Supplementary Information

Tandem Diels−Alder/Oxidation−Aromatization Reactions involving 2-Styrylchromones and Arynes

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1. X-ray crystallographic data of compound **4a**

The structure of **4a** was determined by X-ray crystallographic analysis. The crystal was prepared from the solution of **4a** in mixed hexane/dichloromethane at ambient temperature. For more details, see CCDC 1832632, The Cambridge Crystallographic Data Center.

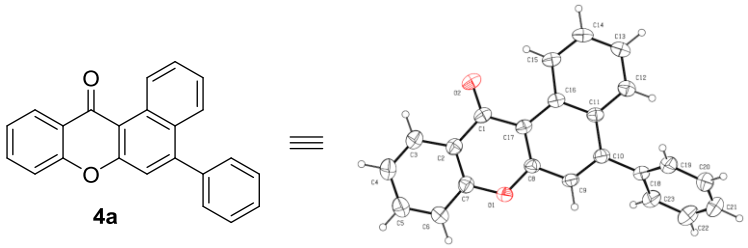


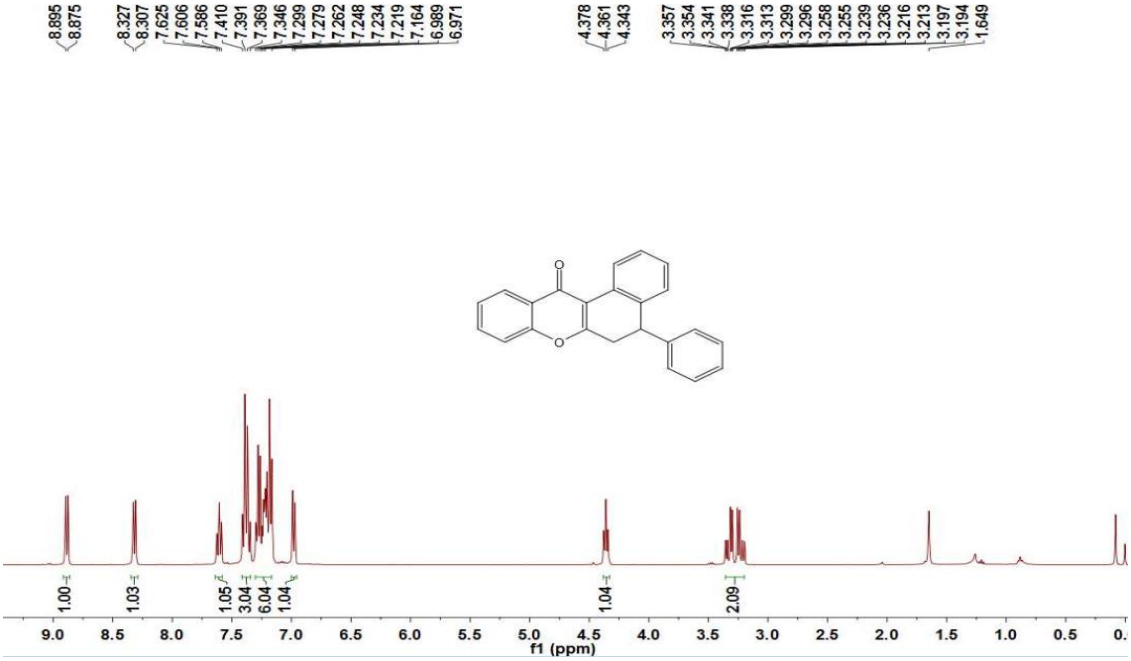
Figure S1. ORTEP diagram of **4a** (30% probability factor for the thermal ellipsoids).

Table 1 Crystal data and structure refinement for 170623_s3_wz (4a).

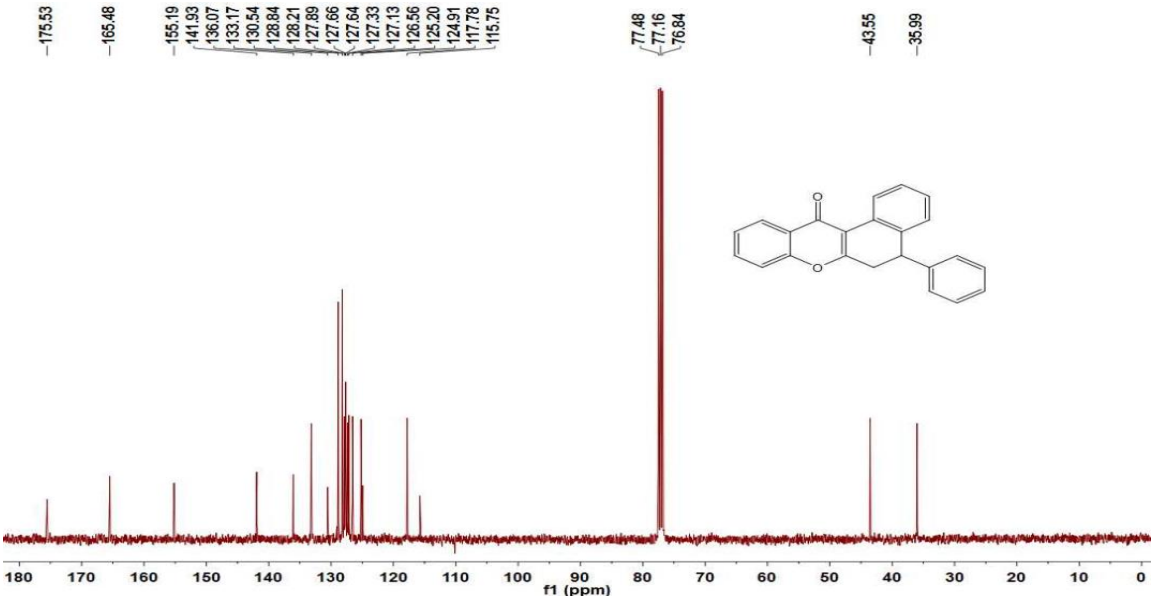
Identification code	170623_s3_wz (**4a**)
Empirical formula	$C_{23}H_{14}O_2$
Formula weight	322.34
Temperature/K	293.15
Crystal system	orthorhombic
Space group	Pbcn
a/Å	9.1068(5)
b/Å	13.5461(9)
c/Å	26.1677(13)
α/°	90
β/°	90
γ/°	90
Volume/Å^3	3228.1(3)
Z	8
ρ_{calc}g/cm^3	1.327
μ/mm^{-1}	0.084
F(000)	1344.0
Crystal size/mm^3	0.4 ×0.4 ×0.4
Radiation	MoKα (λ = 0.71073)
2Θ range for data collection/°	6.016 to 52.742
Index ranges	-10 ≤ h ≤ 11, -16 ≤ k ≤ 15, -32 ≤ l ≤ 32
Reflections collected	18344
Independent reflections	3312 [R_{int} = 0.0309, R_{sigma} = 0.0255]
Data/restraints/parameters	3312/0/226
Goodness-of-fit on F^2	1.024
Final R indexes [I>=2σ (I)]	R_1 = 0.0540, wR_2 = 0.1203
Final R indexes [all data]	R_1 = 0.0861, wR_2 = 0.1393
Largest diff. peak/hole / e Å^{-3}	0.14/-0.16

2. Experimental Spectra

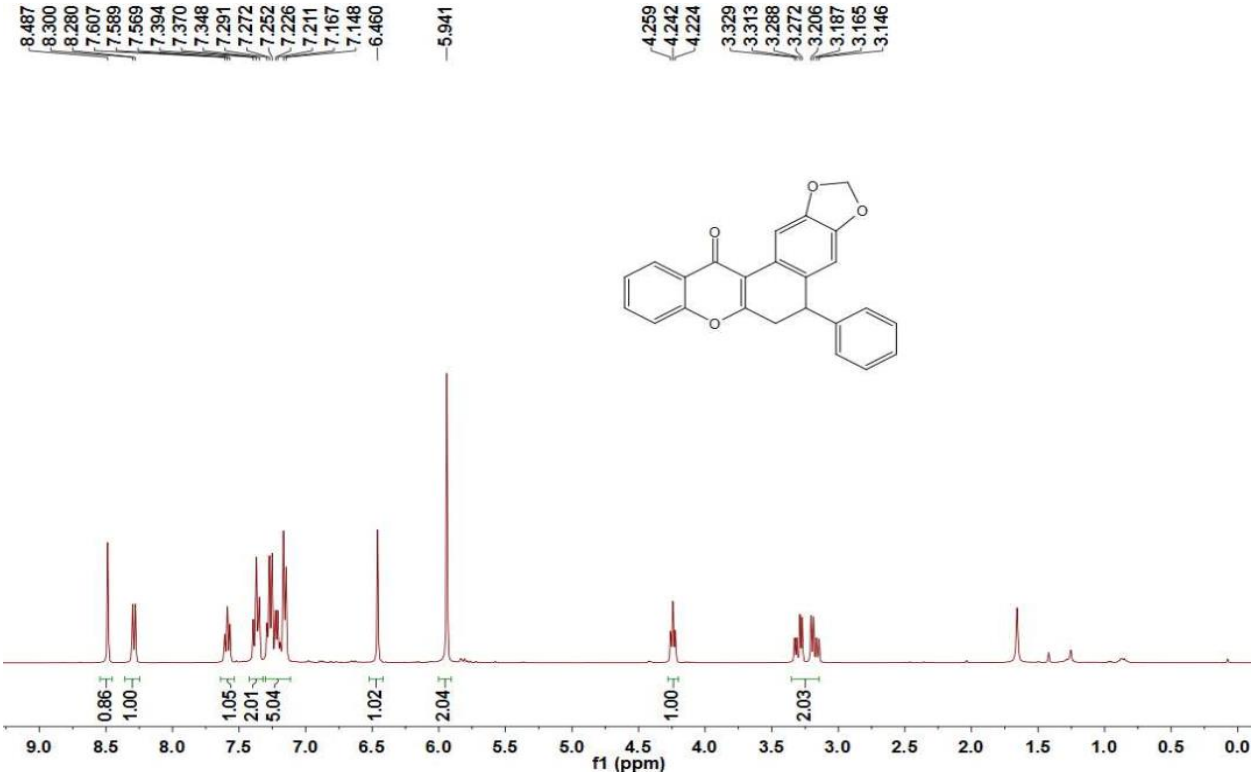
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **3a**



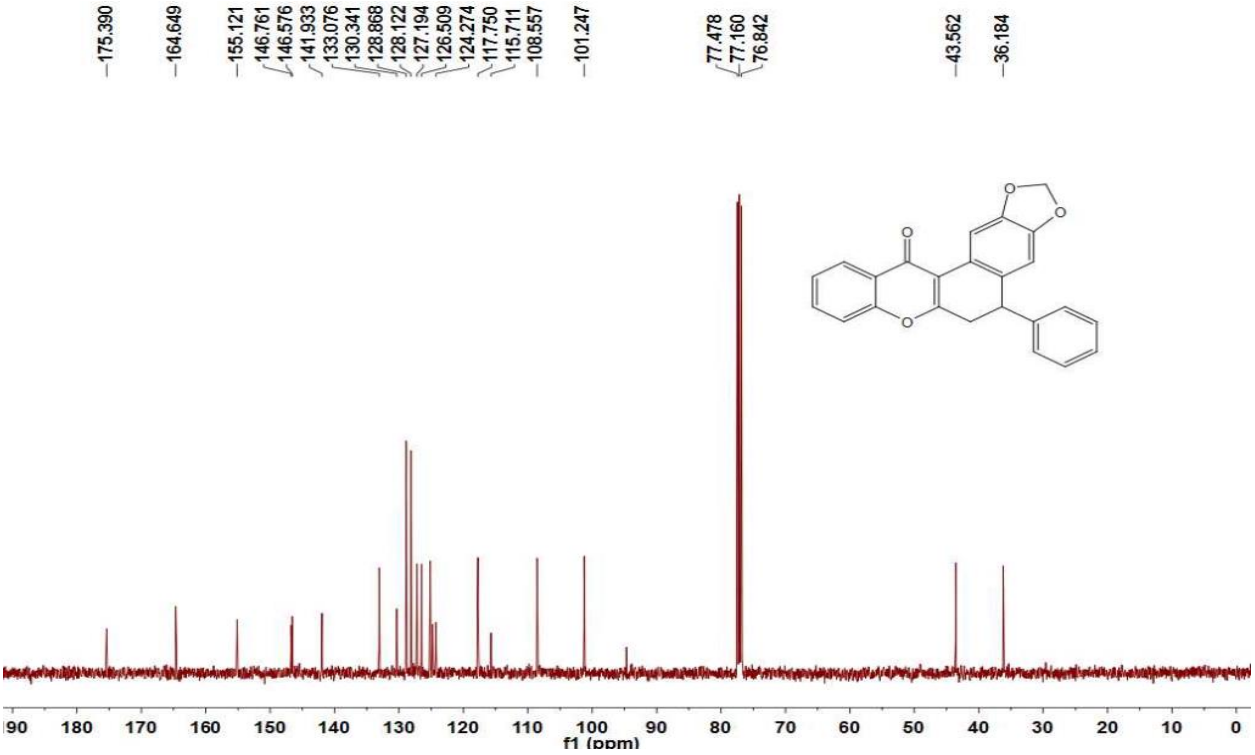
^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **3a**



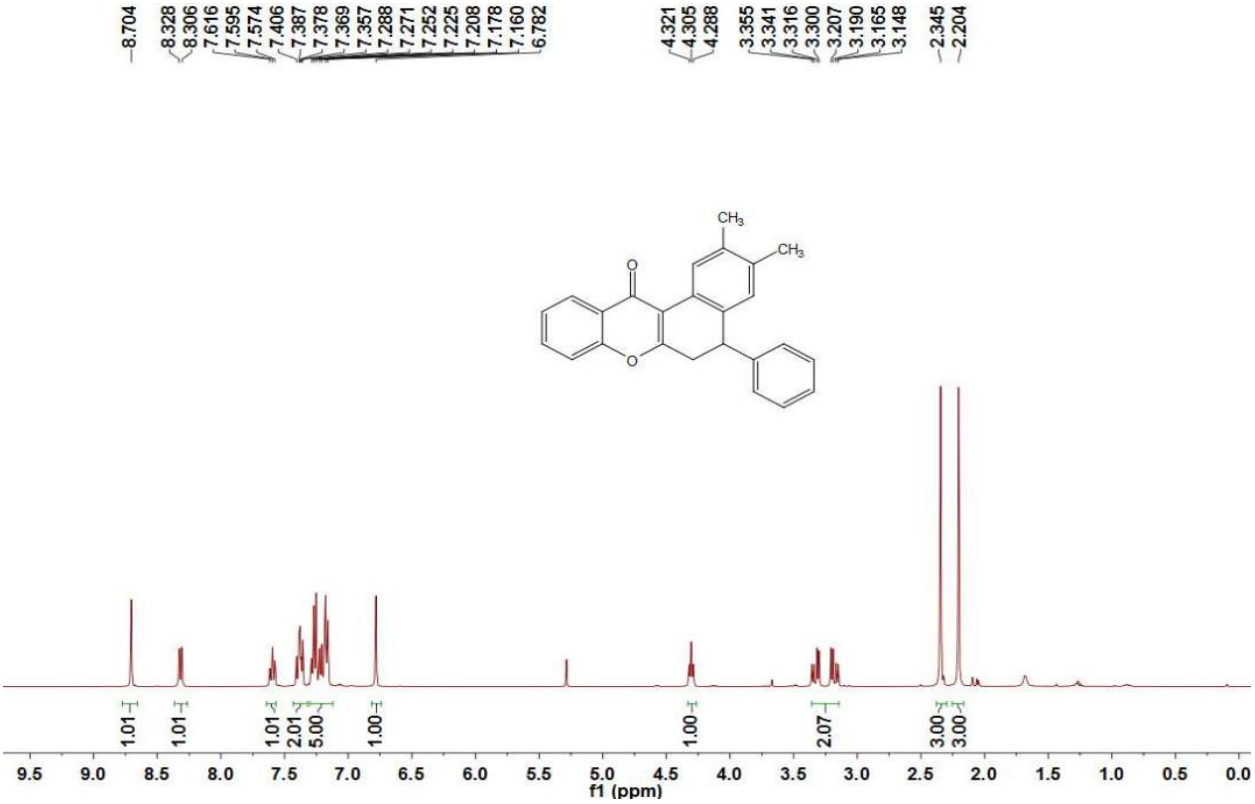
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **3b**



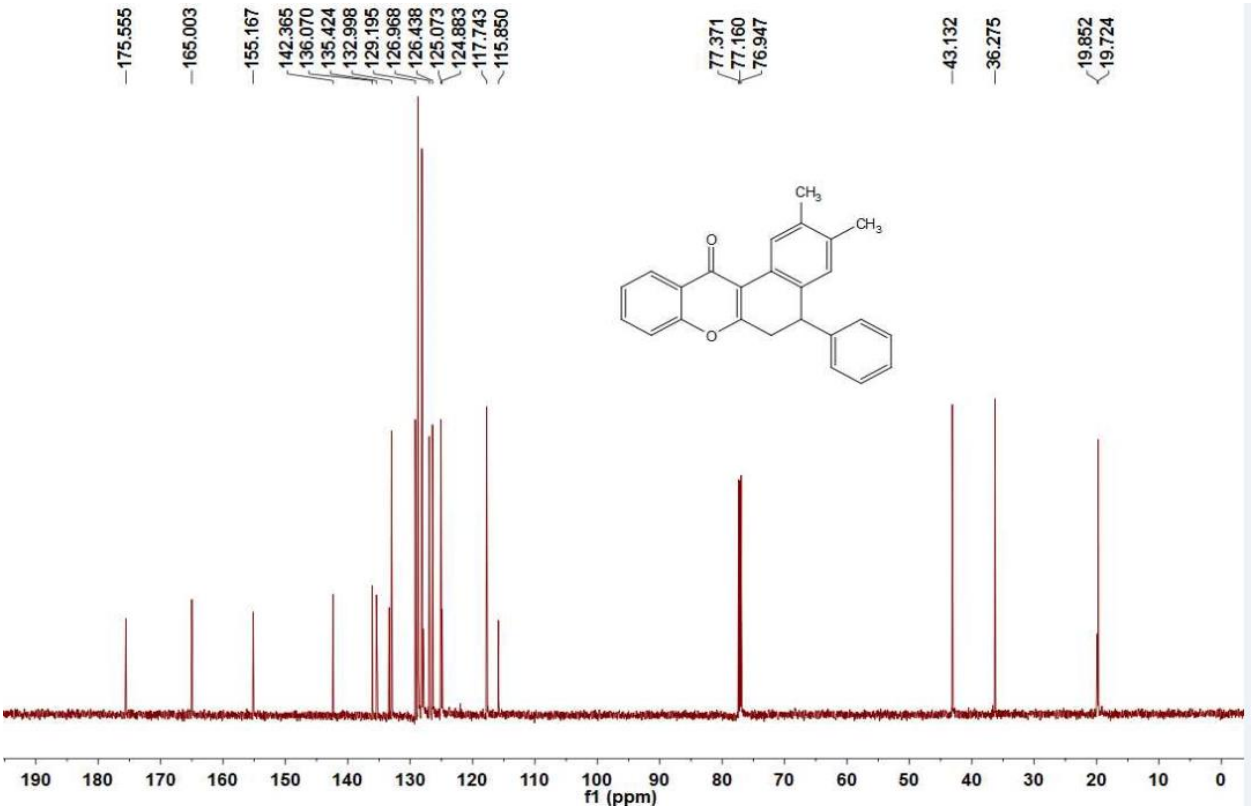
^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **3b**



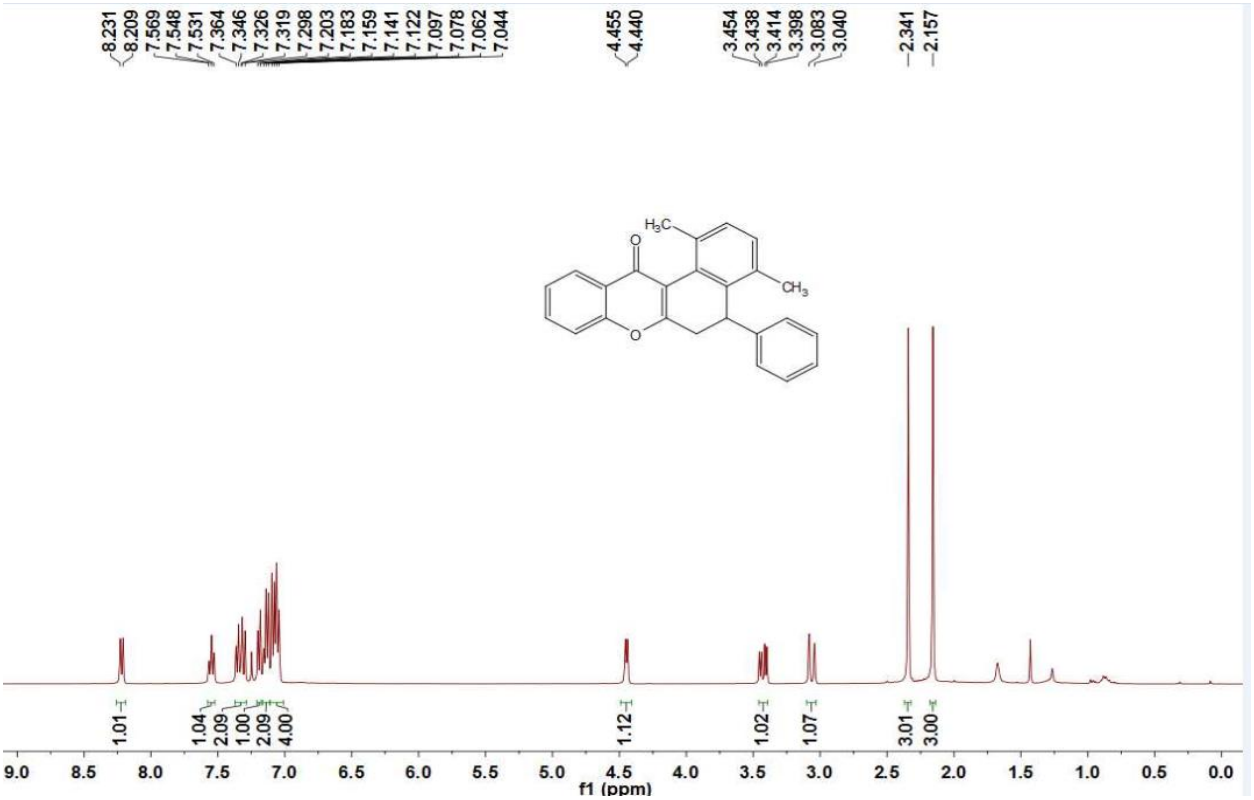
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **3c**



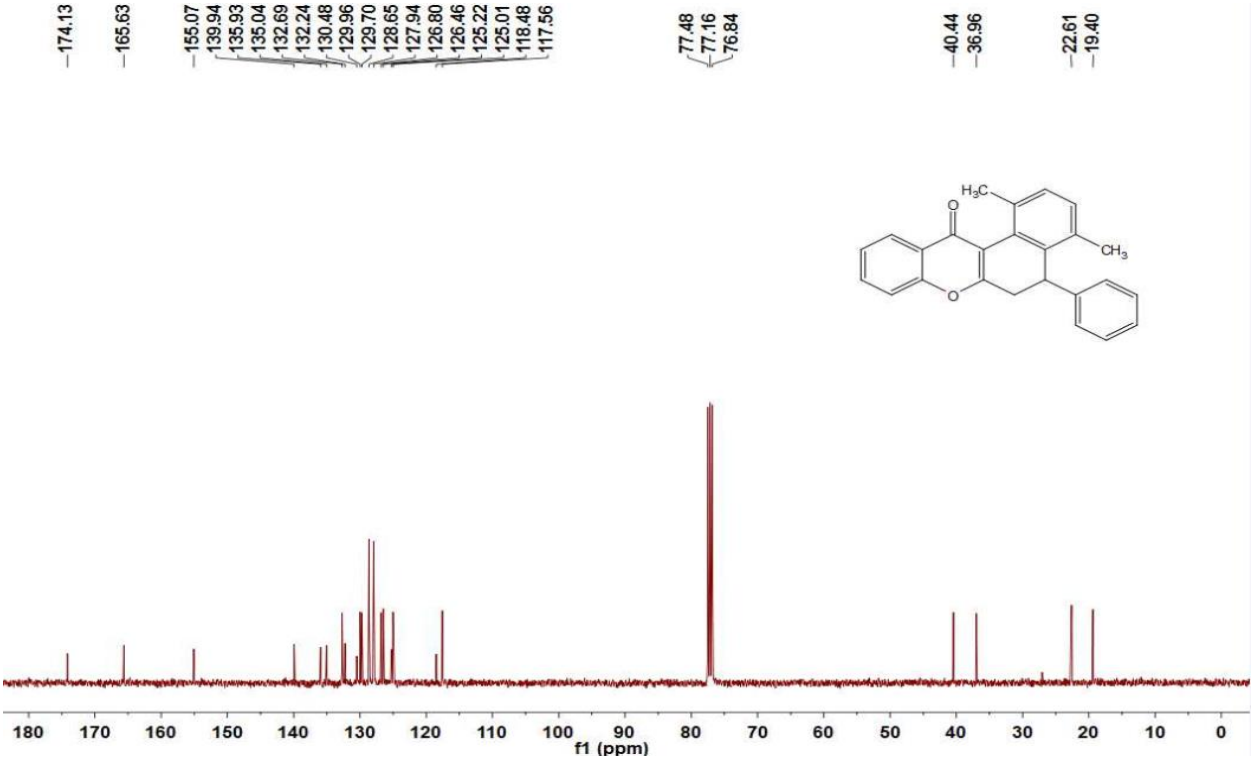
^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **3c**



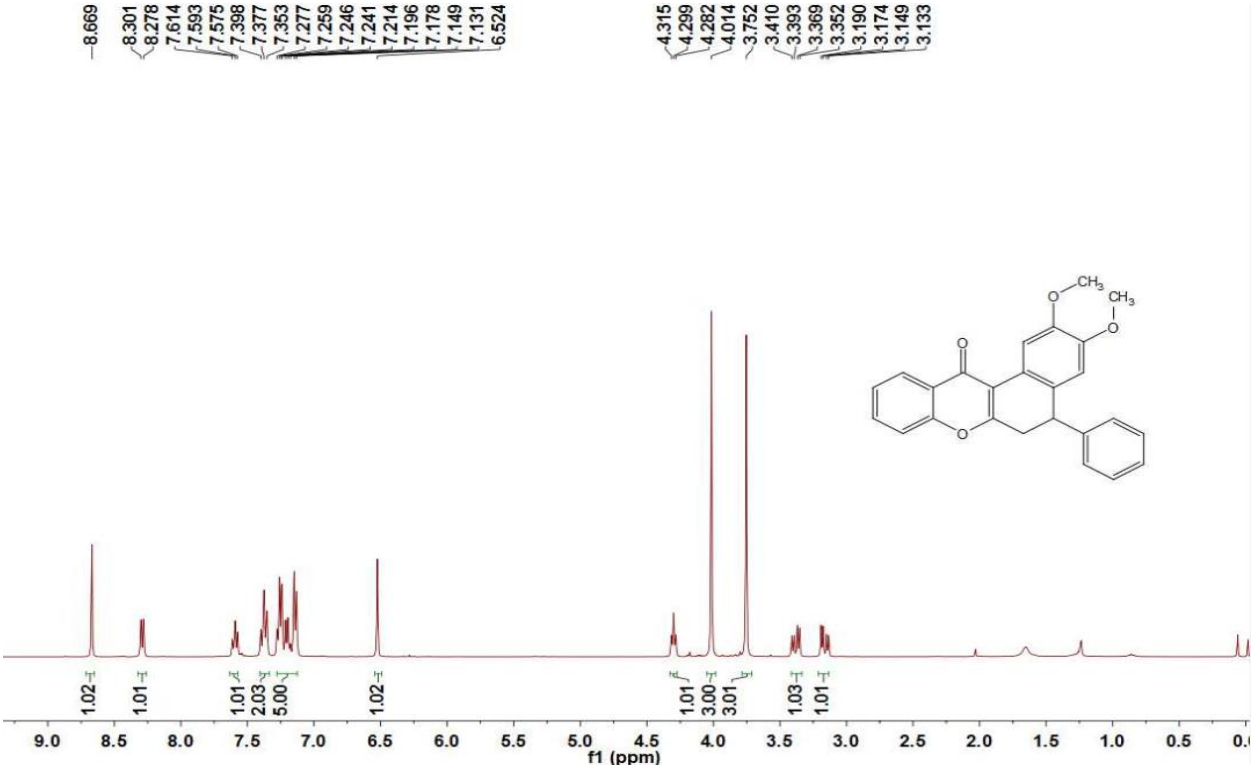
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **3d**



