Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Performances of New Cyclotriphosphazene Derivatives in Photocatalytic Reactions

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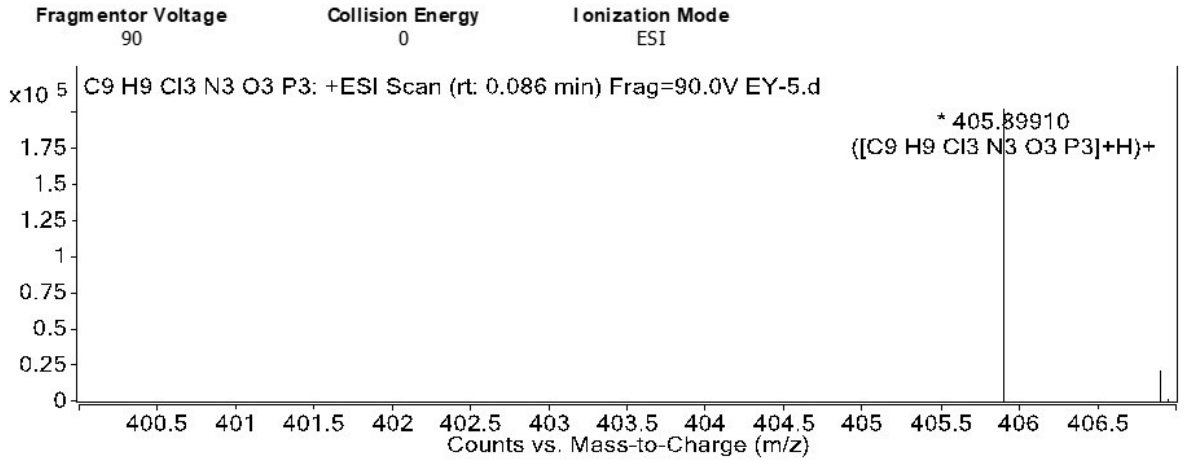


