$AlFe_2O_4$@Ph-SO_3H Innovative Nanocatalyst: A Sustainable Approach for the A3 Coupling Reaction in DES for 2-Thioarylbenzoazoles

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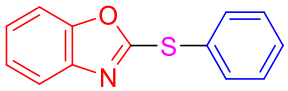
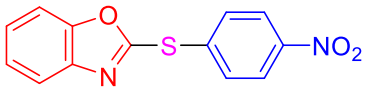
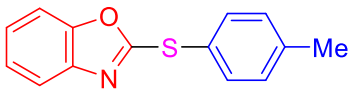


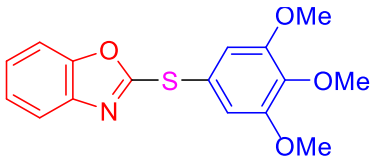
2-(phenylthio)benzo[*d*]oxazole: Colorless oil, ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.76 (d, J = 7.8 Hz, 2H), 7.66 (d, J = 8.0 Hz, 2H), 7.52 (d, J = 8.6 Hz, 2H), 7.47 – 7.42 (m, 3H).; ^{13}C NMR (101 MHz, $CDCl_3$) δ 154.9, 152.0, 141.3, 134.8, 126.8, 126.5, 125.7, 124.3, 123.6, 122.7, 121.0, 109.3.



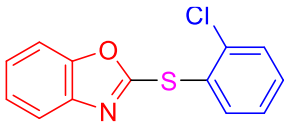
2-(phenylthio)benzo[*d*]oxazole: mp: 93-95 ºC, ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.91 (d, J = 7.7 Hz, 2H), 7.64 (dd, J = 9.1, 3.5 Hz, 4H), 7.38 (d, J = 8.6 Hz, 2H).; ^{13}C NMR (101 MHz, $CDCl_3$) δ 154.0, 147.6, 143.2, 136.9, 131.1, 124.7, 123.2, 122.0, 121.3, 120.8, 119.8, 119.1, 101.5.



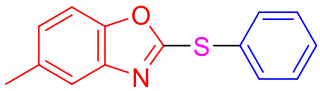
2-(p-tolylthio)benzo[*d*]oxazole: Colorless oil, $_{1}$H NMR (400 MHz, $CDCl_3$) δ 7.83 (d, J = 7.7 Hz, 2H), 7.65-7.63 (m, 2H), 7.46 (d, J = 8.6 Hz, 2H), 7.34 (d, J = 9.0 Hz, 2H), 2.39 (s, 3H); $_{13}$C NMR (101 MHz, $CDCl_3$) δ 155.0, 153.1, 142.8, 137.6, 127.5, 126.0, 124.3, 123.7, 122.6, 121.0, 119.8, 108.5, 20.1.



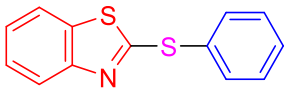
2-((3,4,5-trimethoxyphenyl)thio)benzo[*d*]oxazole: mp: 129-131 ºC, ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.71 (d, J = 8.0 Hz, 2H), 7.43 (d, J = 8.6 Hz, 2H), 7.12 (s, 2H), 3.85 (s, 6H), 3.71 (s, 3H); ^{13}C NMR (101 MHz, $CDCl_3$) δ 154.3, 151.9, 142.7, 134.1, 130.7, 129.8, 128.4, 127.4, 119.7, 112.6, 61.9, 55.4.



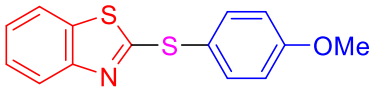
2-((2-chlorophenyl)thio)benzo[*d*]oxazole: mp: 46-48 ºC, ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.81 (d, J = 7.8 Hz, 1H), 7.75 (d, J = 7.7 Hz, 2H), 7.68 (d, J = 8.0 Hz, 2H), 7.61 (d, J = 7.6 Hz, 1H), 7.33 – 7.30 (m, 1H), 7.11 (t, J = 7.7 Hz, 1H); ^{13}C NMR (101 MHz, $CDCl_3$) δ 145.1, 152.6, 143.2, 134.7, 132.8, 131.5, 129.0, 128.6, 126.4, 119.8, 112.5.



5-methyl-2-(phenylthio)benzo[*d*]oxazole: mp: 48-50 ºC, ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.88 (d, J = 7.4 Hz, 1H), 7.71 (s, 1H), 7.69 (d, J = 7.6 Hz, 1H), 7.54 (d, J = 8.6 Hz, 2H), 7.30 (d, J = 7.7 Hz, 2H), 7.16 – 7.09 (m, 1H), 2.61 (s, 3H).; ^{13}C NMR (101 MHz, $CDCl_3$) δ 153.2, 138.9, 131.5, 126.7, 125.1, 123.6, 120.1, 100.7, 21.0.

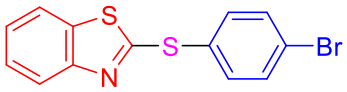


2-(phenylthio)benzo[*d*]thiazole: mp: 33-35 ºC, ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.03 (d, J = 8.0 Hz, 2H), 7.91 (d, J = 7.7 Hz, 2H), 7.37 (t, J = 8.6 Hz, 2H), 7.20 (d, J = 7.8 Hz, 2H), 7.08-7.04 (m, 1H); ^{13}C NMR (126 MHz, $CDCl_3$) δ 163.2, 156.7, 138.0, 133.9, 127.6, 126.5, 124.3, 123.7, 122.1, 121.0, 120.5.

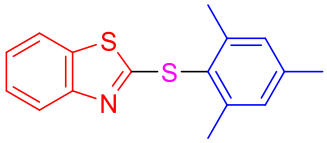


2-((4-methoxyphenyl)thio)benzo[*d*]thiazole: mp: 55-57 ºC, ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.34 (d, J = 7.4 Hz, 1H), 8.09 (d, J = 7.5 Hz, 1H), 7.54-7.48 (m, 2H), 7.37–7.33 (m, 2H), 7.04 (d, J = 7.0 Hz, 2H), , 3.83

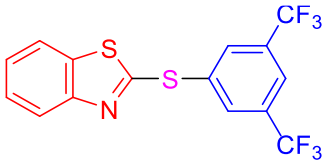
(s, 3H); ^{13}C NMR (101 MHz, $CDCl_3$) δ 163.8, 156.0, 152.1, 138.7, 128.9, 127.4, 126.1, 125.7, 124.3, 113.1, 54.9.



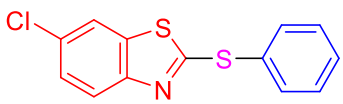
2-((4-bromophenyl)thio)benzo[*d*]thiazole: mp: 50-52 °C, ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.06 (d, J = 7.7 Hz, 1H), 7.81 (d, J = 7.6 Hz, 1H), 7.53 (d, J = 8.0 Hz, 2H), 7.38-7.30 (m, 4H); ^{13}C NMR (101 MHz, $CDCl_3$) δ 167.3, 156.1, 134.7, 129.8, 128.4, 127.1, 124.9, 121.5, 120.3..



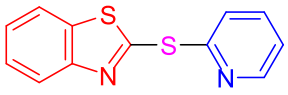
2-(mesitylthio)benzo[*d*]thiazole: Colorless oil, ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.11 (d, J = 8.0 Hz, 1H), 8.01 (d, J = 8.4 Hz, 1H), 7.63-7.55 (m, 2H), 7.01 (s, 2H), 2.42 (s, 6H), 2.18 (s 3H); ^{13}C NMR (101 MHz, $CDCl_3$) δ 163.1, 152.8, 138.7, 135.9, 131.0, 124.7, 123.1, 122.6, 121.0, 120.3, 22.1 19.8..



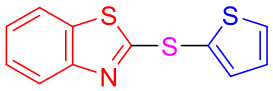
2-((3,5-bis(trifluoromethyl)phenyl)thio)benzo[*d*]thiazole: Colorless oil, ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.21 (d, J = 7.4 Hz, 1H), 8.07 (dd, J = 8.9, 2.3 Hz, 1H), 7.73 (s, 1H), 7.46-7.58 (m, 2H), 7.43 (s, 2H); ^{13}C NMR (101 MHz, $CDCl_3$) δ 166.5, 154.8, 137.4, 129.8, 128.1, 127.3, 126.0, 125.3, 124.7, 123.1, 120.7.



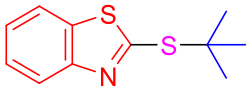
6-chloro-2-(phenylthio)benzo[*d*]thiazole: mp: 69-71 °C, ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.10 (s, 1H), 7.83 (d, J = 7.8 Hz, 1H), 7.64 (d, J = 8.6 Hz, 1H), 7.33 (d, J = 8.0 Hz, 2H), 7.25-7.19 (m, 3H); ^{13}C NMR (101 MHz, $CDCl_3$) δ 163.2, 153.1, 138.6, 126.5, 125.3, 124.6, 123.0, 121.8.



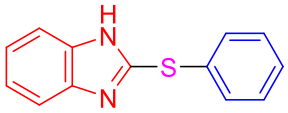
2-(pyridin-2-ylthio)benzo[*d*]thiazole: mp: 66-68 ºC, ^{1}H NMR (400 MHz, CDCl3) δ 8.41 (d, J = 8.0 Hz, 1H), 8.23 (d, J = 7.5 Hz, 1H), 8.03 (d, J = 8.1 Hz, 1H), 7.46 (t, J = 8.1 Hz, 1H), 7.21–7.18 (m, 2H), 7.04-7.00 (m, 2H); 13C NMR (101 MHz, CDCl3) δ 161.0, 154.3, 153.9, 149.8, 134.9, 133.6, 125.4, 123.6, 121.4.



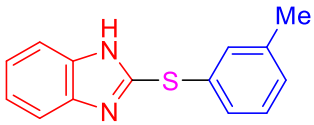
2-(thiophen-2-ylthio)benzo[*d*]thiazole: Colorless oil, ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.83 (d, J = 7.6 Hz, 1H), 7.78 (d, J = 8.0 Hz, 1H), 7.62-7.57 (m, 3H), 7.51 (d, J = 8.4 Hz, 1H), 7.16 (d, J = 7.6 Hz, 1H); ^{13}C NMR (101 MHz, $CDCl_3$) δ 164.1, 155.8, 135.4, 134.2, 125.7, 125.0, 124.8, 124.2, 122.8, 121.1.



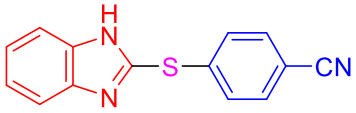
2-(tert-butylthio)benzo[*d*]thiazole: Colorless oil, ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.89 (d, J = 8.4 Hz, 1H), 7.76 (d, J = 7.9 Hz, 1H), 7.43-7.37 (m, 2H); ^{13}C NMR (101 MHz, $CDCl_3$) δ 164.1, 155.8, 132.9, 126.3, 125.1, 124.7, 122.0, 45.6, 30.7.



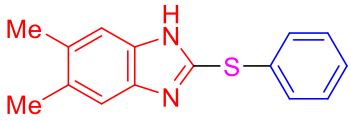
2-(phenylthio)-1*H*-benzo[*d*]imidazole : mp: 202-204 ºC, ^{1}H NMR (400 MHz, CDCl3) δ 9.76 (s, 1H), 7.98 (d, J = 8.4 Hz, 2H), 7.43 (d, J = 8.0 Hz, 2H), 7.36 (t, J = 7.6 Hz, 2H), 7.27-7.20 (m, 1H), 7.04-6.97 (m, 2H); ^{13}C NMR (101 MHz, CDCl3) δ 141.9, 139.5, 136.7, 129.8, 128.1, 126.7, 116.5.



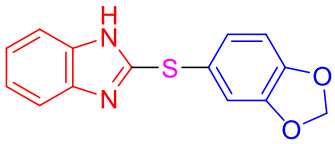
2-(m-tolylthio)-1*H*-benzo[*d*]imidazole: Colorless oil, ^{1}H NMR (400 MHz, $CDCl_3$) δ 9.80 (s, 1H), 7.83 (d, J = 8.6 Hz, 2H), 7.66 (dd, J = 8.8, 3.1 Hz, 1H), 7.48-7.43 (m, 3H), 7.32 (s, 1H), 7.11 (dd, J = 9.2, 1.4 Hz, 1H), 2.46 (s, 3H); ^{13}C NMR (101 MHz, $CDCl_3$) δ 139.0, 131.6, 123.1, 122.6, 121.9, 120.5, 120.3, 119.8, 114.3, 114.0, 21.5.



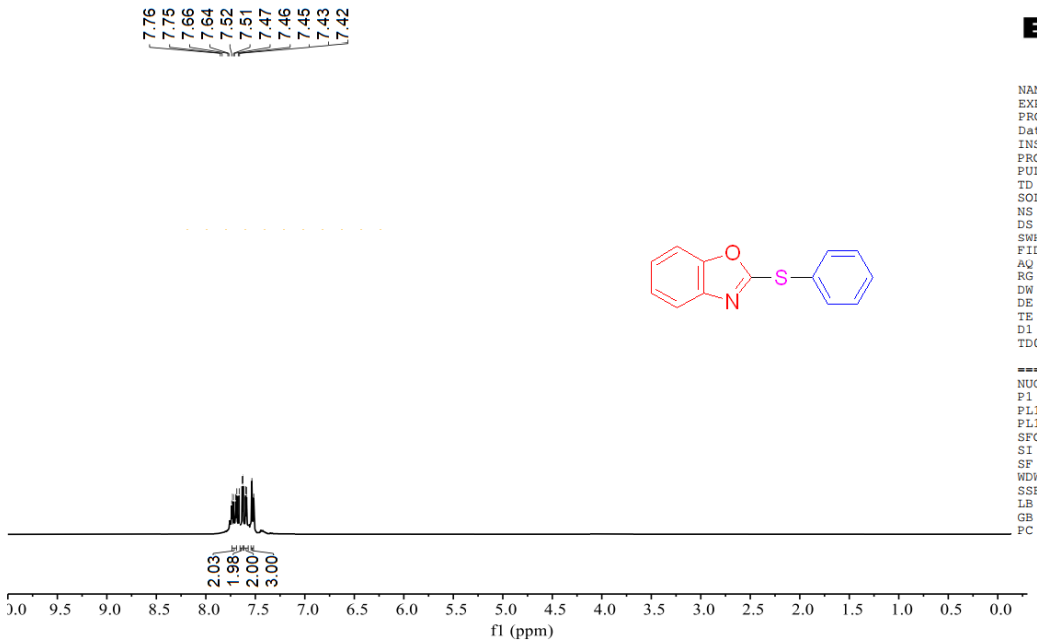
4-((1*H*-benzo[*d*]imidazol-2-yl)thio)benzonitrile: mp: 178-180 ºC, ^{1}H NMR (400 MHz, CDCl3) δ 9.82 (s, 1H), 7.75 (d, J = 7.4 Hz, 2H), 7.62 (d, J = 7.7 Hz, 2H), 7.41 (d, J = 8.6 Hz, 2H), 7.35-7.29 (m, 2H); ^{13}C NMR (101 MHz, CDCl3) δ 140.7, 138.5, 137.2, 133.0, 131.4, 121.3, 119.5, 117.0.



5,6-dimethyl-2-(phenylthio)-1*H*-benzo[*d*]imidazole: mp: 167-169 ºC, ^{1}H NMR (400 MHz, CDCl3) δ 9.79 (s, 1H), 7.85-7.81 (m, 3H), 7.63 (dd, J = 8.7, 3.6 Hz, 2H), 7.50 (s, 2H), 2.34 (s, 6H); ^{13}C NMR (101 MHz, CDCl3) δ 138.7, 130.6, 130.3, 129.8, 129.2, 128.0, 127.4, 120.4, 120.0, 116.9.



2-(benzo[d][1,3]dioxol-5-ylthio)-1H-benzo[d]imidazole: mp: 183-185 ºC, ^{1}H NMR (400 MHz, CDCl3) δ 9.74 (s,1H), 7.73 (d, J = 8.4 Hz, 2H), 7.66-7.61 (m, 2H), 7.37-7.32 (m, 1H), 7.16 (s, 1H), 7.09 (d, J = 8.0 Hz, 1H), 6.07 (s, 2H); ^{13}C NMR (101 MHz, CDCl3) δ 150.1, 138.7, 131.7, 129.8, 124.8, 123.1, 122.0, 121.5, 120.7, 116.7, 101.3.



