Optimizing the white light emission in the solid state isatin and thiazole based molecular hybrids by introduction of variety of substituents on isatin and thiazole ring systems

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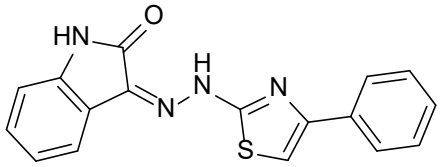
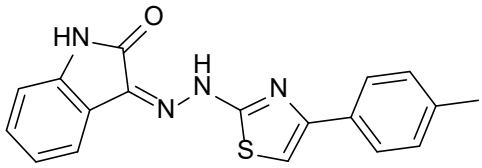
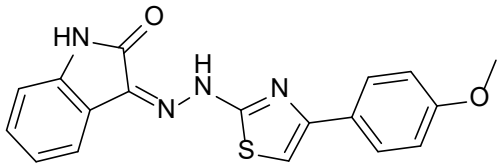
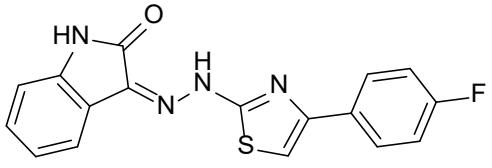
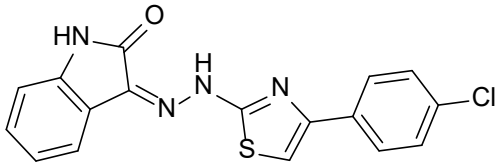
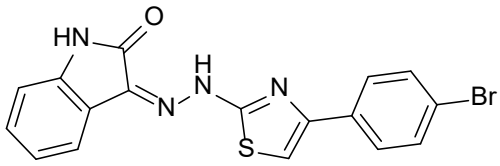
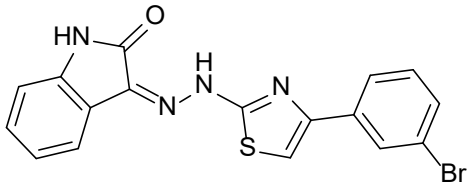
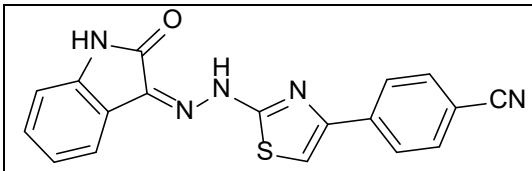
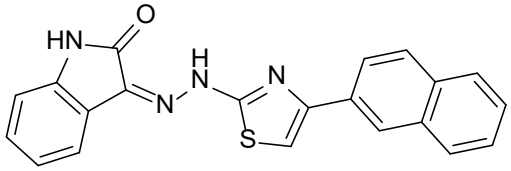
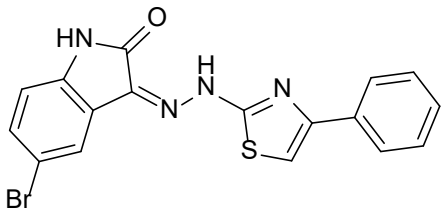
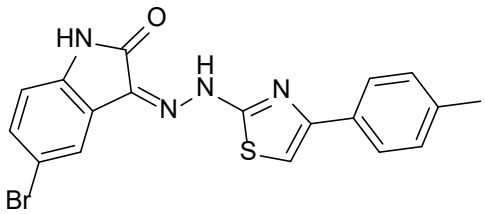
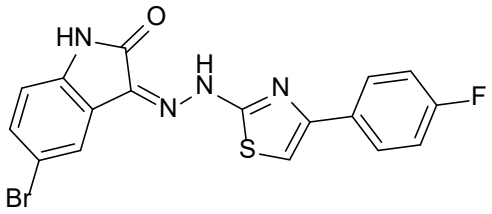
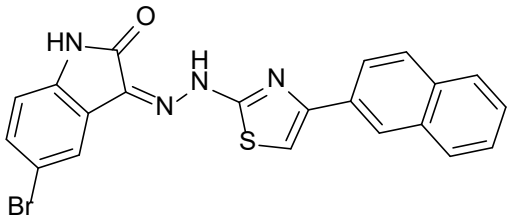
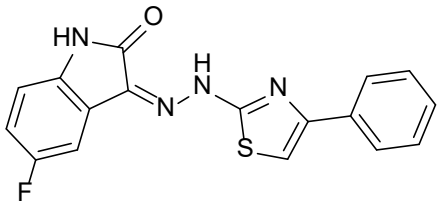
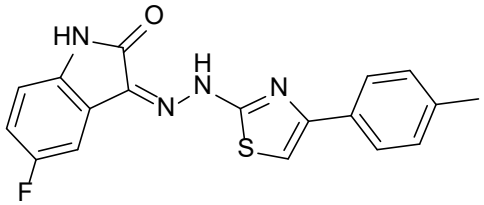
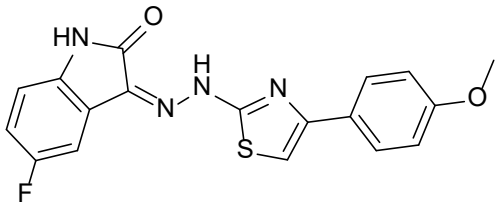
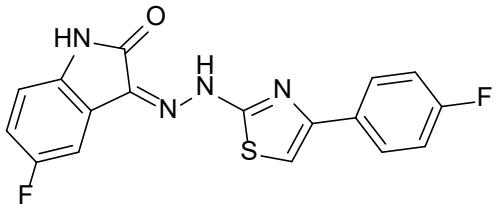
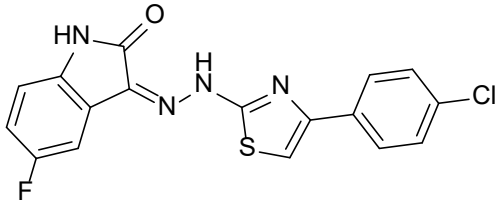
Physical andspectral data(^{1}H-NMR and Mass) of thiazolylhydrazonoindolin-2-ones (4)

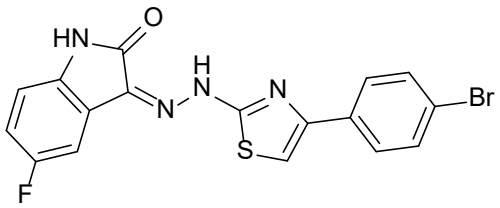
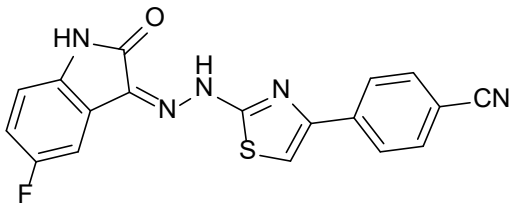
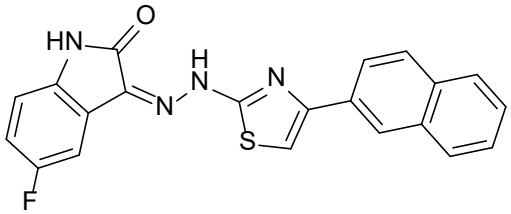
(*Z*)-3-(2-(4-phenylthiazol-2-yl)hydrazono)indolin-2-one (4a): 	mp: 272-273°C.^{1}H NMR (400MHz, *d*$_6$-DMSO): δ 13.36 (s, 1H, -NH), 11.27 (s, 1H, NH of lactam), 7.91 (d, *J*=7.2 Hz, 2H, arom H), 7.64 (s, 1H, Thiazole H), 7.55 (d, *J*=7.2 Hz, 1H, arom H), 7.43 (t, *J*=7.6 Hz, 2H, arom H), 7.37-7.32 (m, 2H, arom H), 7.10 (t, *J*=7.6 Hz, 1H, arom H), 6.97 (d, *J*=8.0 Hz, 1H, arom H). MS (ESI): $[M+H]^+$ 321.37.
(Z)-3-(2-(4-(p-tolyl)thiazol-2-yl)hydrazono)indolin-2-one (4b) 	mp: 281-283°C.^{1}H NMR (400MHz, *d*$_6$-DMSO): δ 13.34 (s, 1H, -NH), 11.25 (s, 1H, NH of lactam), 7.79 (d, *J*=8.4 Hz, 2H, arom H), 7.55-7.53 (m, 2H, Thiazole **H**and1H, arom H),7.34 (td, *J*=7.6 Hz, *J* =1.2 Hz, 1H,arom H), 7.23 (d, *J*=8.0 Hz, 2H, arom H), 7.09 (td, *J*=7.6 Hz, *J*=0.8 Hz, 1H, arom H), 6.97 (d, *J* =7.6 Hz, 1H,arom H), 2.33 (s, 3H, -CH_3).MS (ESI): $[M+H]^+$ 335.33.
(*Z*)-3-(2-(4-(4-methoxyphenyl)thiazol-2-yl)hydrazono)indolin-2-one (4c): 	mp: 269-271°C.^{1}H NMR (400MHz, *d*$_6$-DMSO): δ 13.34 (s, 1H, -NH), 11.26 (s, 1H, NH of lactam), 7.84 (d, *J*=9.6 Hz, 2H, arom H), 7.54 (d, *J*=7.2 Hz, 1H, arom H), 7.47 (s, 1H, Thiazole **H**), 7.35 (td, *J*=8.0 Hz, *J*=1.2 Hz, 1H, arom H), 7.10 (t, *J* =7.4 Hz, 1H, arom H), 7.00-6.96 (m, 3H, arom H), 3.79 (s, 3H, -OCH_3). MS (ESI): $[M+H]^+$ 351.38.
(*Z*)-3-(2-(4-(4-fluorophenyl)thiazol-2-yl)hydrazono)indolin-2-one (4d) 	mp: 260-261°C. ^{1}H NMR (400MHz, *d*$_6$-DMSO): δ 13.35 (s, 1H, -NH), 11.26 (s, 1H, NH of lactam), 7.97-7.93 (m, 2H, arom H), 7.62 (s, 1H, Thiazole **H**), 7.55 (d, *J*=7.6 Hz, 1H, arom H), 7.35 (td, *J*=7.6 Hz, *J*=1.2 Hz, 1H, arom H), 7.26 (t, *J*=9.0 Hz, 2H, arom H), 7.12-7.07(m, 1H, arom H), 6.97 (d, *J*=7.6 Hz, 1H,arom H). MS (ESI): $[M+H]^+$ 339.30

(*Z*)-3-(2-(4-(4-chlorophenyl)thiazol-2-yl)hydrazono)indolin-2-one (4e) 	mp: 291-294 °C.^{1}H NMR (400MHz, *d*$_6$-DMSO): δ 13.36 (s, 1H, -NH), 11.26 (s, 1H, NH of lactam), 7.93 (d, *J*=8.8 Hz, 2H,arom H), 7.70 (s, 1H, Thiazole **H**), 7.55 (d, *J*=7.6 Hz, 1H, arom H), 7.49 (d, *J*=8.8 Hz, 2H,arom H), 7.35 (td, *J*=7.6 Hz, *J*=1.2 Hz, 1H, arom H),7.01 (td, *J*=7.6 Hz, *J*=0.8 Hz, 1H, arom H),6.97 (d, *J*=7.6 Hz, 1H,arom H). MS (ESI): $[M+H]^+$ 355.25; $[M+H+2]^+$ 357.25.
(*Z*)-3-(2-(4-(4-bromophenyl)thiazol-2-yl)hydrazono)indolin-2-one (4f): 	mp: 250-251°C.^{1}H NMR (400MHz, *d*$_6$-DMSO): δ 13.36 (s, 1H, -NH), 11.27 (s, 1H, NH of lactam), 7.86 (d, *J*=8.8 Hz, 2H, arom H), 7.72 (s, 1H, Thiazole **H**), 7.63 (d, *J*=8.8 Hz, 2H, arom H), 7.55 (d, *J*=7.2 Hz, 1H, arom H), 7.35 (td, *J*=7.8 Hz, *J*=1.2 Hz, 1H, arom H), 7.10 (t, *J*=7.2 Hz, 1H, arom H), 6.97 (d, *J*=8.0 Hz, 1H, arom H). MS (ESI): $[M+H]^+$399.28; $[M+H+2]^+$ 401.28.
(*Z*)-3-(2-(4-(3-bromophenyl)thiazol-2-yl)hydrazono)indolin-2-one (4g): 	mp: 245-246°C.^{1}H NMR (400MHz, *d*$_6$-DMSO): δ 13.35 (s, 1H, -NH), 11.28 (s, 1H, NH of lactam), 8.09 (t, *J*=1.8 Hz, 1H, arom H), 7.92 (dt, *J*=7.6 Hz, *J*=1.2 Hz, 1H, arom H), 7.79 (s, 1H, Thiazole **H**), 7.56-7.52 (m, 2H, arom H), 7.40 (t, *J*=7.8 Hz, 1H, arom H), 7.35 (td, *J*=7.6 Hz, *J*=1.2 Hz, 1H, arom H), 7.10 (td, *J*=7.6 Hz, *J*=0.8 Hz, 1H, arom H), 6.97 (d, *J*=7.6 Hz, 1H, arom H). MS (ESI): $[M+H]^+$399; $[M+H+2]^+$ 401.23.
(*Z*)-4-(2-(2-(2-oxoindolin-3-ylidene)hydrazinyl)thiazol-4-yl)benzonitrile (4h):	mp: 268-269°C.^{1}H NMR (400MHz, *d*$_6$-DMSO): δ 13.36 (s, 1H, -NH), 11.27 (s, 1H, NH of lactam), 7.86 (d, *J*=9.2 Hz, 2H, arom H), 7.72 (s, 1H, Thiazole **H**), 7.63 (d, *J*=9.2 Hz, 2H, arom H), 7.55 (d, *J*=7.2 Hz, 1H,arom H), 7.35 (td, *J*=7.6 Hz, *J*=1.2 Hz, 1H,arom H), 7.10 (t, *J*=7.2 Hz, 1H, arom H), 6.97 (d,

	*J*=8.0 Hz, 1H, arom H). MS (ESI):$[M+H]^+$346.36.
(*Z*)-3-(2-(4-(naphthalen-2-yl)thiazol-2-yl)hydrazono)indolin-2-one (4i) 	mp: 286-288°C.^{1}H NMR (400MHz, *d*$_6$-DMSO): δ 13.42 (s, 1H, -NH), 11.27 (s, 1H, NH of lactam), 8.48 (s, 1H, arom H), 8.06-7.91 (m, 4H arom H), 7.79 (s, 1H, Thiazole **H**), 7.57 (d, *J*=7.2 Hz, 1H,arom H), 7.54-7.51 (m, 2H, arom H), 7.36 (td, *J*=7.6 Hz, *J*=1.2 Hz, 1H, arom H), 7.11 (t, *J*=7.6 Hz, 1H, arom H), 6.98 (d, *J*=7.6 Hz, 1H,arom H).MS (ESI):$[M+H]^+$371.31.
(*Z*)-5-bromo-3-(2-(4-phenylthiazol-2-yl)hydrazono)indolin-2-one (4k) 	mp: 286-288°C.^{1}H NMR (400MHz, *d*$_6$-DMSO): δ 13.33 (s, 1H, -NH), 11.37 (s, 1H, NH of lactam), 7.91 (d, *J*=7.2 Hz, 2H, arom H), 7.68 (s, 1H, Thiazole **H**), 7.65 (d, *J*=2.0 Hz, 1H, arom H), 7.51 (dd, *J*=8.4 Hz, *J*=2.0 Hz, 1H, arom H), 7.43 (t, *J*=7.4 Hz, 2H, arom H), 7.34 (tt, *J*=7.2 Hz, *J*=1.2 Hz, 1H, arom H), 6.94 (d, *J*=8.4 Hz, 1H, arom H).MS (ESI): $[M+H]^+$ 399.16, $[M+H+2]^+$ 401.
(*Z*)-5-bromo-3-(2-(4-(p-tolyl)thiazol-2-yl)hydrazono)indolin-2-one (4l) 	mp: 301-302°C.^{1}H NMR (400MHz, *d*$_6$-DMSO): δ 13.32 (s, 1H, -NH), 11.37 (s, 1H, NH of lactam), 7.79 (d, *J*=8.0 Hz, 2H,arom H), 7.65 (d, *J*=1.6 Hz, 1H,arom H), 7.60 (s, 1H, Thiazole **H**), 7.51 (dd, *J*=8.2 Hz, *J*=1.8 Hz, 1H,arom H), 7.24 (d, *J*=8.0 Hz, 2H,arom H), 6.94 (d, *J*=8.4 Hz, 1H,arom H), 2.33 (s, 1H, -CH_3). MS (ESI): $[M+H]^+$413, $[M+H+2]^+$ 415.18.
(*Z*)-5-bromo-3-(2-(4-(4-fluorophenyl)thiazol-2-	mp: 296-297°C.^{1}H NMR (400 MHz, *d*$_6$-DMSO): δ 13.32 (s, 1H, -NH), 11.37 (s, 1H, NH of lactam), 7.97-

yl)hydrazono)indolin-2-one(4m) 	7.93 (m, 2H, arom H), 7.66-7.65 (m, 2H, 1H, Thiazole**H,** 1H,arom Hand **H**), 7.51 (dd, *J*=8.4 Hz, *J*=2.0 Hz 1H, arom H), 7.27 (t, *J*=9.0 Hz,2H, arom H), 6.93 (d, *J*=8.4 Hz,1H, arom H). MS (ESI): $[M+H]^+$417, $[M+H+2]^+$ 419.18.
5-bromo-3-(2-(4-(naphthalen-2-yl)thiazol-2-yl)hydrazono)indolin-2-one (4o): 	mp: 292-293°C. ^{1}H NMR (400MHz, *d*$_6$-DMSO): δ 13.40 (s, 1H, -NH), 11.39 (s, 1H, NH of lactam), 8.48 (s, 1H, arom H), 8.06-7.91(m, 4H, arom H), 7.83 (s, 1H, Thiazole **H**), 7.67 (d, *J*=2.0 Hz, 1H, arom H), 7.56-7.50 (m, 3H, arom H), 6.95 (d, *J*=8.4 Hz, 1H,arom H). MS (ESI): $[M+H]^+$449, $[M+H+2]^+$ 451.23.
(Z)-5-fluoro-3-(2-(4-phenylthiazol-2-yl)hydrazono)indolin-2-one (4q) 	mp: 286-287°C.^{1}H NMR (400MHz, *d*$_6$-DMSO): δ 13.40 (s, 1H, -NH), 11.27 (s, 1H, NH of lactam), 7.91 (d, *J*=7.2 Hz, 2H, arom H), 7.67 (s, 1H, Thiazole **H**), 7.44 (t, *J*=7.6 Hz, 2H, arom H), 7.38-7.32 (m, 2H, arom H), 7.21-7.16 (m, 1H, arom H), 6.97 (dd, *J*=8.6 Hz, *J*=4.2 Hz, 1H, arom H). MS (ESI): $[M+H]^+$339.30.
(*Z*)-5-fluoro-3-(2-(4-(p-tolyl)thiazol-2-yl)hydrazono)indolin-2-one (4r) 	mp: 304-305°C.^{1}H NMR (400MHz, *d*$_6$-DMSO): δ 13.38 (s, 1H, -NH), 11.26 (s, 1H, NH of lactam), 7.79 (d, *J*=8.4Hz, 2H,arom H), 7.59 (s, 1H, Thiazole **H**), 7.36 (dd, *J*=8.2 Hz, *J*=2.6 Hz, 1H,arom H), 7.23 (d, *J*=7.6 Hz, 2H,arom H), 7.21-7.15 (m, 1H,arom H), 6.96 (dd, *J*=8.6 Hz, *J*=4.2 Hz, 1H, arom H), 2.33 (s, 3H, -CH_3). MS (ESI): $[M+H]^+$353.34.

(*Z*)-5-fluoro-3-(2-(4-(4-methoxyphenyl)thiazol-2-yl)hydrazono)indolin-2-one (4s) 	mp: 293-294 °C.^{1}H NMR (400MHz, *d*$_6$-DMSO): δ 13.37 (s, 1H, NH), 11.26 (s, 1H, NH of lactam), 7.83 (d, *J*=8.8 Hz, 2H, arom H), 7.49 (s, 1H, Thiazole **H**), 7.35 (dd, *J*=8.2 Hz, *J*=2.6 Hz, 1H,arom H),7.21-7.15 (m, 1H, arom H), 7.06-6.90 (m, 3H, arom H), 3.79 (s,3H, -OCH_3). MS (ESI): $[M+H]^+$369.27.
(*Z*)-5-fluoro-3-(2-(4-(4-fluorophenyl) thiazol-2-yl)hydrazono)indolin-2-one (4t) 	mp: 273-275°C.^{1}H NMR (400 MHz, *d*$_6$-DMSO): δ 13.39 (s, 1H, -NH), 11.27 (s, 1H, NH of lactam), 7.97-7.93 (m, 2H, arom H), 7.65 (s, 1H, Thiazole **H**), 7.36 (dd, *J*=8.0 Hz, *J*=2.4 Hz 1H, arom H), 7.26 (t, *J*=9.0 Hz,2H, arom H), 7.18 (td, *J*=8.8 Hz, *J*=2.6 Hz, 1H, arom H), 6.96 (dd, *J*=8.4 Hz, *J*=4.4 Hz, 1H, arom H). MS (ESI): $[M+H]^+$357.24.
(*Z*)-3-(2-(4-(4-chlorophenyl)thiazol-2-yl)hydrazono)-5-fluoroindolin-2-one (4u) 	mp: 295-296°C.^{1}H NMR (400 MHz, *d*$_6$-DMSO): δ 13.39 (s, 1H, -NH), 11.27 (s, 1H, NH of lactam), 7.93 (d, *J*=8.4 Hz, 2H, arom H), 7.73 (s, 1H, Thiazole **H**), 7.49 (d, *J*=8.4 Hz,2H, arom H), 7.36 (dd, *J*=8.0 Hz, *J*=2.4 Hz, 1H, arom H), 7.19 (td, *J*=8.4 Hz, *J*=2.8 Hz, 1H, arom H), 6.96 (dd, *J*=8.6 Hz, *J*=4.2 Hz, 1H, arom H). MS (ESI): $[M+H]^+$373.28; $[M+H+2]^+$ 375.27.

(*Z*)-3-(2-(4-(4-bromophenyl)thiazol-2-yl)hydrazono)-5-fluoroindolin-2-one (4v)  	mp: 290-292 °C.^{1}H NMR (400MHz, *d*$_6$-DMSO): δ 13.39 (s, 1H, -NH), 11.27 (s, 1H, NH of lactam), 7.86 (d, *J*=8.8 Hz,2H, arom H), 7.74 (s, 1H, Thiazole **H**), 7.62 (d, *J*=8.8, Hz, 2H, arom H), 7.36 (dd, *J*=8.0 Hz, *J*=2.8 Hz, 1H, arom H), 7.18 (td, *J*=8.4 Hz, *J*=2.4 Hz, 1H, arom H), 6.96 (dd, *J*=8.6 Hz, *J*=2.2 Hz, 1H, arom H).
(*Z*)-4-(2-(2-(5-fluoro-2-oxoindolin-3-ylidene)hydrazinyl)thiazol-4-yl)benzonitrile (4x)  	mp: 283-285°C.^{1}H NMR (400MHz, *d*$_6$-DMSO): δ 13.40 (s, 1H, -NH), 11.28 (s, 1H, NH of lactam), 8.09 (d, *J*=8.4 Hz, 2H, arom H), 7.96 (s, 1H, Thiazole **H**), 7.89 (d, *J*=8.4 Hz, 2H, arom H), 7.37 (dd, *J*=8.0 Hz, *J*=2.8 Hz, 1H, arom H), 7.19 (td, *J*=9.6 Hz, *J*=2.6 Hz, 1H, arom H), 6.96 (dd, *J*=8.6 Hz, *J*=4.2 Hz, 1H, arom H).MS (ESI): $[M+H]^+$364.32.
(*Z*)-5-fluoro-3-(2-(4-(naphthalen-2-yl)thiazol-2-yl)hydrazono)indolin-2-one (4y)  	mp: 289-290°C.^{1}H NMR (400MHz, *d*$_6$-DMSO): δ 13.46 (s, 1H, -NH), 11.29 (s, 1H, NH of lactam), 8.48 (s, 1H, arom H), 8.06-7.91 (m, 4H, arom H), 7.82 (s, 1H, Thiazole **H**), 7.56-7.50 (m, 2H, arom H), 7.38 (dd, *J*=8.2 Hz, *J*=2.6 Hz,1H, arom H), 7.19 (td, *J*=9.6 Hz, *J*=2.6 Hz, 1H, arom H), 6.98 (dd, *J*=8.6 Hz, *J*=4.2 Hz, 1H, arom H). MS (ESI): $[M+H]^+$389.33.

Copies of ^{1}H NMR and Mass spectra of thiazolylhydrazonoindolin-2-ones (4)

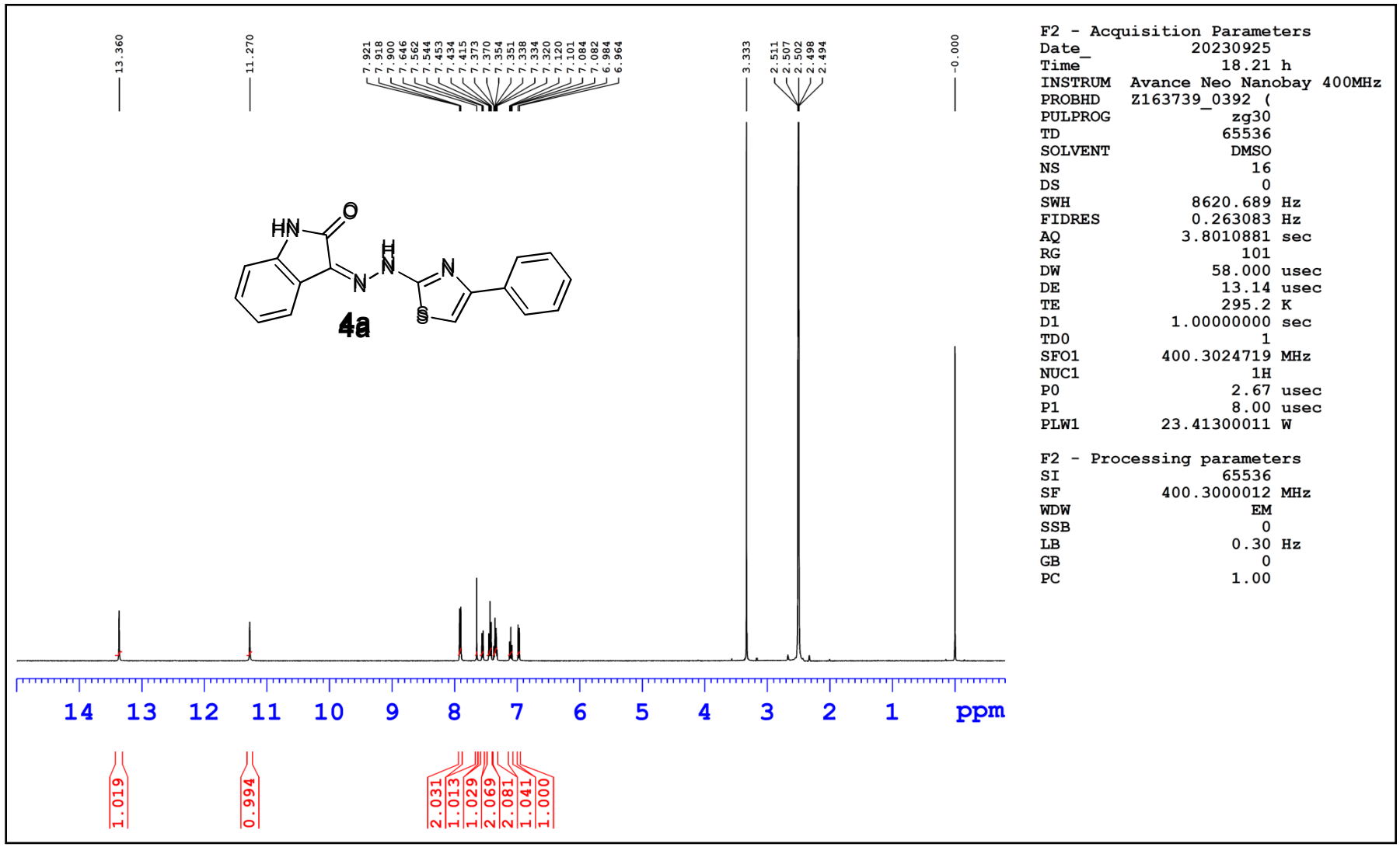


Figure S1 ^{1}H NMR spectrum of 4a.

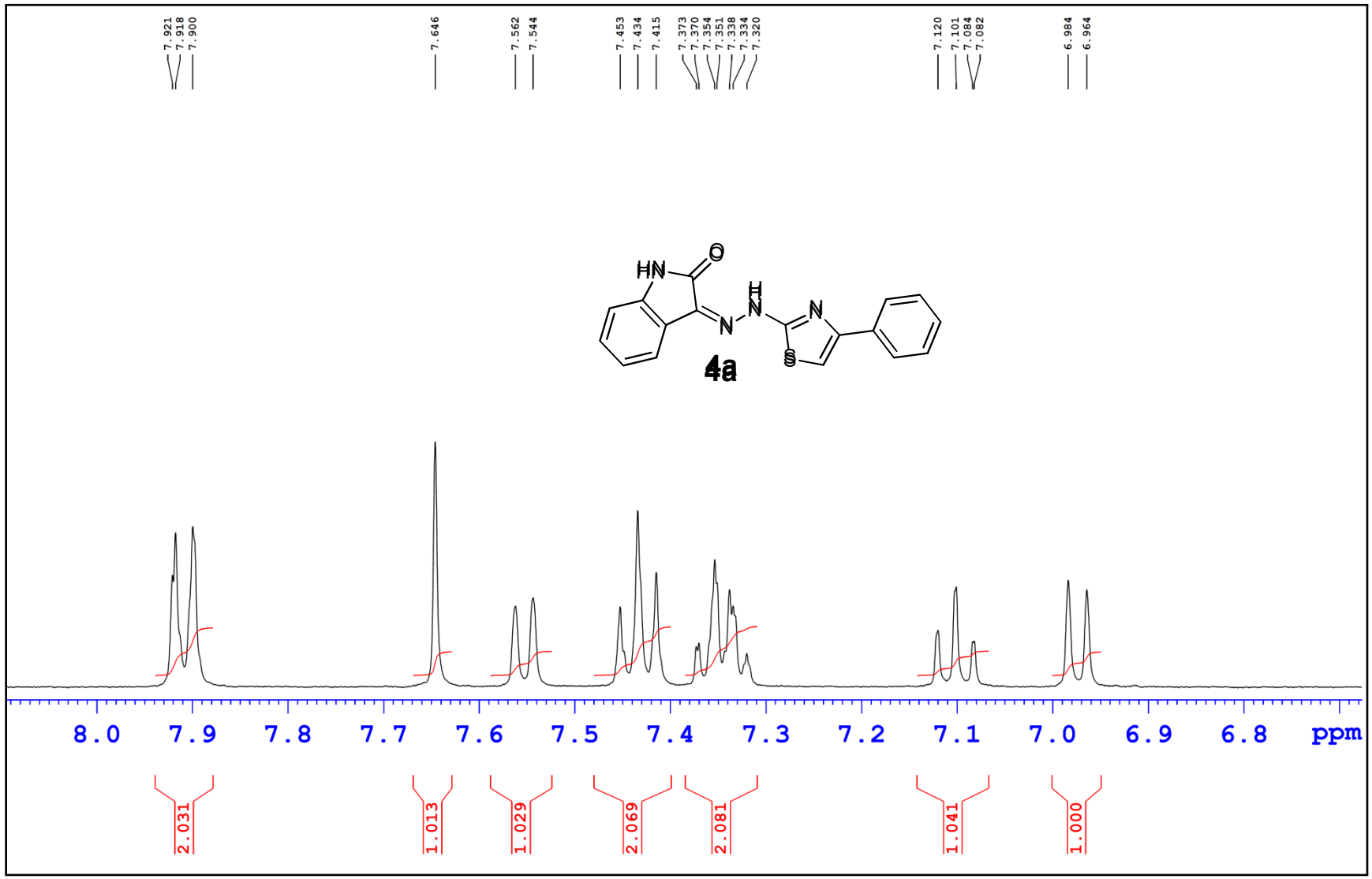


Figure S2 Expanded ^{1}H NMR spectrum of 4a.

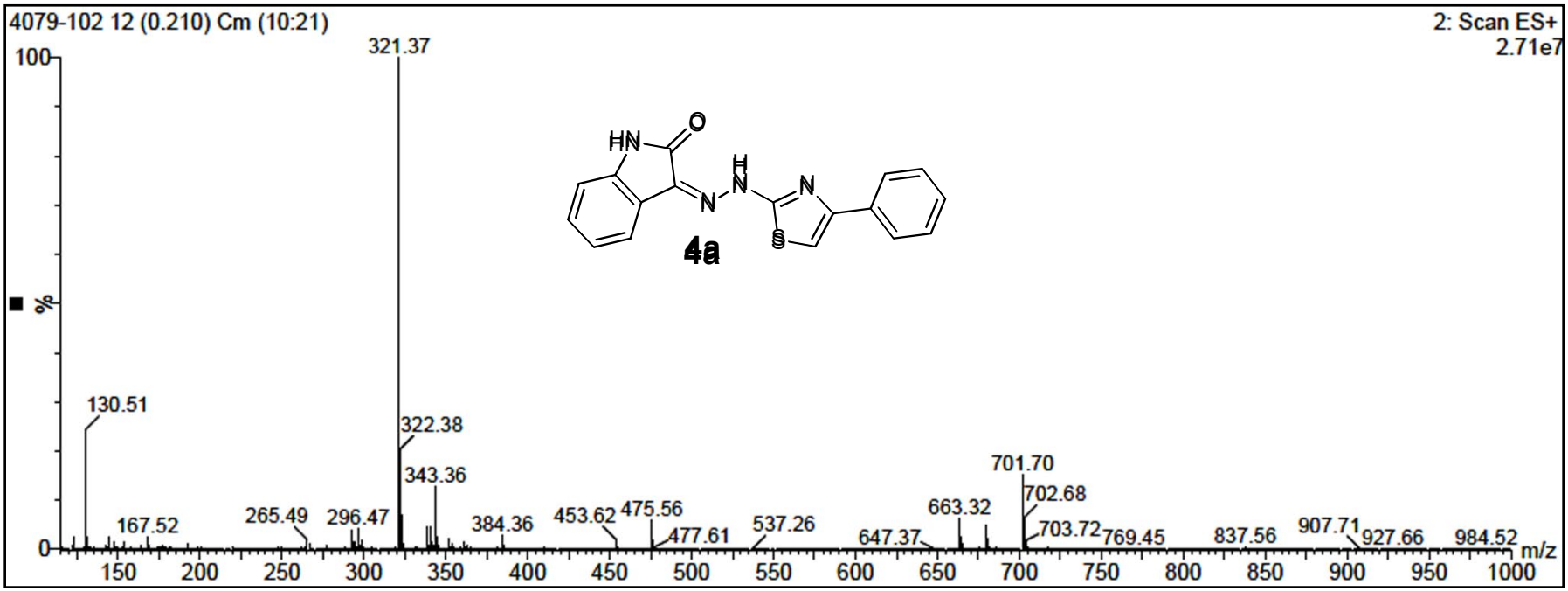


Figure S3Mass spectrum of 4a.

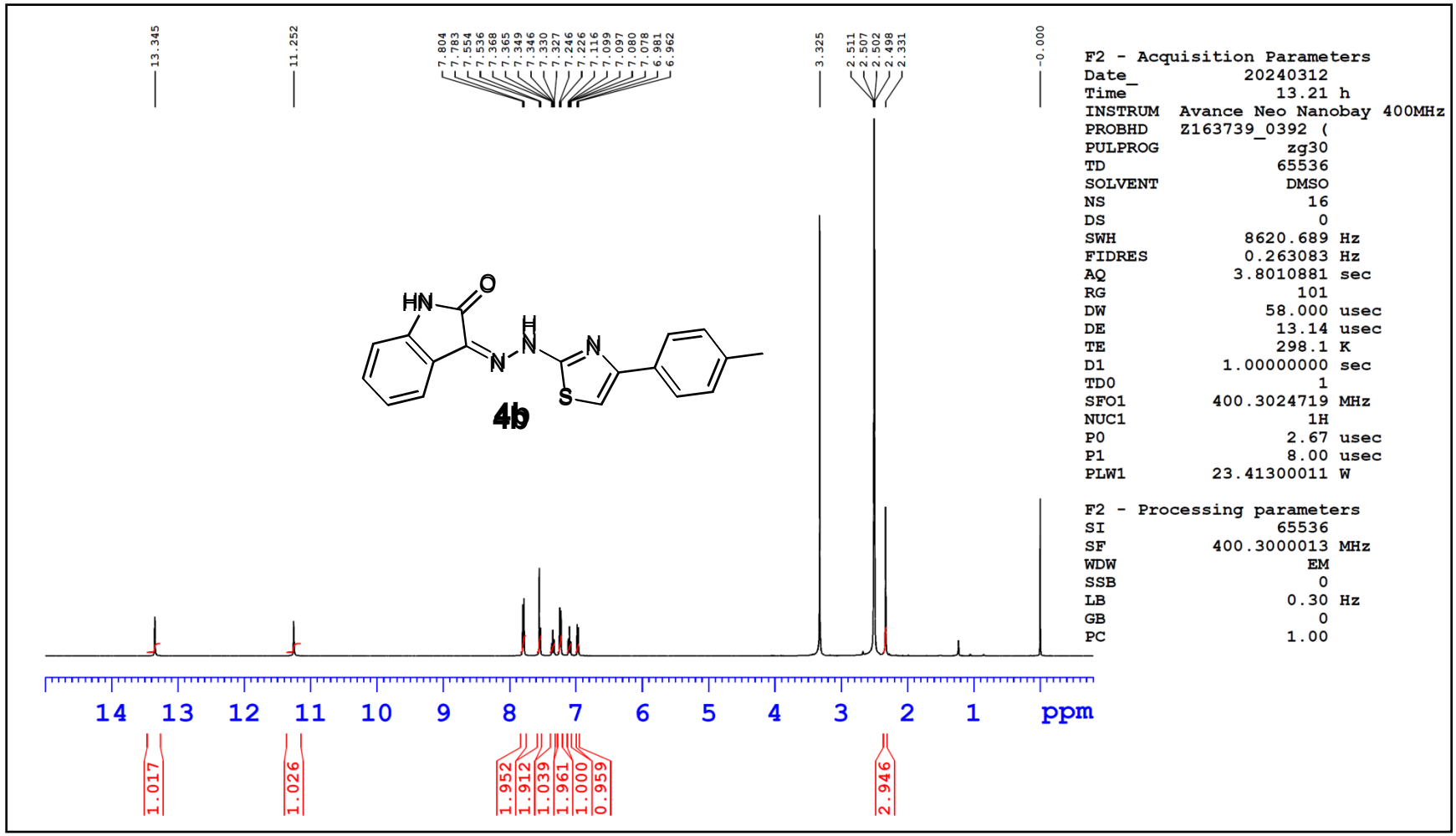


Figure S4 ^{1}H NMR spectrum of 4b.

