

8.- ANEXOS

8.1.- Instrumentación

Los *puntos de fusión* se han medido en un Gallenkamp.

Los *espectros de IR* se han llevado a cabo en un espectrofotómetro Perkin Elmer 1600FT en suspensión de Nujol o pastilla de KBr. Las vibraciones se expresan en número de ondas (cm^{-1}).

Los *espectros de resonancia magnética nuclear* se han registrado en un Bruker AV-300, a 300 MHz para ^1H -RMN y a 85 MHz para ^{13}C -RMN, o en un Bruker ARX-300, a 300 MHz para ^1H -RMN y a 85 MHz para ^{13}C -RMN; o en un Bruker AV-400, a 400 MHz para ^1H -RMN y a 100 MHz para ^{13}C -RMN.

Los *espectros HRMS-MALDI⁺* se registraron en un Bruker MicroFlex que utiliza un láser de nitrógeno (3,68 eV) empleando ditranol (1,8,9-antracenotriol) o DCTB como matriz y operando el analizador en modo reflector o lineal.

Los *espectros de HRMS-ESI⁺* se registraron en un Bruker MicroTOF-Q, usando formiato de sodio como referencia externa.

Los *espectros ESI⁺ de baja resolución* se registraron en un esquire 3000+.

La purificación de los productos finales por *cromatografía en columna* se ha llevado a cabo empleando una bomba de media presión, modelo Buchi C-605 con controlador C-615 y columnas Omnifit de diferentes diámetros.

Los *espectros de absorción UV-visible* se han realizado en un espectrofotómetro UNICAM UV4. Los resultados se expresan en nm.

Los *espectros de Voltametría de Pulso Diferencial y Voltametría Cíclica* se han llevado a cabo en un potencióstato μ -Autolab ECO-Chemie, utilizando como electrodo de trabajo uno de grafito, electrodo de referencia Ag/AgCl y un electrodo de platino como contraelectrodo.

8.2.- Espectros y gráficos

Referencia	Espectros	Figura
(1)	^1H -RMN	8.1
	^{13}C -RMN	8.2
	IR	8.3
	HRMS (MALDI ⁺)	8.4
(2)	^1H -RMN	8.5
	^{13}C -RMN	8.6
	IR	8.7
	HRMS (ESI ⁺)	8.8
(3)	^1H -RMN	8.9
	^{13}C -RMN	8.10
	IR	8.11
	MS (MALDI ⁺)	8.12
(4)	^1H -RMN	8.13
	^{13}C -RMN	8.14
	IR	8.15
	HRMS (ESI ⁺)	8.16
(5)	^1H -RMN	8.17
	^{13}C -RMN	8.18
	IR	8.19
	HRMS (ESI ⁺)	8.20
(6)	^1H -RMN	8.21
	^{13}C -RMN	8.22
	IR	8.23
	HRMS (ESI ⁺)	8.24
(7)	^1H -RMN	8.25
	IR	8.26
	HRMS (ESI ⁺)	8.27
(8)	^1H -RMN	8.28
	^{13}C -RMN	8.29
	IR	8.30
	HRMS (ESI ⁺)	8.31
(9)	^1H -RMN	8.32
	^{13}C -RMN	8.33
	IR	8.34
	HRMS (MALDI ⁺)	8.35
	CV	8.36
(10)	^1H -RMN	8.37
	^{13}C -RMN	8.38
	HSQC	8.39
	IR	8.40
	HRMS (ESI ⁺)	8.41
	CV	8.42
(11)	^1H -RMN	8.43
	^{13}C -RMN	8.44
	IR	8.45
	HRMS (MALDI ⁺)	8.46
	CV	8.47
(12)	^1H -RMN	8.48
	^{13}C -RMN	8.49

IR	8.50
HRMS (ESI ⁺)	8.51
CV	8.52

Gráfico	Figura
Espectros de UV-vis y fluorescencia para averiguar λ_{corte} de (9)	8.53
Espectros de UV-vis y fluorescencia para averiguar λ_{corte} de (10)	8.54
Espectros de UV-vis y fluorescencia para averiguar λ_{corte} de (12)	8.55

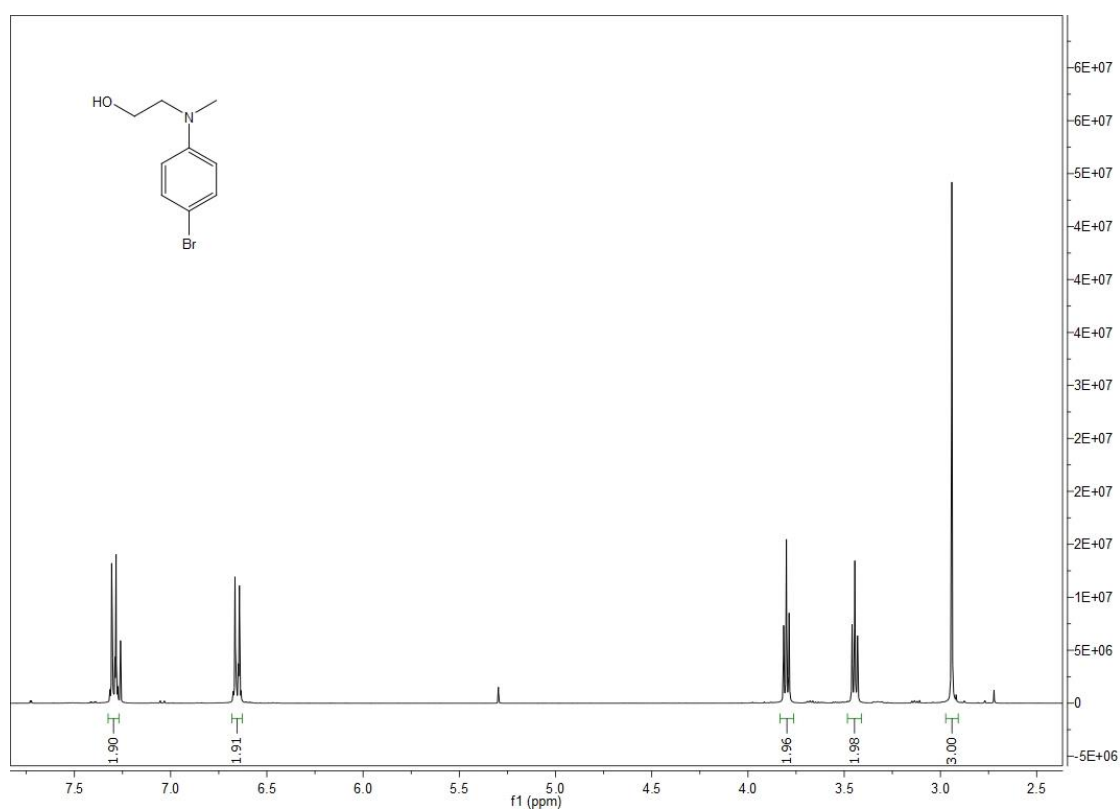


Figura 8.1. Espectro ¹H-RMN de **(1)**.

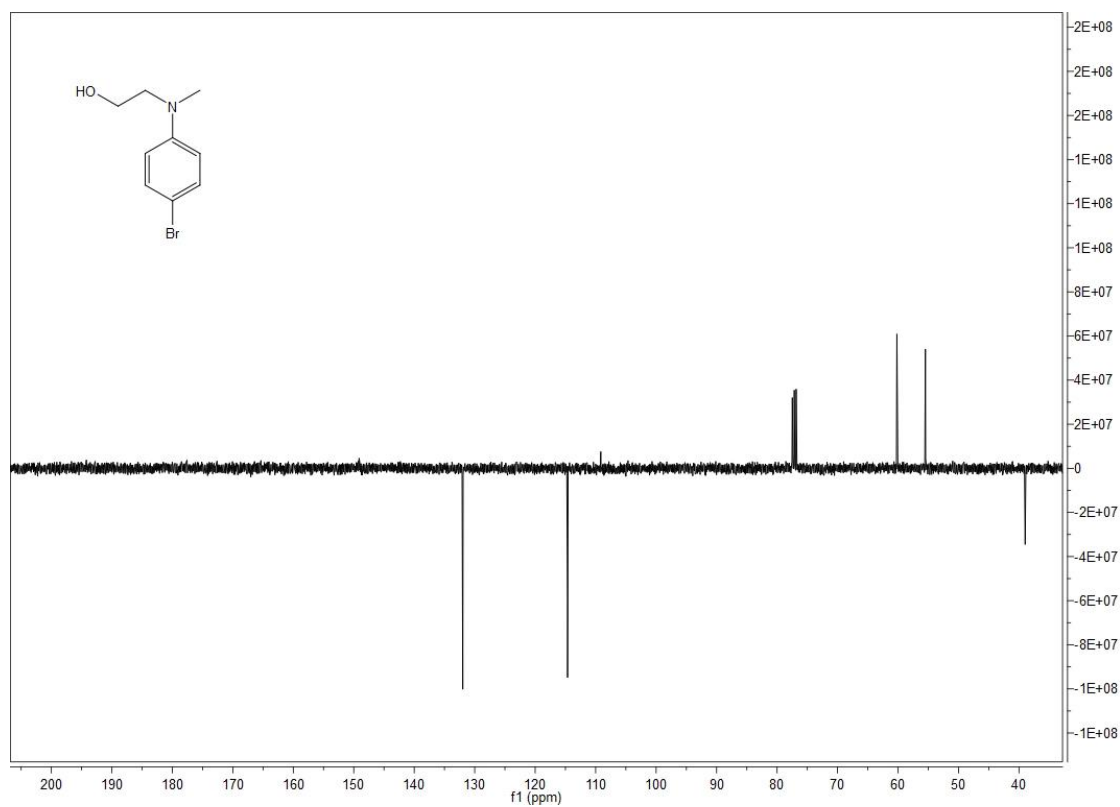


Figura 8.2. Espectro ¹³C-RMN de **(1)**.

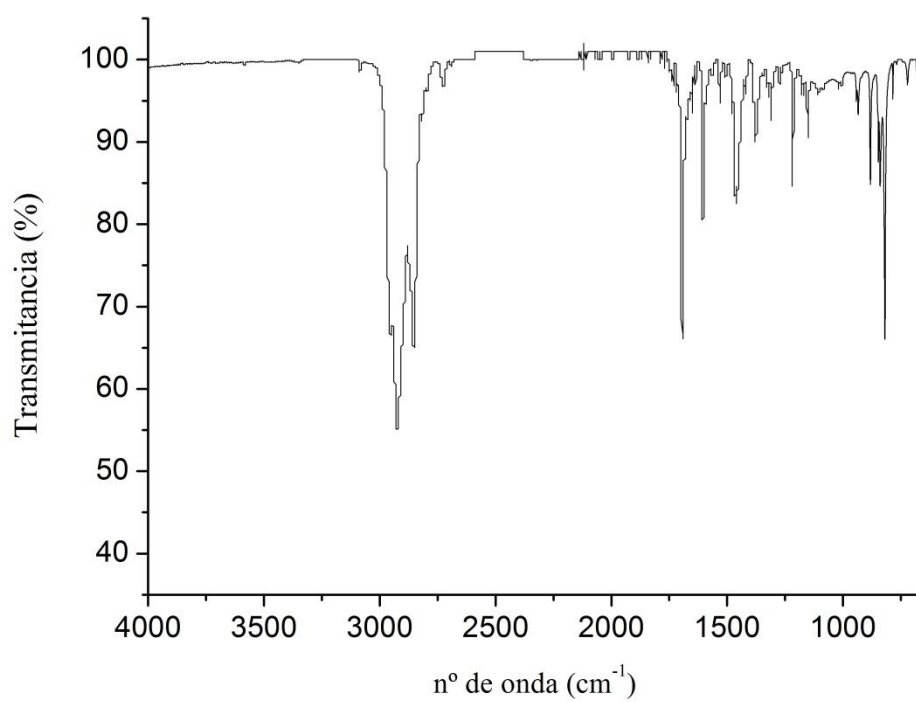


Figura 8.3. Espectro IR de **(1)**.

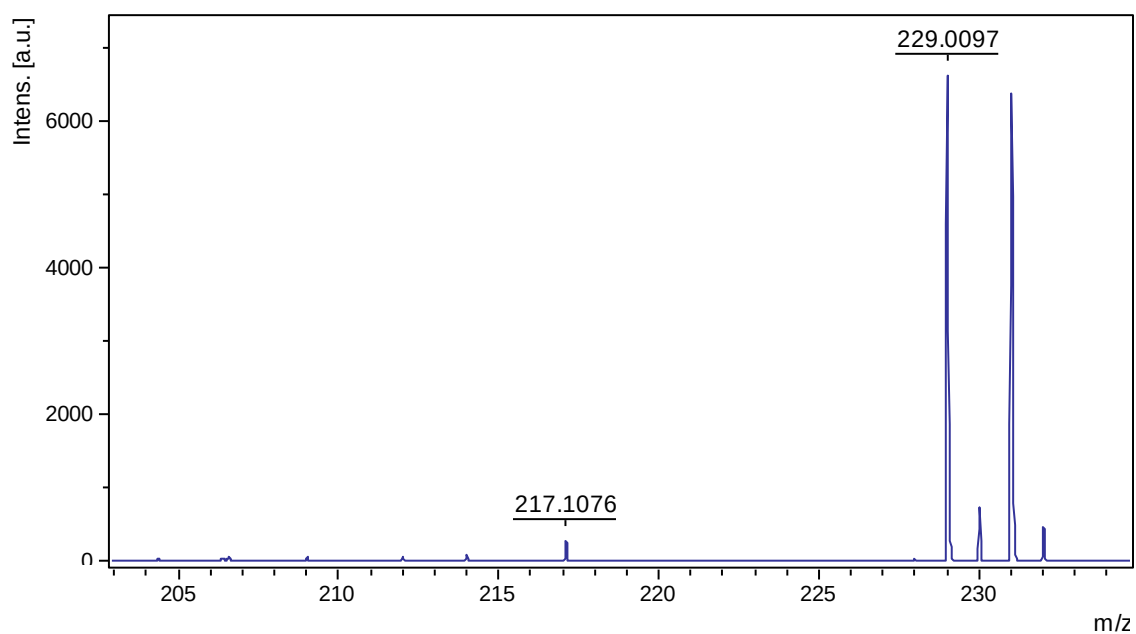


Figura 8.4. Espectro HRMS (MALDI⁺) de **(1)**.

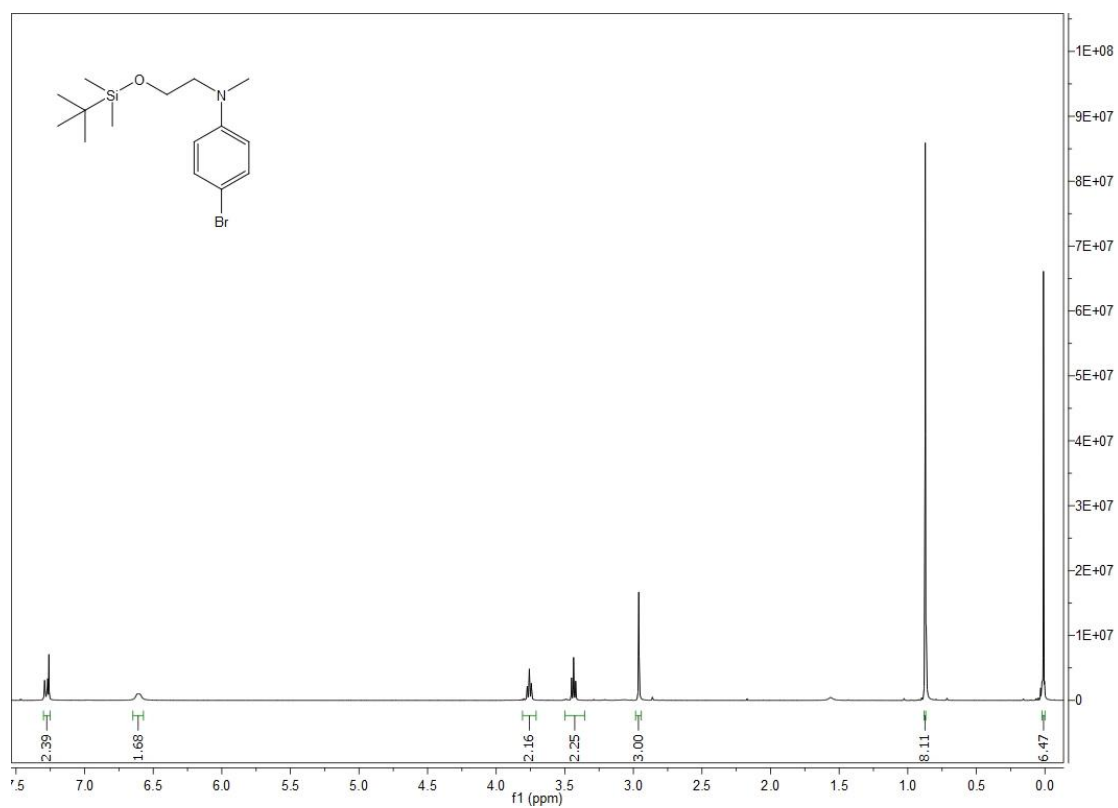


Figura 8.5. Espectro ¹H-RMN de (2).

