Electronic Supplementary Material (ESI) for RSC Advances.

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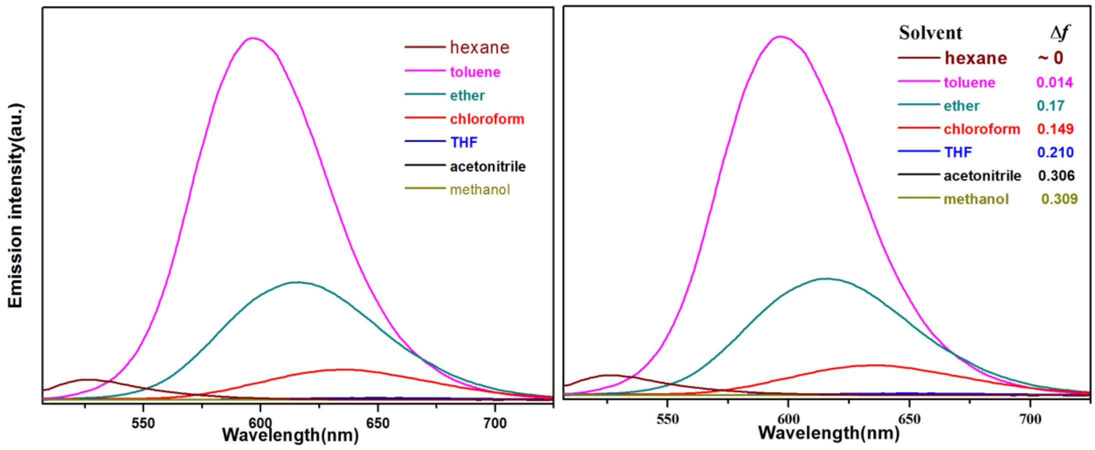


Fig. S1 Emission spectra of solutions of **TBMA** in solvents with different polarities (Δf). Solution concentration: 10 μM. Solutions were excited at their absorption maxima (Table S1).

Table S1. Optical Transitions of **TBMA** in Different Solvents[a]

Solvent	λ_{abs}(max)/nm	λ_{em}(max)/nm	Δv/cm^{-1}	Φ_F%
Hexane	498	527	1105	-
Toluene	505	596	3023	52.24
Ether	499	616	3806	17.41
Chloroform	503	637	4182	4.35
THF	500	649	4592	0.1817
Ethylacetate	499	650	4655	0.1710
Acetonitrile	497	-	-	-
MeOH	498	-	-	-

[a] ΦF = fluorescence quantum yield [estimated by using 1ug/ml RhB as standard (ΦF = 97%)].[46-48] Emission spectra were measured by exciting the solutions (10 μM) at their absorption maxima.

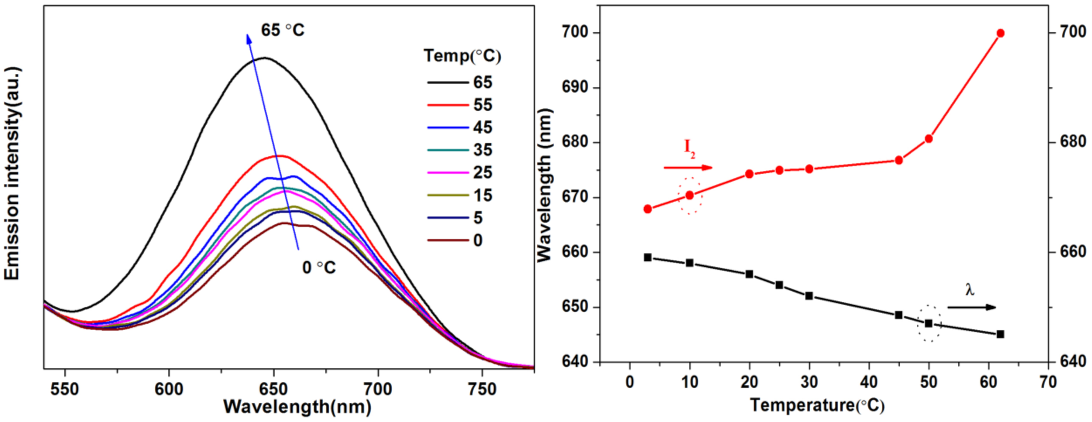


Fig. S2 (a) Temperature dependence of emission spectra of THF solution (10 μM) of **TBMA**. (b) Plots of maximum emission intensities (I, red solid lines) and wavelengths (λ, black dashed lines) of **TBMA** versus temperature. Excitation wavelength: 500 nm.

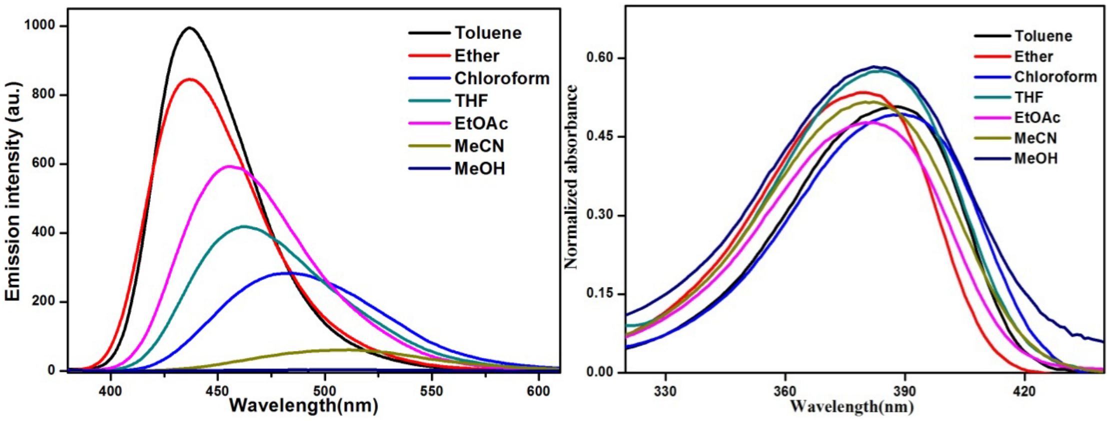


Fig. S3 (a) Emission spectra of solutions of **III** in solvents with different polarities (Δf). Solution concentration: 10 μM. Solutions were excited at their absorption maxima (cf., Table S1). (b) Normalized absorption spectra of **III** in different solvents.

Table S2. Optical Transitions of **III** in Different Solvents[a]

Solvent	λ_{abs}(max)/nm	λ_{em}(max)/nm	Δv/cm^{-1}	Φ_F%
Toluene	388	437	2890	5.56
Ether	379	437	3502	9.9856
Chloroform	389	484	5046	2.5081
THF	384	462	4397	3.4518
Ethylacetate	380	455	4338	4.7520
Acetonitrile	382	511	6609	0.8319
MeOH	383	-	-	-

[a] Φ_F = fluorescence quantum yield [estimated by using 0.1 M sulphuric acid as standard (ΦF = 54%)]. Emission spectra were measured by exciting the solutions (10 μM) at their absorption maxima.

