh2
O
S
N
3af
200
180
160
140
120
100
80
60
40
20
0
δ (ppm)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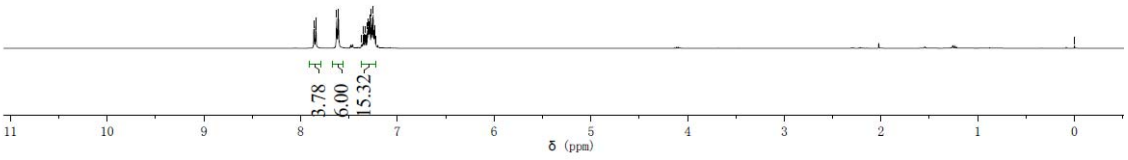
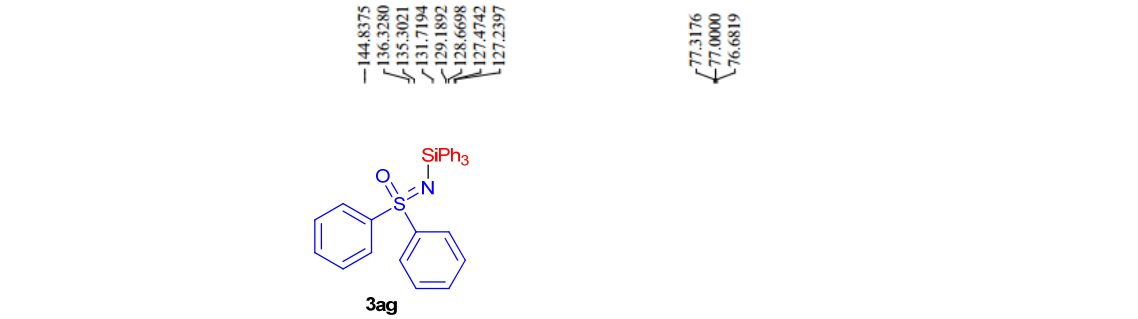
7.8438
7.8404
7.6265
7.6102
7.6068
7.3676
7.3557
7.3491
7.3442
7.3310
7.3175
7.3099
7.3024
7.2963
7.2921
7.2871
7.2827
7.2687
7.2503
7.2394
7.2335
7.2303
7.2229
0.0000
3.78
6.00
15.32
8.2
8.0
7.8
7.6
7.4
7.2
δ (ppm)
SiPh3
O
S
N
3ag


3.78
6.00
15.32
11
10
9
8
7
6
5
4
3
2