Figure S1. The QTOF-LS/MS spectrum of compound **1**

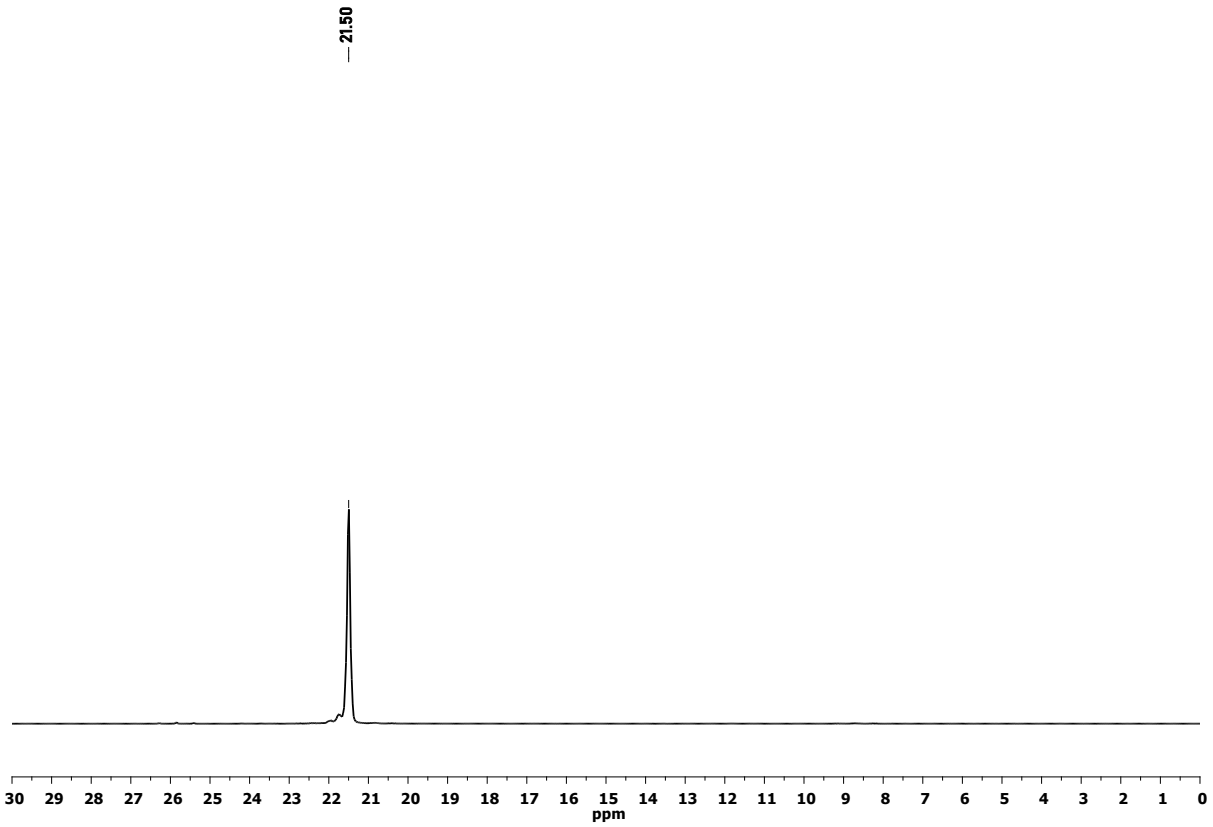


Figure S2. The proton-decoupled ^{31}P NMR spectrum of compound **1** in $CDCl_3$