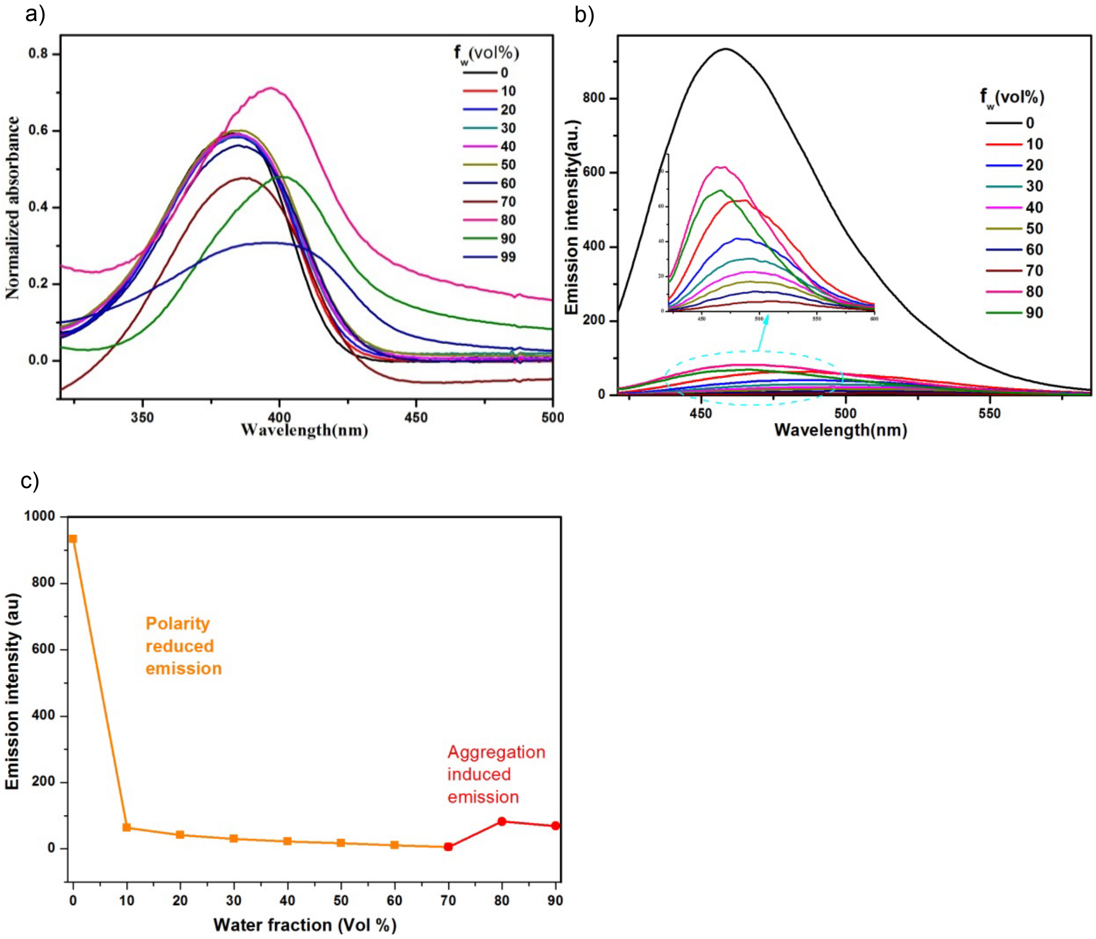


Fig. S4 (a) Normalized absorption spectra of **III** in THF/water mixture. (b) Emission spectra of **TBMA** in the THF/water mixtures. (c) Plot of maximum emission intensity of **III** versus water fraction in the aqueous mixture. Inset: fluorescent images of **III** in THF/water mixtures with different water fractions. Solution concentration: 10μM. Excitation wavelength: 390nm.

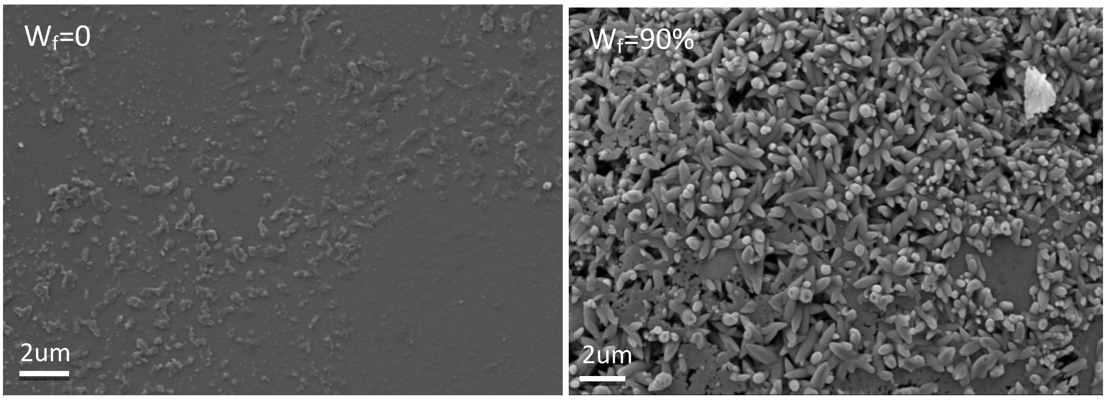


Fig. S5 SEM image of **III** in the different the water fraction (f_w).

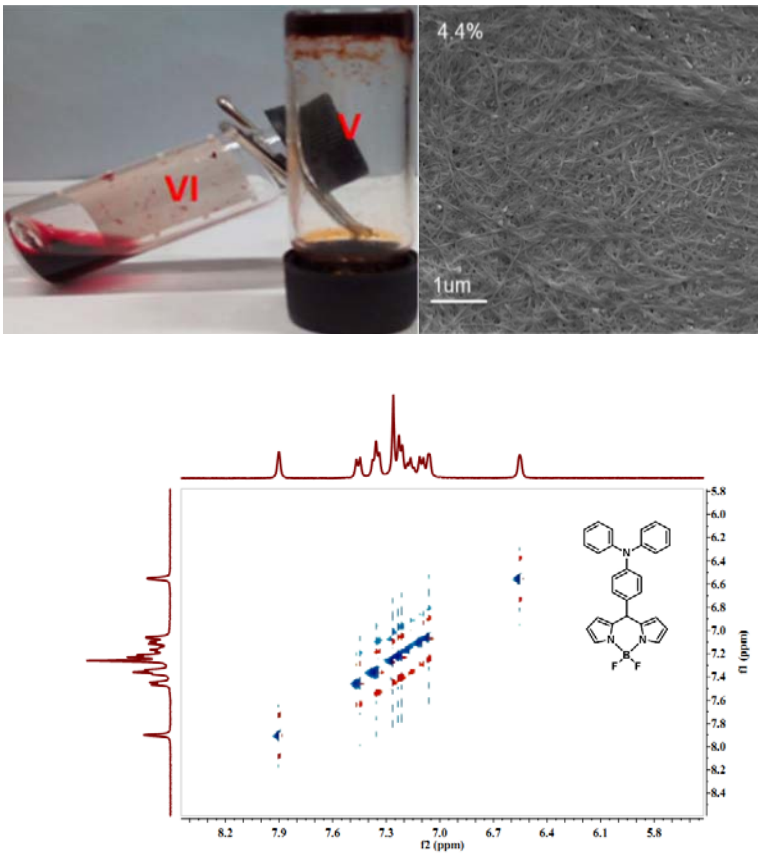


Fig. S6 (a)The photographs of **TBMA** and **TB** in CH_3CH_2OH/CH_3CN (v/v = 9/1), the photograph (right) showing the SEM images of **TB** inCH_3CH_2OH/CH_3CN (v/v = 9/1) in 4.4%**.** (b) NOESY NMR spectrum (400 MHz, room temperature) of a solution of **TBMA** in $CDCl_3$.