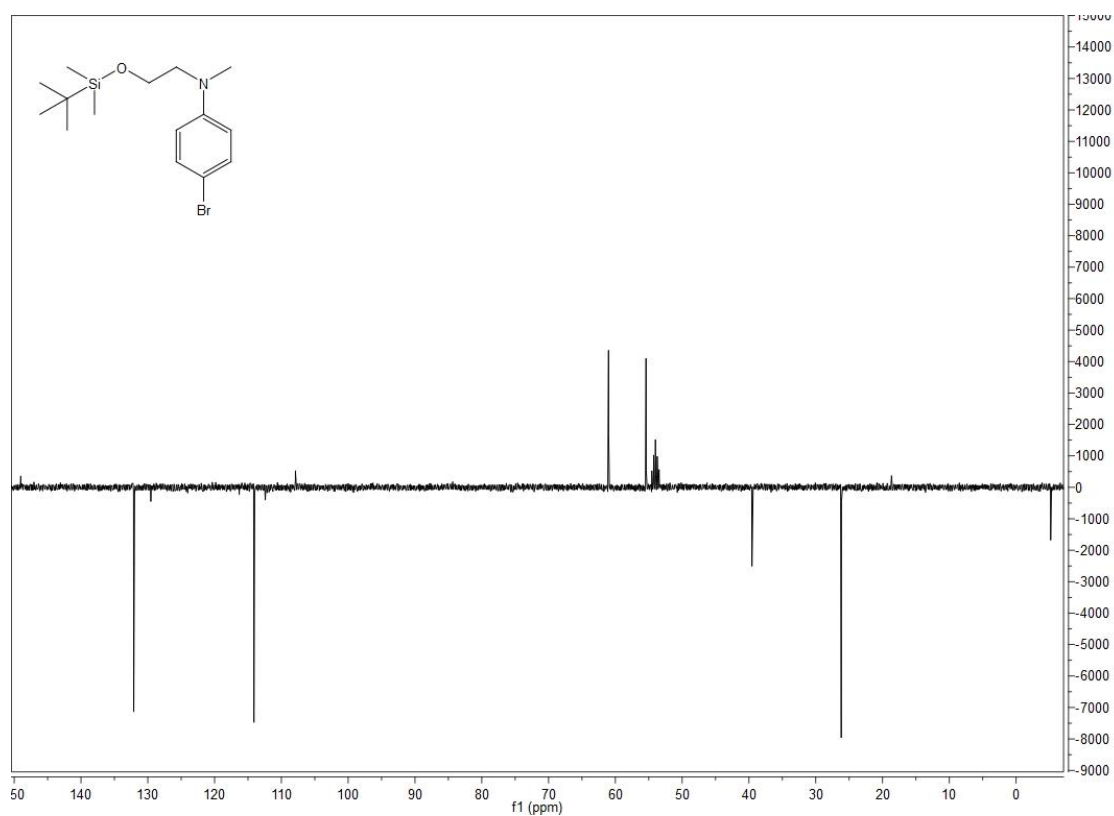


Figura 8.6. Espectro ¹³C-RMN de (2).

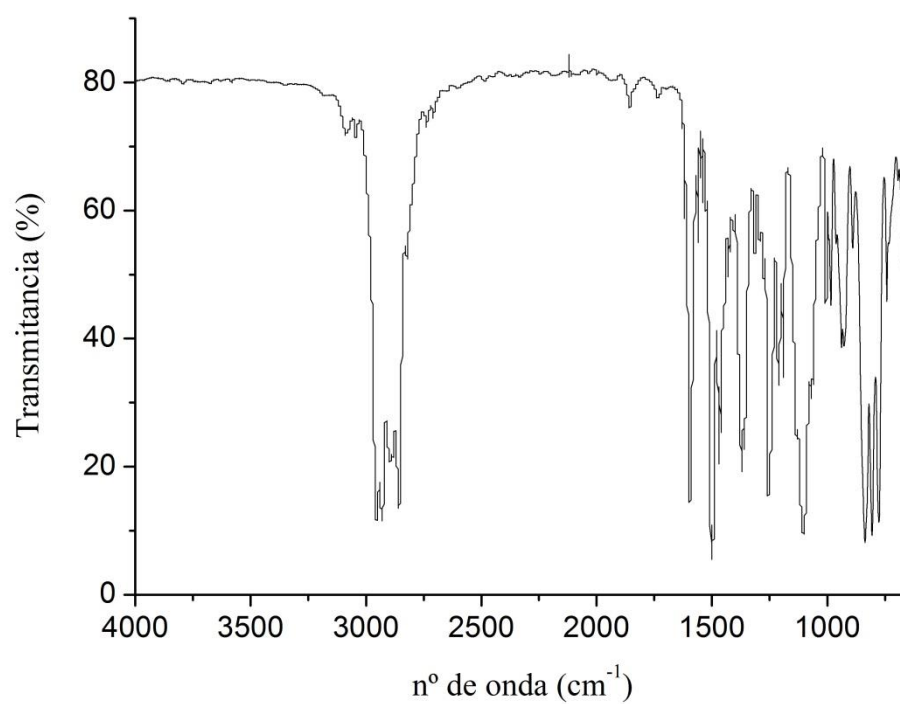


Figura 8.7. Espectro IR de **(2)**.

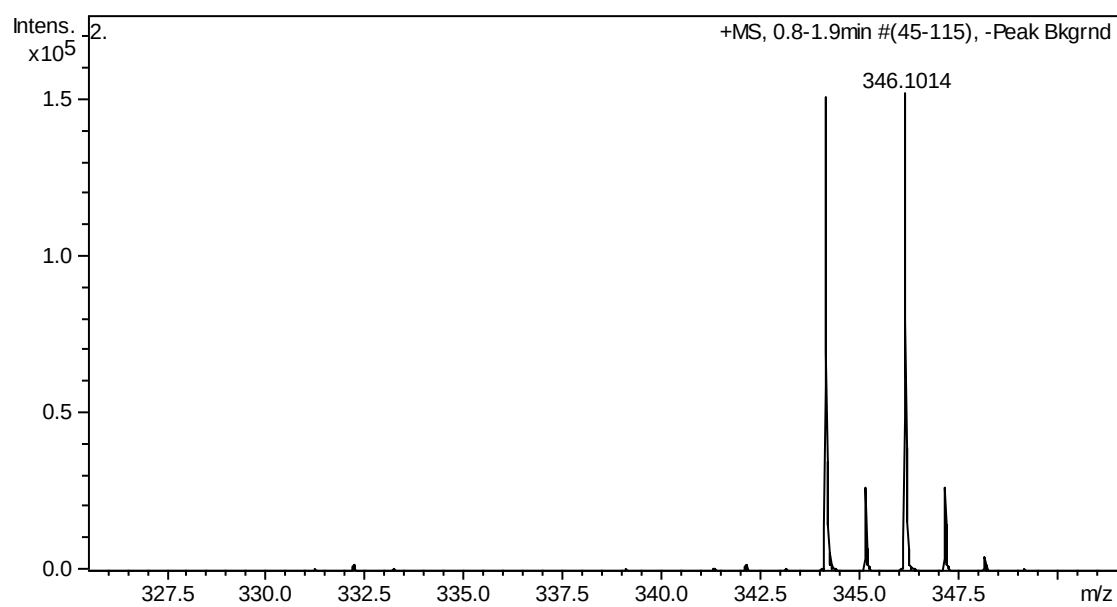


Figura 8.8. Espectro HRMS (ESI^+) de **(2)**.

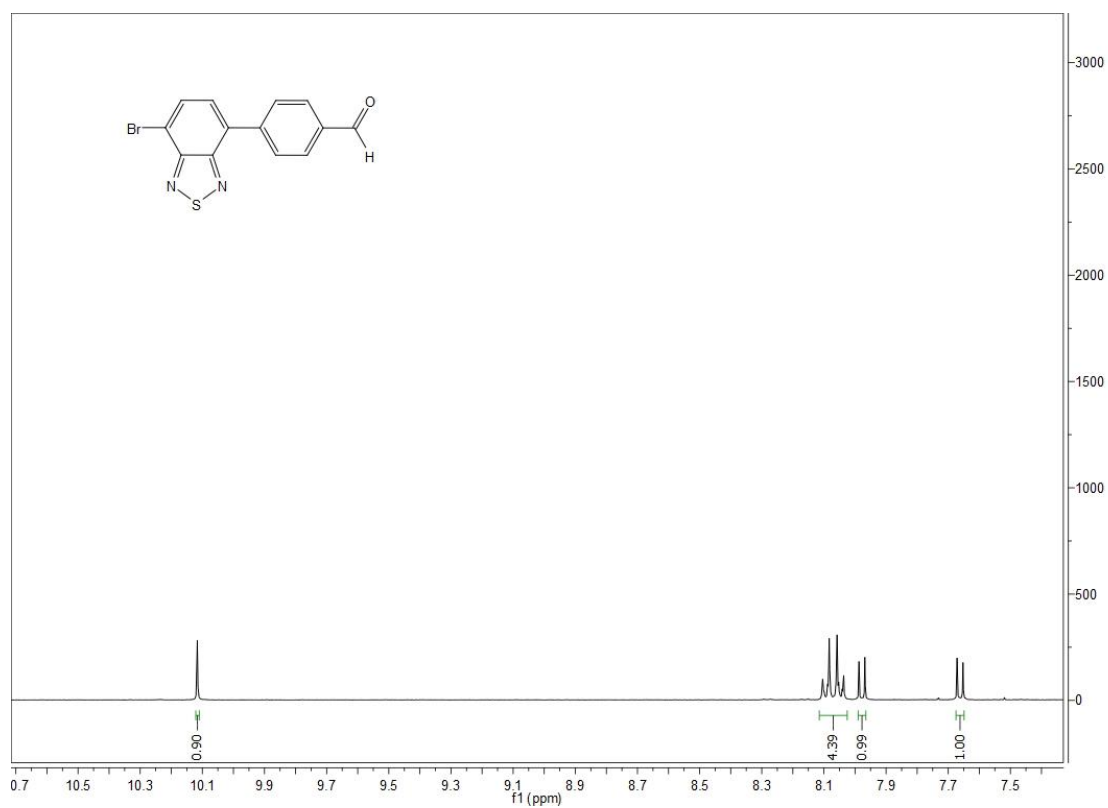


Figura 8.9. Espectro ^1H -RMN de **(3)**.

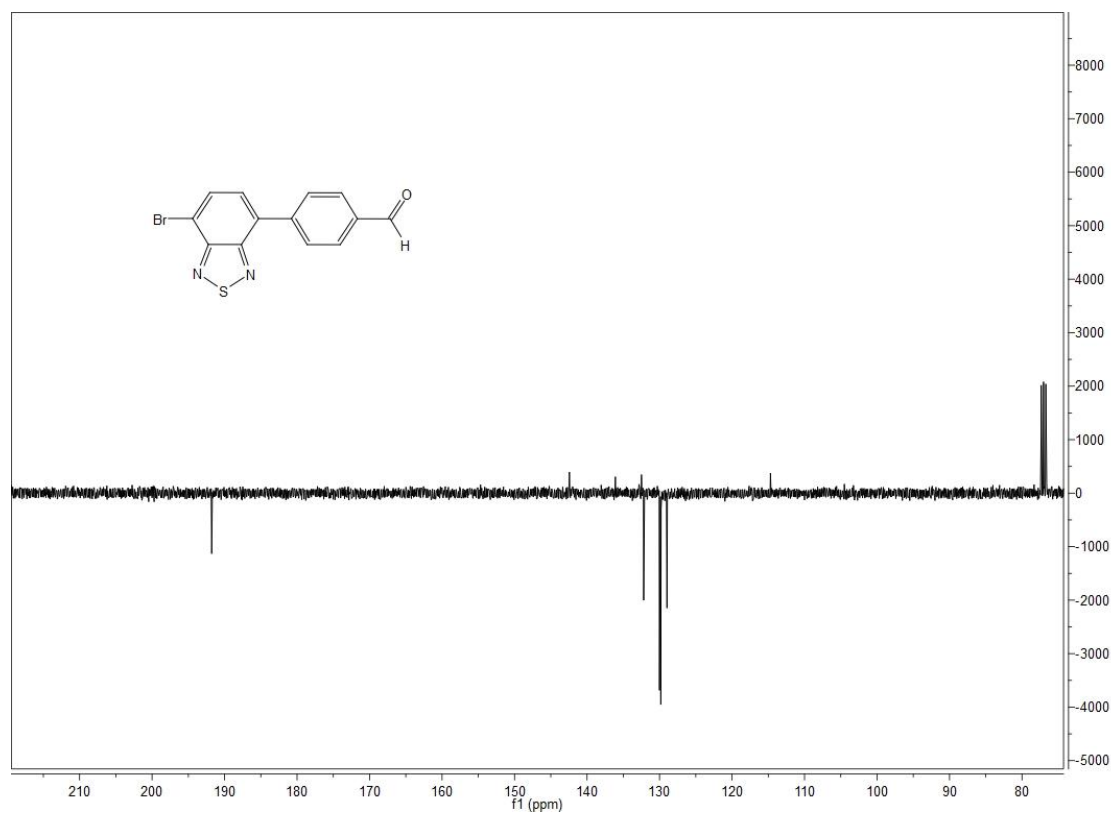


Figura 8.10. Espectro ^{13}C -RMN de **(3)**.

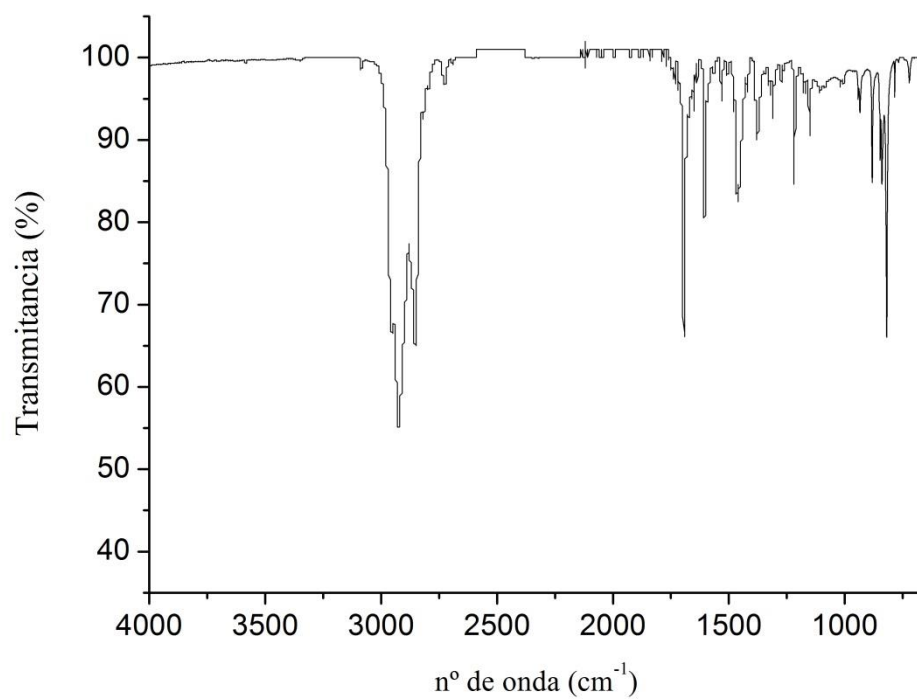


Figura 8.11. Espectro IR de **(3)**.

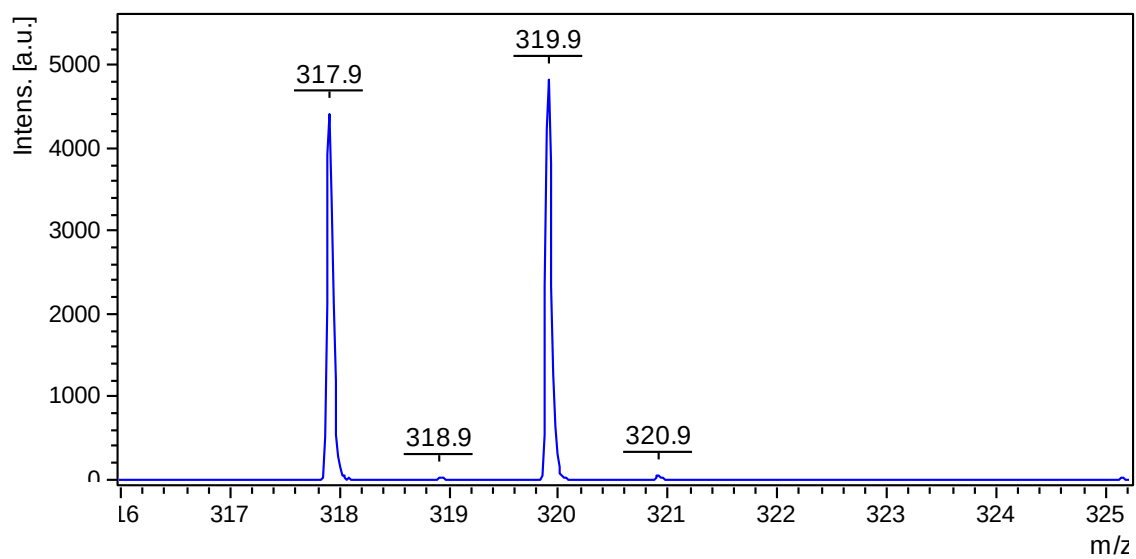


Figura 8.12. Espectro HRMS (MALDI⁺) de **(3)**.