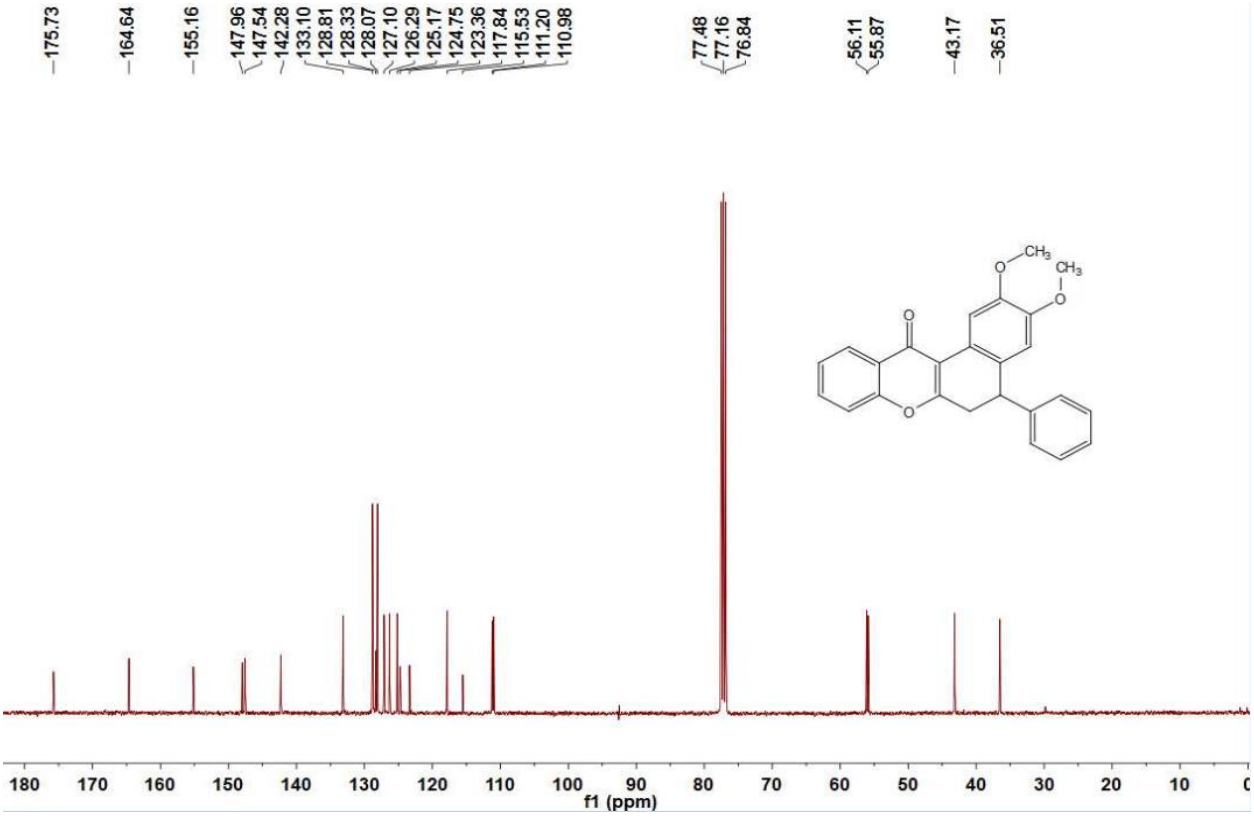
^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **3d**



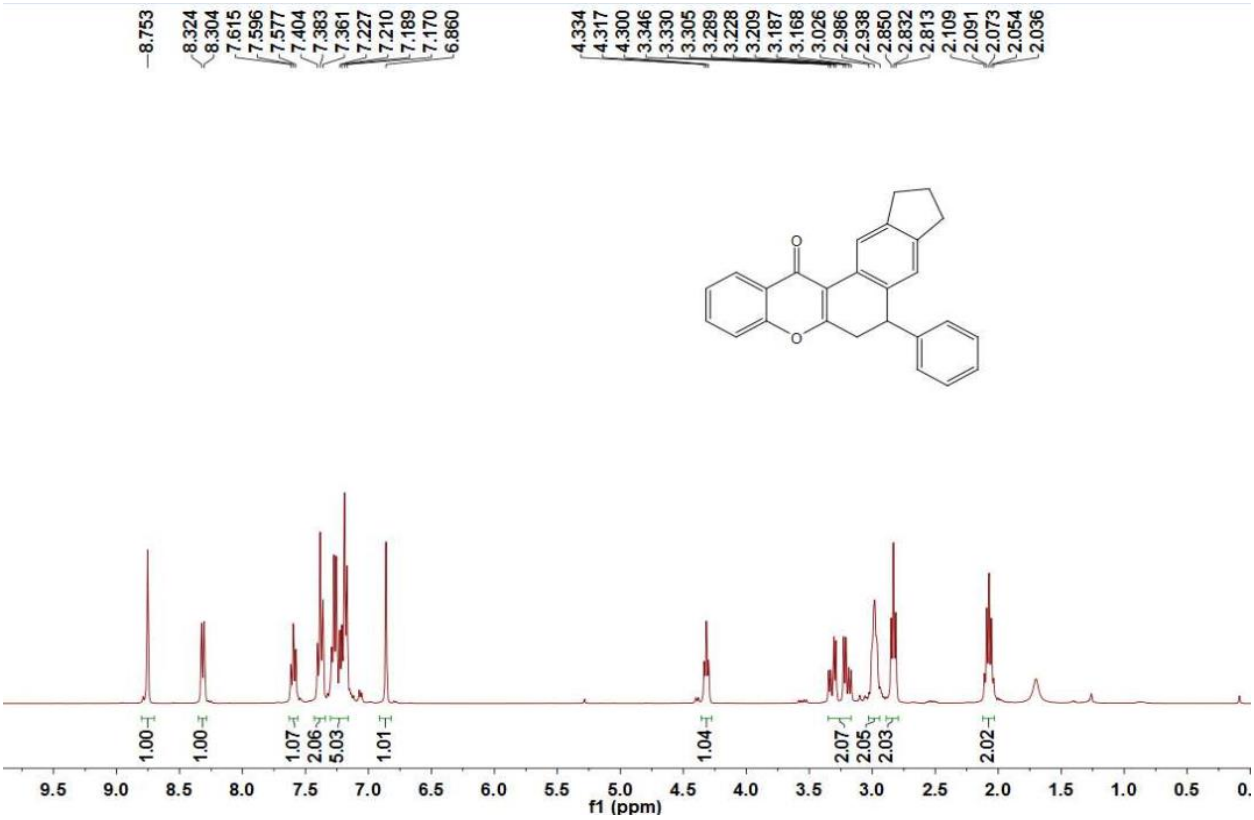
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **3e**



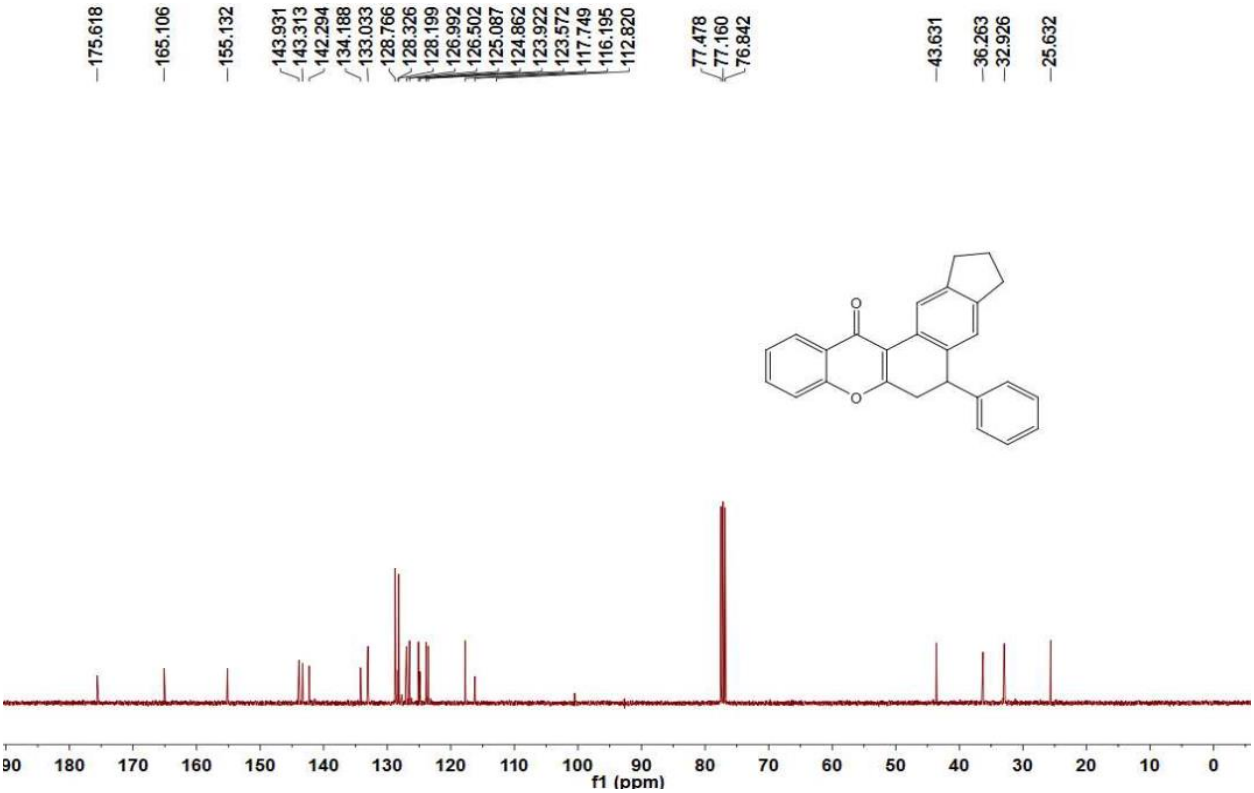
^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **3e**



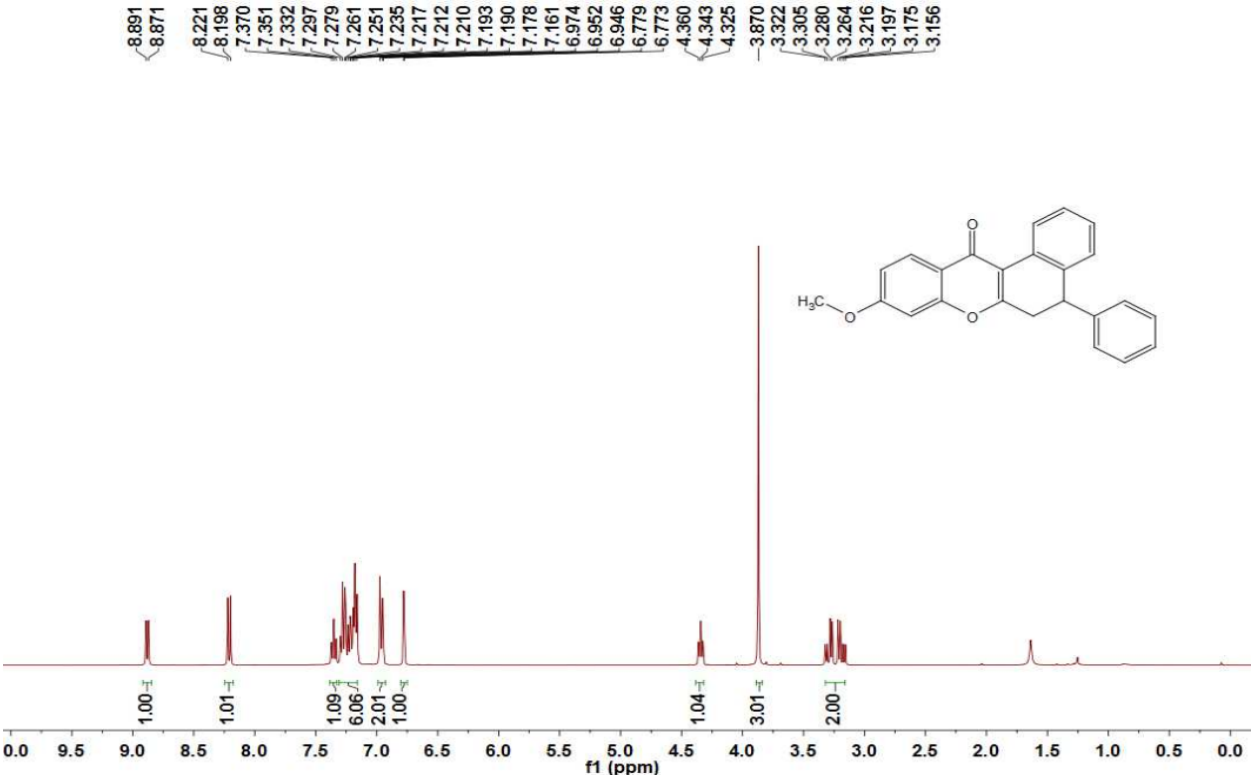
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **3f**



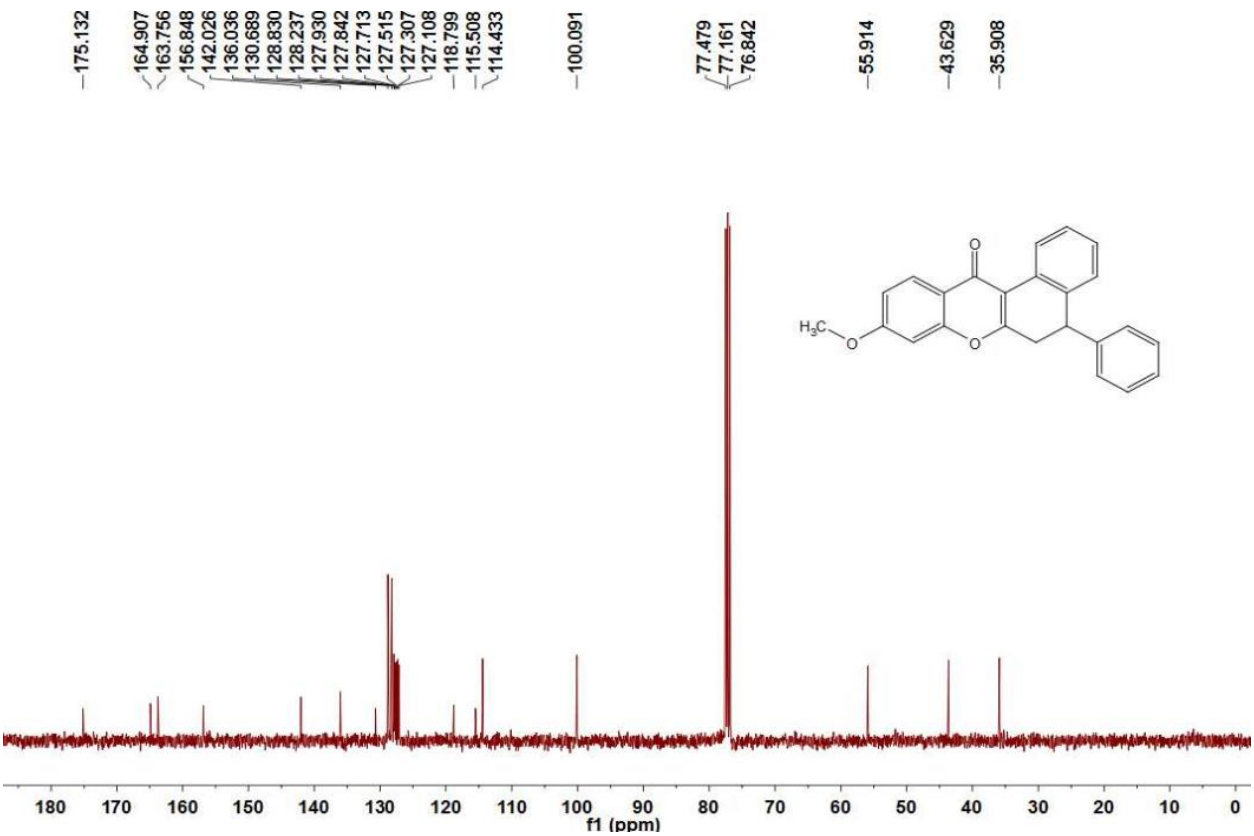
^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **3f**



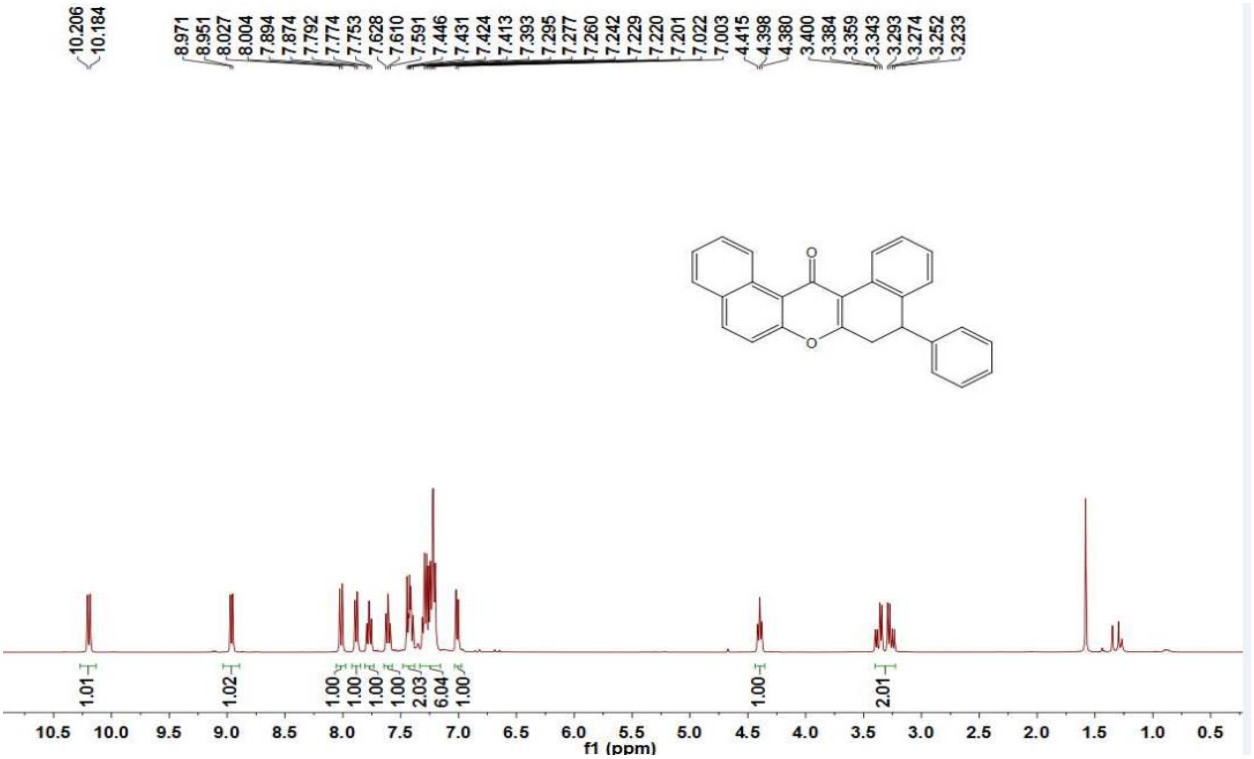
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **3g**



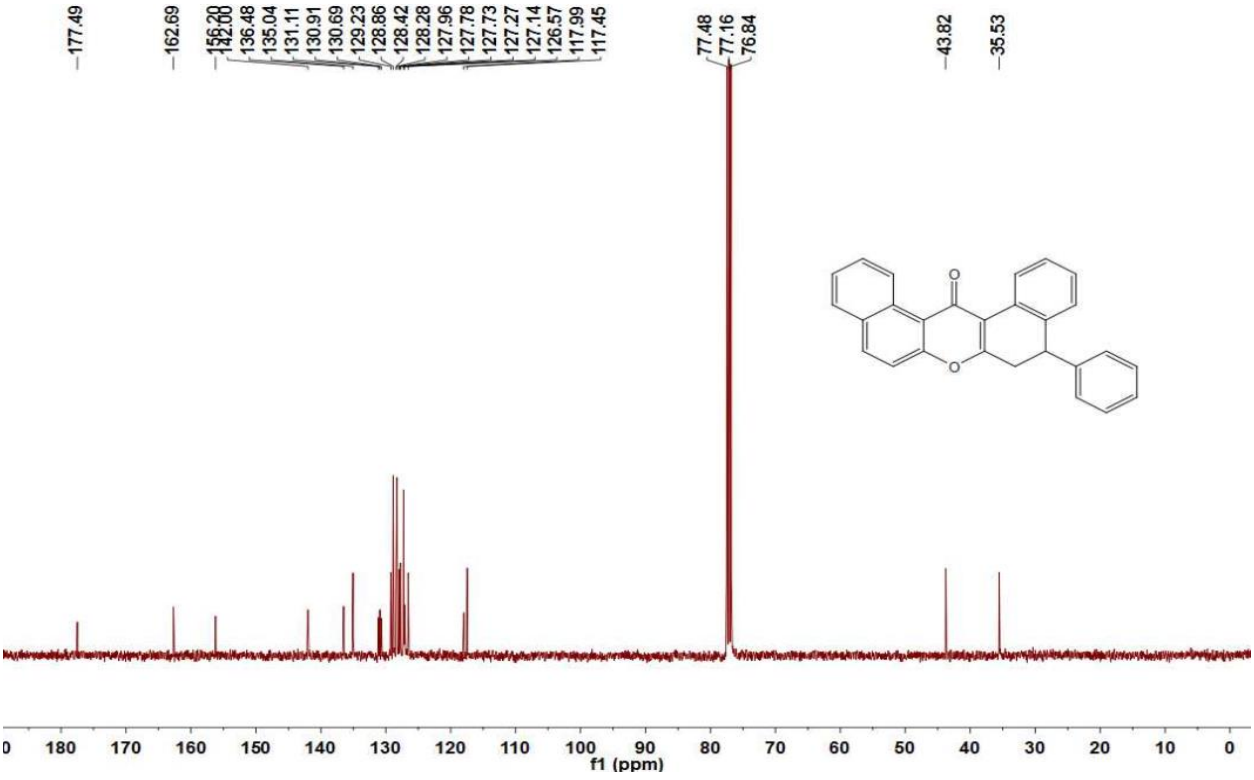
^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **3g**



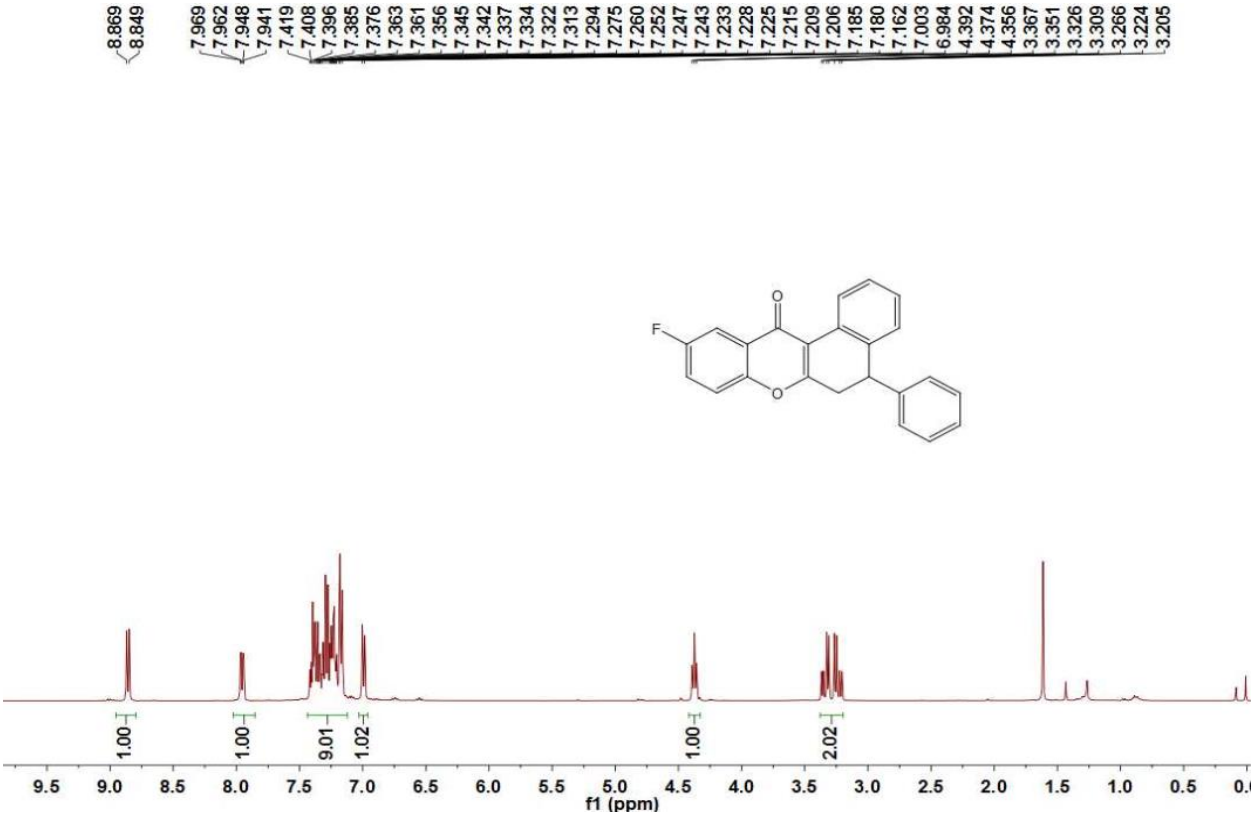
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **3h**



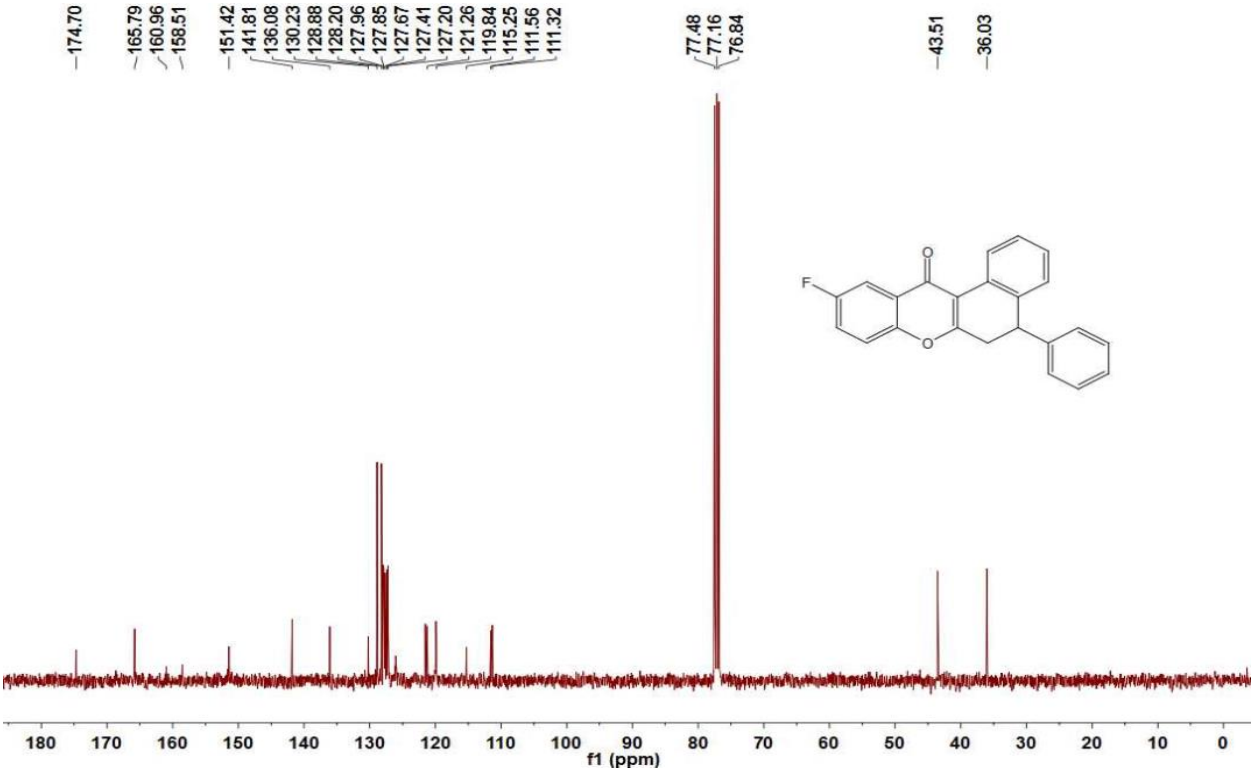
^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **3h**