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D1            6.00000000 sec
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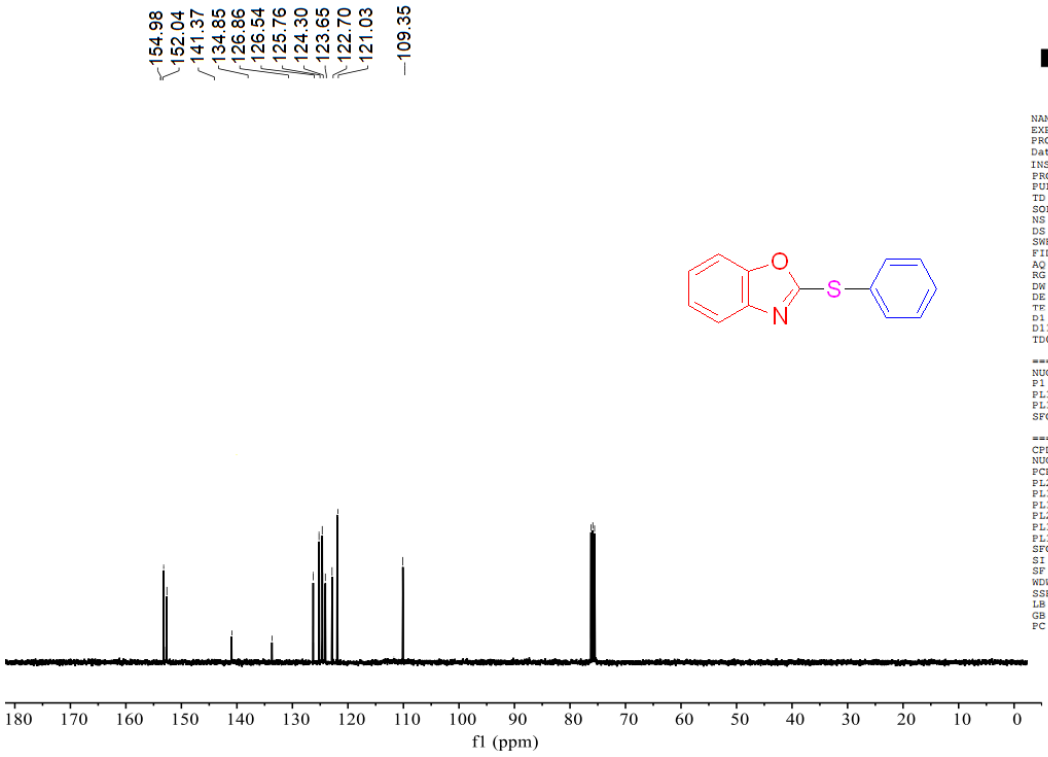

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TE                293.4 K
D1            3.00000000 sec
D11           0.03000000 sec
TD0                     1

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PL1               -0.90 dB
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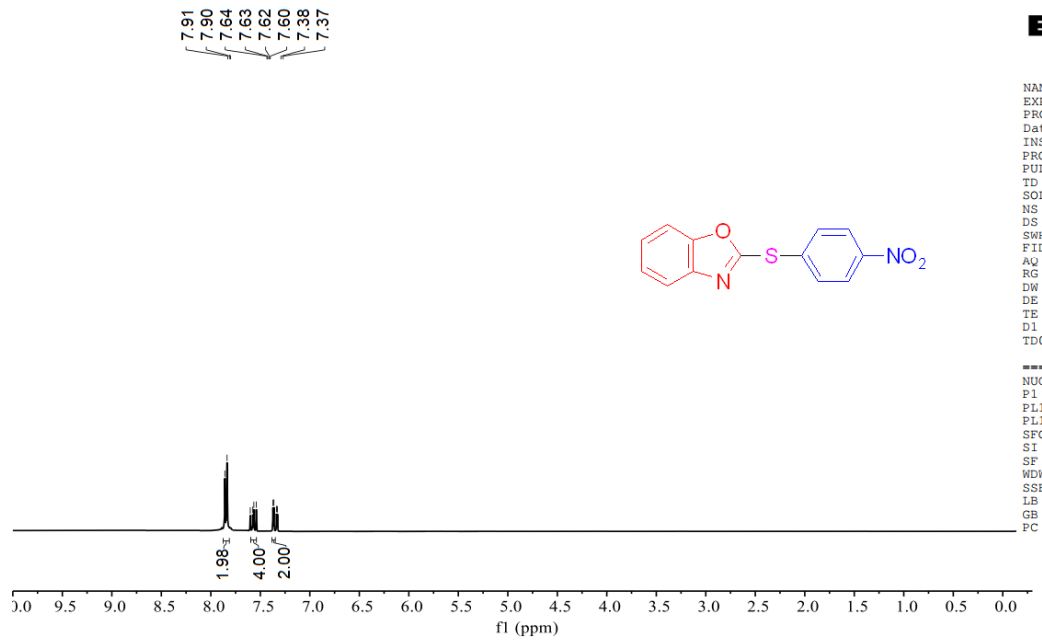

BRUKER

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DW                62.400 usec
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TE                293.2 K
D1             6.00000000 sec
TD0                    1

======== CHANNEL f1 ========
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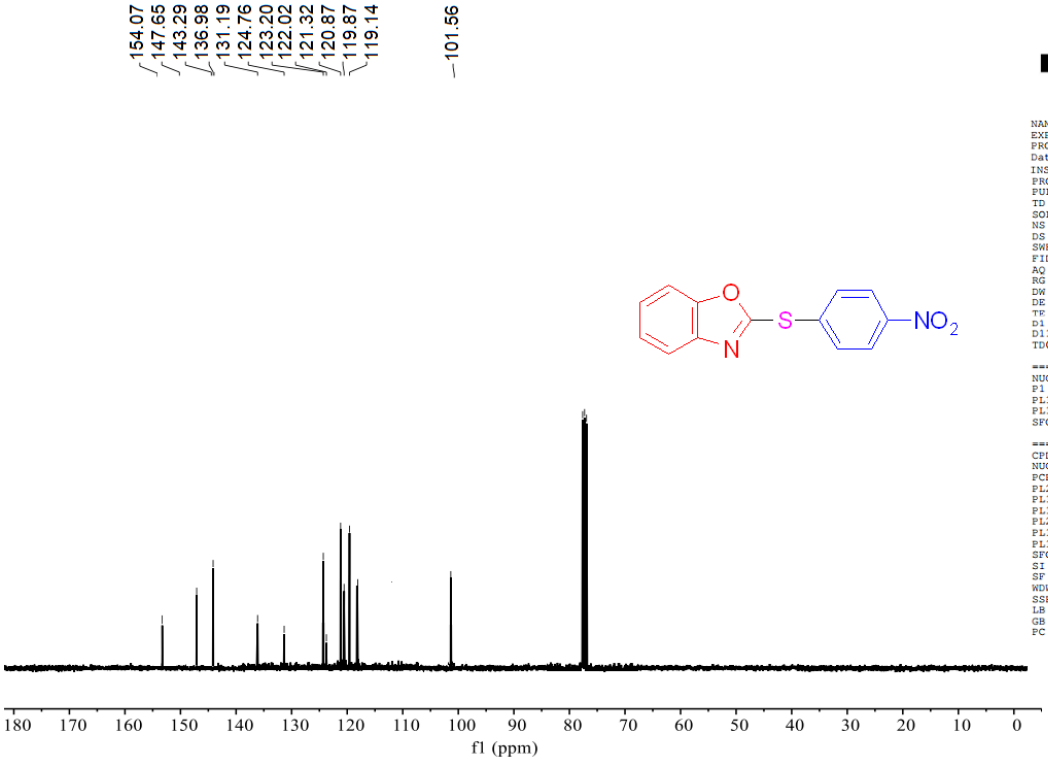

BRUKER

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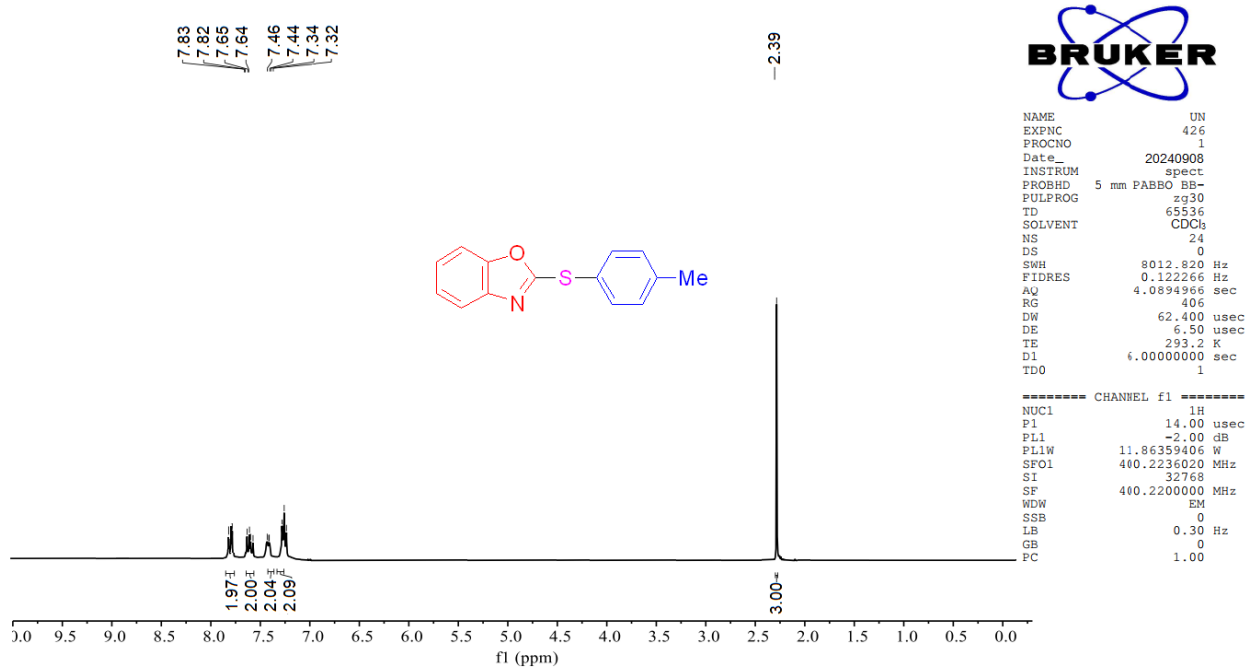
TE                293.4 K
D1             3.00000000 sec
D11            0.03000000 sec
TD0                    1

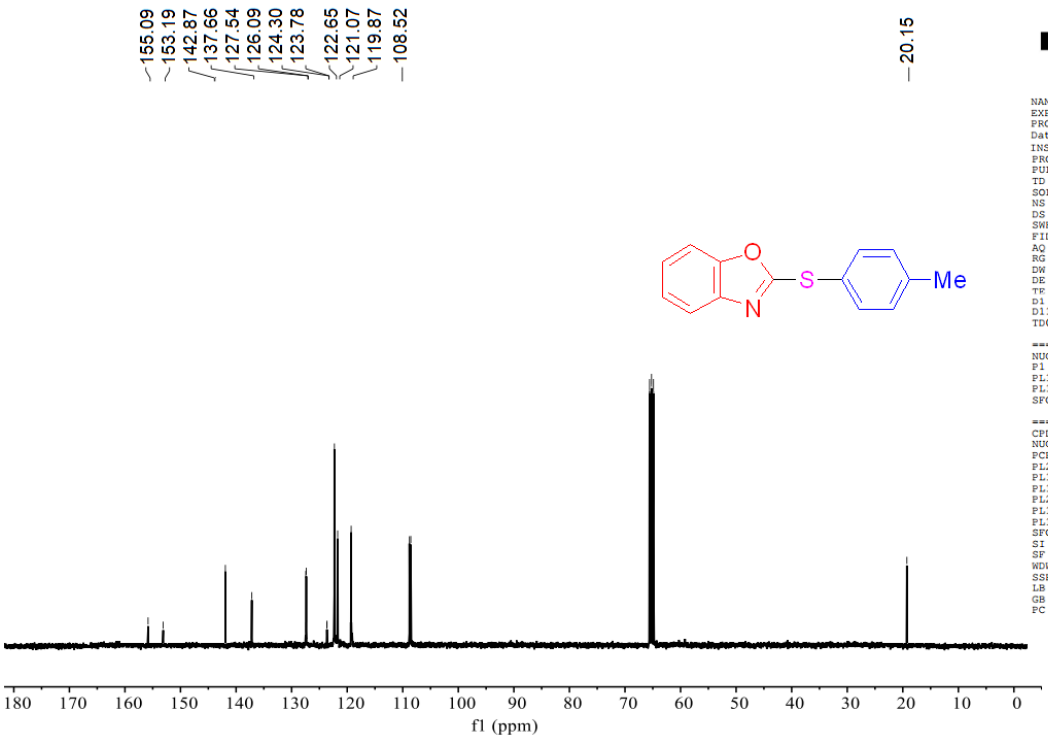
======== CHANNEL f1 ========
NUC1                 13C
P1                  9.00 usec
PL1                -0.90 dB
PL1W          42.02801895 W
SFO1          100.6479784 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                  1H
PCPD2              90.00 usec
PL2                -2.00 dB
PL12               14.16 dB
PL13               17.90 dB
PL2W          11.86359406 W
PL12W          0.28722104 W
PL13W          0.12139934 W
SFO2          400.2216009 MHz
SI                 32768
SF            100.6353990 MHz
WDW                   EM
SSB                    0
LB                 1.00 Hz
GB                     0
PC                 1.40
```




```
NAME                 UN
EXPNO               426
PROCNO                1
Date_          20240908
INSTRUM             spect
PROBHD  5 mm PABBO BB-
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                    24
DS                     0
SWH             8012.820 Hz
FIDRES             0.122266 Hz
AQ              4.0894966 sec
RG                   406
DW                62.400 usec
DE                 6.50 usec
TE                293.2 K
D1             6.00000000 sec
TD0                    1

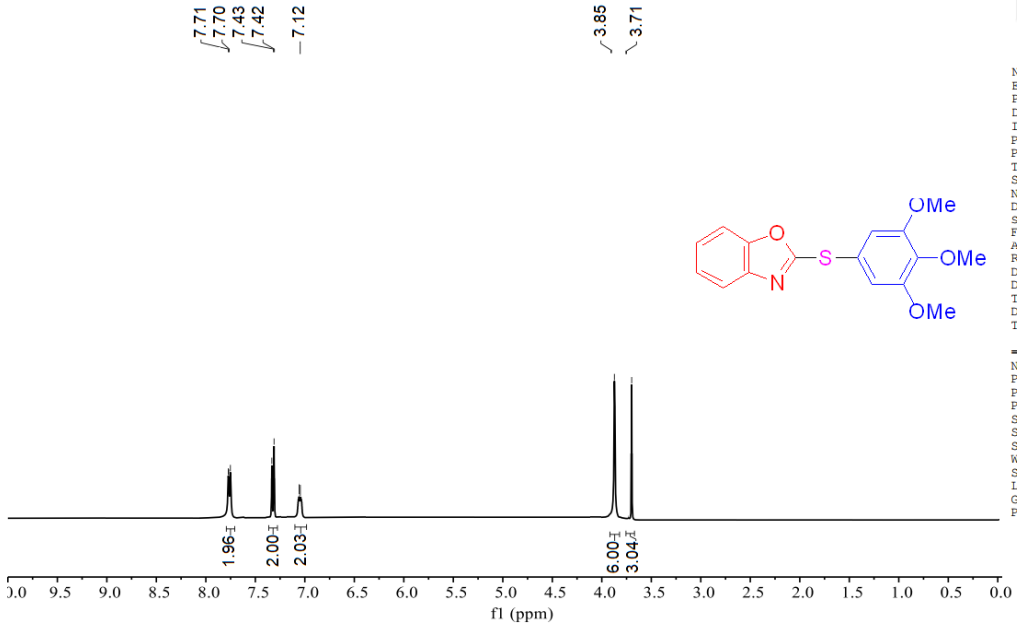
======== CHANNEL f1 ========
NUC1                  1H
P1                 14.00 usec
PL1                -2.00 dB
PL1W          11.86359406 W
SFO1          400.2236020 MHz
SI                 32768
SF            400.2200000 MHz
WDW                   EM
SSB                    0
LB                 0.30 Hz
GB                     0
PC                 1.00
```




```
NAME                 UN
EXPNO               435
PROCNO                2
Date_          20240908
INSTRUM             spect
PROBHD  5 mm PABBO BB-
PULPROG             zgpg
TD                 65536
SOLVENT            CDCl3
NS                    31
DS                     0
SWH            25252.525 Hz
FIDRES             0.385323 Hz
AQ              1.2976629 sec
RG                  2050
DW                19.800 usec
DE                 6.50 usec
TE                293.4 K
D1             3.00000000 sec
D11            0.03000000 sec
TD0                    1