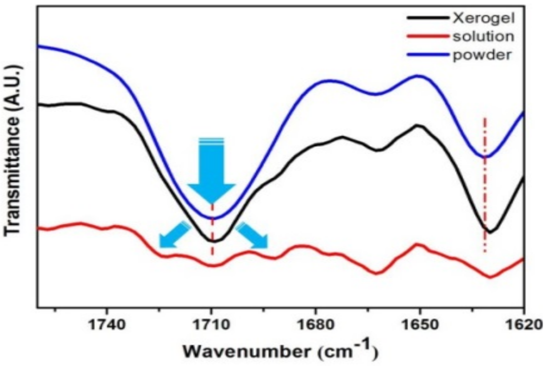


Fig. S7 FT-IR spectra of **TBMA** in different states (xerogel, solution, power).

Table S3. Optical Transitions of **TBMA** in Different Solvents[a]

Solvent	State	m (mg)
dichloromethane	S[a]	10.00
THF	S	10.00
ethanol	P[b]	10.00
chloroform	S	10.00
toluene	P	10.00
ethyl acetate	S	10.00
n-hexane	I[c]	10.00

Table S4. The gel formation ability of **TBMA** in selected mixed solvents.

Mixture solvent	State	CGC[d]	T_g[°C][e]
Acetonitrile**:**Ethanol(1:1)	P	-	-
Acetonitrile**:**Ethanol(1:2)	P	-	-
Acetonitrile**:**Ethanol(1:4)	P	-	-
Acetonitrile**:**Ethanol(1:8)	G	4.4%	0
Acetonitrile**:**Ethanol(1:9)	G	4%	0
Acetonitrile**:**Toluene(1:8)	P	-	-

[a] S = soluble. [b] P = precipitate.

[c] I = insoluble. [d] CGC: critical gelation concentration.

[e] T_g: gel–sol dissociation temperature under CGC conditions.

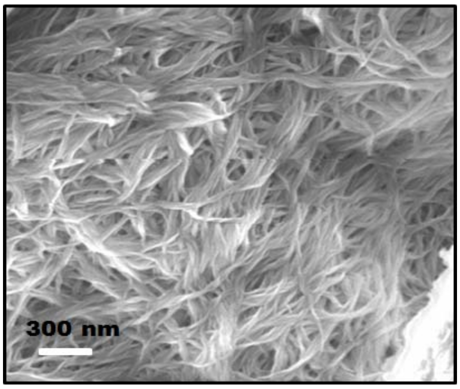


Fig. S8 The SEM images of xerogels of **V.**

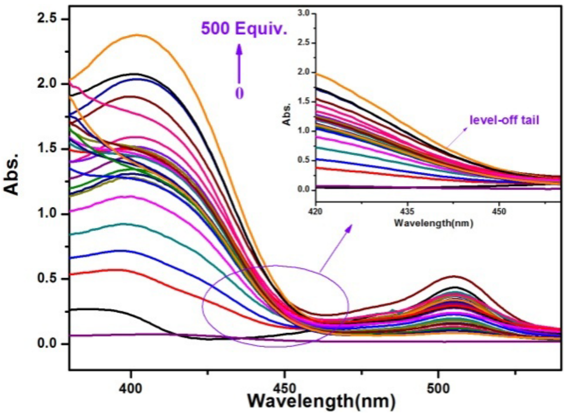


Fig. S9 Change in absorption spectra of compound **V** (10 μM) with the addition of PA in toluene. Inset: enlarge UV spectra of compound **V** (10 μM) with the addition of PA in toluene in the range of 420-460 nm.

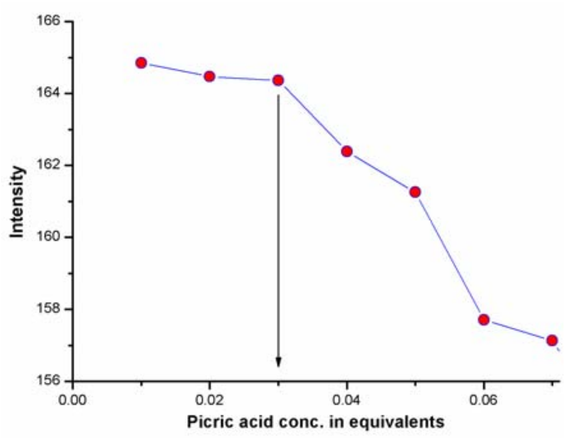


Fig. S10 The fluorescence intensity at 500 nm as a function of picric acid concentration in toluene.

To determine the detection limit, fluorescence titration of compound **V** in toluene with picric acid was carried out by adding aliquots of picric acid solution and the fluorescence intensity as a function of picric acid added was then plotted. From this graph the concentration at which there was a sharp change in the fluorescence intensity multiplied with the concentration of compound **V** gave the detection limit.

Equation used for calculating detection limit (DL):

$$\mathbf{DL= C_L \times C_T}$$

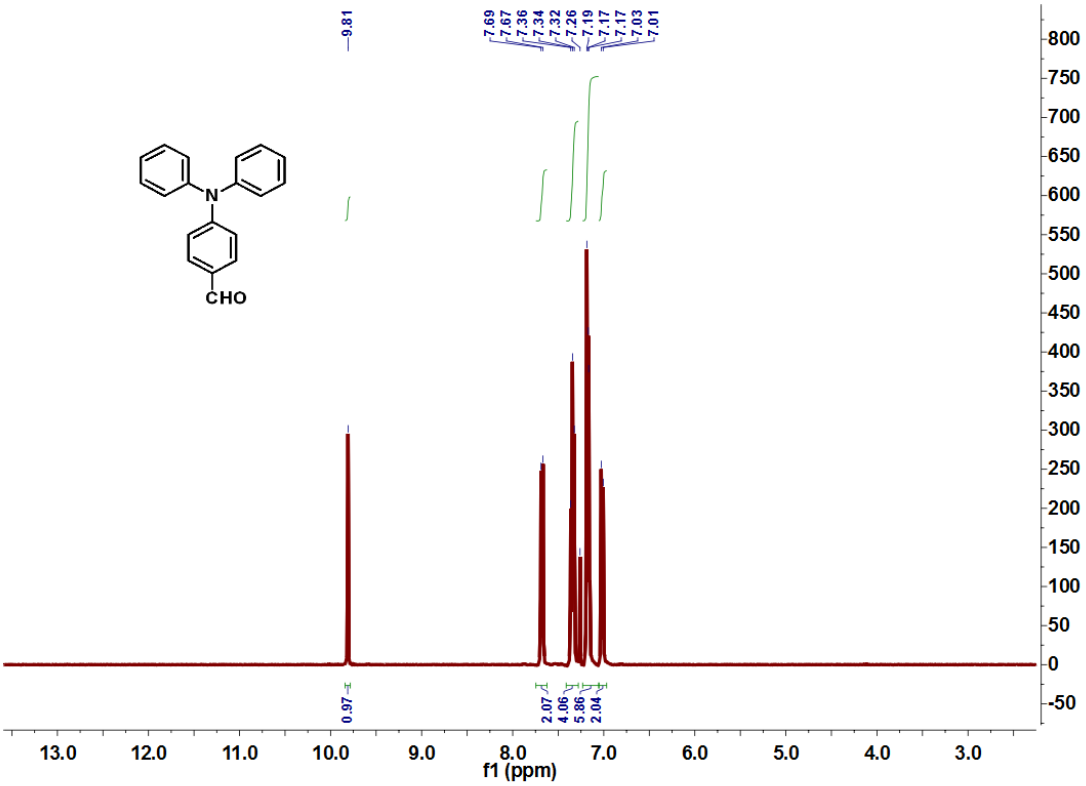
C_L = Conc. of **compound V**; **C_T**= Conc. of Titrant at which change observed.