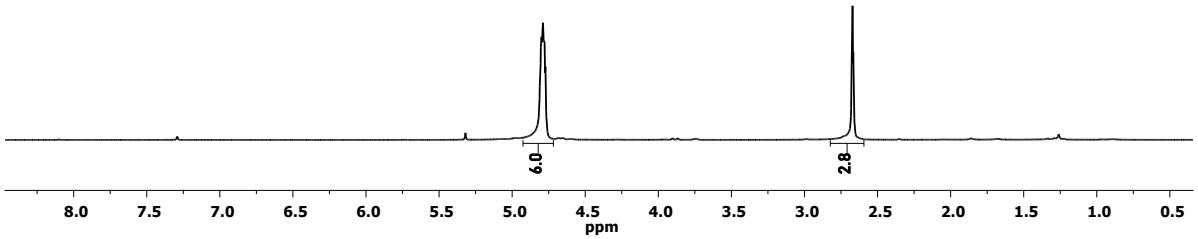


Figure S3. The ^{1}H NMR spectrum of compound **1** in $CDCl_3$

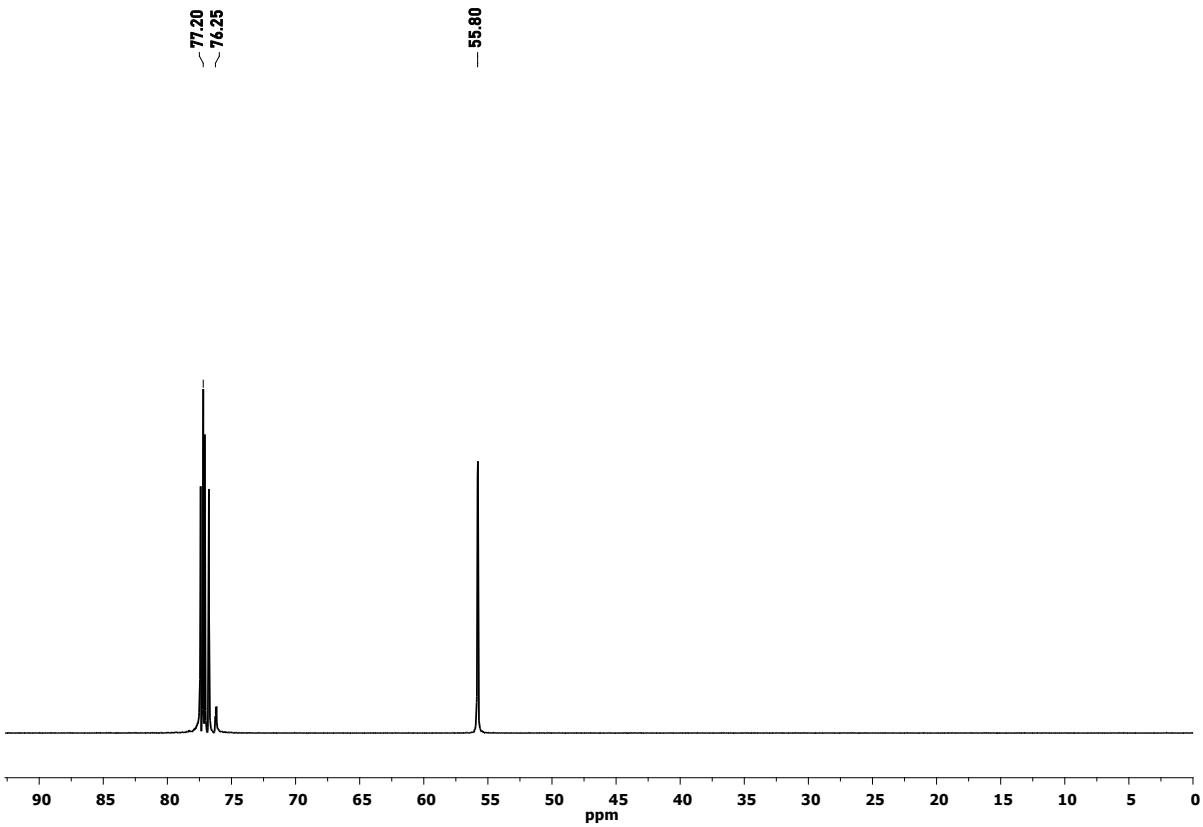


Figure S4. The ^{13}C NMR spectrum of compound **1** in $CDCl_3$