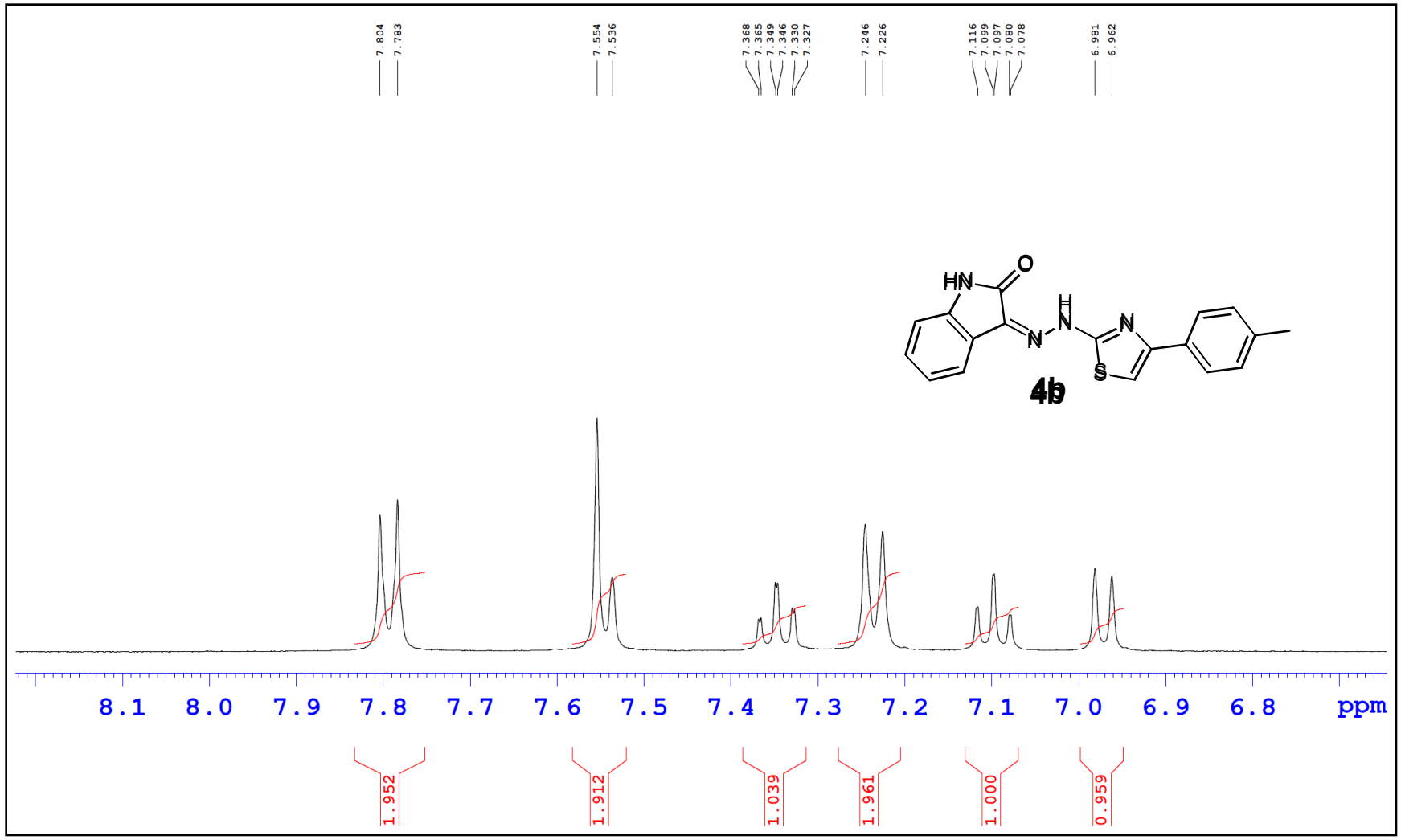


Figure S5 Expanded ^{1}H NMR spectrum of 4b.

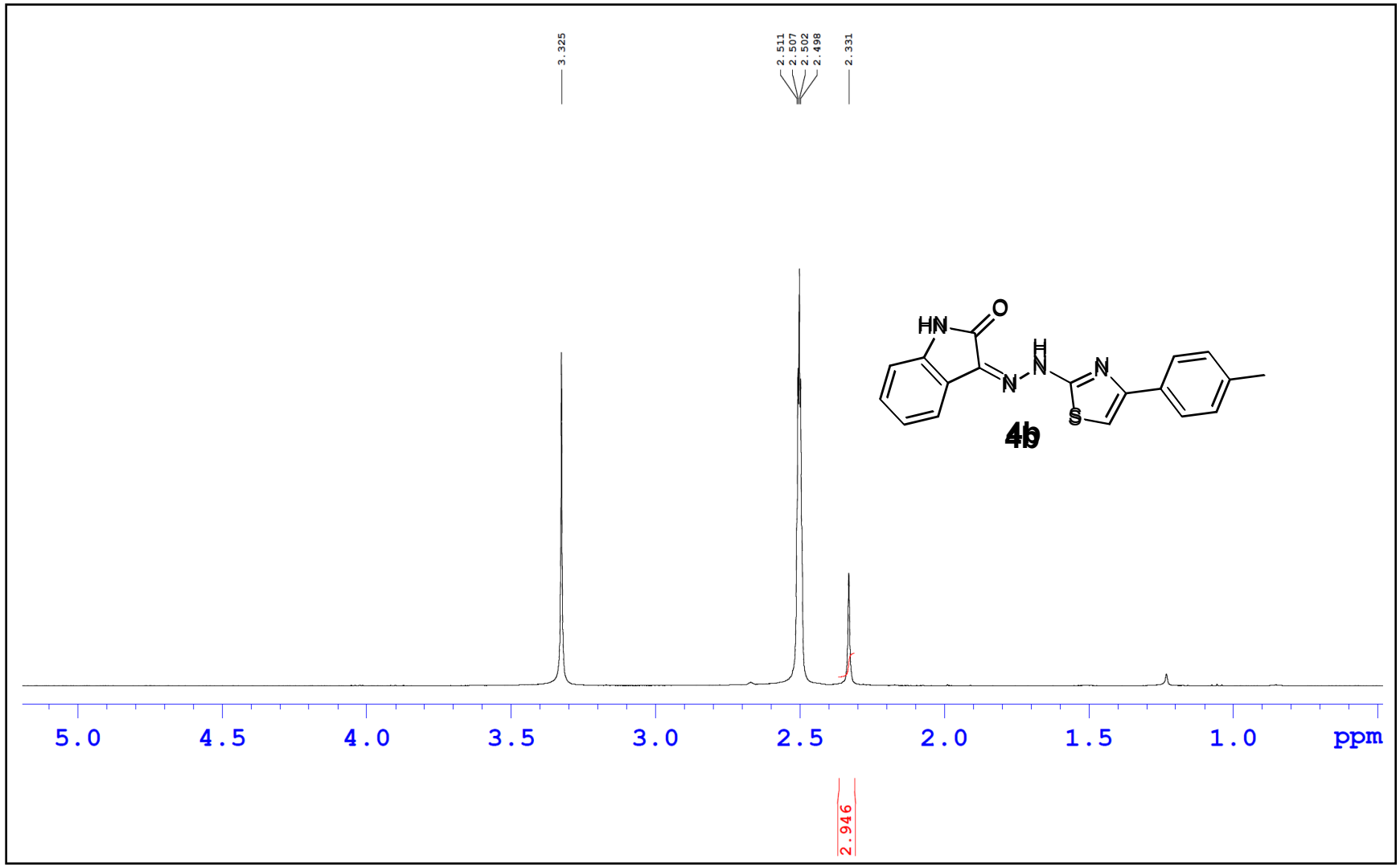


Figure S6 Expanded ^{1}H NMR spectrum of 4b.

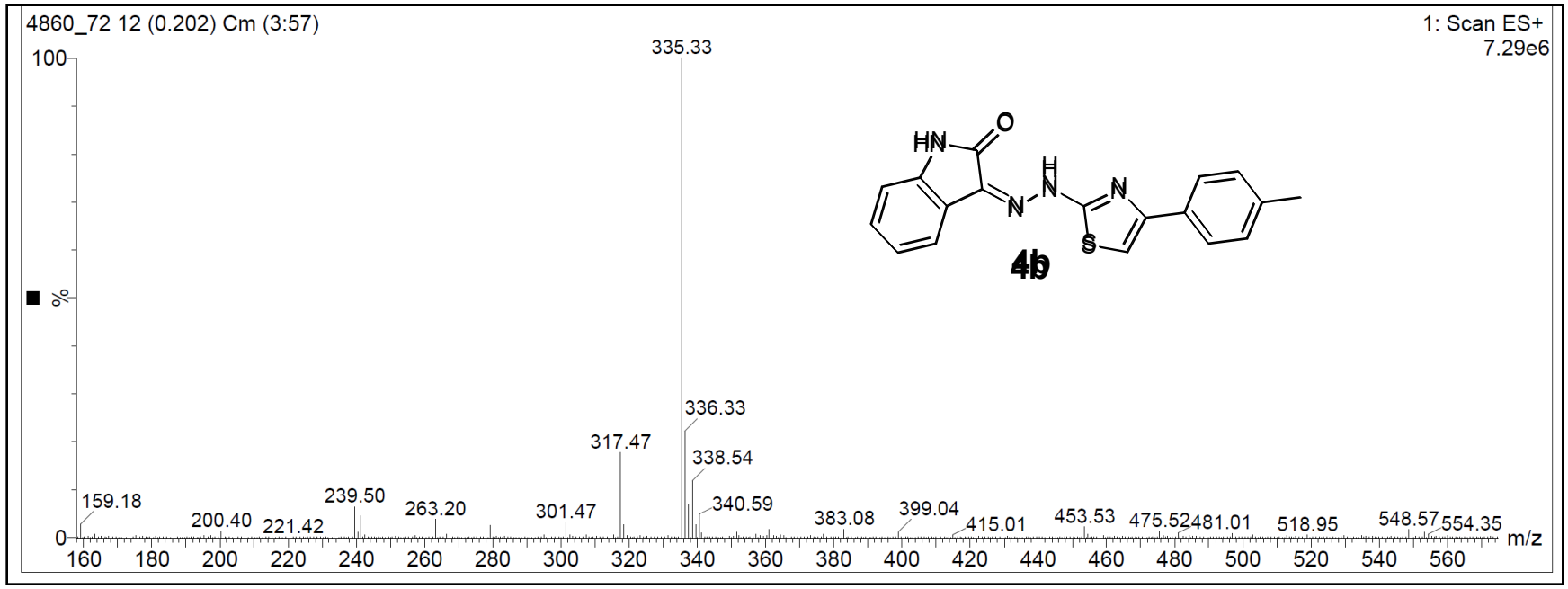


Figure S7Mass spectrum of 4b.

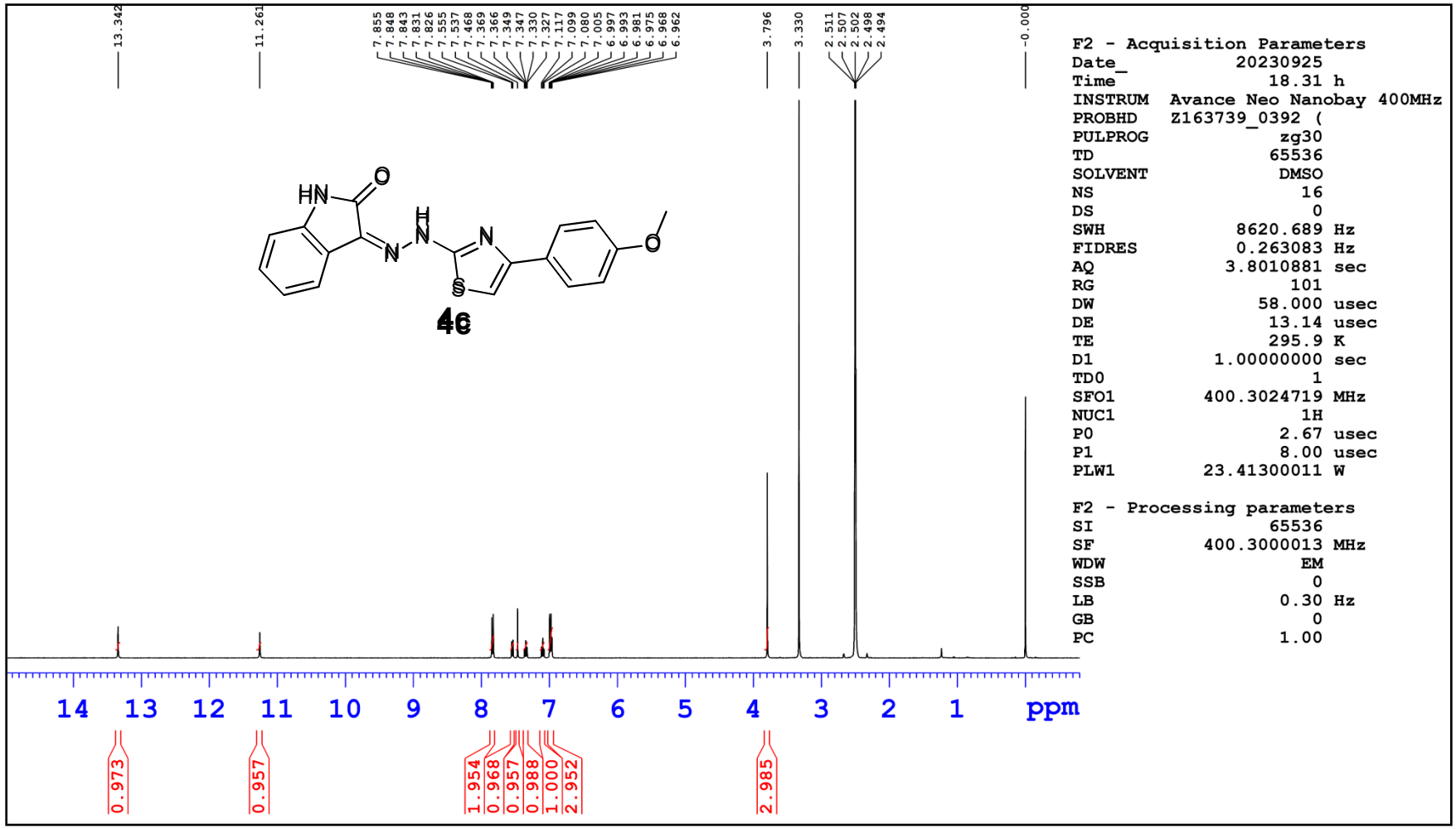


Figure S8 ^{1}**H NMR spectrum of 4c.**

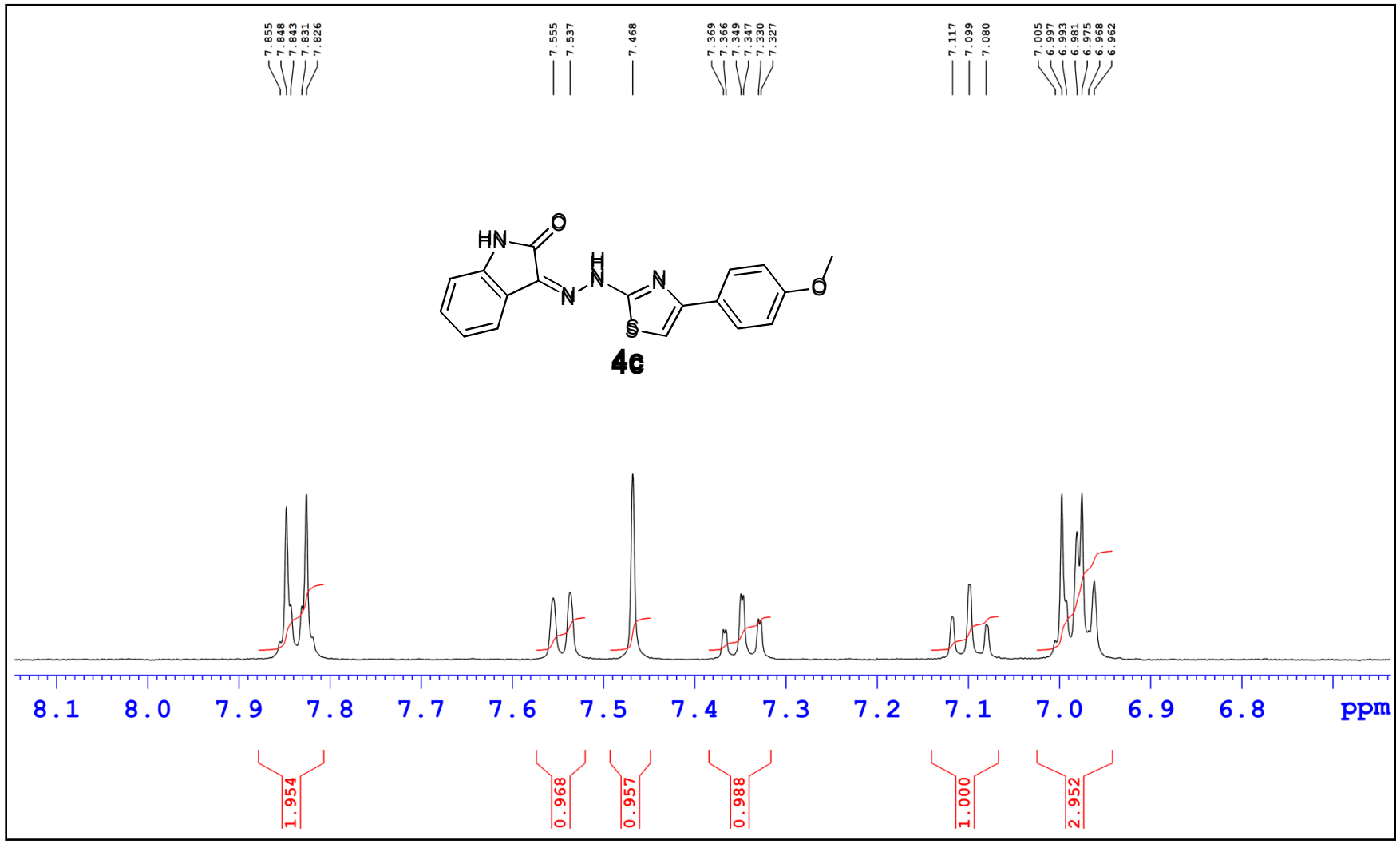


Figure S9 Expanded ^{1}H NMR spectrum of 4c.

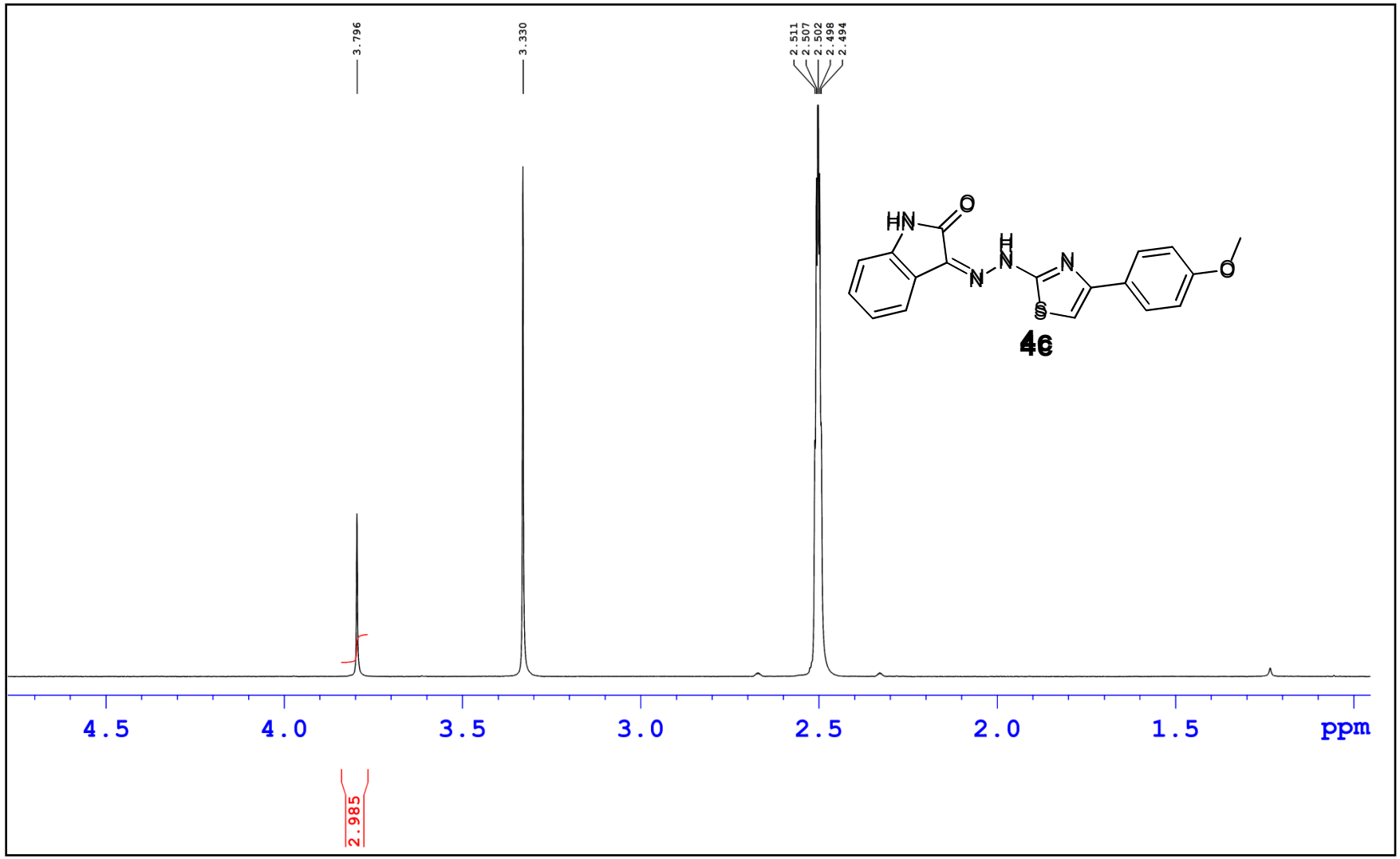


Figure S10 Expanded ^{1}H NMR spectrum of 4c.

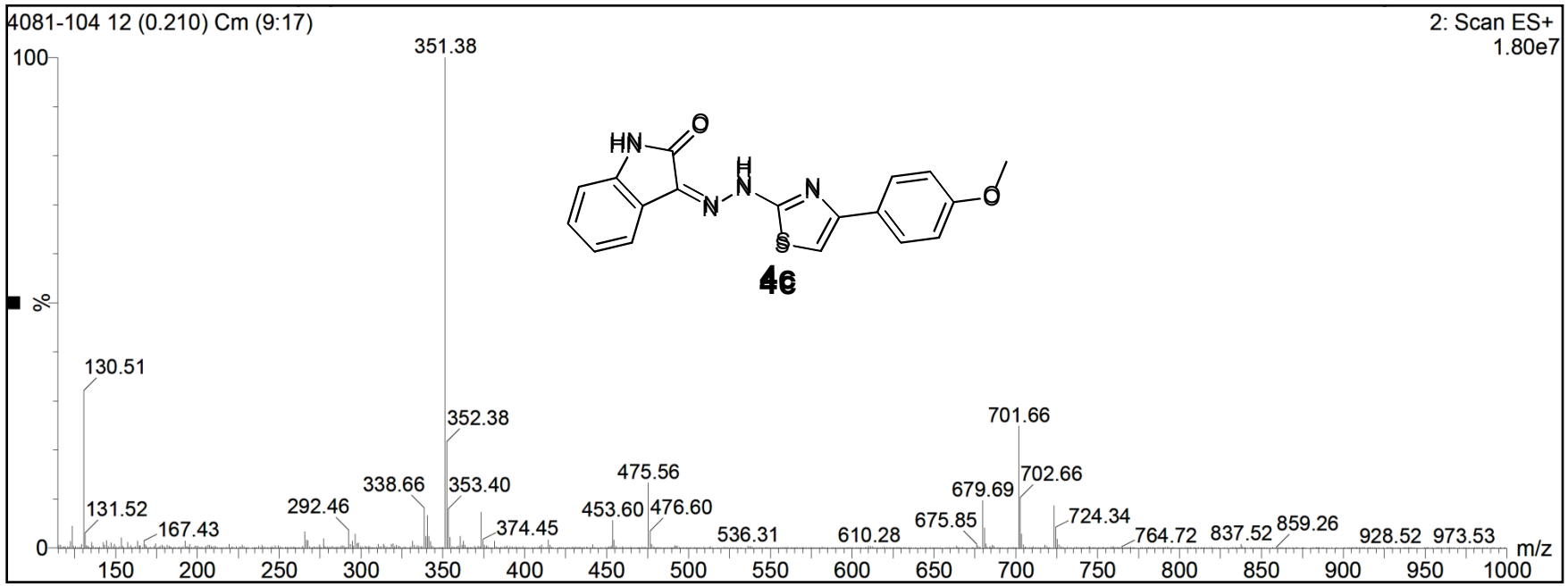


Figure S11 Mass spectrum of 4c.

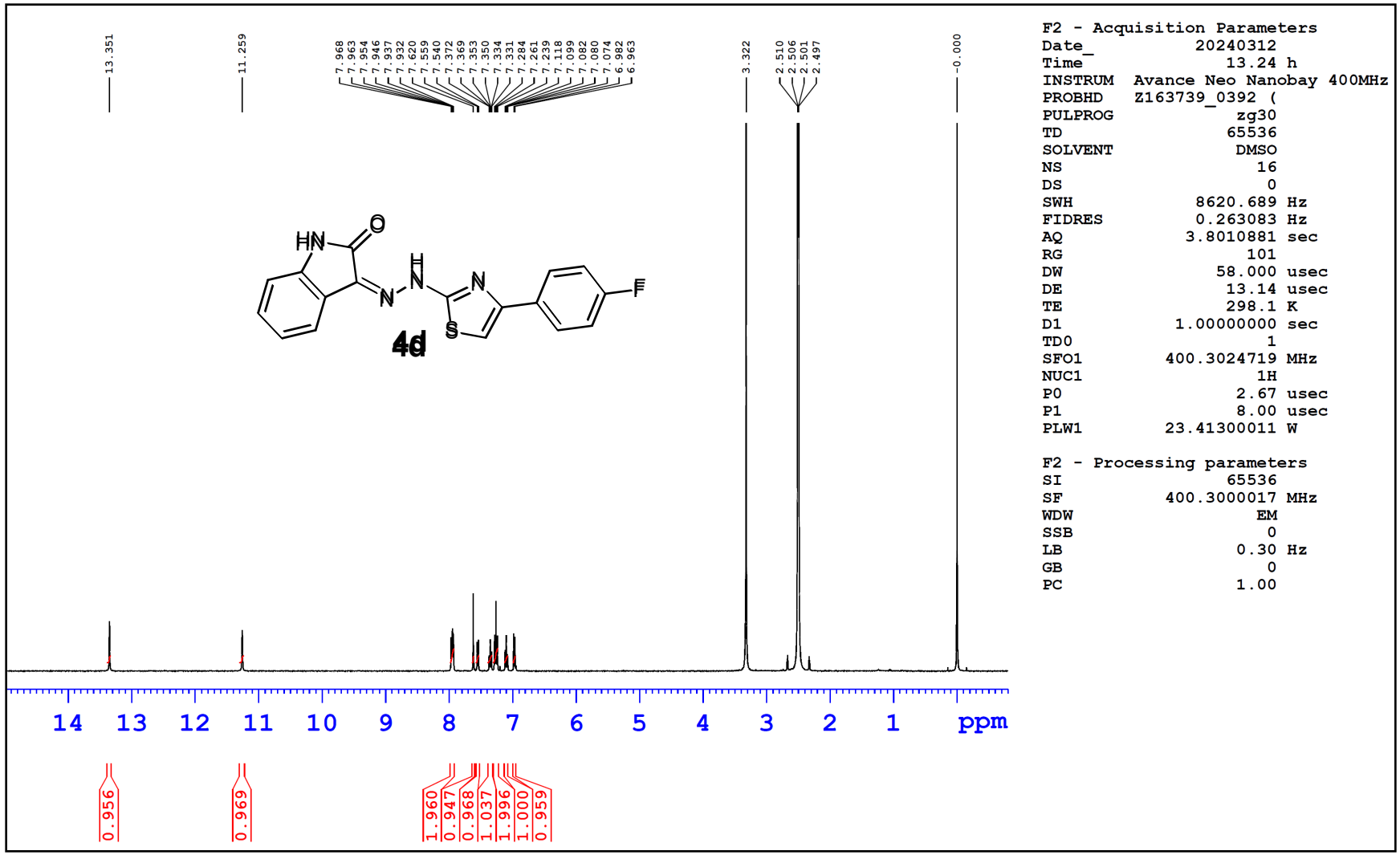


Figure S12 ^{1}H NMR spectrum of 4d.

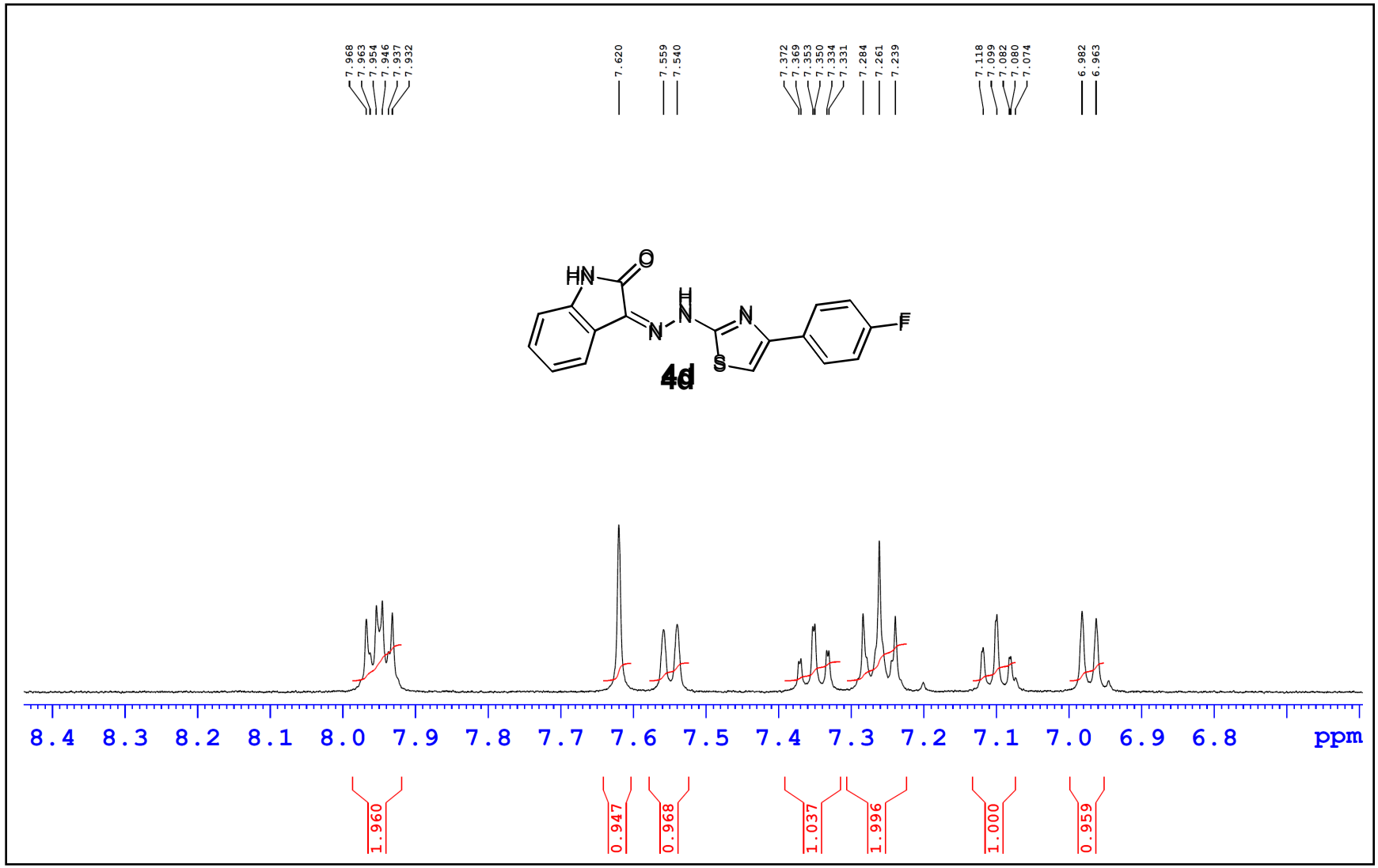


Figure S13 Expanded ^{1}H NMR spectrum of 4d.

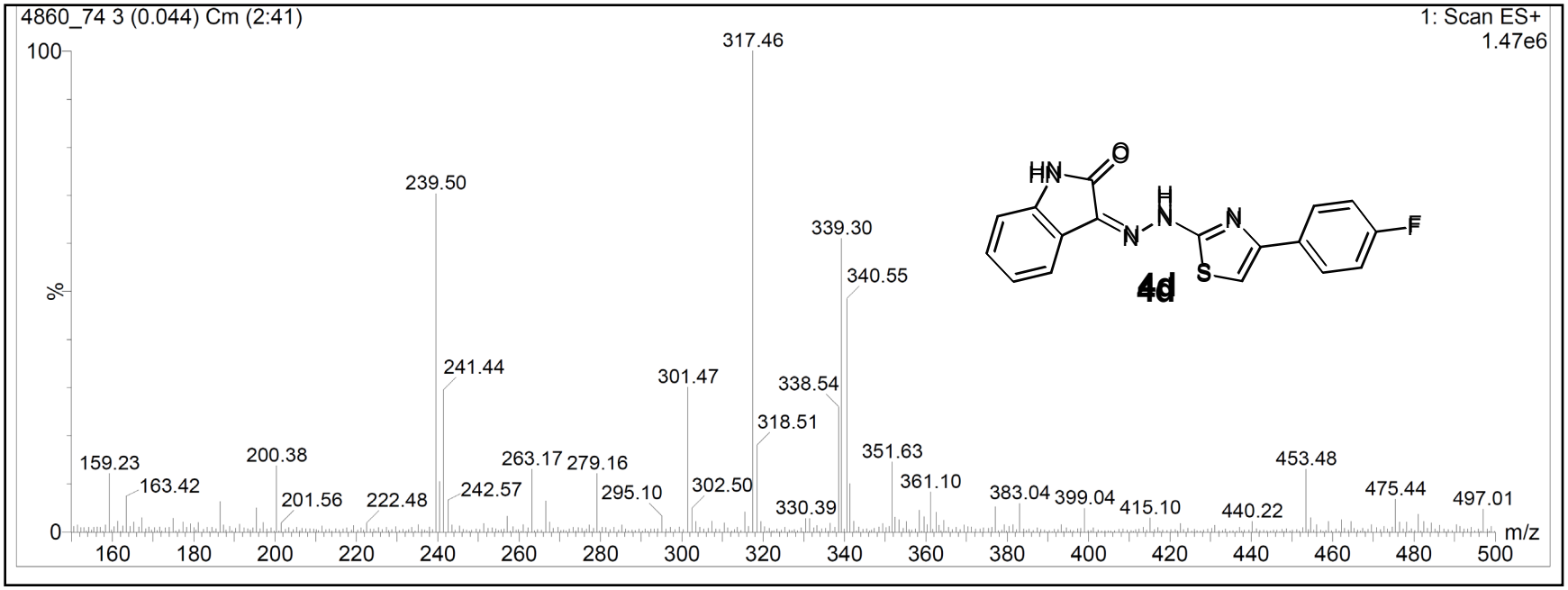


Figure S14 Mass spectrum of 4d.