C_L $=1 \times 10^{-6}$ $M \cdot L^{-1}$**;** **C_T**= 0.03 equiv

Thus; detection limit for picric acid

D_L $= 1 \times 10^{-6}\ M \cdot L^{-1} \times 0.03$ equiv

$= 3 \times 10^{-8}\ M \cdot L^{-1}$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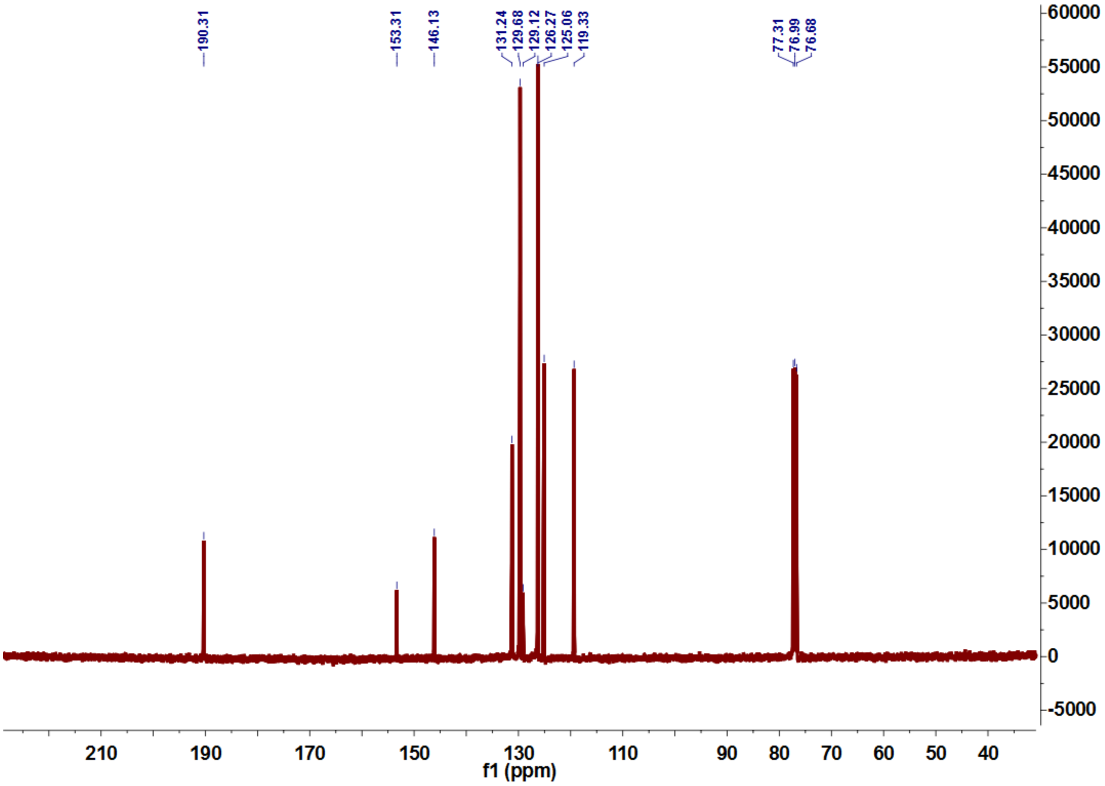