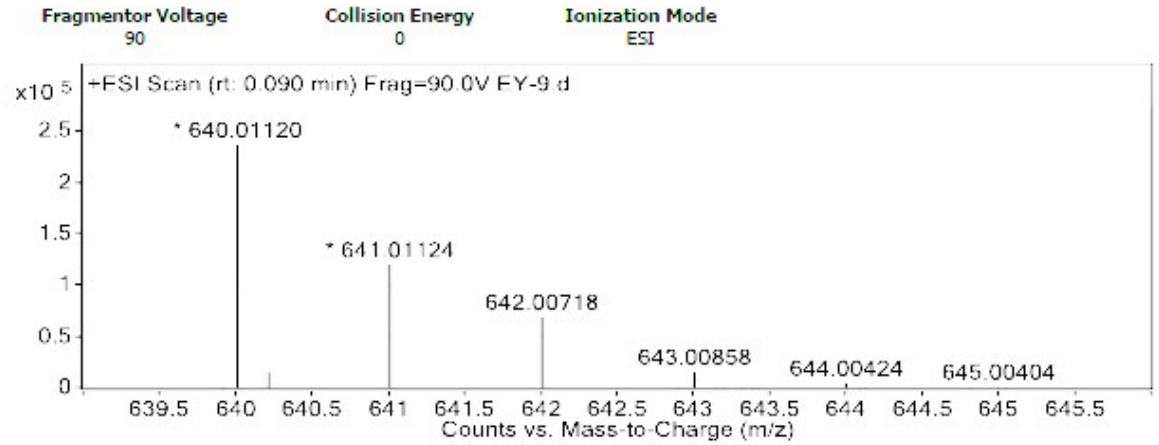


Figure S5. The QTOF-LS/MS spectrum of compound **2**

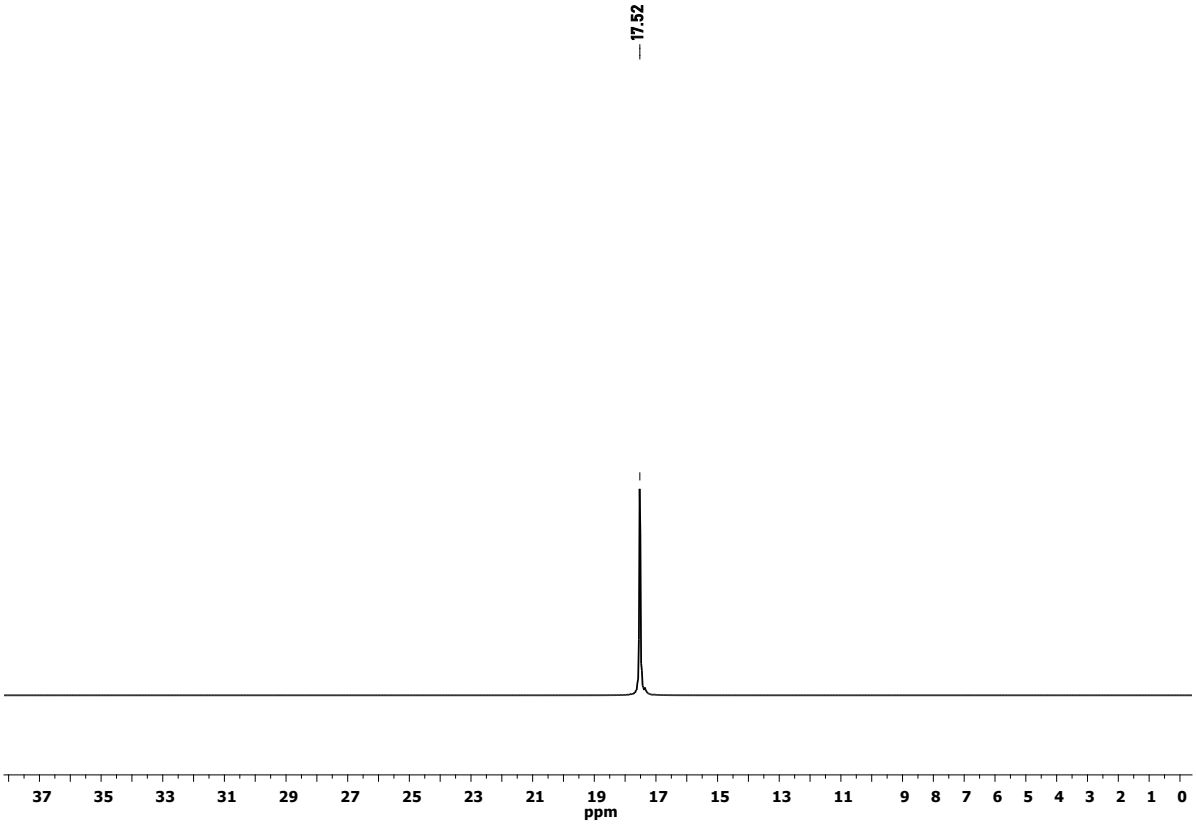


Figure S6. The proton-decoupled ^{31}P NMR spectrum of compound **2** in $CDCl_3$