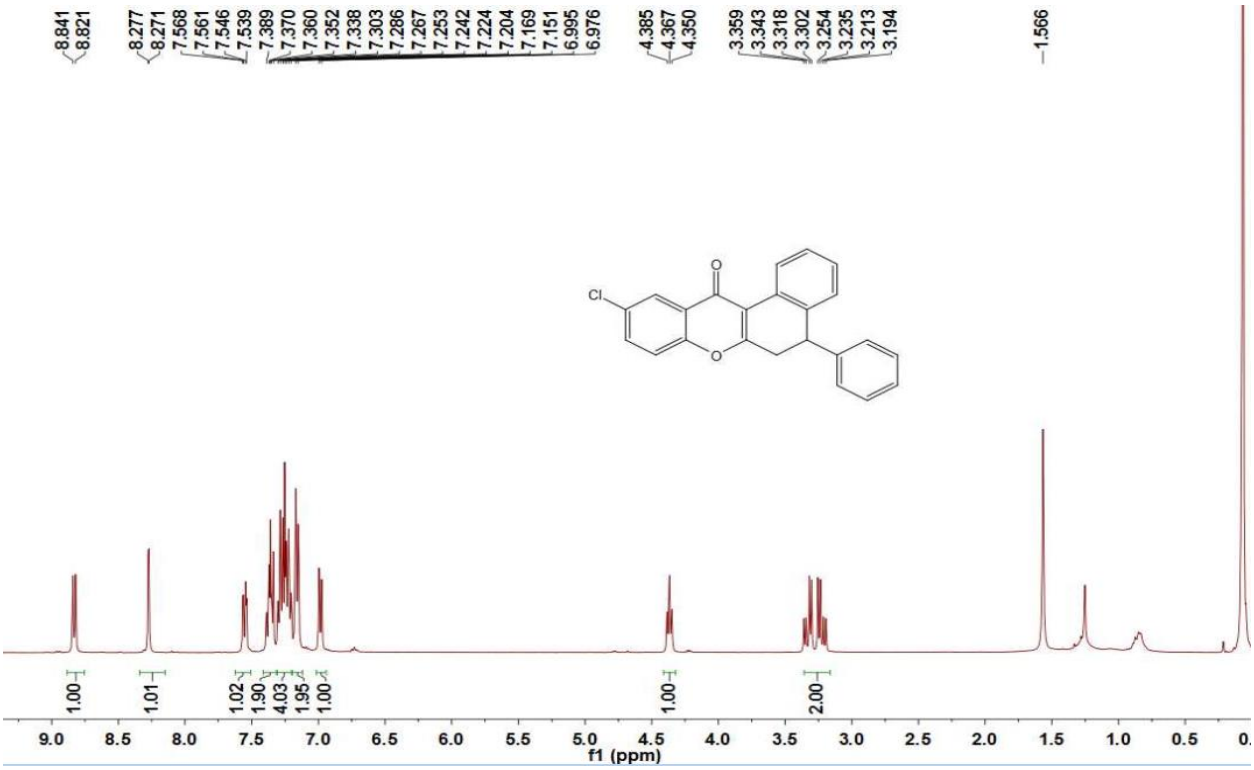
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **3i**



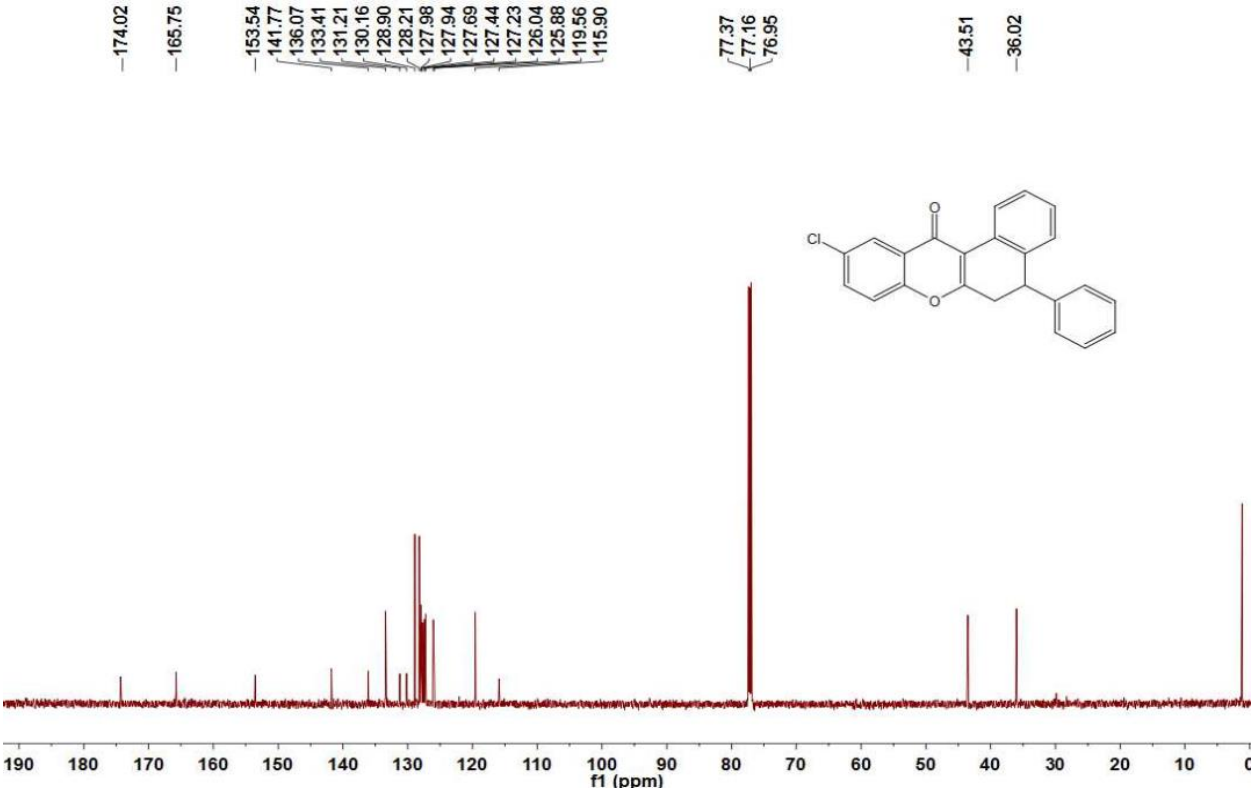
^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **3i**



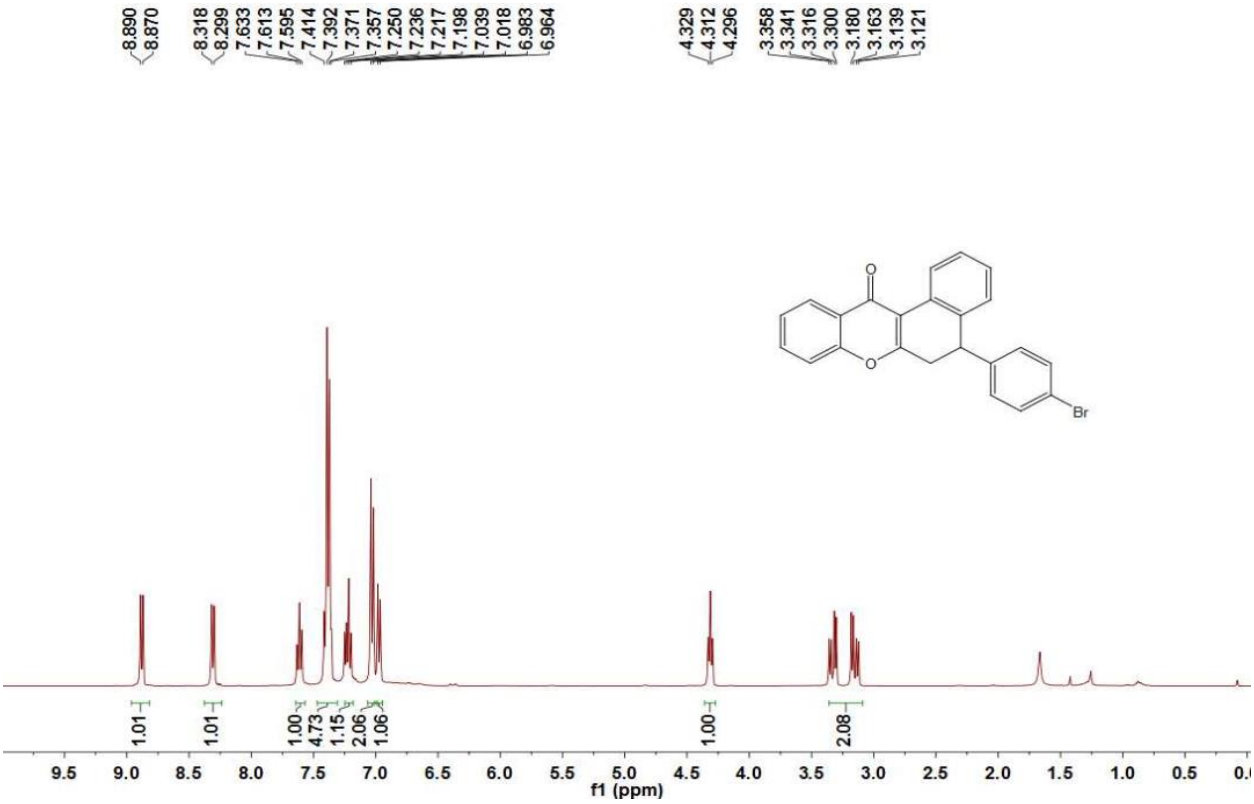
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **3j**



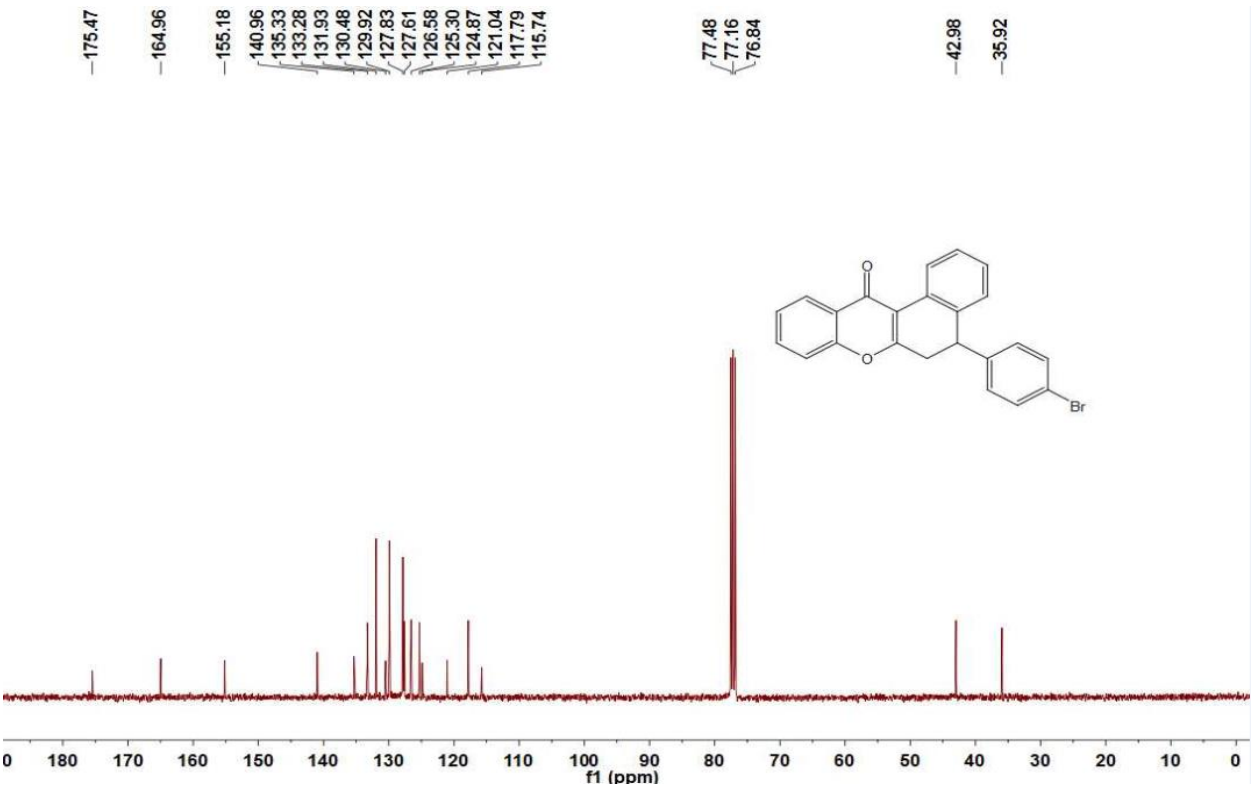
^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **3j**



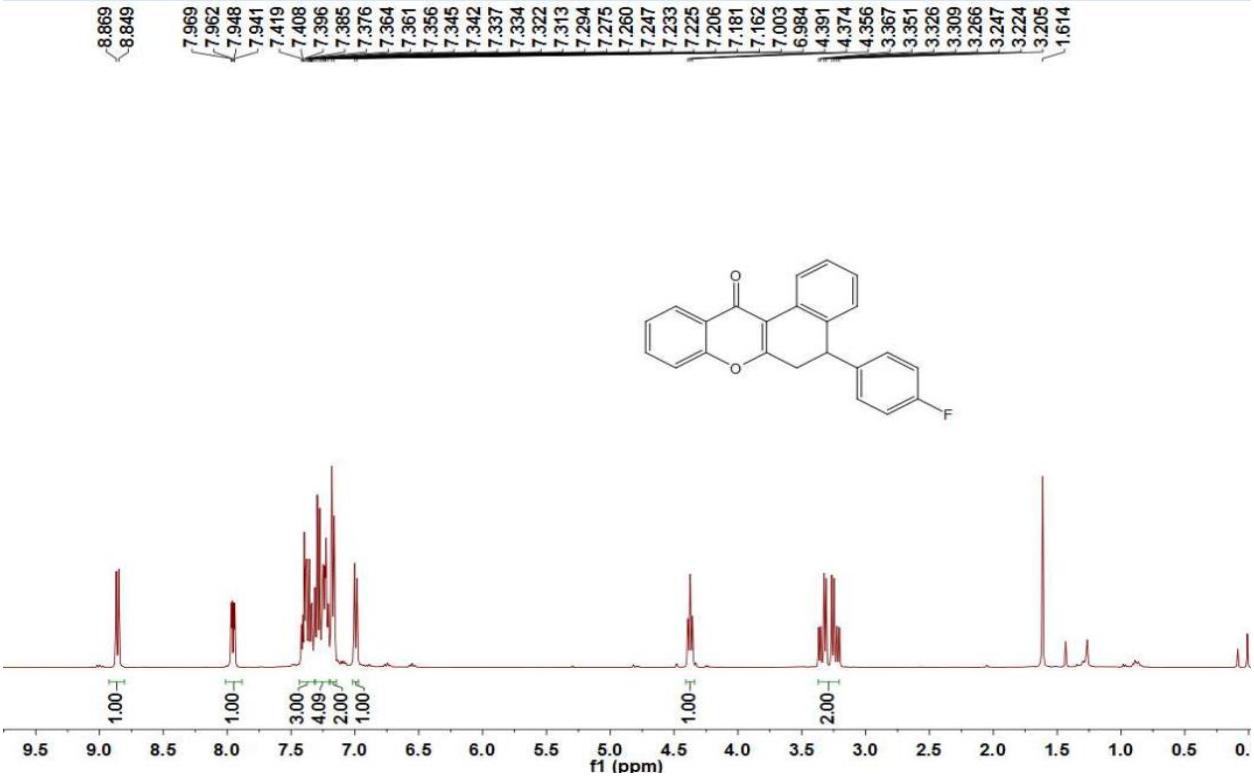
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **3k**



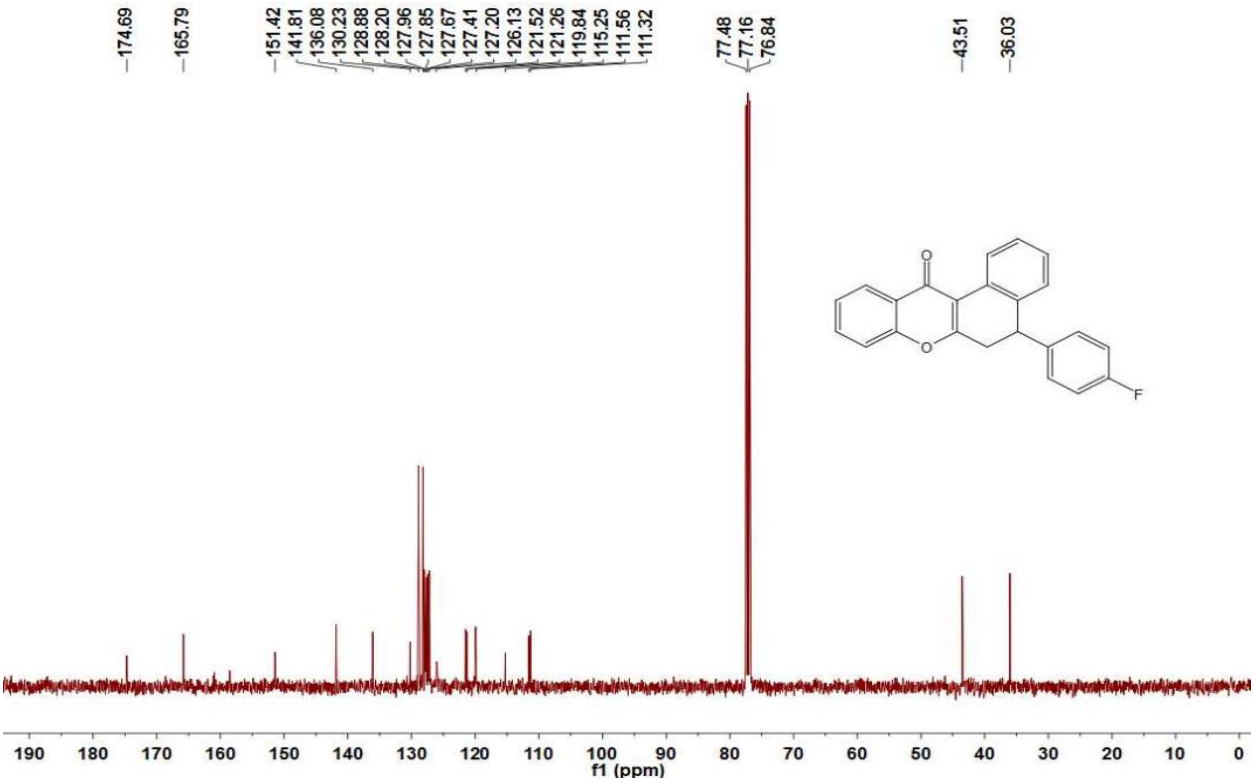
^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **3k**



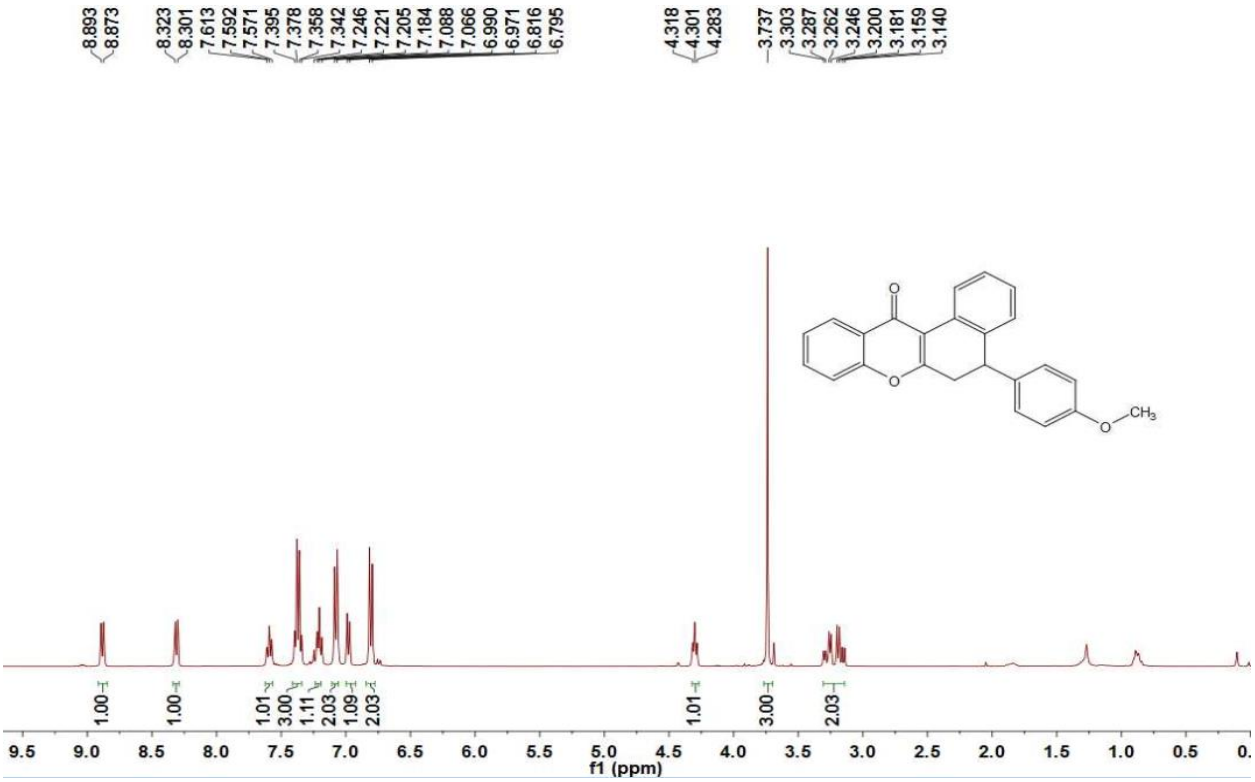
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **3l**



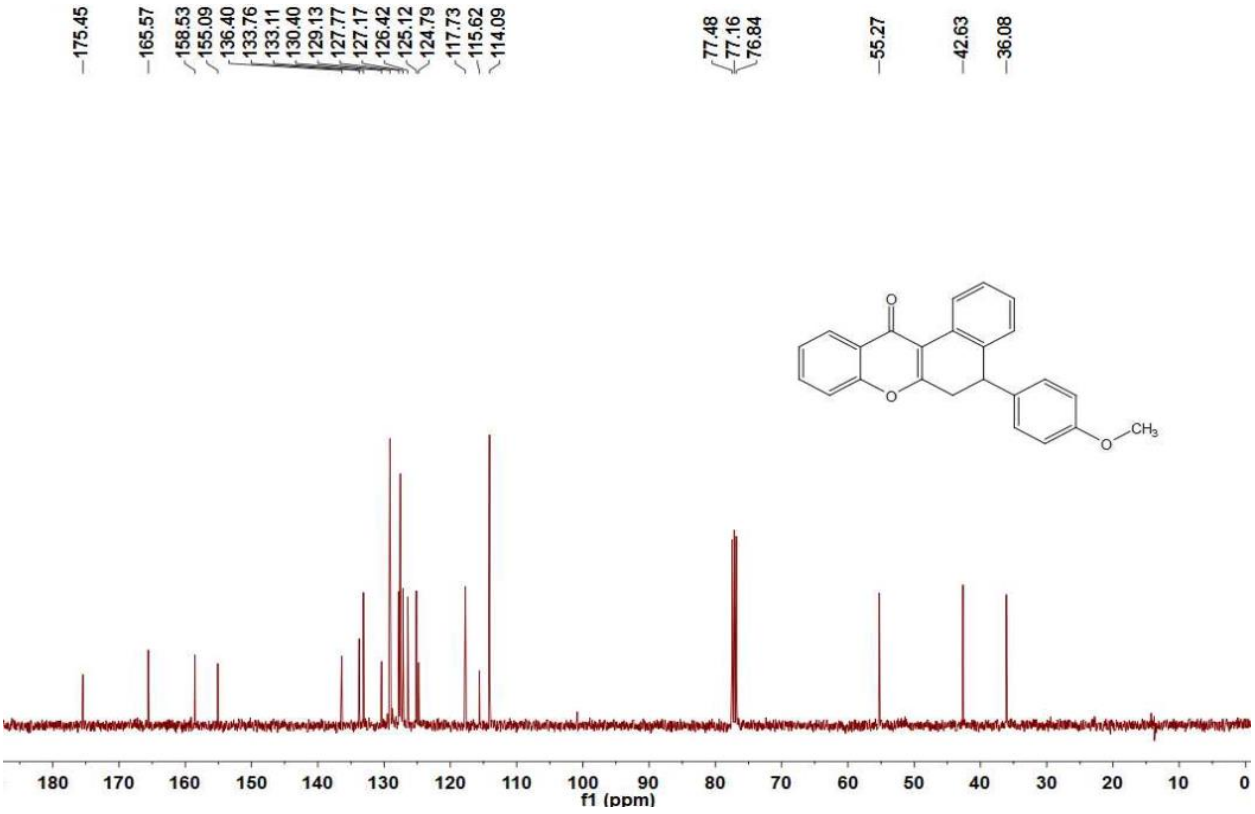
^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **3l**