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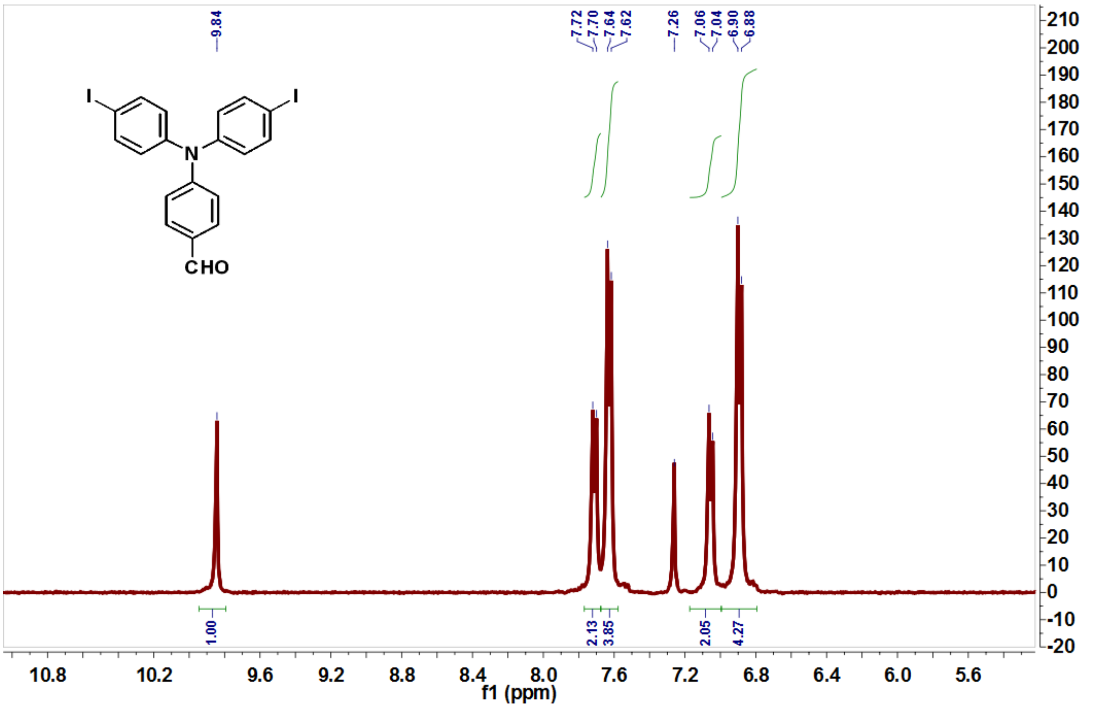
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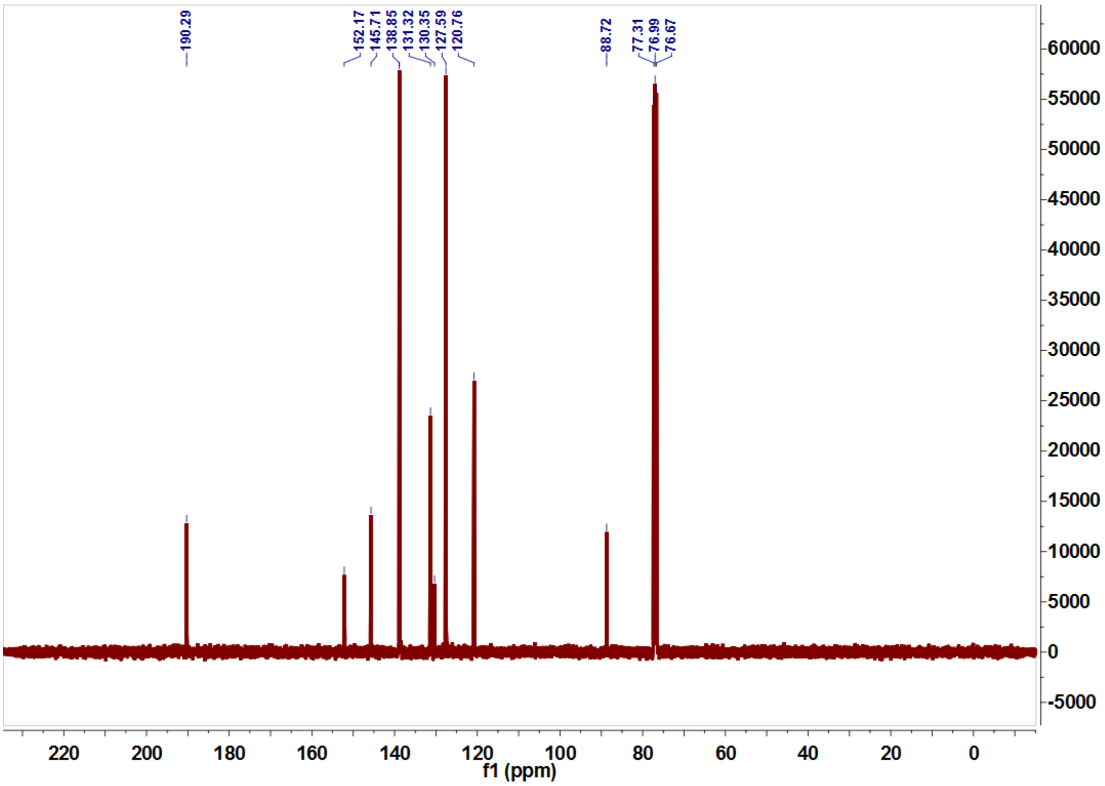
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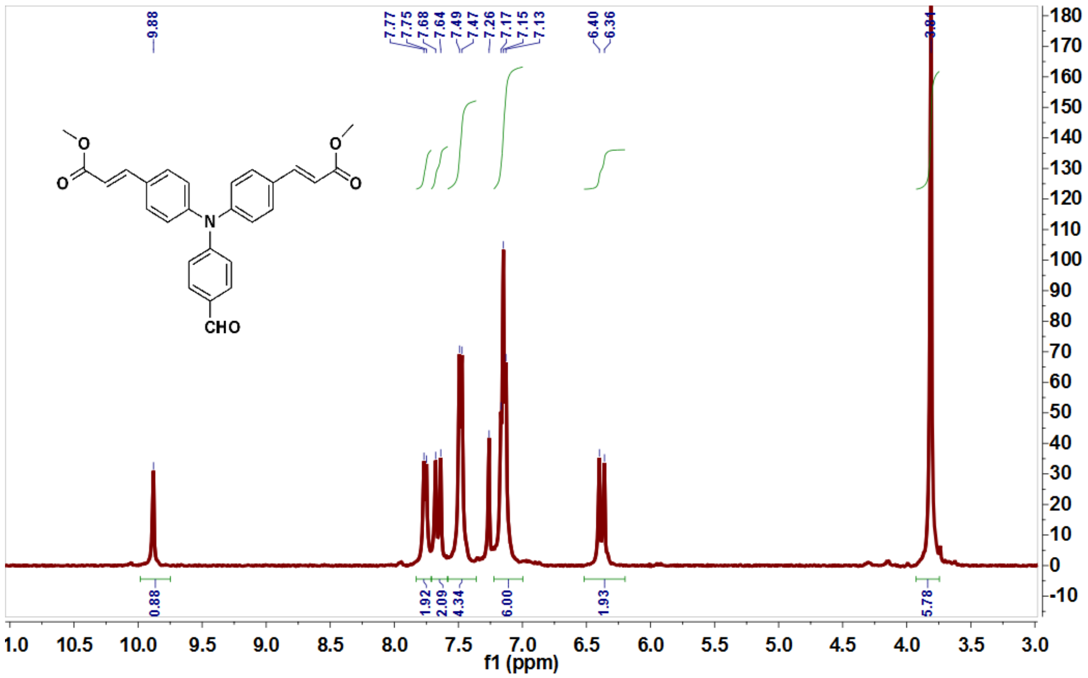