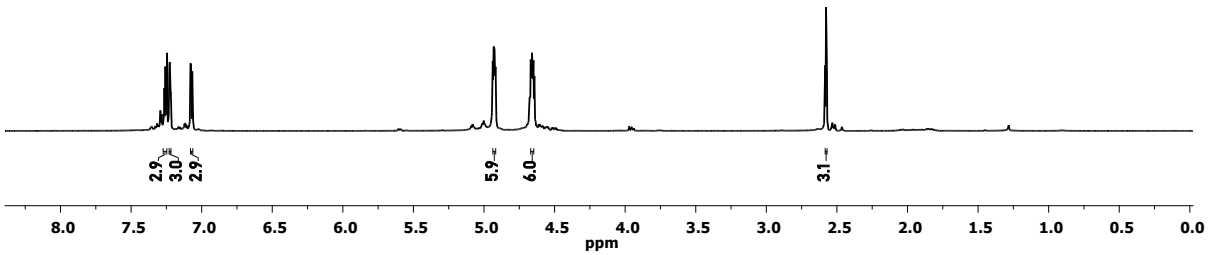


Figure S7. The ^{1}H NMR spectrum of compound **2** in $CDCl_3$

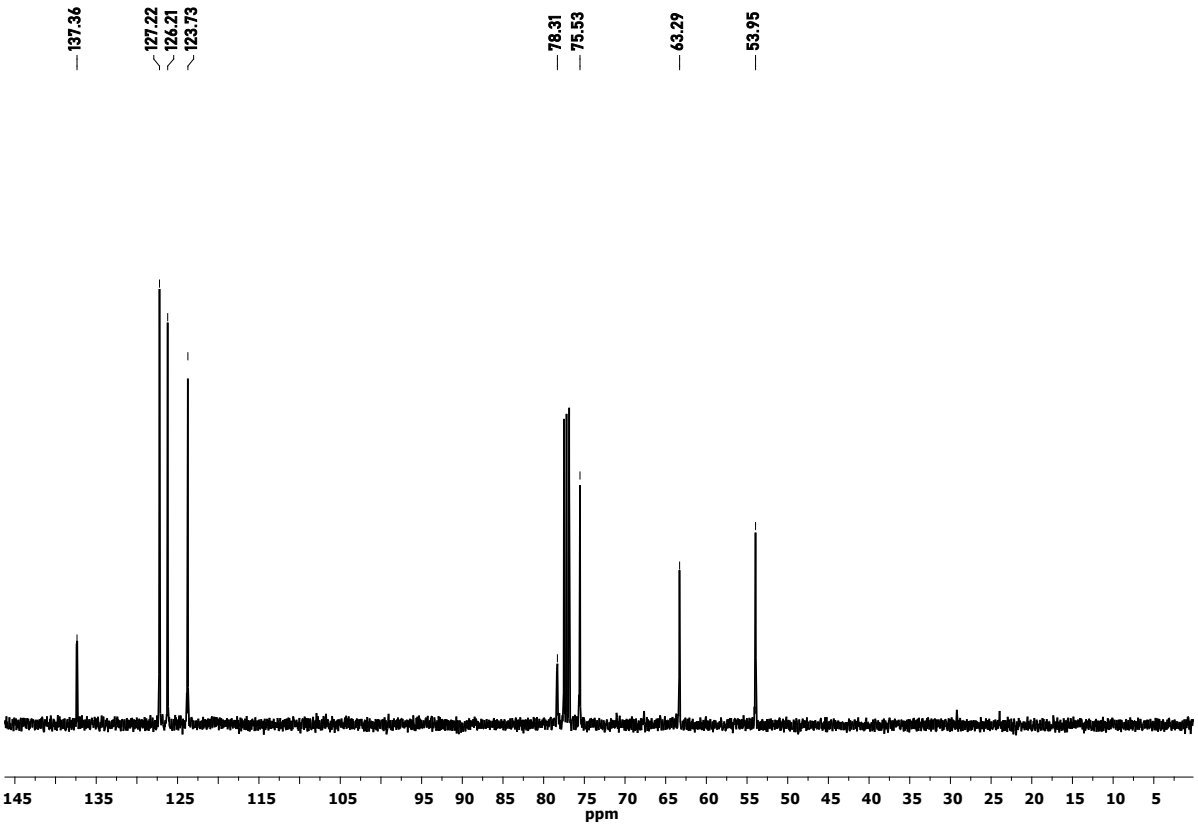


Figure S8. The ^{13}C NMR spectrum