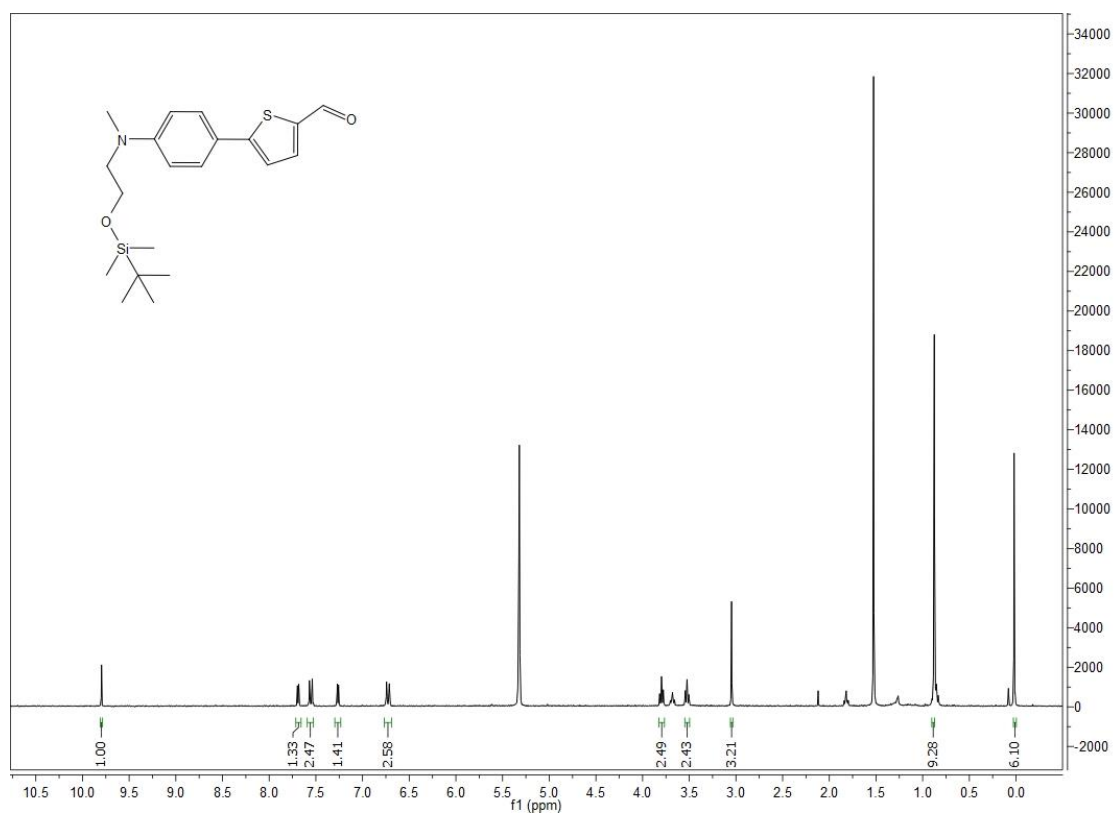


Figura 8.13. Espectro ¹H-RMN de **(4)**.

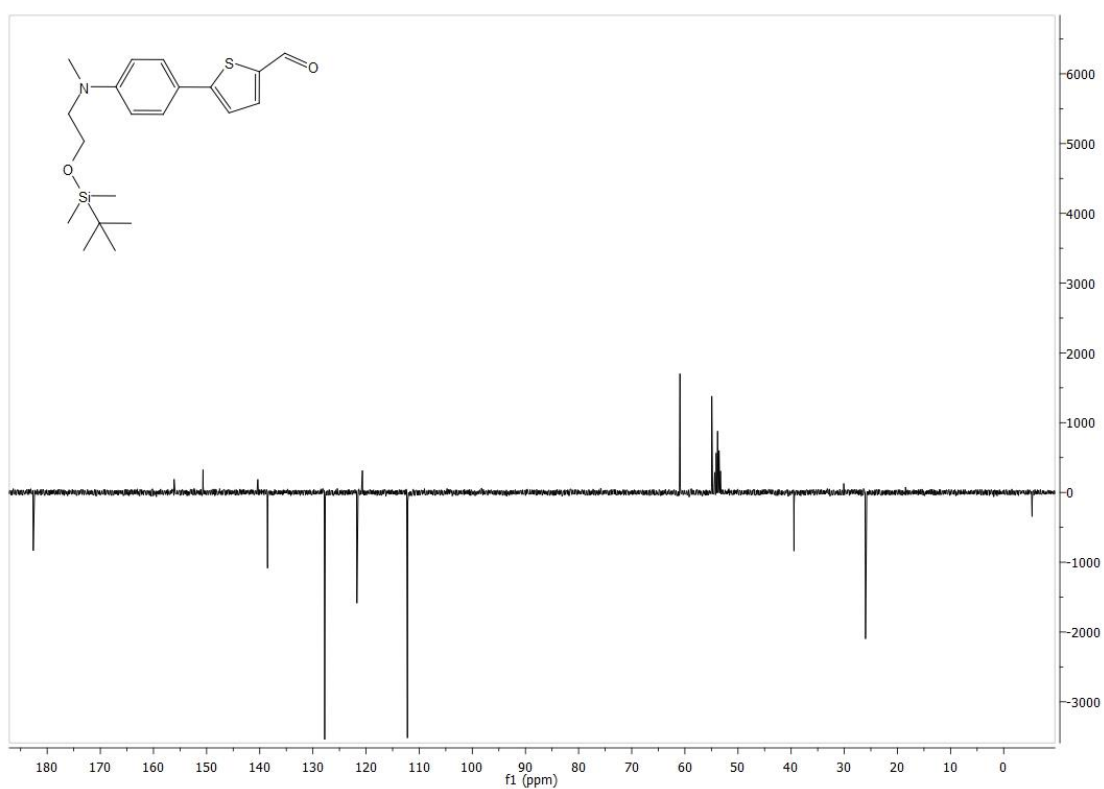


Figura 8.14. Espectro ¹³C-RMN de **(4)**.

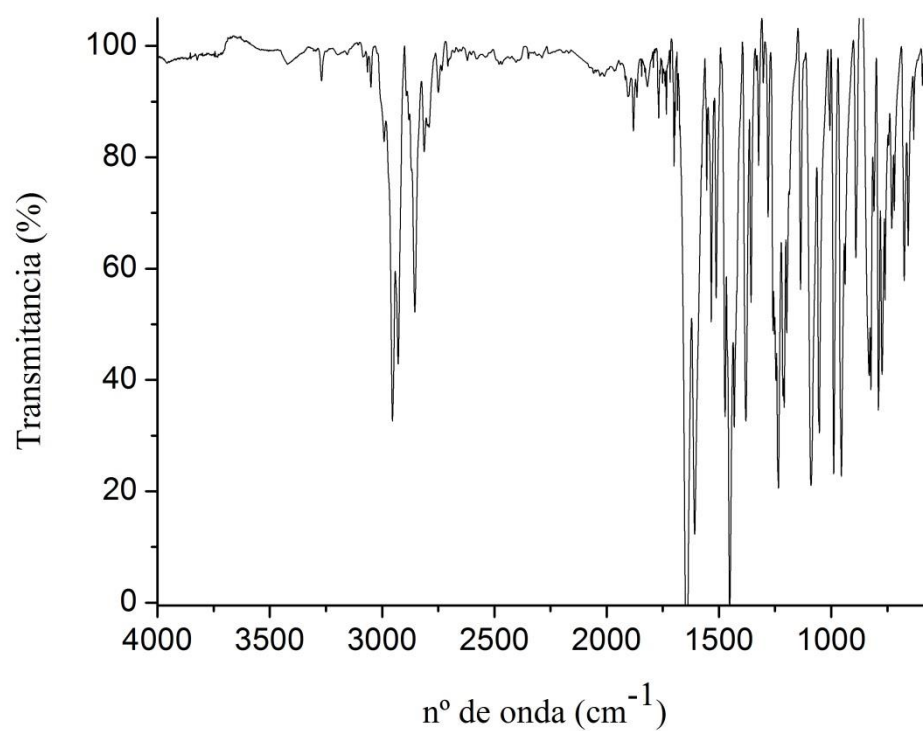


Figura 8.15. Espectro IR de **(4)**.

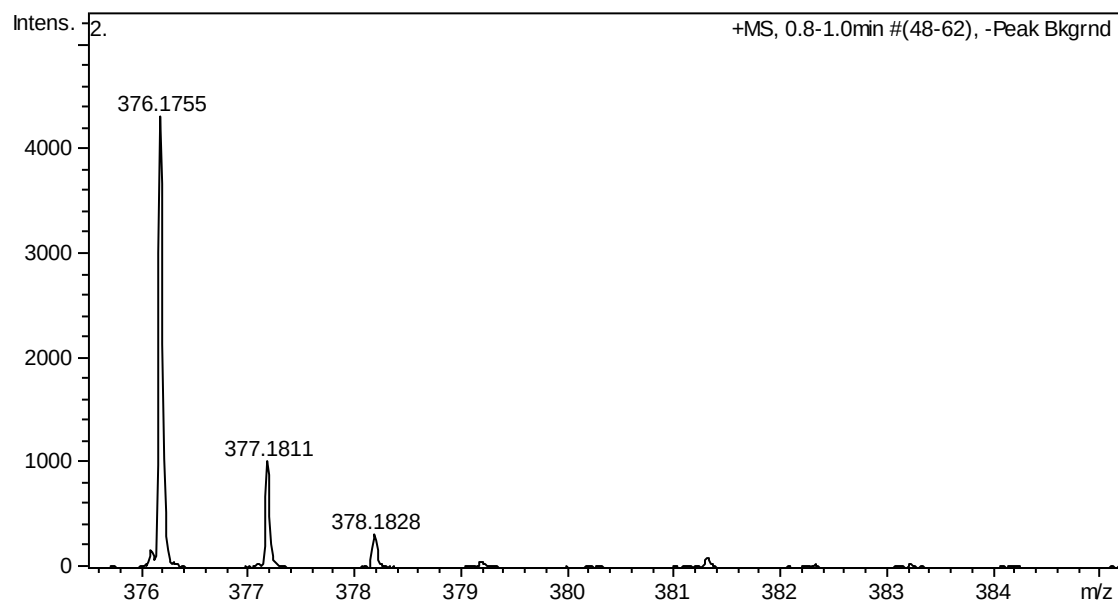


Figura 8.16. Espectro HRMS (ESI⁺) de **(4)**.

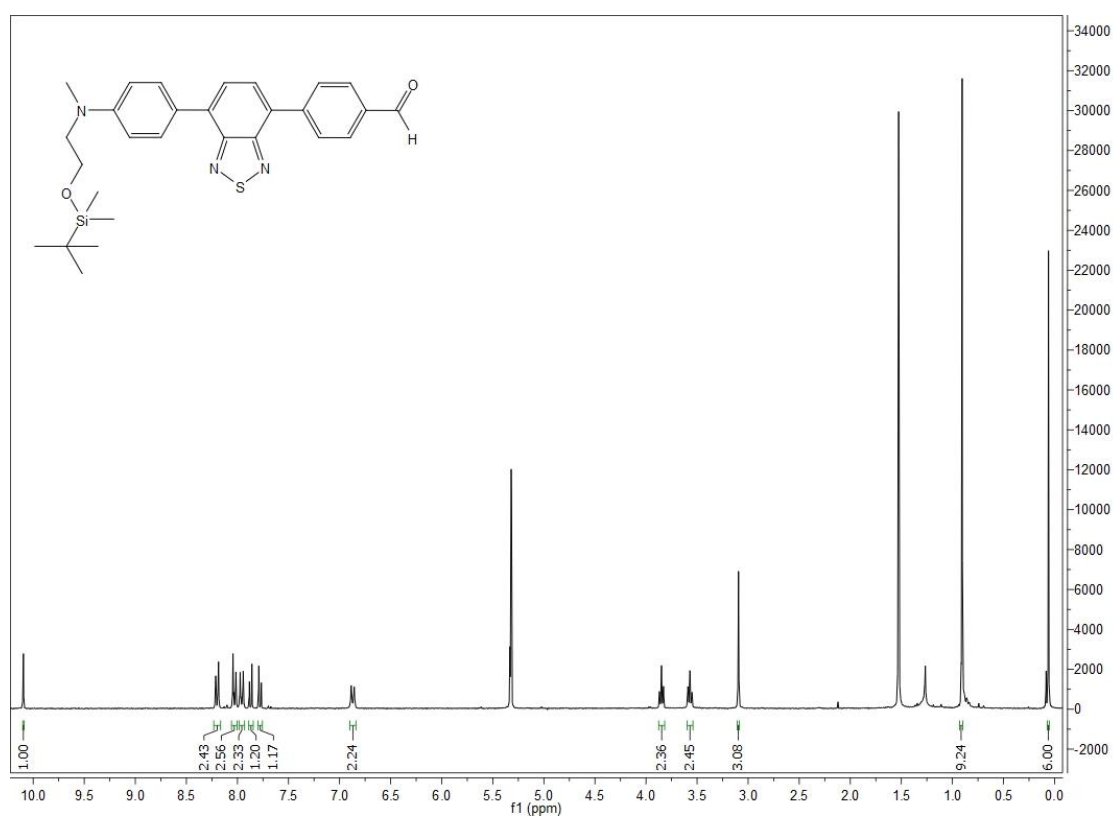


Figura 8.17. Espectro ^1H -RMN de (5).

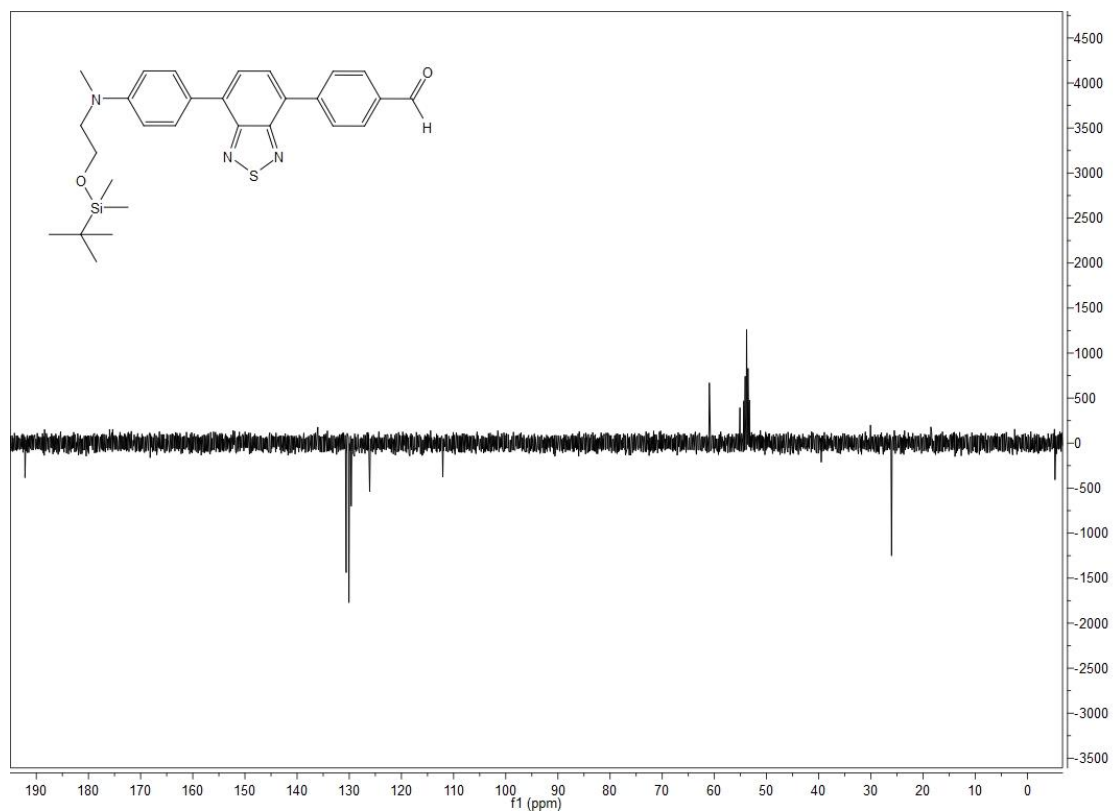


Figura 8.18. Espectro ^{13}C -RMN de (5).