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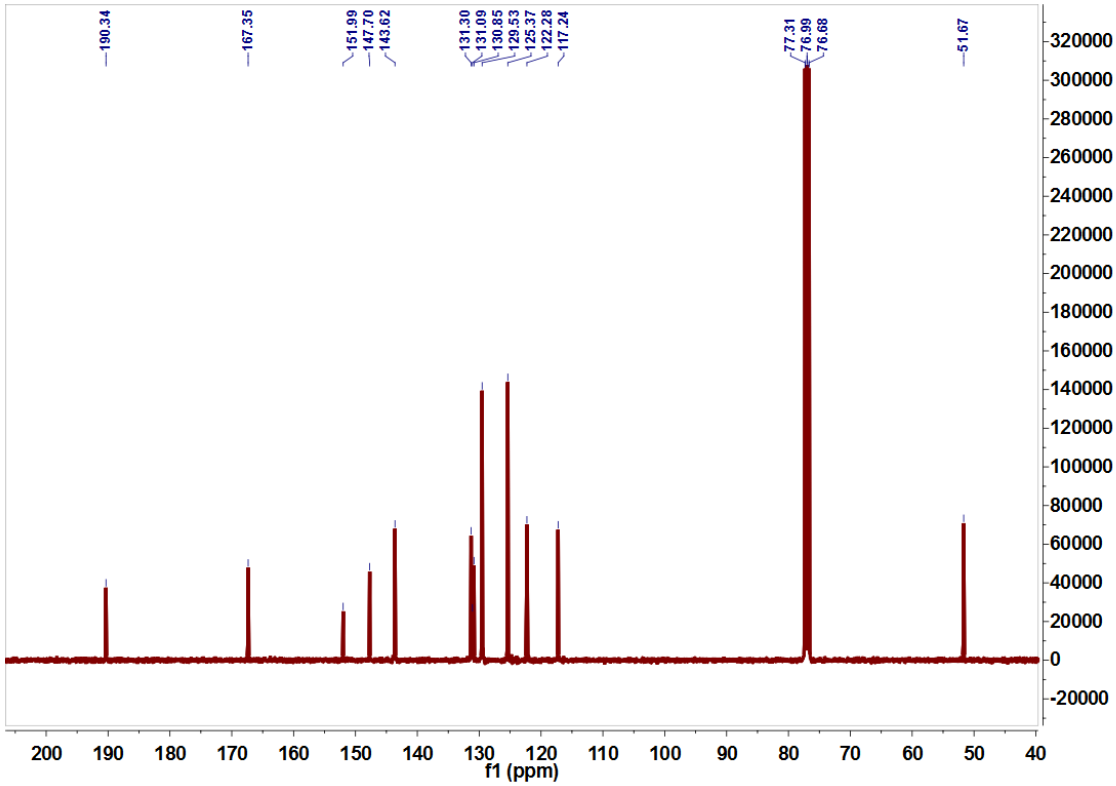
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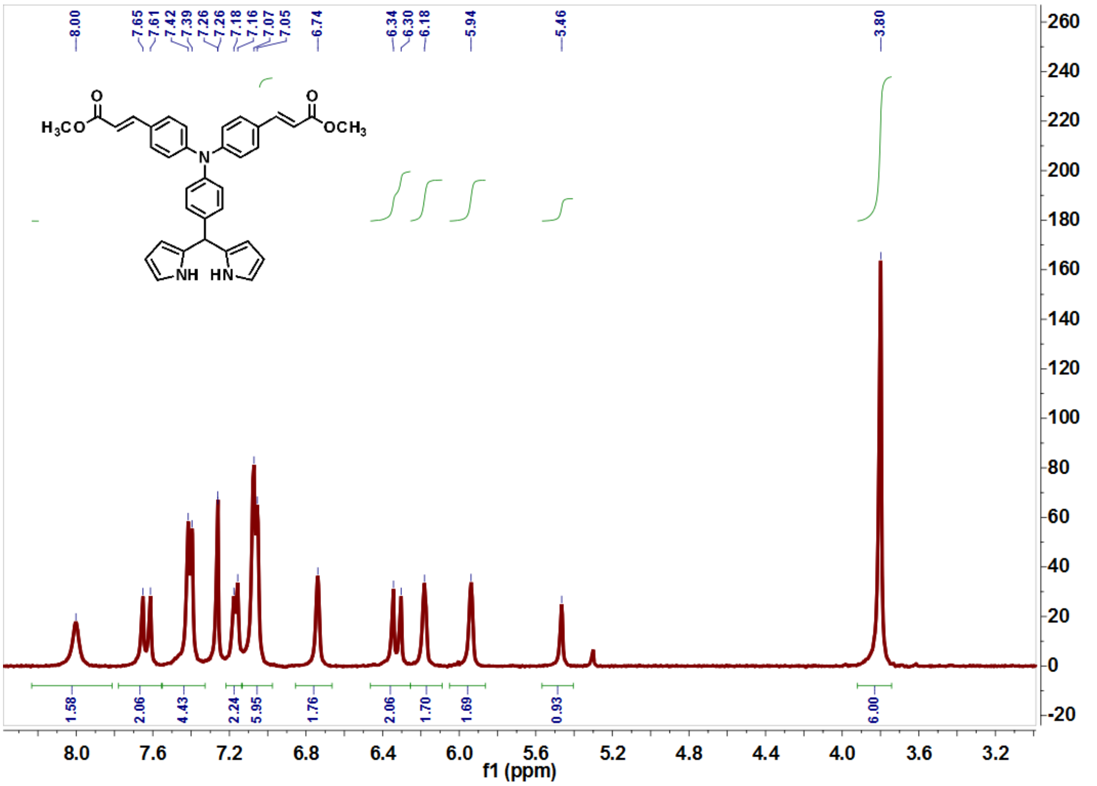
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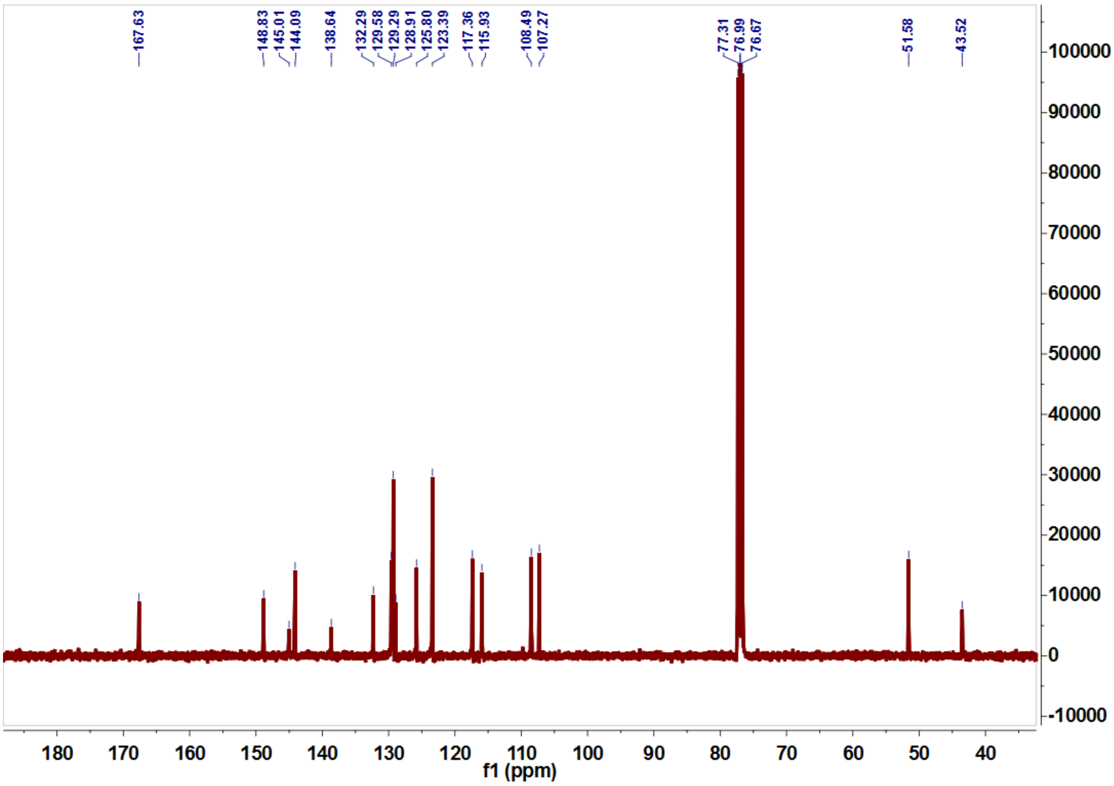