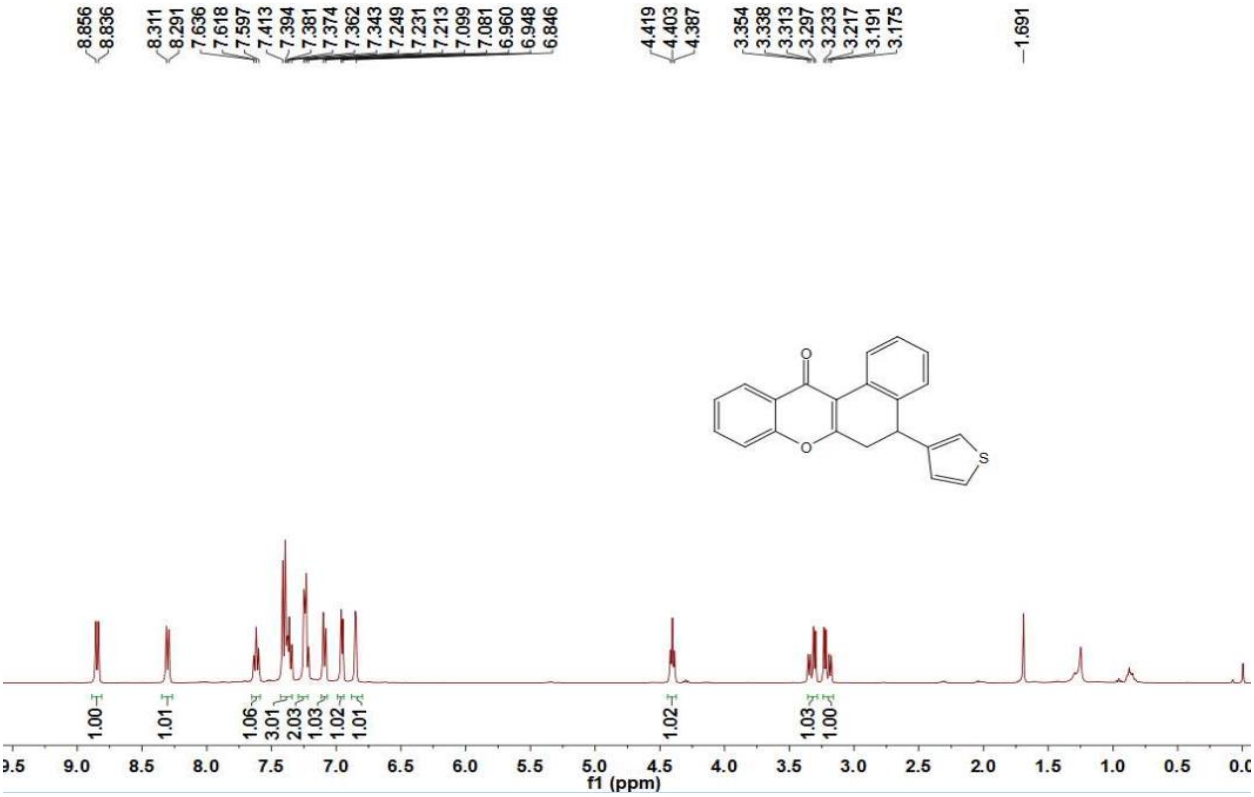
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **3m**



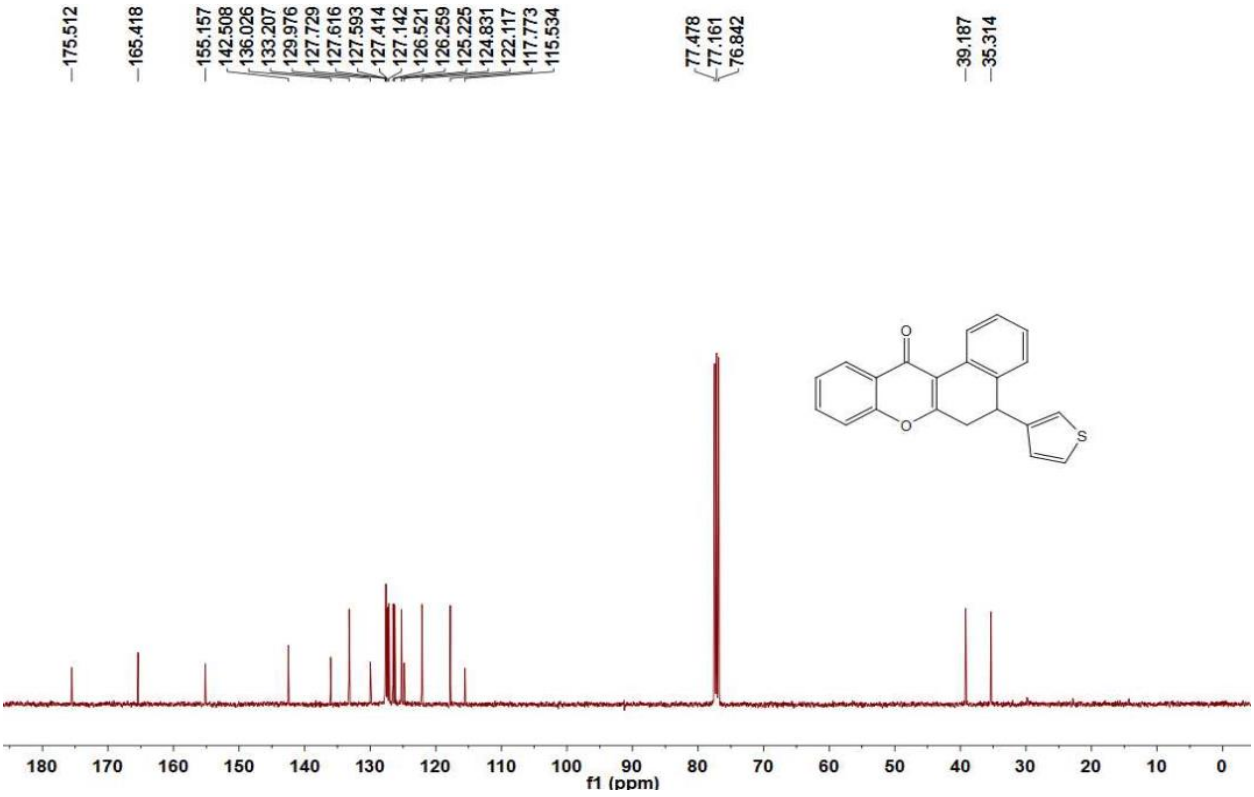
^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **3m**



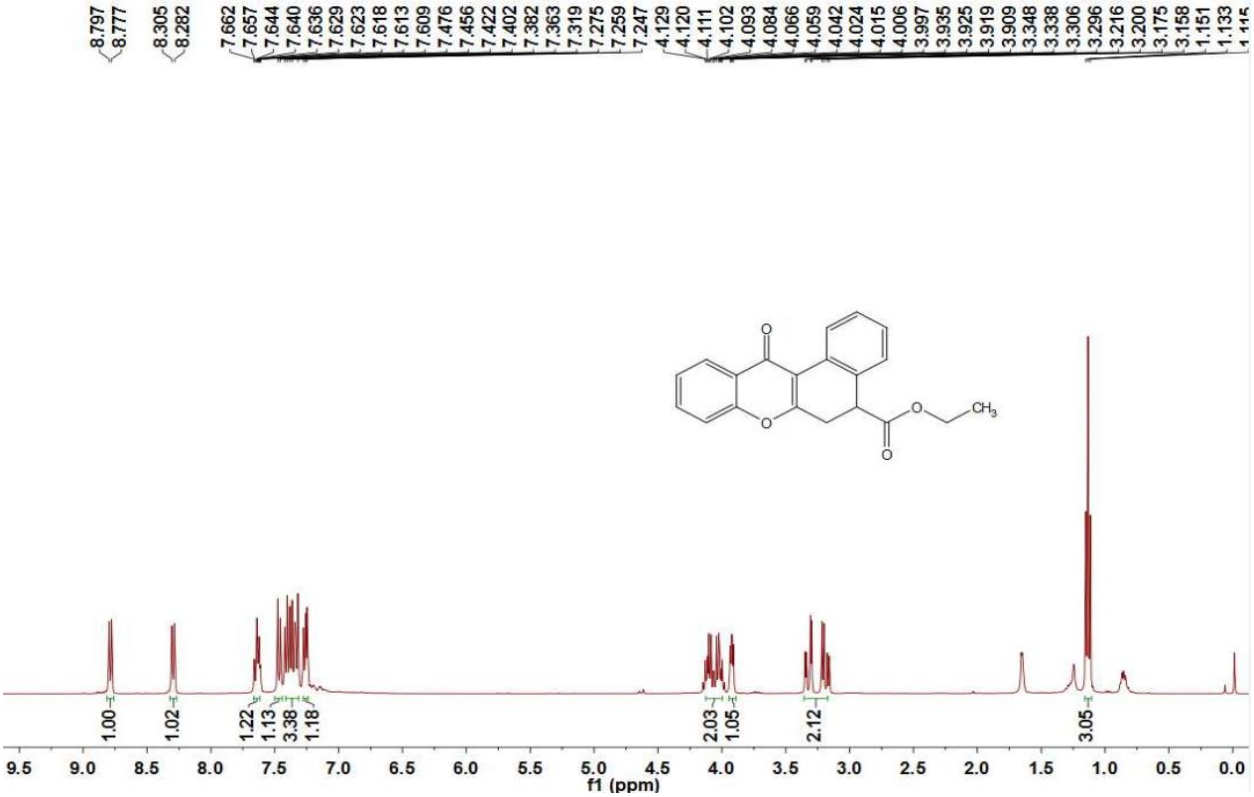
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **3n**



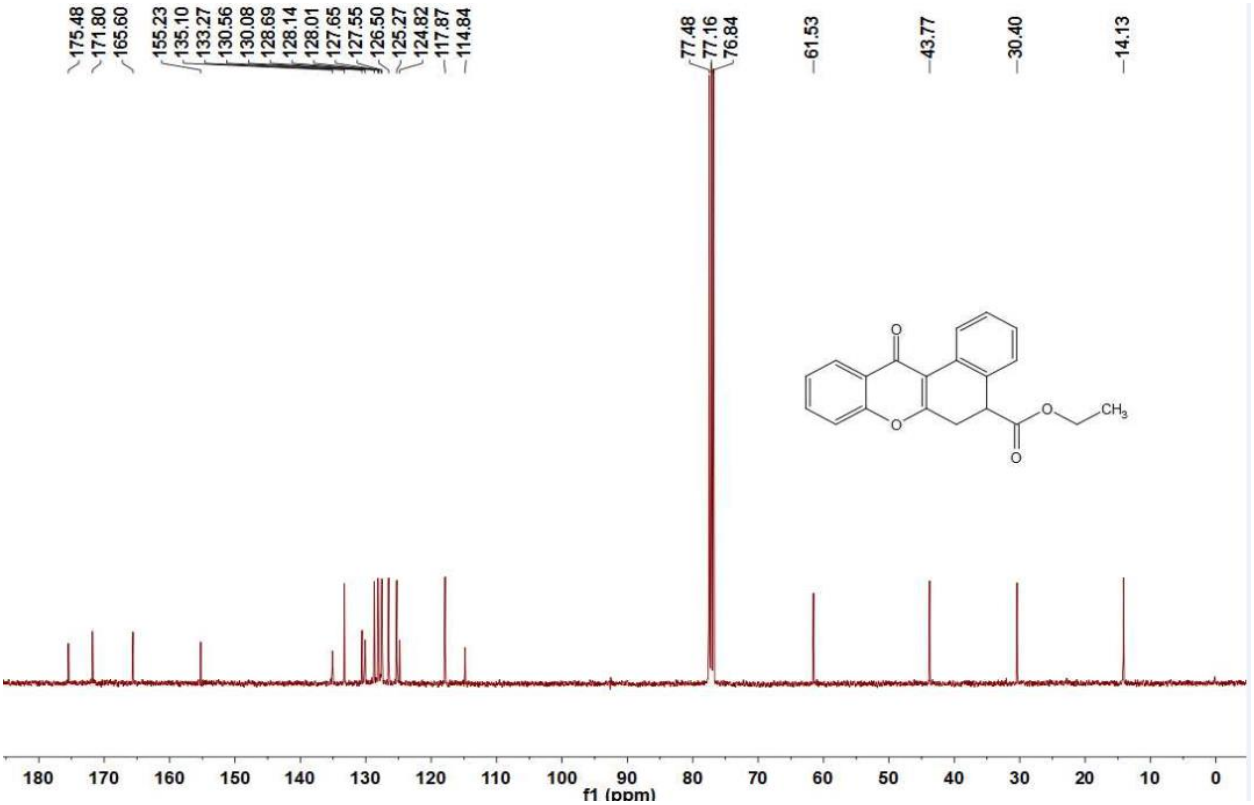
^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **3n**



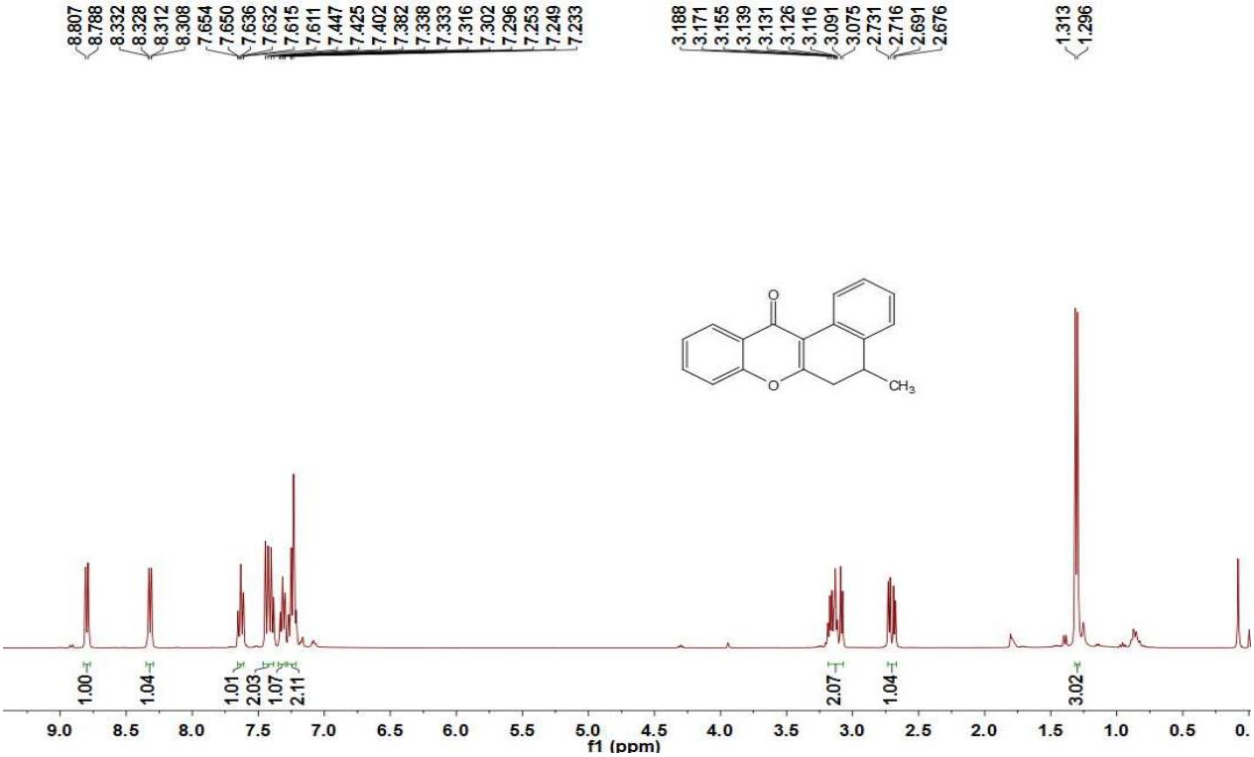
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **3o**



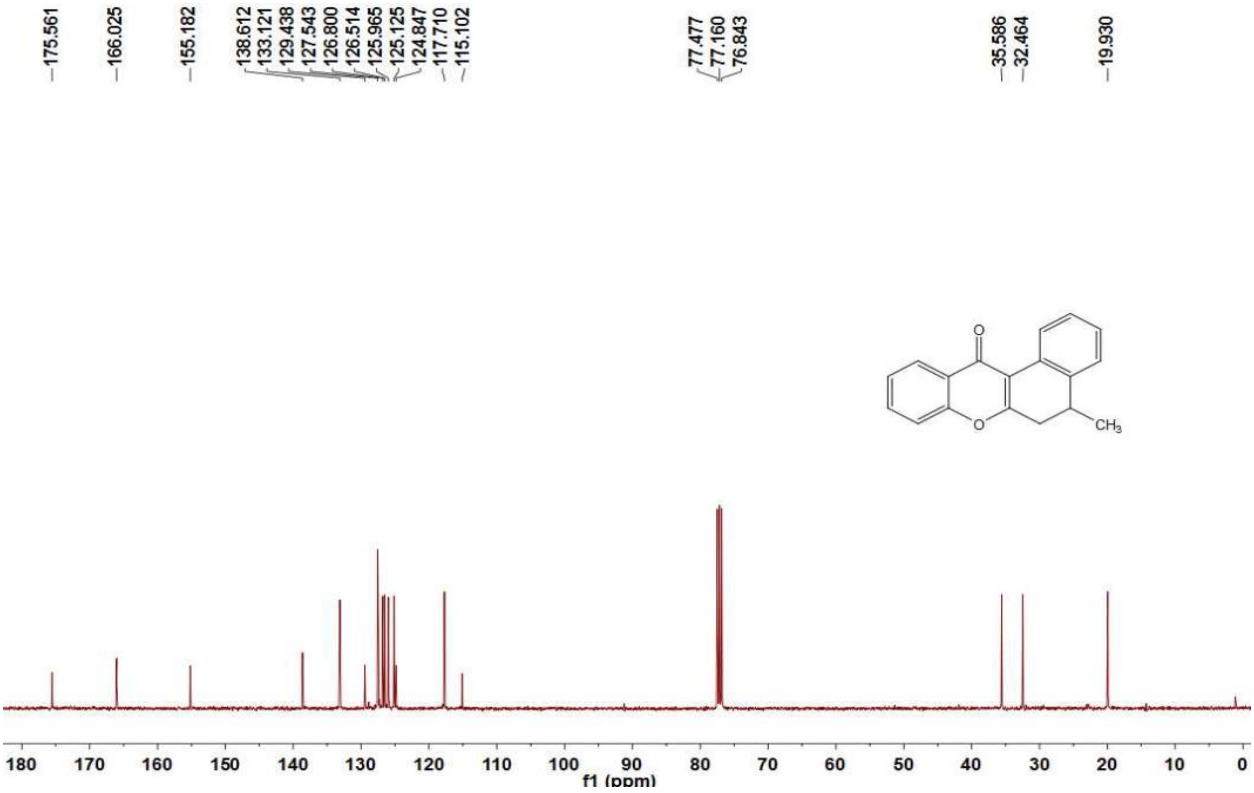
^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **3o**



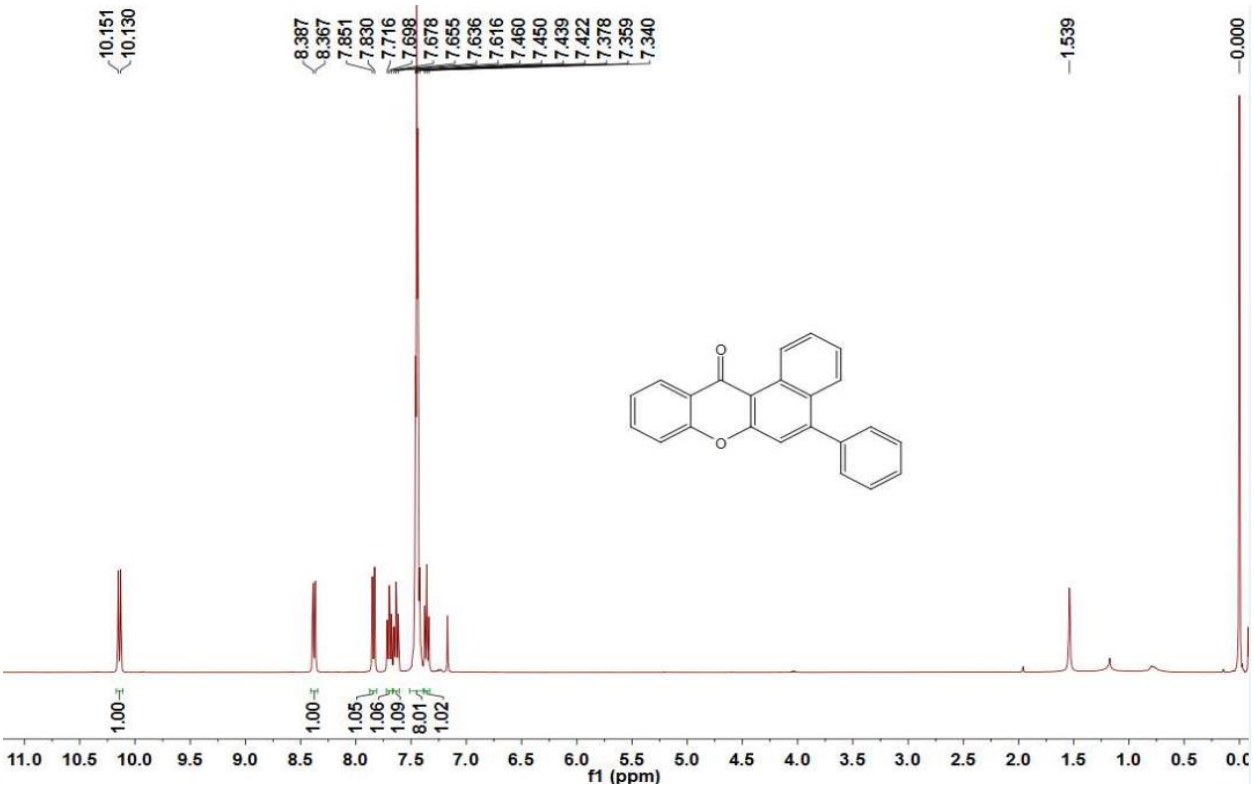
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **3p**



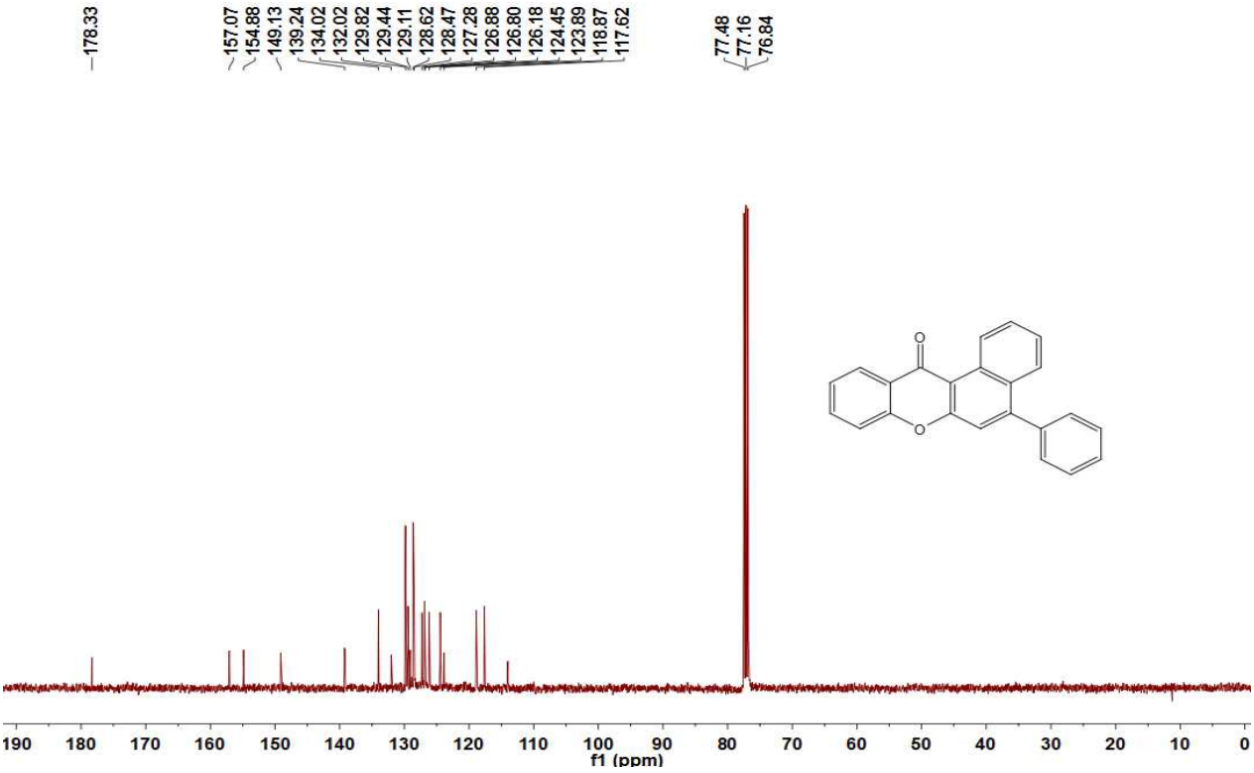
^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **3p**



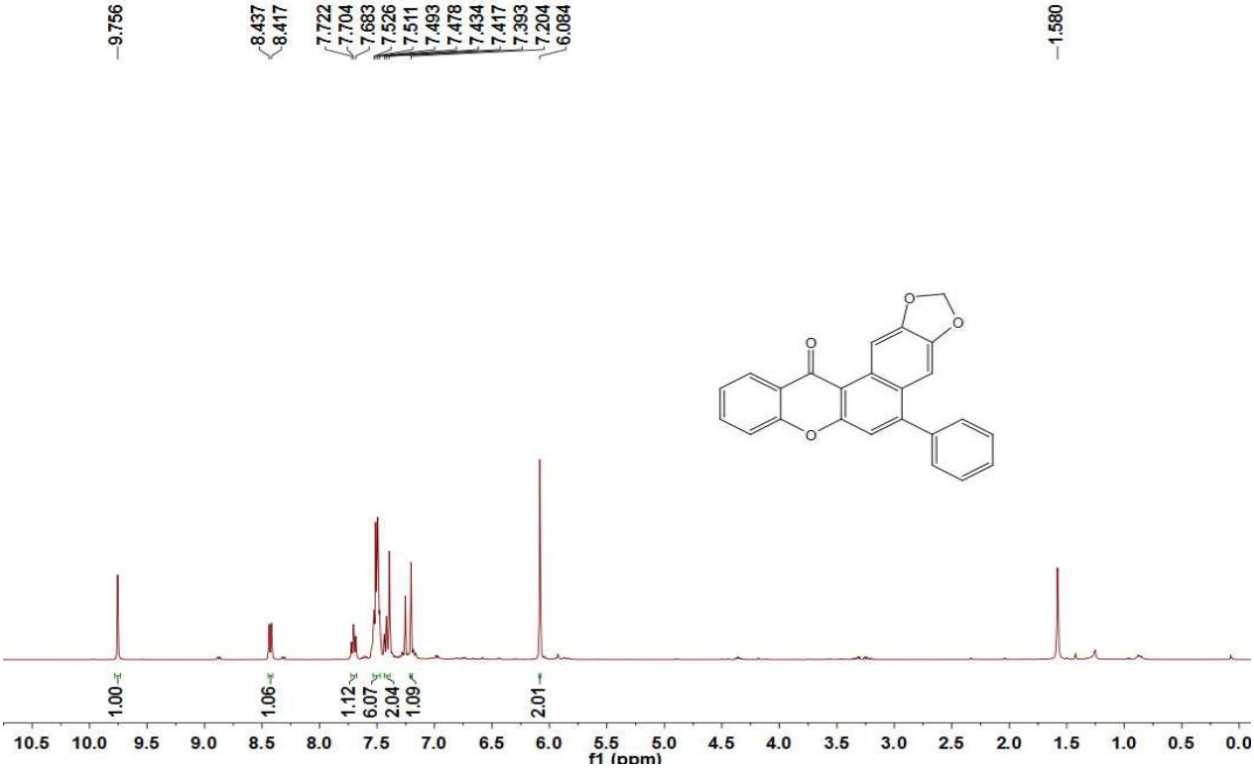
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **4a**