of compound **2** in $CDCl_3$

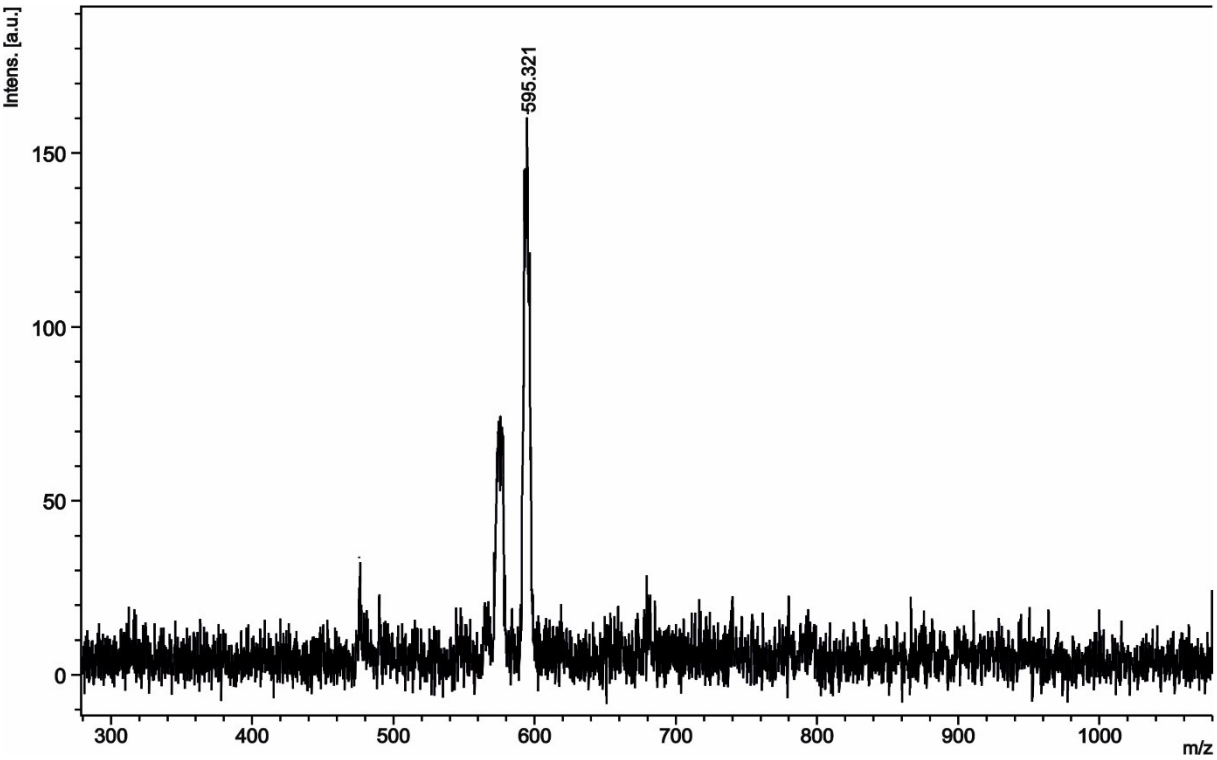


Figure S9. The MALDI TOF spectrum of compound **4**

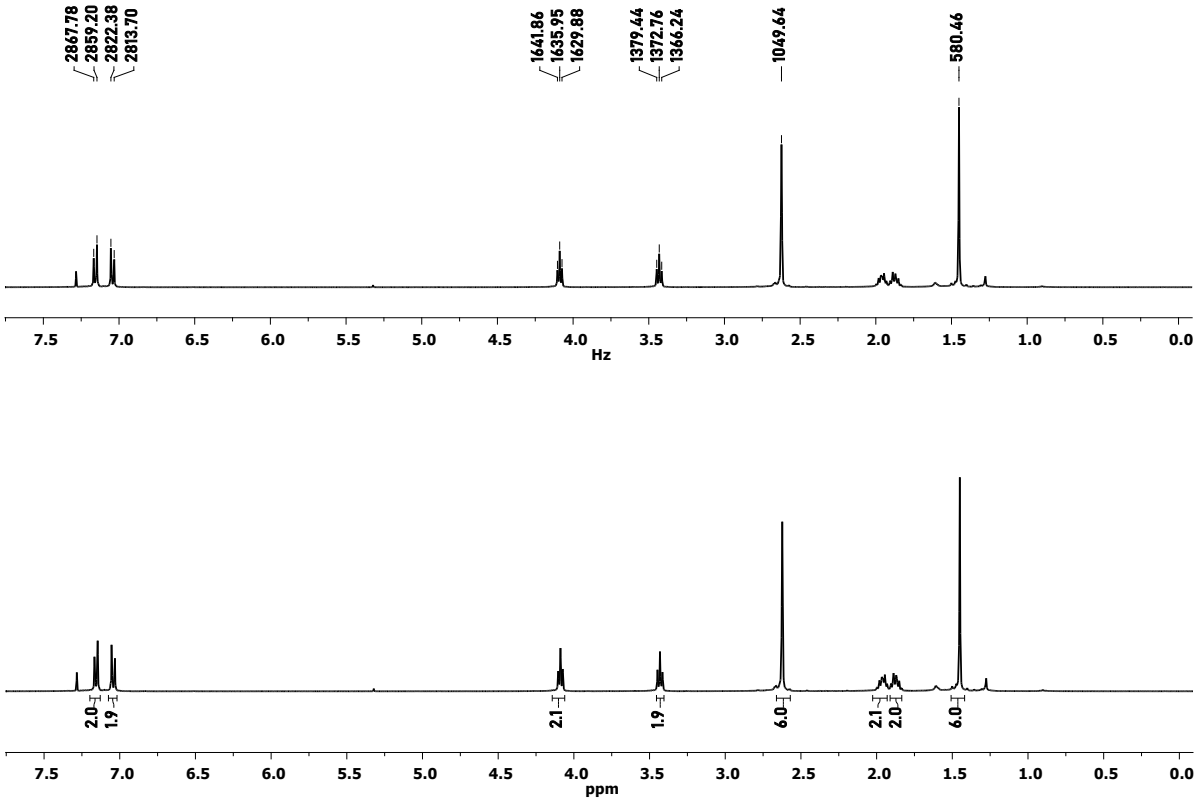