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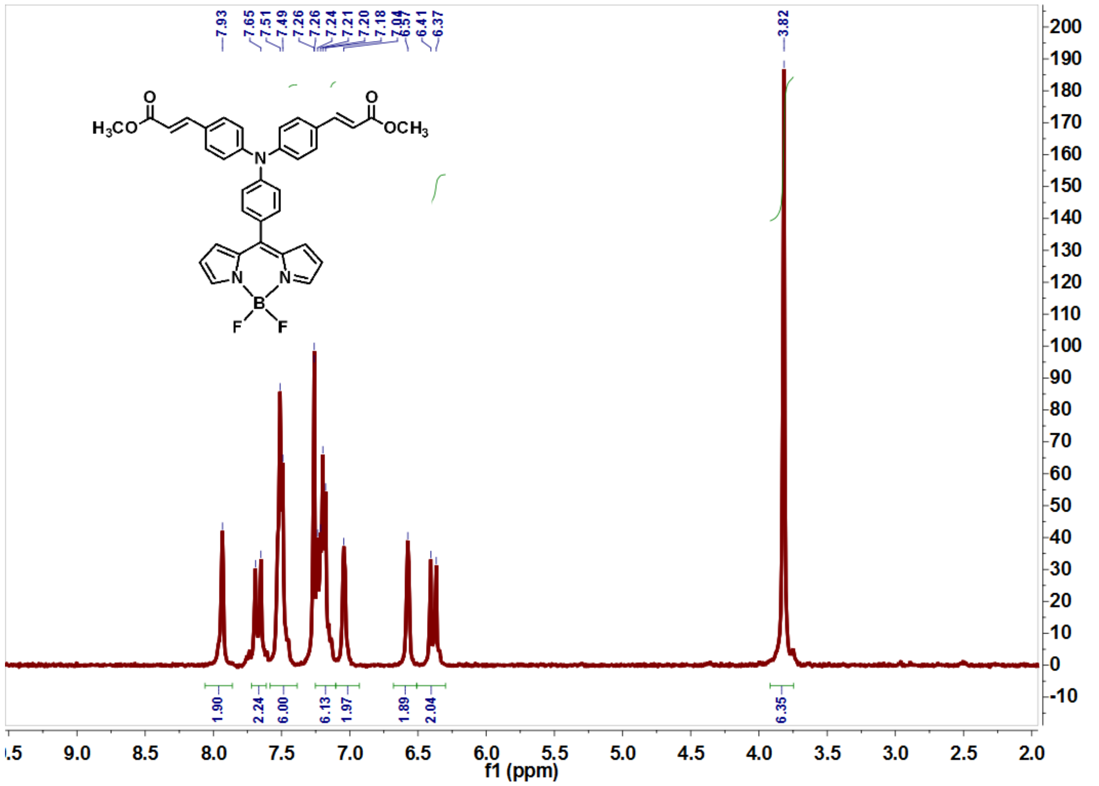
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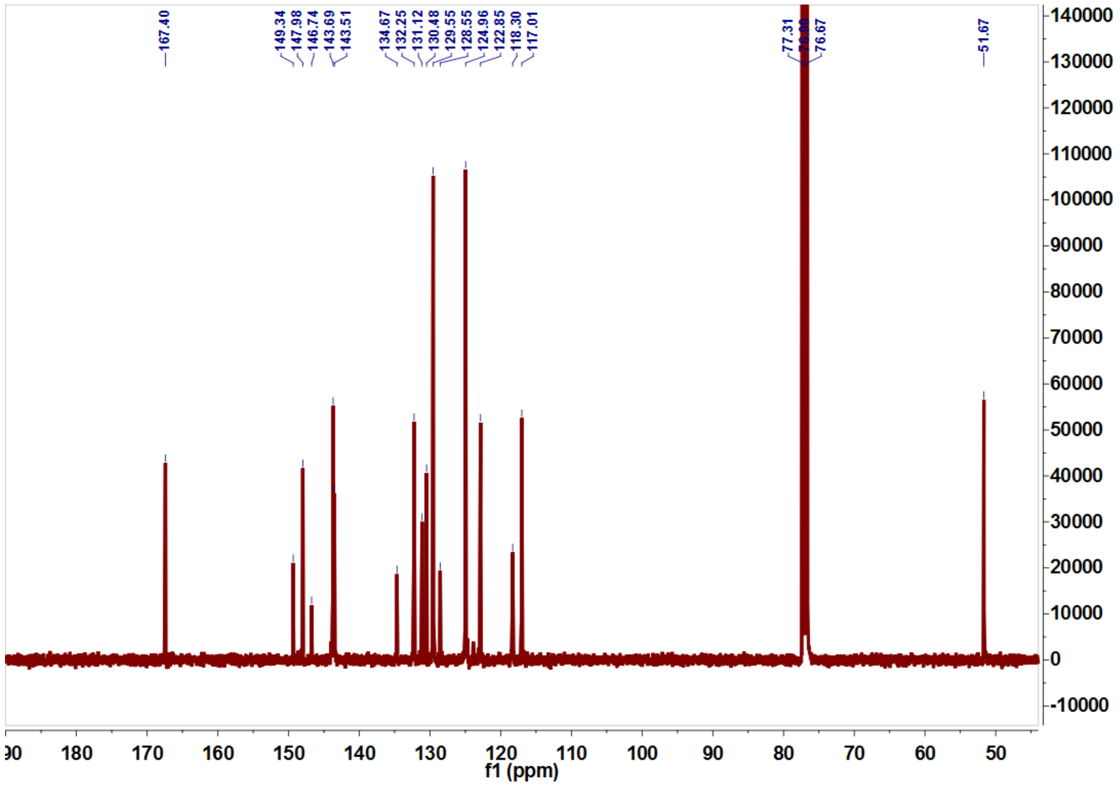
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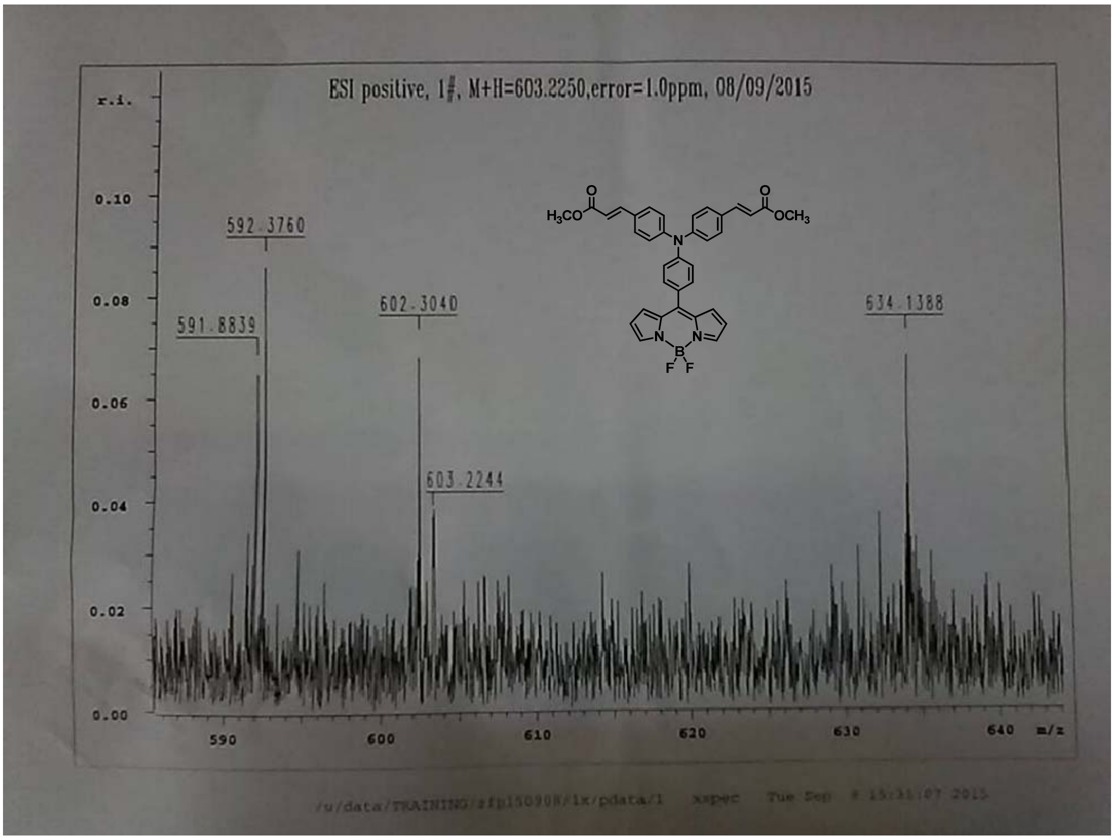