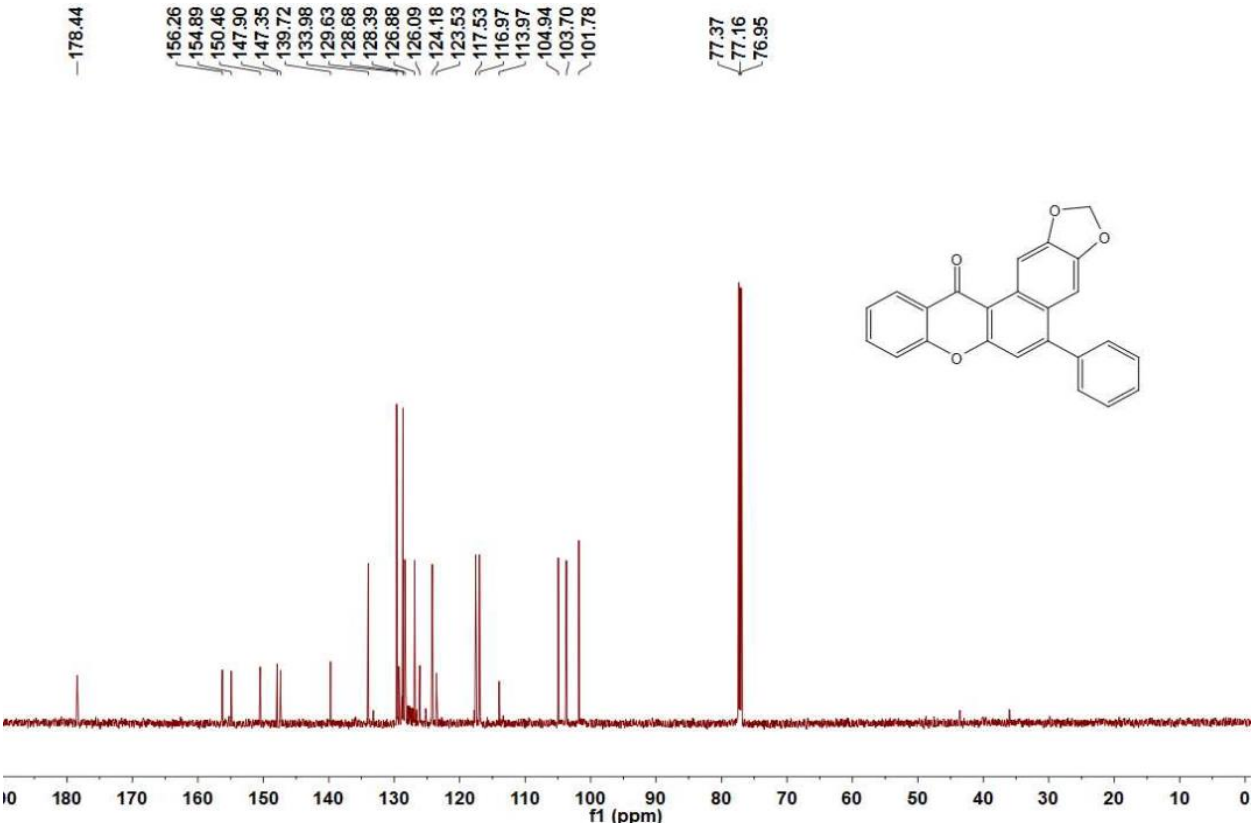
^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **4a**



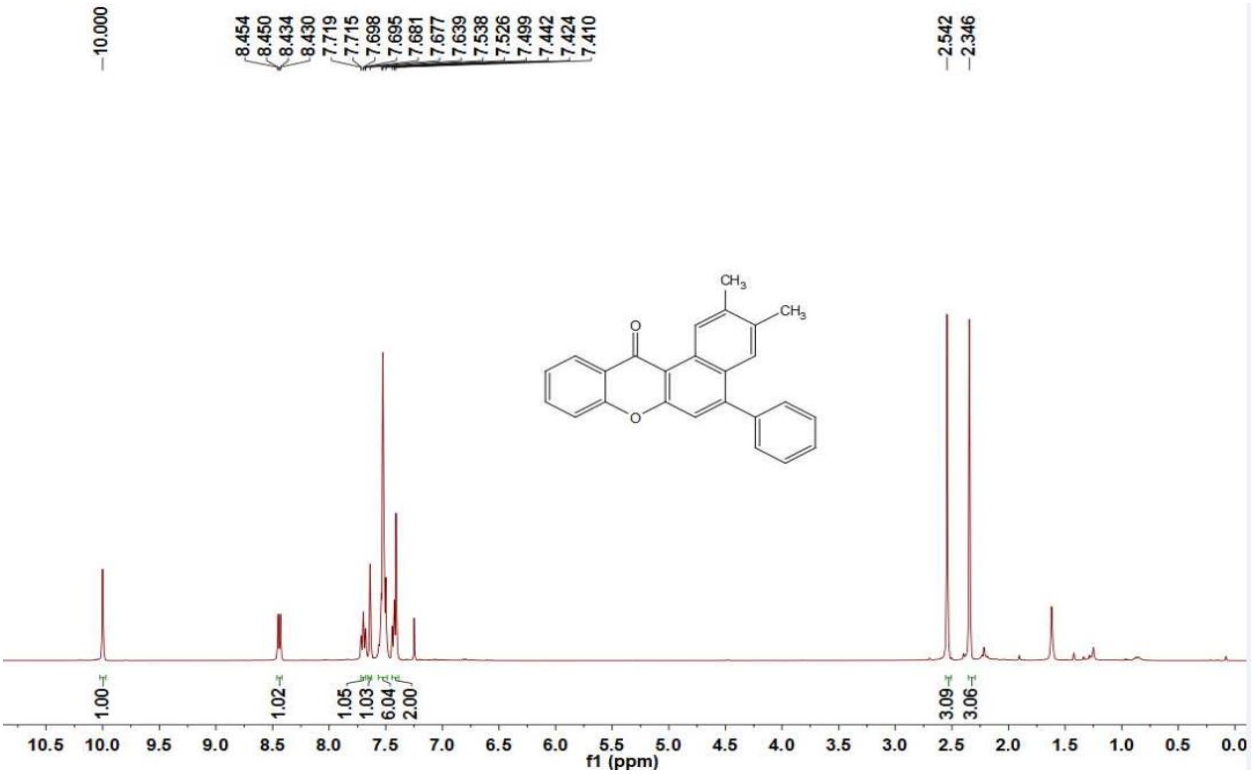
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **4b**



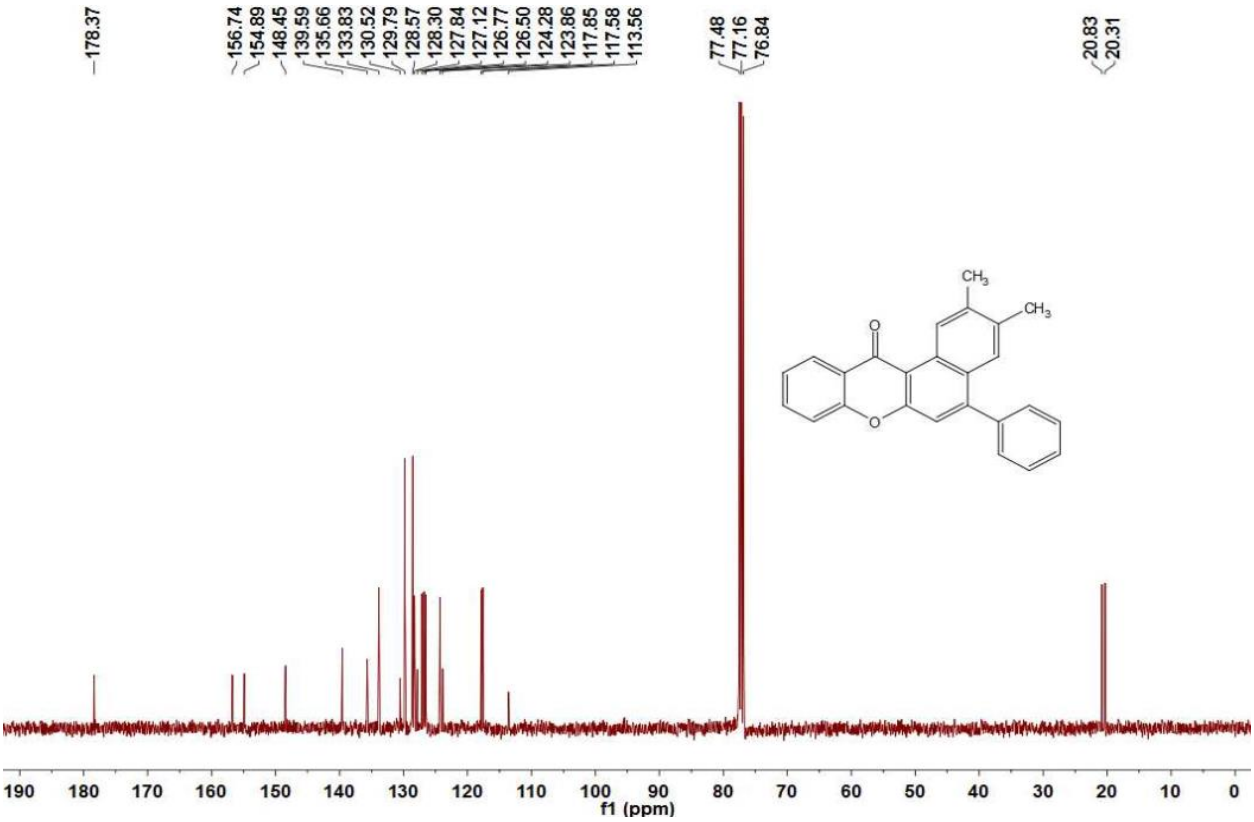
^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **4b**



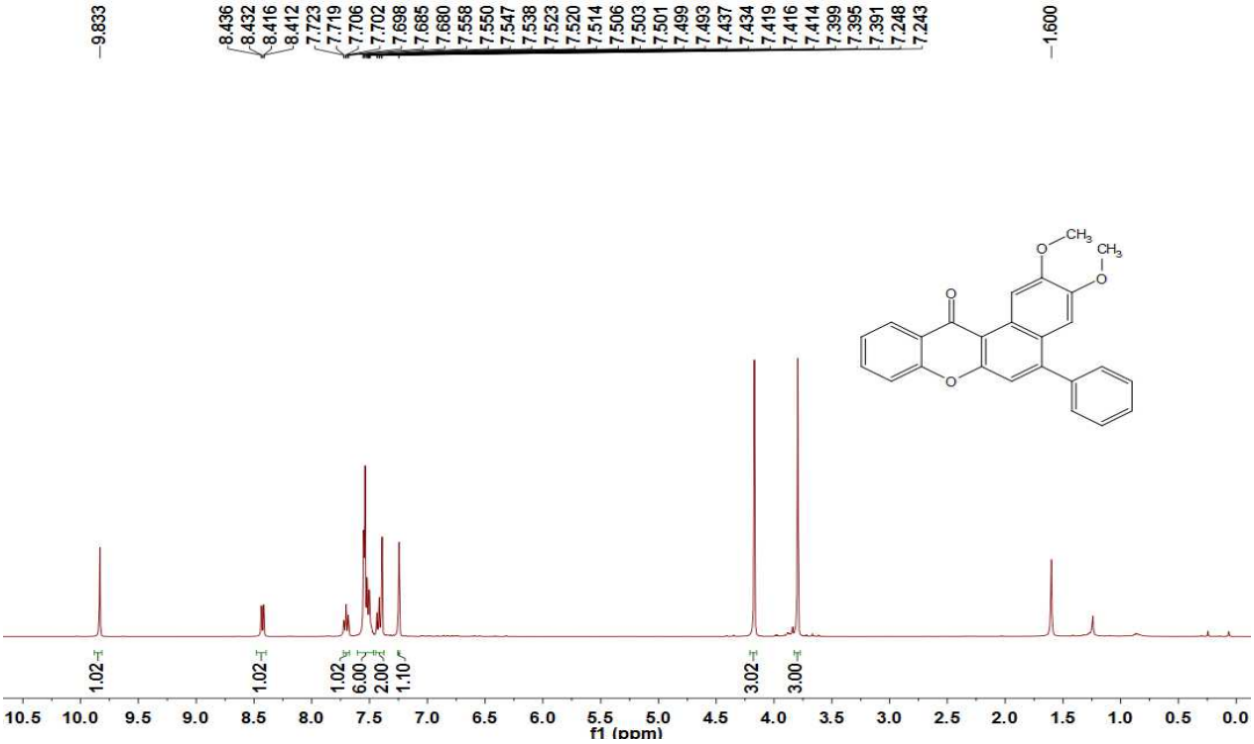
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **4c**



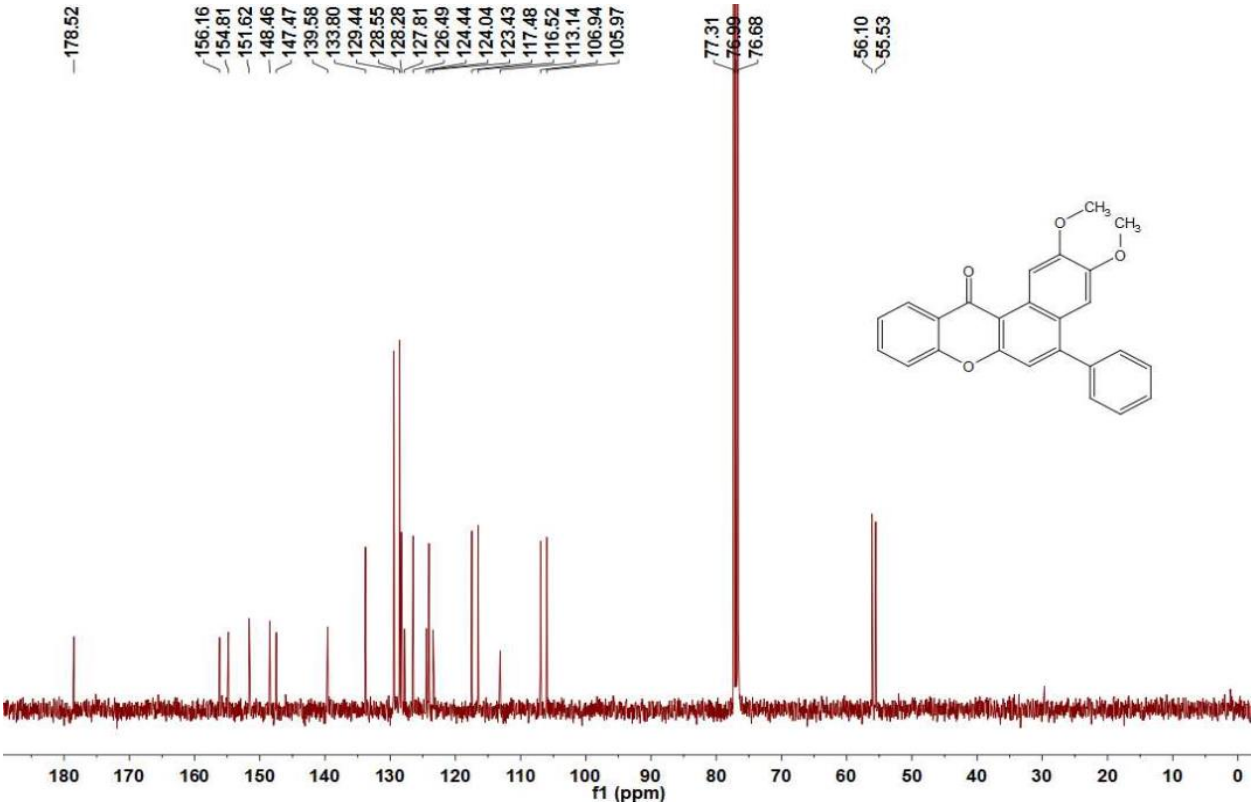
^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **4c**



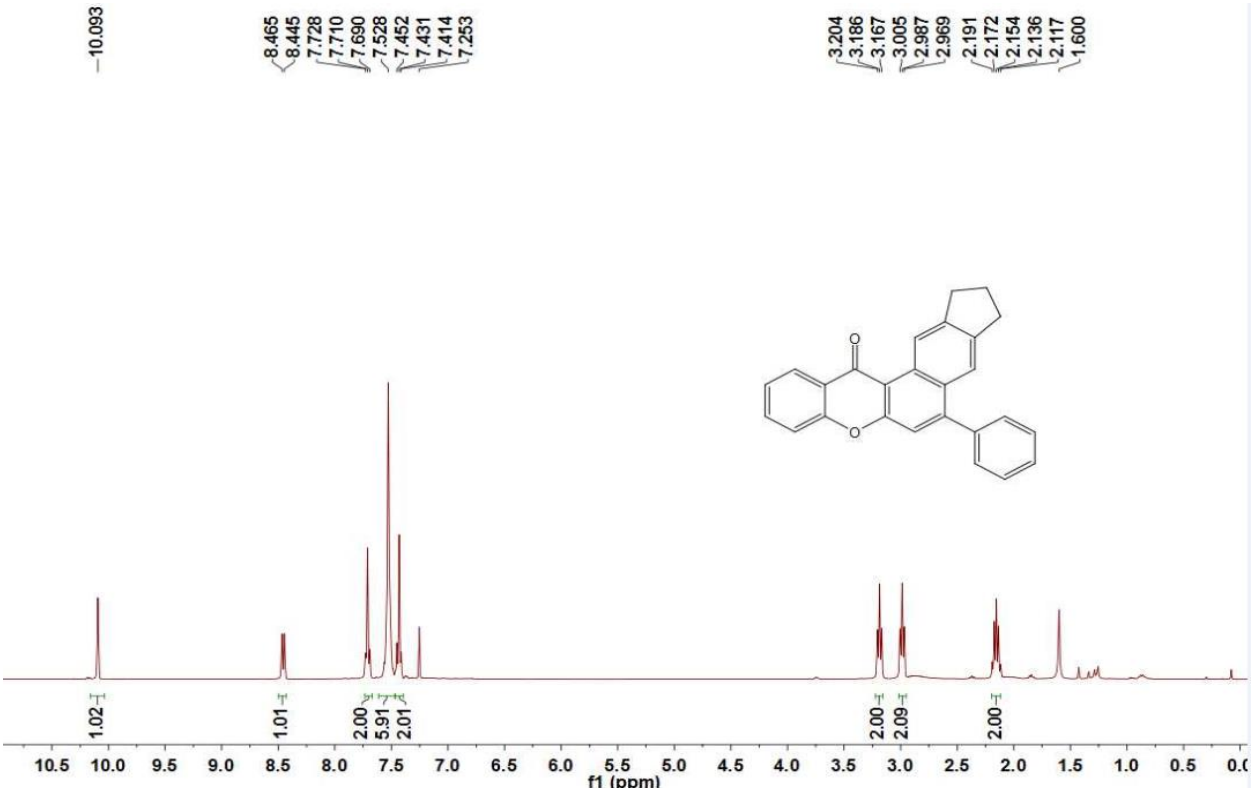
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **4d**



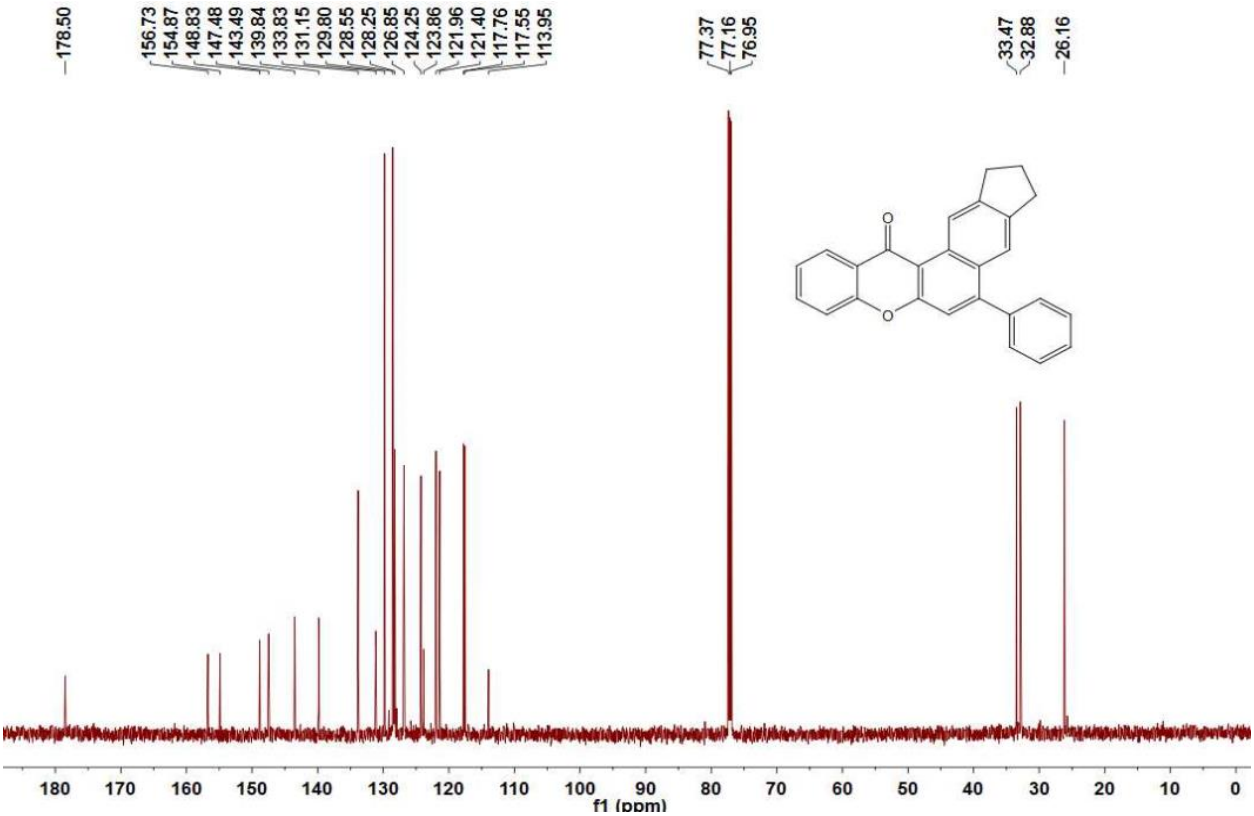
^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **4d**



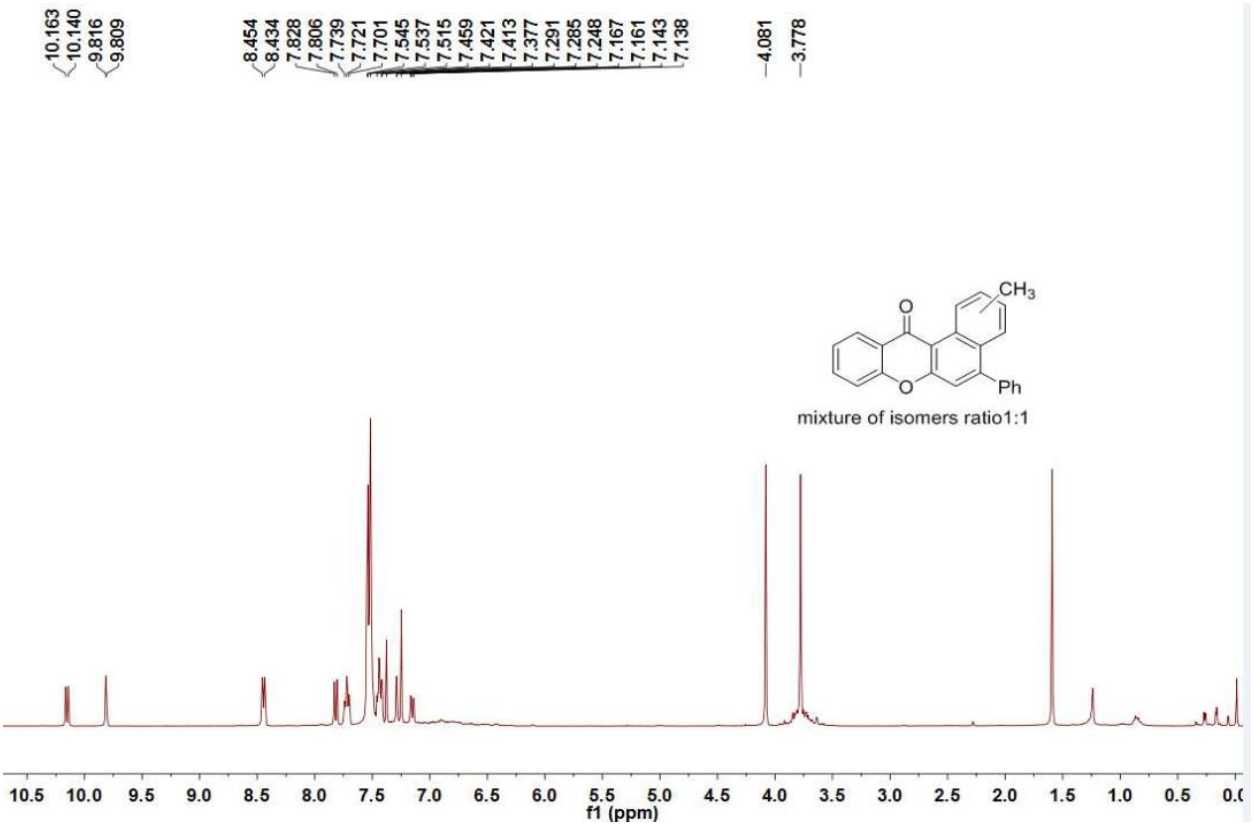
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **4e**



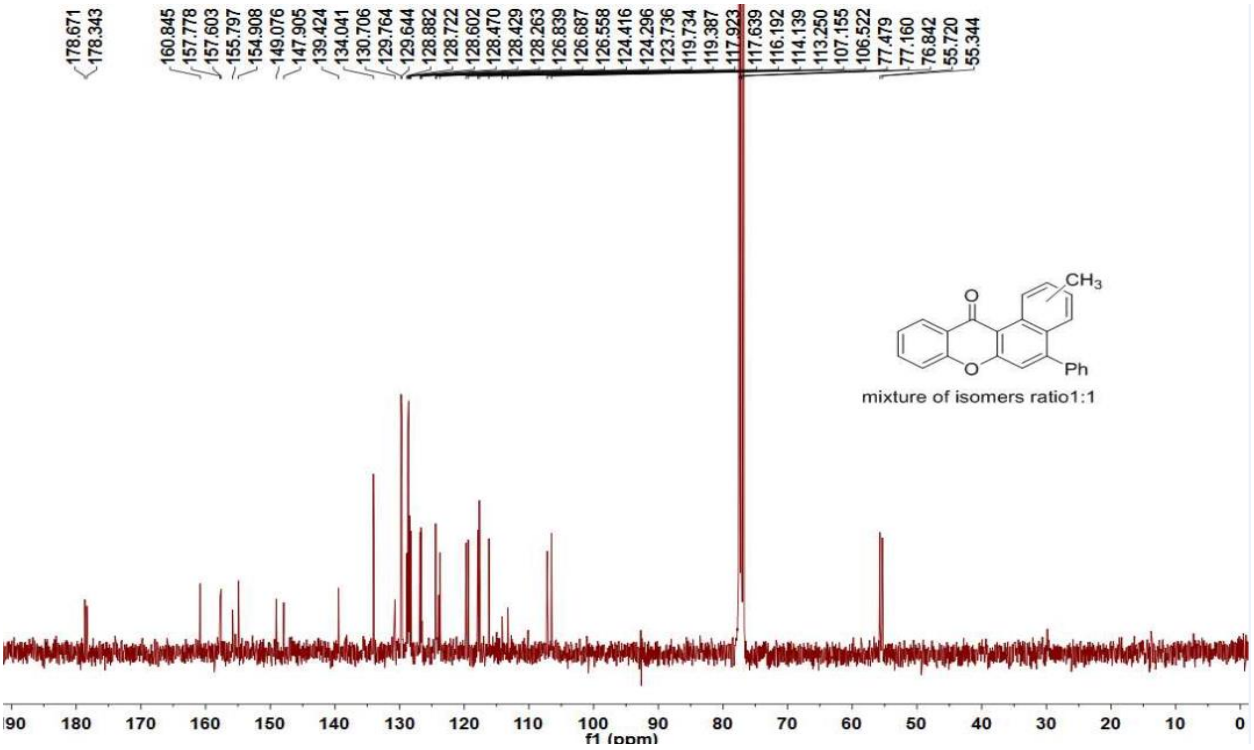
^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **4e**