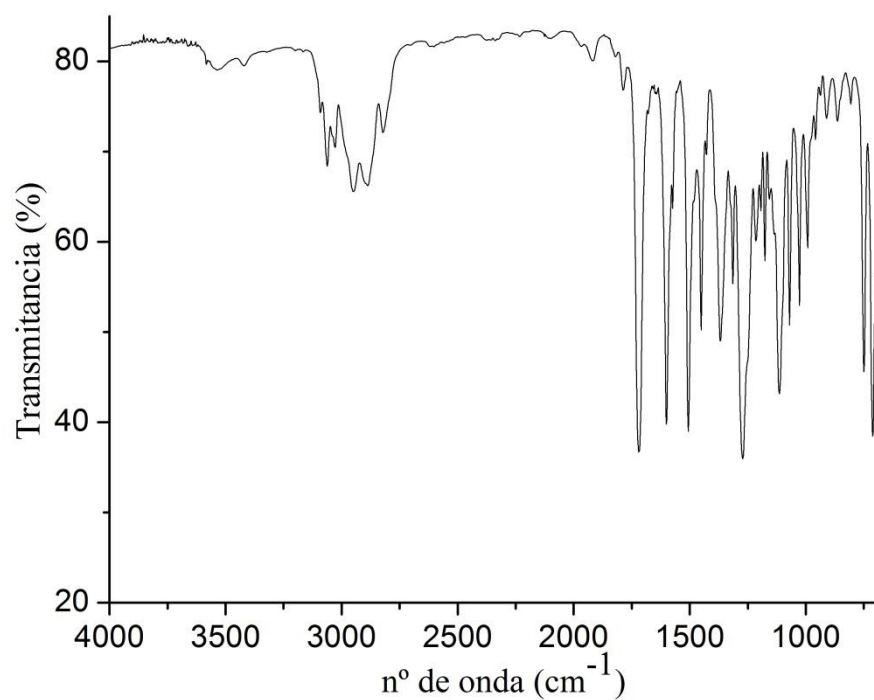


Figura 8.19. Espectro IR de **(5)**.

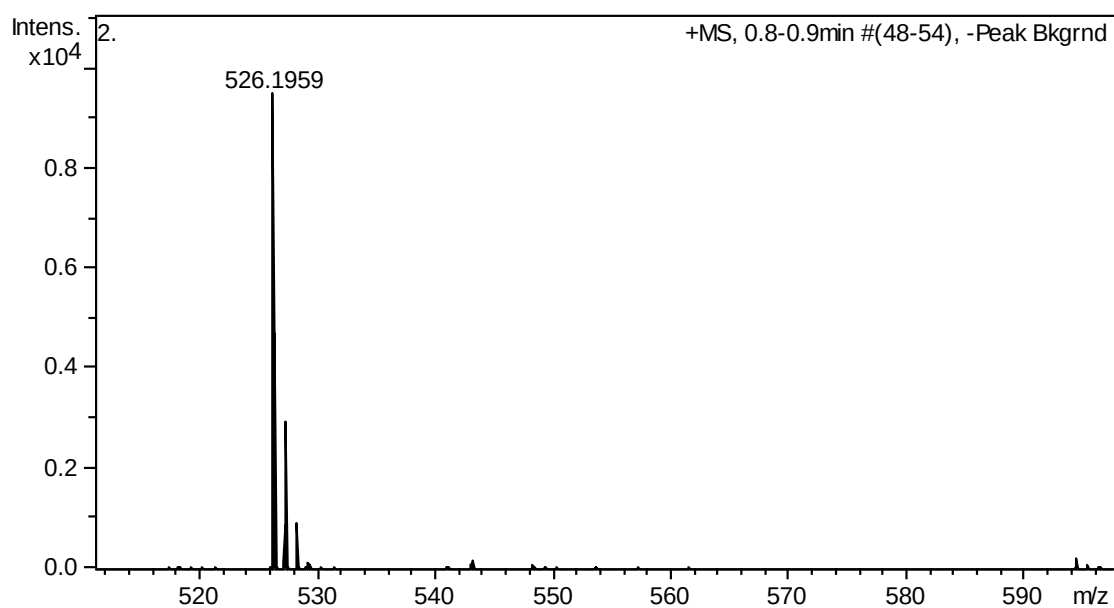


Figura 8.20. Espectro HRMS (ESI⁺) de **(5)**.

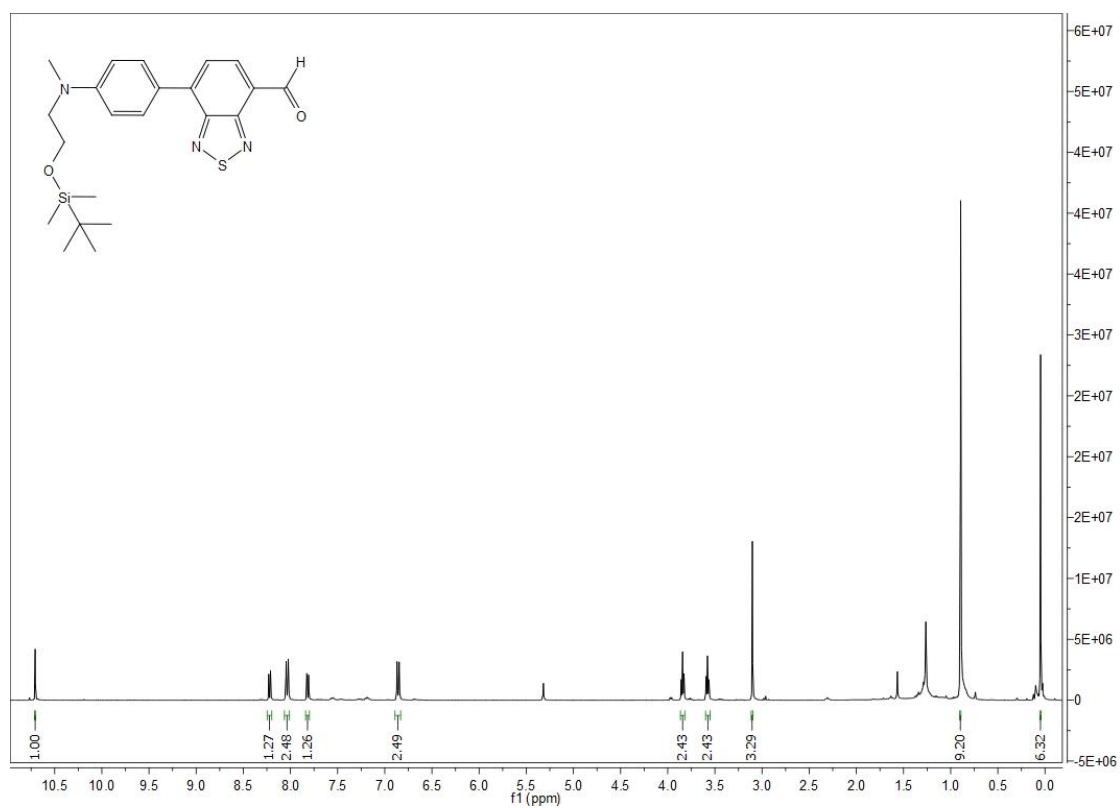


Figura 8.21. Espectro ¹H-RMN de (6).

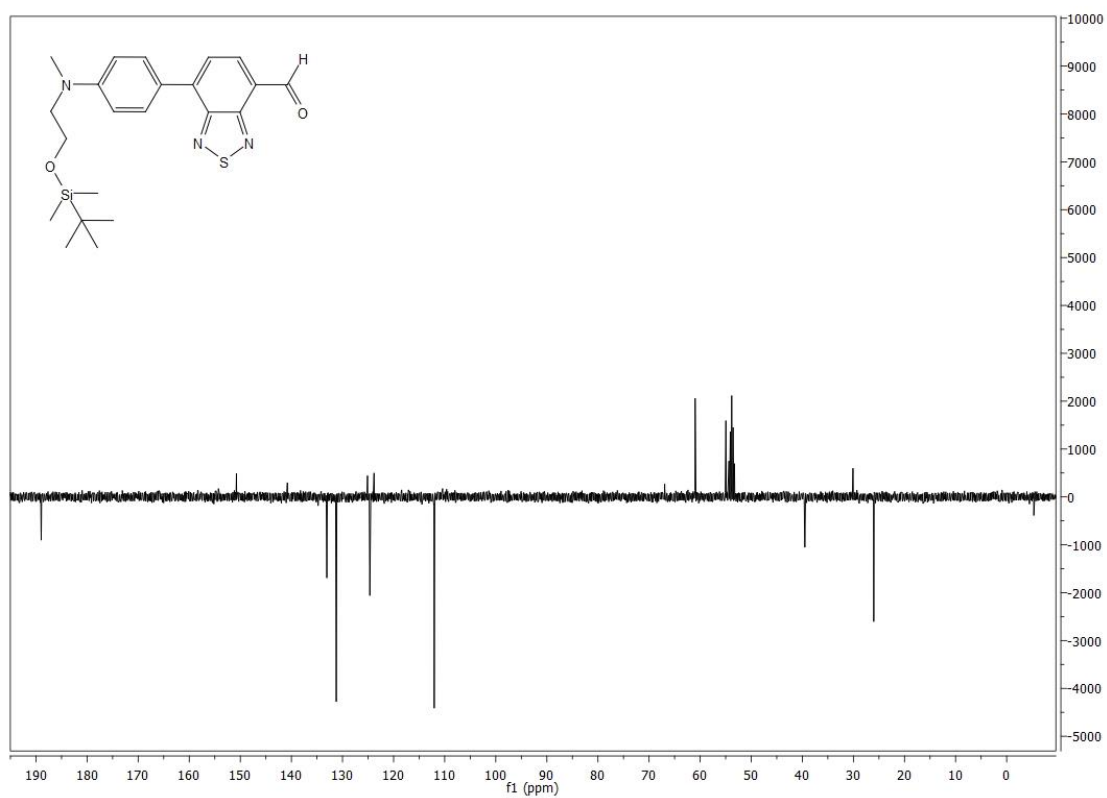


Figura 8.22. Espectro ¹³C-RMN de (6).

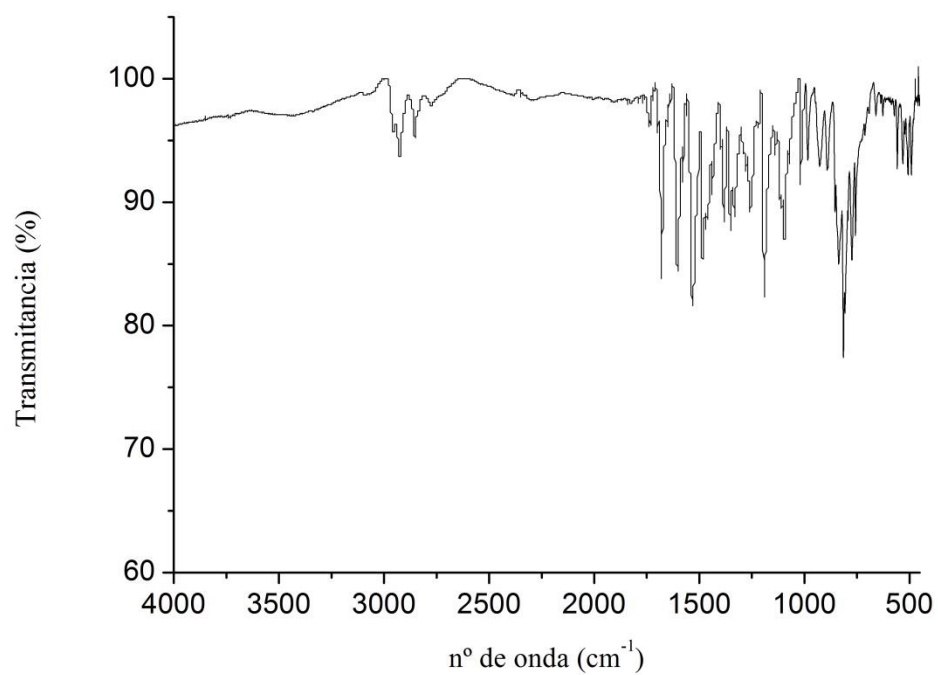


Figura 8.23. Espectro IR de **(6)**.

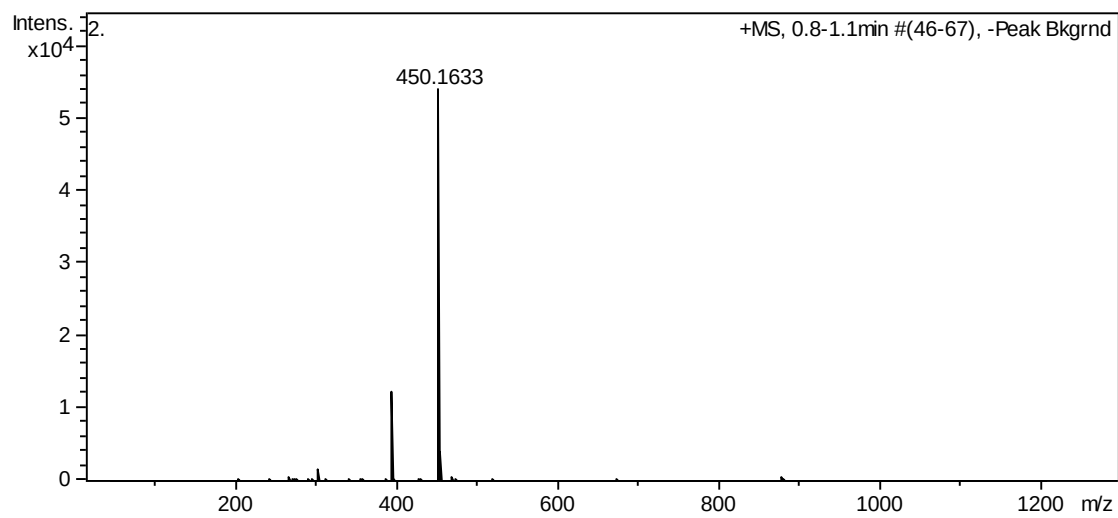


Figura 8.24. Espectro HRMS (ESI⁺) de **(6)**.

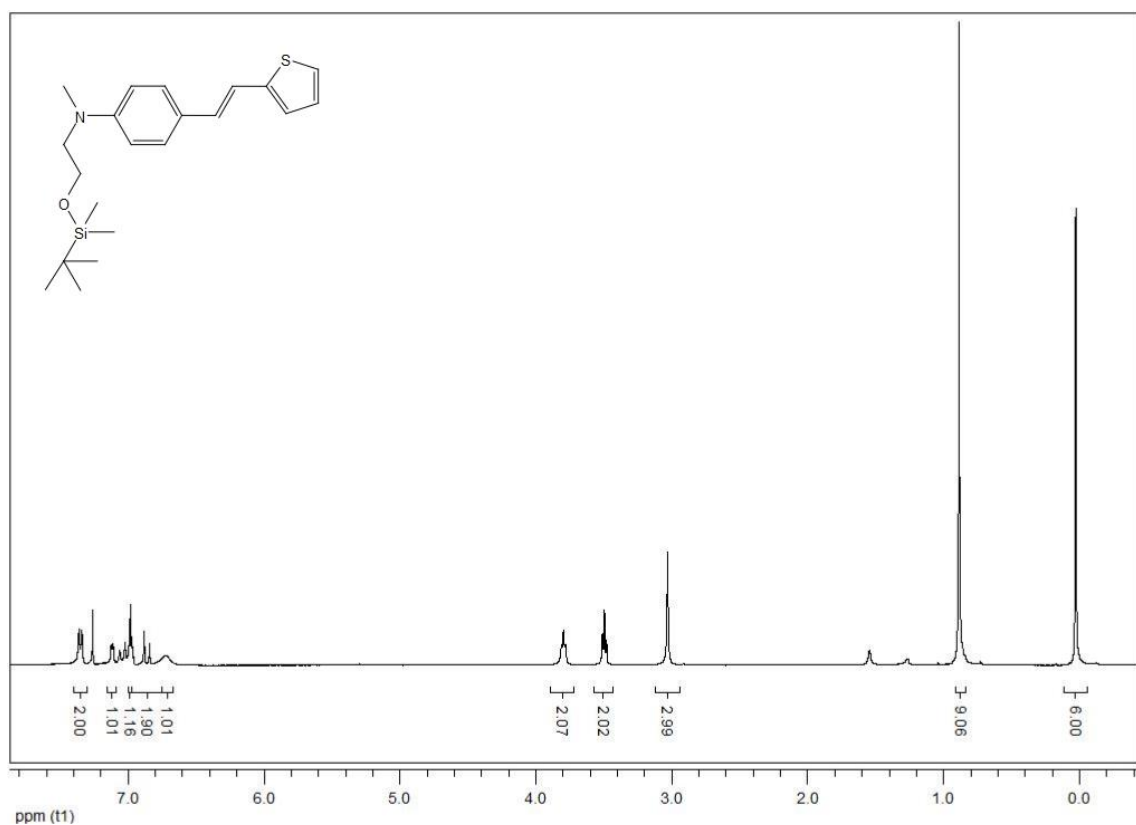


Figura 8.25. Espectro ^1H -RMN de **(7)**.