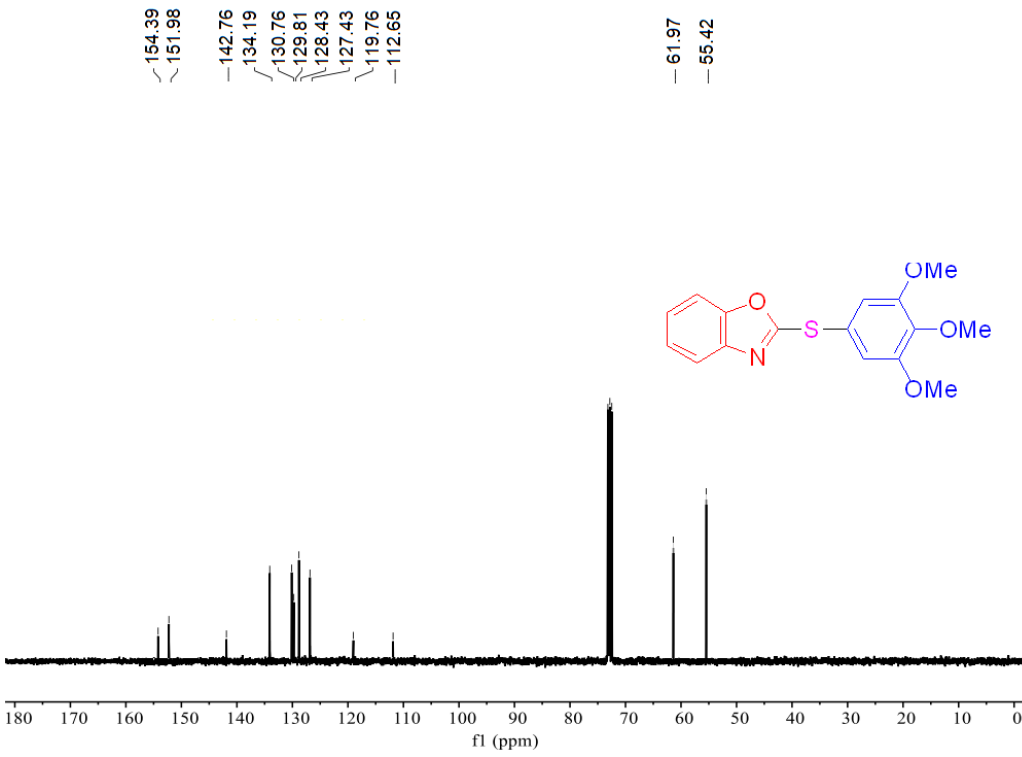
======== CHANNEL f1 ========
NUC1                  13C
P1                 9.00 usec
PL1                -0.90 dB
PL1W          42.02801895 W
SFO1          100.6479784 MHz

======== CHANNEL f2 ========
CPDPRG2           waltz16
NUC2                  1H
PCPD2              90.00 usec
PL2                -2.00 dB
PL12               14.16 dB
PL13               17.90 dB
PL2W          11.86359406 W
PL12W          0.28722104 W
PL13W          0.12139934 W
SFO2          400.2216009 MHz
SI                 32768
SF            100.6353990 MHz
WDW                   EM
SSB                    0
LB                 1.00 Hz
GB                     0
PC                 1.40
```




```
NAME                   UN
EXPNO                 426
PROCNO                  1
Date_            20240912
INSTRUM             spect
PROBHD   5 mm PABBO BB-
PULPROG              zg30
TD                  65536
SOLVENT             CDCl3
NS                     24
DS                      0
SWH              8012.820 Hz
FIDRES           0.122266 Hz
AQ               4.0894966 sec
RG                    406
DW                62.400 usec
DE                 6.50 usec
TE                293.2 K
D1               6.00000000 sec
TD0                     1

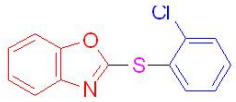
======== CHANNEL f1 ========
NUC1                   1H
P1                  14.00 usec
PL1                 -2.00 dB
PL1W          11.86359406 W
SFO1          400.2236020 MHz
SI                  32768
SF            400.2200000 MHz
WDW                    EM
SSB                     0
LB                   0.30 Hz
GB                      0
PC                   1.00
```

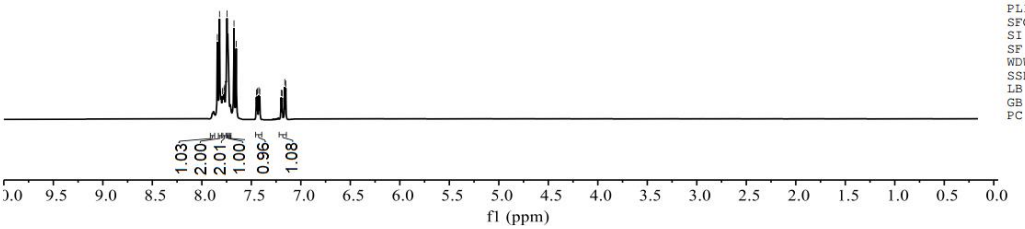



```
NAME                   UN
EXPNO                 435
PROCNO                  2
Date_            20240912
INSTRUM             spect
PROBHD   5 mm PABBO BB-
PULPROG             zgpg
TD                  65536
SOLVENT             CDCl3
NS                     31
DS                      0
SWH              25252.525 Hz
FIDRES           0.385323 Hz
AQ               1.2976629 sec
RG                   2050
DW                19.800 usec
DE                 6.50 usec
TE                293.4 K
D1               3.00000000 sec
D11              0.03000000 sec
TD0                     1

======== CHANNEL f1 ========
NUC1                  13C
P1                   9.00 usec
PL1                 -0.90 dB
PL1W          42.02801895 W
SFO1          100.6479784 MHz

======== CHANNEL f2 ========
CPDPRG2           waltz16
NUC2                   1H
PCPD2               90.00 usec
PL2                 -2.00 dB
PL12                14.16 dB
PL13                17.90 dB
PL2W          11.86359406 W
PL12W          0.28722104 W
PL13W          0.12139934 W
SFO2          400.2216009 MHz
SI                  32768
SF            100.6353990 MHz
WDW                    EM
SSB                     0
LB                   1.00 Hz
GB                      0
PC                   1.40
```

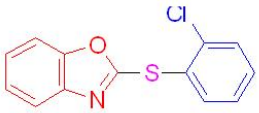


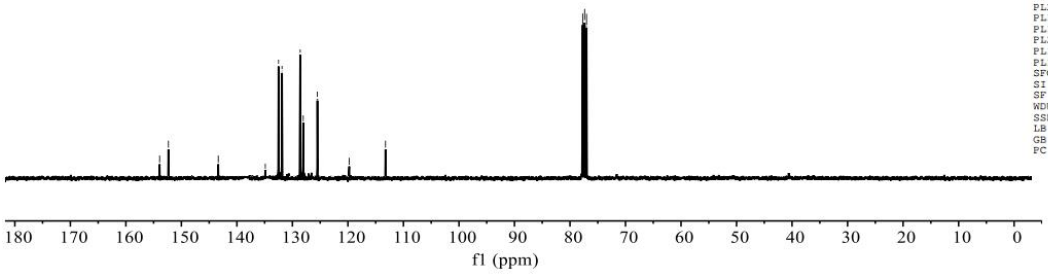


BRUKER

```
NAME                  UN
EXPNC                426
PROCNO                 1
Date_           20240912
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG              zg30
TD                  65536
SOLVENT             CDCl3
NS                     24
DS                      0
SWH              8012.820 Hz
FIDRES           0.122266 Hz
AQ               4.0894966 sec
RG                    406
DW                62.400 usec
DE                 6.50 usec
TE                293.2 K
D1               6.00000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                  1H
P1                 14.00 usec
PL1                -2.00 dB
PL1W         11.86359406 W
SFO1         400.2236020 MHz
SI                 32768
SF           400.2200000 MHz
WDW                   EM
SSB                    0
LB                0.30 Hz
GB                     0
PC                 1.00
```



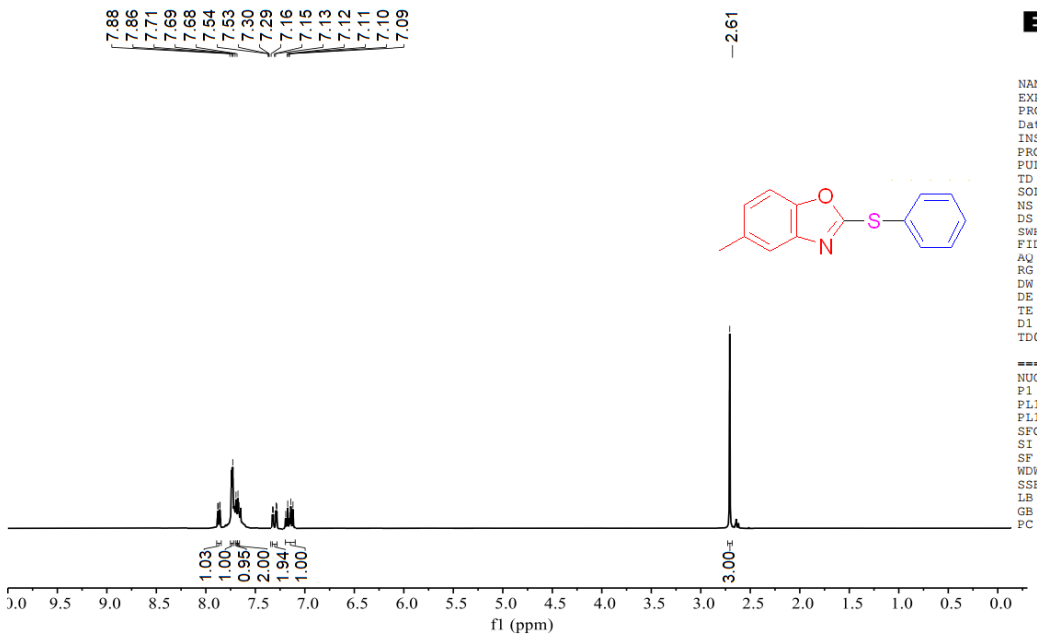


BRUKER

```
NAME                  UN
EXPNO                435
PROCNO                 2
Date_           20240912
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG             zgpg
TD                  65536
SOLVENT             CDCl3
NS                     31
DS                      0
SWH              25252.525 Hz
FIDRES           0.385323 Hz
AQ               1.2976629 sec
RG                   2050
DW                19.800 usec
DE                 6.50 usec
TE                293.4 K
D1               3.00000000 sec
D11              0.03000000 sec
TD0                    1

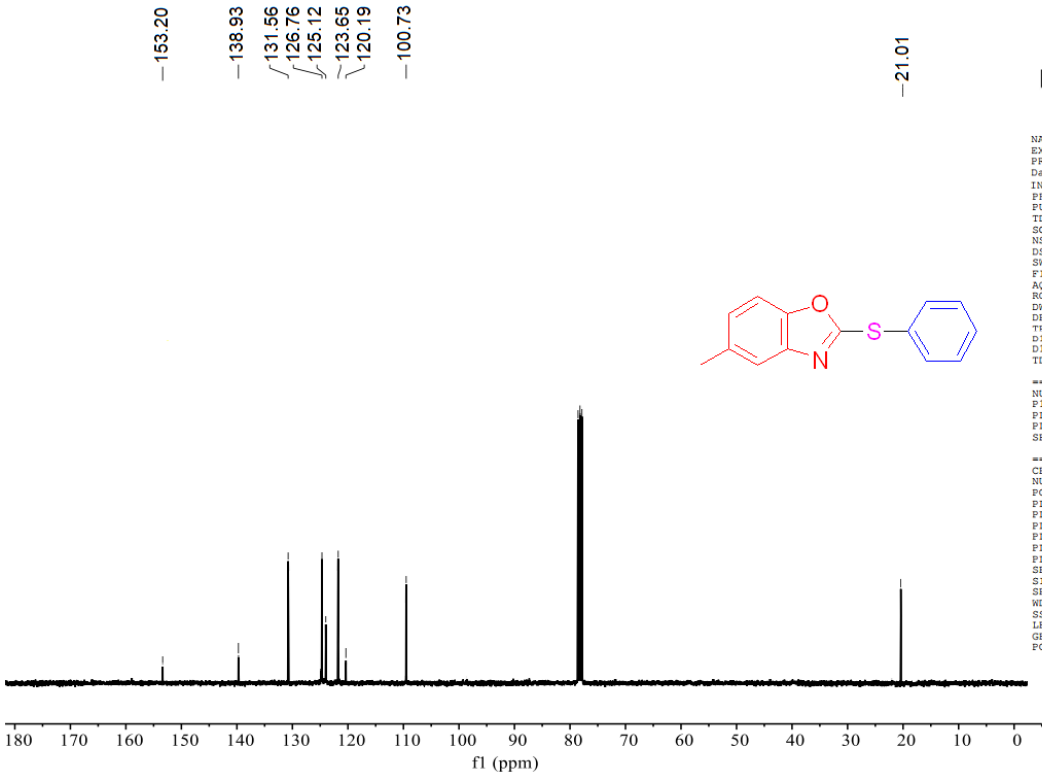
======== CHANNEL f1 ========
NUC1                 13C
P1                 9.00 usec
PL1                -0.90 dB
PL1W         42.02801895 W
SFO1         100.6479784 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                  1H
PCPD2              90.00 usec
PL2                -2.00 dB
PL12               14.16 dB
PL13               17.90 dB
PL2W         11.86359406 W
PL12W        0.28722104 W
PL13W        0.12139934 W
SFO2         400.2216009 MHz
SI                 32768
SF           100.6353990 MHz
WDW                   EM
SSB                    0
LB                1.00 Hz
GB                     0
PC                 1.40
```




```
NAME                   UN
EXPNC                 426
PROCNO                  1
Date_            20240908
INSTRUM             spect
PROBHD   5 mm PABBO BB-
PULPROG              zg30
TD                  65536
SOLVENT             CDCl3
NS                     24
DS                      0
SWH              8012.820 Hz
FIDRES           0.122266 Hz
AQ               4.0894966 sec
RG                    406
DW                 62.400 usec
DE                  6.50 usec
TE                 293.2 K
D1              6.00000000 sec
TD0                     1

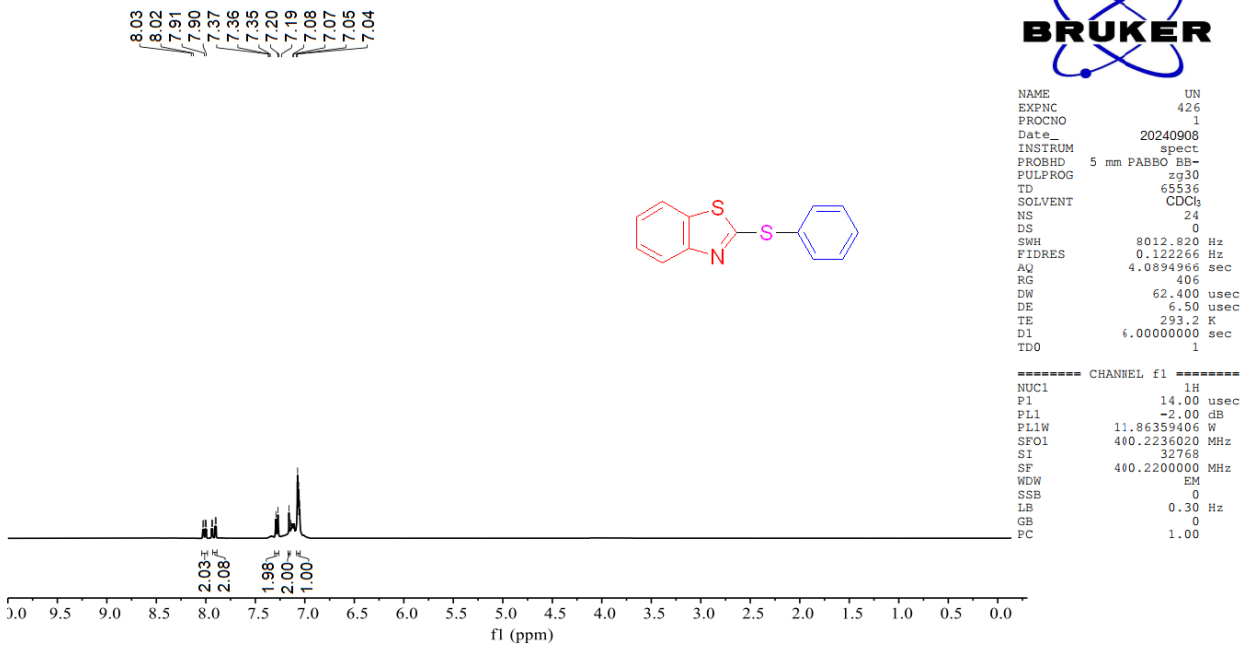
======== CHANNEL f1 ========
NUC1                   1H
P1                 14.00 usec
PL1                -2.00 dB
PL1W           11.86359406 W
SFO1           400.2236020 MHz
SI                  32768
SF             400.2200000 MHz
WDW                    EM
SSB                     0
LB                 0.30 Hz
GB                      0
PC                   1.00
```