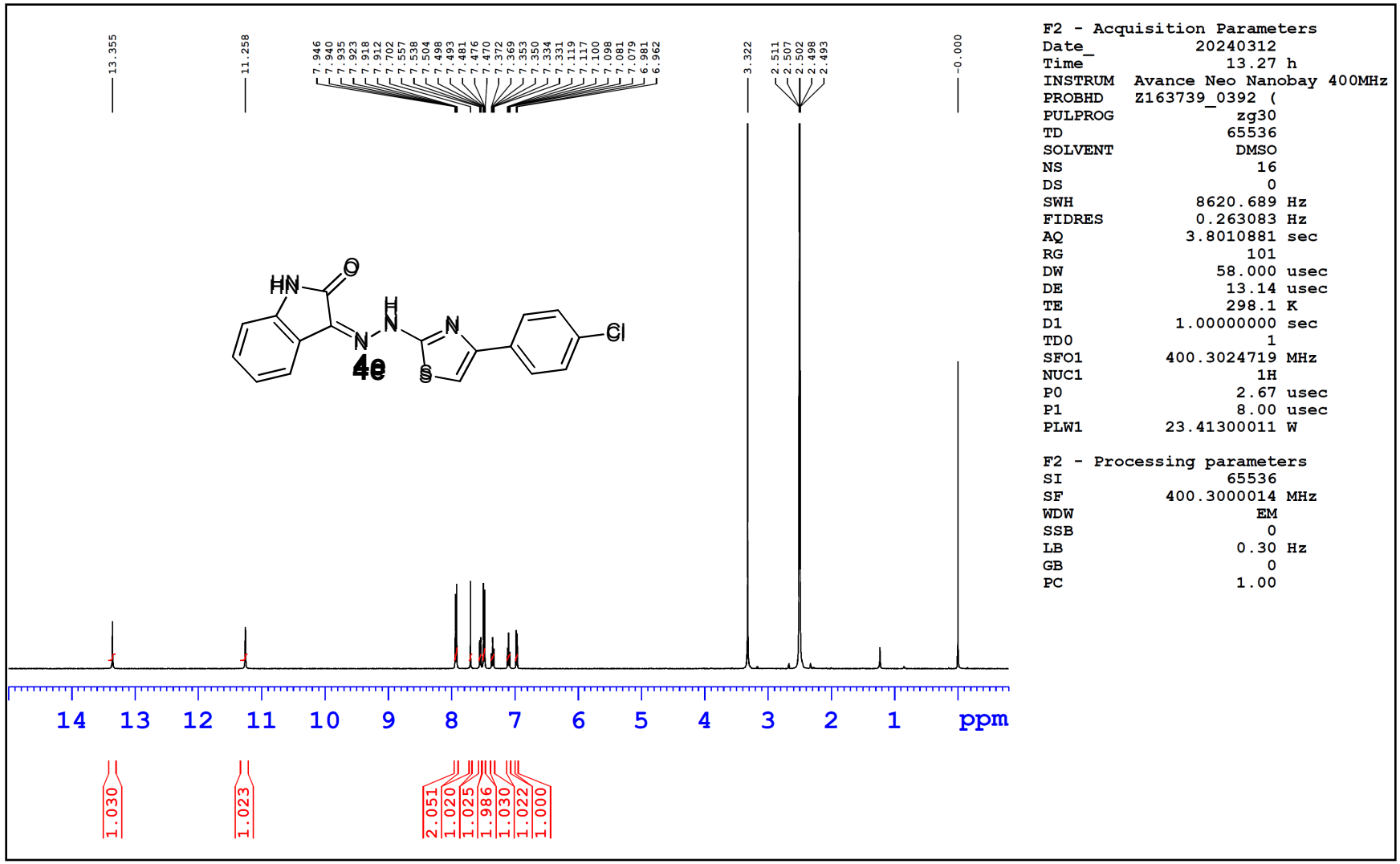


Figure S15 ^{1}**H NMR spectrum of 4e.**

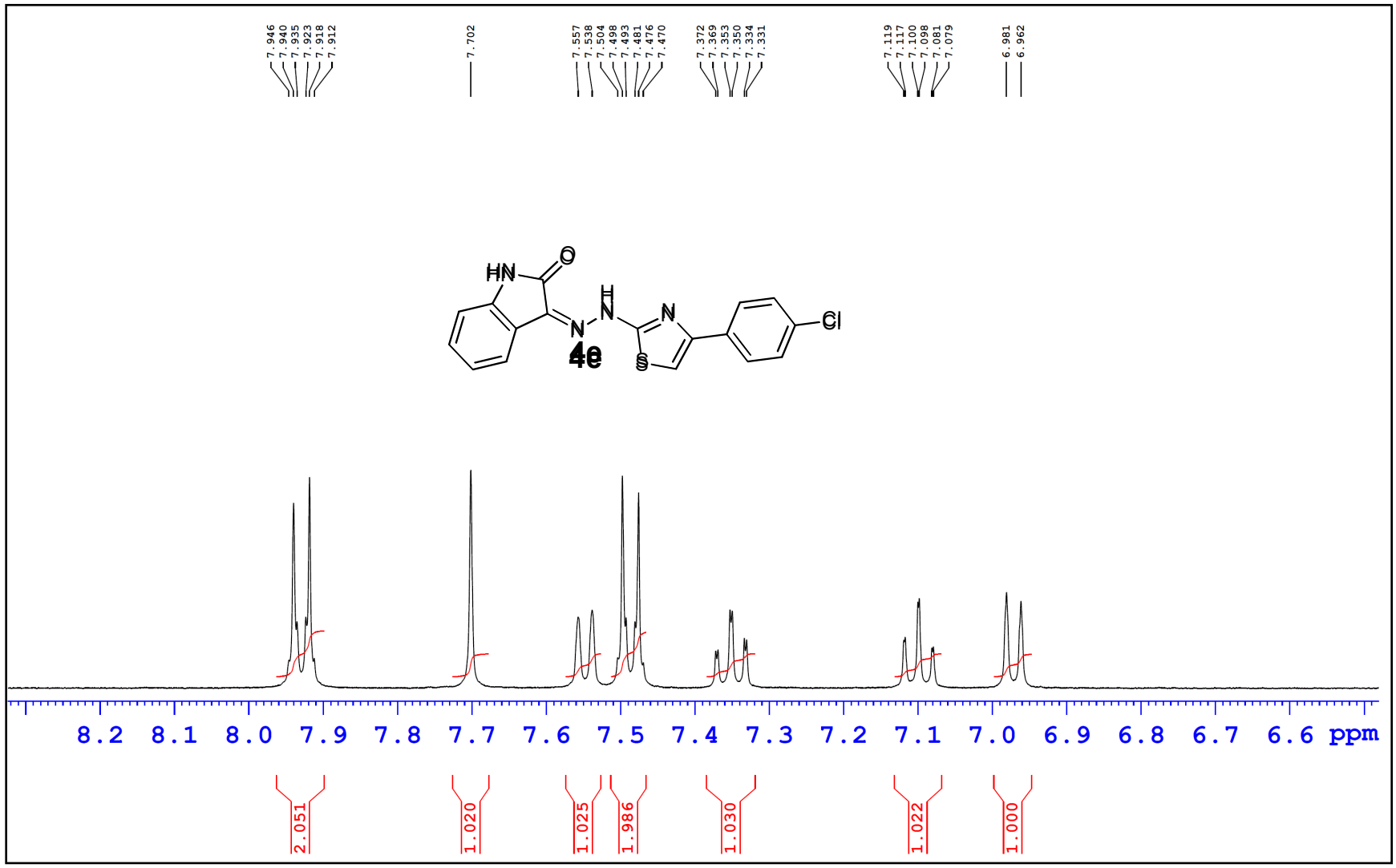


Figure S16 Expanded ^{1}H NMR spectrum of 4e.

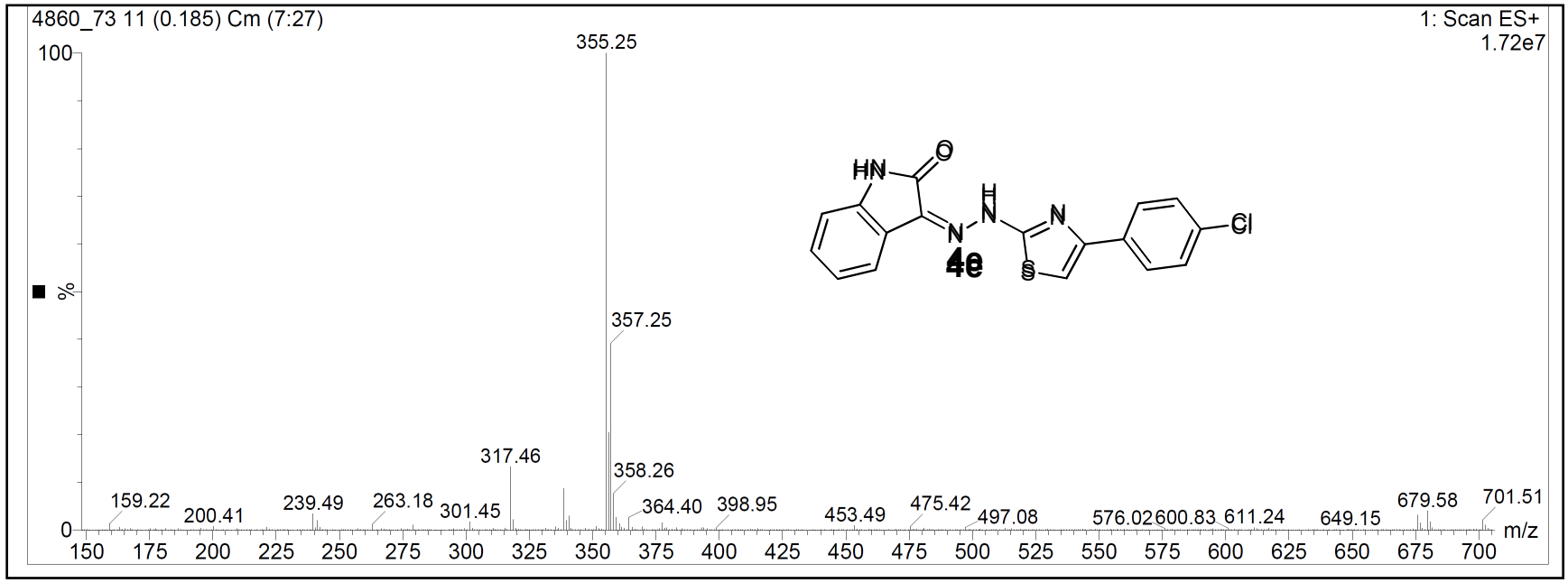


Figure S17 Mass spectrum of 4e.

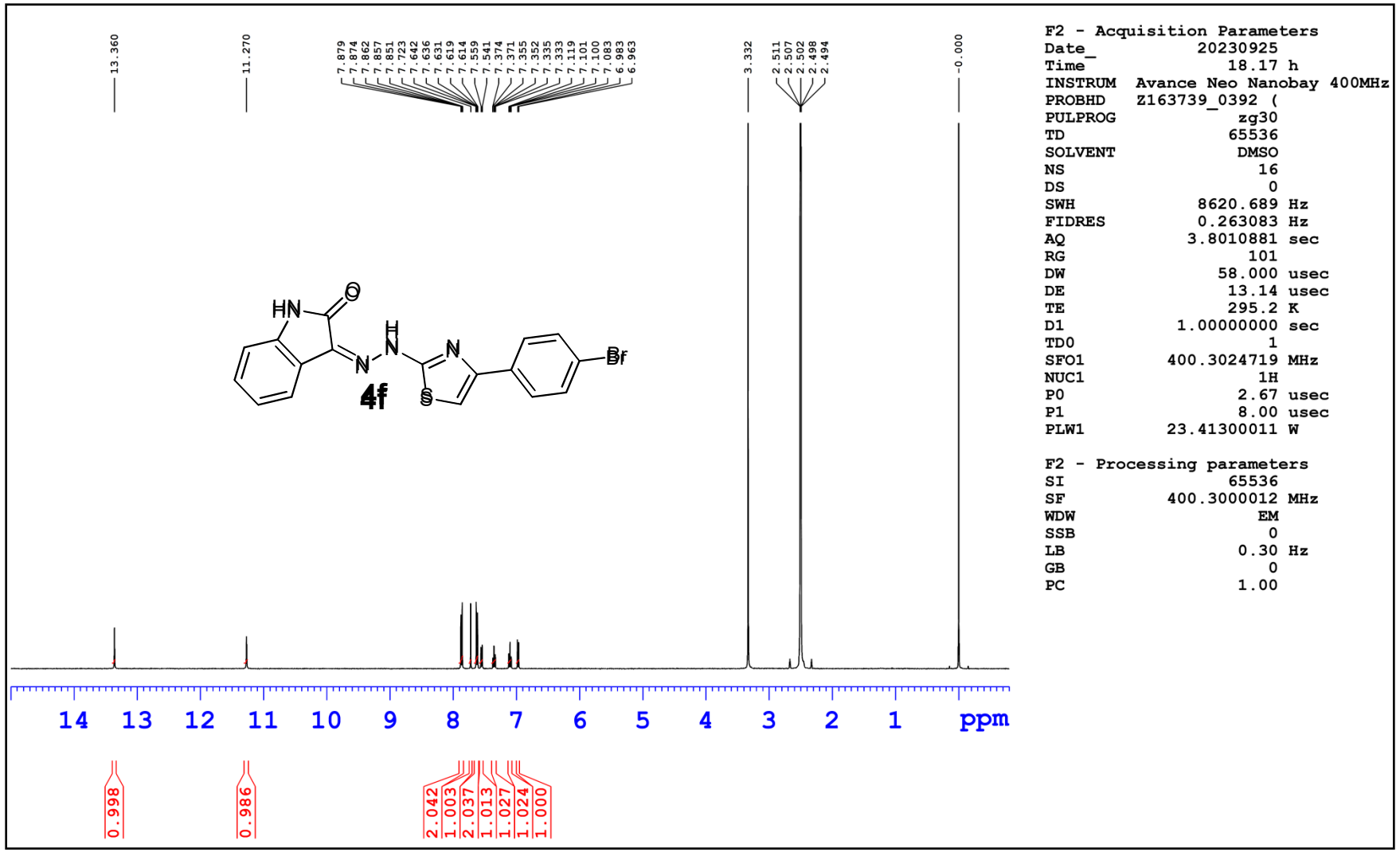


Figure S18 ^{1}H NMR spectrum of 4f.

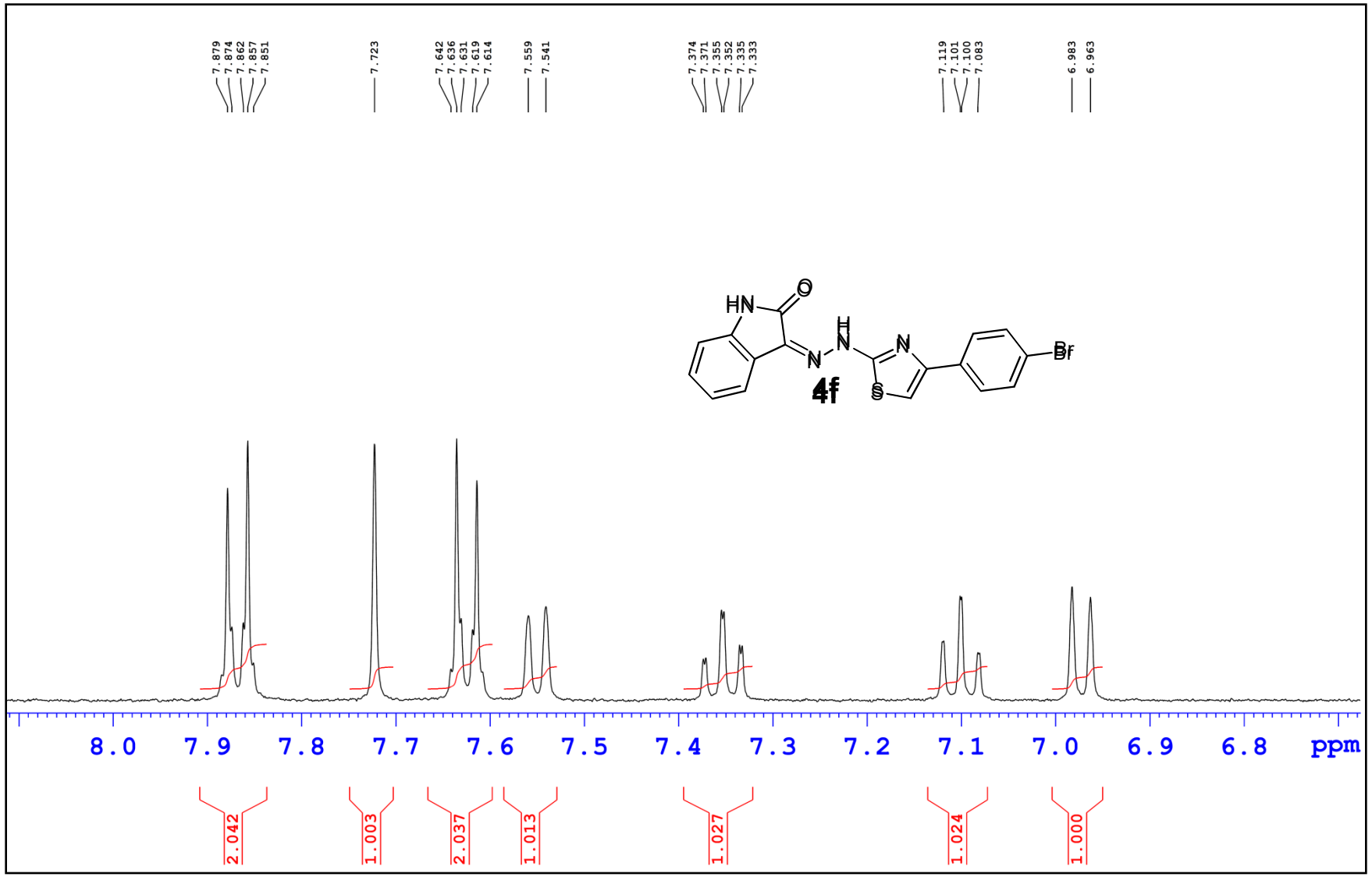


Figure S19 Expanded ^{1}H NMR spectrum of 4f.

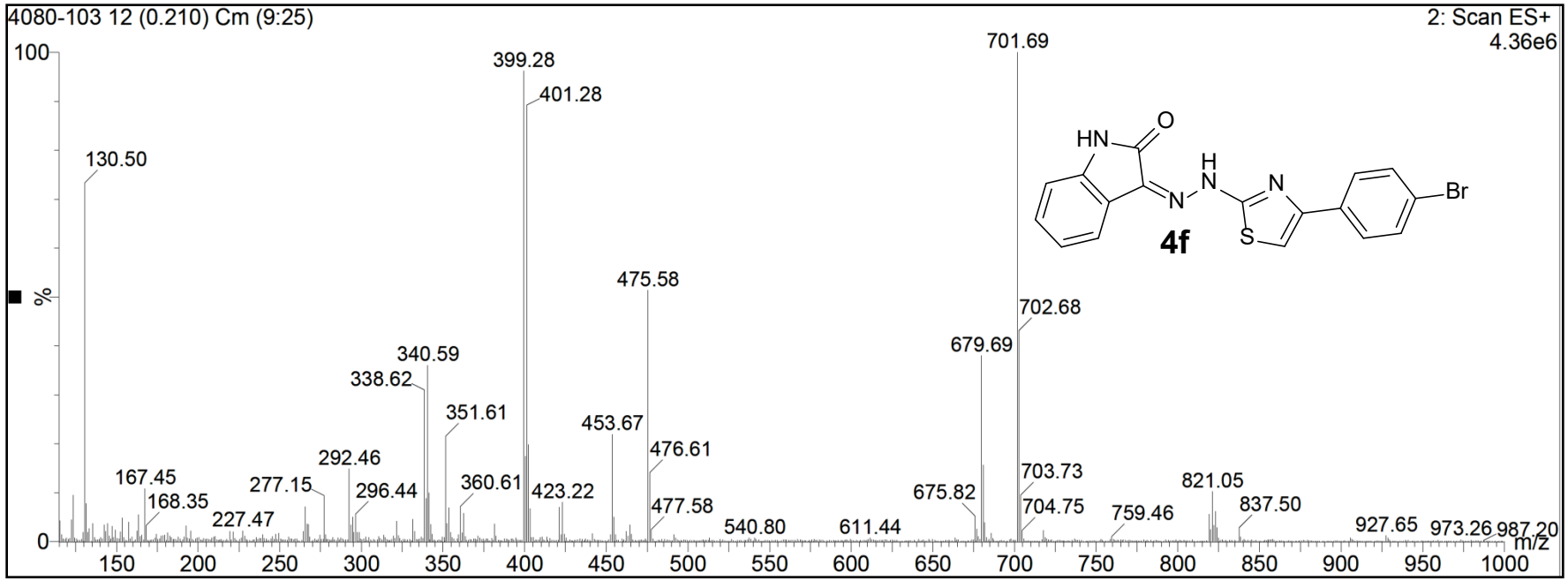


Figure S20Mass spectrum of 4f.

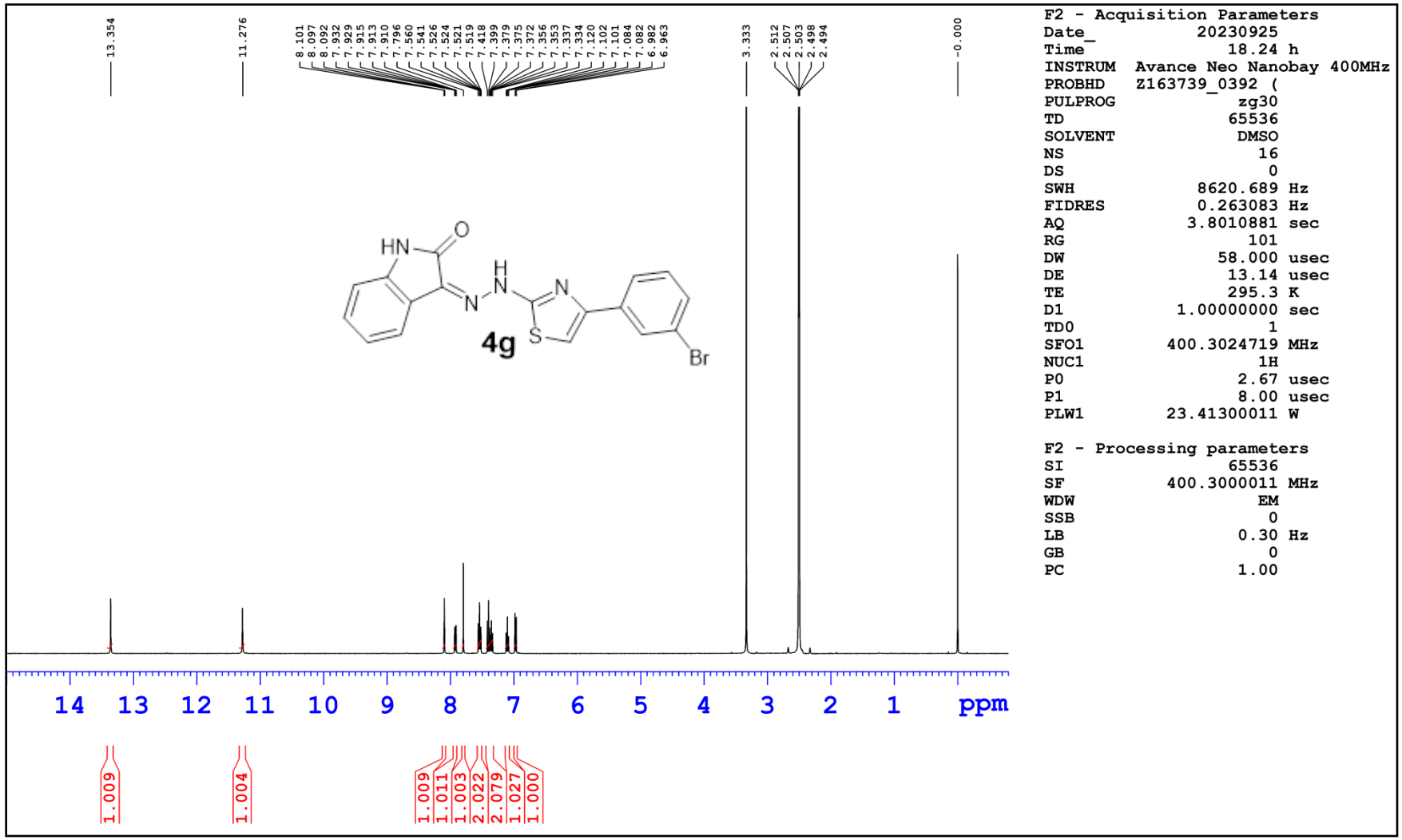


Figure S21 ^{1}H NMR spectrum of 4g.

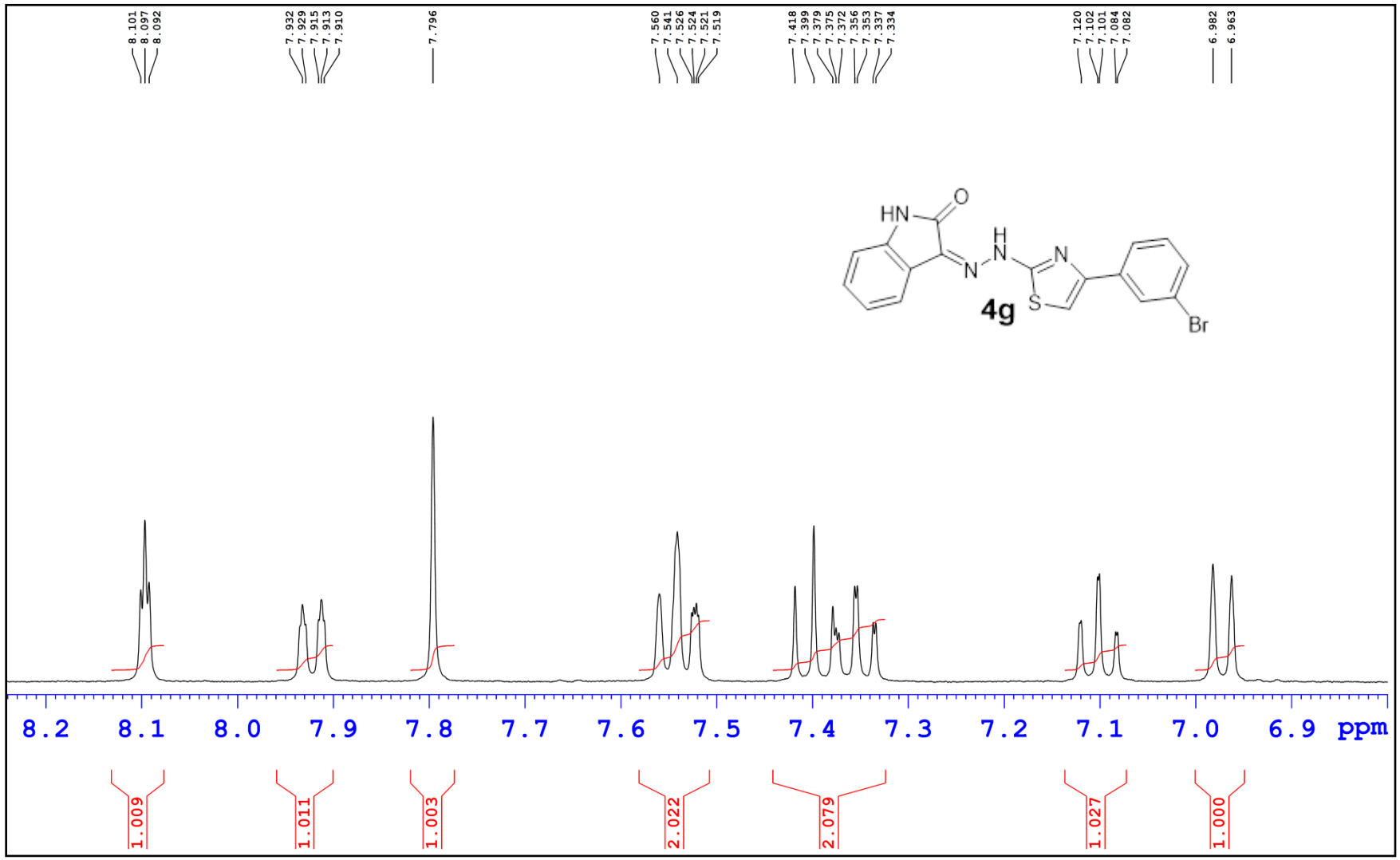


Figure S22 Expanded ^{1}H NMR spectrum of 4g.

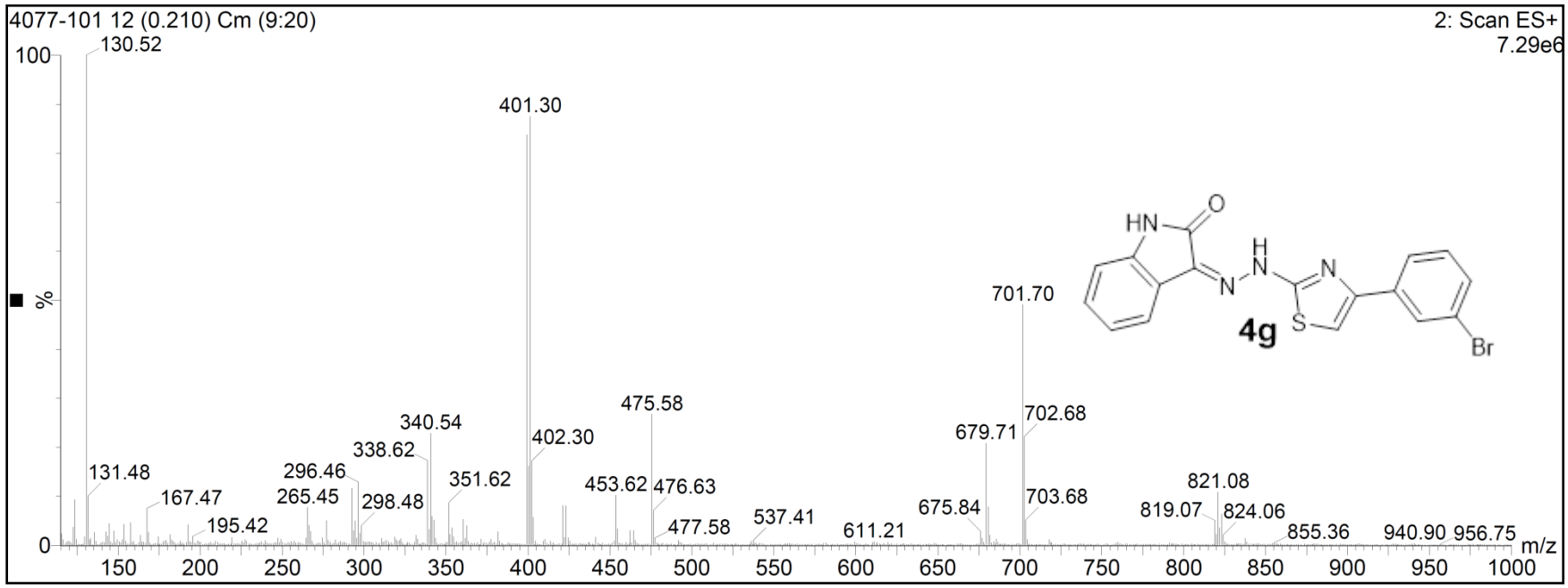


Figure S23Mass spectrum of 4g.

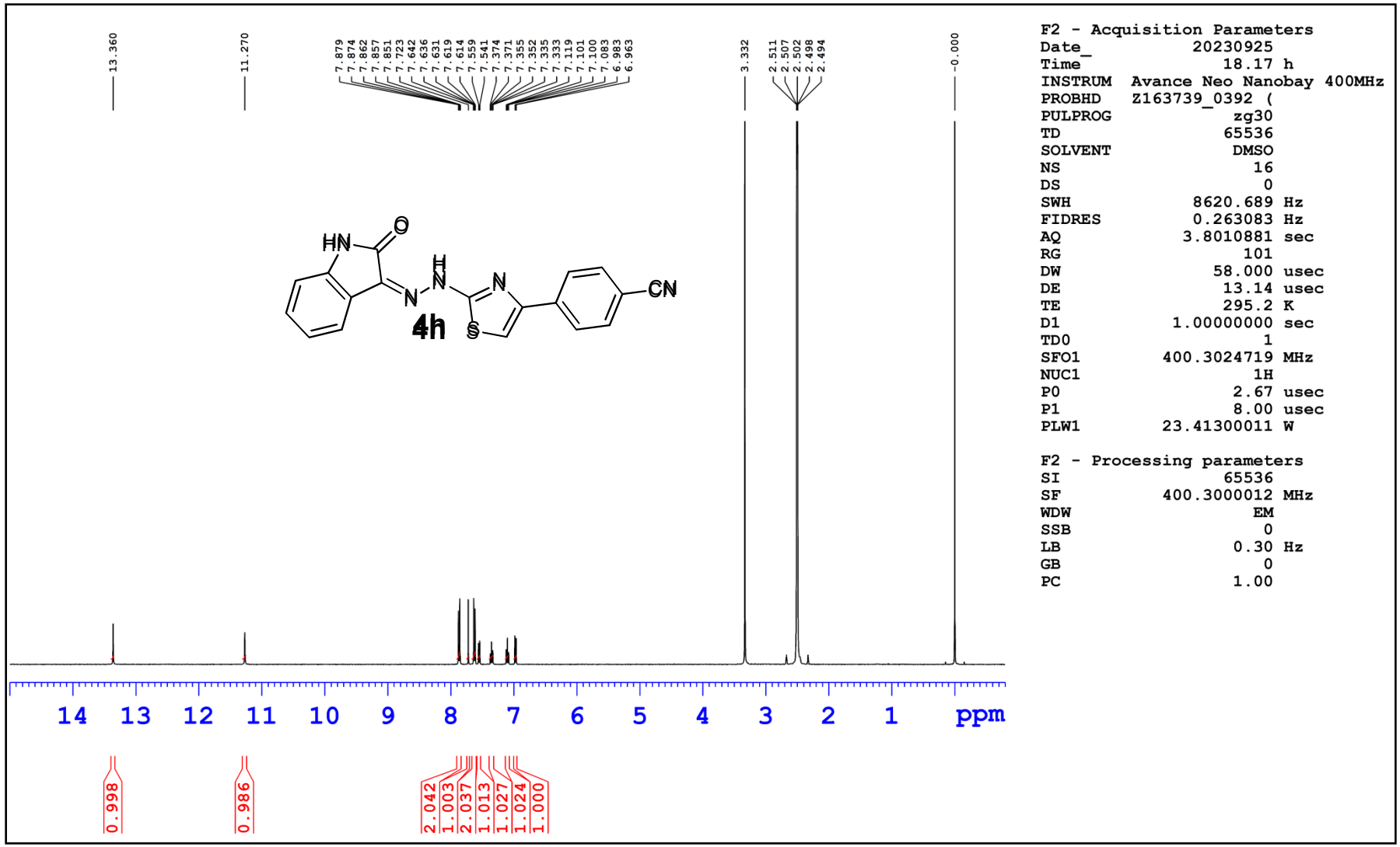


Figure S24 ^{1}**H NMR spectrum of 4h.**

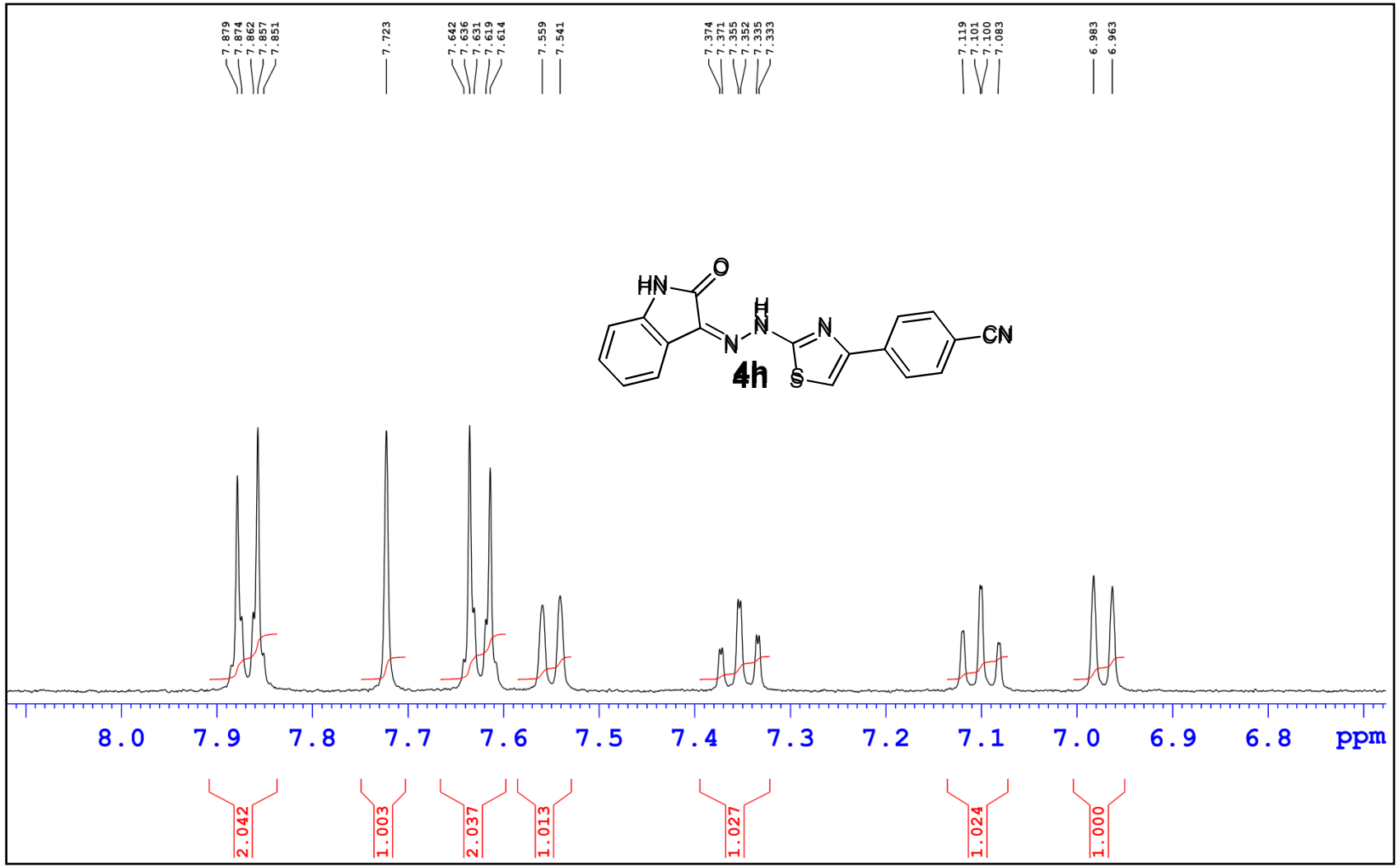


Figure S25 Expanded ^{1}H NMR spectrum of 4h.

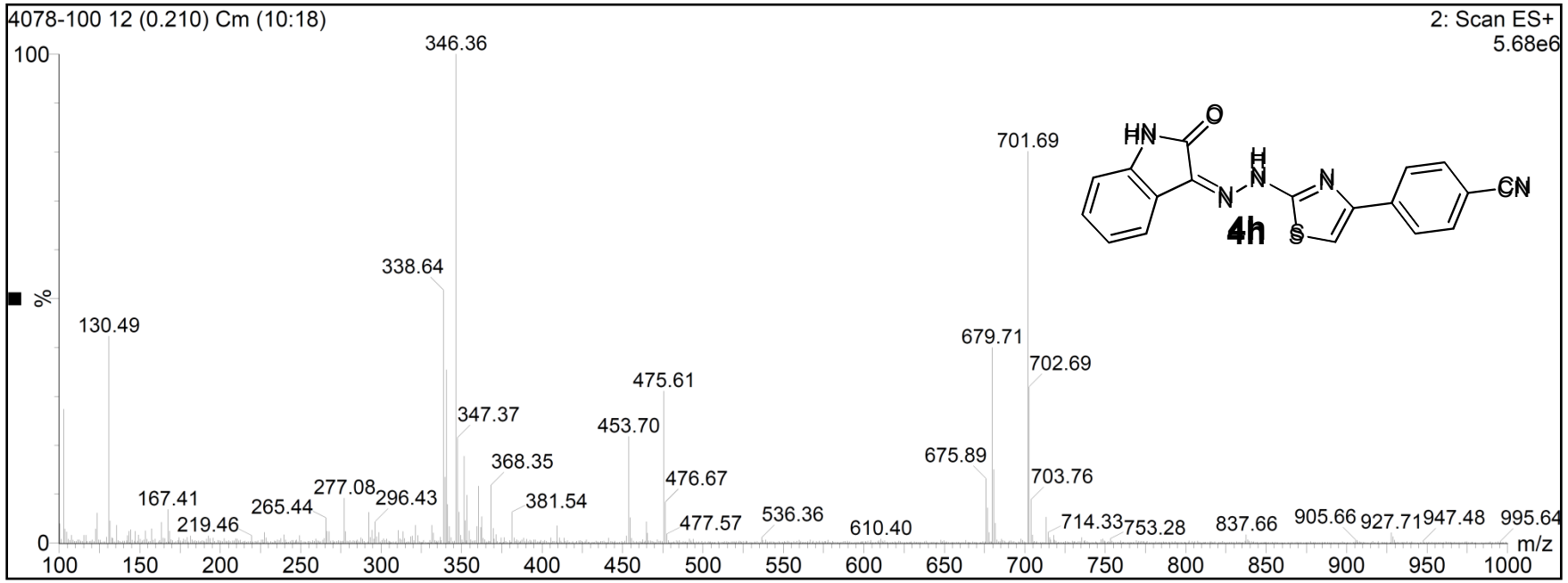


Figure S26 Mass spectrum of 4h.