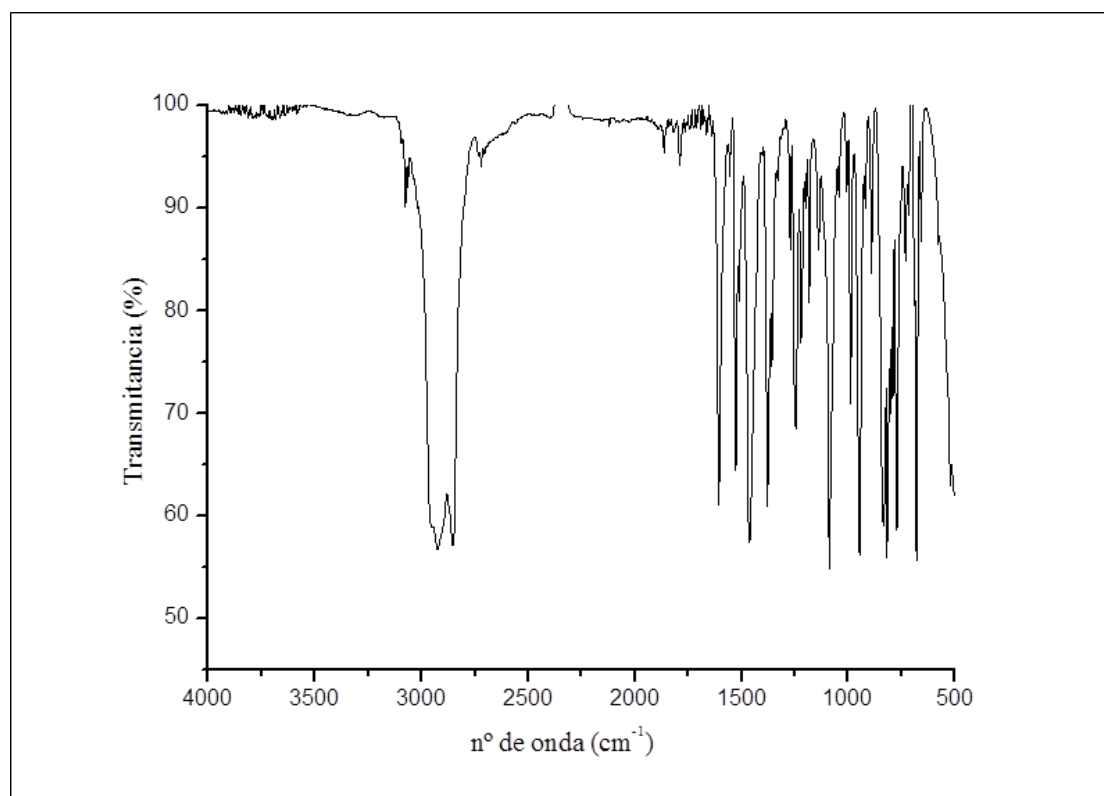


Figura 8.26. Espectro IR de **(7)**.

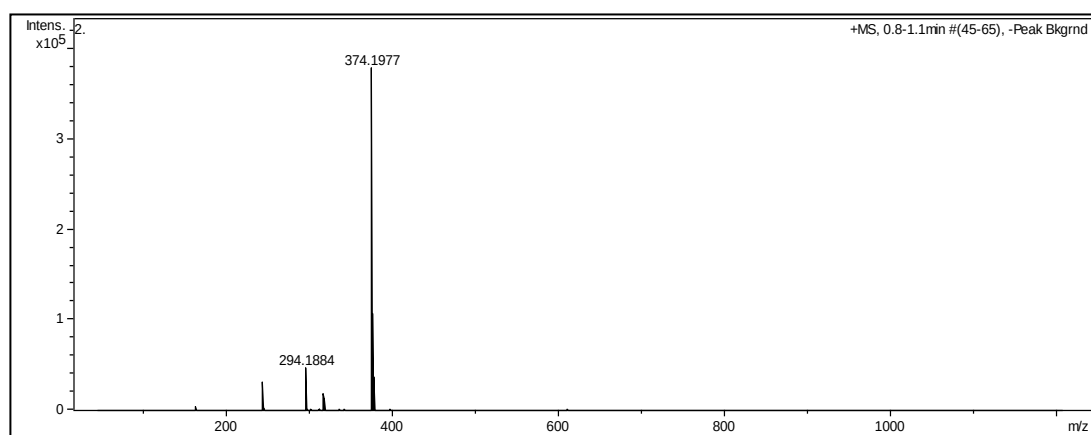


Figura 8.27. Espectro HRMS (ESI⁺) de **(7)**.

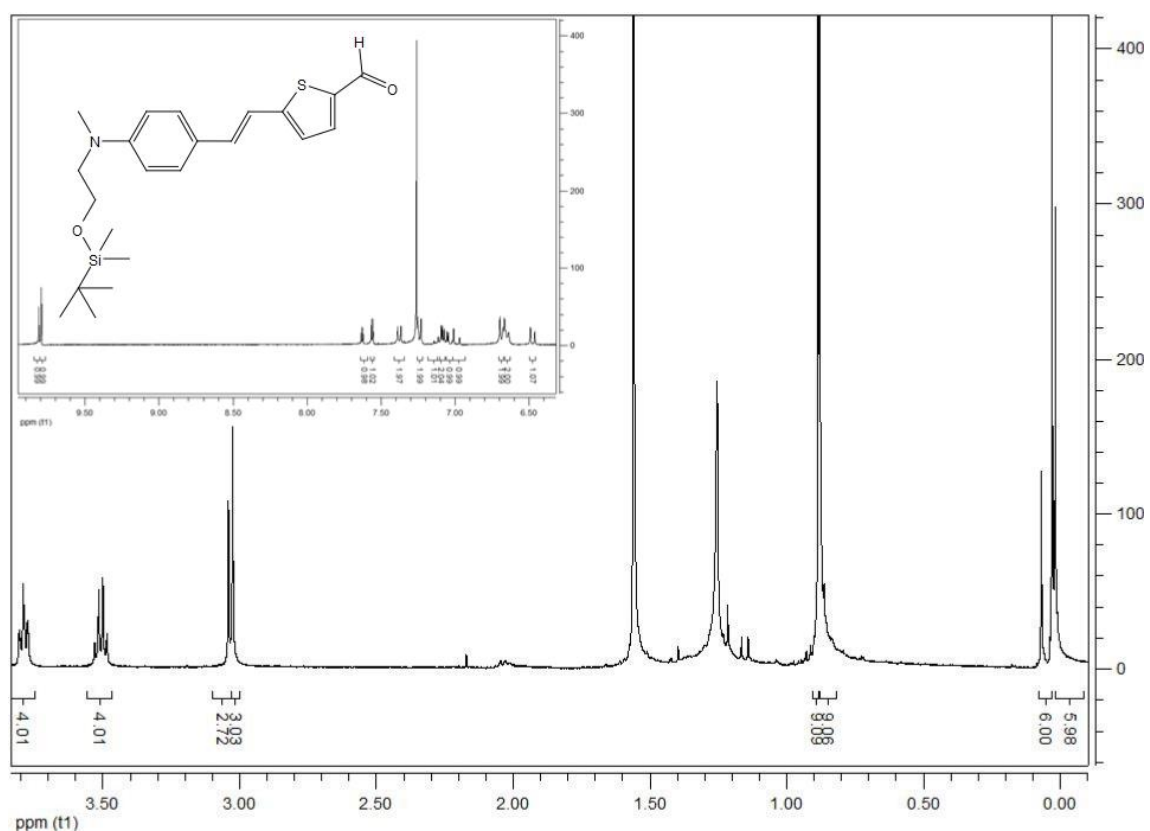


Figura 8.28. Espectro ¹H-RMN de **(8)**.

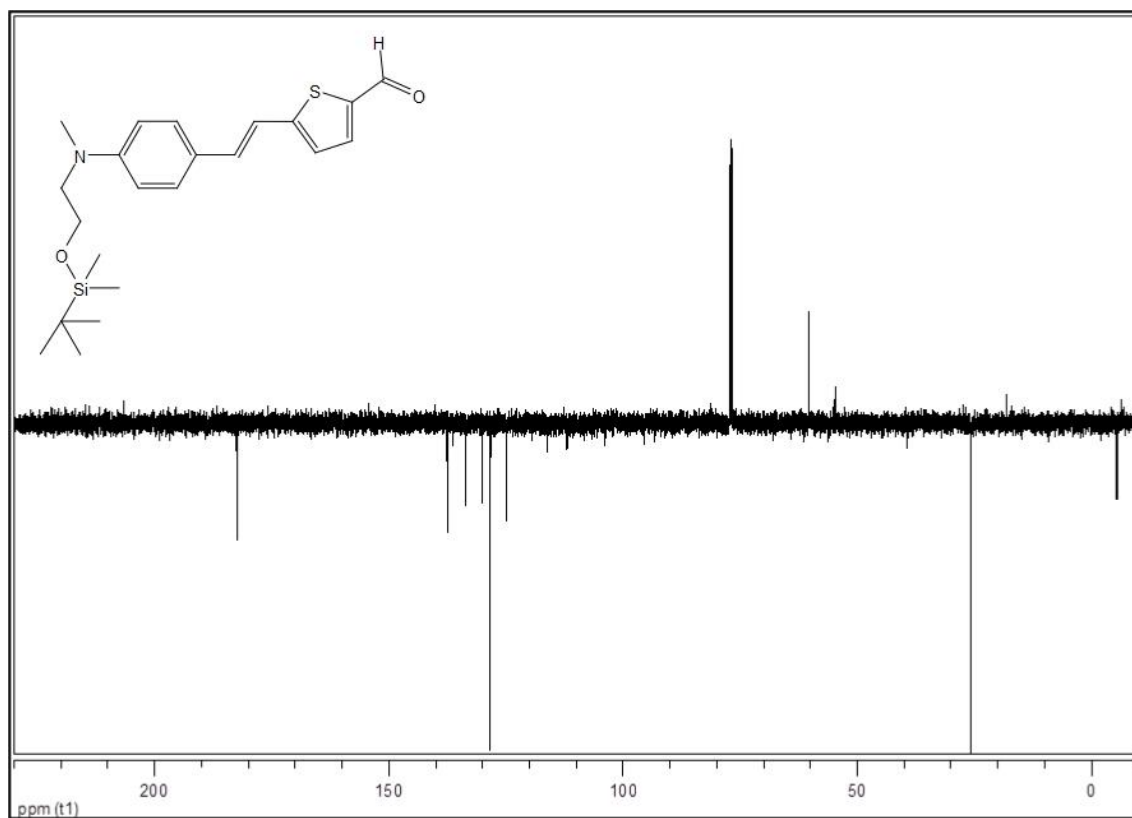


Figura 8.29. Espectro ¹³C-RMN de **(8)**.

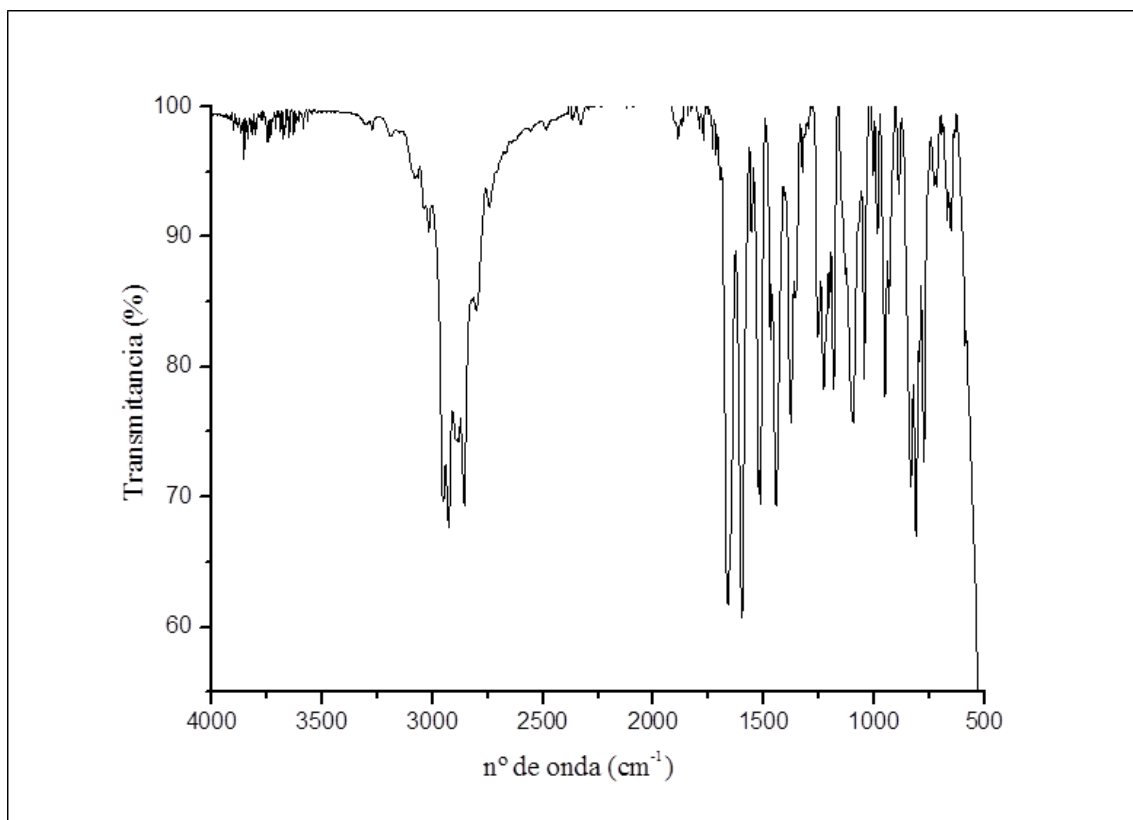


Figura 8.30. Espectro IR de **(8)**.

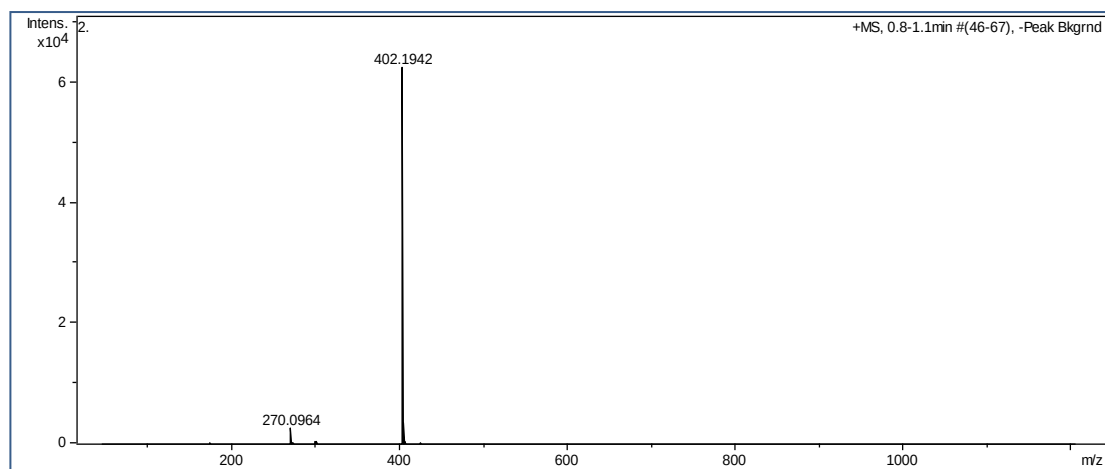


Figura 8.31. Espectro HRMS (ESI⁺) de **(8)**.