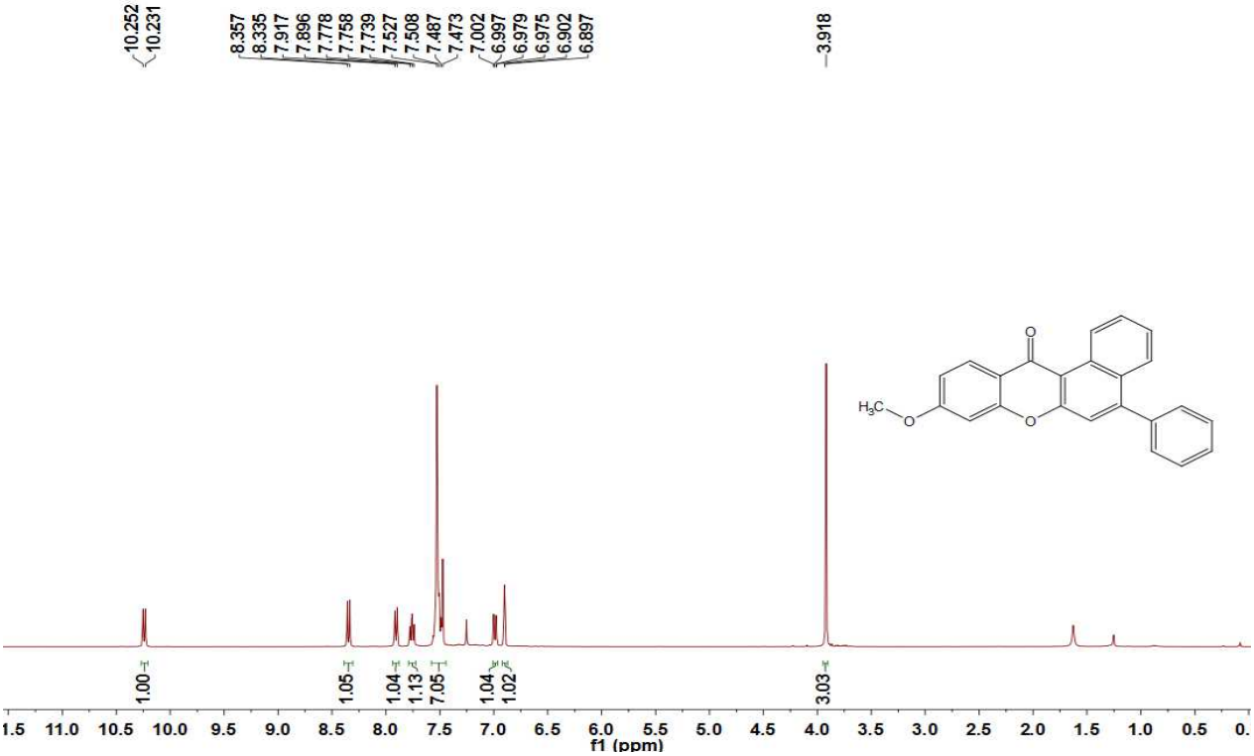
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **4f**



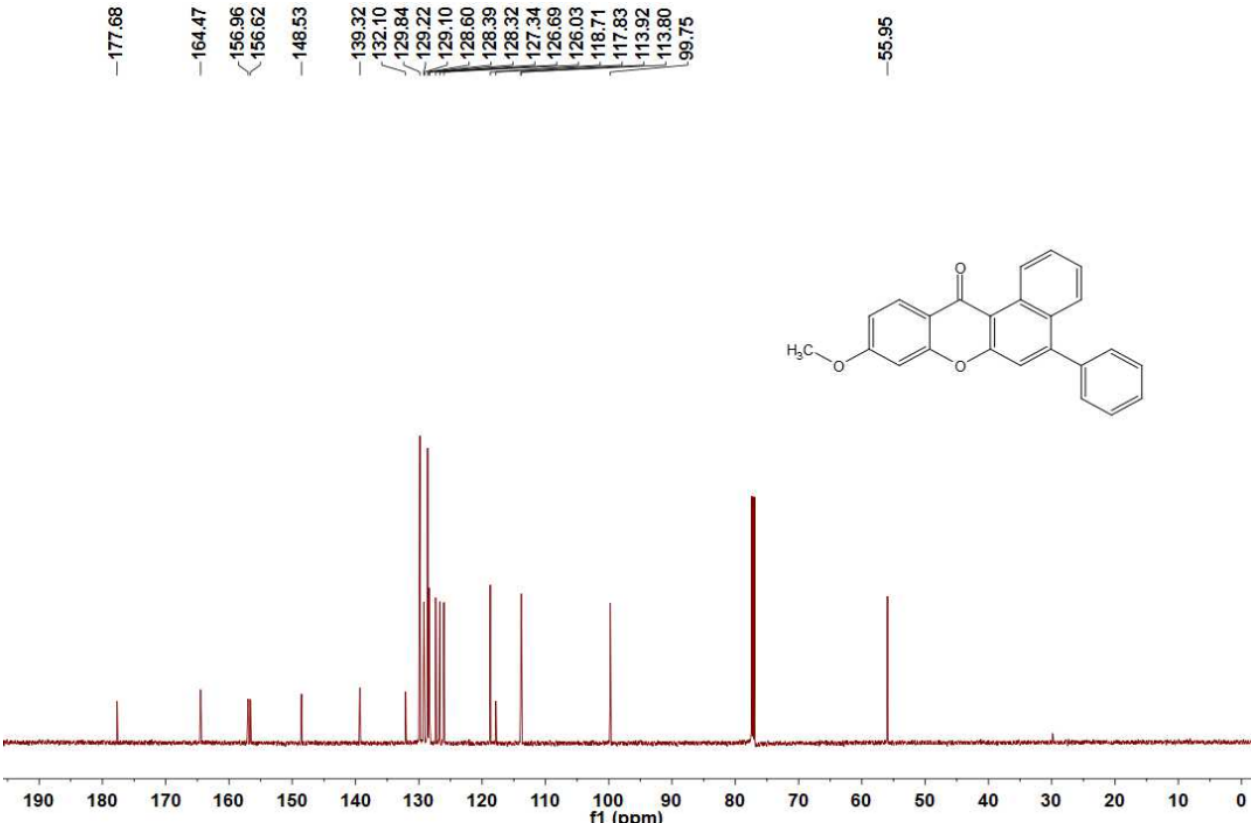
^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **4f**



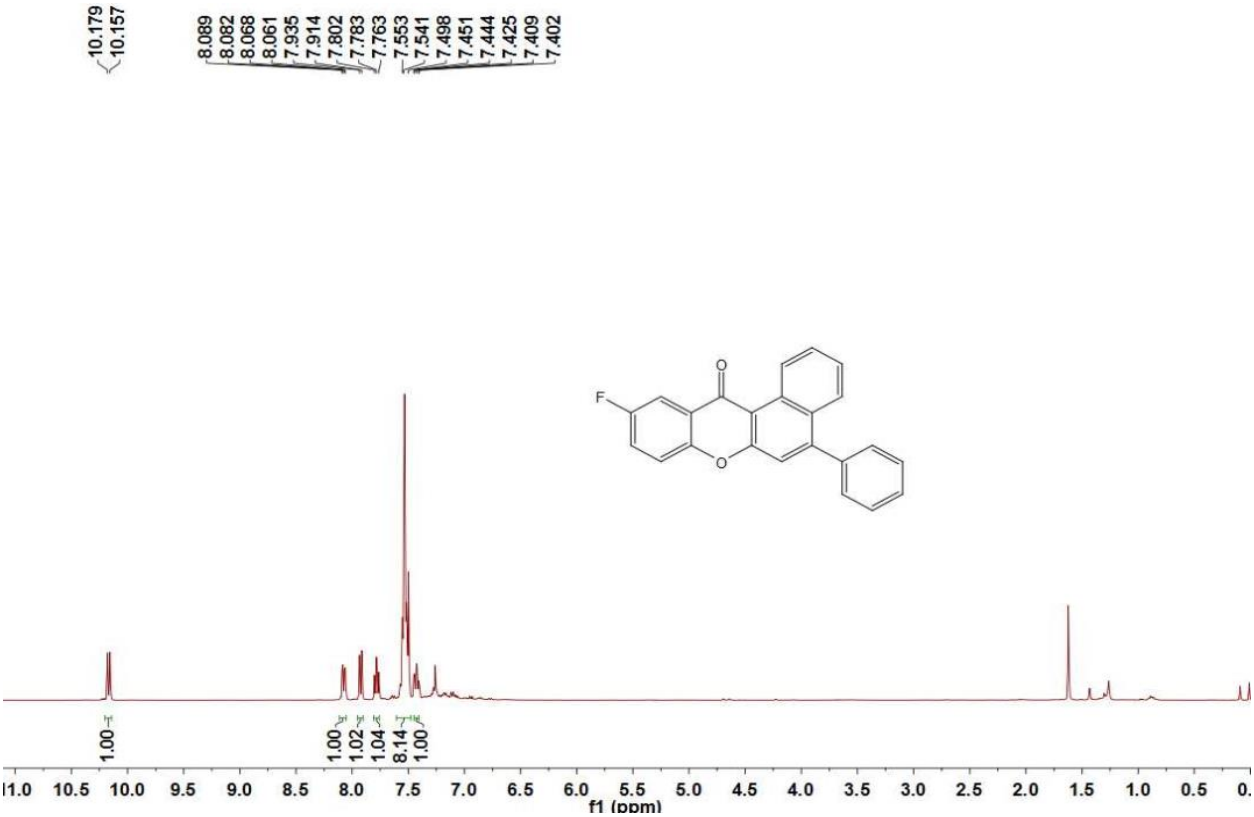
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **4g**



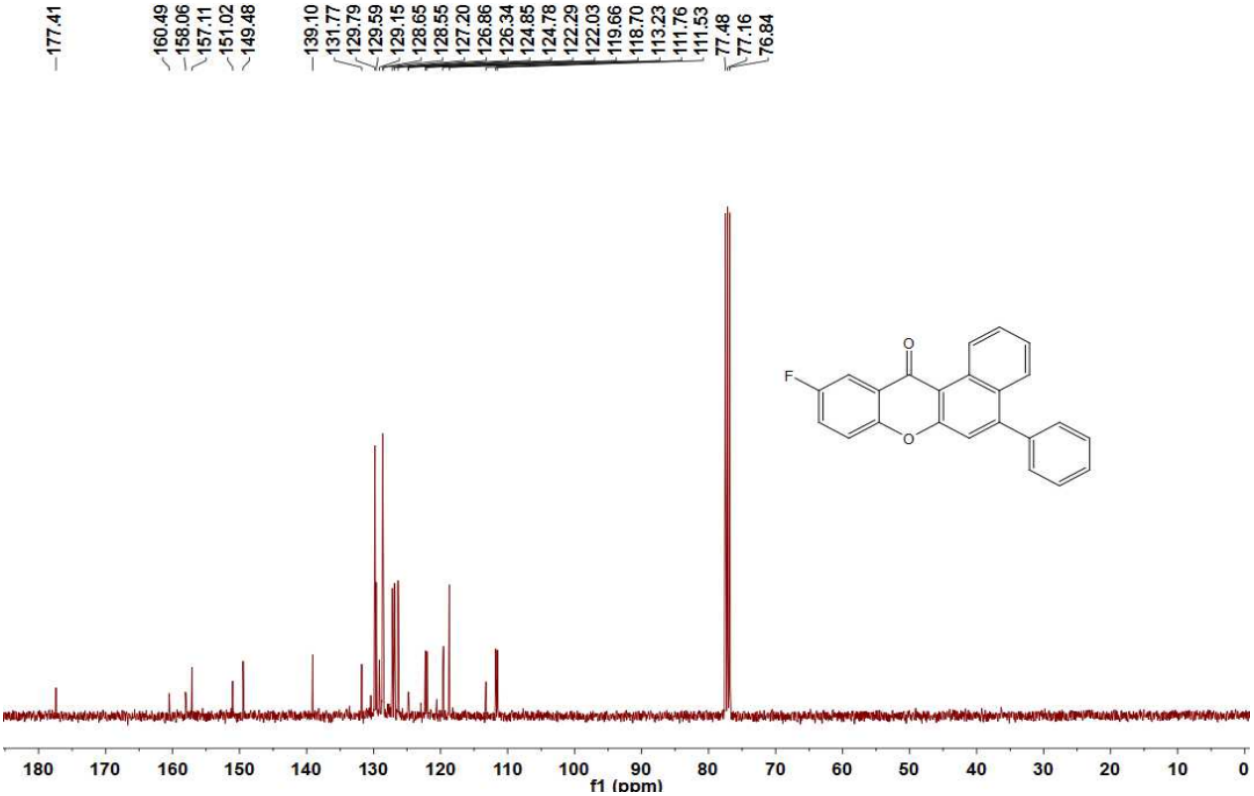
^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **4g**



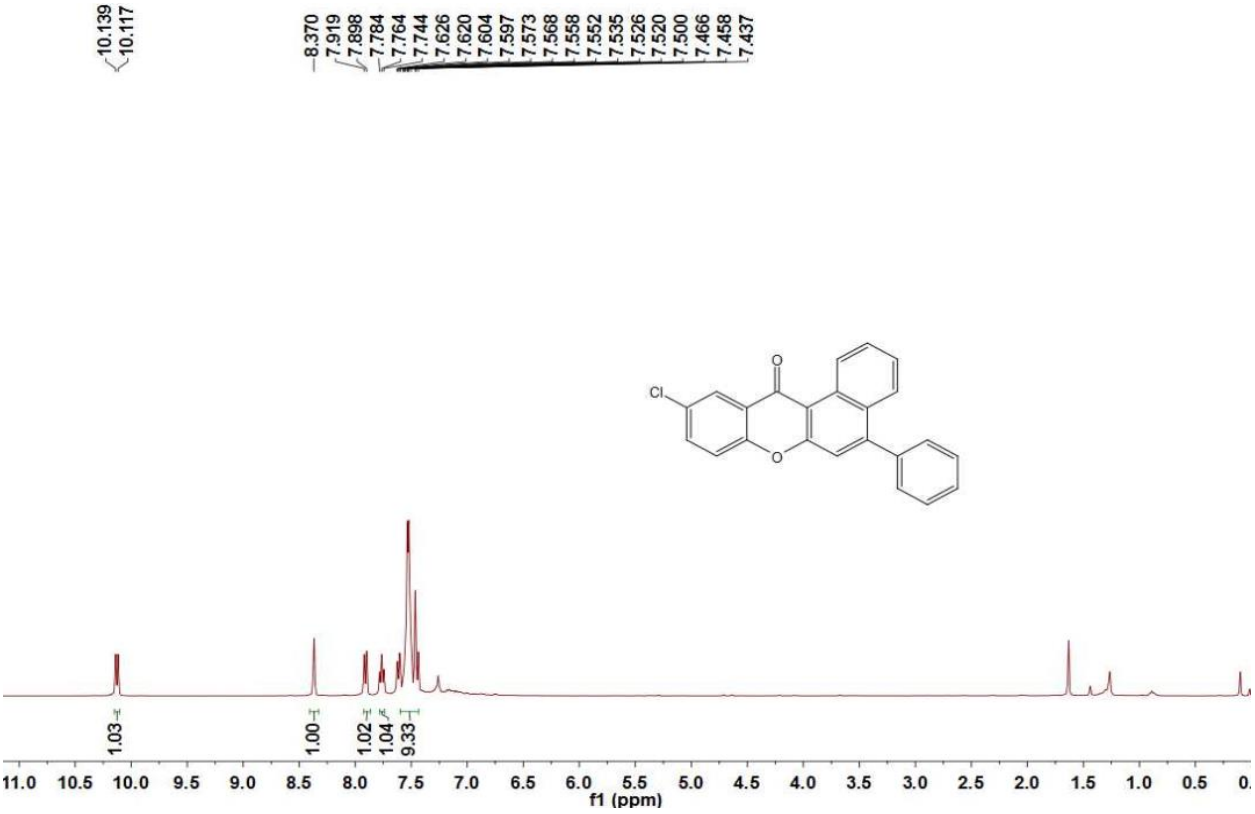
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **4h**



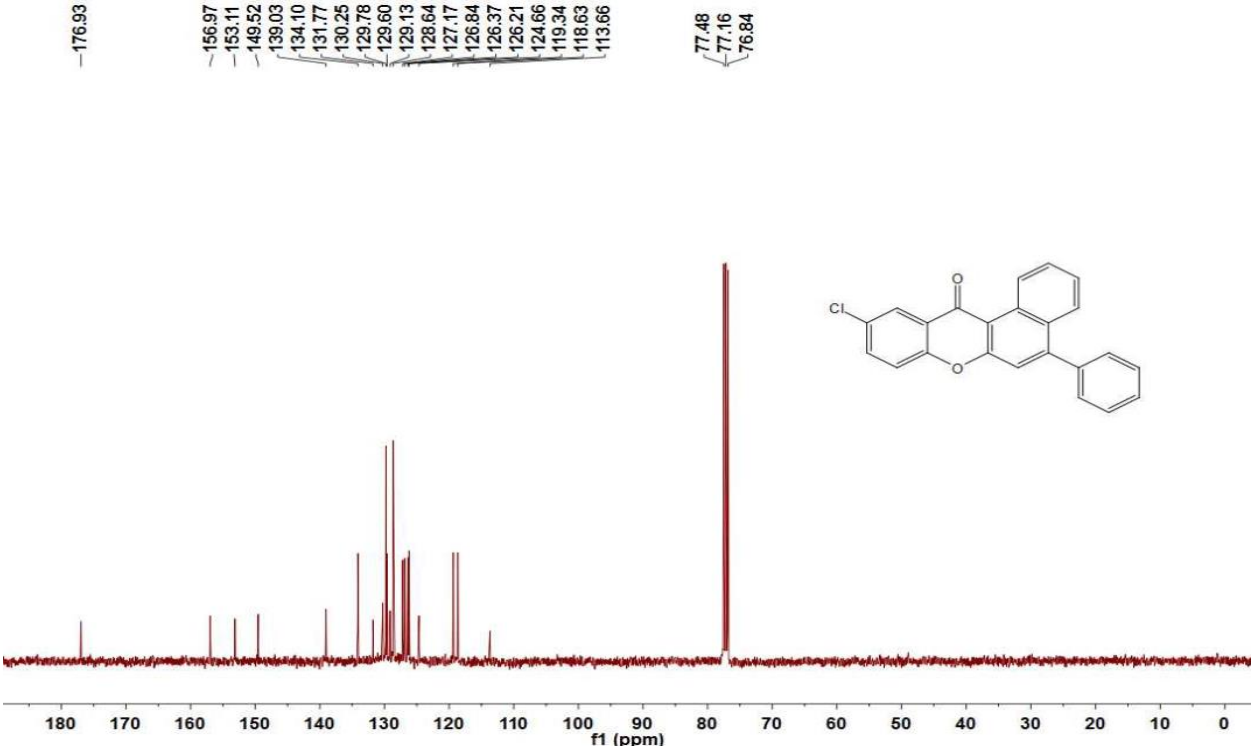
^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **4h**



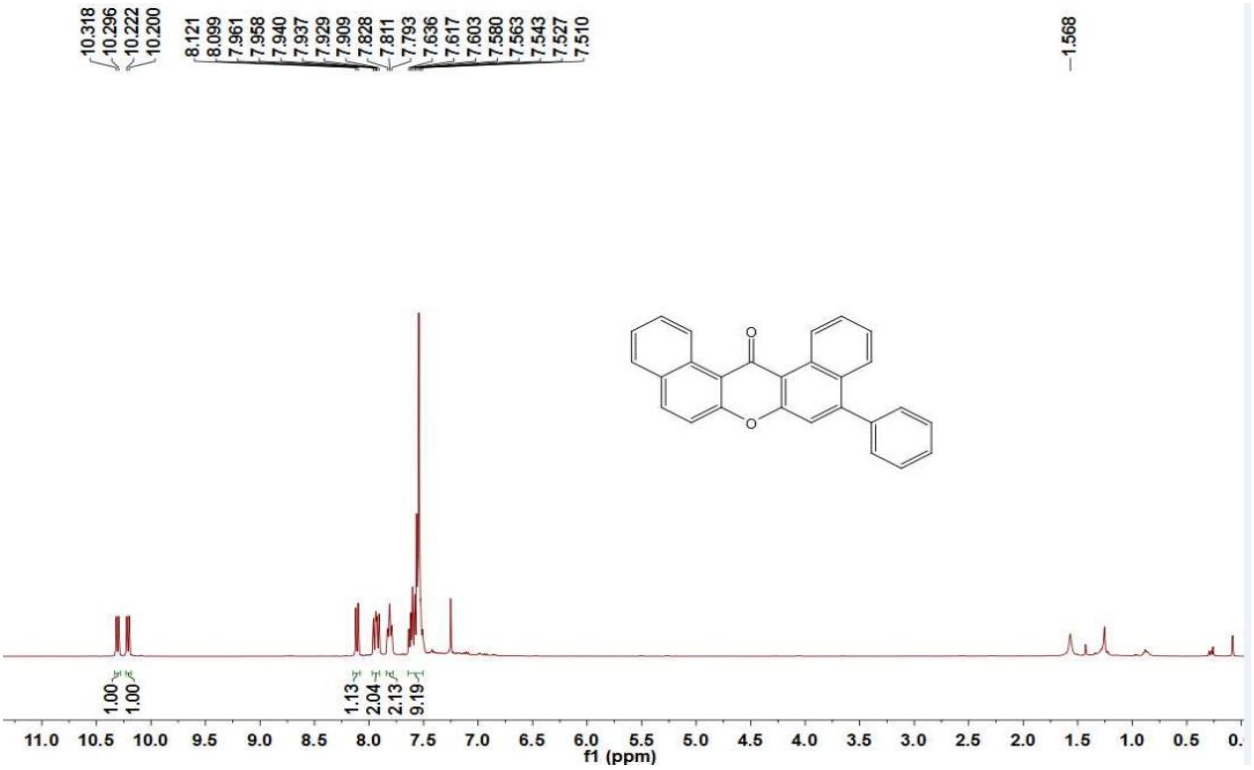
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **4i**



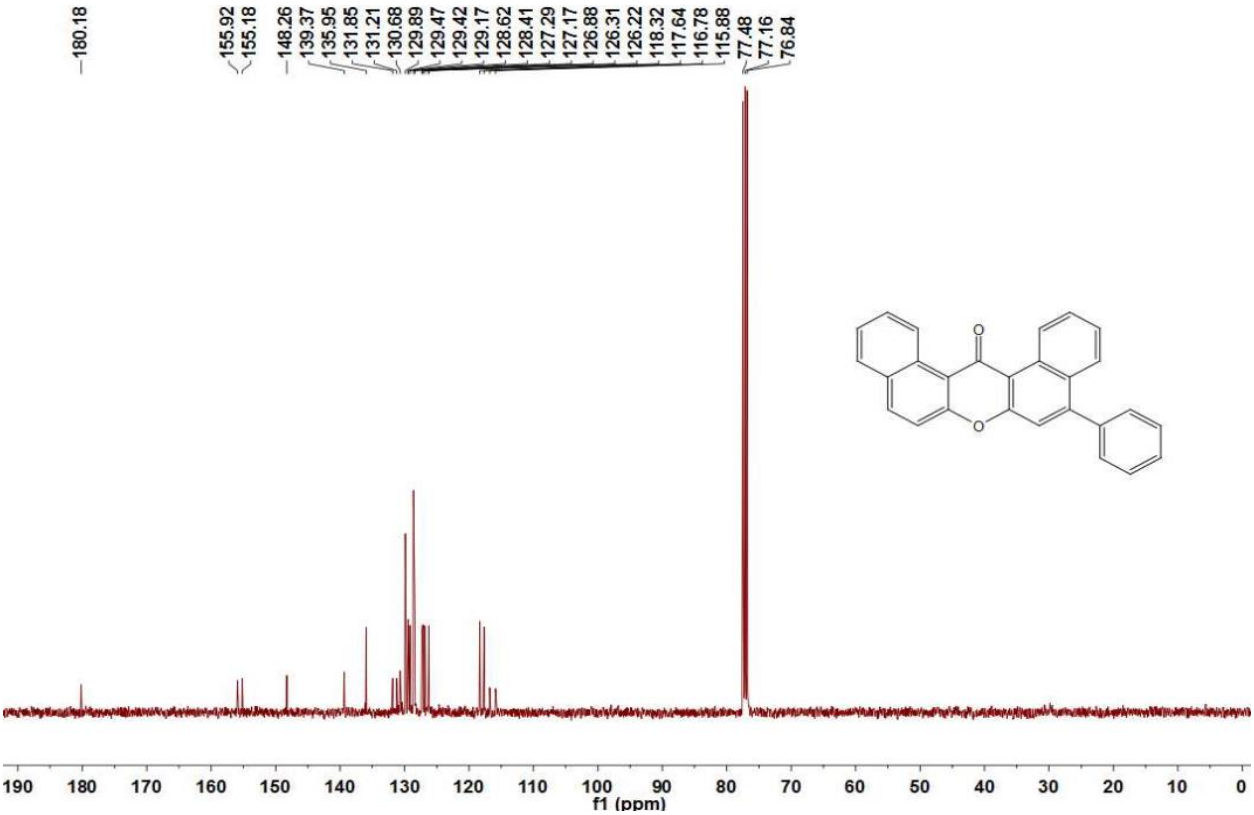
^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **4i**



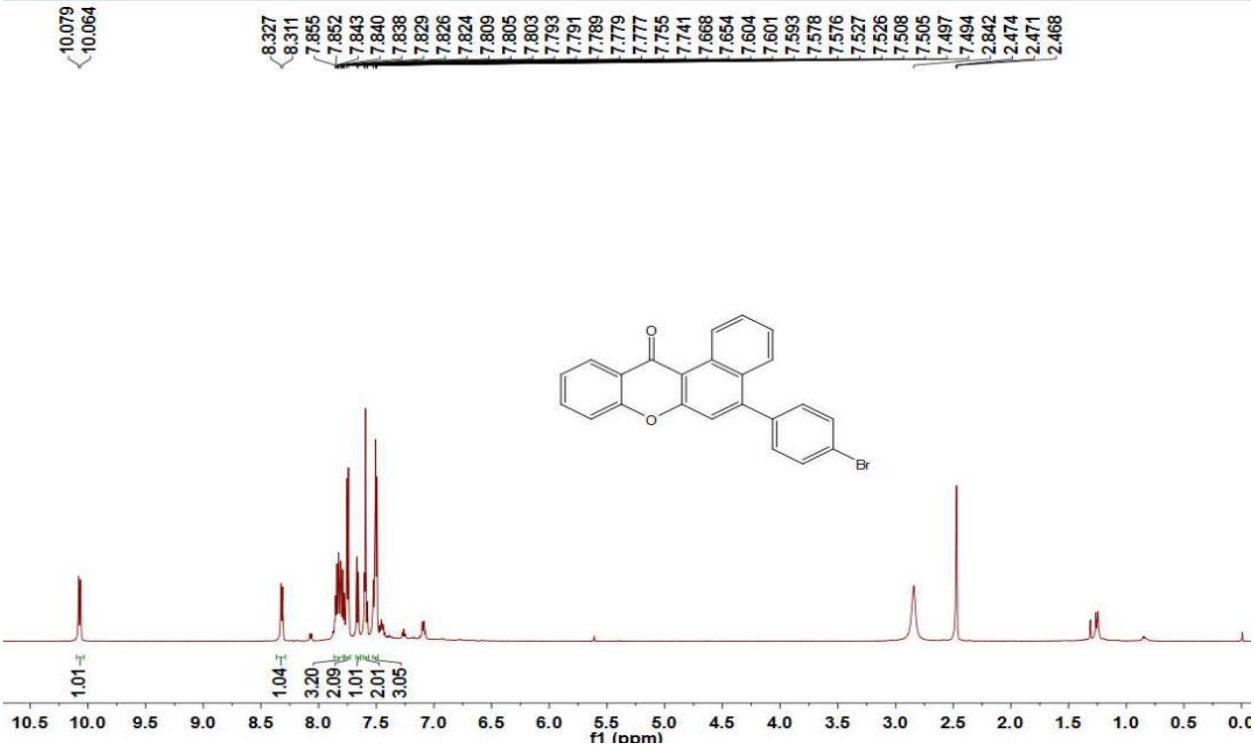
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **4j**