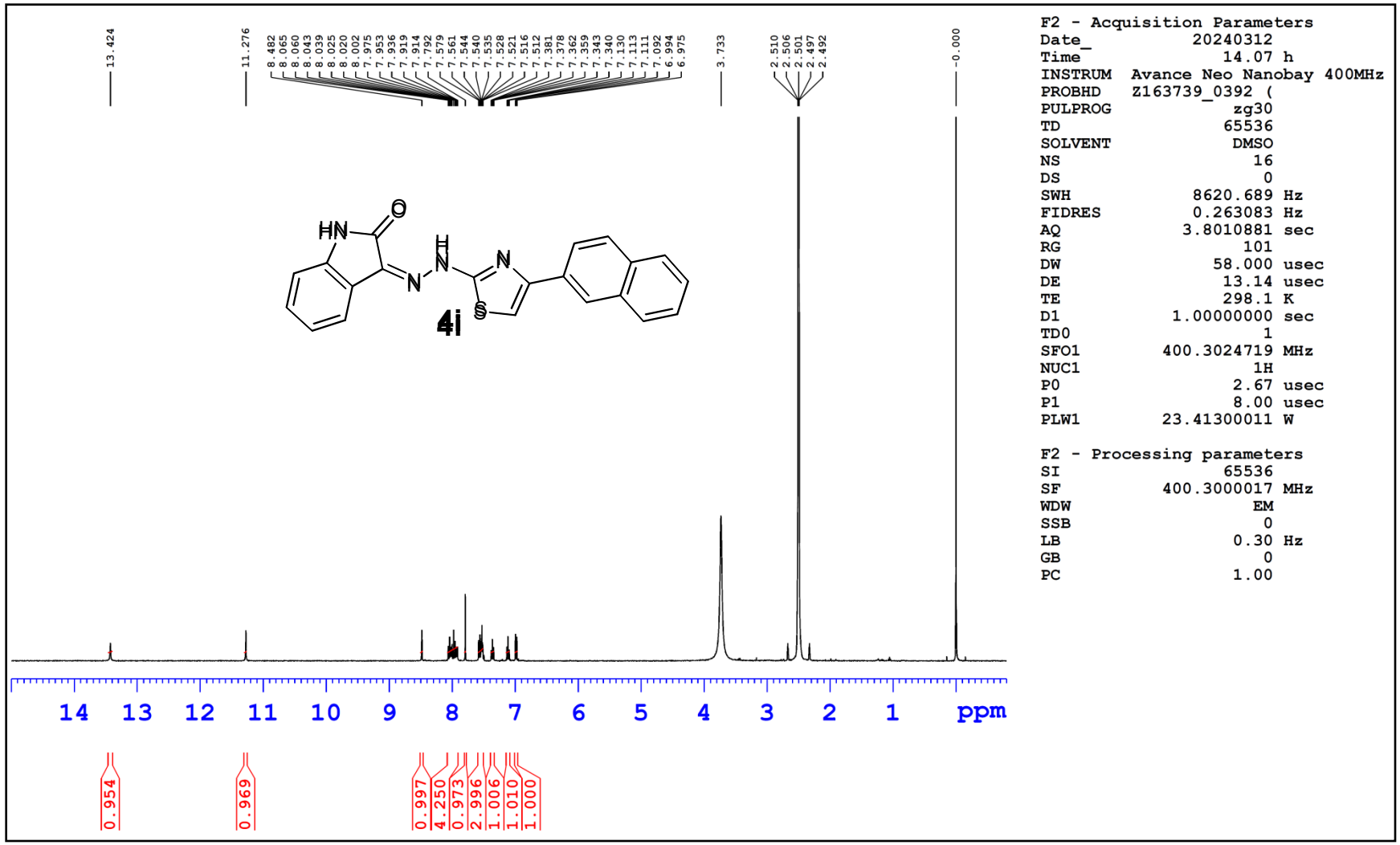


Figure S 27 ^{1}H NMR spectrum of 4i.

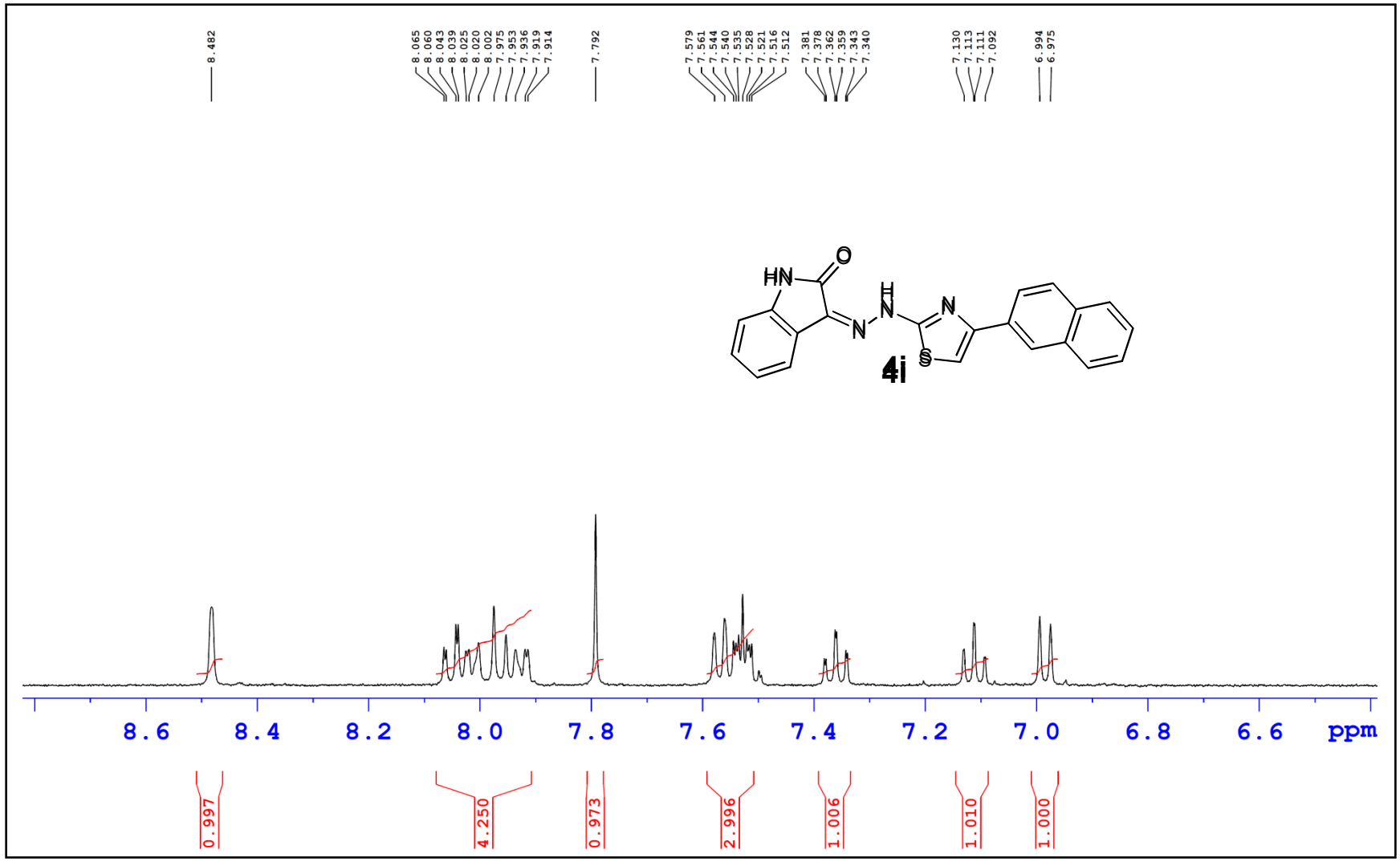


Figure S28 Expanded ^{1}H NMR spectrum of 4i.

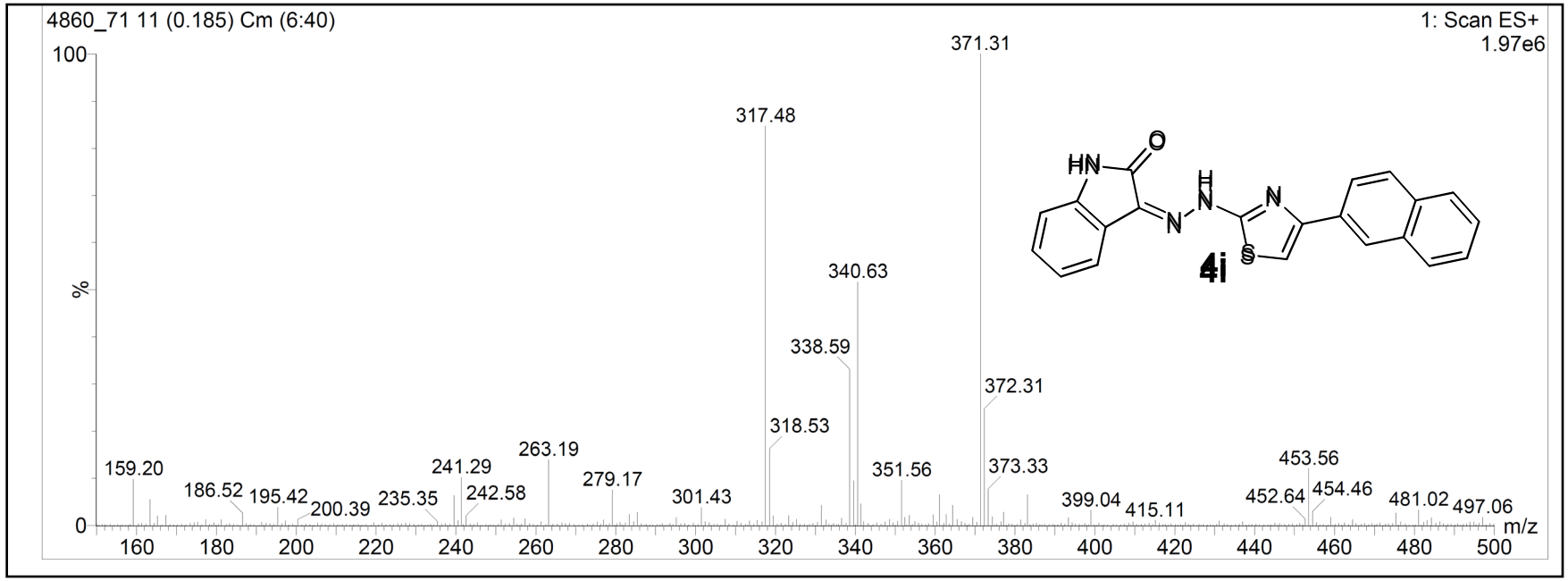


Figure S29 Mass spectrum of 4i.

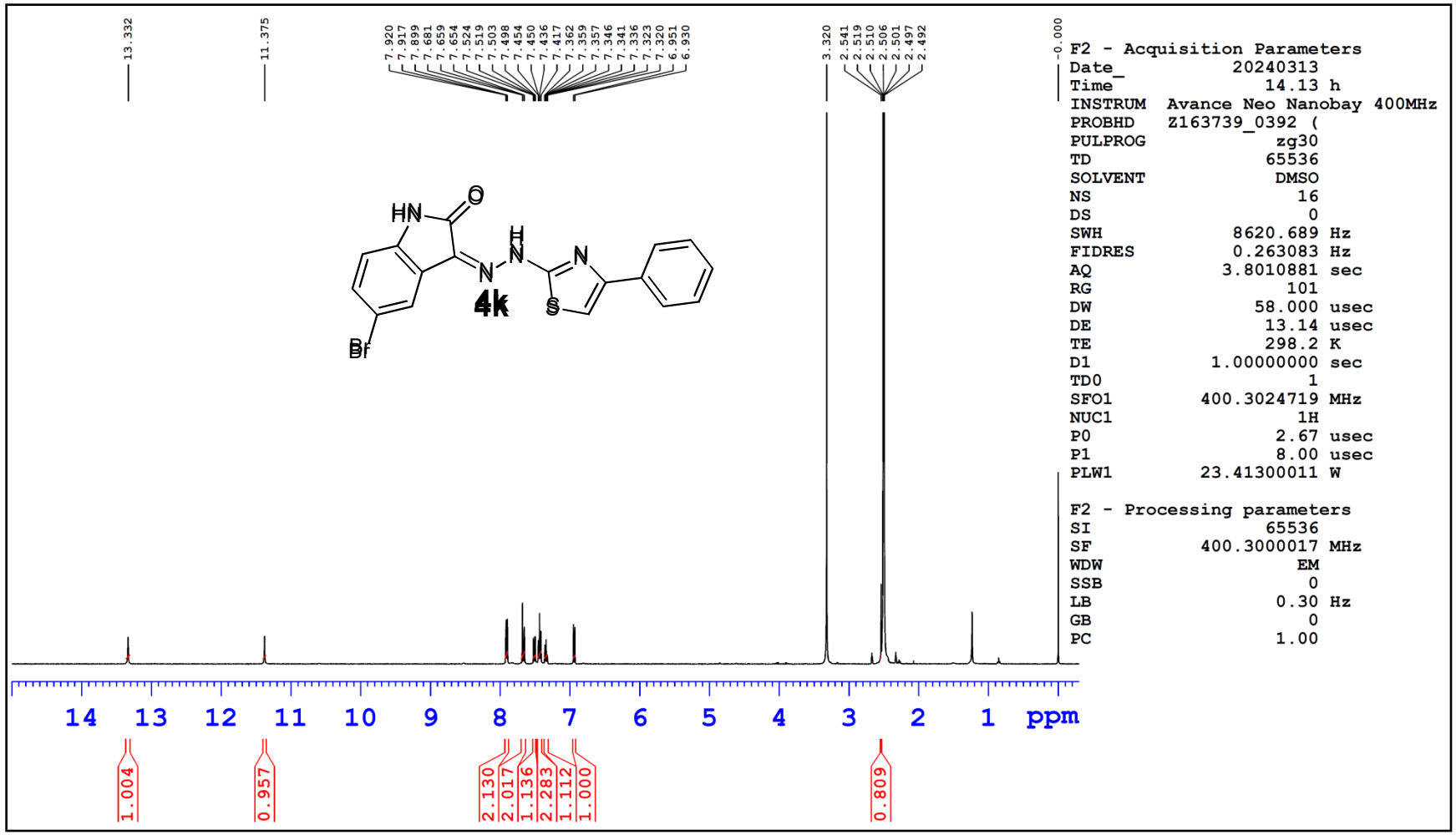


Figure S30 ^{1}H NMR spectrum of 4k.

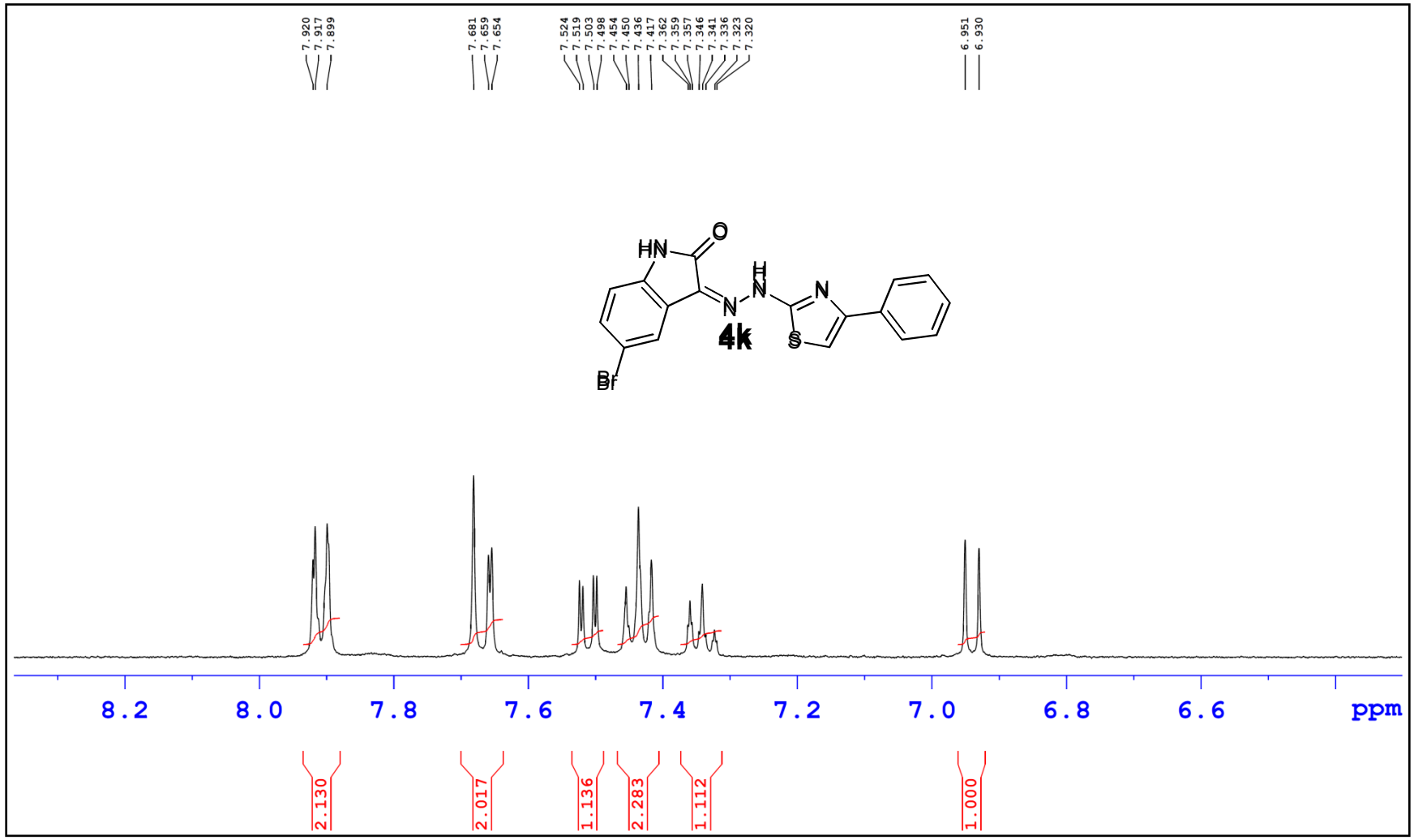


Figure S31 Expanded ^{1}H NMR spectrum of 4k.

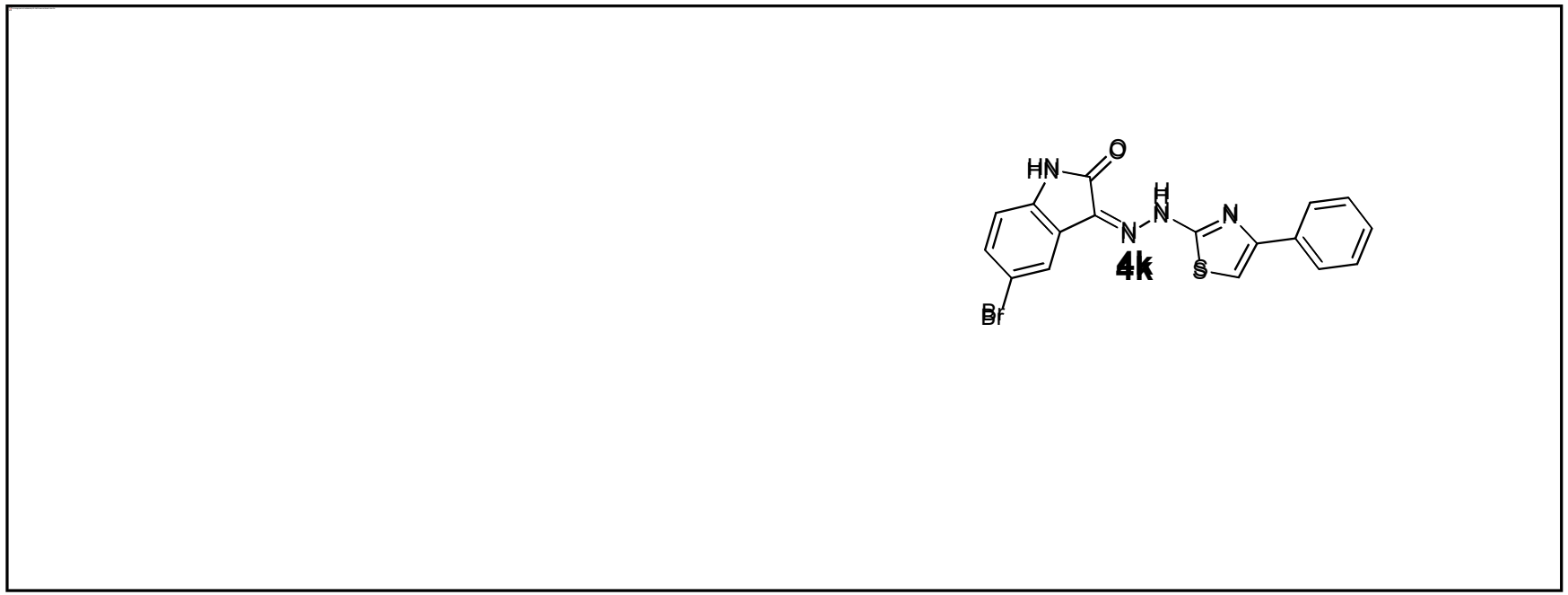


Figure S32 Mass spectrum of 4k.

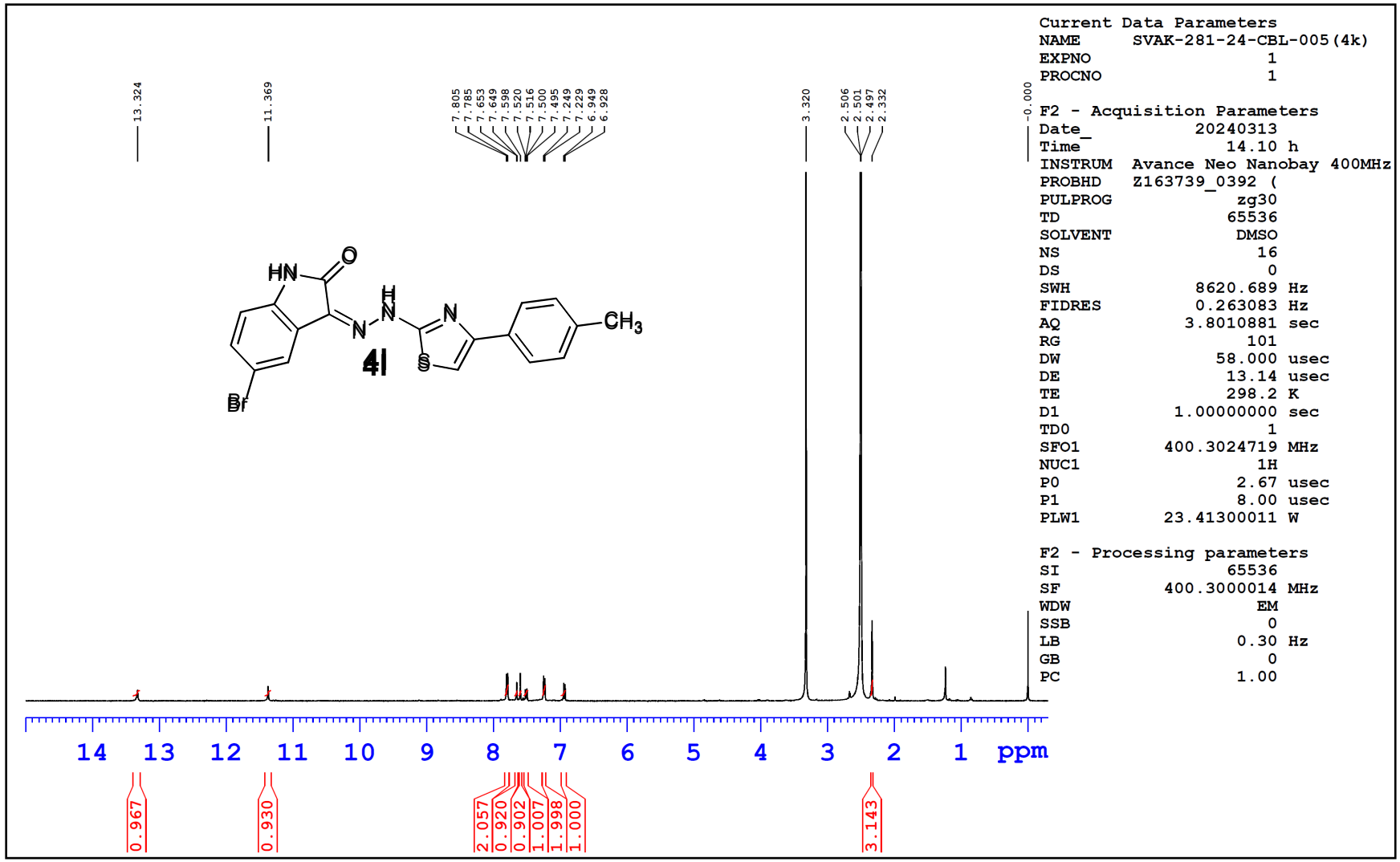


Figure S33 ^{1}H NMR spectrum of 4l.

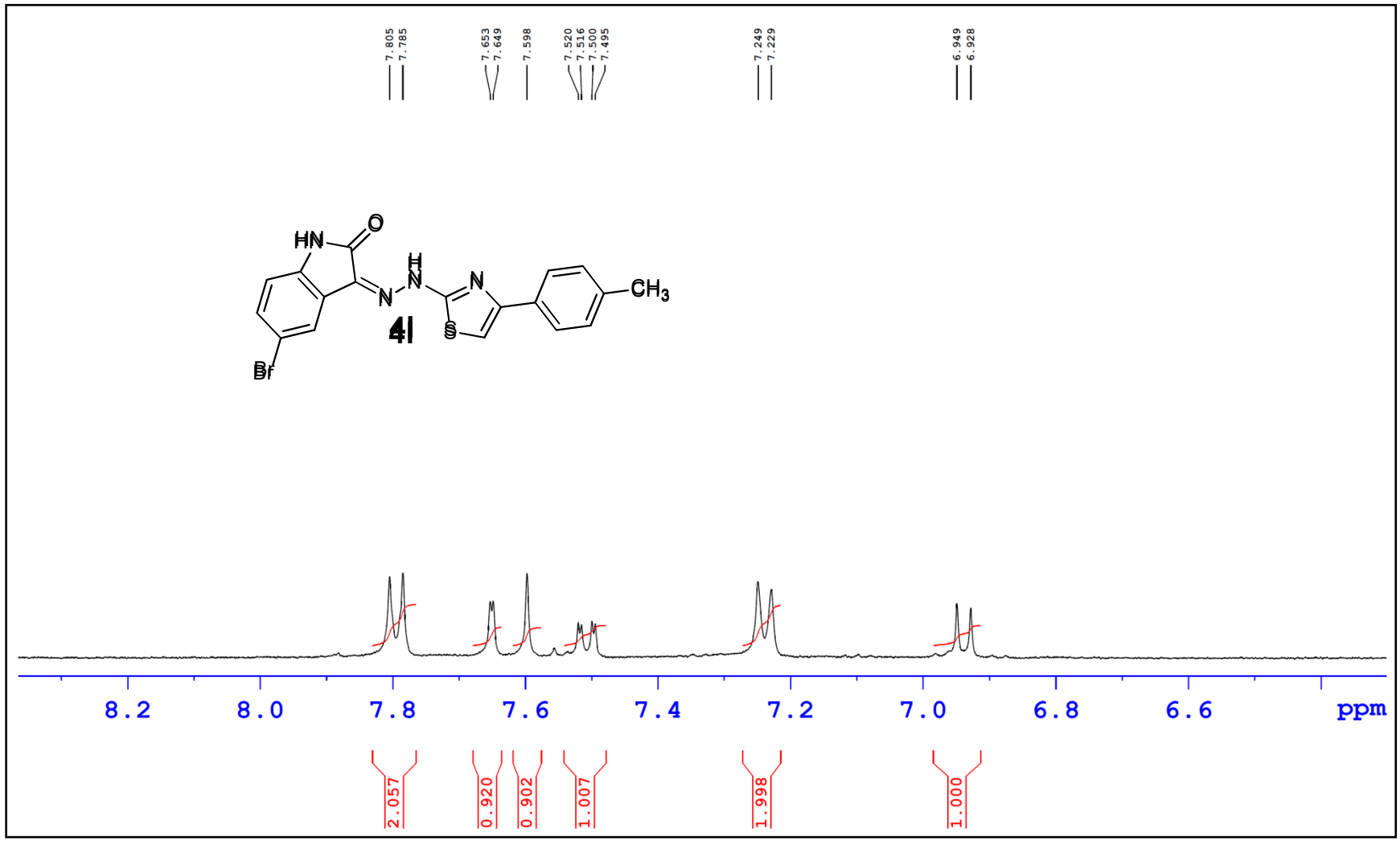


Figure S34 Expanded ^{1}H NMR spectrum of 4l.

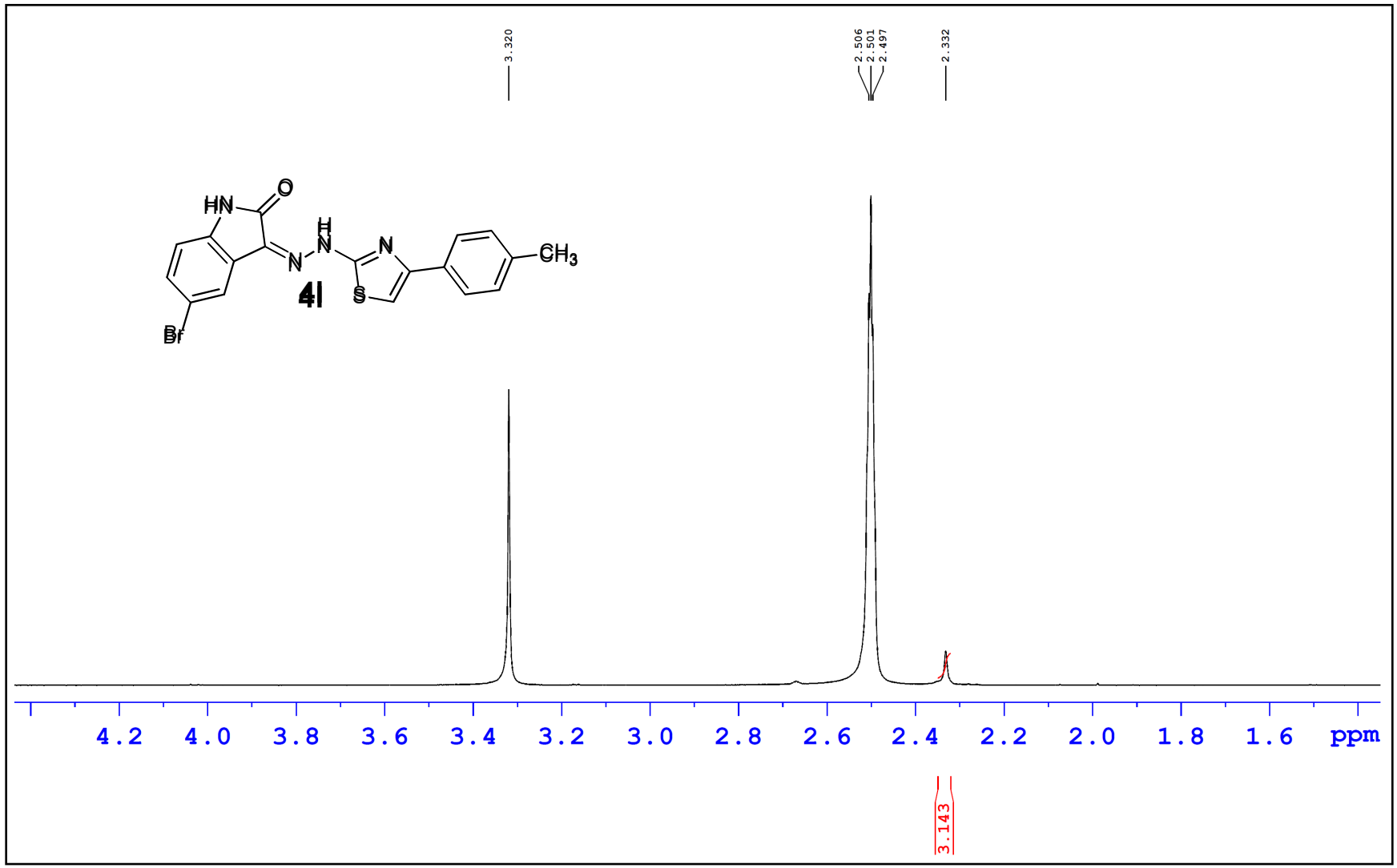


Figure S35 Expanded ^{1}H NMR spectrum of 4l.

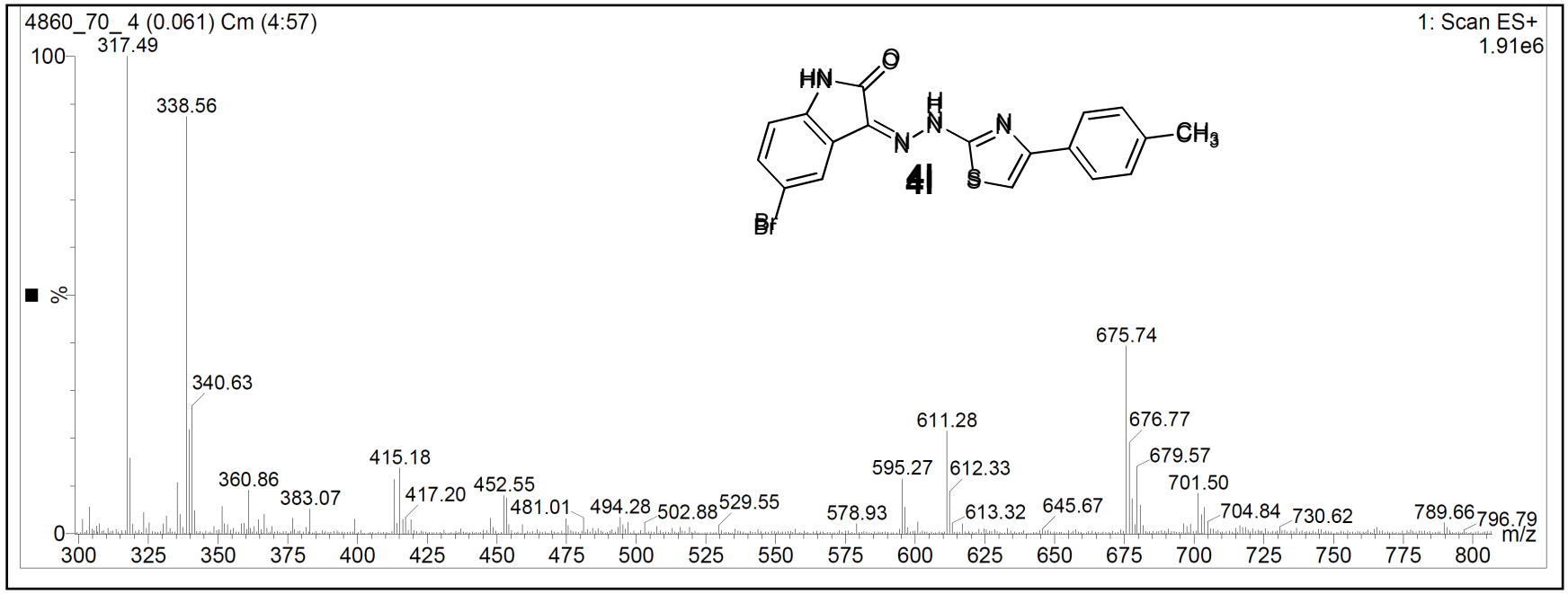


Figure S36 Mass spectrum of 4l.