```
NAME                   UN
EXPNO                 435
PROCNO                  2
Date_            20240908
INSTRUM             spect
PROBHD   5 mm PABBO BB-
PULPROG             zgpg
TD                  65536
SOLVENT             CDCl3
NS                     31
DS                      0
SWH              25252.525 Hz
FIDRES           0.385323 Hz
AQ               1.2976629 sec
RG                   2050
DW                 19.800 usec
DE                  6.50 usec
TE                 293.4 K
D1              3.00000000 sec
D11             0.03000000 sec
TD0                     1

======== CHANNEL f1 ========
NUC1                   13C
P1                  9.00 usec
PL1                -0.90 dB
PL1W          42.02801895 W
SFO1          100.6479784 MHz

======== CHANNEL f2 ========
CPDPRG2            waltz16
NUC2                   1H
PCPD2              90.00 usec
PL2                -2.00 dB
PL12               14.16 dB
PL13               17.90 dB
PL2W           11.86359406 W
PL12W          0.28722104 W
PL13W          0.12139934 W
SFO2          400.2216009 MHz
SI                  32768
SF            100.6353990 MHz
WDW                    EM
SSB                     0
LB                 1.00 Hz
GB                      0
PC                   1.40
```



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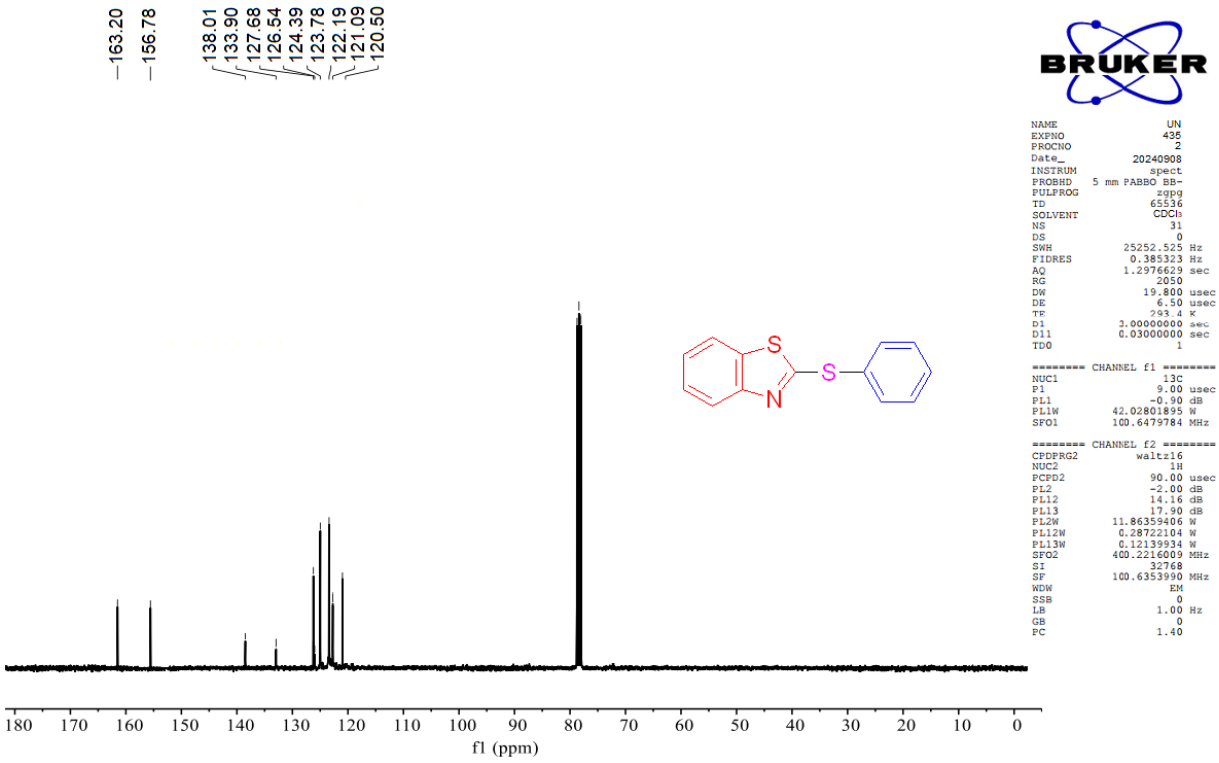
```
NAME                 UN
EXPNC               426
PROCNO                1
Date_          20240908
INSTRUM           spect
PROBHD  5 mm PABBO BB-
PULPROG           zg30
TD               65536
SOLVENT          CDCl3
NS                   24
DS                    0
SWH            8012.820 Hz
FIDRES         0.122266 Hz
AQ             4.0894966 sec
RG                  406
DW               62.400 usec
DE                6.50 usec
TE              293.2 K
D1             6.00000000 sec
TD0                   1

======== CHANNEL f1 ========
NUC1                 1H
P1                14.00 usec
PL1               -2.00 dB
PL1W        11.86359406 W
SFO1        400.2236020 MHz
SI                32768
SF          400.2200000 MHz
WDW                  EM
SSB                   0
LB                 0.30 Hz
GB                    0
PC                 1.00
```

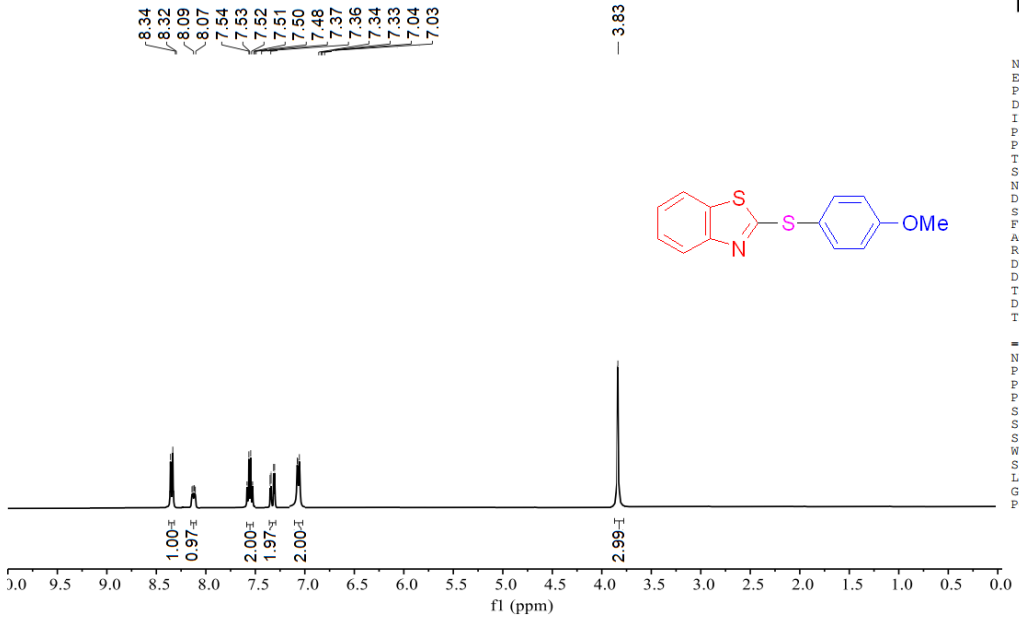


BRUKER

```
NAME                 UN
EXPNO               435
PROCNO                2
Date_          20240908
INSTRUM           spect
PROBHD  5 mm PABBO BB-
PULPROG          zgpg
TD               65536
SOLVENT          CDCl3
NS                   31
DS                    0
SWH            25252.525 Hz
FIDRES         0.385323 Hz
AQ             1.2976629 sec
RG                 2050
DW               19.800 usec
DE                6.50 usec
TE              293.4 K
D1             3.00000000 sec
D11            0.03000000 sec
TD0                   1

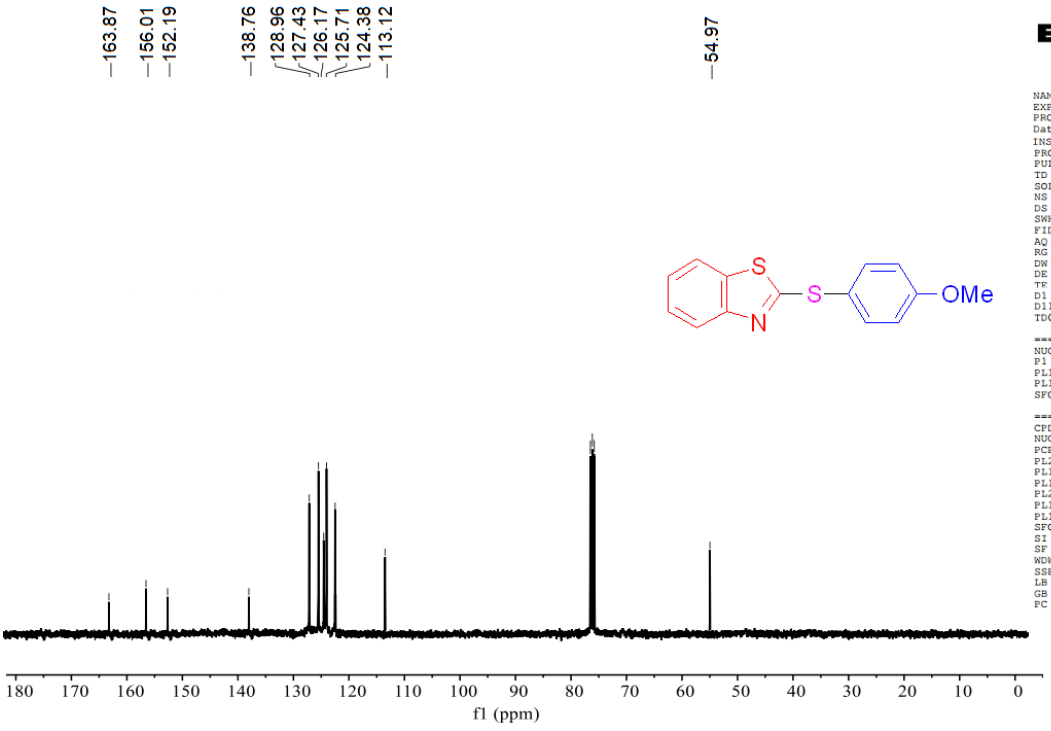
======== CHANNEL f1 ========
NUC1                13C
P1                 9.00 usec
PL1               -0.90 dB
PL1W        42.02801895 W
SFO1        100.6479784 MHz

======== CHANNEL f2 ========
CPDPRG2         waltz16
NUC2                1H
PCPD2            90.00 usec
PL2               -2.00 dB
PL12              14.16 dB
PL13              17.90 dB
PL2W        11.86359406 W
PL12W        0.28722104 W
PL13W        0.12139934 W
SFO2        400.2216009 MHz
SI                32768
SF          100.6353990 MHz
WDW                  EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
```




```
NAME                   UN
EXPNO                 426
PROCNO                  1
Date_            20240912
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG              zg30
TD                  65536
SOLVENT             CDCl3
NS                     24
DS                      0
SWH             8012.820 Hz
FIDRES             0.122266 Hz
AQ                4.0894966 sec
RG                    406
DW                 62.400 usec
DE                  6.50 usec
TE                293.2 K
D1                6.00000000 sec
TD0                     1

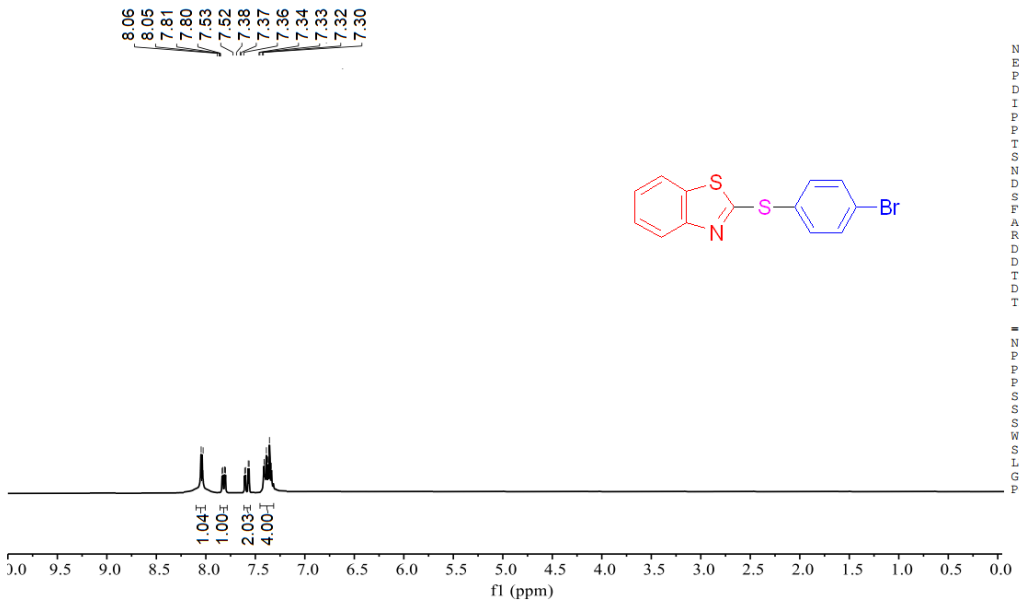
======== CHANNEL f1 ========
NUC1                   1H
P1                  14.00 usec
PL1                 -2.00 dB
PL1W           11.86359406 W
SFO1           400.2236020 MHz
SI                  32768
SF             400.2200000 MHz
WDW                    EM
SSB                     0
LB                   0.30 Hz
GB                      0
PC                   1.00
```




```
NAME                   UN
EXPNO                 435
PROCNO                  2
Date_            20240912
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG             zgpg
TD                  65536
SOLVENT             CDCl3
NS                     31
DS                      0
SWH            25252.525 Hz
FIDRES             0.385323 Hz
AQ                1.2976629 sec
RG                   2050
DW                 19.800 usec
DE                  6.50 usec
TE                293.4 K
D1                3.00000000 sec
D11               0.03000000 sec
TD0                     1

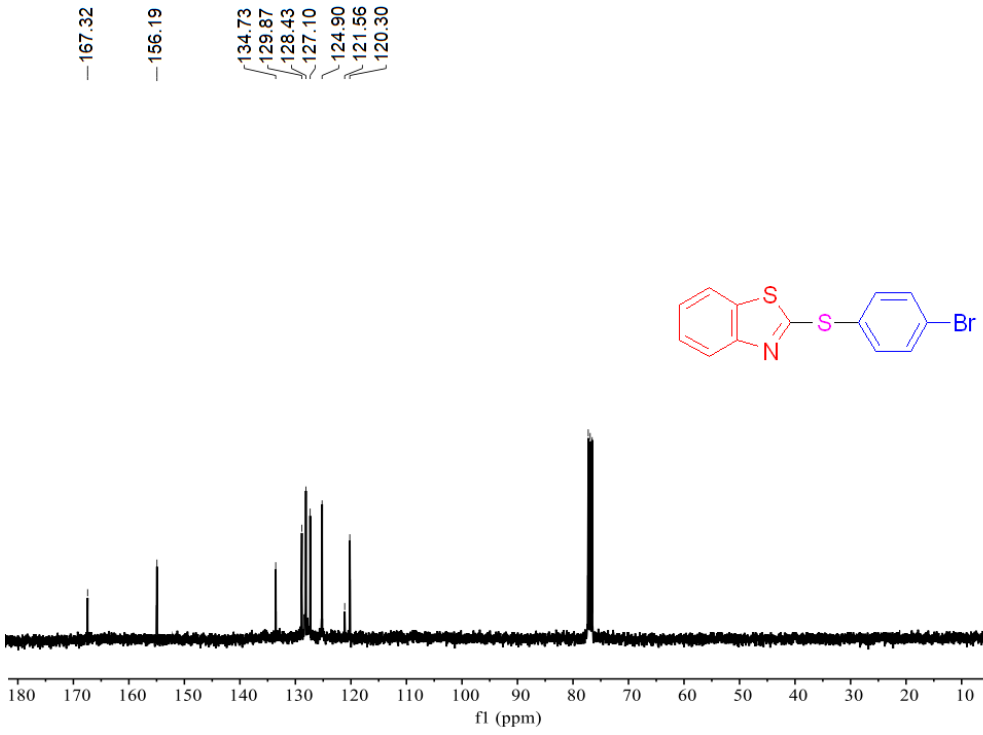
======== CHANNEL f1 ========
NUC1                  13C
P1                   9.00 usec
PL1                 -0.90 dB
PL1W           42.02801895 W
SFO1           100.6479784 MHz