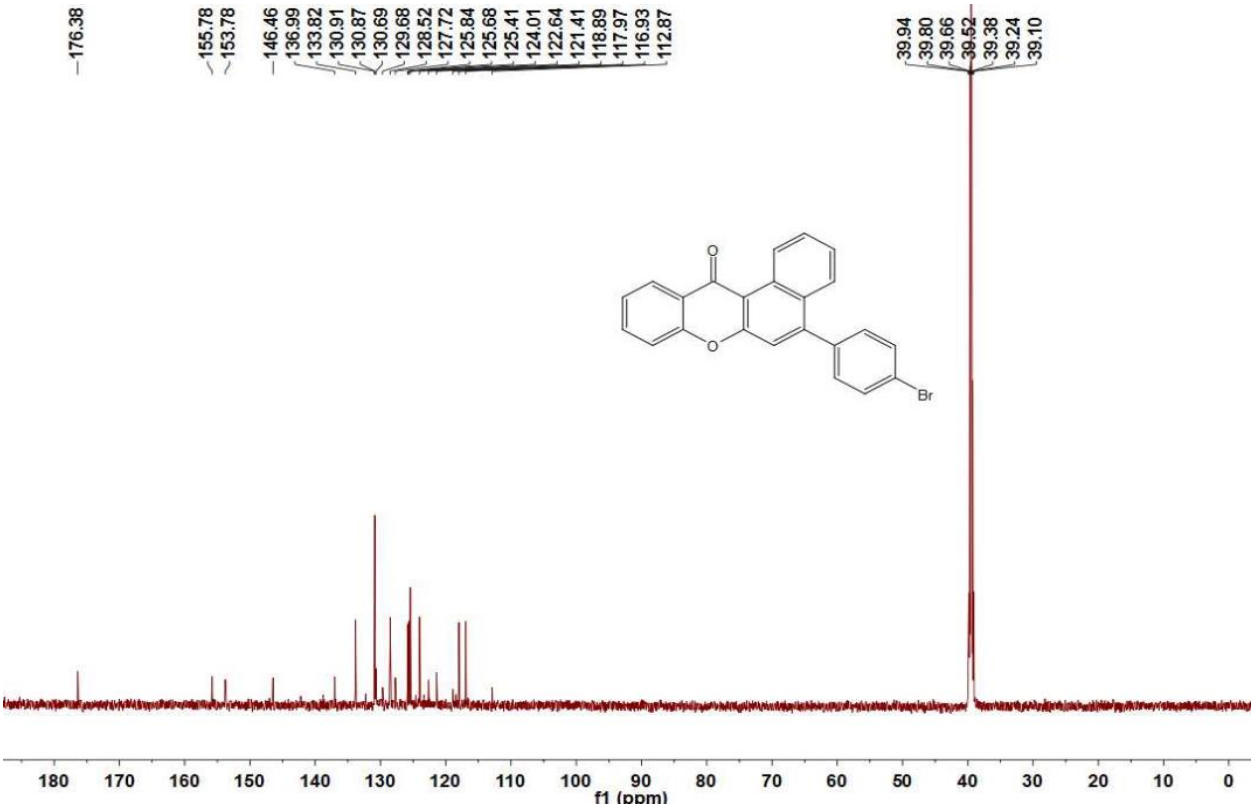
^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **4j**



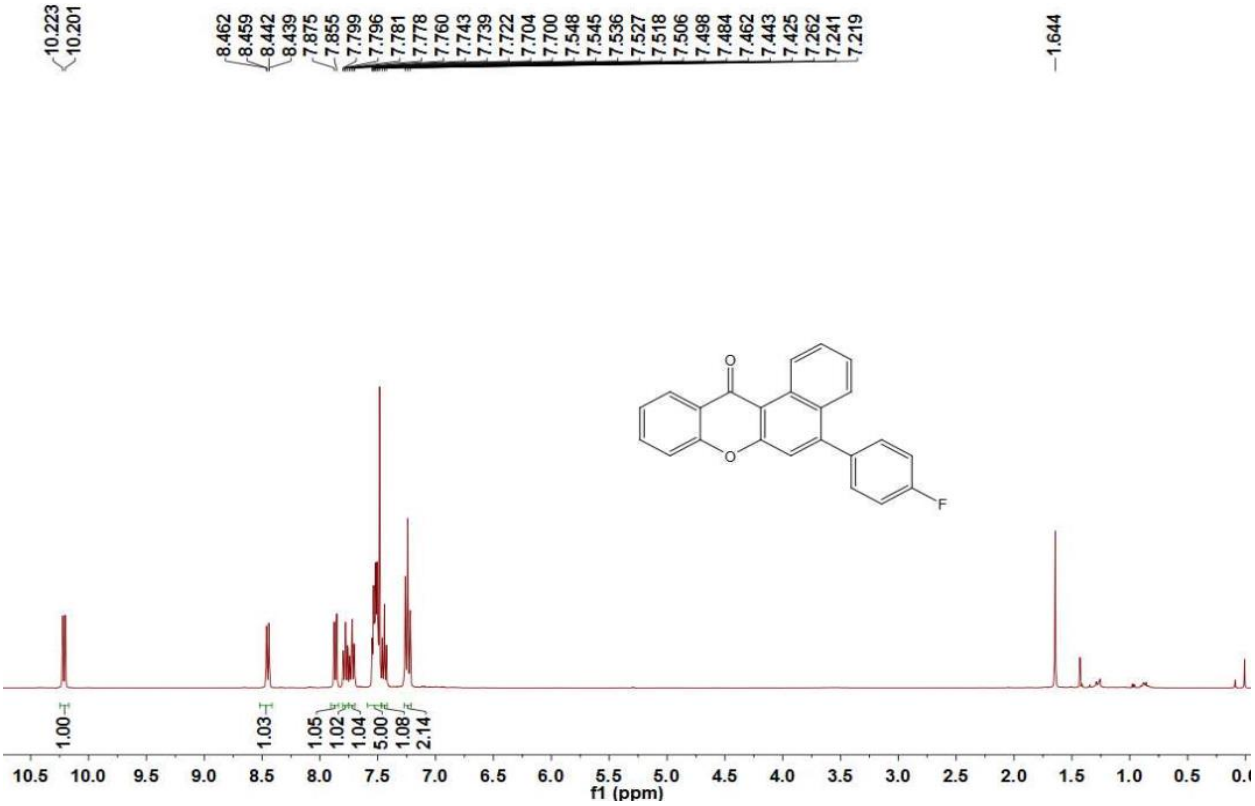
^{1}H NMR spectrum (400 MHz, DMSO-d_6) of compound **4k**



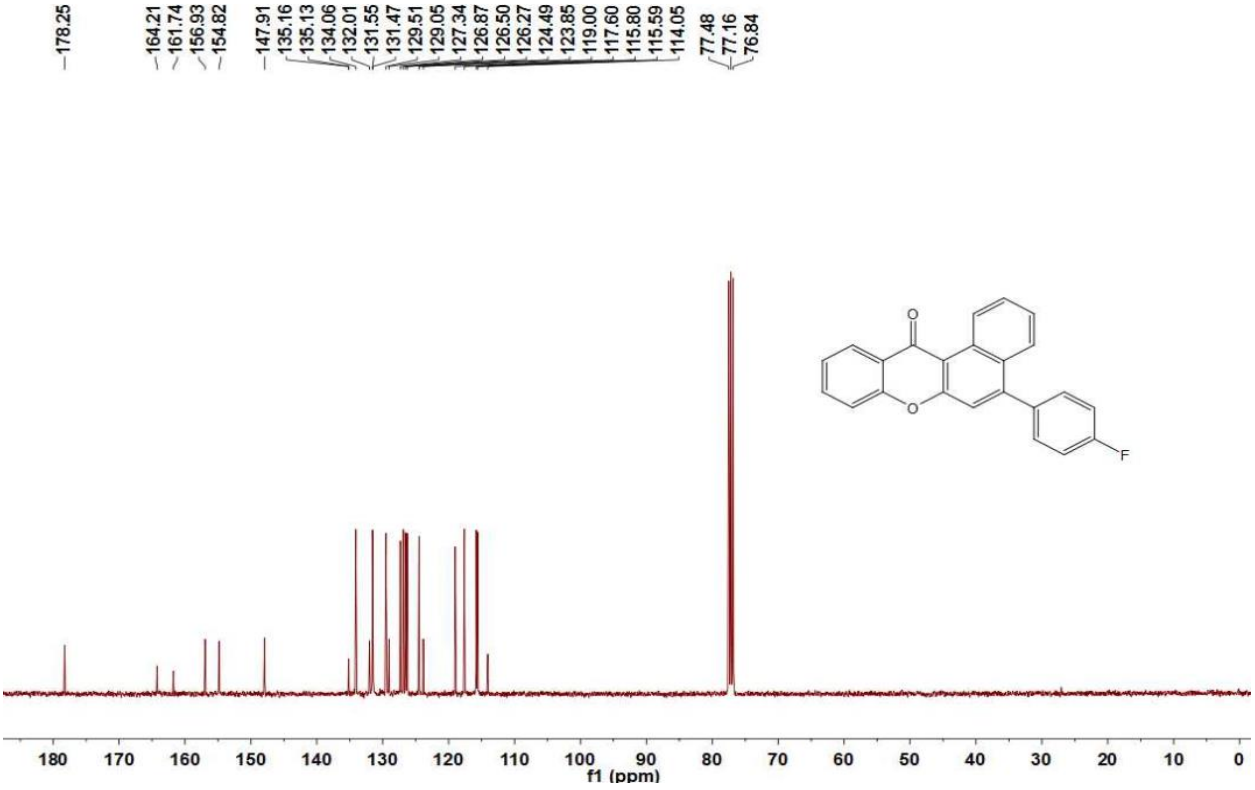
^{13}C NMR spectrum (100 MHz, DMSO-d_6) of compound **4k**



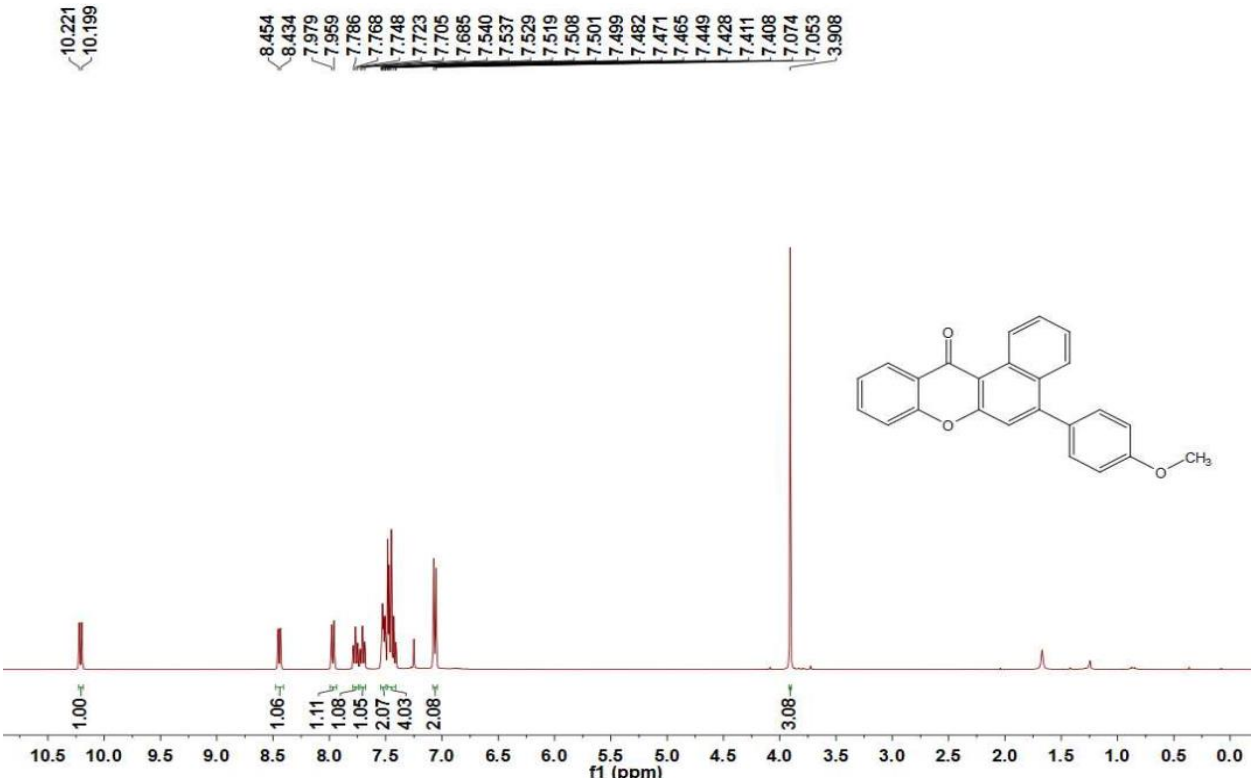
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **4l**



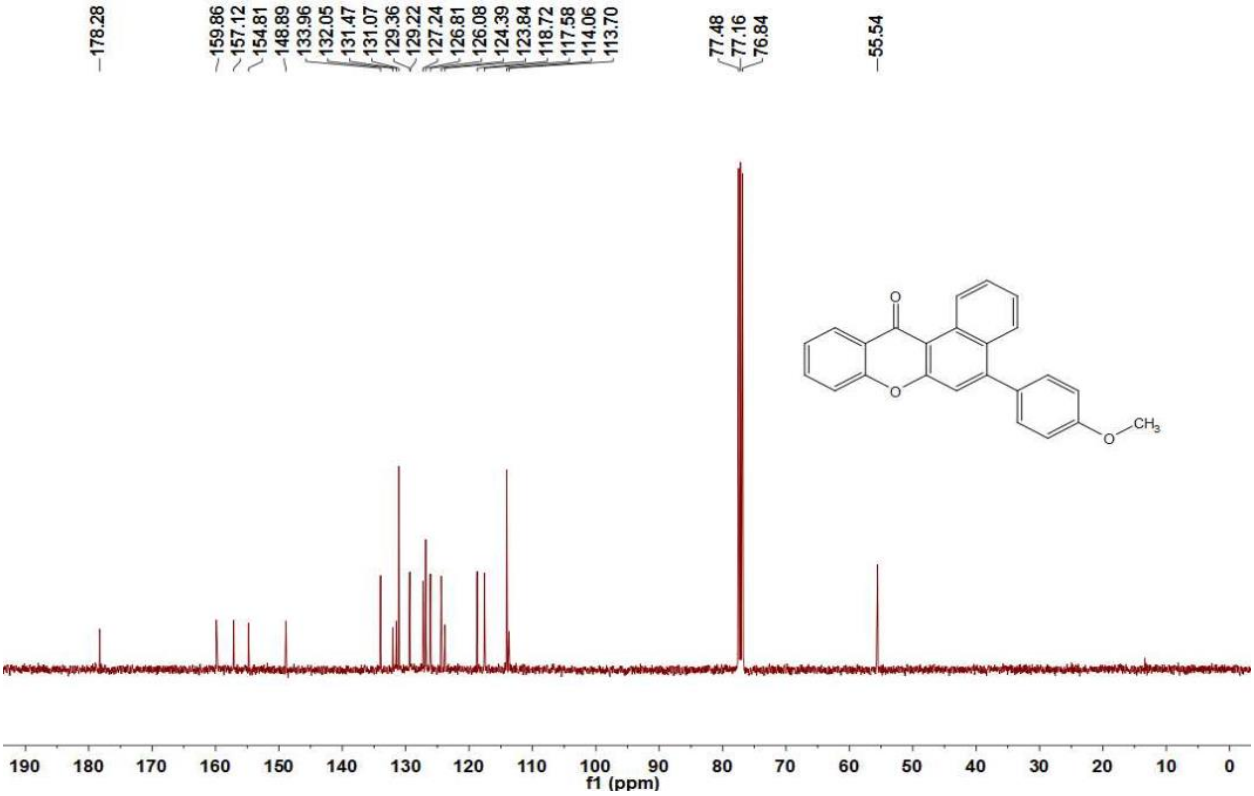
^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **4l**



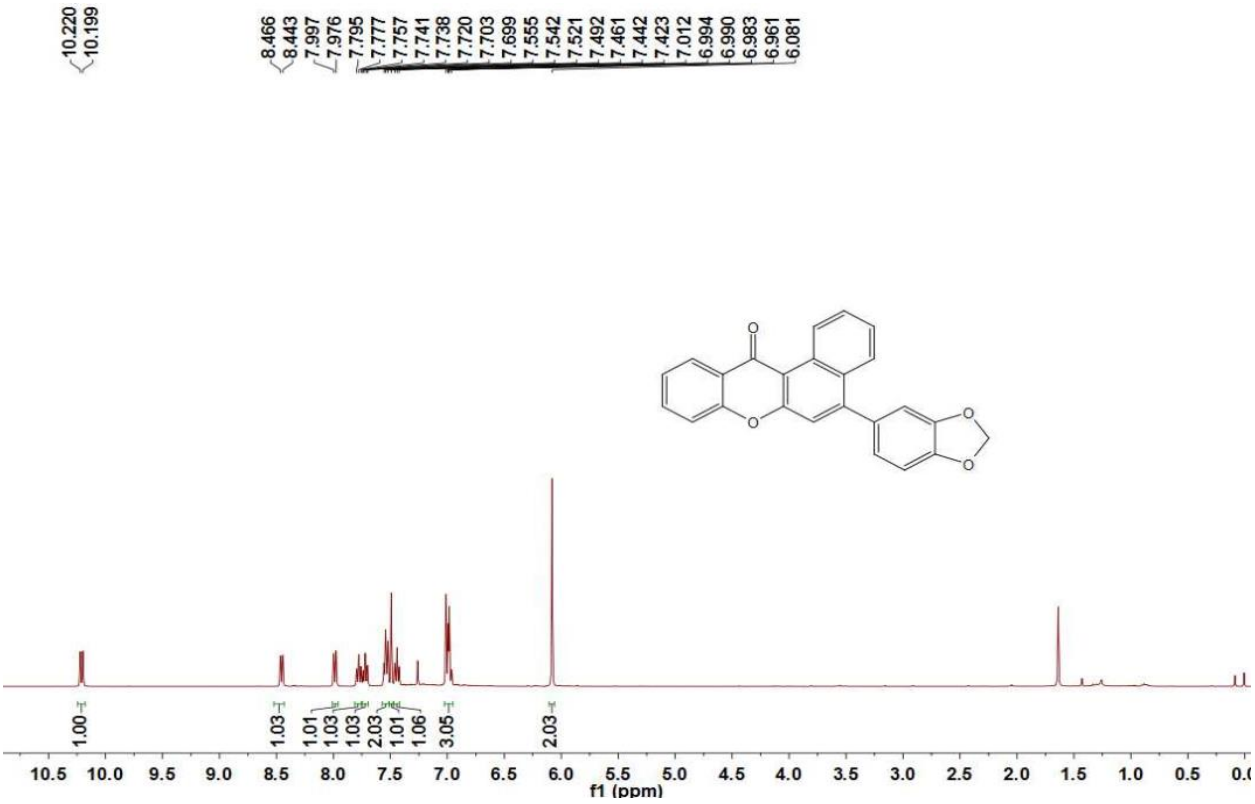
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **4m**



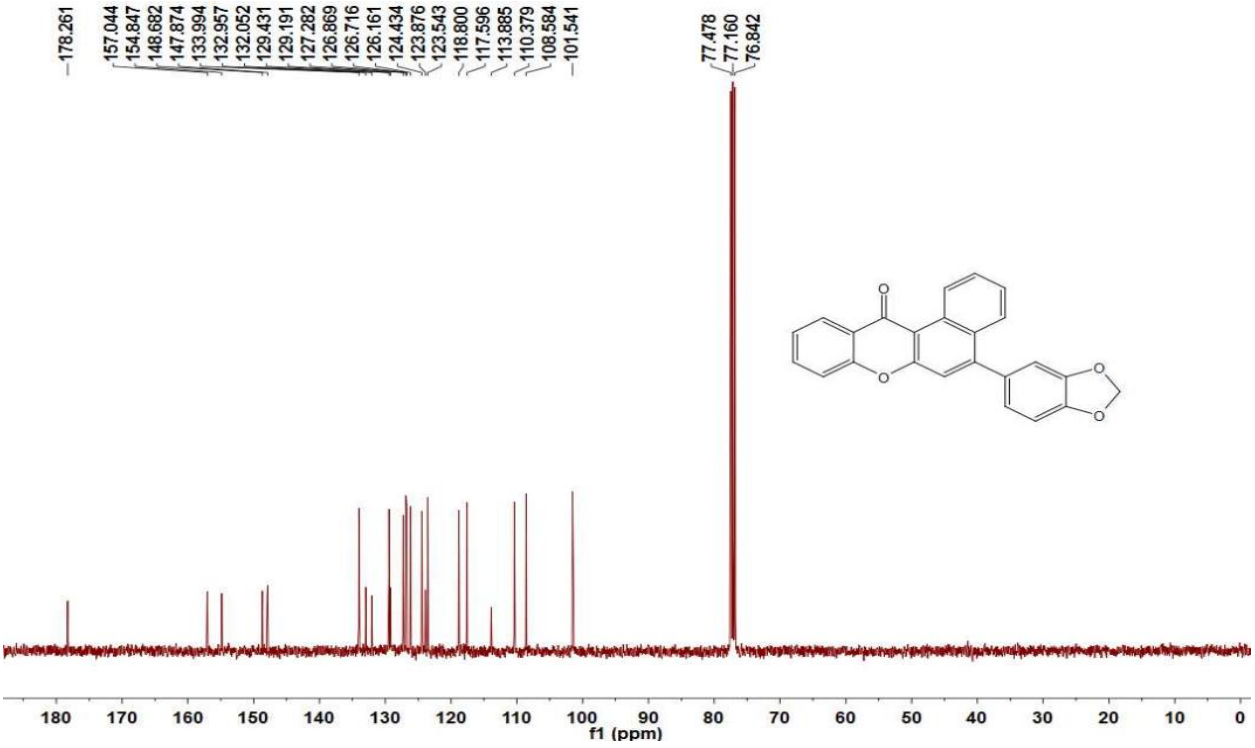
^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **4m**



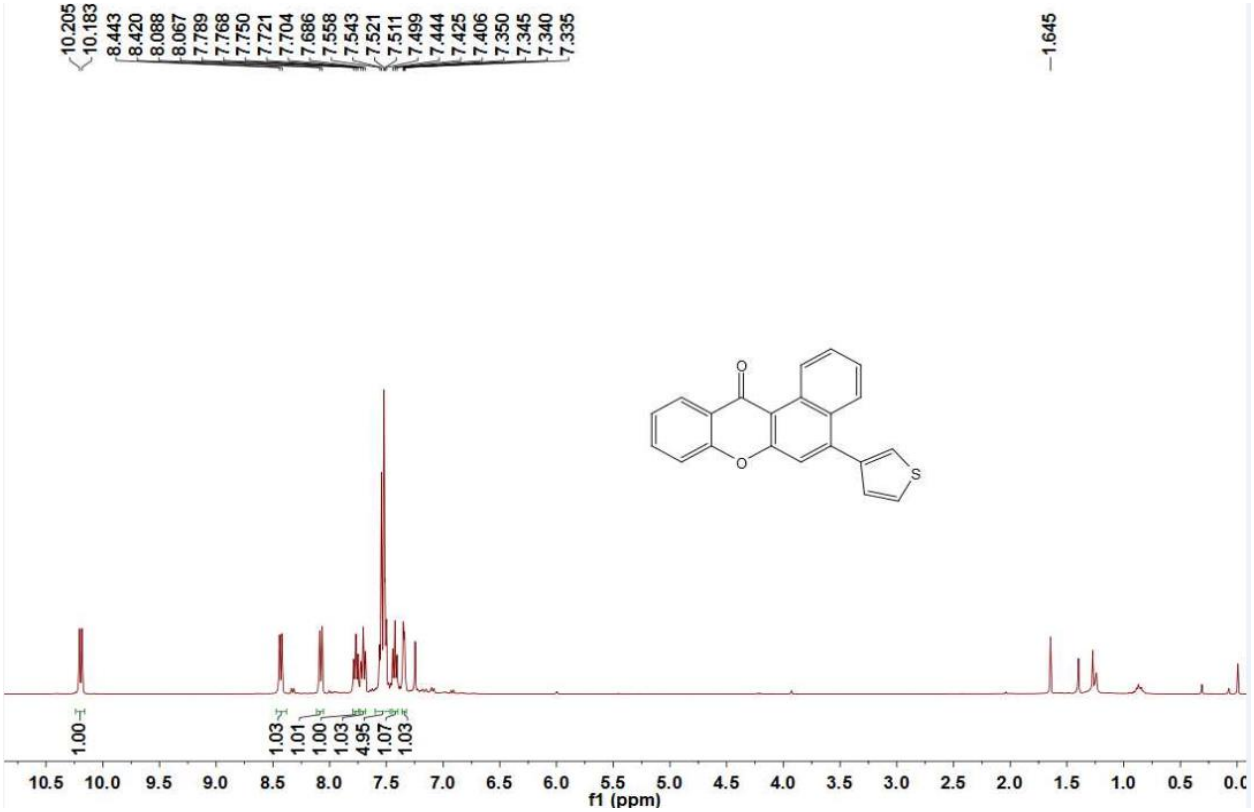
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **4n**



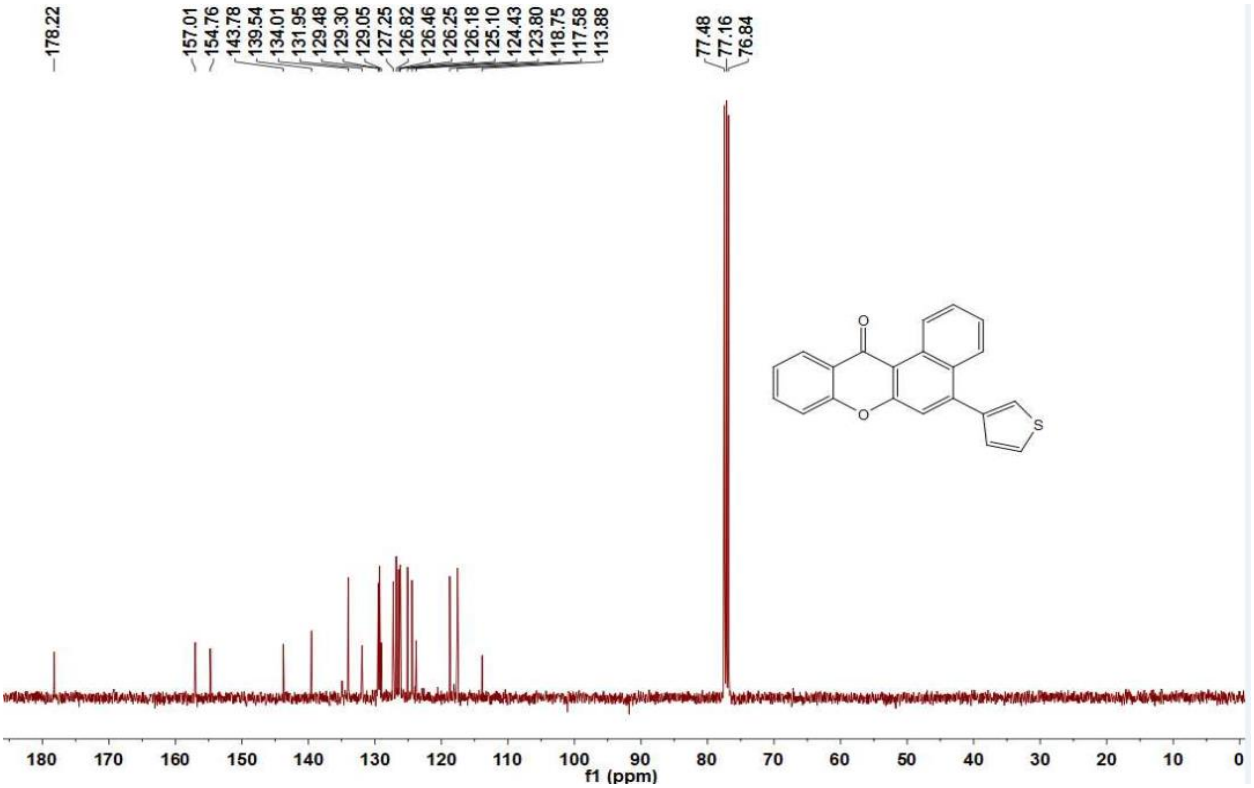
^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **4n**