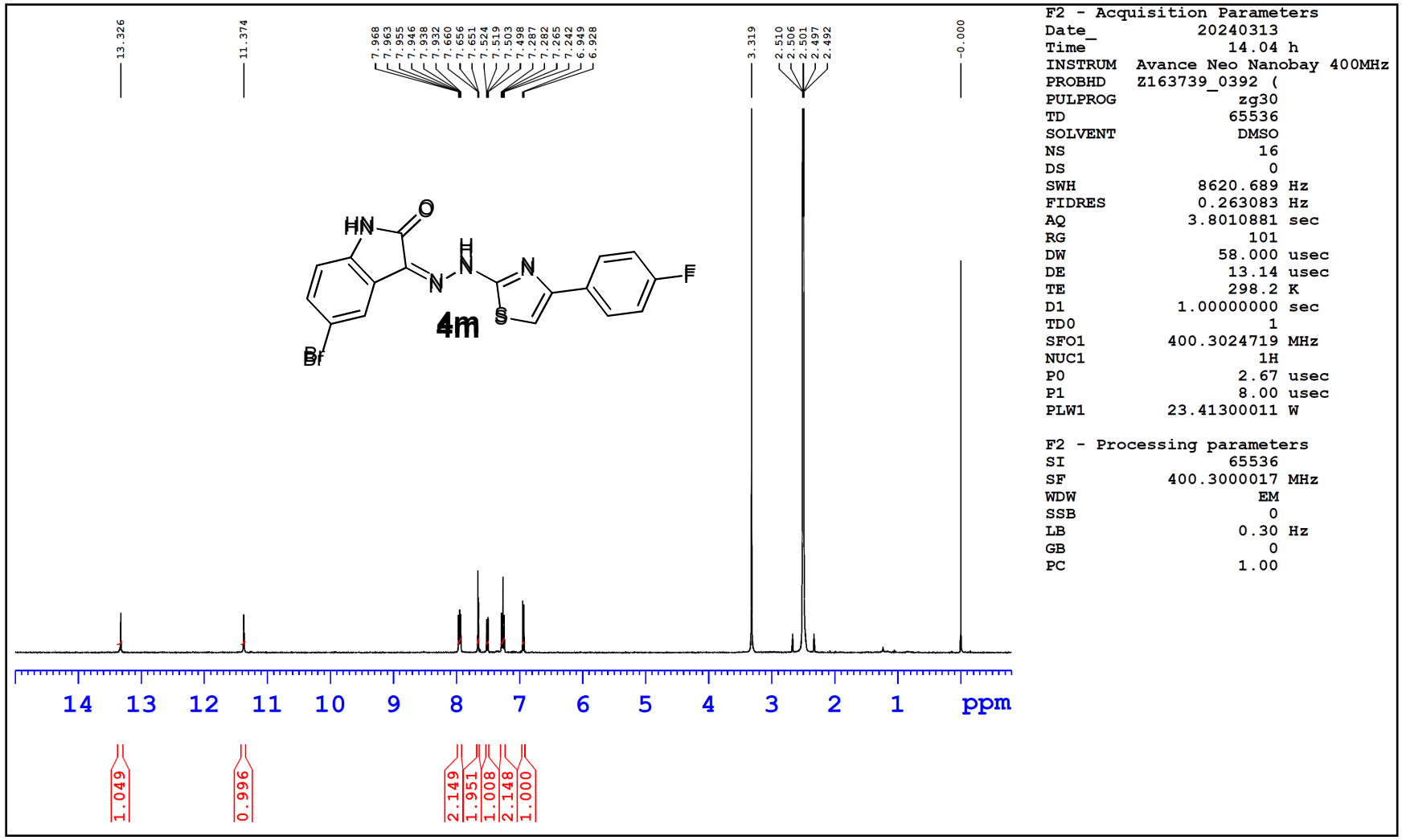


Figure S37 ^{1}**H NMR spectrum of 4m.**

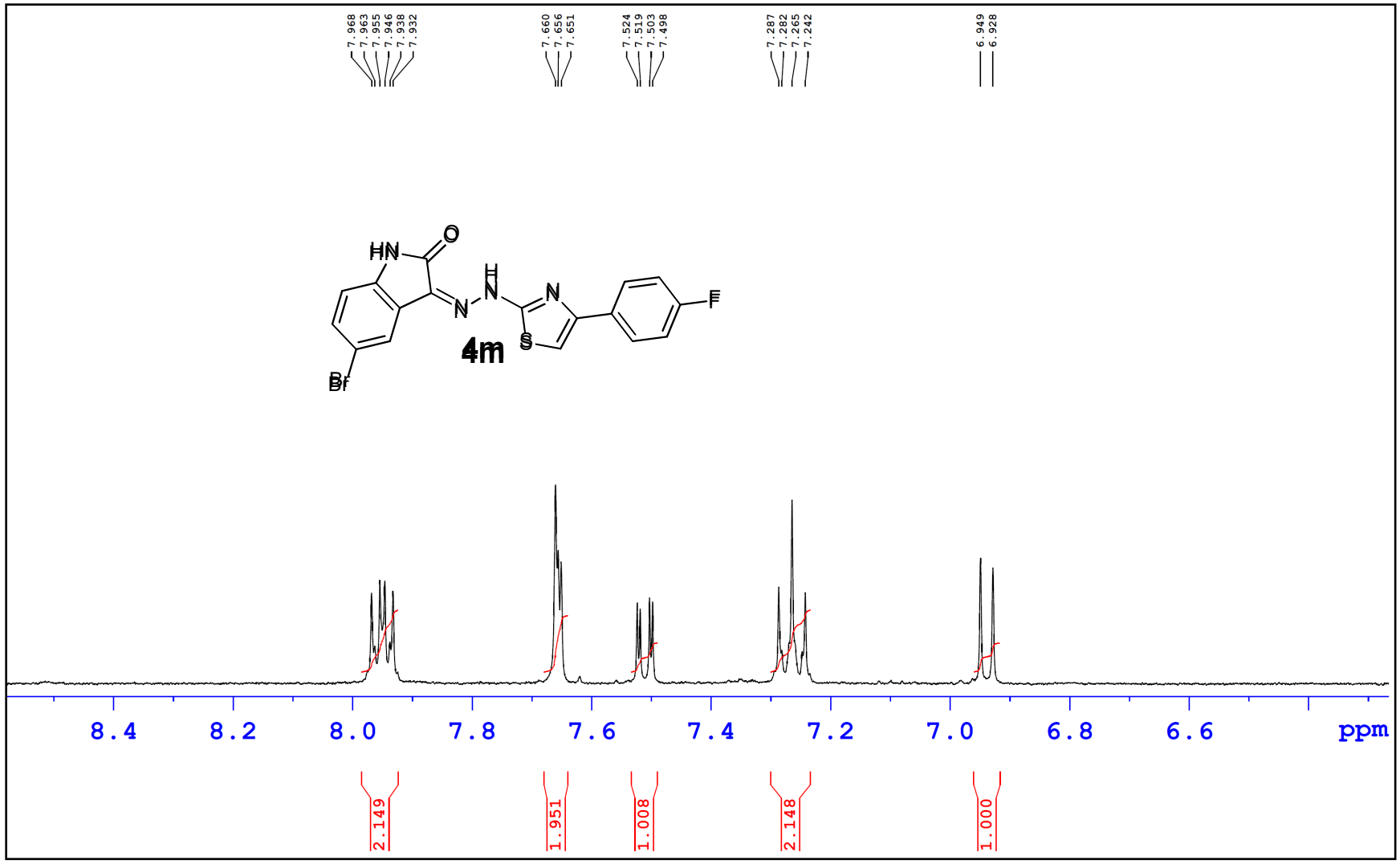


Figure S38 Expanded ^{1}H NMR spectrum of 4m.

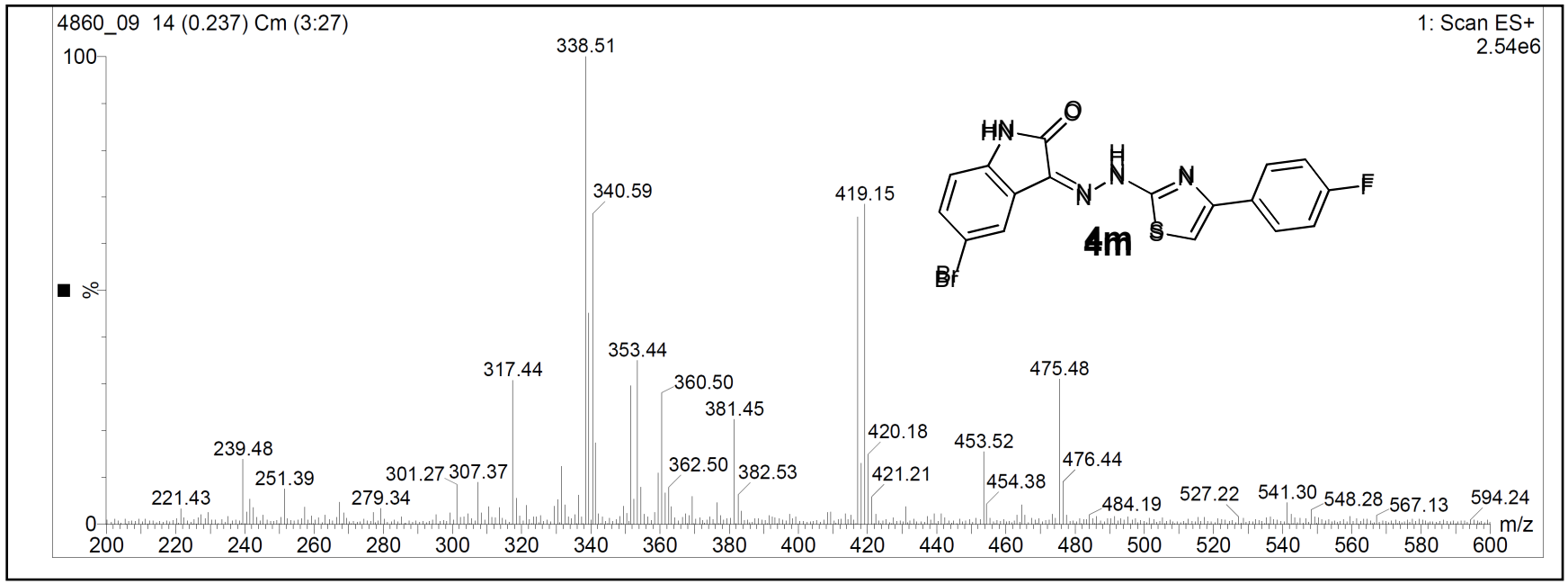


Figure S39 Mass spectrum of 4m.

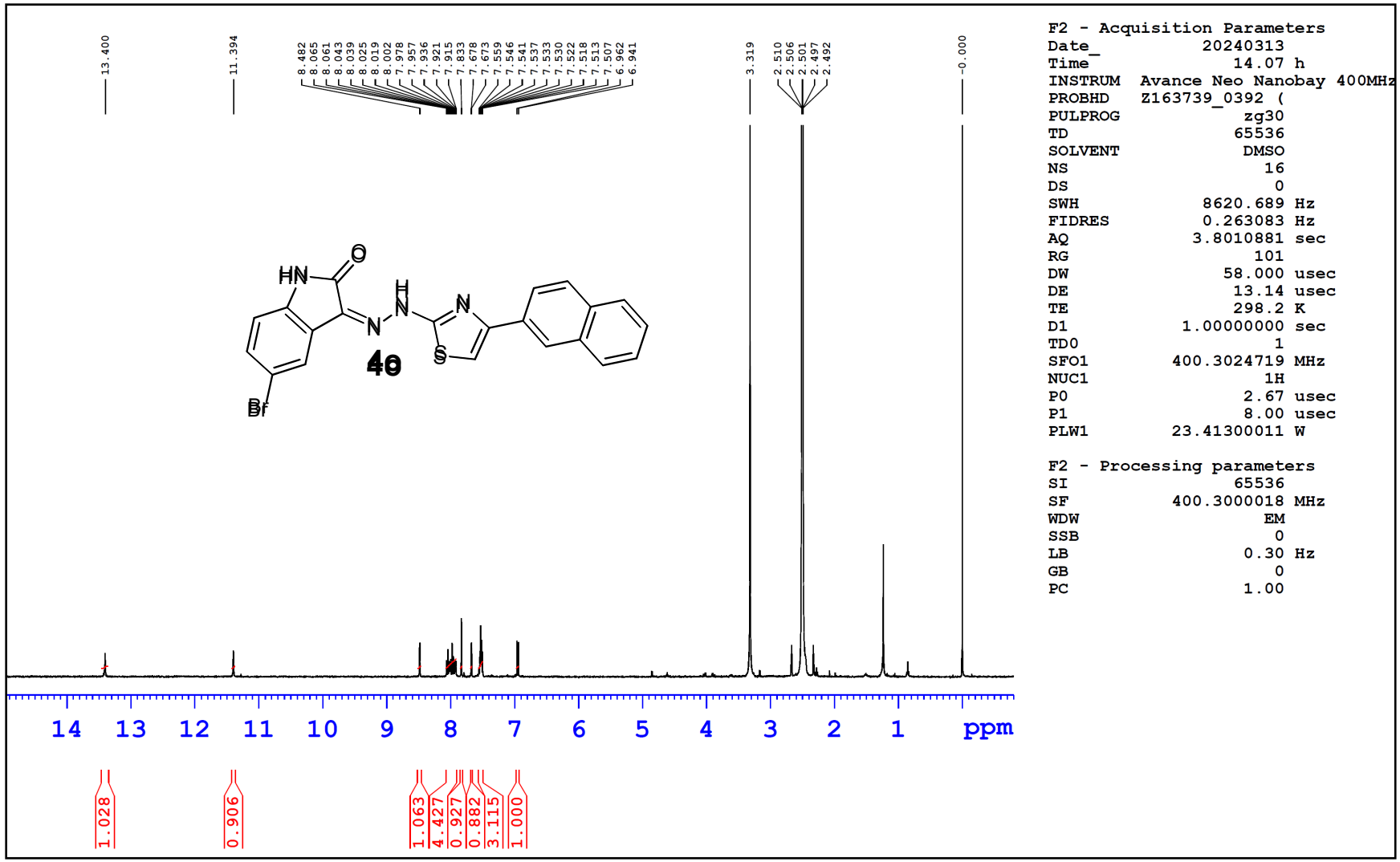


Figure S40 ^{1}H NMR spectrum of 4o.

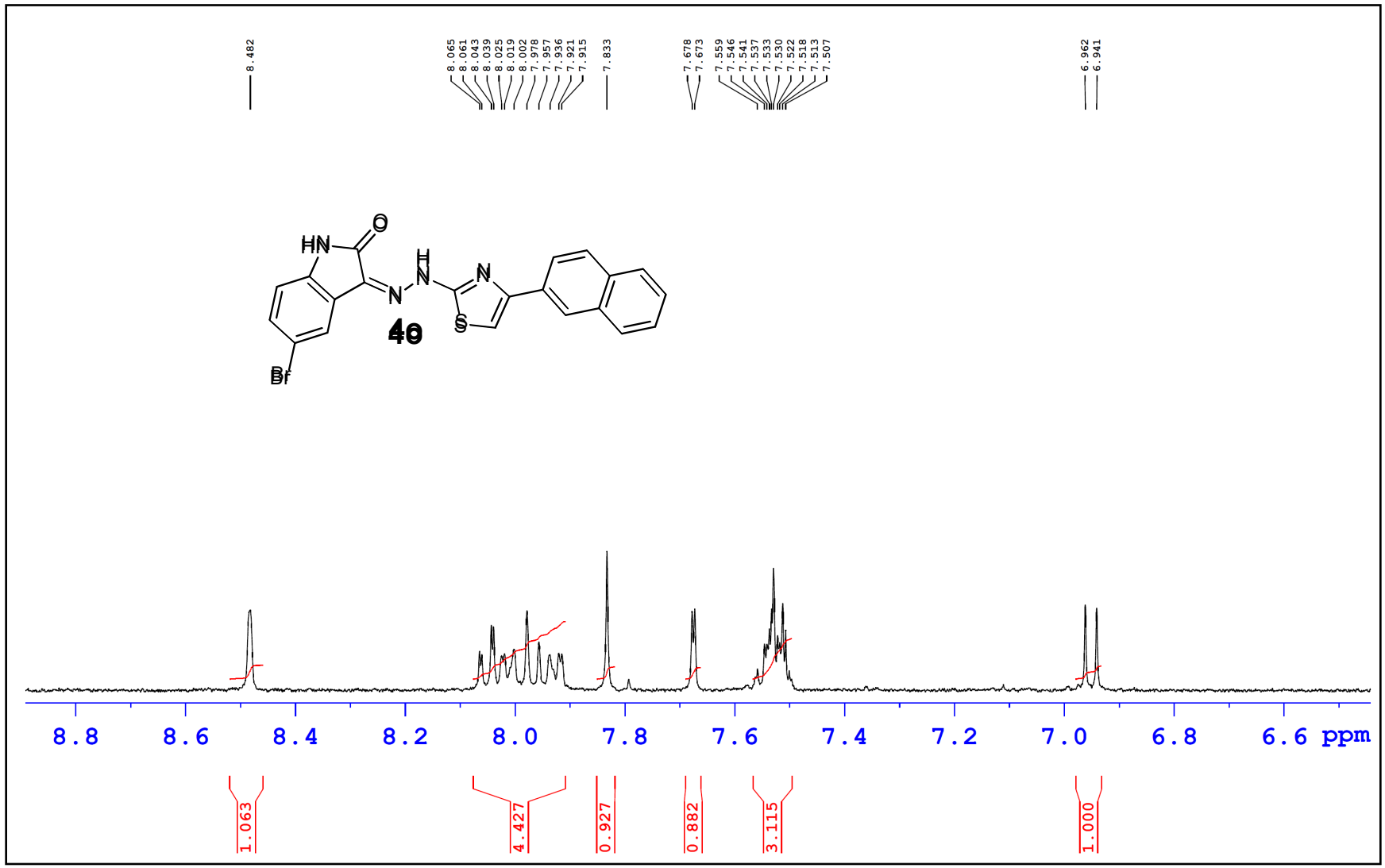


Figure S41 Expanded ^{1}H NMR spectrum of 4o.

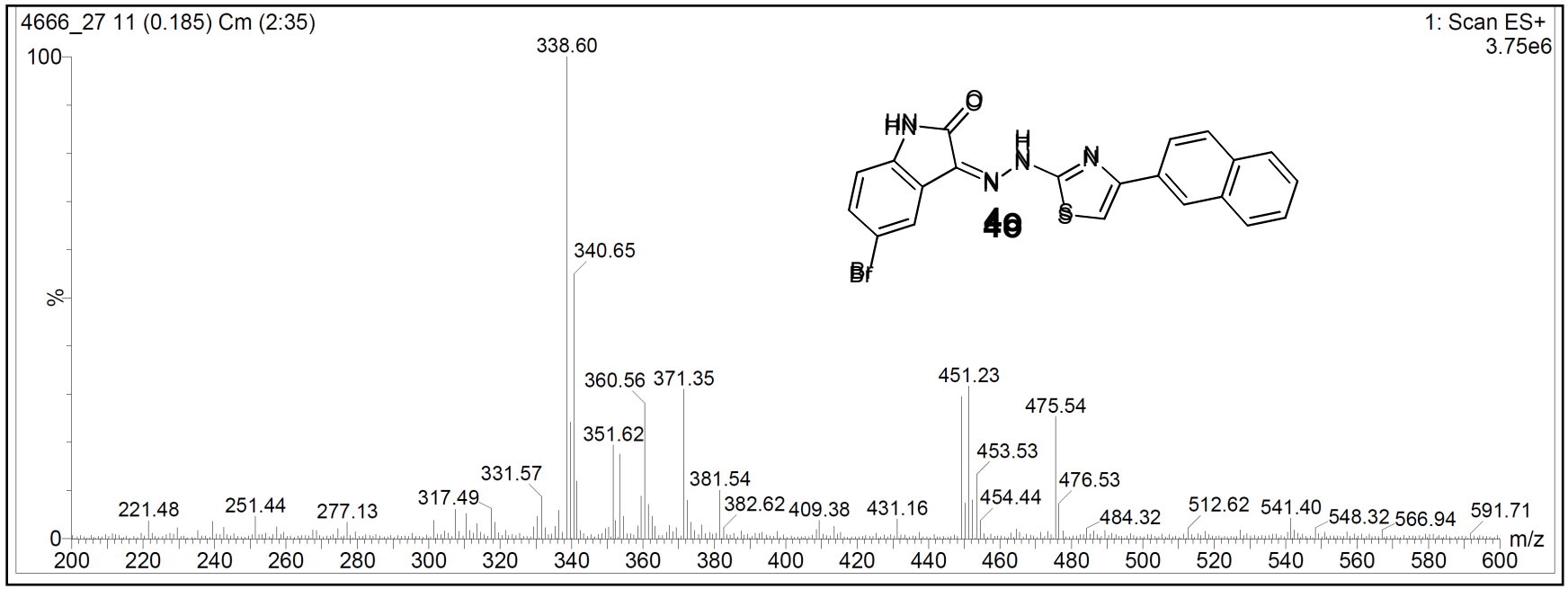


Figure S42 Mass spectrum of 4o.

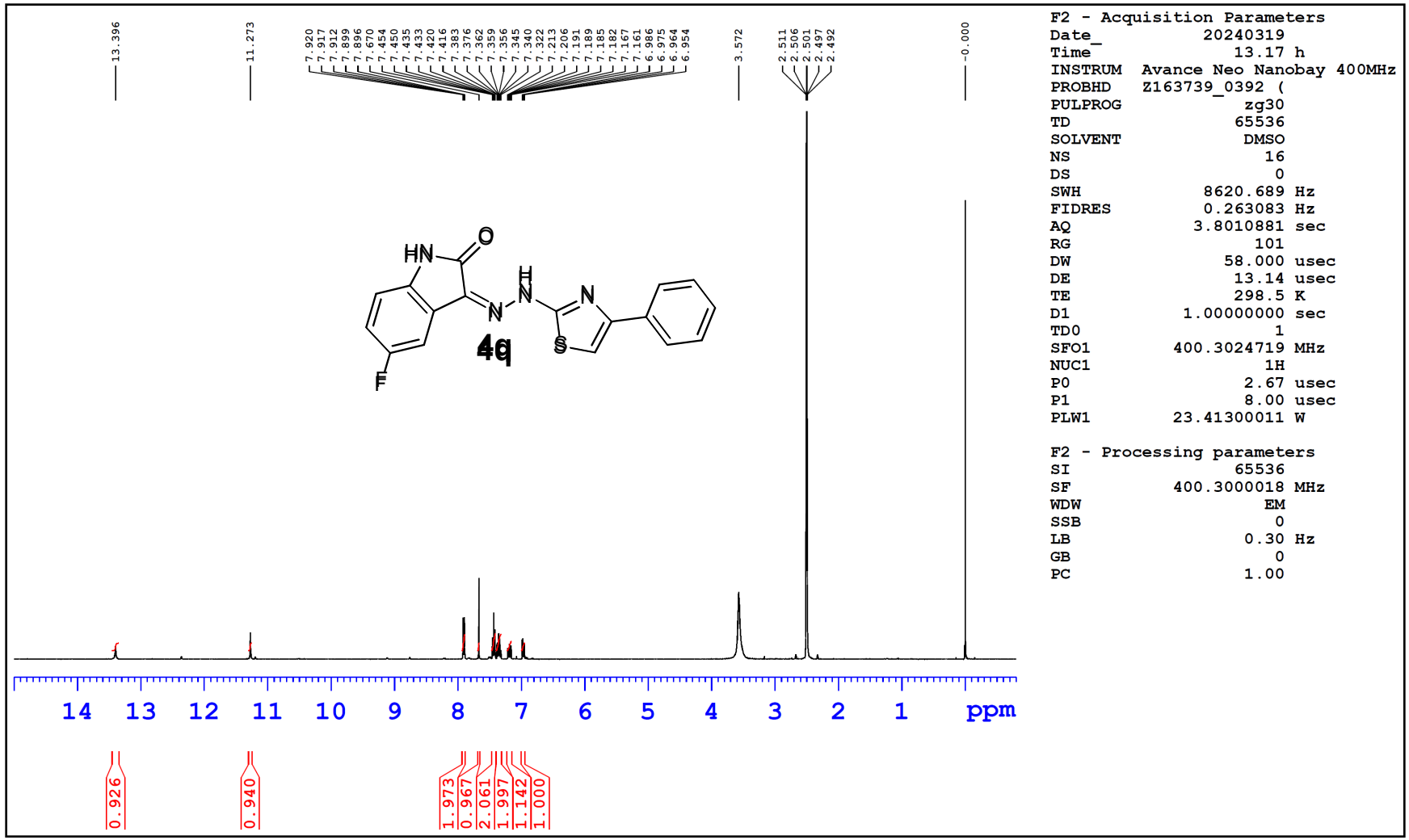


Figure S43 ^{1}**H NMR spectrum of 4q.**

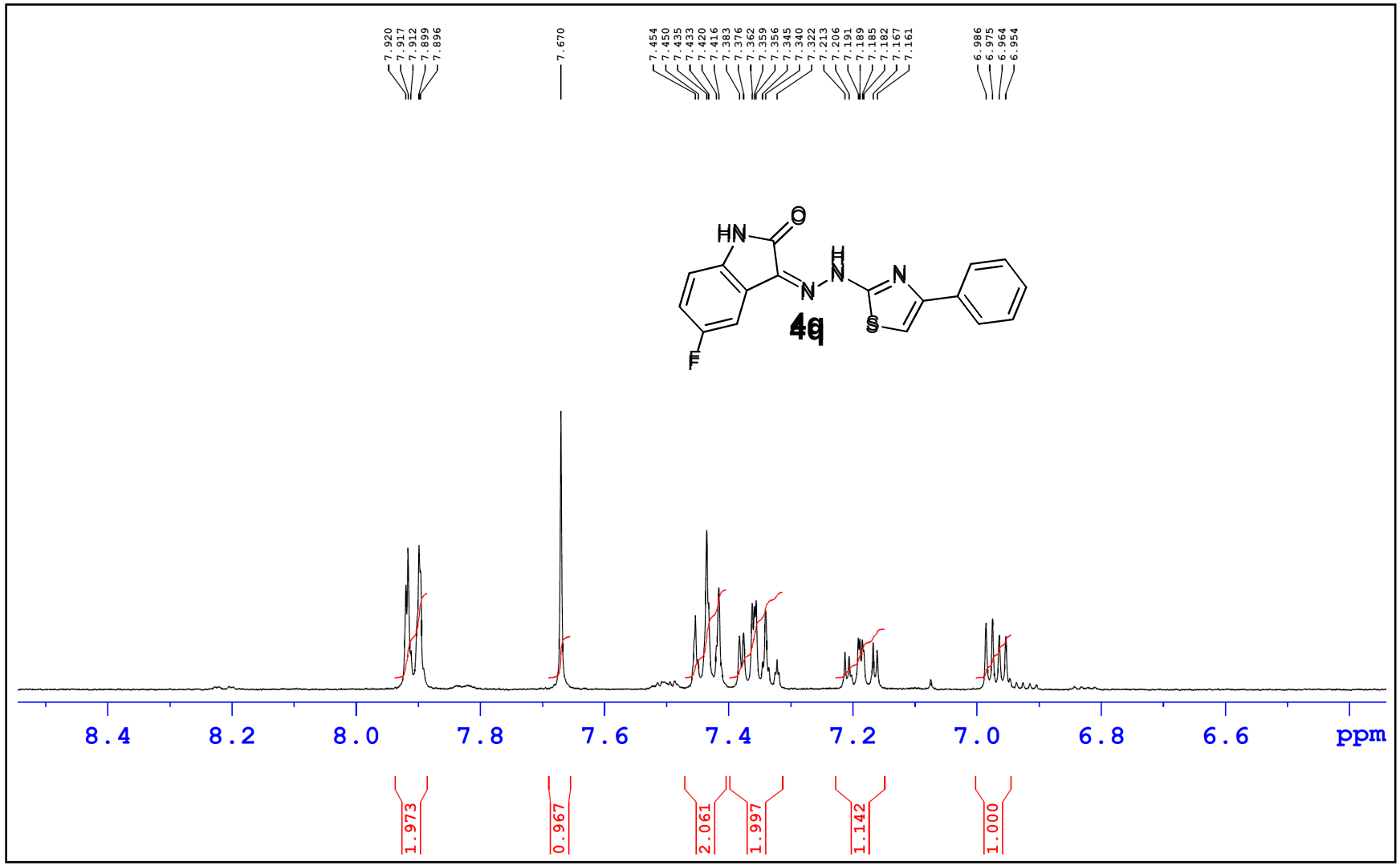


Figure S44 Expanded ^{1}H NMR spectrum of 4q.

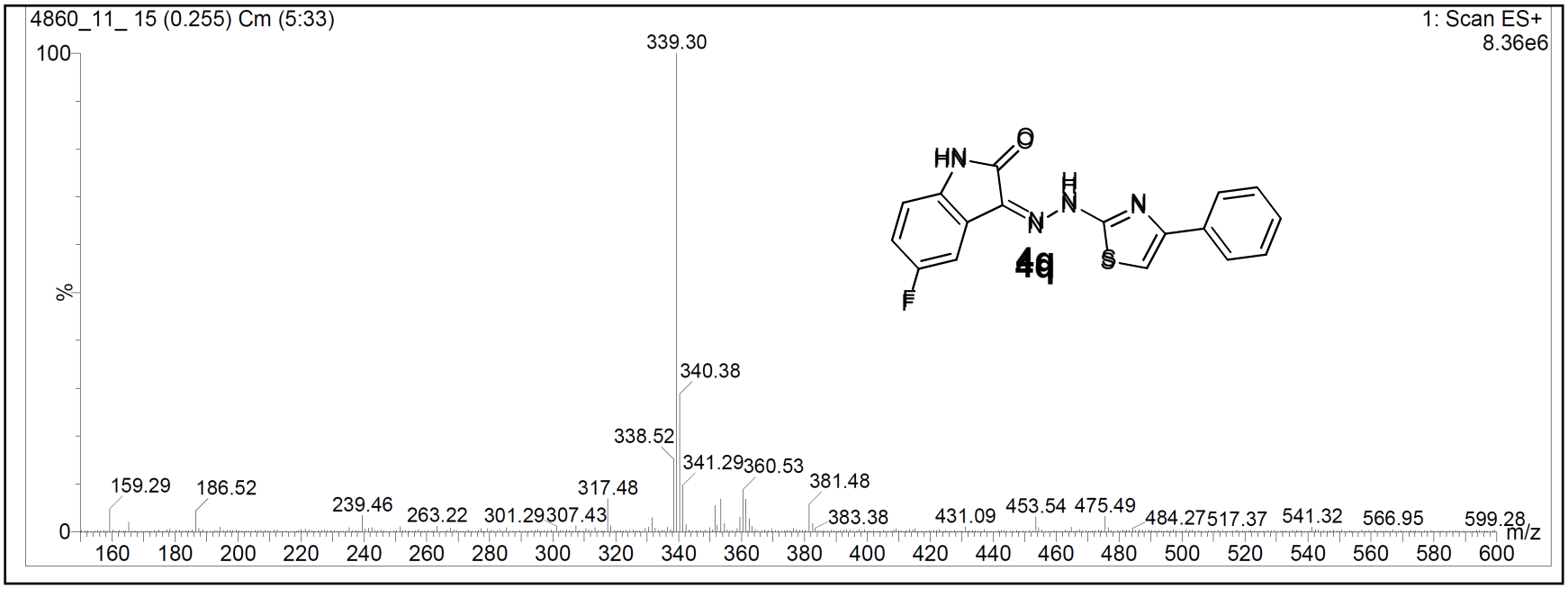


Figure S45 Mass spectrum of 4q.

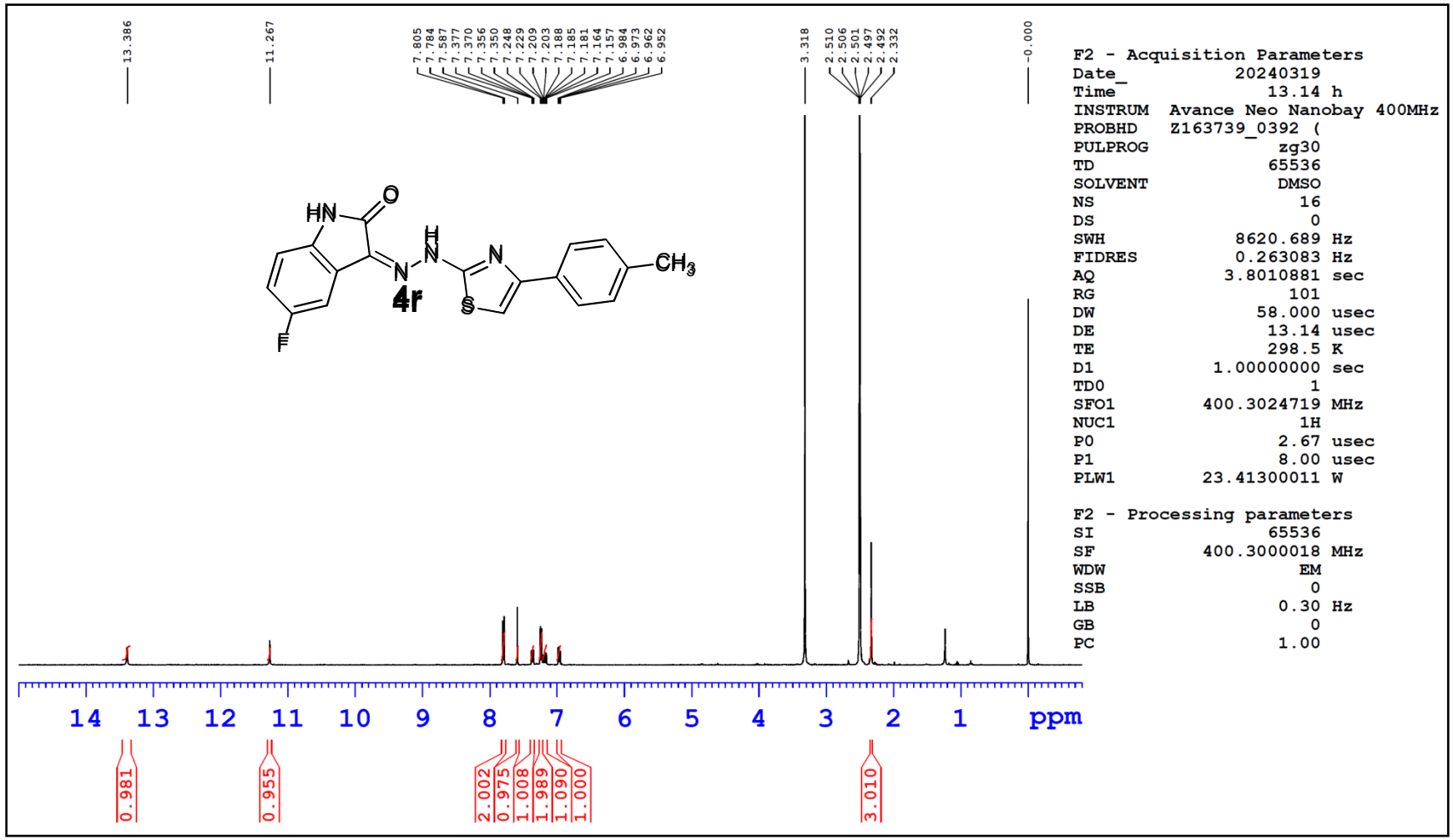


Figure S46 ^{1}**H NMR spectrum of 4r.**

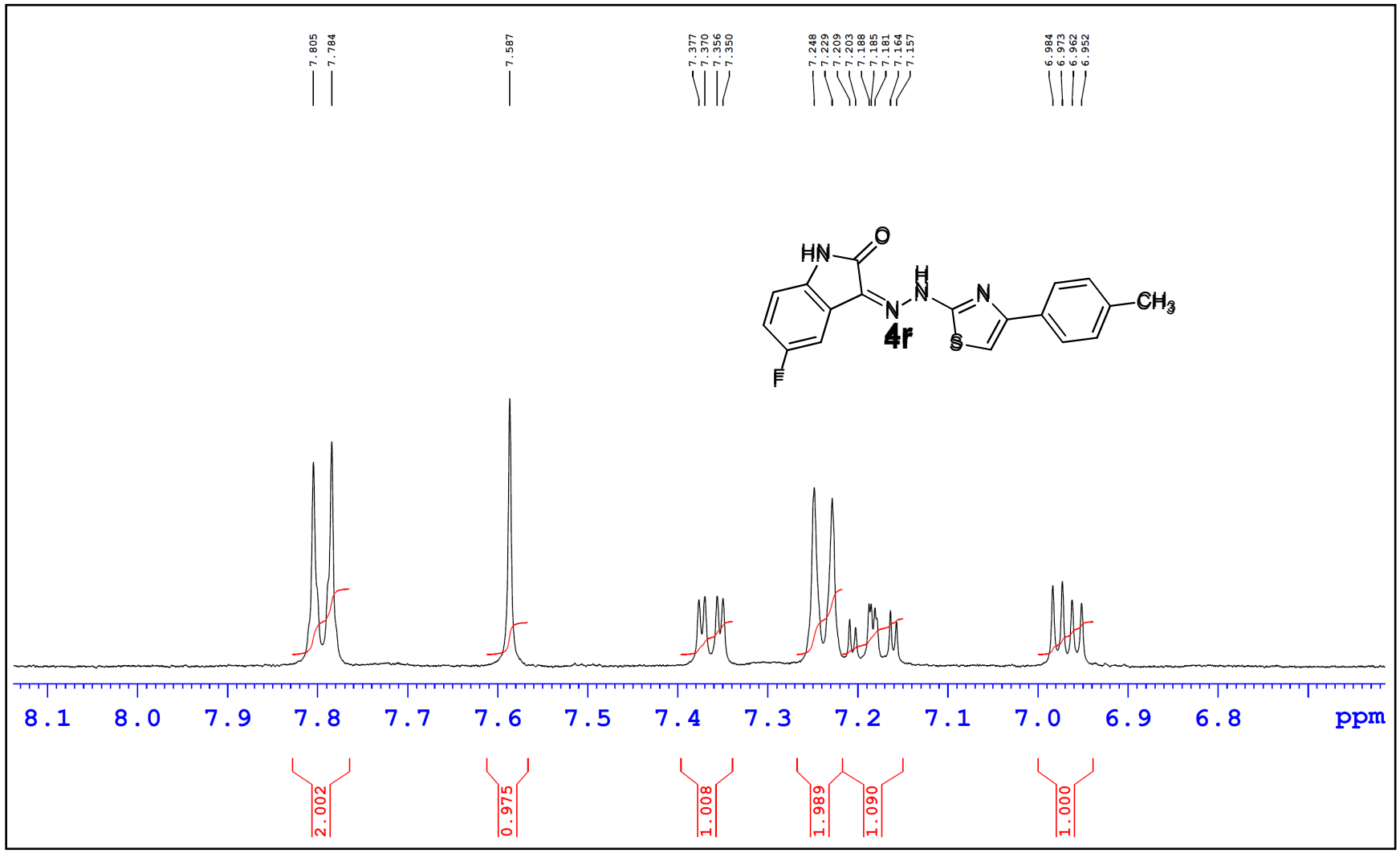


Figure S47 Expanded ^{1}H NMR spectrum of 4r.