======== CHANNEL f2 ========
CPDPRG2            waltz16
NUC2                   1H
PCPD2               90.00 usec
PL2                 -2.00 dB
PL12                14.16 dB
PL13                17.90 dB
PL2W           11.86359406 W
PL12W           0.28722104 W
PL13W           0.12139934 W
SFO2           400.2216009 MHz
SI                  32768
SF             100.6353990 MHz
WDW                    EM
SSB                     0
LB                   1.00 Hz
GB                      0
PC                   1.40
```




```
NAME                  UN
EXPNC                426
PROCNO                 1
Date_           20240912
INSTRUM              spect
PROBHD   5 mm PABBO BB-
PULPROG              zg30
TD                  65536
SOLVENT             CDCl3
NS                     24
DS                      0
SWH              8012.820 Hz
FIDRES           0.122266 Hz
AQ               4.0894966 sec
RG                    406
DW                62.400 usec
DE                 6.50 usec
TE                293.2 K
D1               6.00000000 sec
TD0                    1

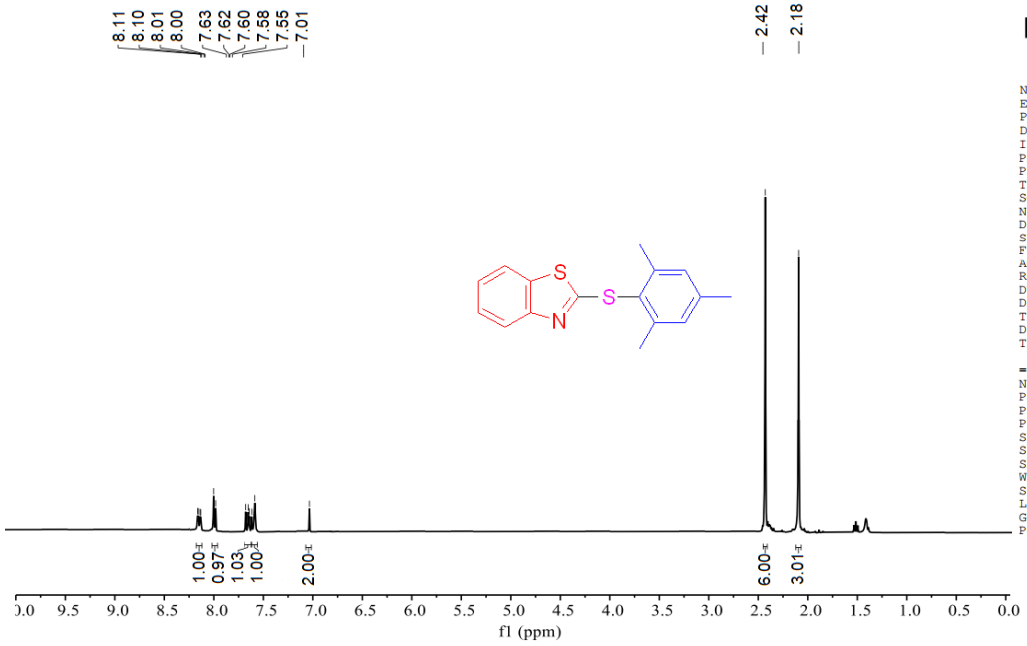
======== CHANNEL f1 ========
NUC1                  1H
P1                 14.00 usec
PL1                -2.00 dB
PL1W         11.86359406 W
SFO1         400.2236020 MHz
SI                 32768
SF           400.2200000 MHz
WDW                   EM
SSB                    0
LB                 0.30 Hz
GB                     0
PC                 1.00
```




```
NAME                  UN
EXPNO                435
PROCNO                 2
Date_           20240912
INSTRUM              spect
PROBHD   5 mm PABBO BB-
PULPROG             zgpg
TD                  65536
SOLVENT             CDCl3
NS                     31
DS                      0
SWH              25252.525 Hz
FIDRES           0.385323 Hz
AQ               1.2976629 sec
RG                   2050
DW                19.800 usec
DE                 6.50 usec
TE                293.4 K
D1               3.00000000 sec
D11              0.03000000 sec
TD0                    1

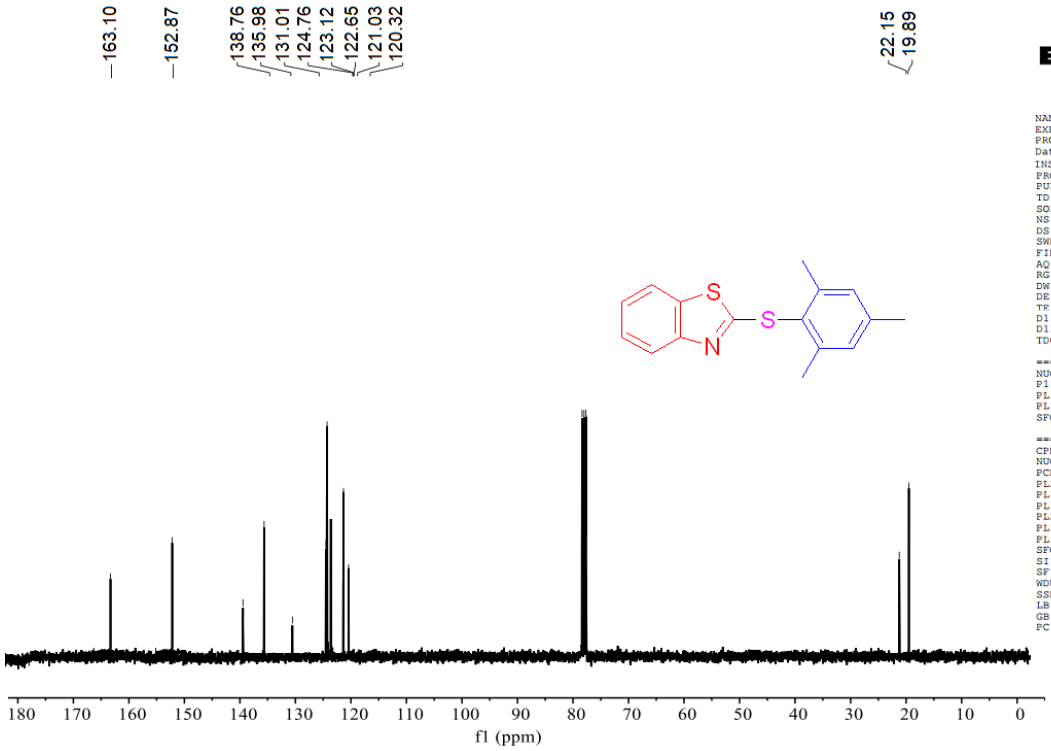
======== CHANNEL f1 ========
NUC1                 13C
P1                 9.00 usec
PL1                -0.90 dB
PL1W         42.02801895 W
SFO1         100.6479784 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                  1H
PCPD2              90.00 usec
PL2                -2.00 dB
PL12               14.16 dB
PL13               17.90 dB
PL2W         11.86359406 W
PL12W         0.28722104 W
PL13W         0.12139934 W
SFO2         400.2216009 MHz
SI                 32768
SF           100.6353990 MHz
WDW                   EM
SSB                    0
LB                 1.00 Hz
GB                     0
PC                 1.40
```




```
NAME                 UN
EXPNC               426
PROCNO                1
Date_          20240912
INSTRUM          spect
PROBHD   5 mm PABBO BB-
PULPROG           zg30
TD               65536
SOLVENT          CDCl3
NS                   24
DS                    0
SWH           8012.820 Hz
FIDRES        0.122266 Hz
AQ            4.0894966 sec
RG                  406
DW             62.400 usec
DE              6.50 usec
TE             293.2 K
D1            6.00000000 sec
TD0                   1

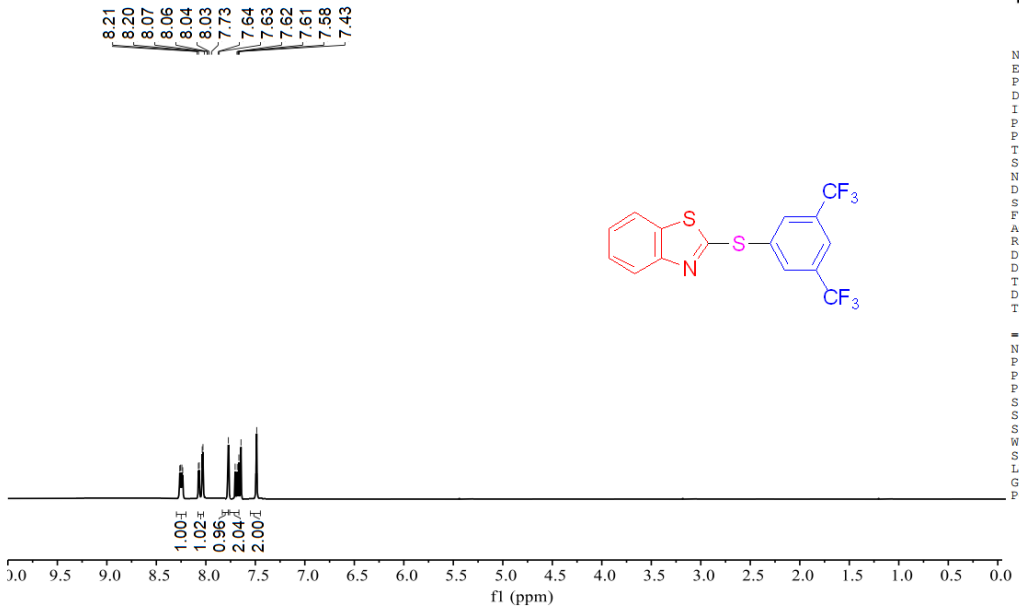
======== CHANNEL f1 ========
NUC1                 1H
P1                14.00 usec
PL1               -2.00 dB
PL1W        11.86359406 W
SFO1        400.2236020 MHz
SI                32768
SF          400.2200000 MHz
WDW                  EM
SSB                   0
LB             0.30 Hz
GB                    0
PC                 1.00
```




```
NAME                 UN
EXPNO               435
PROCNO                2
Date_          20240912
INSTRUM          spect
PROBHD   5 mm PABBO BB-
PULPROG           zgpg
TD               65536
SOLVENT          CDCl3
NS                   31
DS                    0
SWH           25252.525 Hz
FIDRES        0.385323 Hz
AQ            1.2976629 sec
RG                 2050
DW             19.800 usec
DE              6.50 usec
TE             293.4 K
D1            3.00000000 sec
D11           0.03000000 sec
TD0                   1

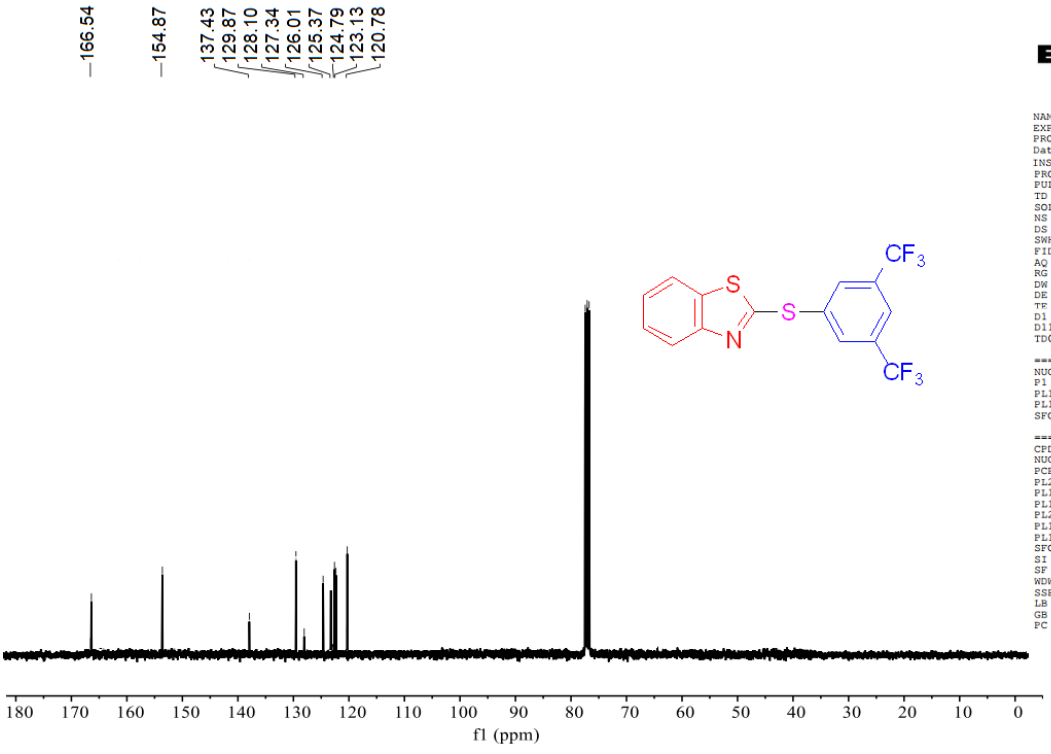
======== CHANNEL f1 ========
NUC1                13C
P1                 9.00 usec
PL1               -0.90 dB
PL1W        42.02801895 W
SFO1        100.6479784 MHz

======== CHANNEL f2 ========
CPDPRG2         waltz16
NUC2                1H
PCPD2             90.00 usec
PL2               -2.00 dB
PL12              14.16 dB
PL13              17.90 dB
PL2W        11.86359406 W
PL12W       0.28722104 W
PL13W       0.12139934 W
SFO2        400.2216009 MHz
SI                32768
SF          100.6353990 MHz
WDW                  EM
SSB                   0
LB             1.00 Hz
GB                    0
PC                 1.40
```




```
NAME                 UN
EXPNC               426
PROCNO                1
Date_          20240912
INSTRUM             spect
PROBHD   5 mm PABBO BB-
PULPROG             zg30
TD                 65536
SOLVENT           CDCl3
NS                    24
DS                     0
SWH             8012.820 Hz
FIDRES          0.122266 Hz
AQ              4.0894966 sec
RG                   406
DW                62.400 usec
DE                 6.50 usec
TE                293.2 K
D1             6.00000000 sec
TD0                    1

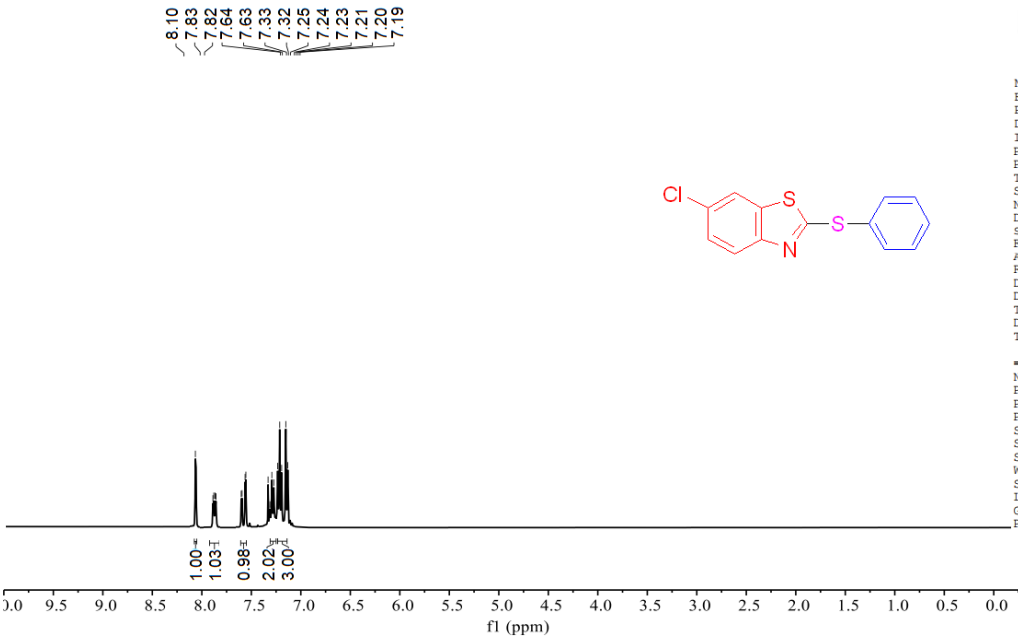
======== CHANNEL f1 ========
NUC1                 1H
P1                14.00 usec
PL1               -2.00 dB
PL1W        11.86359406 W
SFO1        400.2236020 MHz
SI                 32768
SF          400.2200000 MHz
WDW                  EM
SSB                   0
LB                 0.30 Hz
GB                    0
PC                 1.00
```




```
NAME                 UN
EXPNO               435
PROCNO                2
Date_          20240912
INSTRUM             spect
PROBHD   5 mm PABBO BB-
PULPROG             zgpg
TD                 65536
SOLVENT           CDCl3
NS                    31
DS                     0
SWH             25252.525 Hz
FIDRES          0.385323 Hz
AQ              1.2976629 sec
RG                  2050
DW                19.800 usec
DE                 6.50 usec
TE                293.4 K
D1             3.00000000 sec
D11            0.03000000 sec
TD0                    1