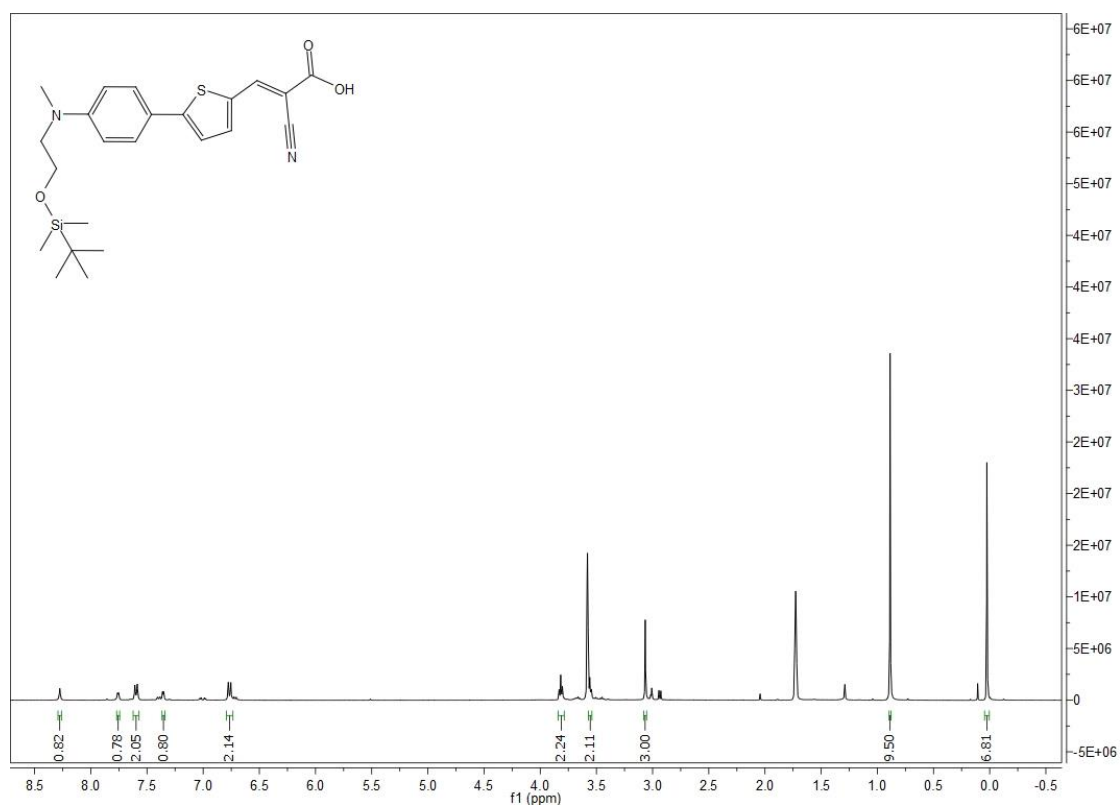


Figura 8.32. Espectro ¹H-RMN de (9).

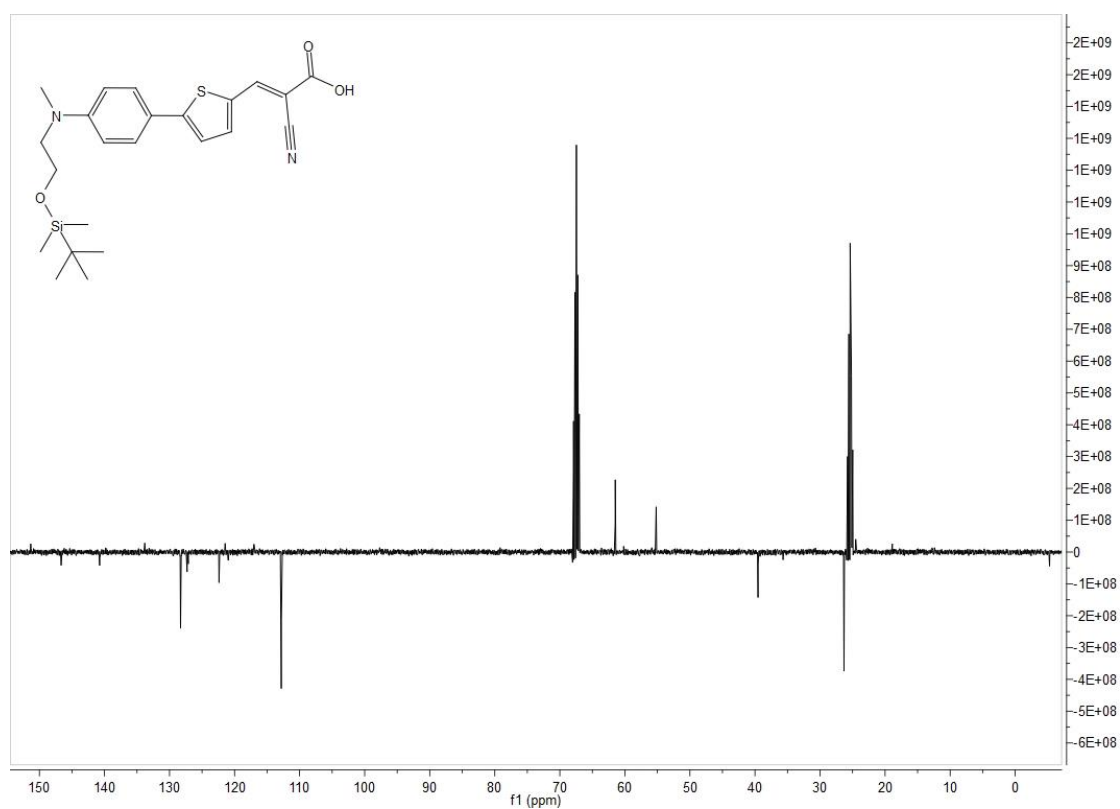


Figura 8.33. Espectro ¹³C-RMN de (9).

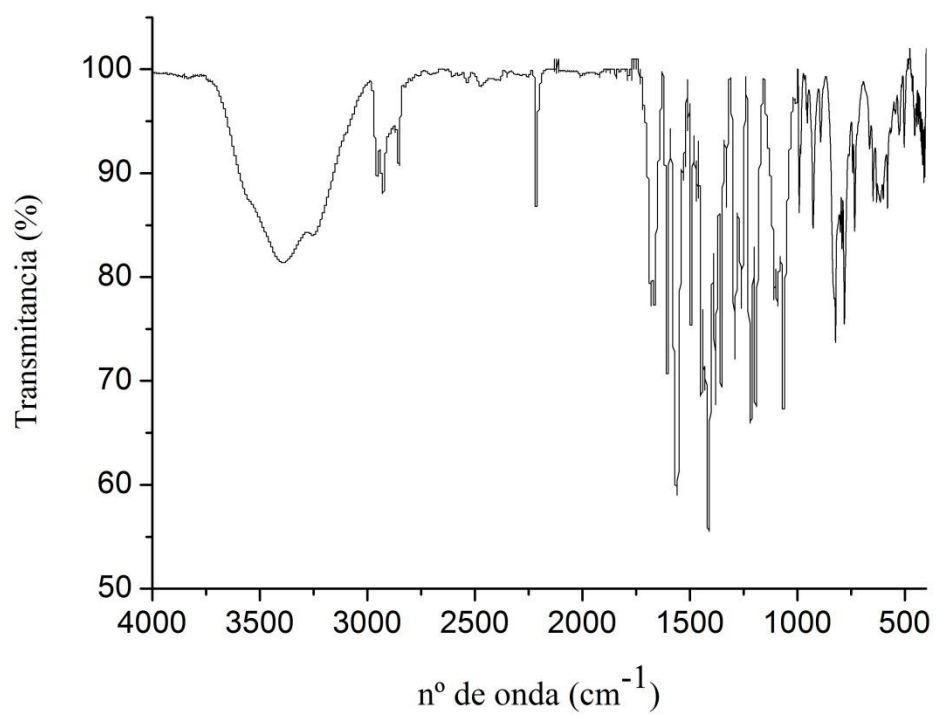


Figura 8.34. Espectro IR de **(9)**.

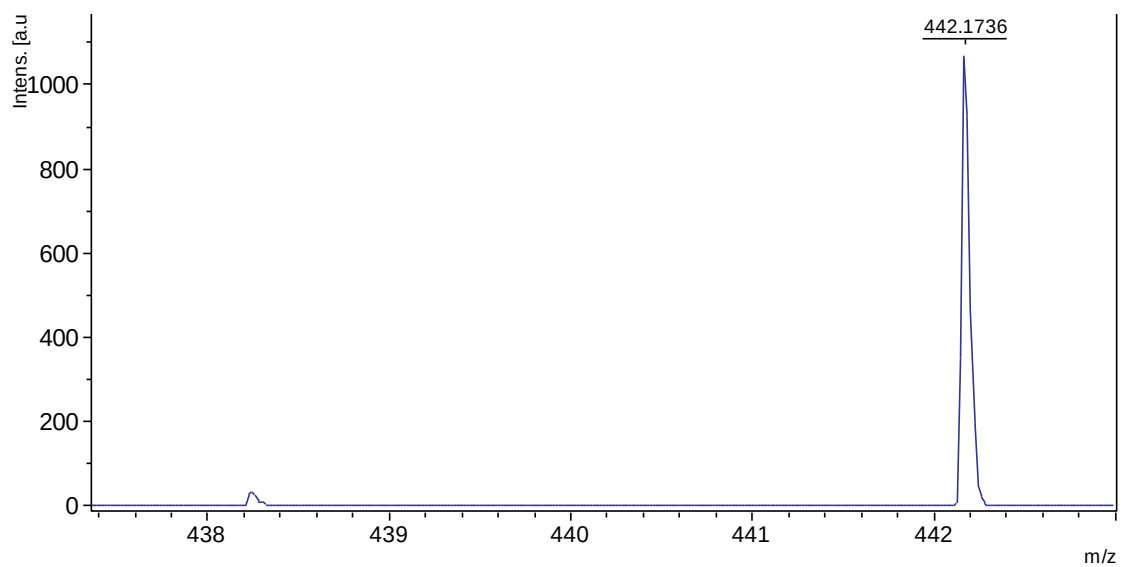


Figura 8.35. Espectro HRMS (MALDI⁺) de **(9)**.

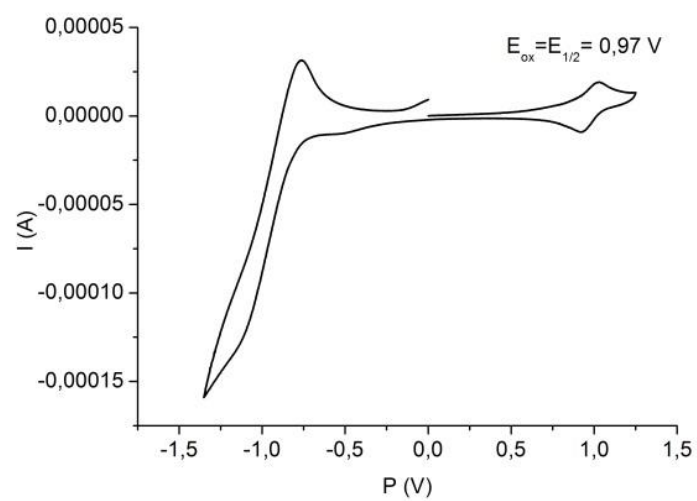


Figura 8.36. Voltametría cíclica de **(9)**.

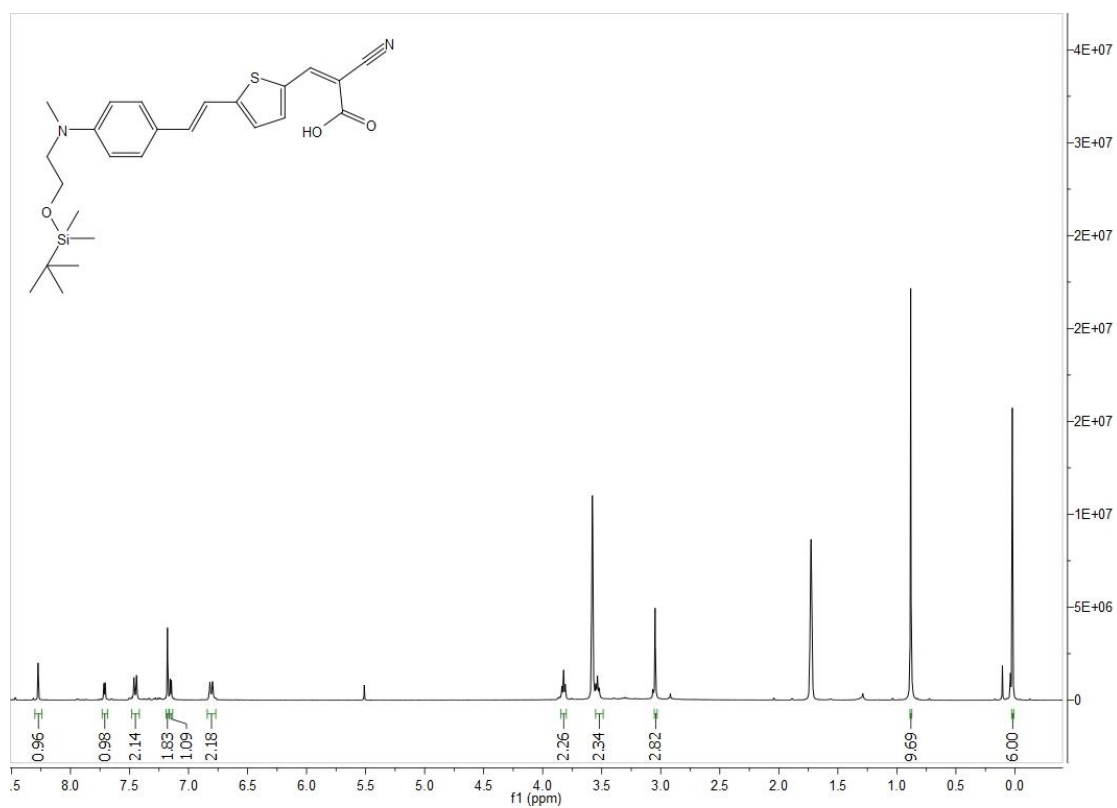


Figura 8.37. Espectro ¹H-RMN de (**10**).

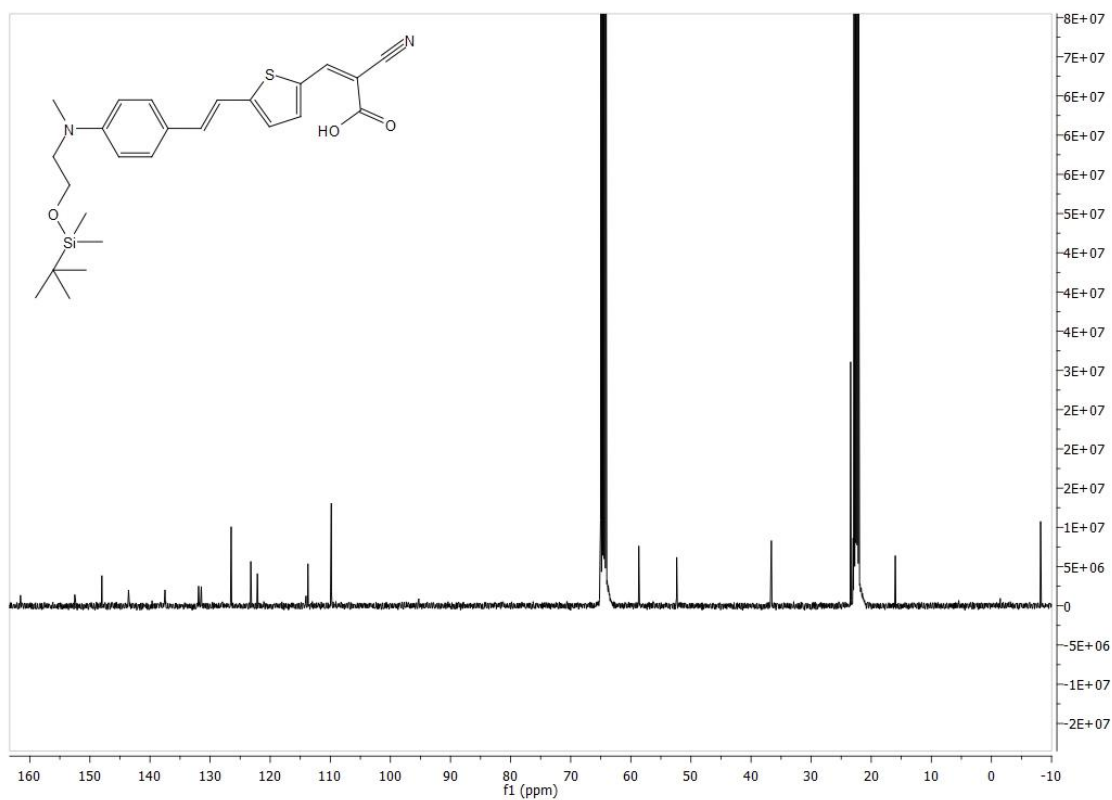


Figura 8.38. Espectro ¹³C-RMN de (**10**).