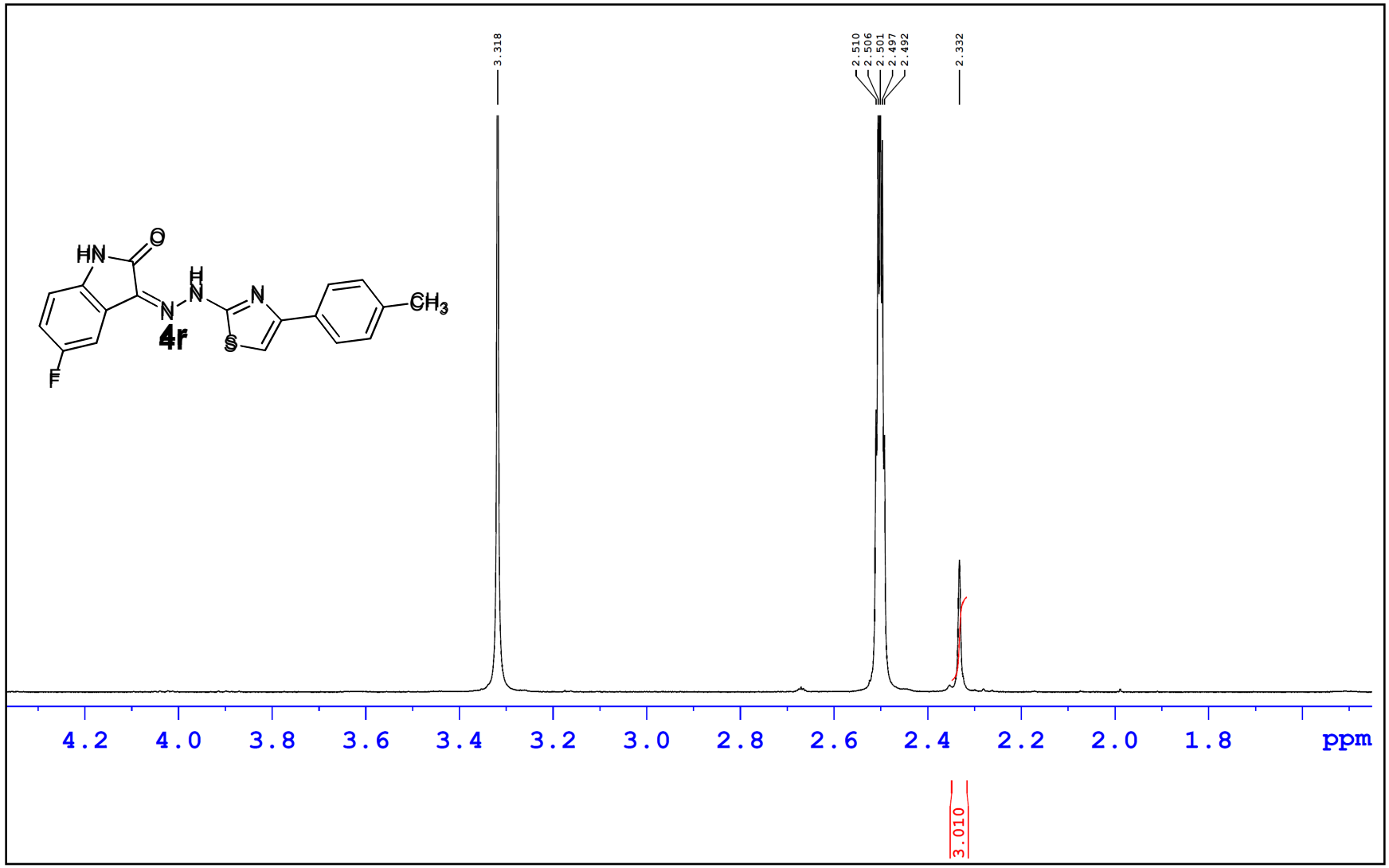


Figure S48 Expanded ^{1}H NMR spectrum of 4r.

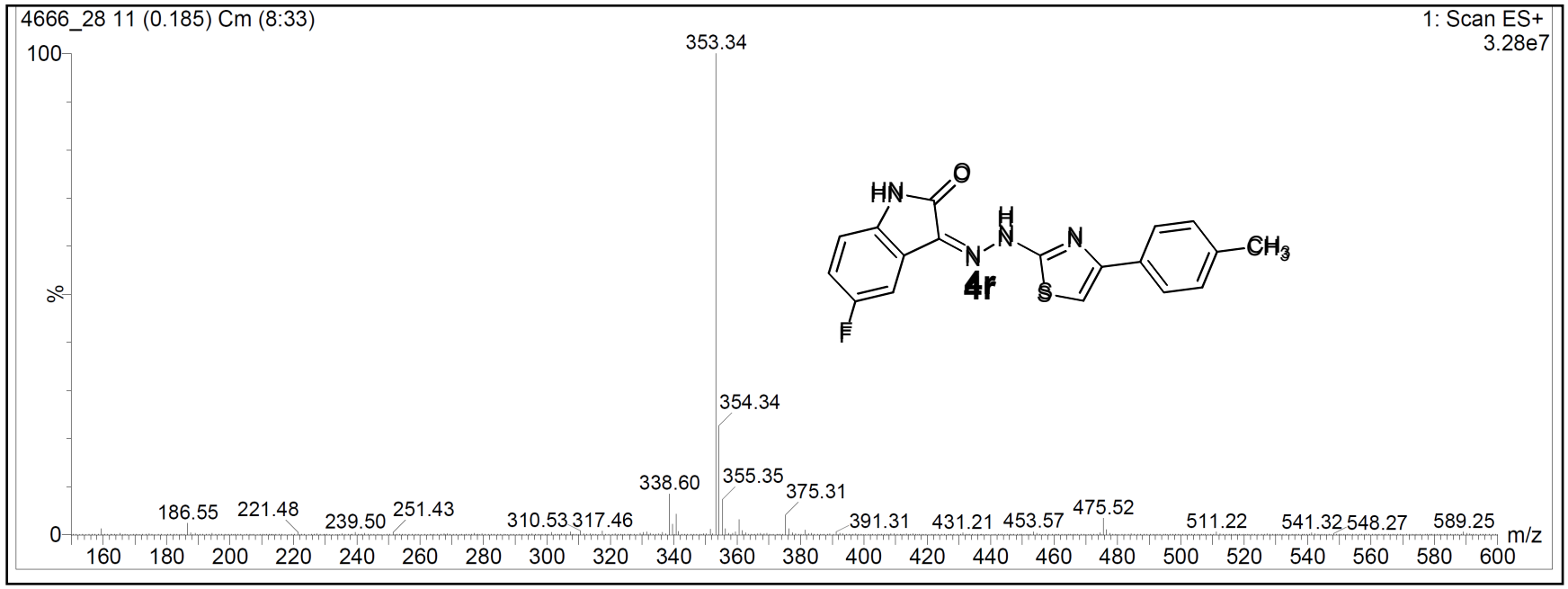


Figure S49 Mass spectrum of 4r.

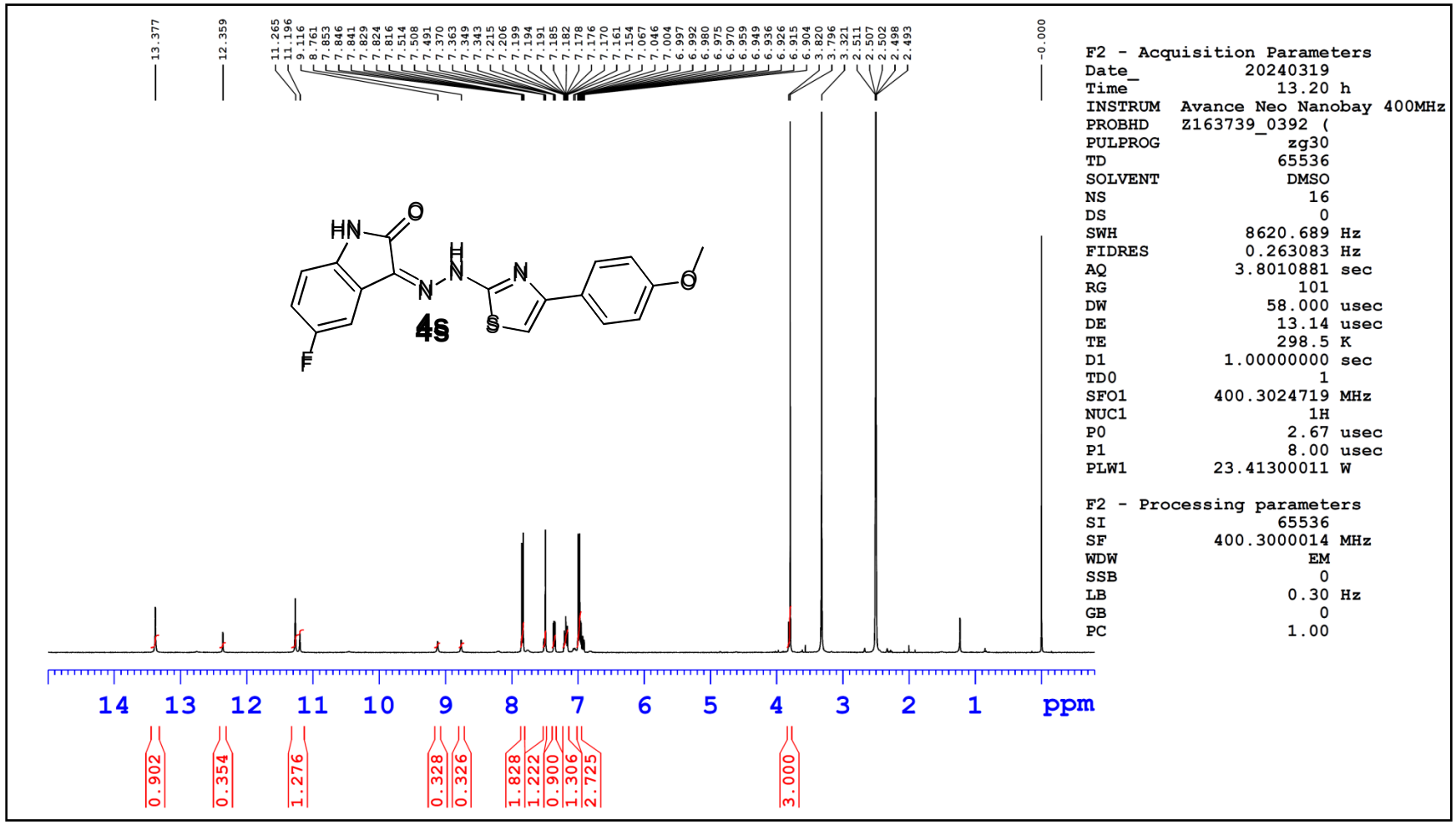


Figure S50 ^{1}**H NMR spectrum of 4s.**

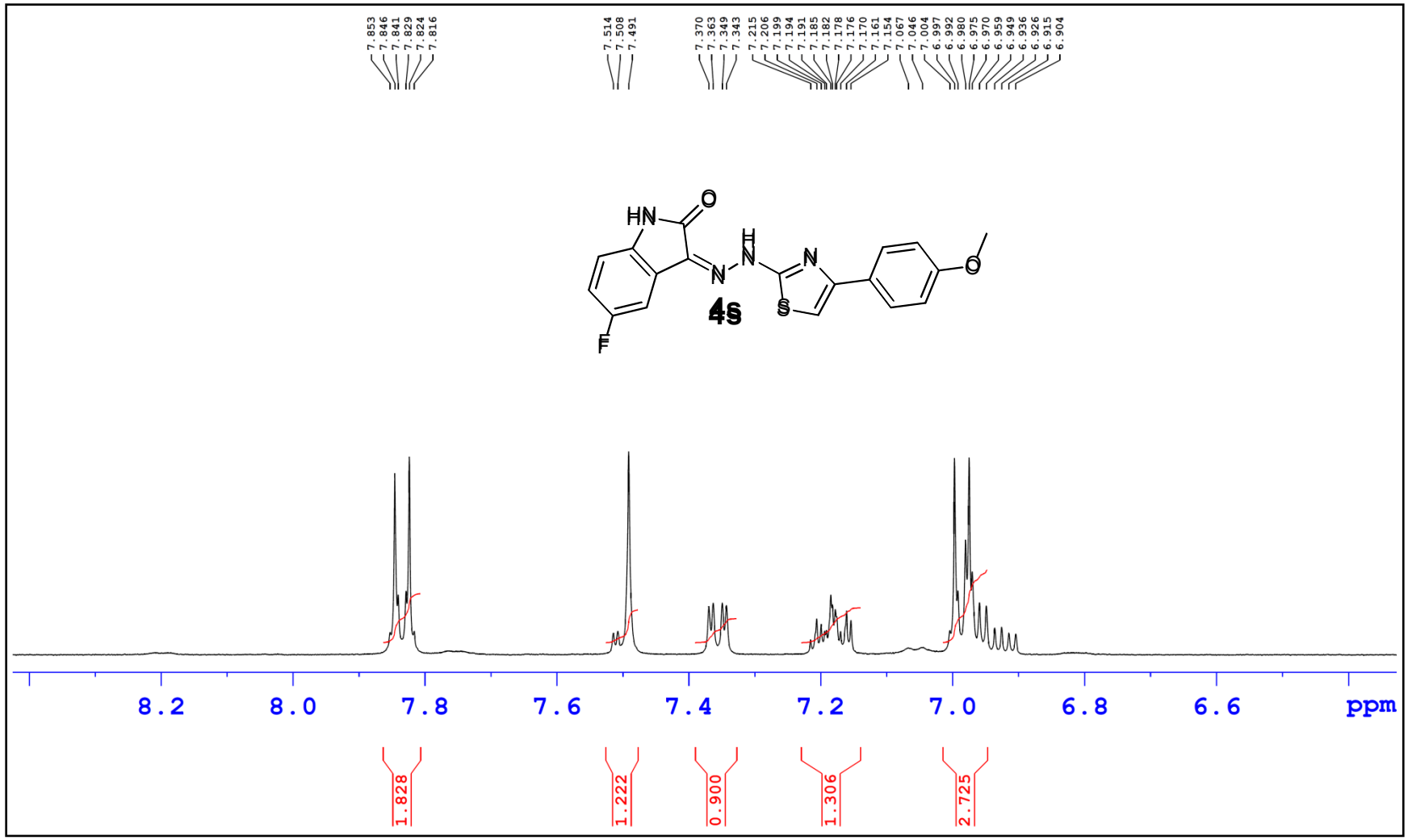


Figure S51 Expanded ^{1}H NMR spectrum of 4s.

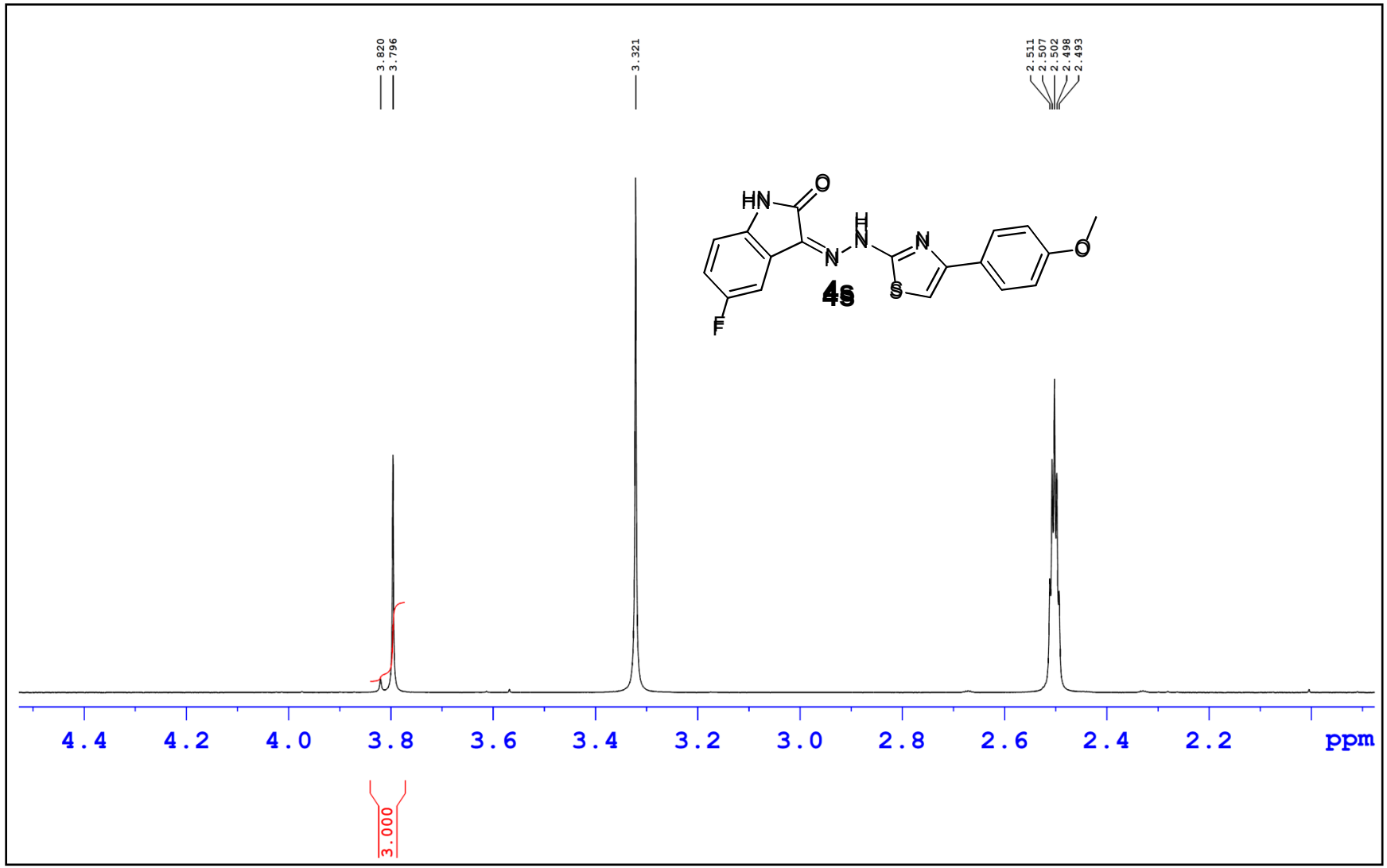


Figure S52 Expanded ^{1}H NMR spectrum of 4s.

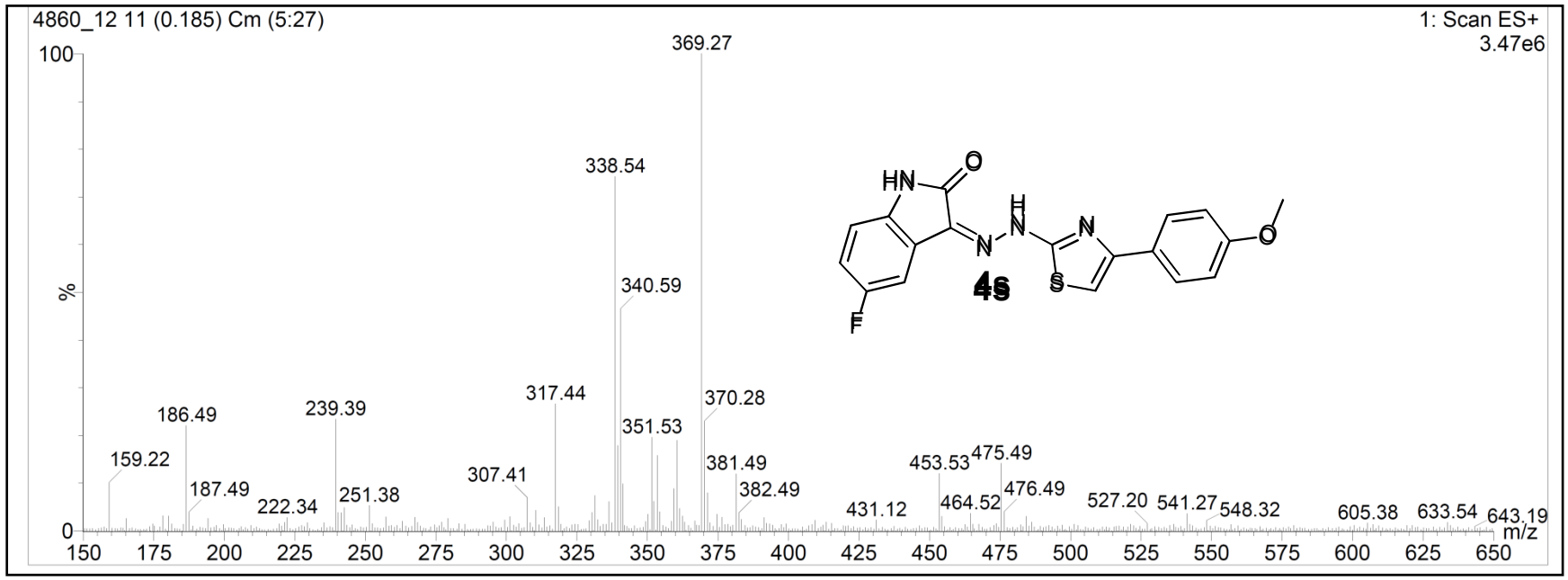


Figure S53 Mass spectrum of 4s.

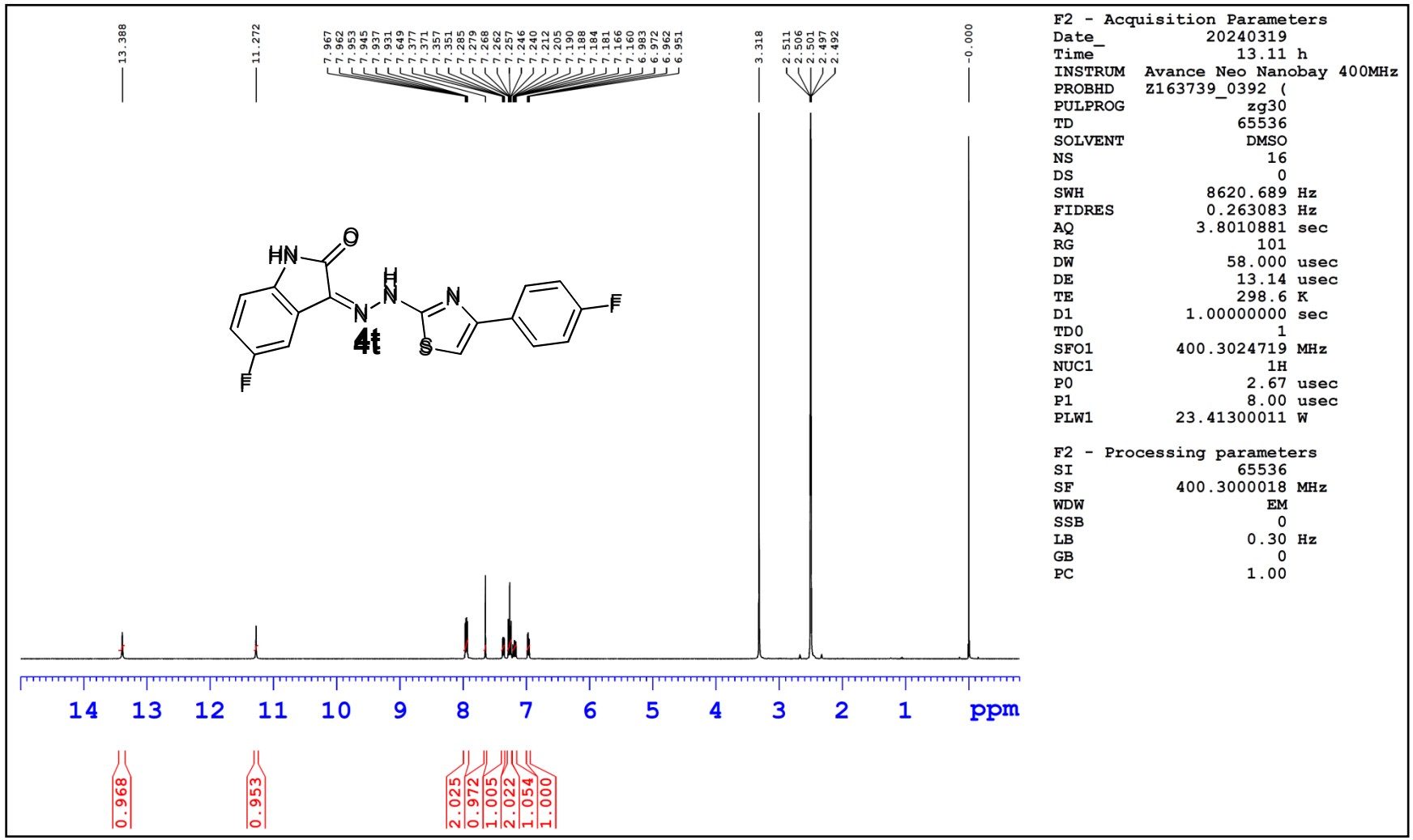


Figure S54 ^{1}**H NMR spectrum of 4t.**

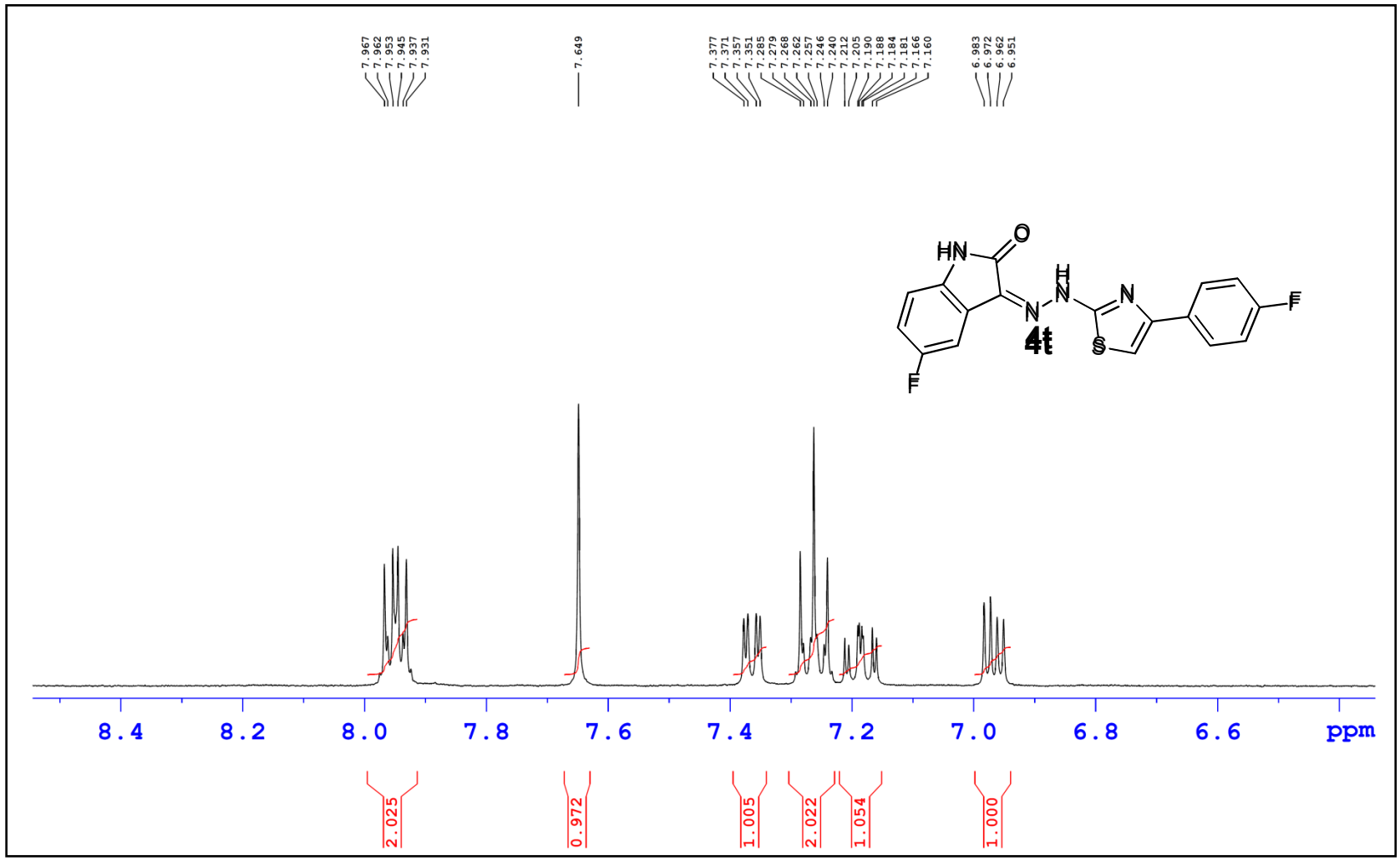


Figure S55 Expanded ^{1}H NMR spectrum of 4t.

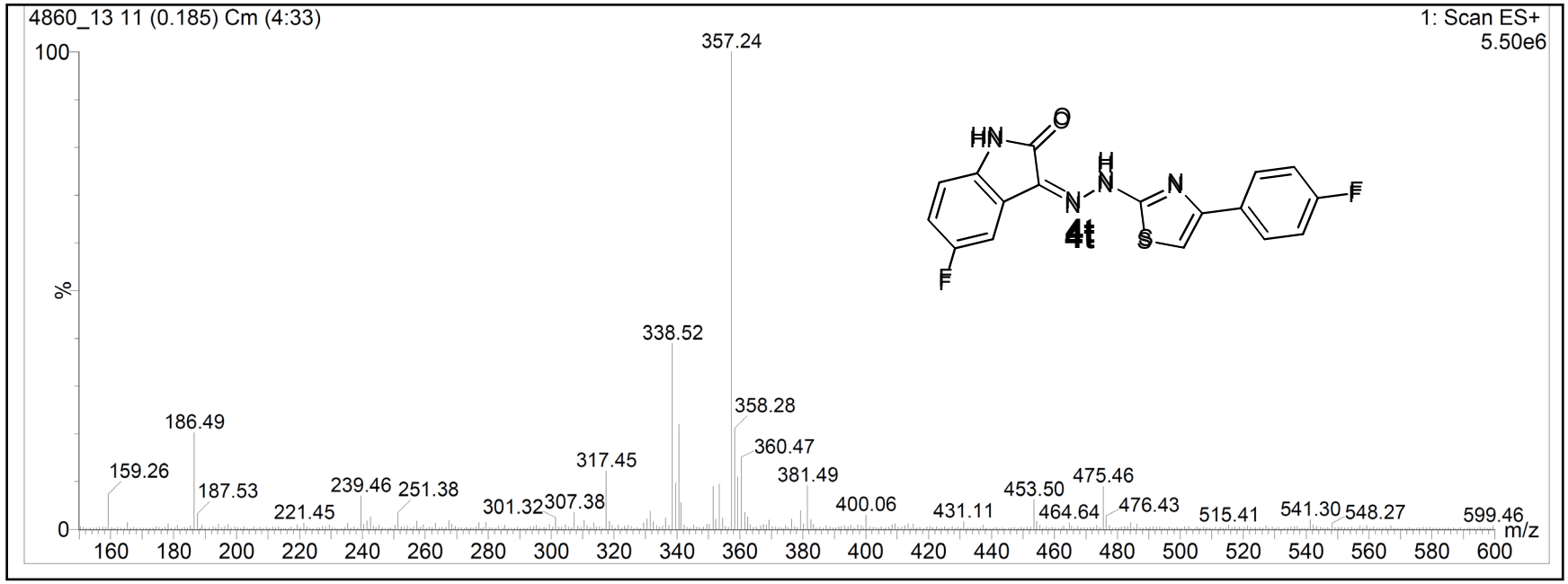


Figure S56 Mass spectrum of 4t.

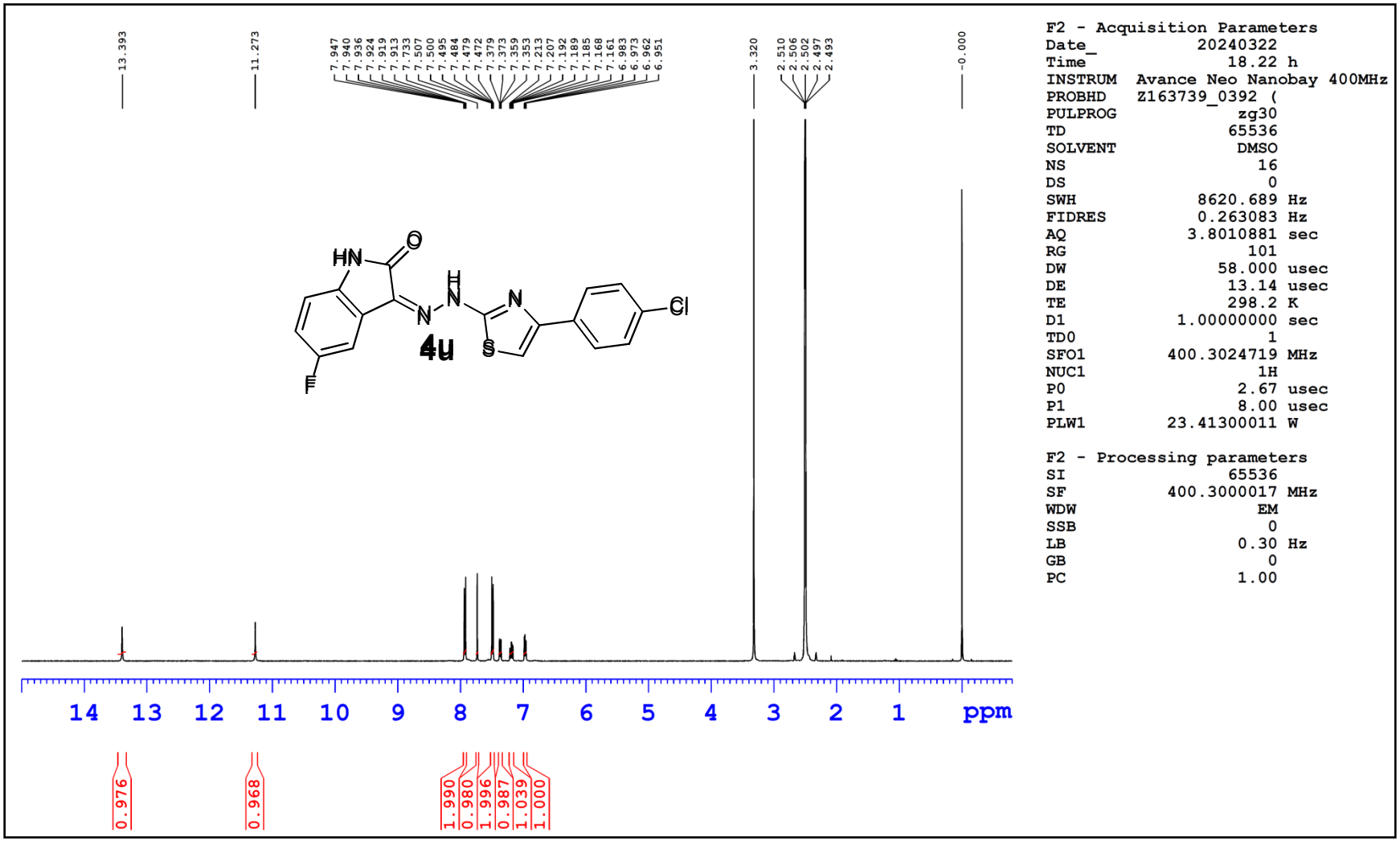


Figure S57 ^{1}H NMR spectrum of 4u.

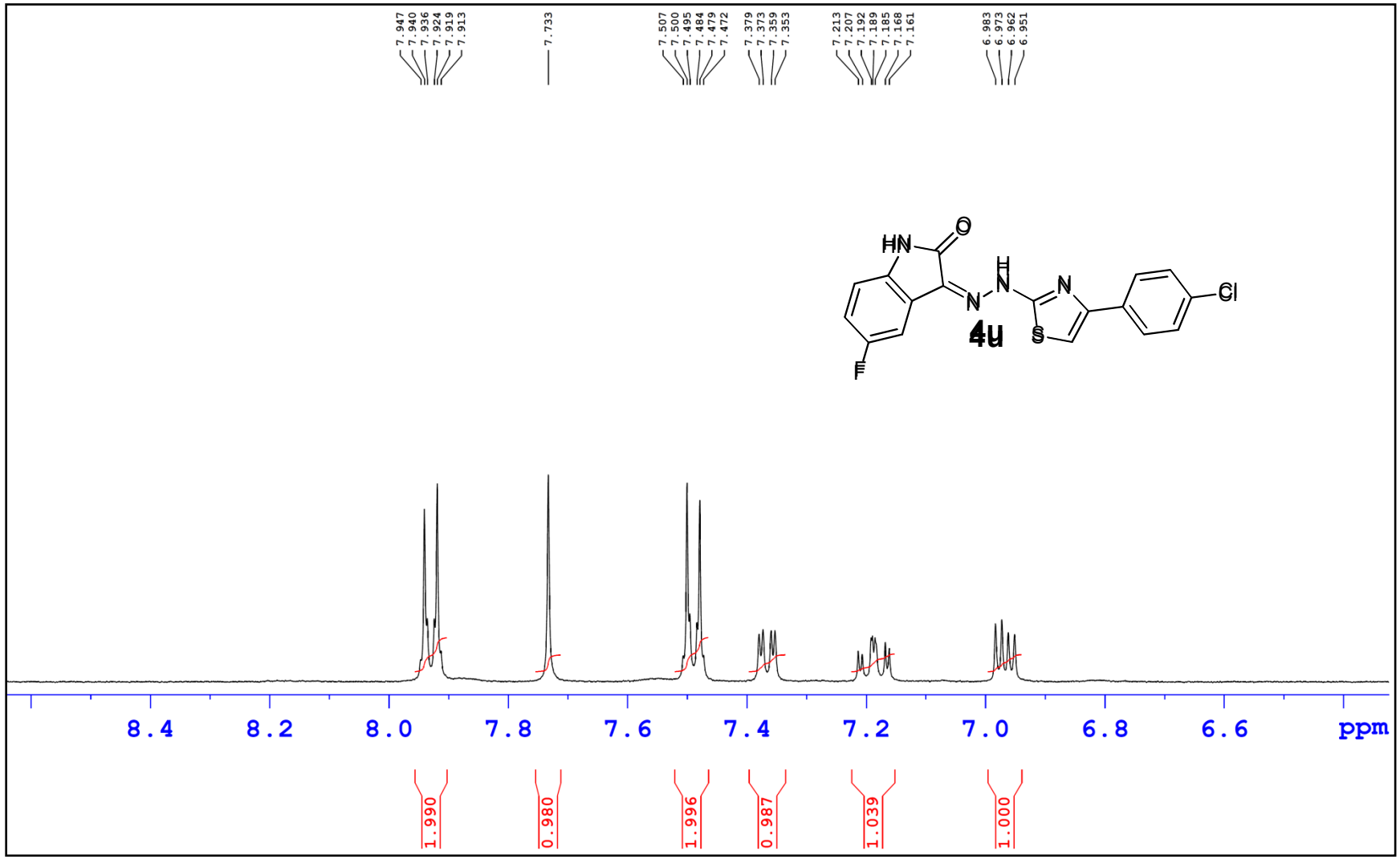


Figure S58 Expanded ^{1}H NMR spectrum of 4u.