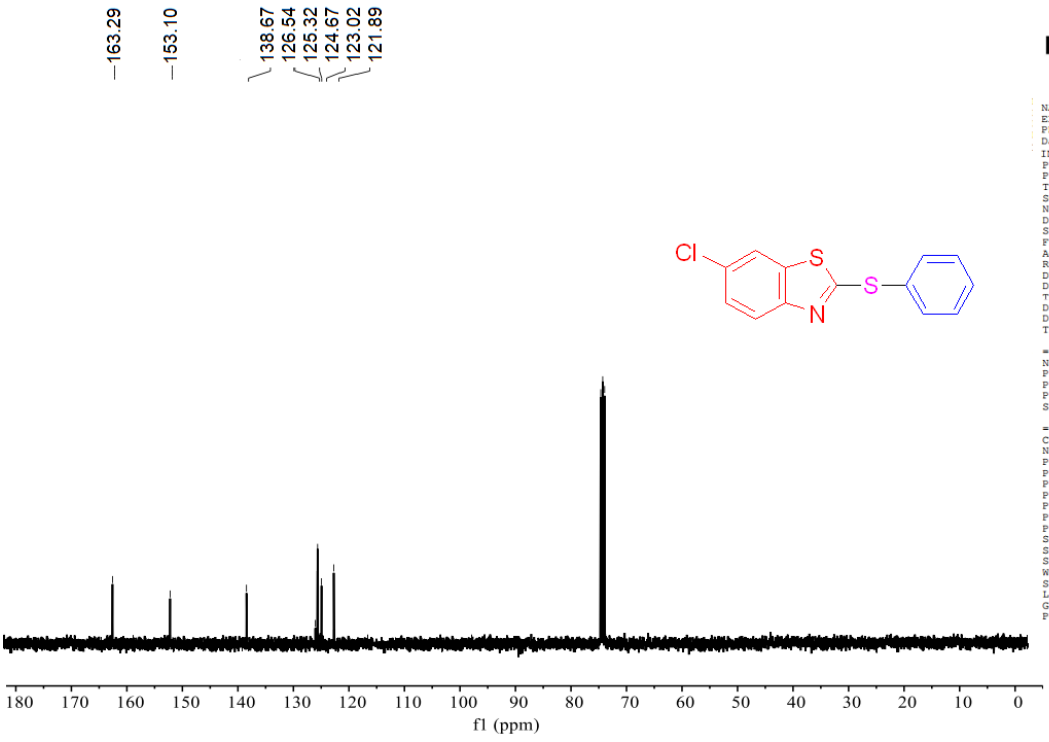
======== CHANNEL f1 ========
NUC1                13C
P1                 9.00 usec
PL1               -0.90 dB
PL1W        42.02801895 W
SFO1        100.6479784 MHz

======== CHANNEL f2 ========
CPDPRG2         waltz16
NUC2                1H
PCPD2           90.00 usec
PL2               -2.00 dB
PL12              14.16 dB
PL13              17.90 dB
PL2W        11.86359406 W
PL12W        0.28722104 W
PL13W        0.12139934 W
SFO2        400.2216009 MHz
SI                 32768
SF          100.6353990 MHz
WDW                  EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
```




```
NAME                   UN
EXPNC                 426
PROCNO                  1
Date_            20240915
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG              zg30
TD                  65536
SOLVENT             CDCl3
NS                     24
DS                      0
SWH              8012.820 Hz
FIDRES           0.122266 Hz
AQ               4.0894966 sec
RG                    406
DW                 62.400 usec
DE                  6.50 usec
TE                 293.2 K
D1              6.00000000 sec
TD0                     1

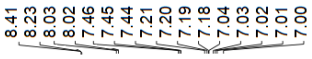
======== CHANNEL f1 ========
NUC1                   1H
P1                  14.00 usec
PL1                 -2.00 dB
PL1W           11.86359406 W
SFO1          400.2236020 MHz
SI                  32768
SF            400.2200000 MHz
WDW                    EM
SSB                     0
LB                   0.30 Hz
GB                      0
PC                   1.00
```

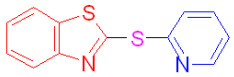



```
NAME                   UN
EXPNO                 435
PROCNO                  2
Date_            20240915
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG             zgpg
TD                  65536
SOLVENT             CDCl3
NS                     31
DS                      0
SWH              25252.525 Hz
FIDRES           0.385323 Hz
AQ               1.2976629 sec
RG                   2050
DW                 19.800 usec
DE                  6.50 usec
TE                 293.4 K
D1              3.00000000 sec
D11             0.03000000 sec
TD0                     1

======== CHANNEL f1 ========
NUC1                  13C
P1                   9.00 usec
PL1                 -0.90 dB
PL1W           42.02801895 W
SFO1          100.6479784 MHz

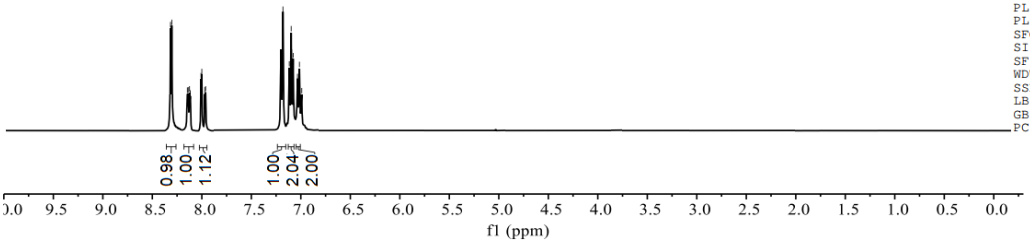
======== CHANNEL f2 ========
CPDPRG2           waltz16
NUC2                   1H
PCPD2               90.00 usec
PL2                 -2.00 dB
PL12                14.16 dB
PL13                17.90 dB
PL2W           11.86359406 W
PL12W           0.28722104 W
PL13W           0.12139934 W
SFO2          400.2216009 MHz
SI                  32768
SF            100.6353990 MHz
WDW                    EM
SSB                     0
LB                   1.00 Hz
GB                      0
PC                   1.40
```

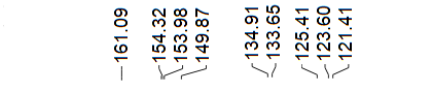


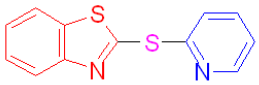



```
NAME                 UN
EXPNC               426
PROCNO                1
Date_          20240915
INSTRUM           spect
PROBHD    5 mm PABBO BB-
PULPROG            zg30
TD                65536
SOLVENT           CDCl3
NS                   24
DS                    0
SWH            8012.820 Hz
FIDRES            0.122266 Hz
AQ             4.0894966 sec
RG                  406
DW                62.400 usec
DE                 6.50 usec
TE                293.2 K
D1             6.00000000 sec
TD0                   1

======== CHANNEL f1 ========
NUC1                1H
P1                14.00 usec
PL1               -2.00 dB
PL1W         11.86359406 W
SFO1         400.2236020 MHz
SI                32768
SF           400.2200000 MHz
WDW                  EM
SSB                   0
LB                 0.30 Hz
GB                    0
PC                 1.00
```



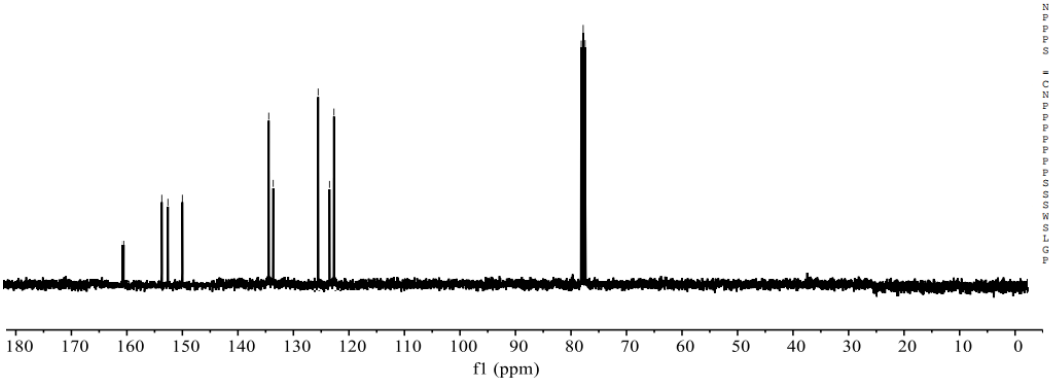


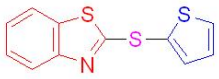


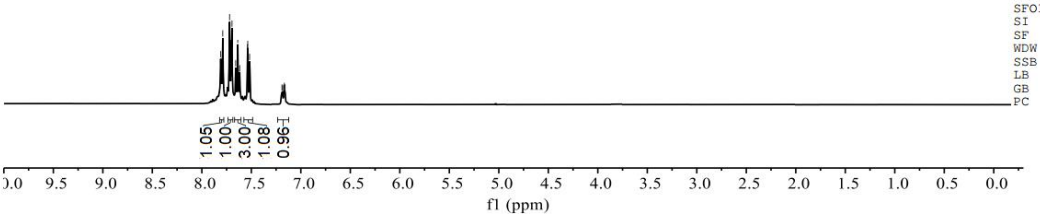

```
NAME                 UN
EXPNO               435
PROCNO                2
Date_          20240915
INSTRUM           spect
PROBHD    5 mm PABBO BB-
PULPROG           zgpg
TD                65536
SOLVENT           CDCl3
NS                   31
DS                    0
SWH           25252.525 Hz
FIDRES            0.385323 Hz
AQ             1.2976629 sec
RG                 2050
DW                19.800 usec
DE                 6.50 usec
TE                293.4 K
D1             3.00000000 sec
D11            0.03000000 sec
TD0                   1

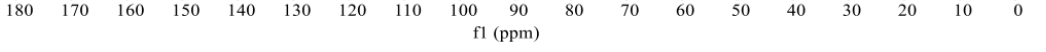
======== CHANNEL f1 ========
NUC1                13C
P1                 9.00 usec
PL1               -0.90 dB
PL1W         42.02801895 W
SFO1         100.6479784 MHz

======== CHANNEL f2 ========
CPDPRG2         waltz16
NUC2                1H
PCPD2             90.00 usec
PL2               -2.00 dB
PL12              14.16 dB
PL13              17.90 dB
PL2W         11.86359406 W
PL12W         0.28722104 W
PL13W         0.12139934 W
SFO2         400.2216009 MHz
SI                32768
SF           100.6353990 MHz
WDW                  EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
```



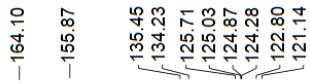


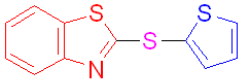





```
NAME                   UN
EXPNC                 426
PROCNO                  1
Date_            20240915
INSTRUM             spect
PROBHD    5 mm PABBO BB-
PULPROG              zg30
TD                  65536
SOLVENT             CDCl3
NS                     24
DS                      0
SWH              8012.820 Hz
FIDRES           0.122266 Hz
AQ               4.0894966 sec
RG                    406
DW                62.400 usec
DE                 6.50 usec
TE                293.2 K
D1            6.00000000 sec
TD0                     1

======== CHANNEL f1 ========
NUC1                   1H
P1                 14.00 usec
PL1                -2.00 dB
PL1W          11.86359406 W
SFO1          400.2236020 MHz
SI                  32768
SF            400.2200000 MHz
WDW                    EM
SSB                     0
LB                 0.30 Hz
GB                      0
PC                   1.00
```

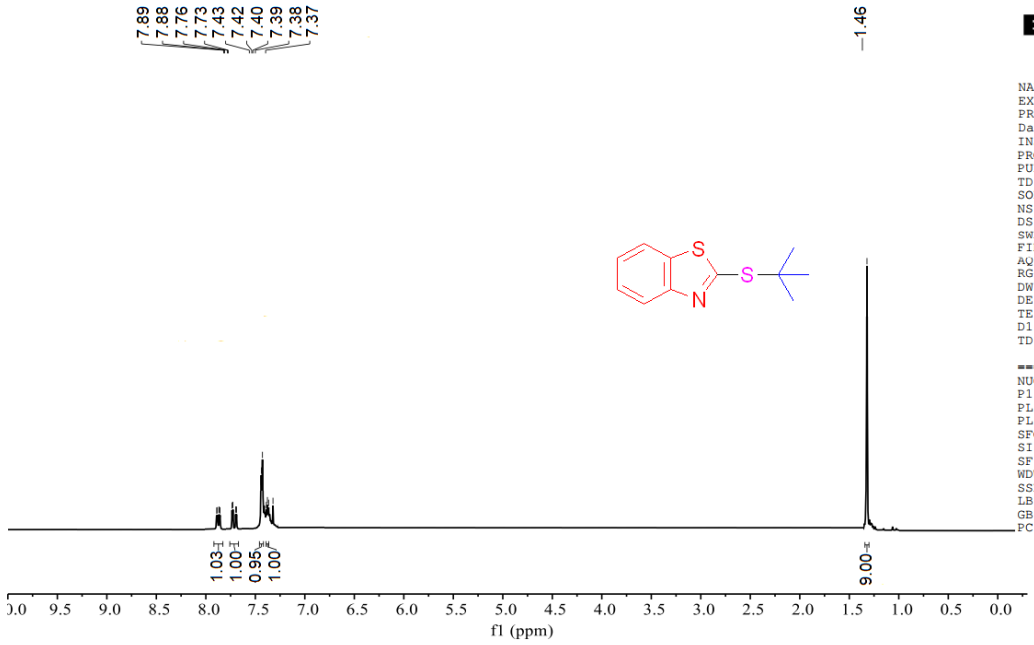





```
NAME                   UN
EXPNO                 435
PROCNO                  2
Date_            20240915
INSTRUM             spect
PROBHD    5 mm PABBO BB-
PULPROG             zgpg
TD                  65536
SOLVENT             CDCl3
NS                     31
DS                      0
SWH              25252.525 Hz
FIDRES           0.385323 Hz
AQ               1.2976629 sec
RG                   2050
DW                19.800 usec
DE                 6.50 usec
TE                293.4 K
D1            3.00000000 sec
D11           0.03000000 sec
TD0                     1

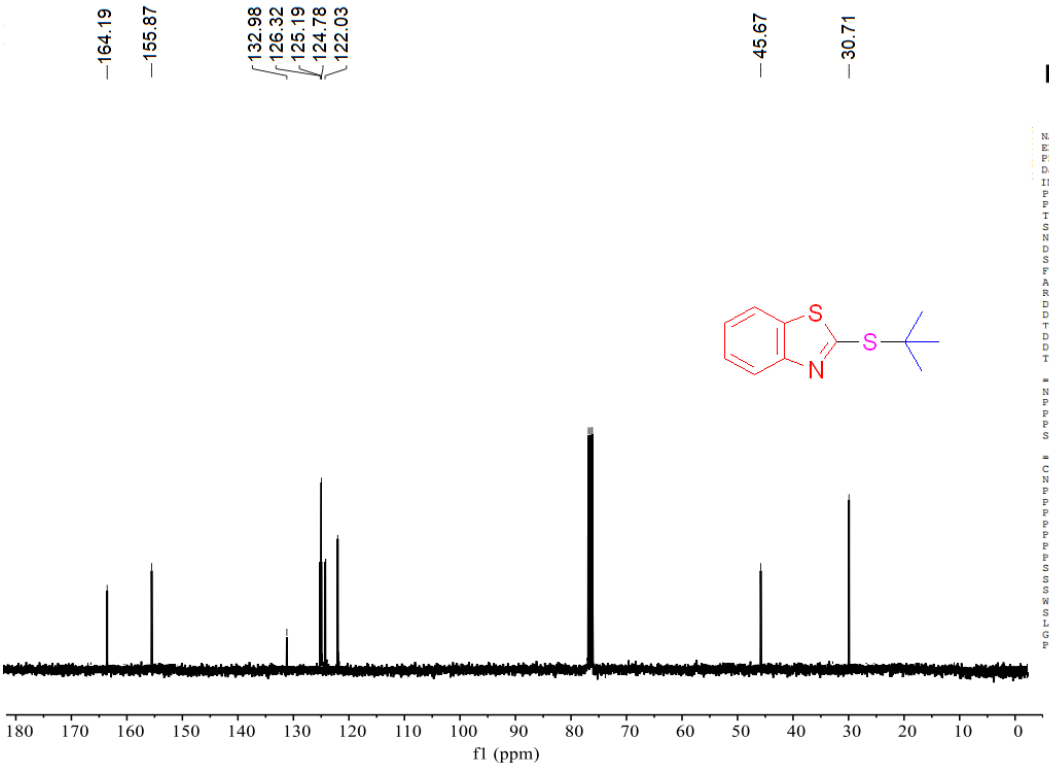
======== CHANNEL f1 ========
NUC1                  13C
P1                  9.00 usec
PL1                -0.90 dB
PL1W          42.02801895 W
SFO1          100.6479784 MHz