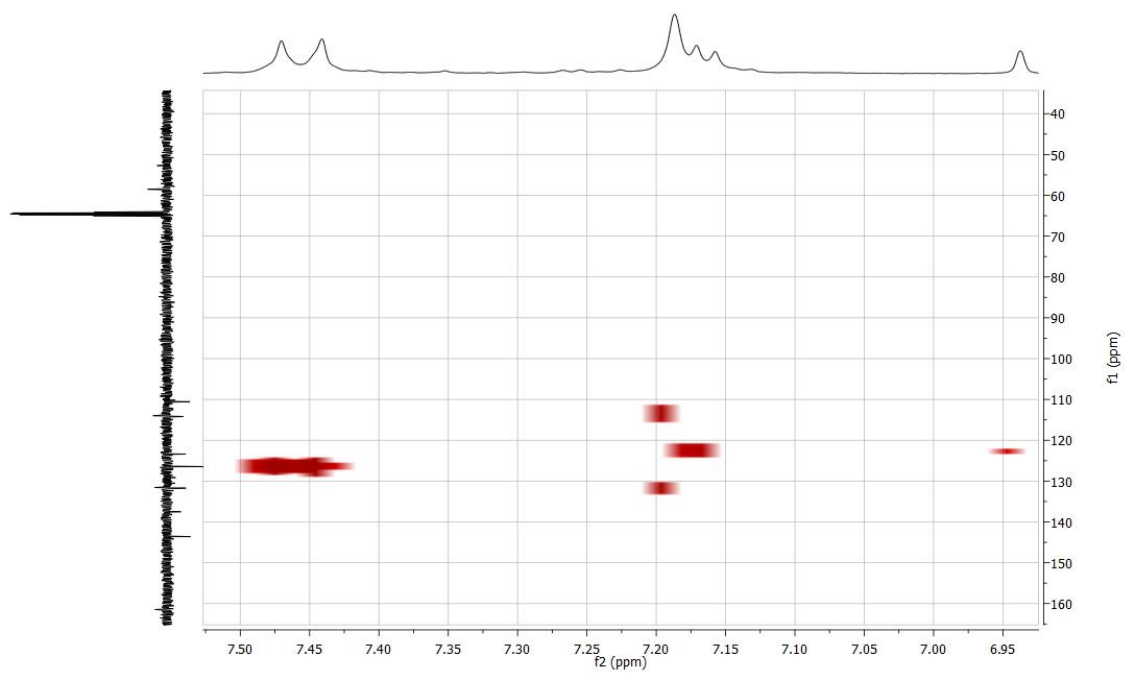


Figura 8.39. Espectro HSQC de **(10)**.

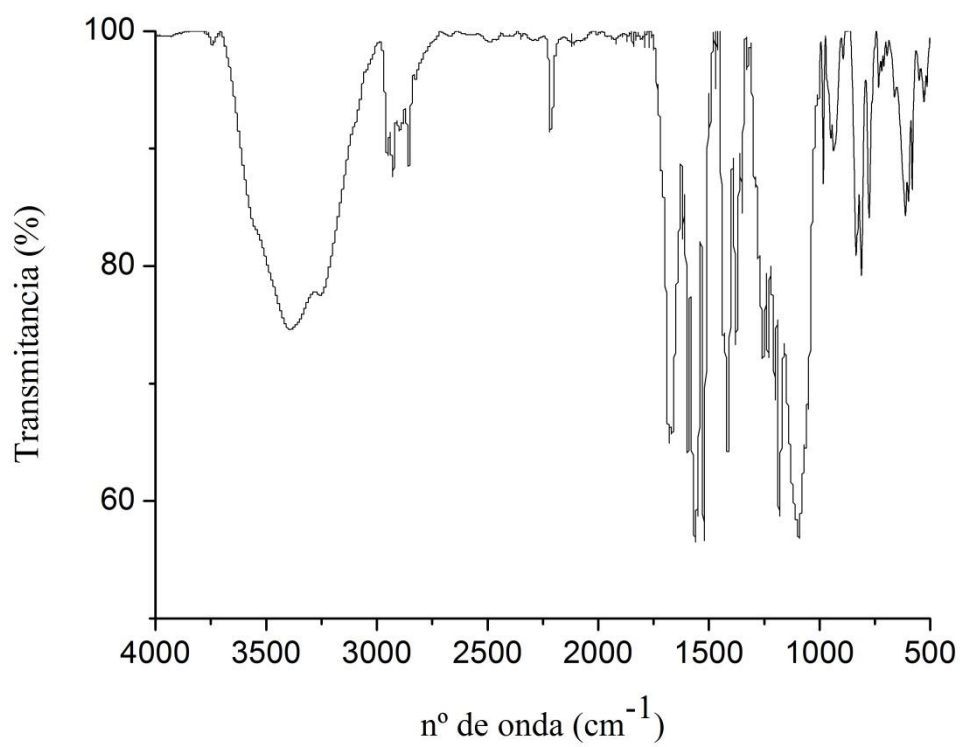


Figura 8.40. Espectro IR de **(10)**.

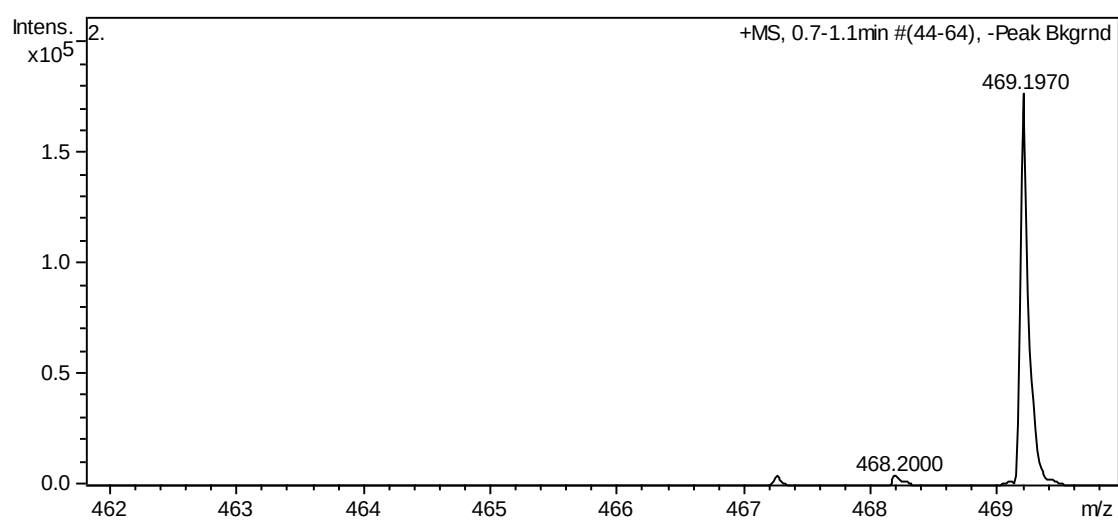


Figura 8.41. Espectro HRMS (ESI⁺) de **(10)**.

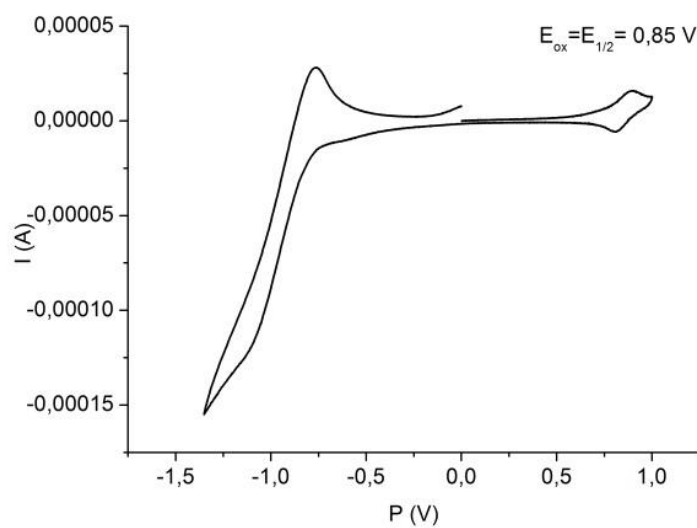


Figura 8.42. Voltametría cíclica de **(10)**.

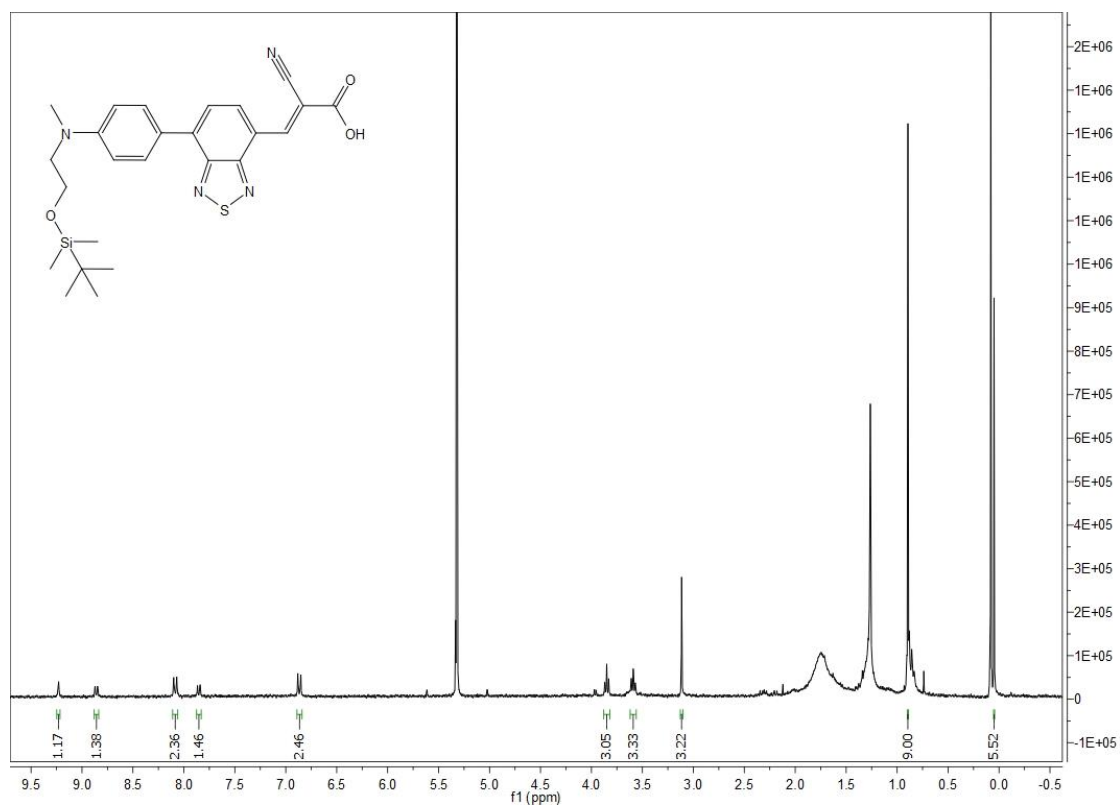


Figura 8.43. Espectro ¹H-RMN de **(11)**.

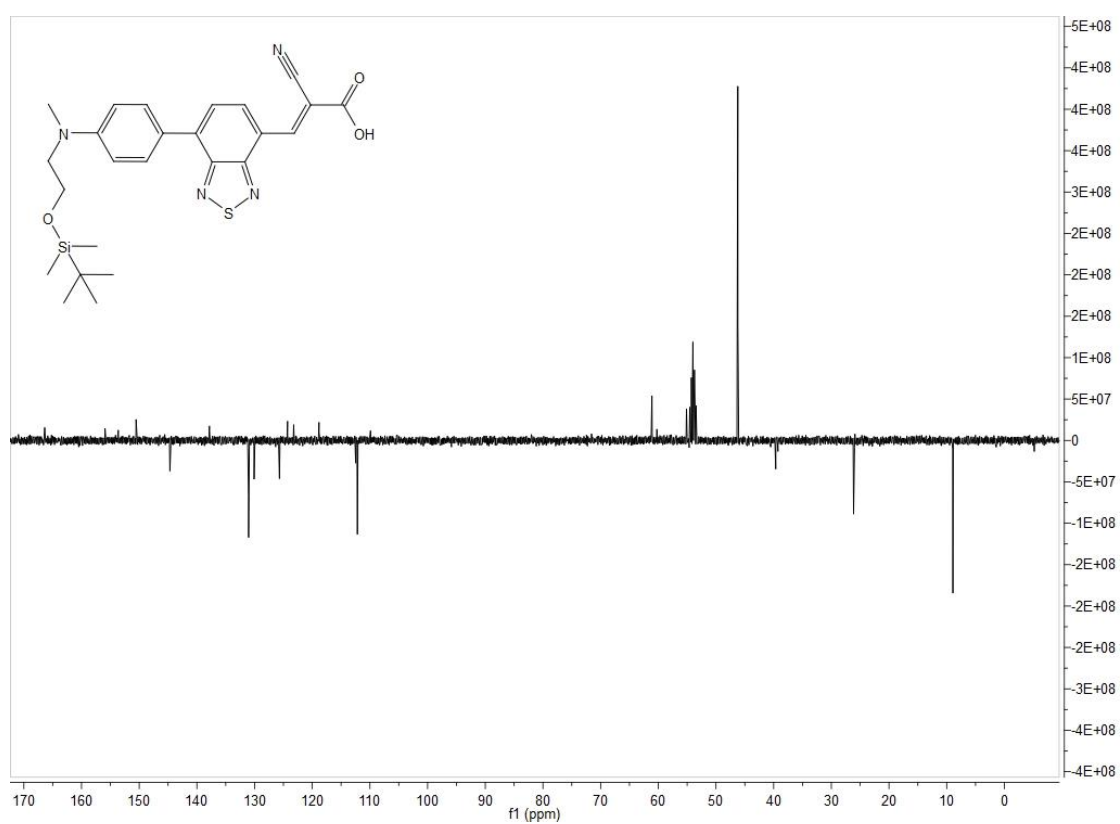


Figura 8.44. Espectro ¹³C-RMN de **(11)**.

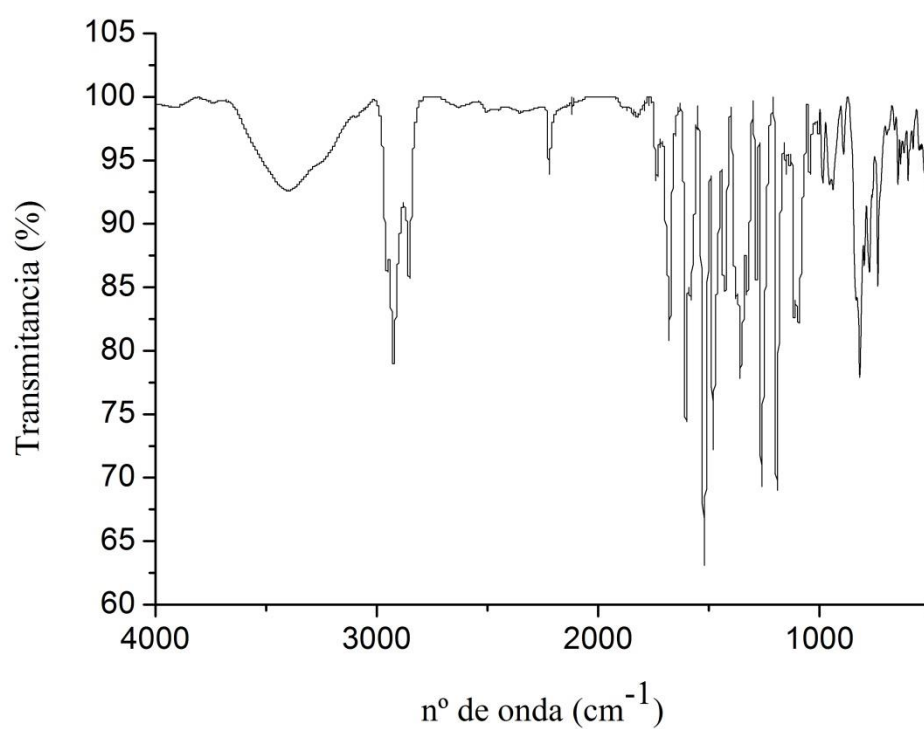


Figura 8.45. Espectro IR de **(11)**.

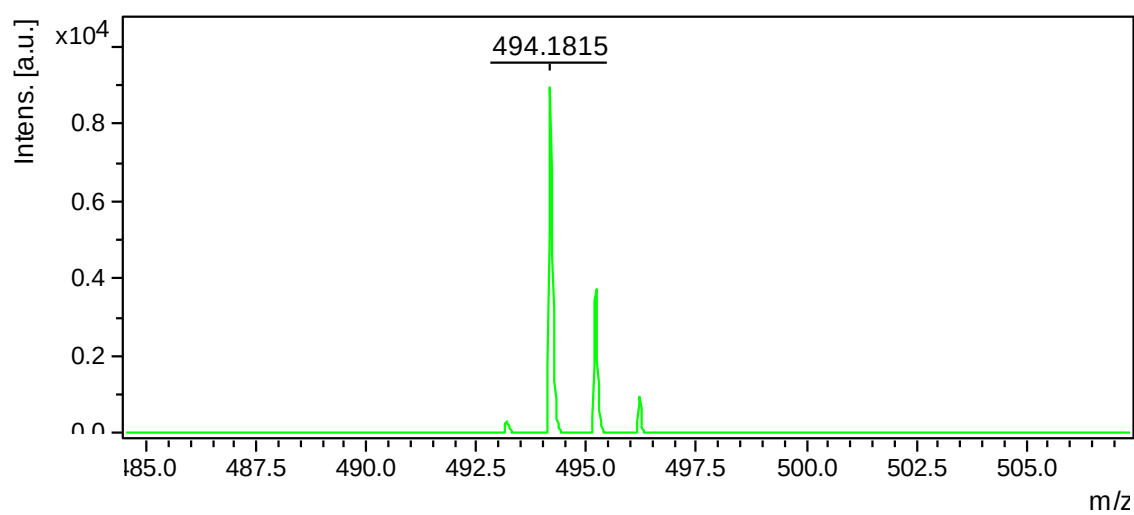


Figura 8.46. Espectro HRMS (MALDI⁺) de **(11)**.