Figure S10. The ^{1}H NMR spectrum of compound **4** in $CDCl_3$

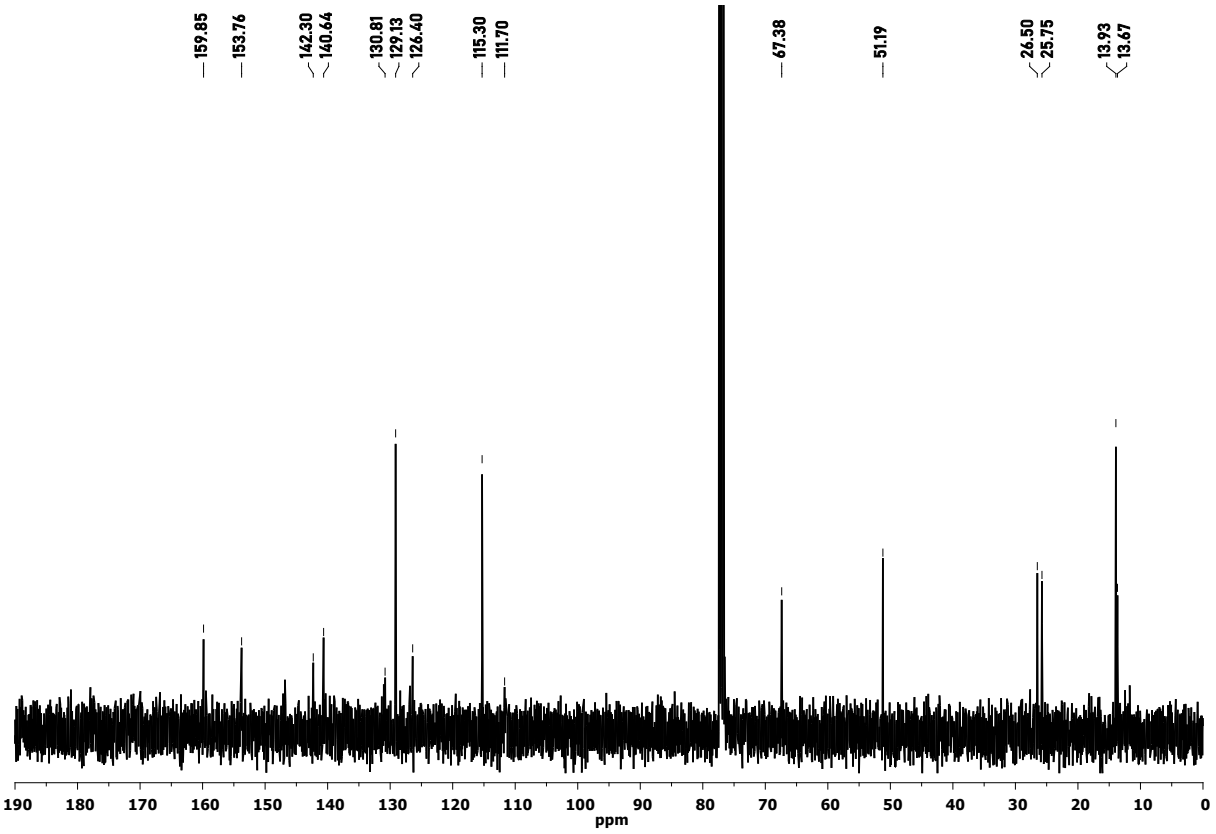


Figure S11. The ^{13}C NMR spectrum of compound **4** in $CDCl_3$

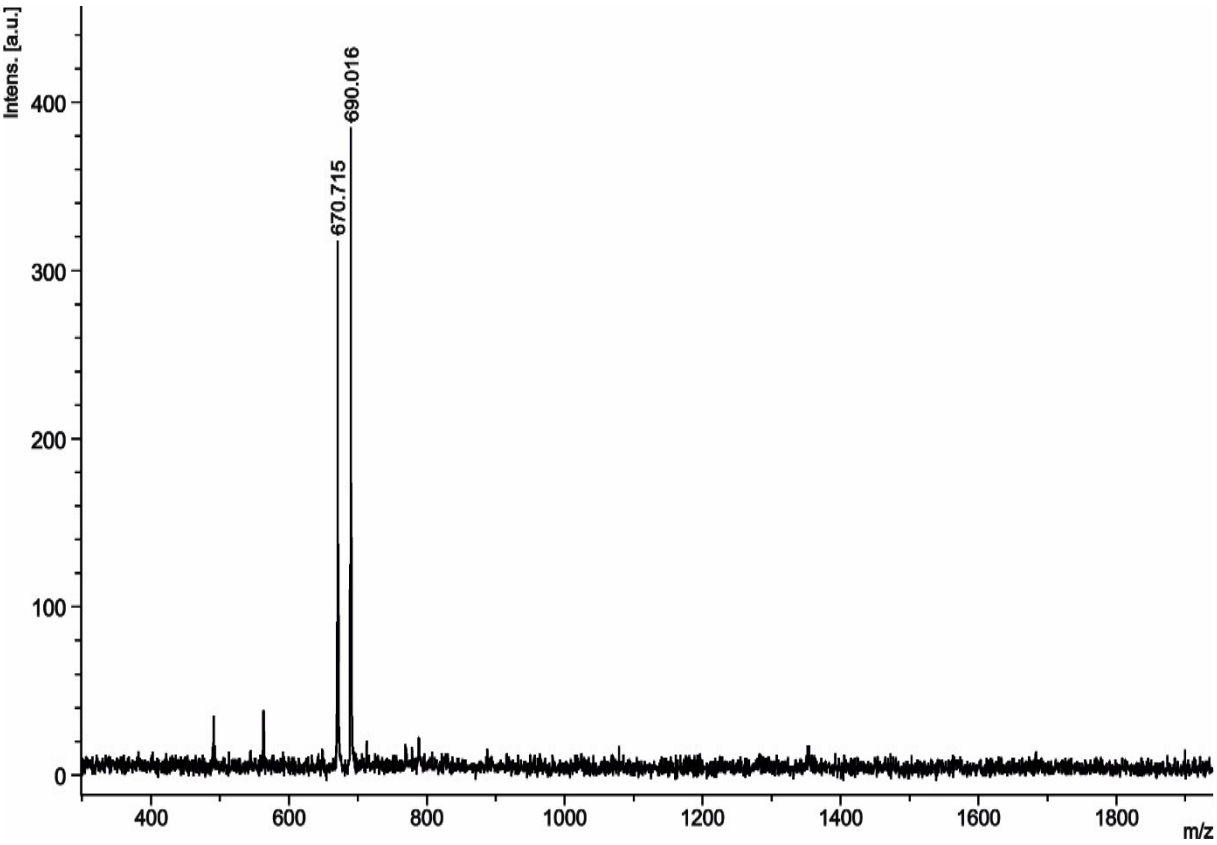