======== CHANNEL f2 ========
CPDPRG2           waltz16
NUC2                   1H
PCPD2              90.00 usec
PL2                -2.00 dB
PL12               14.16 dB
PL13               17.90 dB
PL2W          11.86359406 W
PL12W          0.28722104 W
PL13W          0.12139934 W
SFO2          400.2216009 MHz
SI                  32768
SF            100.6353990 MHz
WDW                    EM
SSB                     0
LB                 1.00 Hz
GB                      0
PC                   1.40
```




```
NAME                 UN
EXPNC               426
PROCNO                1
Date_          20240915
INSTRUM           spect
PROBHD   5 mm PABBO BB-
PULPROG            zg30
TD                65536
SOLVENT           CDCl3
NS                   24
DS                    0
SWH            8012.820 Hz
FIDRES         0.122266 Hz
AQ             4.0894966 sec
RG                  406
DW               62.400 usec
DE                6.50 usec
TE              293.2 K
D1             6.00000000 sec
TD0                   1

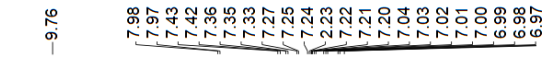
======== CHANNEL f1 ========
NUC1                 1H
P1                14.00 usec
PL1               -2.00 dB
PL1W         11.86359406 W
SFO1         400.2236020 MHz
SI                32768
SF           400.2200000 MHz
WDW                  EM
SSB                   0
LB                 0.30 Hz
GB                    0
PC                 1.00
```

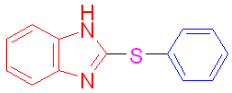


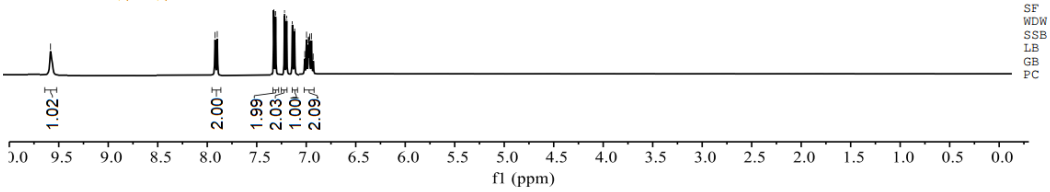

```
NAME                 UN
EXPNO               435
PROCNO                2
Date_          20240915
INSTRUM           spect
PROBHD   5 mm PABBO BB-
PULPROG           zgpg
TD                65536
SOLVENT           CDCl3
NS                   31
DS                    0
SWH           25252.525 Hz
FIDRES         0.385323 Hz
AQ             1.2976629 sec
RG                 2050
DW               19.800 usec
DE                6.50 usec
TE              293.4 K
D1             3.00000000 sec
D11            0.03000000 sec
TD0                   1

======== CHANNEL f1 ========
NUC1                13C
P1                 9.00 usec
PL1               -0.90 dB
PL1W         42.02801895 W
SFO1         100.6479784 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                 1H
PCPD2             90.00 usec
PL2               -2.00 dB
PL12              14.16 dB
PL13              17.90 dB
PL2W         11.86359406 W
PL12W         0.28722104 W
PL13W         0.12139934 W
SFO2         400.2216009 MHz
SI                32768
SF           100.6353990 MHz
WDW                  EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
```

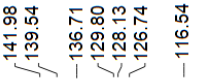


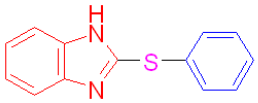


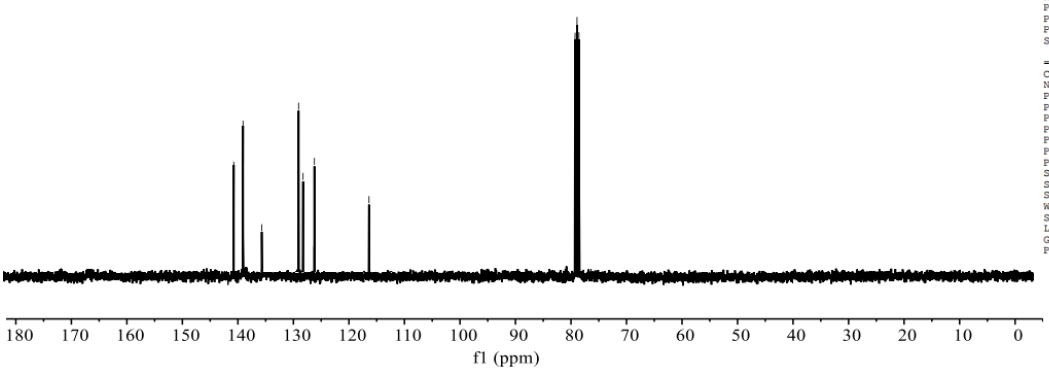



```
NAME                   UN
EXPNC                 426
PROCNO                  1
Date_            20240922
INSTRUM              spect
PROBHD  5 mm PABBO BB-
PULPROG              zg30
TD                  65536
SOLVENT             CDCl3
NS                     24
DS                      0
SWH              8012.820 Hz
FIDRES           0.122266 Hz
AQ               4.0894966 sec
RG                    406
DW                 62.400 usec
DE                  6.50 usec
TE                 293.2 K
D1              6.00000000 sec
TD0                     1

======== CHANNEL f1 ========
NUC1                   1H
P1                  14.00 usec
PL1                 -2.00 dB
PL1W           11.86359406 W
SFO1           400.2236020 MHz
SI                   32768
SF             400.2200000 MHz
WDW                    EM
SSB                     0
LB                   0.30 Hz
GB                      0
PC                   1.00
```



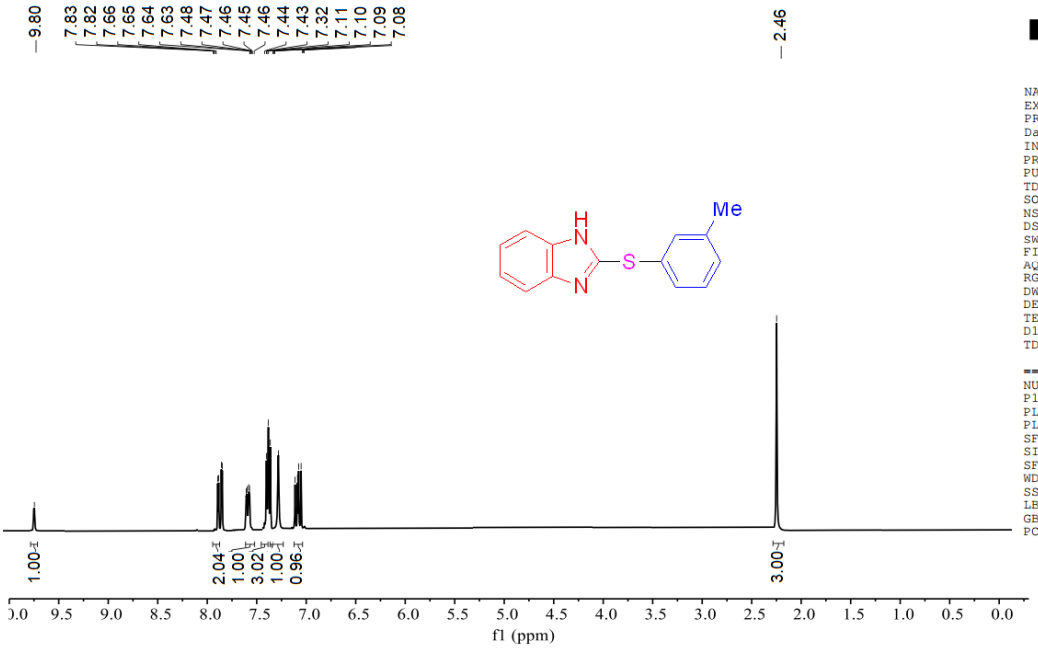





```
NAME                   UN
EXPNO                 435
PROCNO                  2
Date_            20240922
INSTRUM              spect
PROBHD  5 mm PABBO BB-
PULPROG             zgpg
TD                  65536
SOLVENT             CDCl3
NS                     31
DS                      0
SWH              25252.525 Hz
FIDRES           0.385323 Hz
AQ               1.2976629 sec
RG                   2050
DW                 19.800 usec
DE                  6.50 usec
TE                 293.4 K
D1              3.00000000 sec
D11             0.03000000 sec
TD0                     1

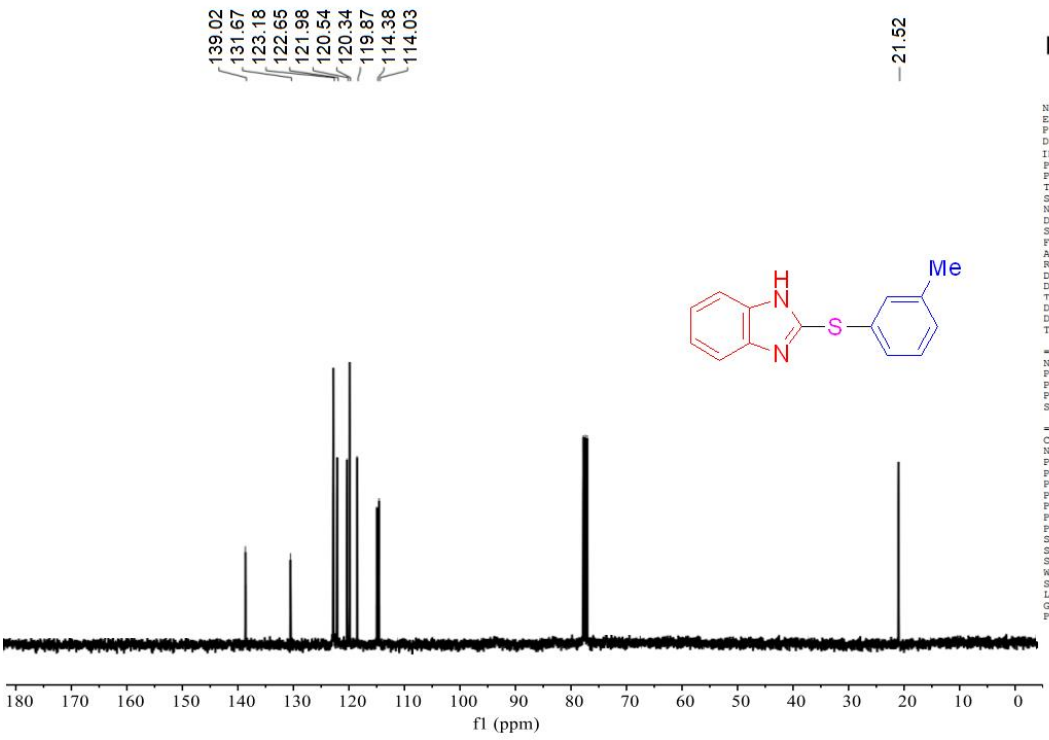
======== CHANNEL f1 ========
NUC1                  13C
P1                   9.00 usec
PL1                 -0.90 dB
PL1W           42.02801895 W
SFO1           100.6479784 MHz

======== CHANNEL f2 ========
CPDPRG2           waltz16
NUC2                   1H
PCPD2               90.00 usec
PL2                 -2.00 dB
PL12                14.16 dB
PL13                17.90 dB
PL2W           11.86359406 W
PL12W           0.28722104 W
PL13W           0.12139934 W
SFO2           400.2216009 MHz
SI                   32768
SF             100.6353990 MHz
WDW                    EM
SSB                     0
LB                   1.00 Hz
GB                      0
PC                   1.40
```




```
NAME                 UN
EXPNC               426
PROCNO                1
Date_          20240922
INSTRUM             spect
PROBHD   5 mm PABBO BB-
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                    24
DS                     0
SWH             8012.820 Hz
FIDRES             0.122266 Hz
AQ              4.0894966 sec
RG                   406
DW                62.400 usec
DE                 6.50 usec
TE                293.2 K
D1             6.00000000 sec
TD0                    1

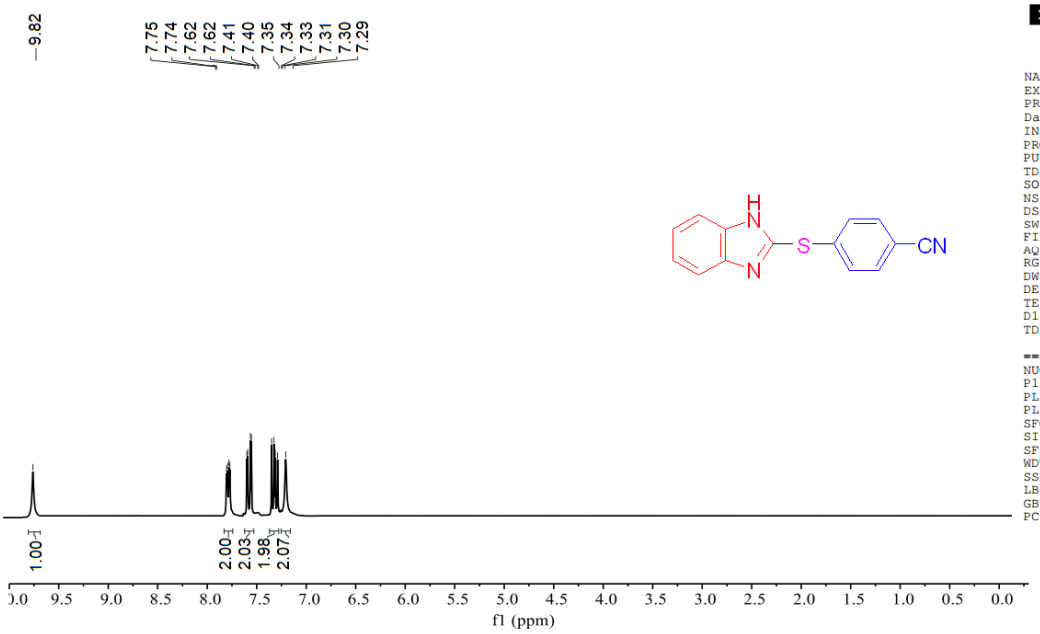
======== CHANNEL f1 ========
NUC1                  1H
P1                 14.00 usec
PL1                -2.00 dB
PL1W          11.86359406 W
SFO1          400.2236020 MHz
SI                 32768
SF            400.2200000 MHz
WDW                   EM
SSB                    0
LB                 0.30 Hz
GB                     0
PC                 1.00
```




```
NAME                 UN
EXPNO               435
PROCNO                2
Date_          20240922
INSTRUM             spect
PROBHD   5 mm PABBO BB-
PULPROG           zgpg
TD                 65536
SOLVENT            CDCl3
NS                    31
DS                     0
SWH            25252.525 Hz
FIDRES             0.385323 Hz
AQ              1.2976629 sec
RG                  2050
DW                19.800 usec
DE                 6.50 usec
TE                293.4 K
D1             3.00000000 sec
D11            0.03000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                 13C
P1                  9.00 usec
PL1                -0.90 dB
PL1W          42.02801895 W
SFO1          100.6479784 MHz

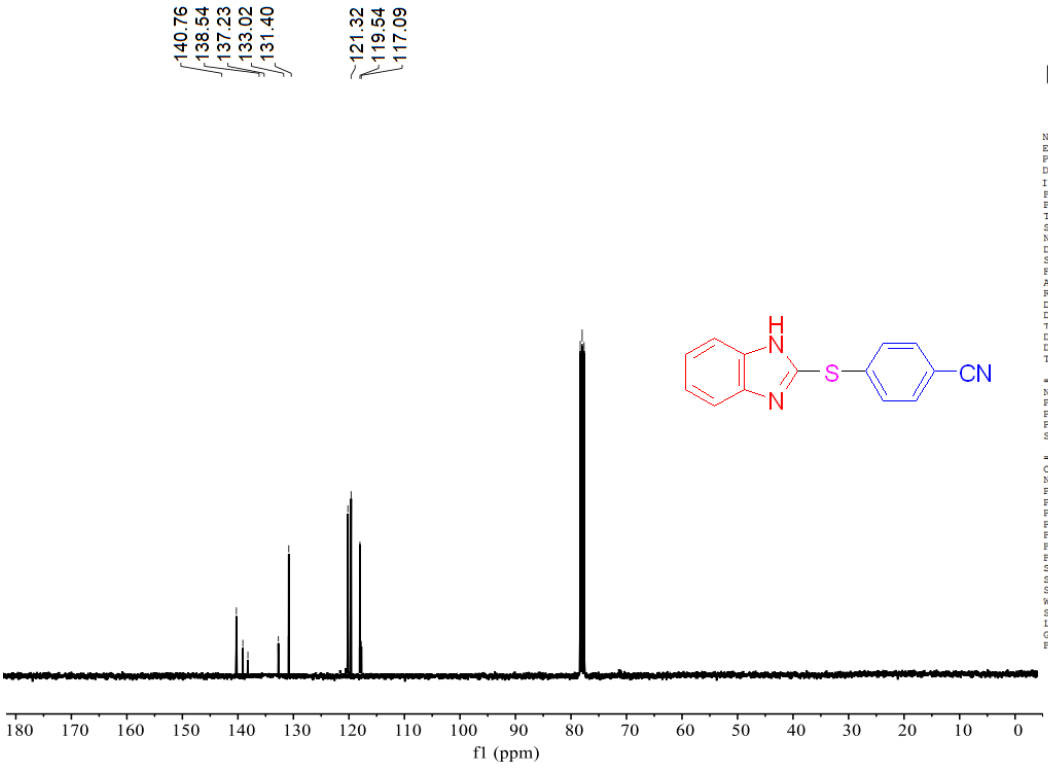
======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                 1H
PCPD2              90.00 usec
PL2                -2.00 dB
PL12               14.16 dB
PL13               17.90 dB
PL2W          11.86359406 W
PL12W          0.28722104 W
PL13W          0.12139934 W
SFO2          400.2216009 MHz
SI                 32768
SF            100.6353990 MHz
WDW                   EM
SSB                    0
LB                 1.00 Hz
GB                     0
PC                 1.40
```



BRUKER