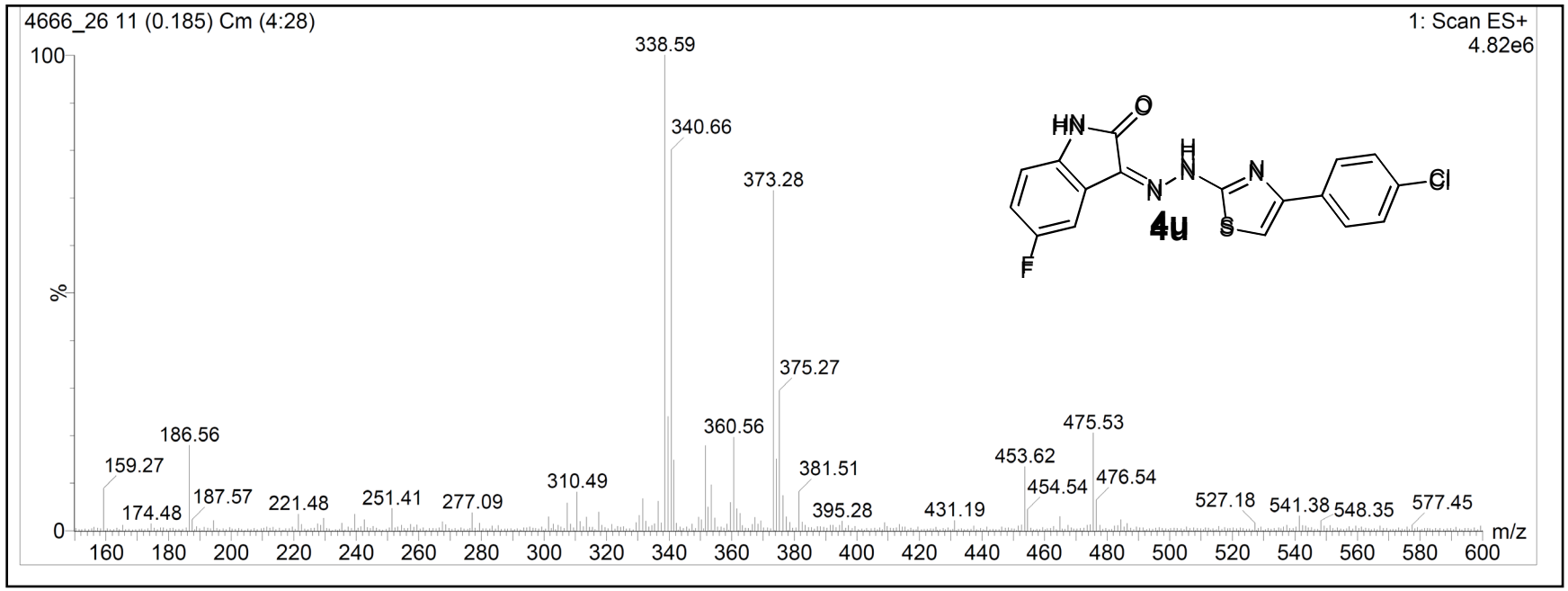


Figure S59 Mass spectrum of 4u.

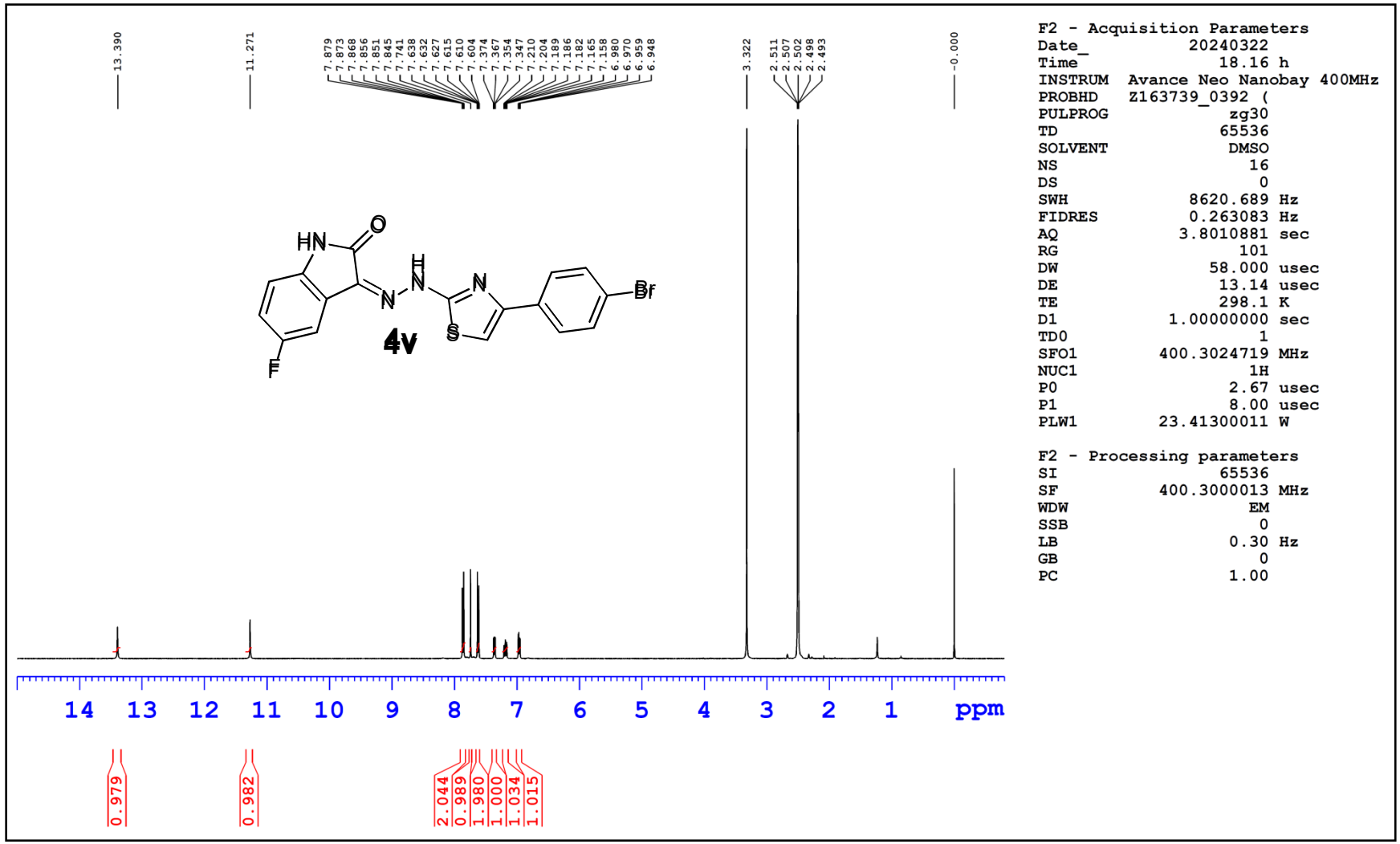


Figure S60 ^{1}H NMR spectrum of 4v.

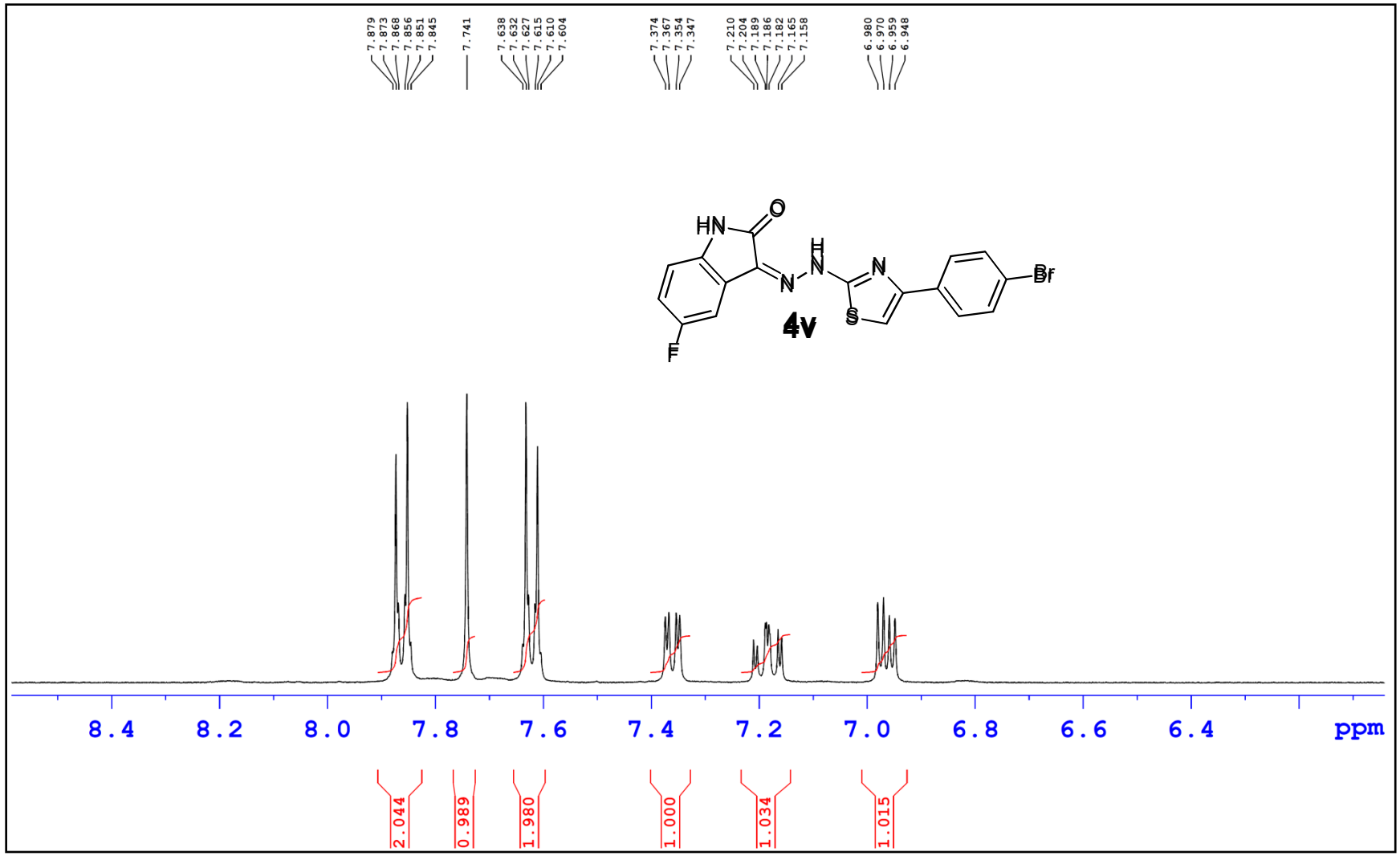


Figure S61 Expanded ^{1}H NMR spectrum of 4v.

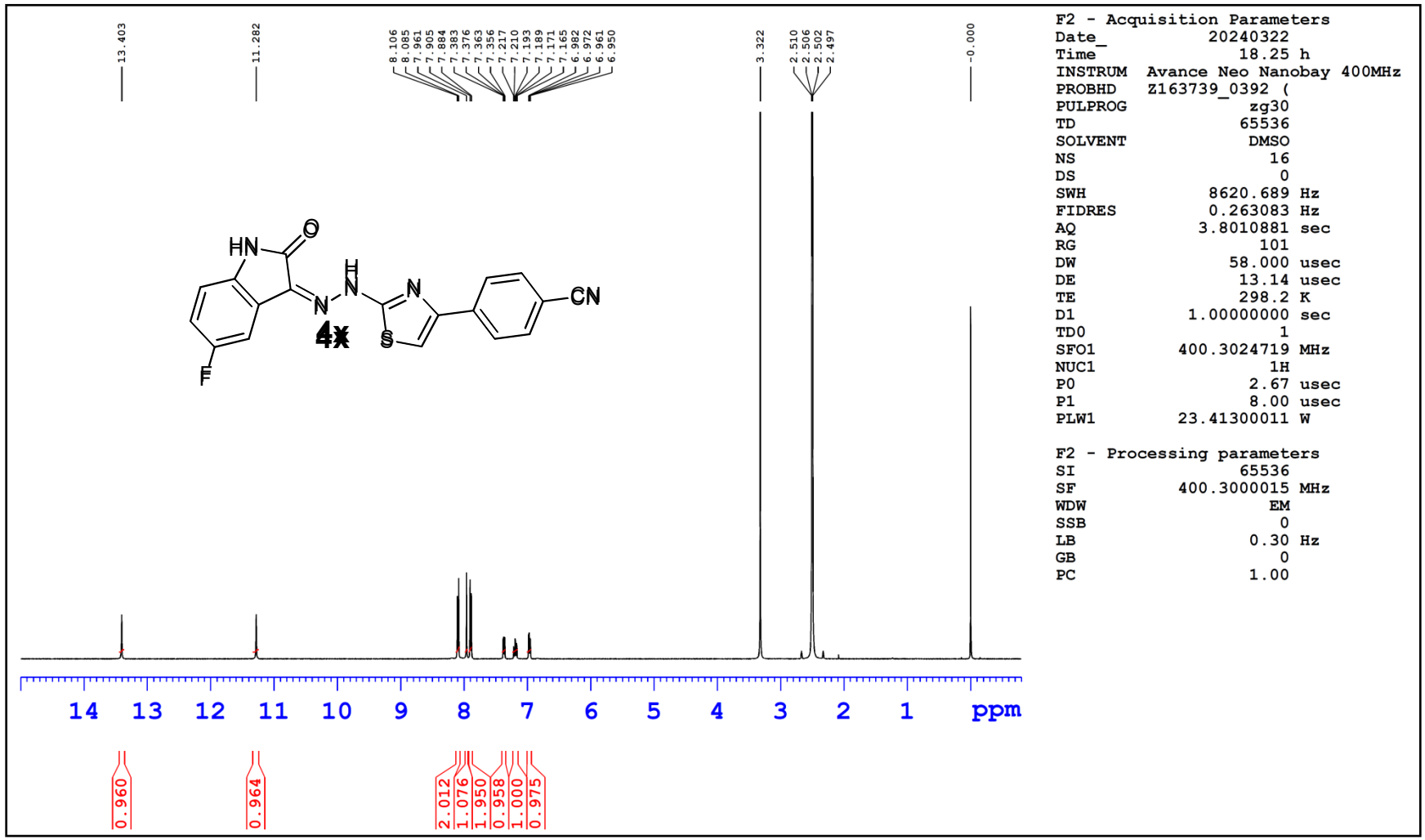


Figure S62 ^{1}H NMR spectrum of 4x.

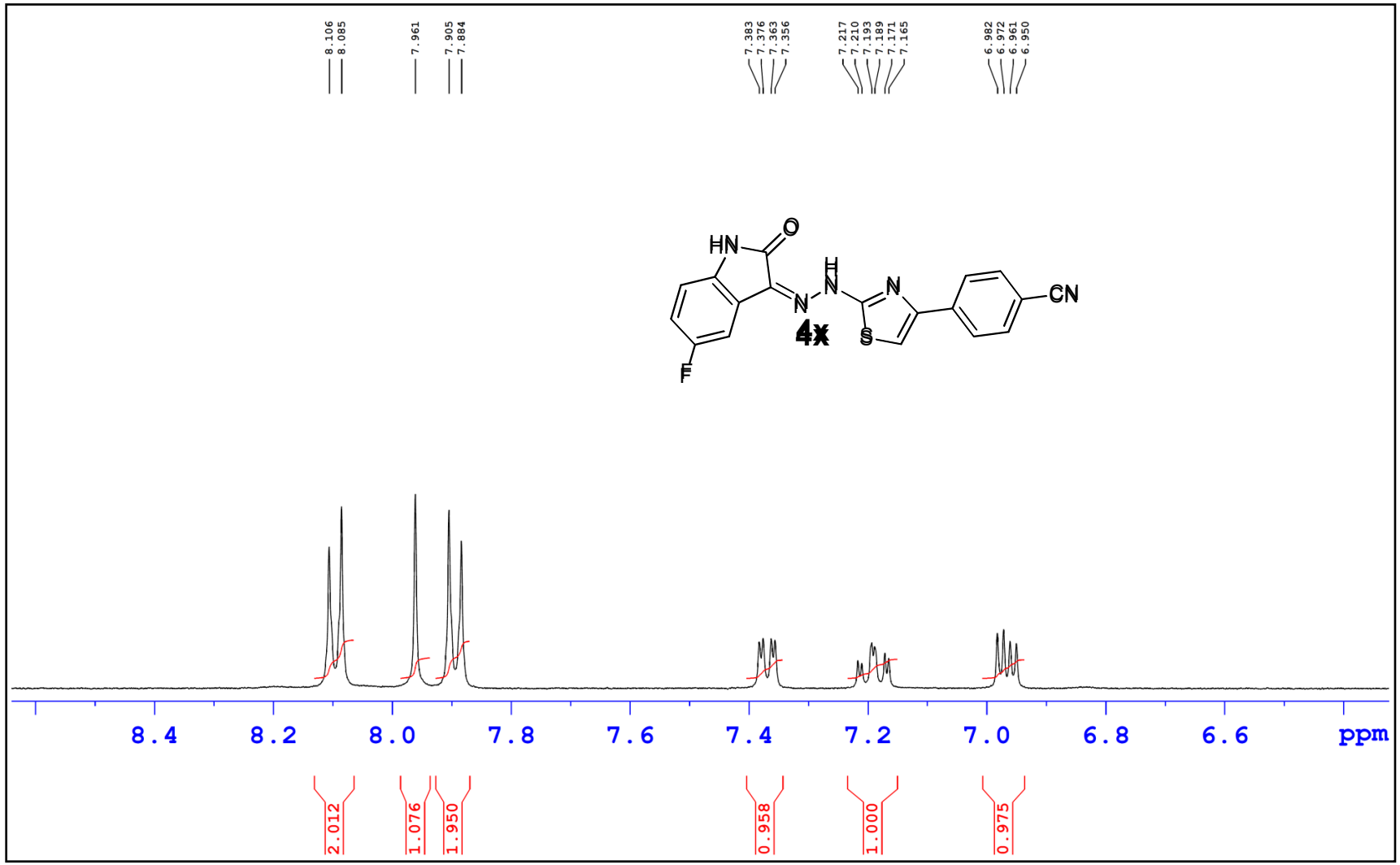


Figure S63Expanded ^{1}H NMR spectrum of 4x.

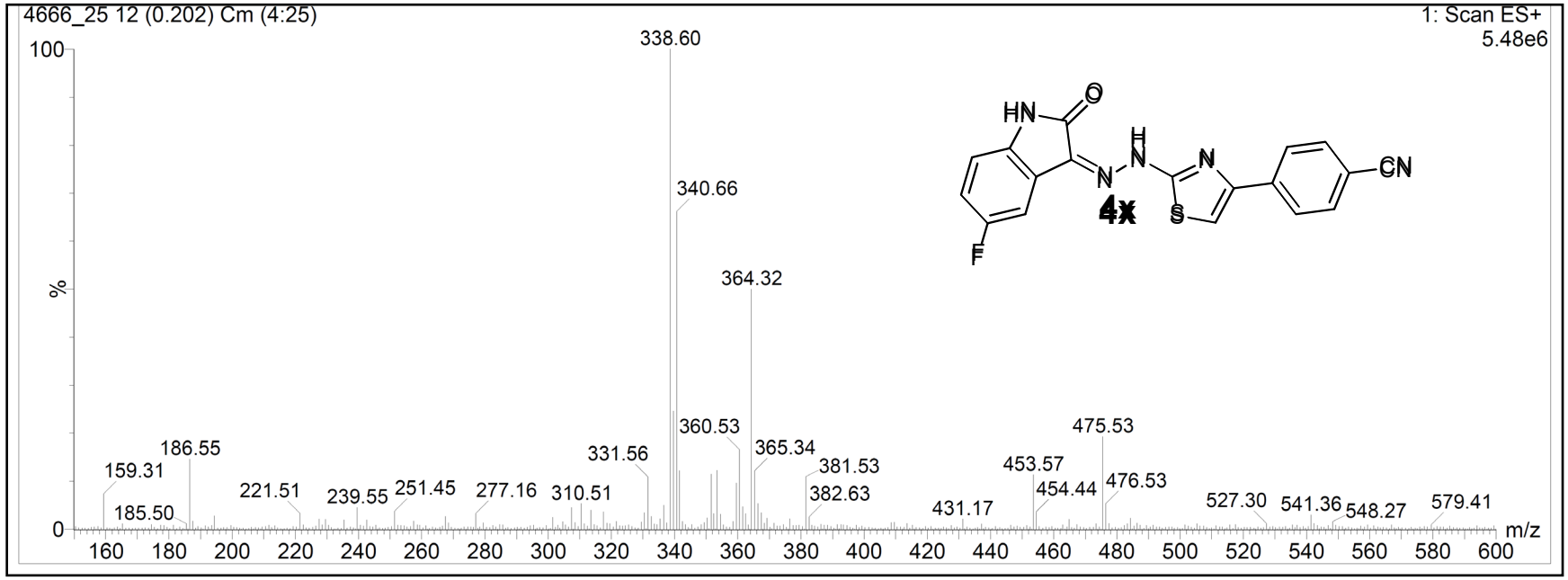


Figure S64 Mass spectrum of 4x.

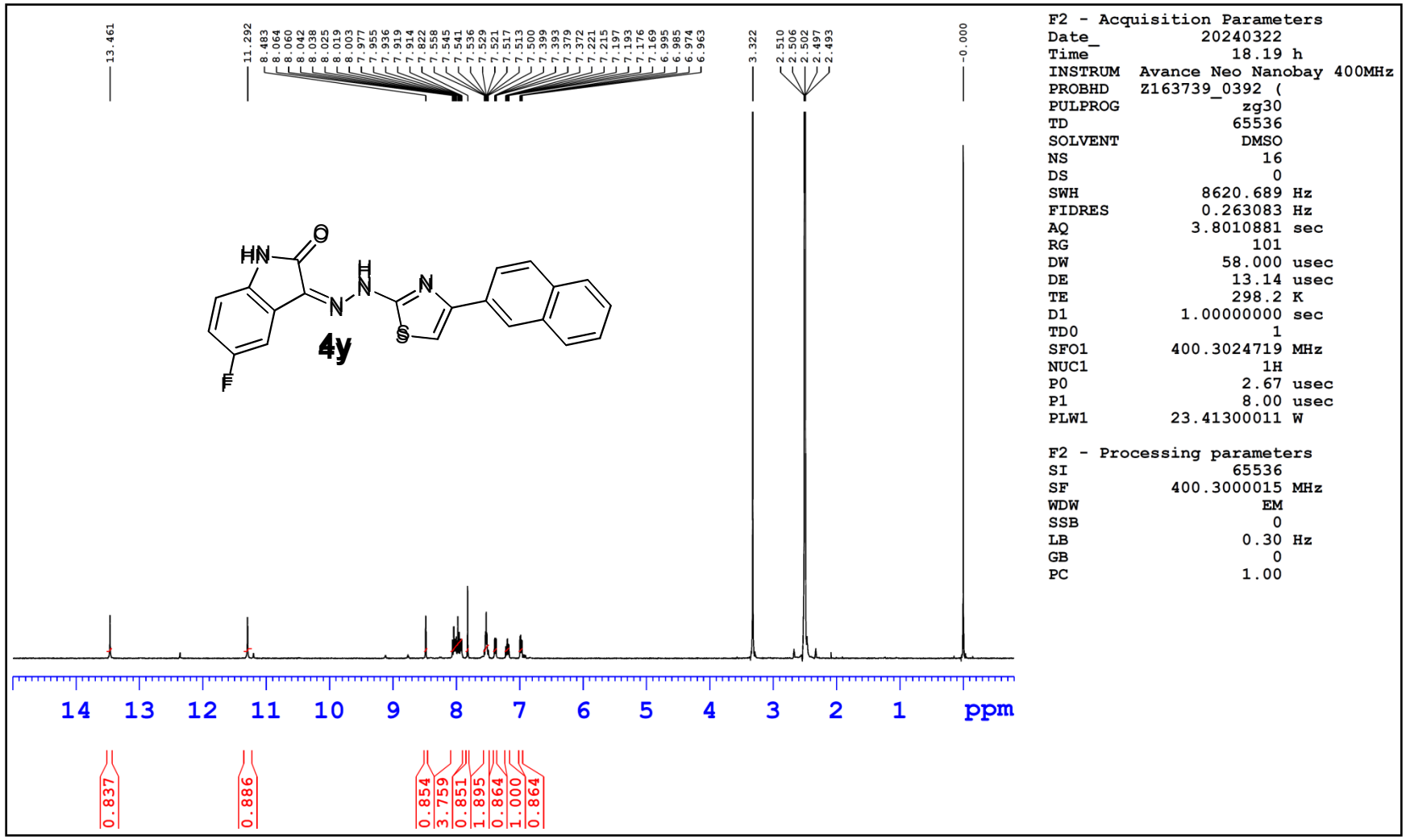


Figure S65 ^{1}H NMR spectrum of 4y.

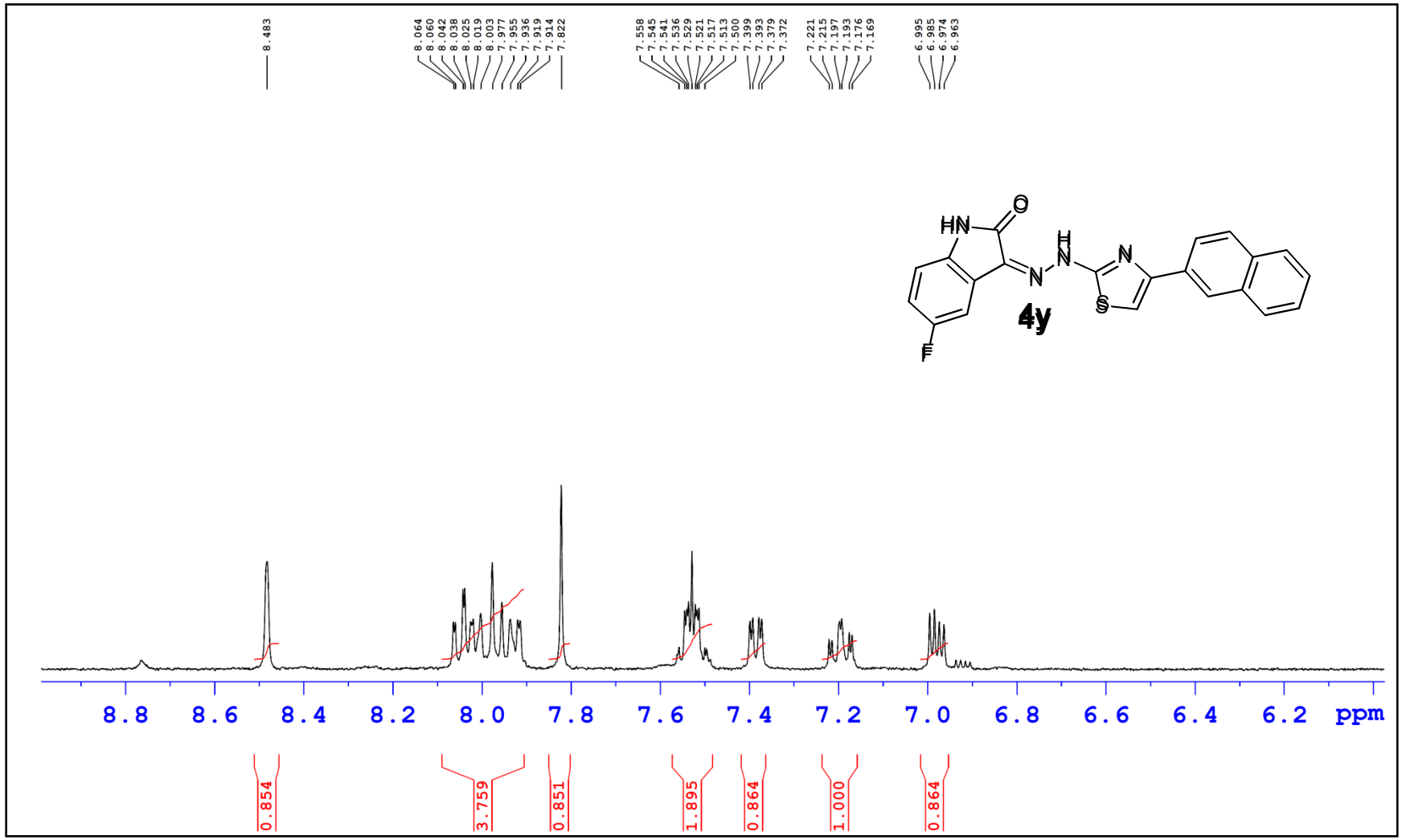


Figure S66Expanded ^{1}H NMR spectrum of 4y.

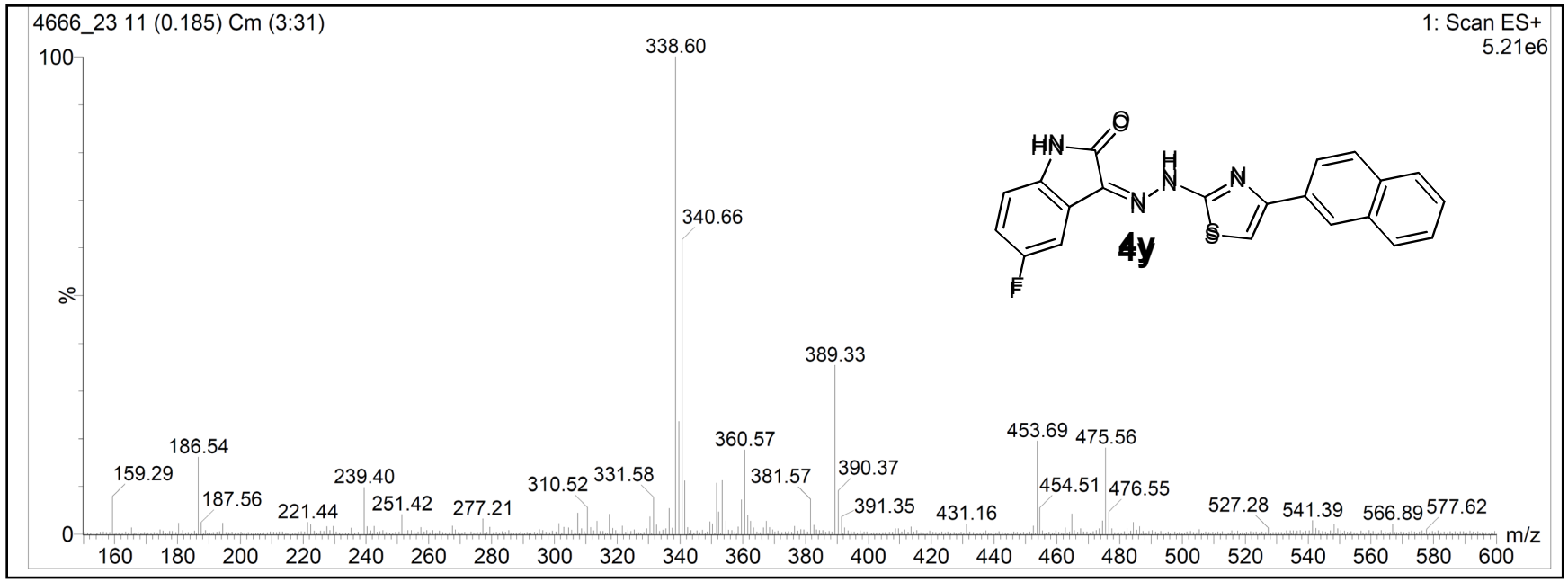
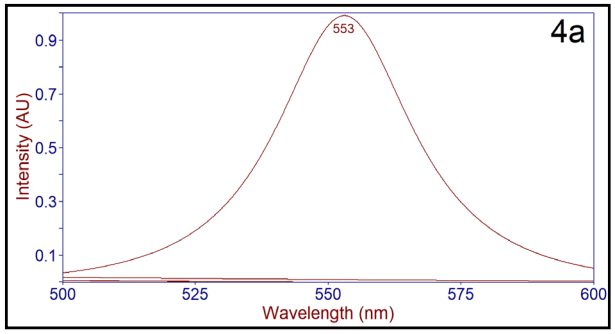
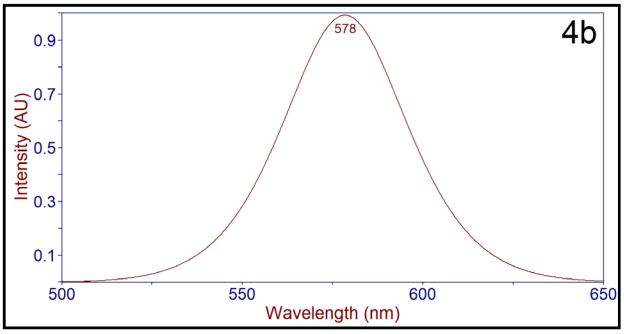
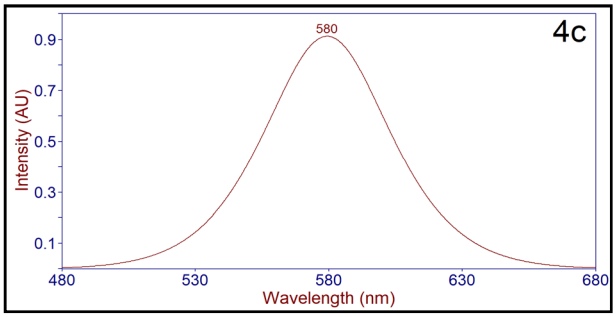
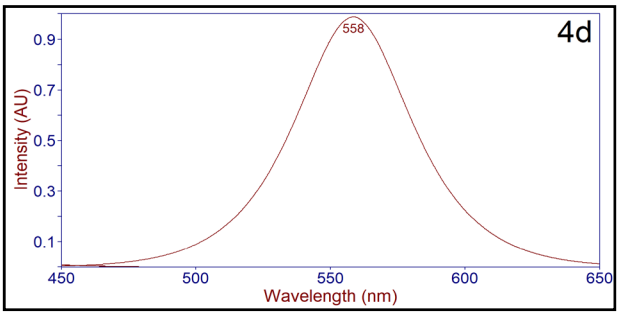


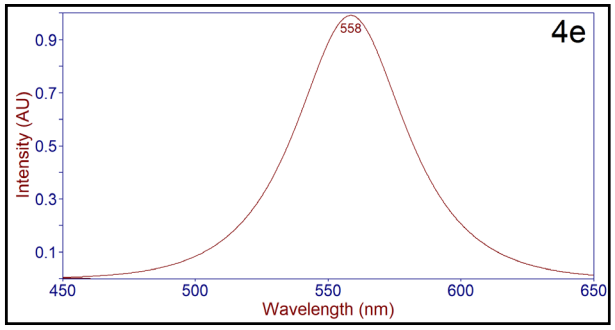
Figure S67 Mass spectrum of 4y.