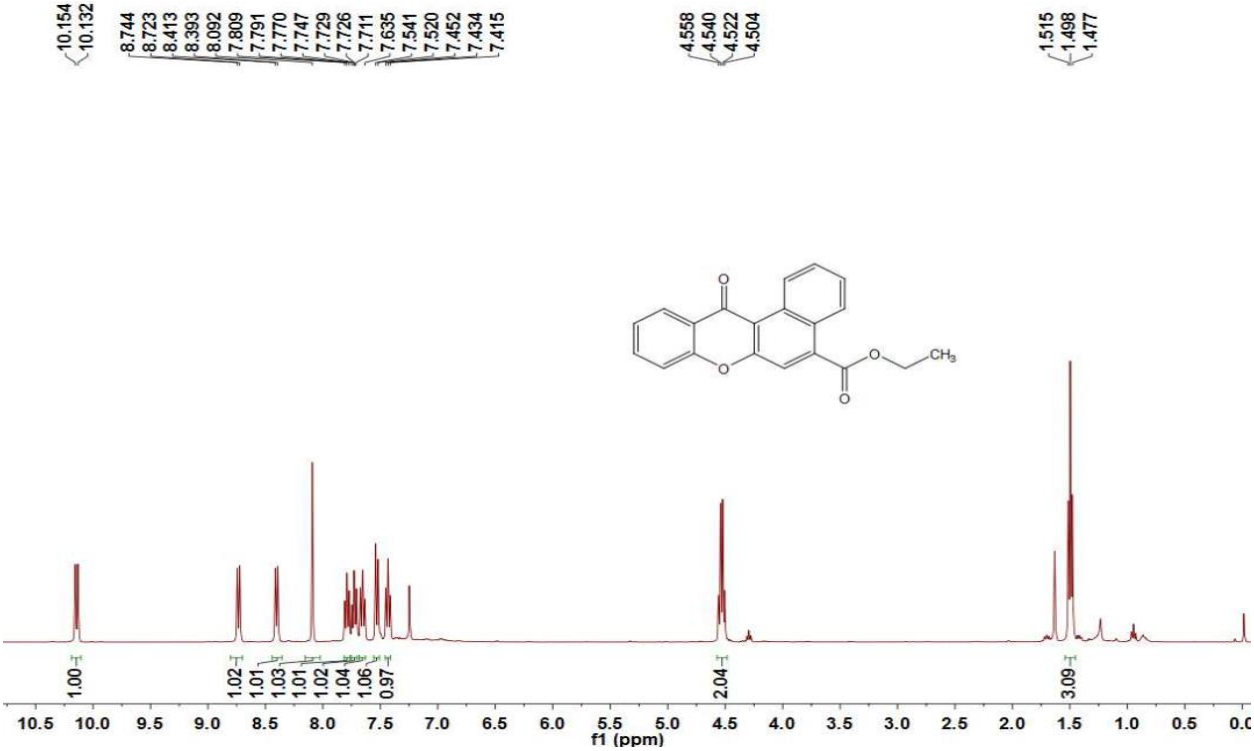
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **4o**



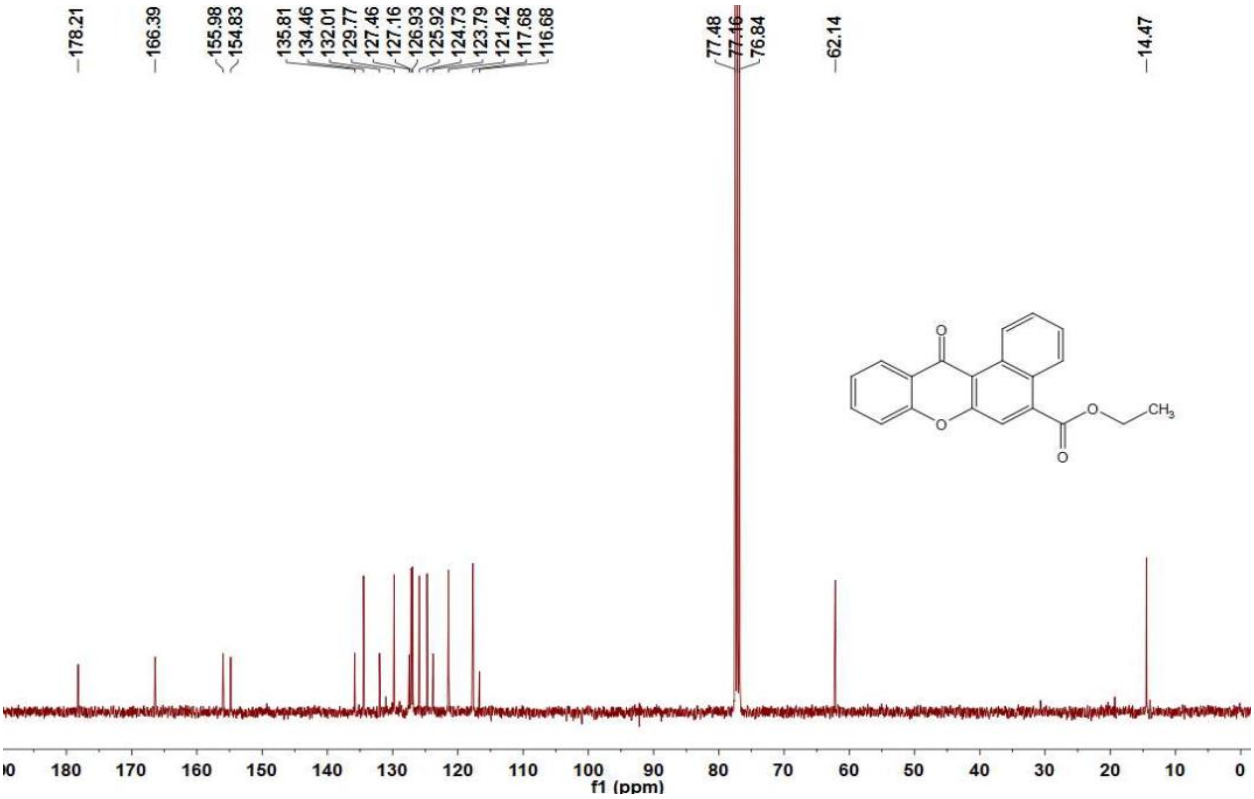
^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **4o**



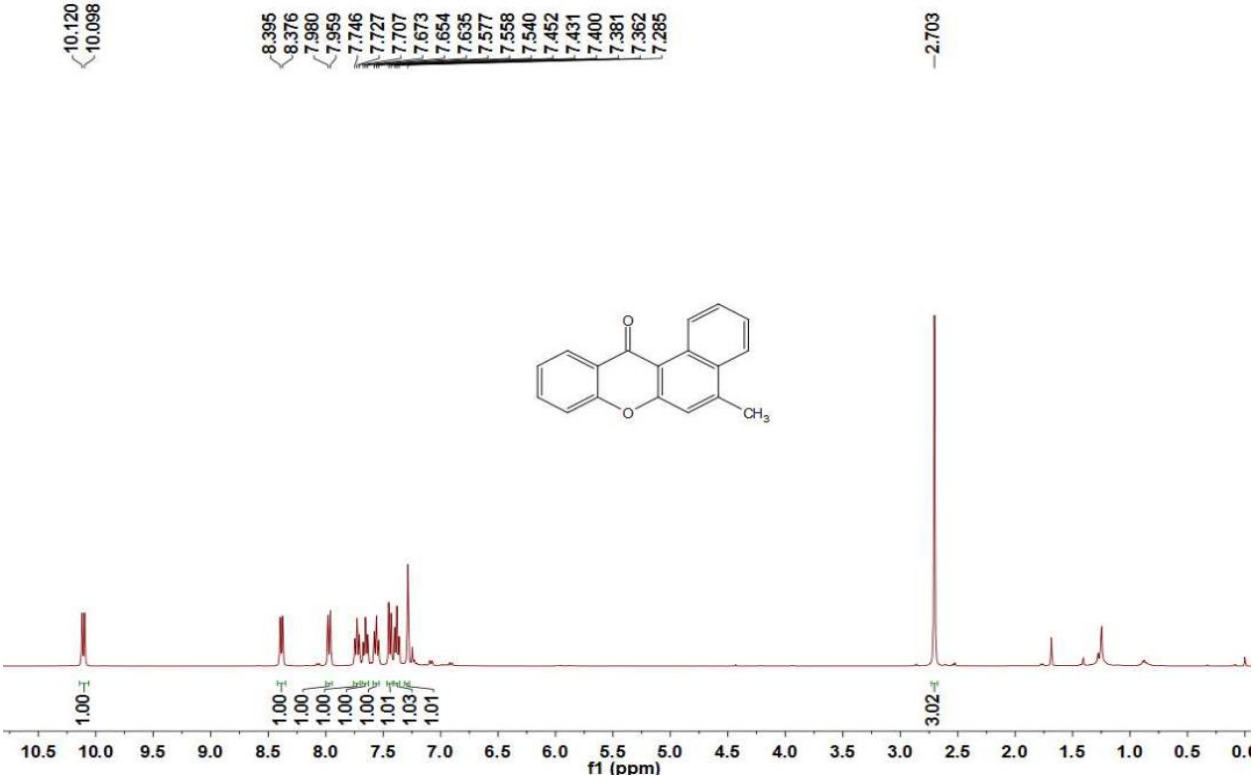
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **4p**



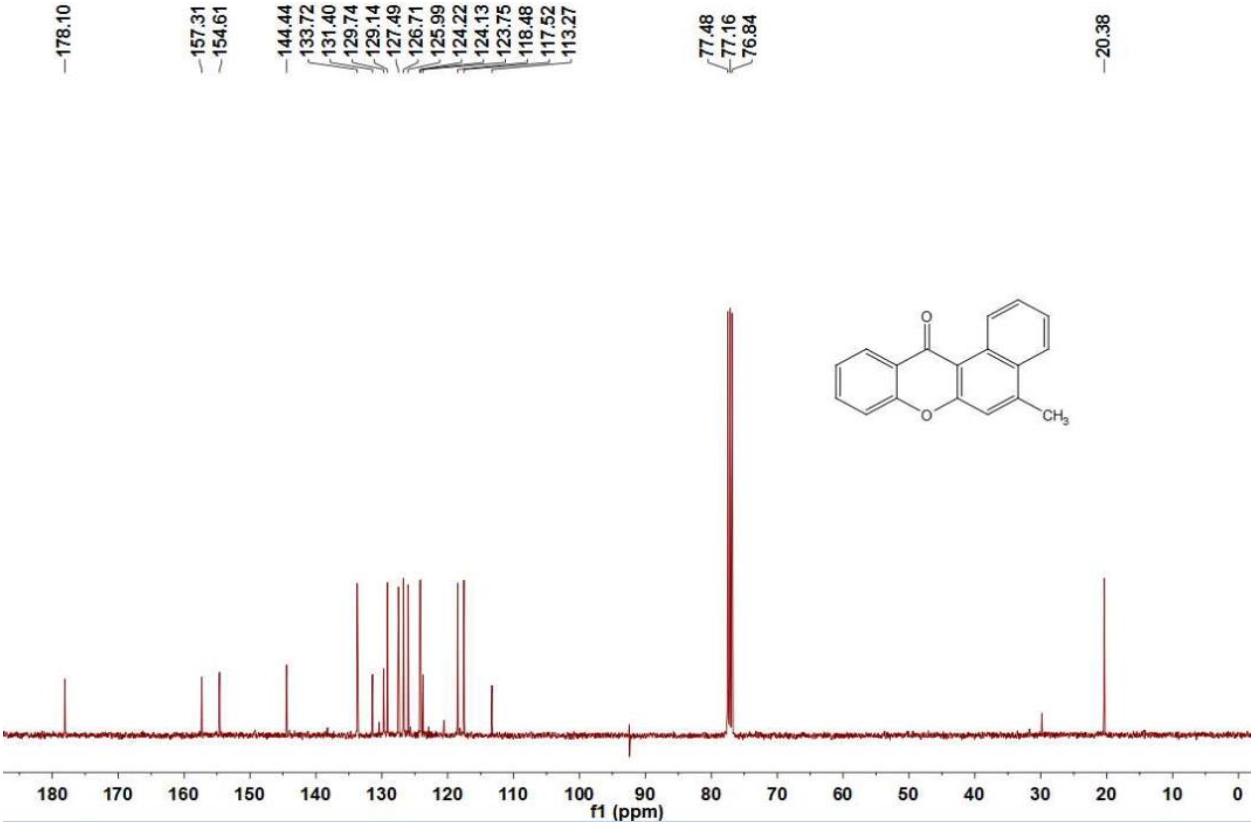
^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **4p**



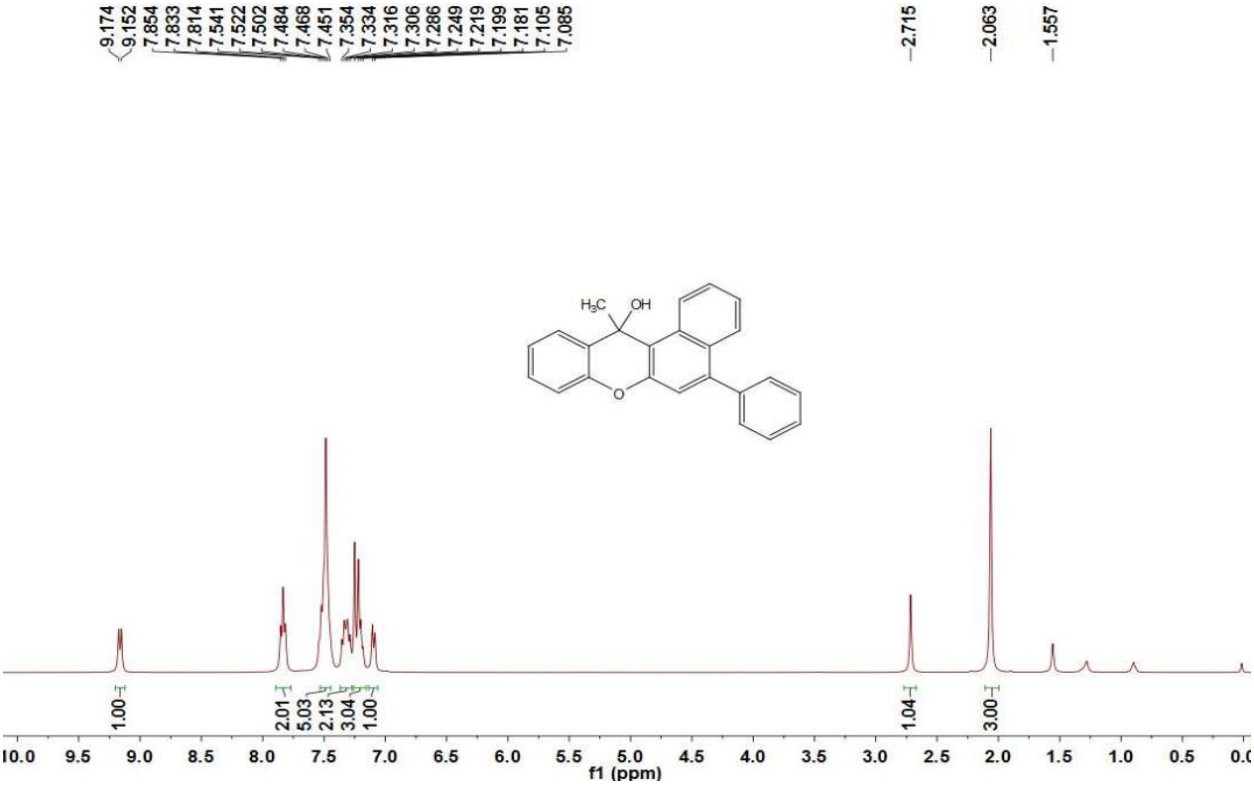
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **4q**



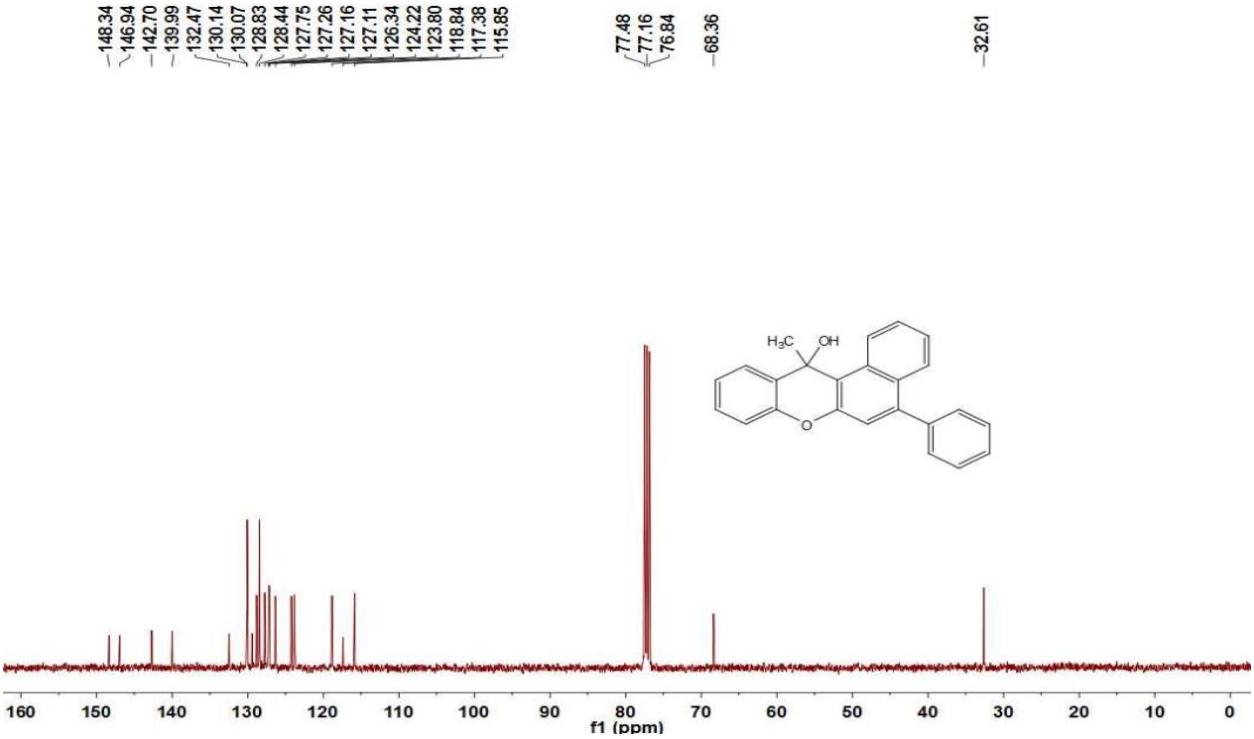
^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **4q**



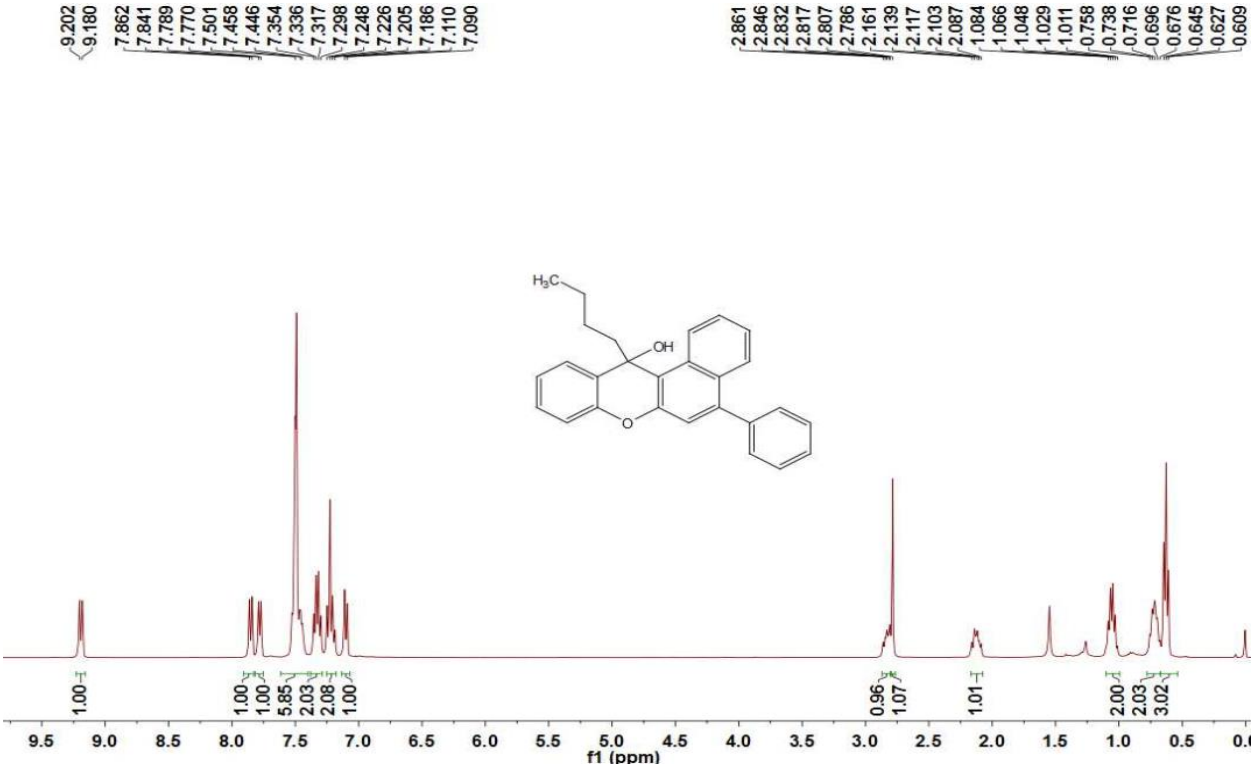
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **5**



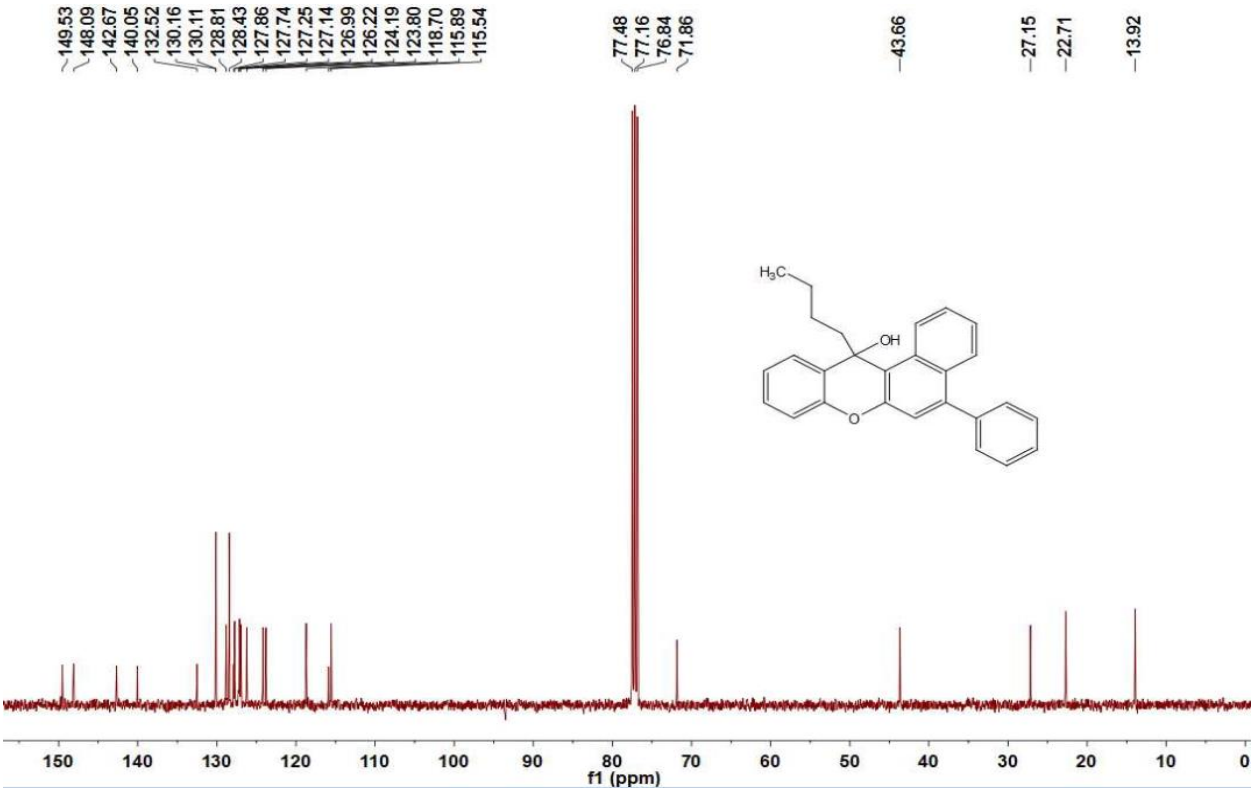
^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **5**



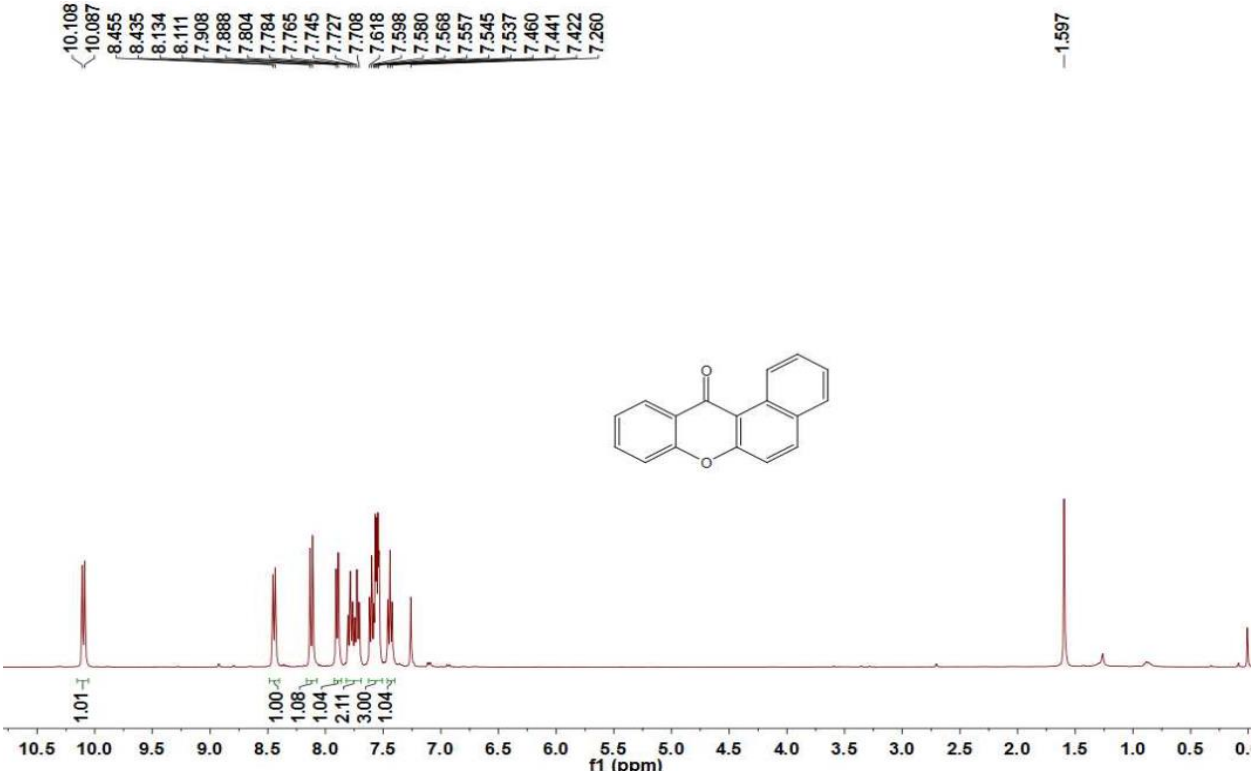
^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **6**



^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **6**



^{1}H NMR spectrum (400 MHz, $CDCl_3$) of compound **8**



^{13}C NMR spectrum (100 MHz, $CDCl_3$) of compound **8**