```
NAME                  UN
EXPNC                426
PROCNO                 1
Date_           20240922
INSTRUM              spect
PROBHD   5 mm PABBO BB-
PULPROG              zg30
TD                  65536
SOLVENT             CDCl3
NS                     24
DS                      0
SWH              8012.820 Hz
FIDRES           0.122266 Hz
AQ               4.0894966 sec
RG                    406
DW                 62.400 usec
DE                  6.50 usec
TE                 293.2 K
D1              6.00000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                  1H
P1                 14.00 usec
PL1                -2.00 dB
PL1W          11.86359406 W
SFO1          400.2236020 MHz
SI                 32768
SF            400.2200000 MHz
WDW                   EM
SSB                    0
LB                  0.30 Hz
GB                     0
PC                  1.00
```

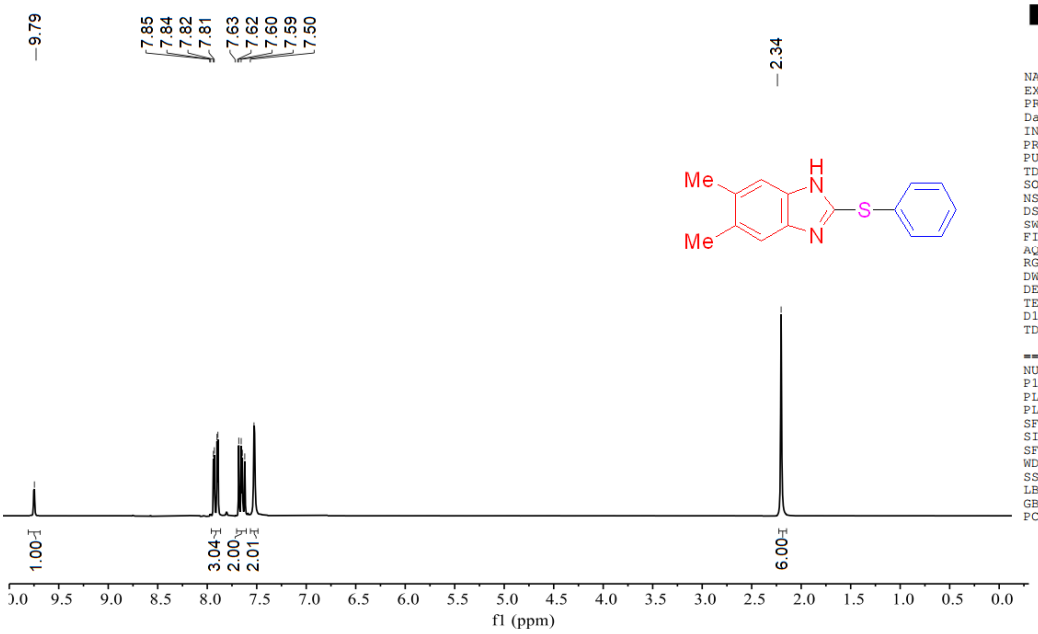


BRUKER

```
NAME                  UN
EXPNO                435
PROCNO                 2
Date_           20240922
INSTRUM              spect
PROBHD   5 mm PABBO BB-
PULPROG             zgpg
TD                  65536
SOLVENT             CDCl3
NS                     31
DS                      0
SWH              25252.525 Hz
FIDRES           0.385323 Hz
AQ               1.2976629 sec
RG                   2050
DW                 19.800 usec
DE                  6.50 usec
TE                 293.4 K
D1              3.00000000 sec
D11             0.03000000 sec
TD0                    1

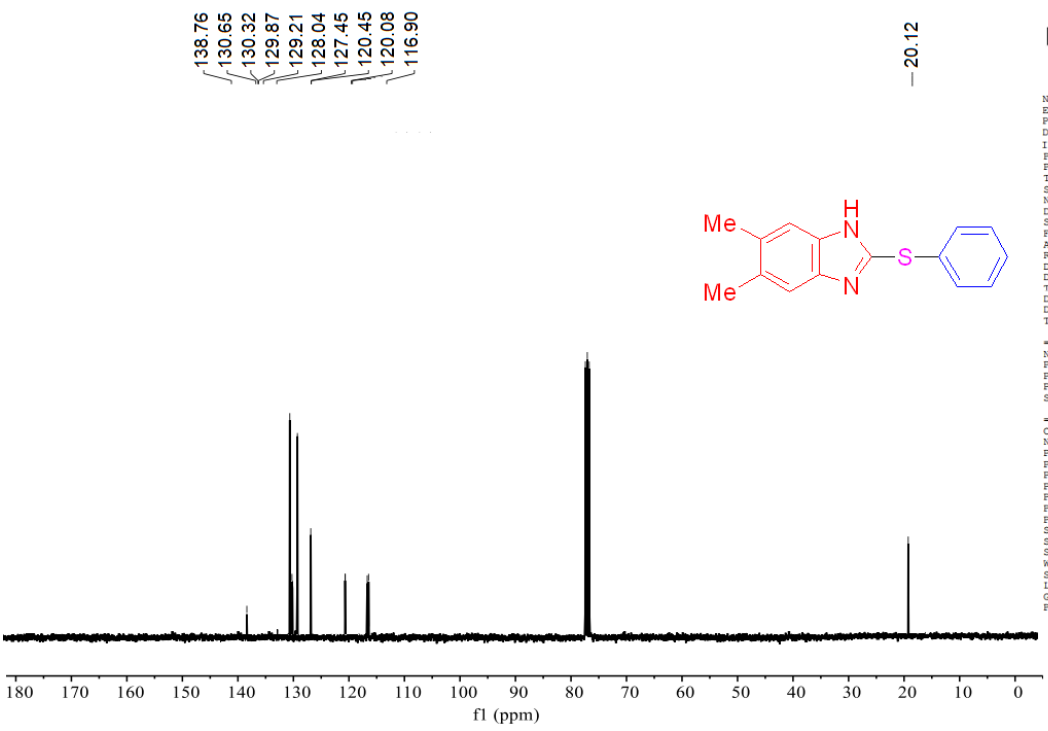
======== CHANNEL f1 ========
NUC1                 13C
P1                  9.00 usec
PL1                -0.90 dB
PL1W          42.02801895 W
SFO1          100.6479784 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                  1H
PCPD2              90.00 usec
PL2                -2.00 dB
PL12               14.16 dB
PL13               17.90 dB
PL2W          11.86359406 W
PL12W          0.28722104 W
PL13W          0.12139934 W
SFO2          400.2216009 MHz
SI                 32768
SF            100.6353990 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40
```




```
NAME                   UN
EXPNC                 426
PROCNO                  1
Date_            20240922
INSTRUM             spect
PROBHD   5 mm PABBO BB-
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                     24
DS                      0
SWH             8012.820 Hz
FIDRES          0.122266 Hz
AQ              4.0894966 sec
RG                    406
DW                 62.400 usec
DE                  6.50 usec
TE                 293.2 K
D1             6.00000000 sec
TD0                     1

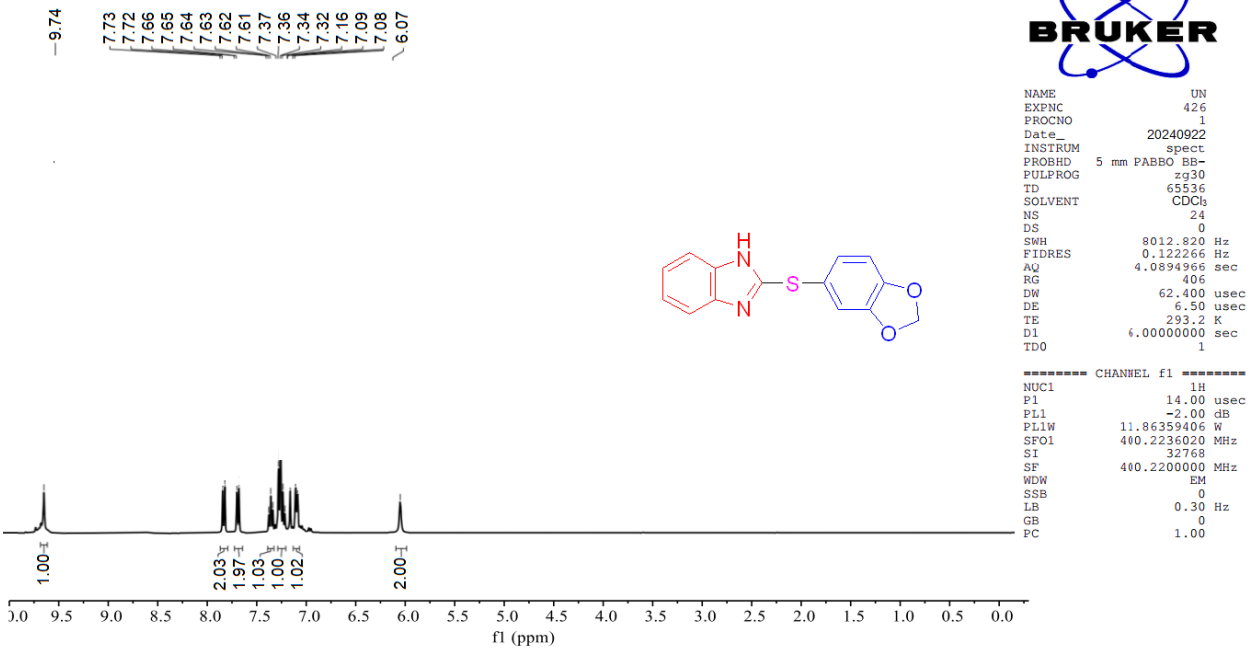
======== CHANNEL f1 ========
NUC1                   1H
P1                 14.00 usec
PL1                -2.00 dB
PL1W           11.86359406 W
SFO1           400.2236020 MHz
SI                   32768
SF             400.2200000 MHz
WDW                   EM
SSB                    0
LB                  0.30 Hz
GB                     0
PC                  1.00
```




```
NAME                   UN
EXPNO                 435
PROCNO                  2
Date_            20240922
INSTRUM             spect
PROBHD   5 mm PABBO BB-
PULPROG             zgpg
TD                 65536
SOLVENT            CDCl3
NS                     31
DS                      0
SWH            25252.525 Hz
FIDRES          0.385323 Hz
AQ              1.2976629 sec
RG                   2050
DW                 19.800 usec
DE                  6.50 usec
TE                 293.4 K
D1             3.00000000 sec
D11            0.03000000 sec
TD0                     1

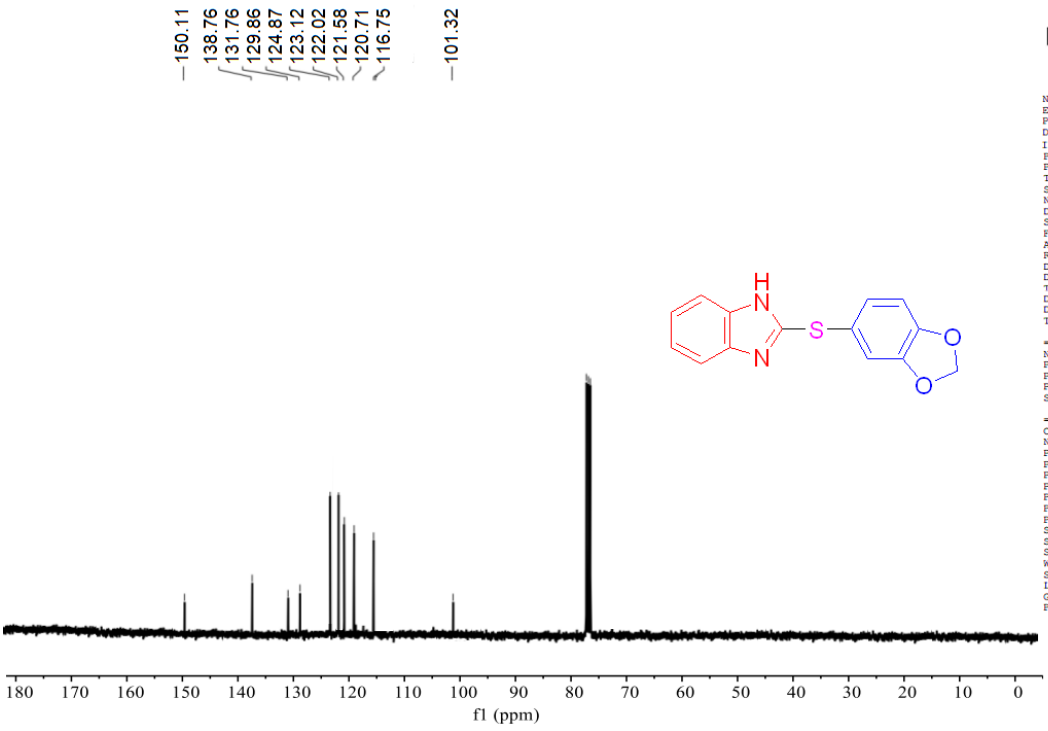
======== CHANNEL f1 ========
NUC1                  13C
P1                  9.00 usec
PL1                -0.90 dB
PL1W          42.02801895 W
SFO1          100.6479784 MHz

======== CHANNEL f2 ========
CPDPRG2           waltz16
NUC2                   1H
PCPD2              90.00 usec
PL2                -2.00 dB
PL12               14.16 dB
PL13               17.90 dB
PL2W           11.86359406 W
PL12W          0.28722104 W
PL13W          0.12139934 W
SFO2           400.2216009 MHz
SI                   32768
SF             100.6353990 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40
```




```
NAME                   UN
EXPNC                 426
PROCNO                  1
Date_            20240922
INSTRUM             spect
PROBHD   5 mm PABBO BB-
PULPROG              zg30
TD                  65536
SOLVENT             CDCl3
NS                     24
DS                      0
SWH              8012.820 Hz
FIDRES           0.122266 Hz
AQ               4.0894966 sec
RG                    406
DW                62.400 usec
DE                 6.50 usec
TE                293.2 K
D1             6.00000000 sec
TD0                     1

======== CHANNEL f1 ========
NUC1                   1H
P1                 14.00 usec
PL1                -2.00 dB
PL1W          11.86359406 W
SFO1          400.2236020 MHz
SI                  32768
SF            400.2200000 MHz
WDW                    EM
SSB                     0
LB                 0.30 Hz
GB                      0
PC                   1.00
```




```
NAME                   UN
EXPNO                 435
PROCNO                  2
Date_            20240922
INSTRUM             spect
PROBHD   5 mm PABBO BB-
PULPROG             zgpg
TD                  65536
SOLVENT             CDCl3
NS                     31
DS                      0
SWH             25252.525 Hz
FIDRES           0.385323 Hz
AQ               1.2976629 sec
RG                   2050
DW                19.800 usec
DE                 6.50 usec
TE                293.4 K
D1             3.00000000 sec
D11            0.03000000 sec
TD0                     1

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======== CHANNEL f2 ========
CPDPRG2           waltz16
NUC2                   1H
PCPD2              90.00 usec
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PL12               14.16 dB
PL13               17.90 dB
PL2W          11.86359406 W
PL12W          0.28722104 W
PL13W          0.12139934 W
SFO2          400.2216009 MHz
SI                  32768
SF            100.6353990 MHz
WDW                    EM
SSB                     0
LB                 1.00 Hz
GB                      0
PC                   1.40
```