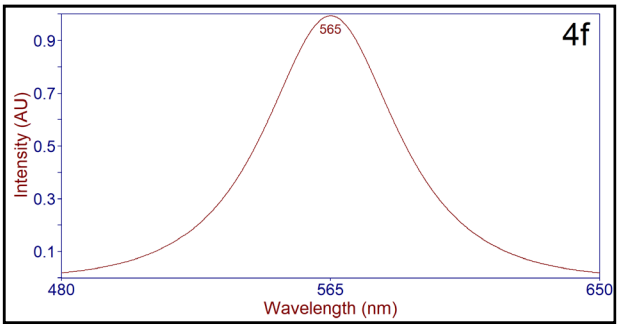

4a
553
Intensity (AU)
0.9
0.7
0.5
0.3
0.1
500
525
550
575
600
Wavelength (nm)

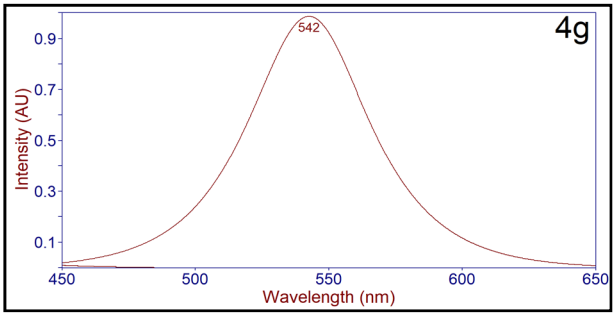

4b
578
Intensity (AU)
0.9
0.7
0.5
0.3
0.1
500
550
600
650
Wavelength (nm)

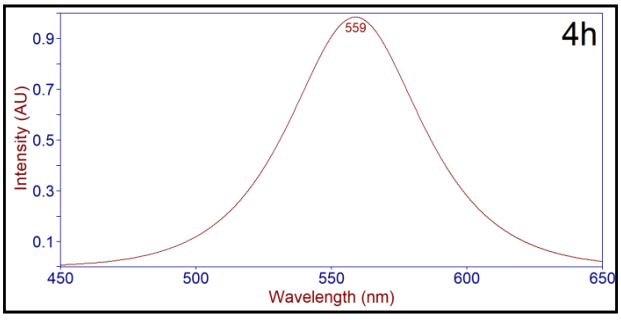

4c
580
Intensity (AU)
0.9
0.7
0.5
0.3
0.1
480
530
580
630
680
Wavelength (nm)

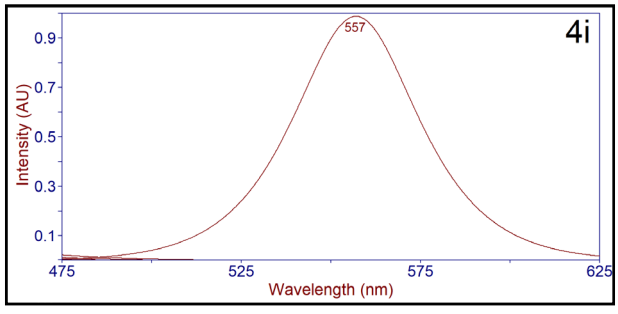

4d
558
Intensity (AU)
0.9
0.7
0.5
0.3
0.1
450
500
550
600
650
Wavelength (nm)

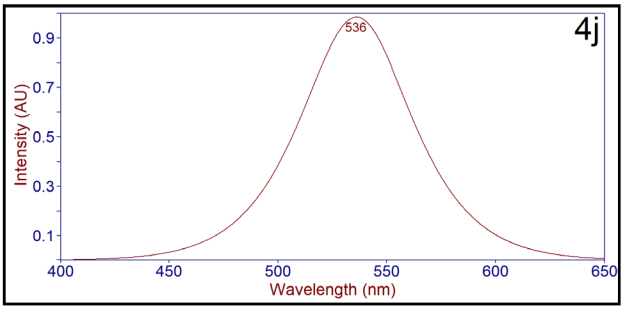

4e
558
Intensity (AU)
0.9
0.7
0.5
0.3
0.1
450
500
550
600
650
Wavelength (nm)


4f
565
Intensity (AU)
0.9
0.7
0.5
0.3
0.1
480
565
650
Wavelength (nm)


4g
542
Intensity (AU)
0.9
0.7
0.5
0.3
0.1
450
500
550
600
650
Wavelength (nm)


4h
559
Intensity (AU)
0.9
0.7
0.5
0.3
0.1
450
500
550
600
650
Wavelength (nm)


4i
557
Intensity (AU)
0.9
0.7
0.5
0.3
0.1
475
525
575
625
Wavelength (nm)


4j
536
Intensity (AU)
0.9
0.7
0.5
0.3
0.1
400
450
500
550
600
650
Wavelength (nm)

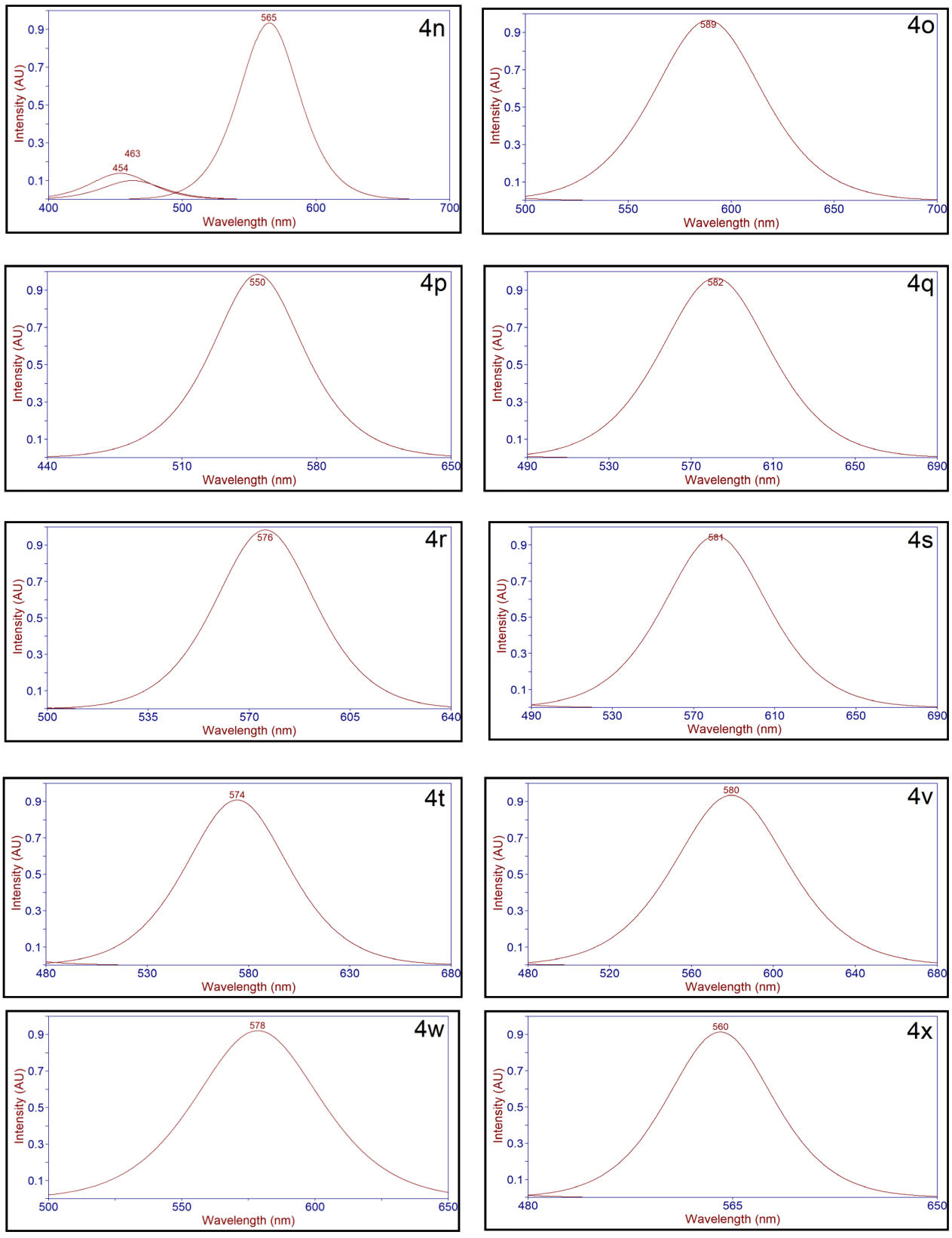
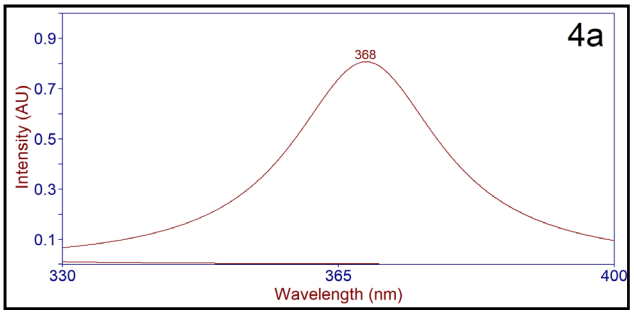
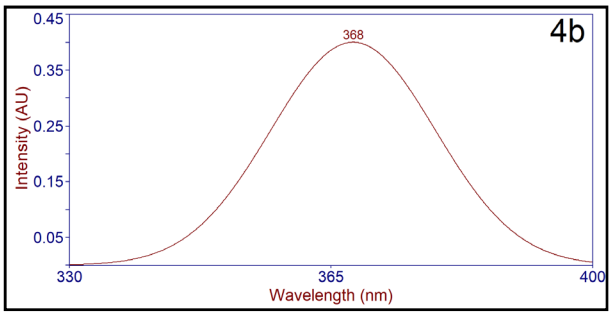
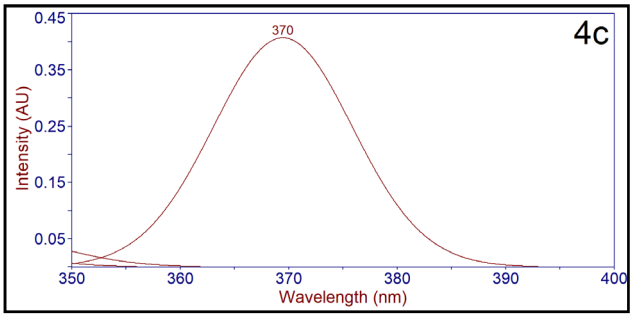
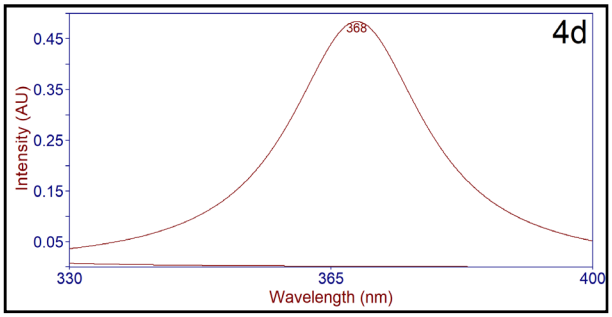


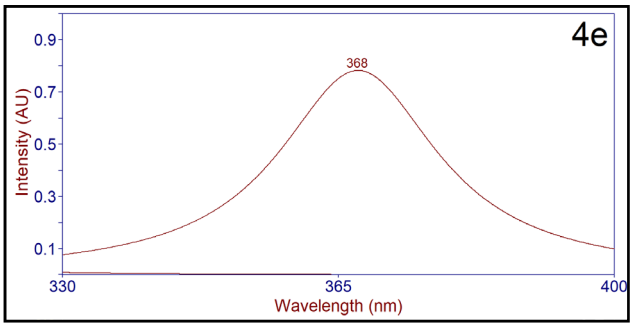
Figure S68. Deconvoluted solid state emission spectra of **4a-4j, 4n-4t & 4v-4x.**

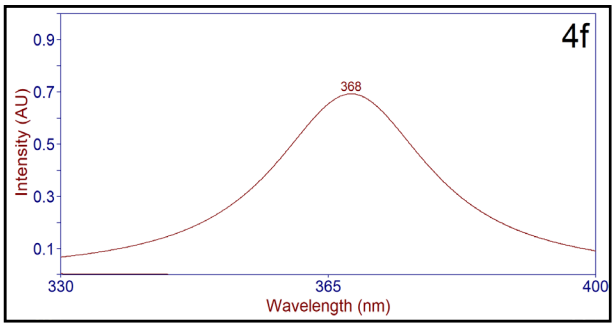

4a
368
Intensity (AU)
Wavelength (nm)

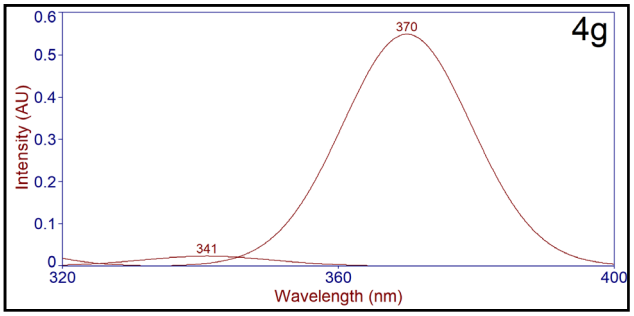

4b
368
Intensity (AU)
Wavelength (nm)

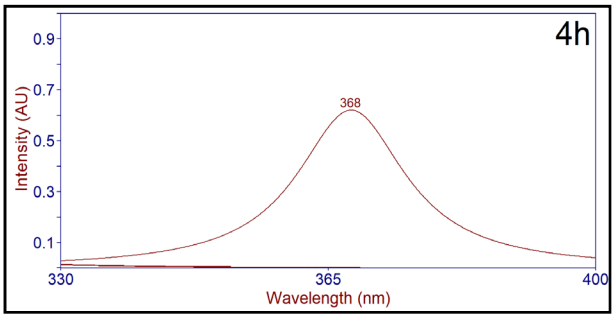

4c
370
Intensity (AU)
Wavelength (nm)

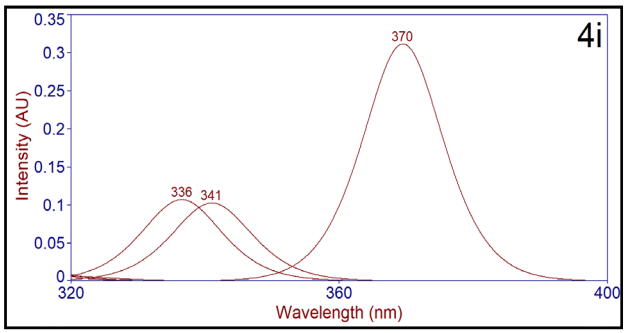

4d
368
Intensity (AU)
Wavelength (nm)

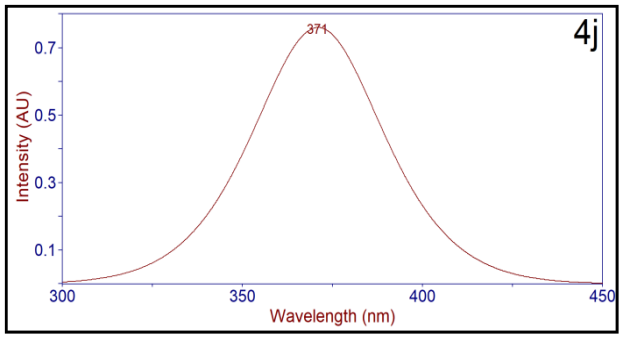

4e
368
Intensity (AU)
Wavelength (nm)


4f
368
Intensity (AU)
Wavelength (nm)


4g
370
341
Intensity (AU)
Wavelength (nm)


4h
368
Intensity (AU)
Wavelength (nm)


4i
370
336
341
Intensity (AU)
Wavelength (nm)


4j
371
Intensity (AU)
Wavelength (nm)

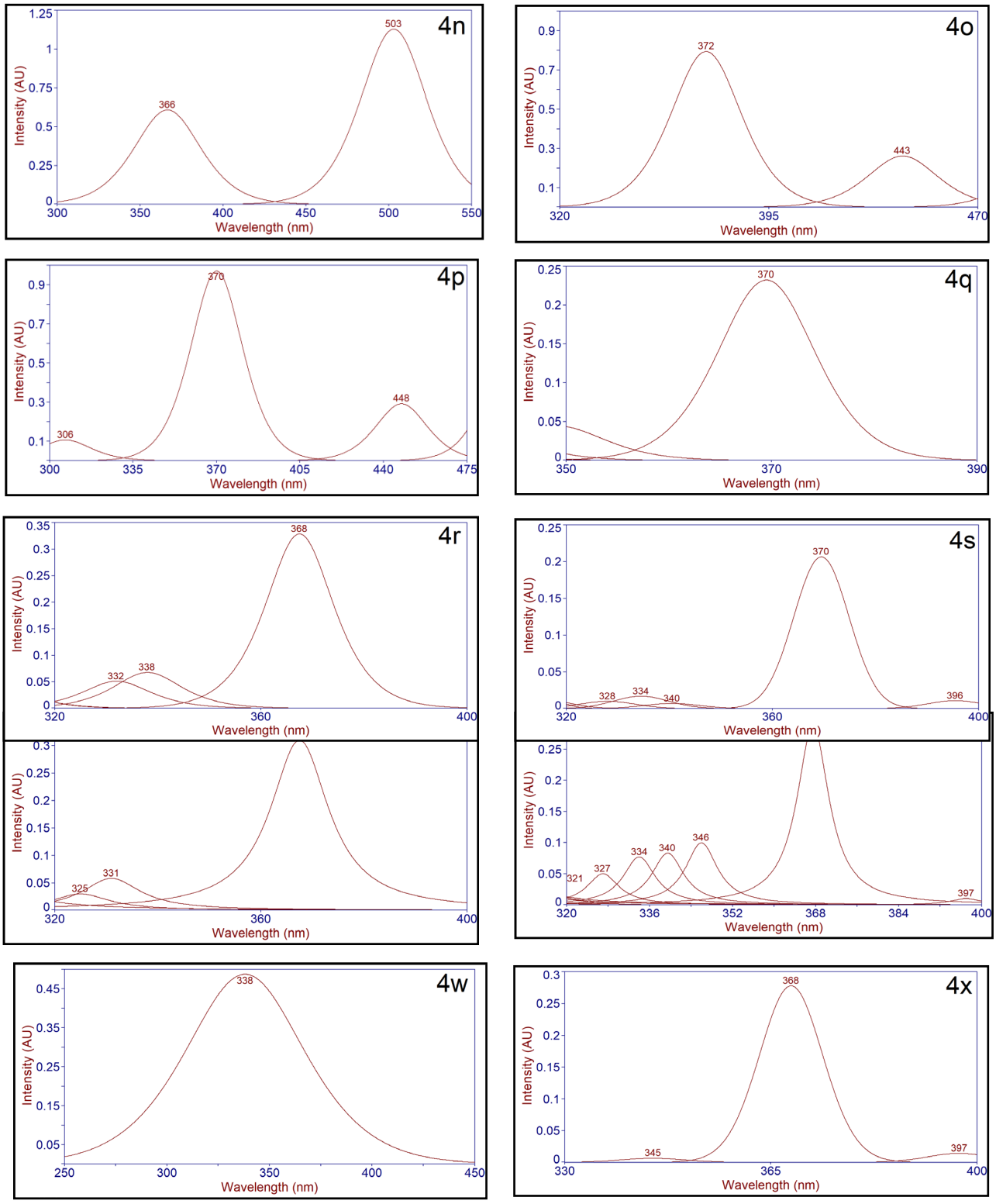
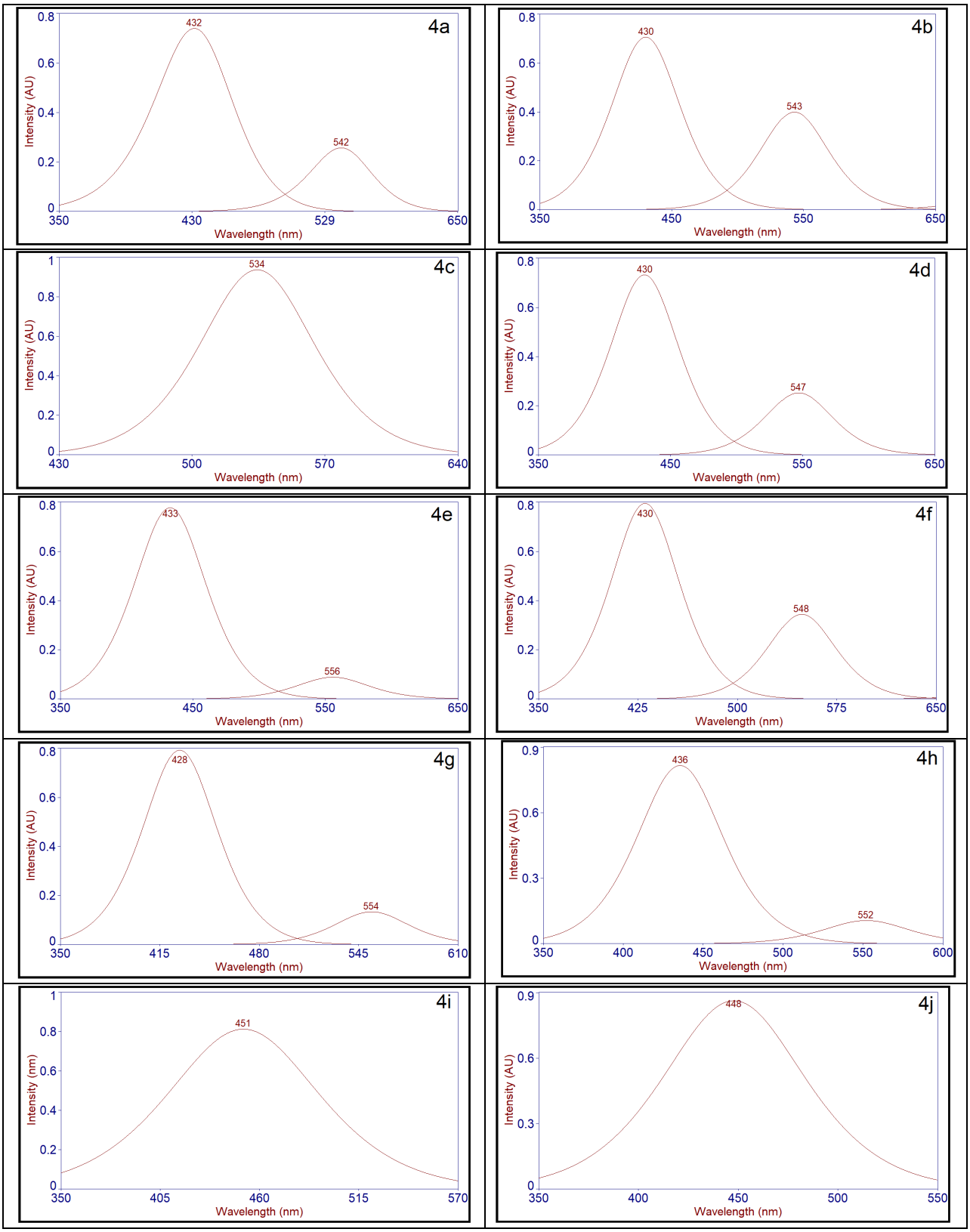


Figure S69. Deconvoluted solid state excitation spectra of **4a-4j, 4n-4t** & **4v-4x.**


4a
Intensity (AU)
Wavelength (nm)
0.8
0.6
0.4
0.2
0
350
430
529
650
432
542
4b
Intensity (AU)
Wavelength (nm)
0.8
0.6
0.4
0.2
0
350
450
550
650
430
543
4c
Intensity (AU)
Wavelength (nm)
1
0.8
0.6
0.4
0.2
0
430
500
570
640
534
4d
Intensity (AU)
Wavelength (nm)
0.8
0.6
0.4
0.2
0
350
450
550
650
430
547
4e
Intensity (AU)
Wavelength (nm)
0.8
0.6
0.4
0.2
0
350
450
550
650
433
556
4f
Intensity (AU)
Wavelength (nm)
0.8
0.6
0.4
0.2
0
350
425
500
575
650
430
548
4g
Intensity (AU)
Wavelength (nm)
0.8
0.6
0.4
0.2
0
350
415
480
545
610
428
554
4h
Intensity (AU)
Wavelength (nm)
0.9
0.6
0.3
0
350
400
450
500
550
600
436
552
4i
Intensity (nm)
Wavelength (nm)
1
0.8
0.6
0.4
0.2
0
350
405
460
515
570
451
4j
Intensity (AU)
Wavelength (nm)
0.9
0.6
0.3
0
350
400
450
500
550
448

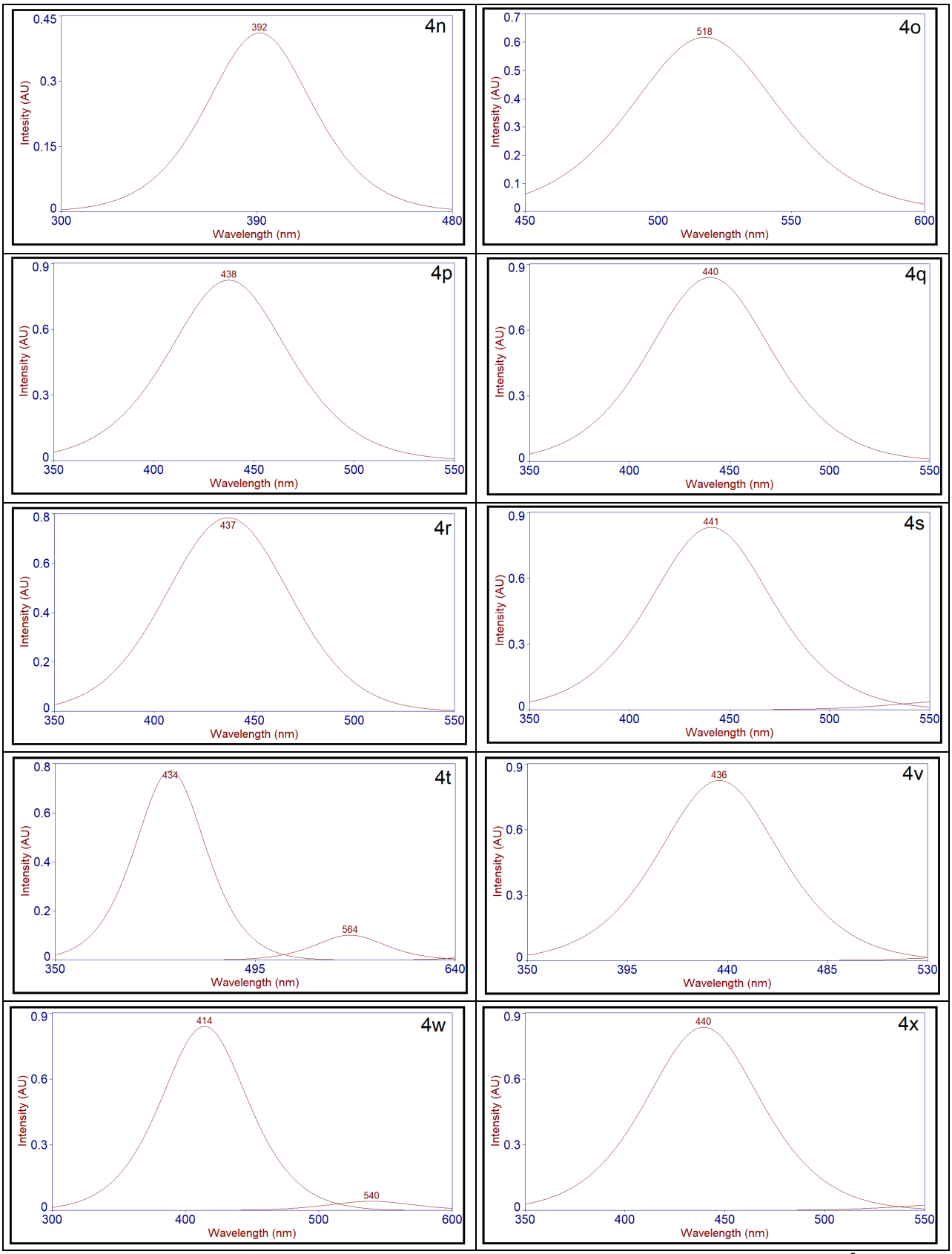
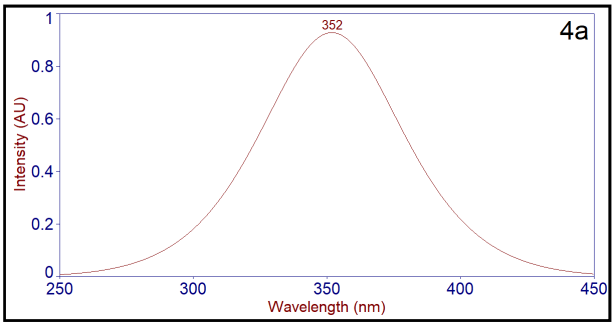
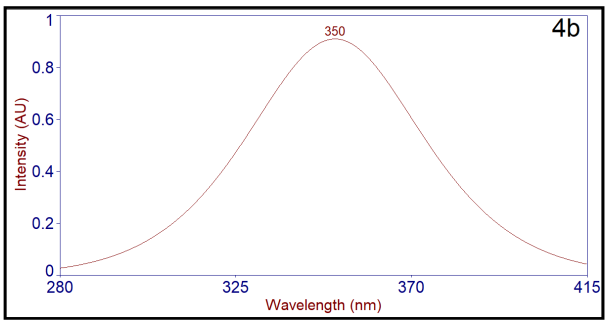
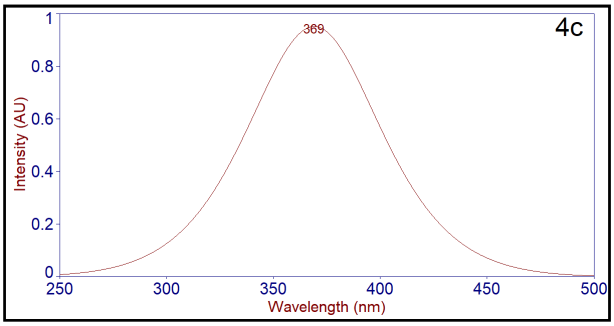
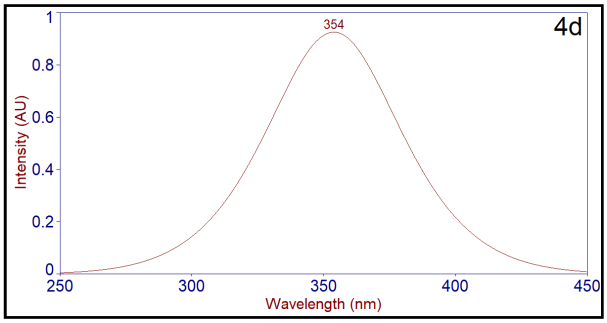


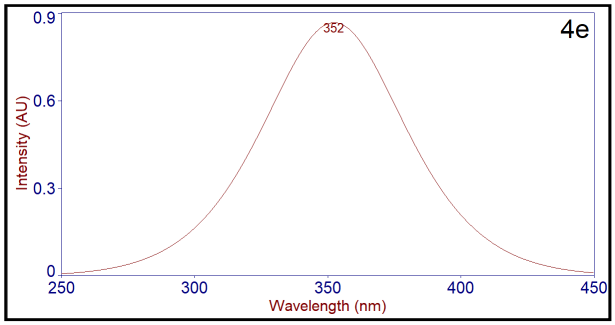
Figure S70. Deconvoluted emission spectra of **4a-4j, 4n-4t** & **4v-4x** in DMSO (1.0×10^{-5} M)

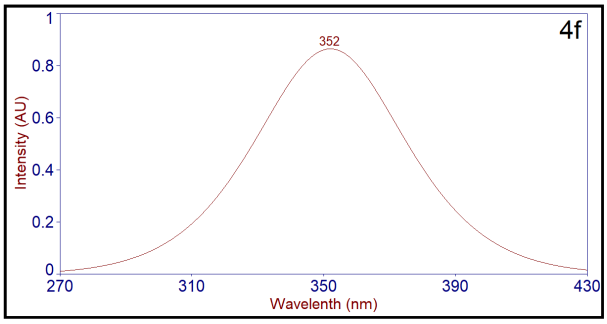

4a
352
Intensity (AU)
Wavelength (nm)

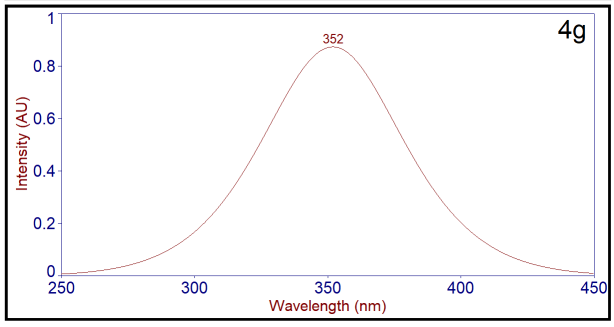

4b
350
Intensity (AU)
Wavelength (nm)

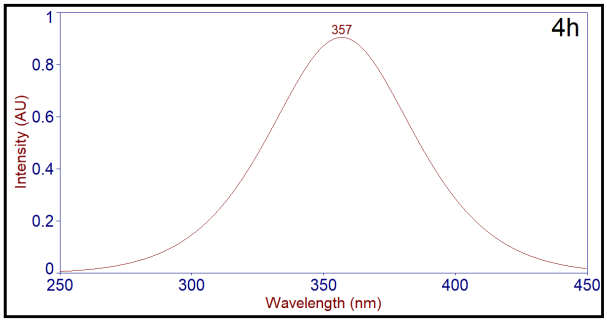

4c
369
Intensity (AU)
Wavelength (nm)

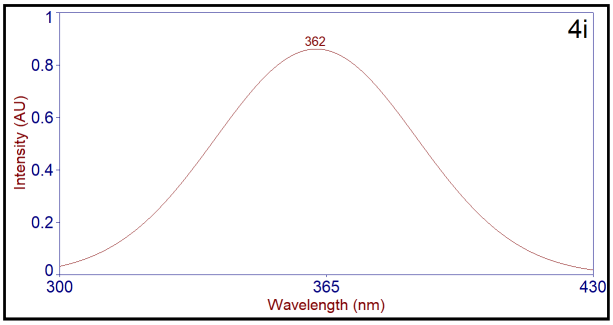

4d
354
Intensity (AU)
Wavelength (nm)

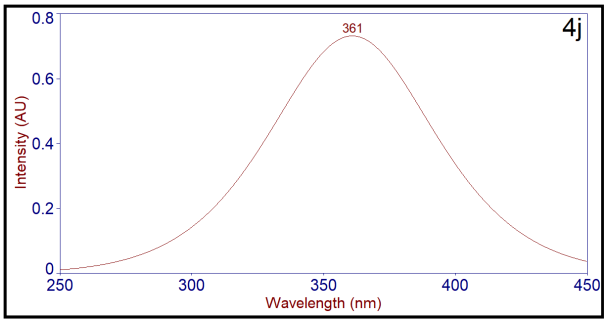

4e
352
Intensity (AU)
Wavelength (nm)


4f
352
Intensity (AU)
Wavelength (nm)


4g
352
Intensity (AU)
Wavelength (nm)


4h
357
Intensity (AU)
Wavelength (nm)


4i
362
Intensity (AU)
Wavelength (nm)


4j
361
Intensity (AU)
Wavelength (nm)

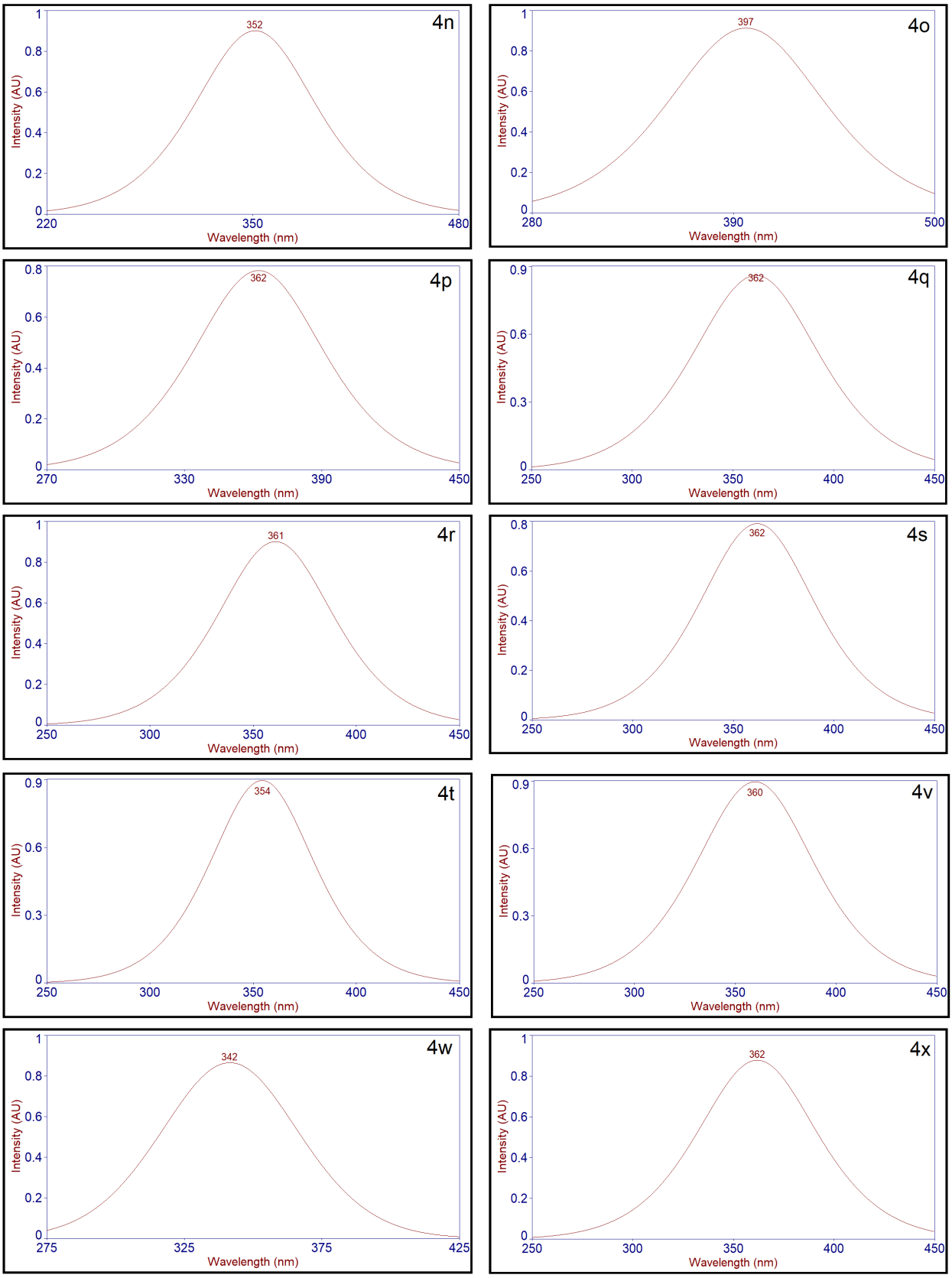


Figure S71. Deconvoluted absorption spectra of **4a-4j, 4n-4t** & **4v-4x** in DMSO ($1.0x10^{-5}$ M)

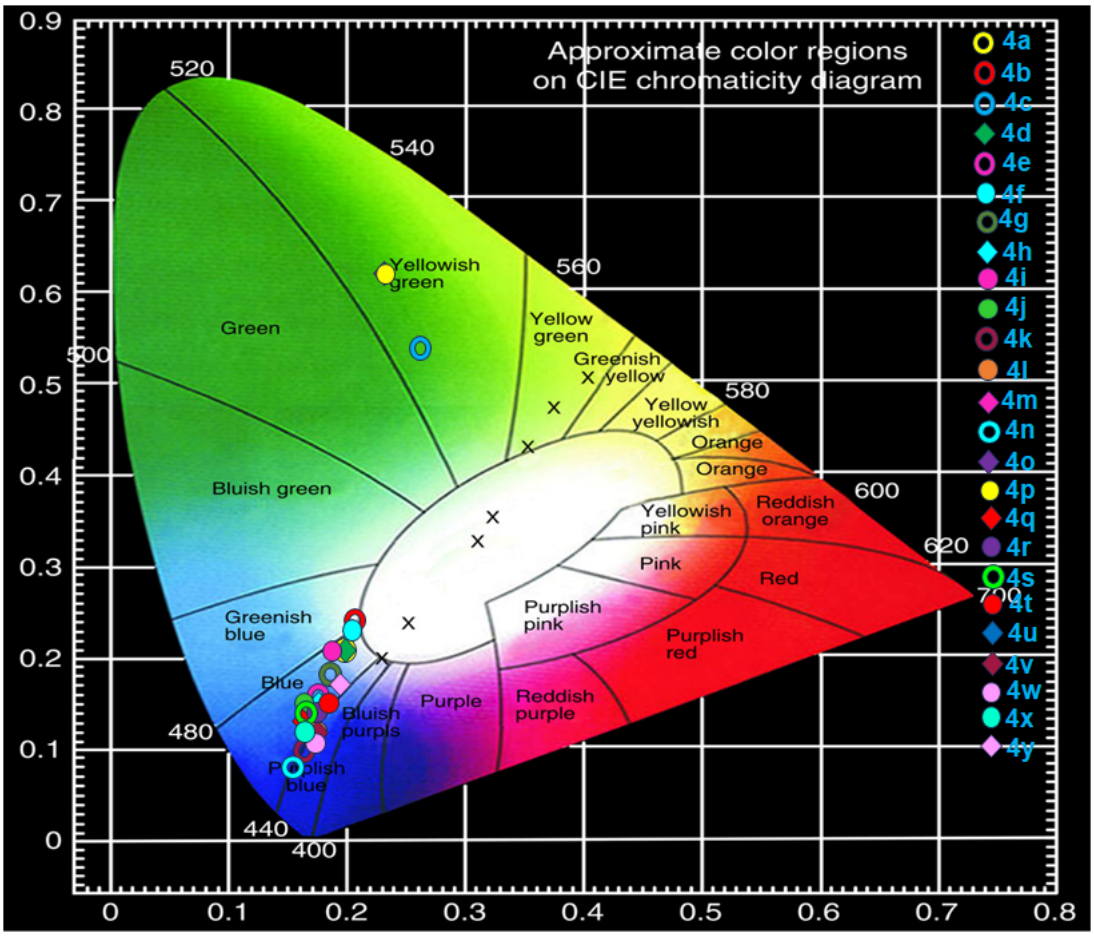


Figure S72. CIE chromaticity diagram of thiazolylhydrazonoindolin-2-ones (**4)** in the solution state.