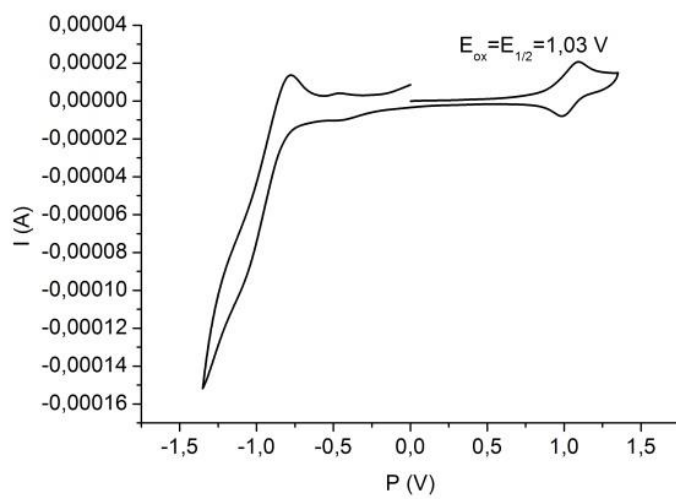


Figura 8.47. Voltametría cíclica de **(11)**.

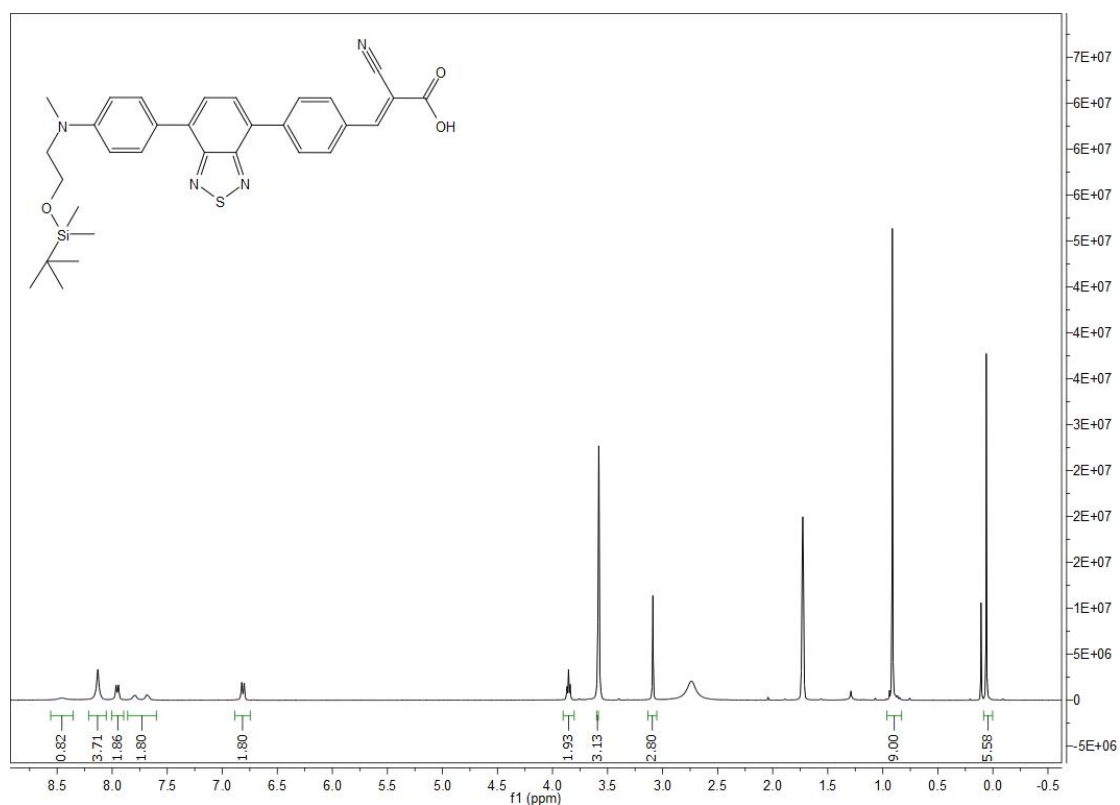


Figura 8.48. Espectro ¹H-RMN de (**12**).

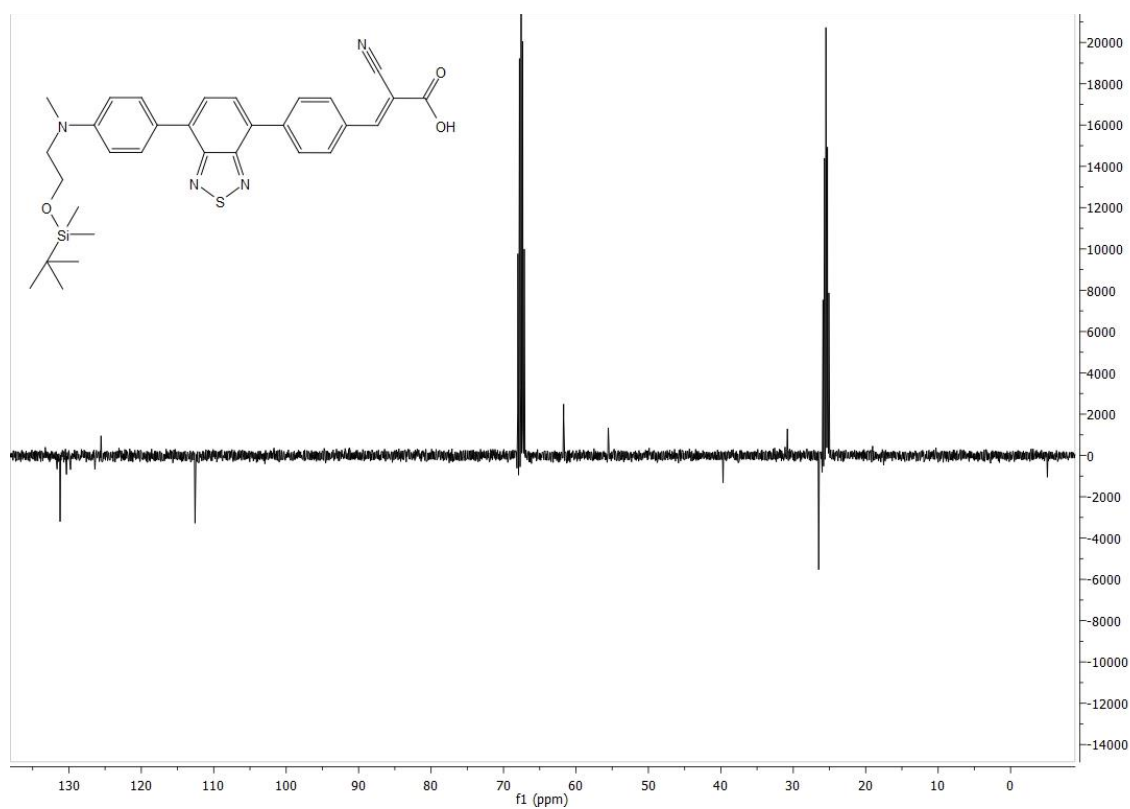


Figura 8.49. Espectro ¹³C-RMN de (**12**).

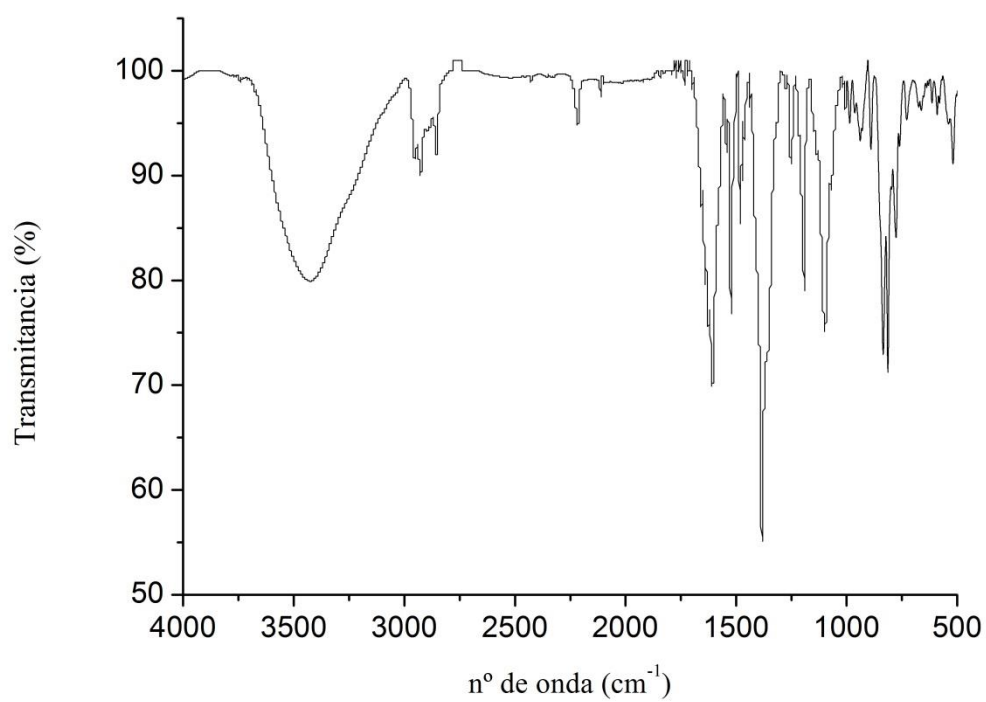


Figura 8.50. Espectro IR de **(12)**.

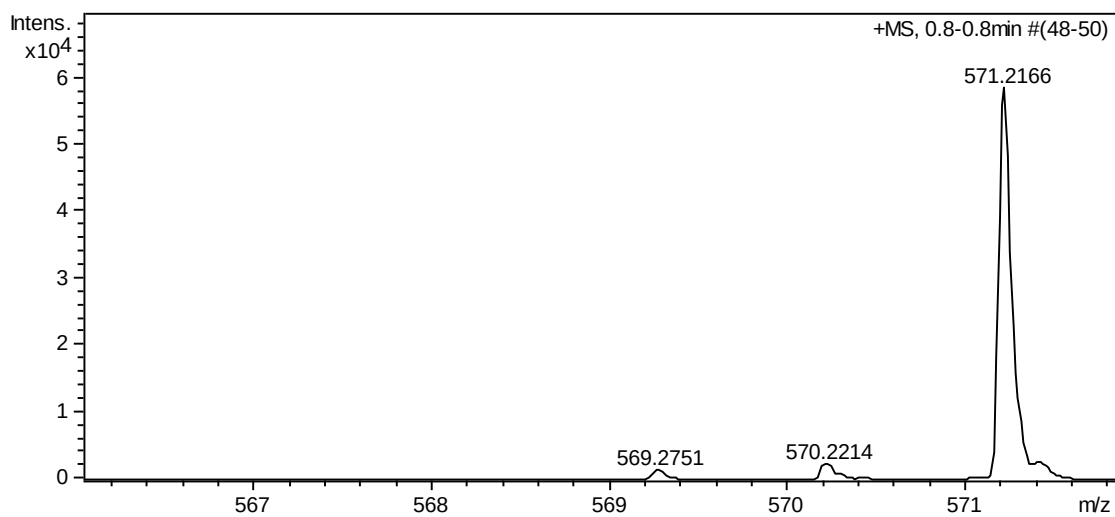


Figura 8.51. Espectro HRMS (ESI⁺) de **(12)**.

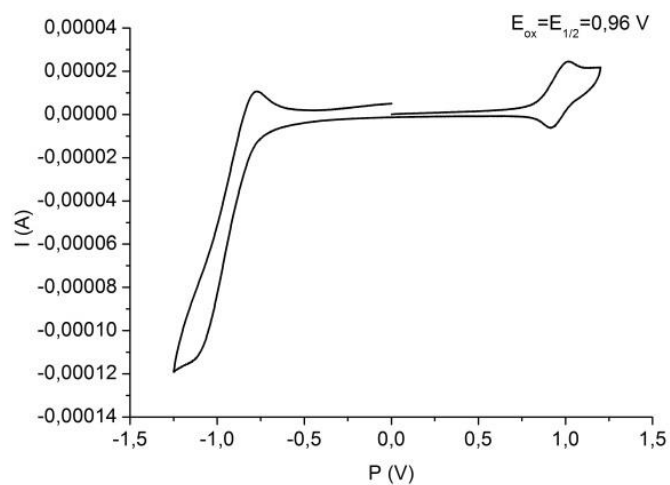


Figura 8.52. Voltametría cíclica de **(12)**.

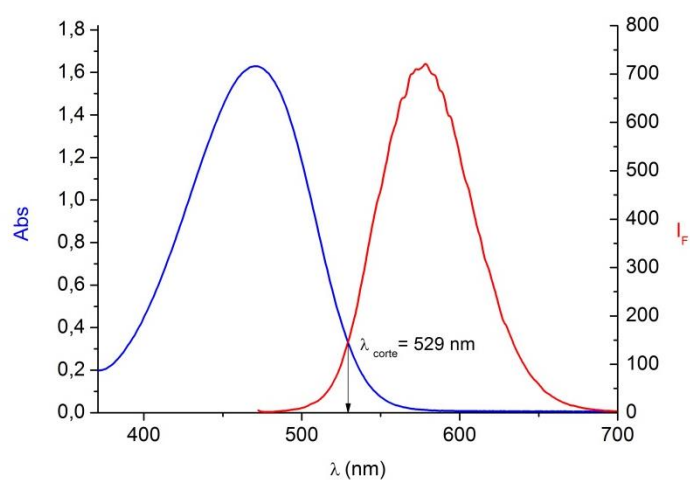


Figura 8.53. Espectros UV-Vis y fluorescencia de **(9)**.

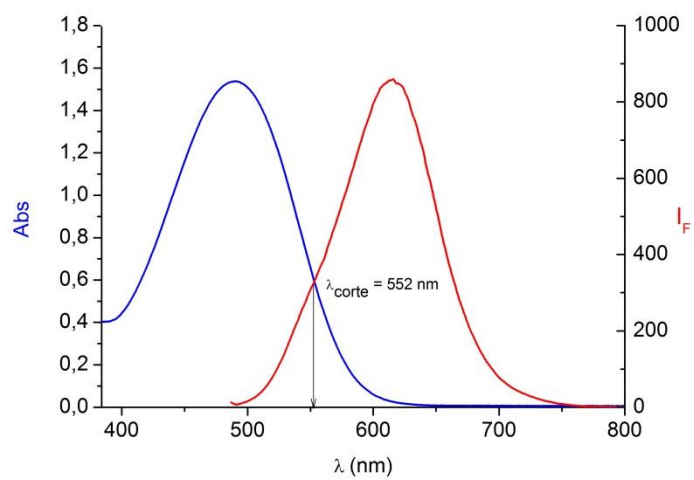


Figura 8.54. Espectros UV-Vis y fluorescencia de **(10)**.

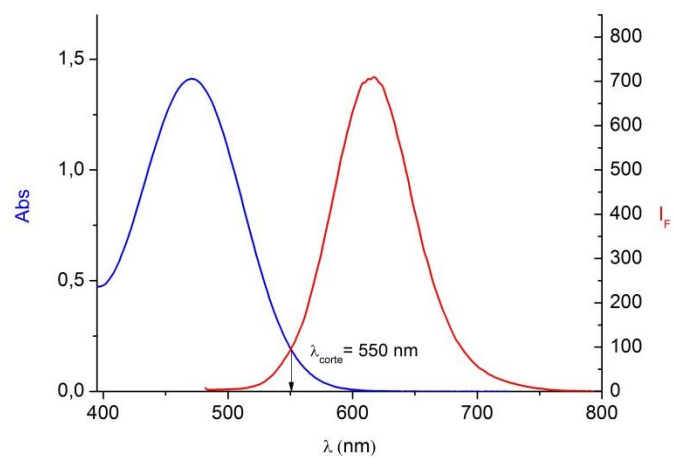


Figura 8.55. Espectros UV-Vis y fluorescencia de **(12)**.