1
0
δ (ppm)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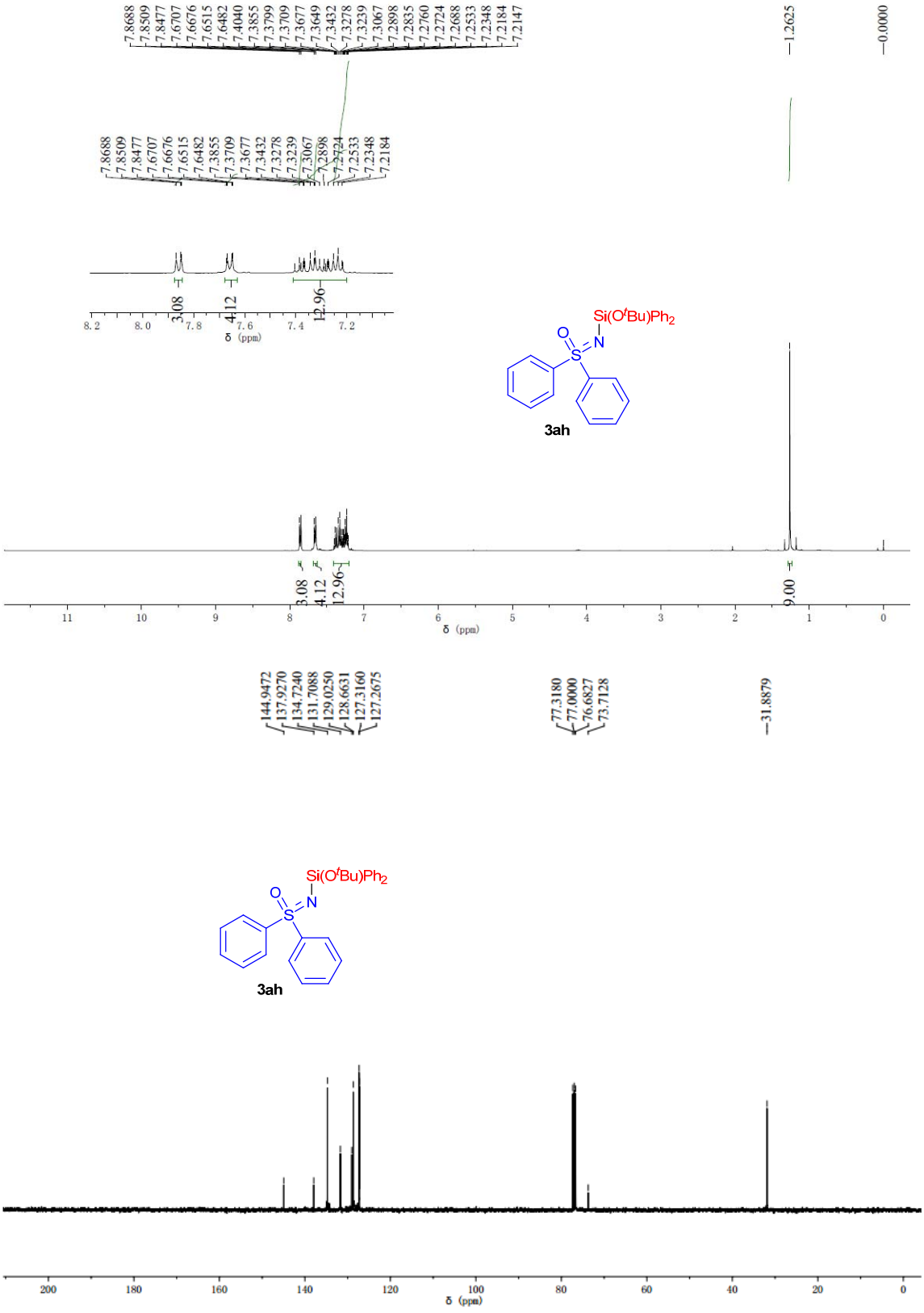
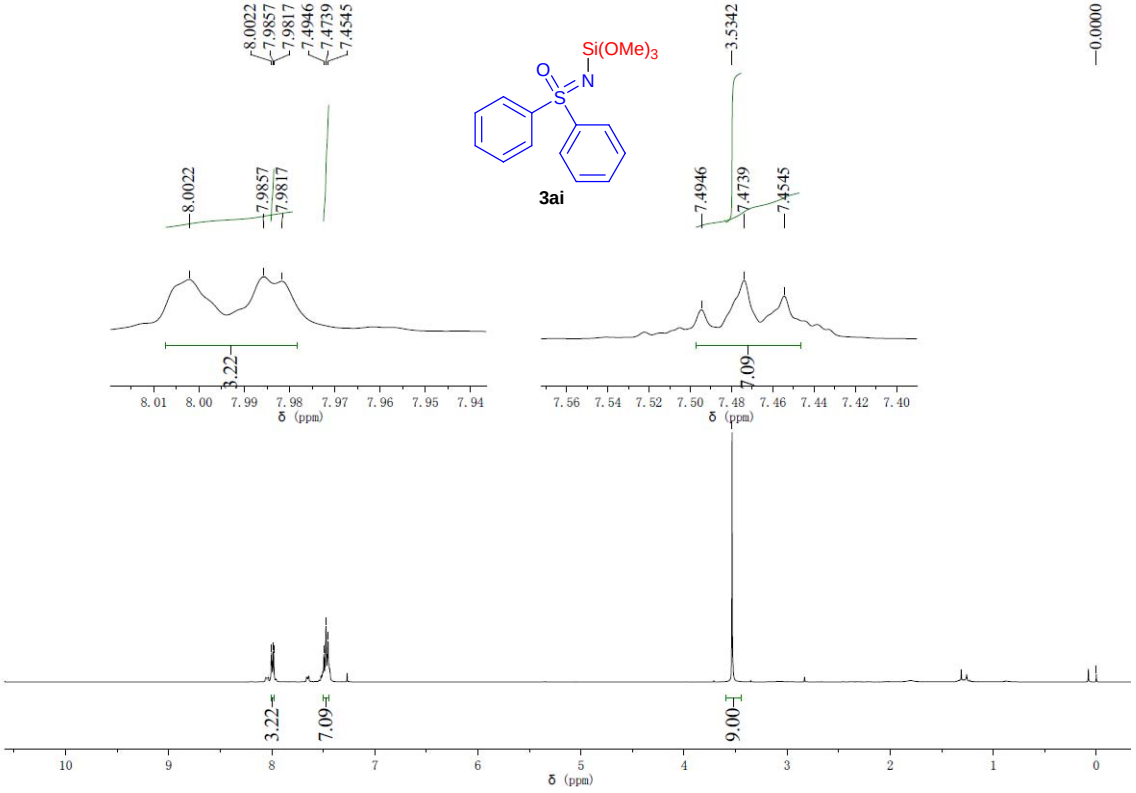
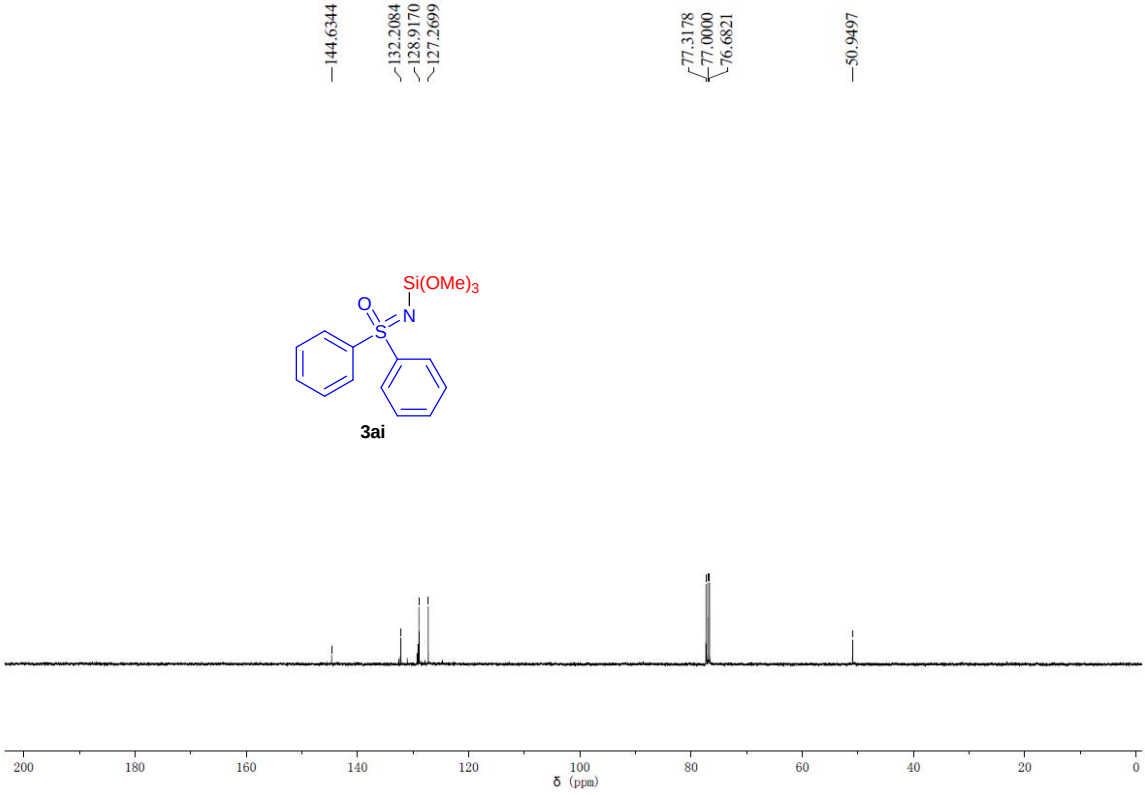
136.3280
135.3021
131.7194
129.1892
128.6698
127.4742
127.2397
77.3176
77.0000
76.6819
SiPh3
O
S
N
3ag
200
180
160
140
120
100
80
60
40
20
0
δ (ppm)


7.8688
7.8509
7.8477
7.6707
7.6676
7.6515
7.6482
7.4040
7.3855
7.3799
7.3709
7.3677
7.3649
7.3432
7.3278
7.3239
7.3067
7.2898
7.2835
7.2760
7.2724
7.2688
7.2533
7.2348
7.2184
7.2147
1.2625
0.0000
3.08
4.12
12.96
δ (ppm)
Si(O^{t}Bu)Ph$_2$
3ah
9.00
δ (ppm)
144.9472
137.9270
134.7240
131.7088
129.0250
128.6631
127.3160
127.2675
77.3180
77.0000
76.6827
73.7128
31.8879
Si(O^{t}Bu)Ph$_2$
3ah
δ (ppm)


8.0022
7.9857
7.9817
7.4946
7.4739
7.4545
3.5342
0.0000
Si(OMe)3
O
S
N
3ai
3.22
7.09
9.00
δ (ppm)


144.6344
132.2084
128.9170
127.2699
77.3178
77.0000
76.6821
50.9497
Si(OMe)3
O
S
N
3ai
δ (ppm)