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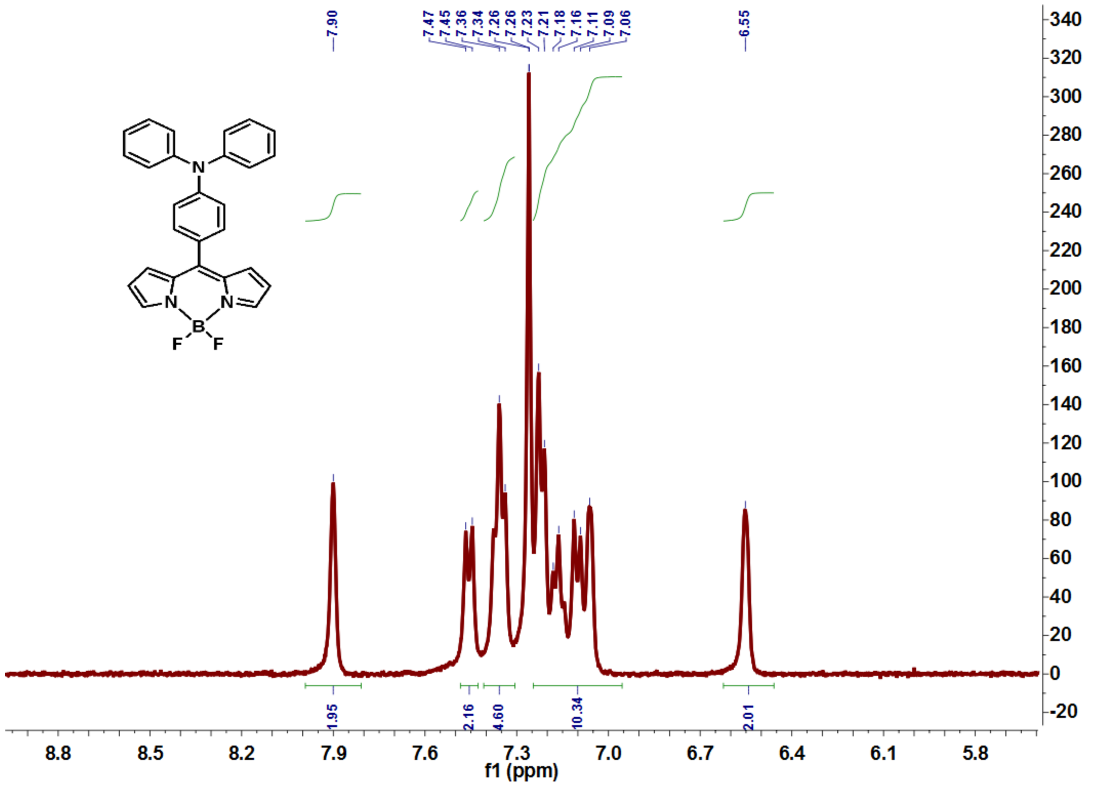
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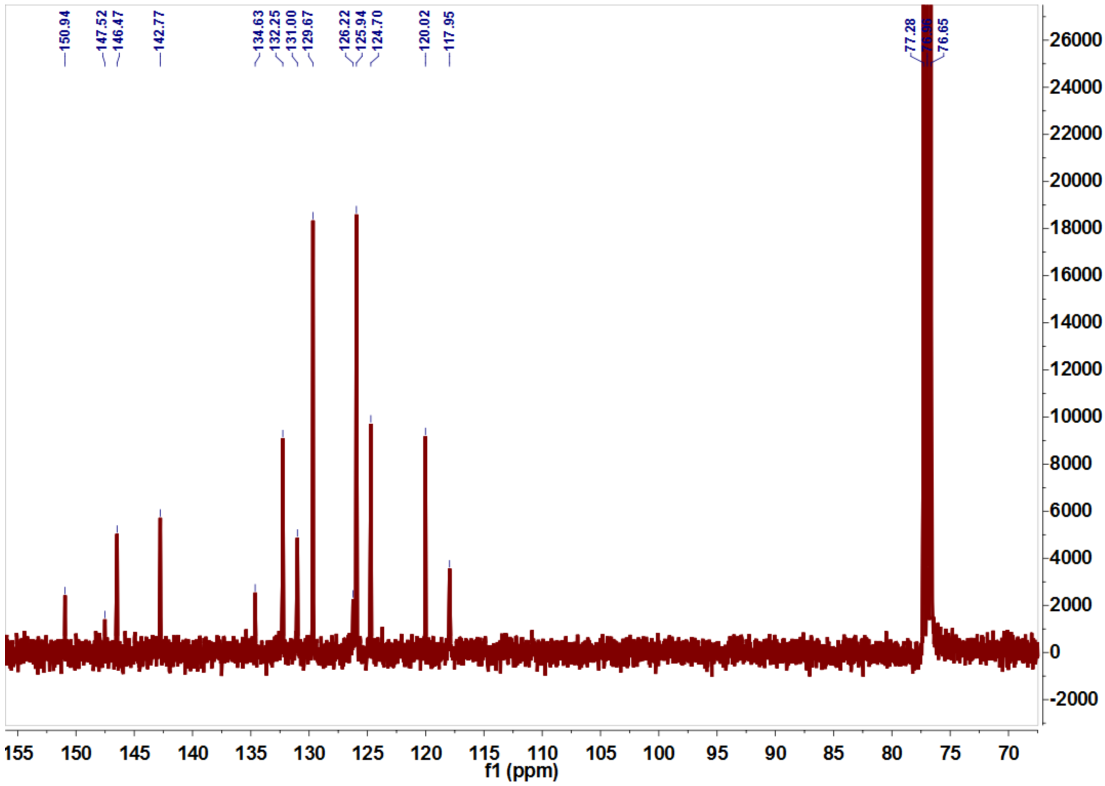
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f1 (ppm)