Figure S12. The MALDI TOF spectrum of compound **5** in $CDCl_3$

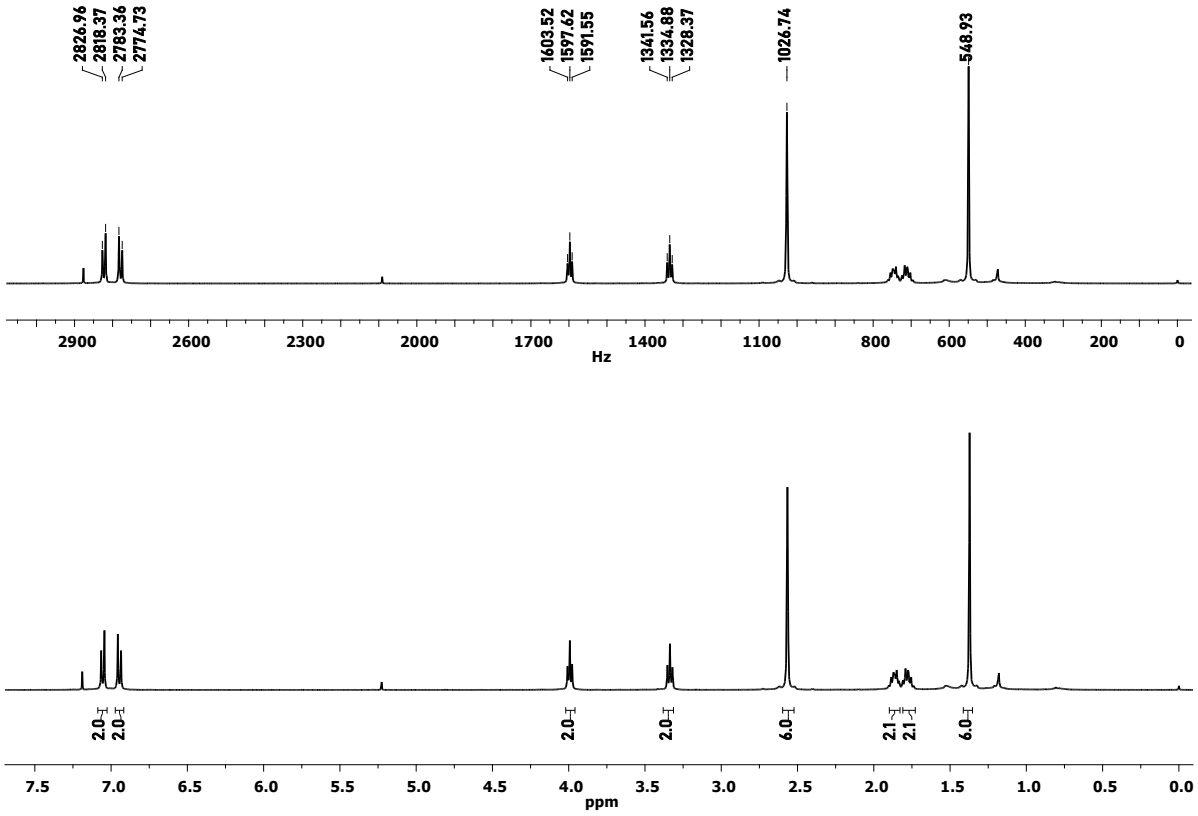


Figure S13. The ^{1}H NMR spectrum of compound **5** in $CDCl_3$

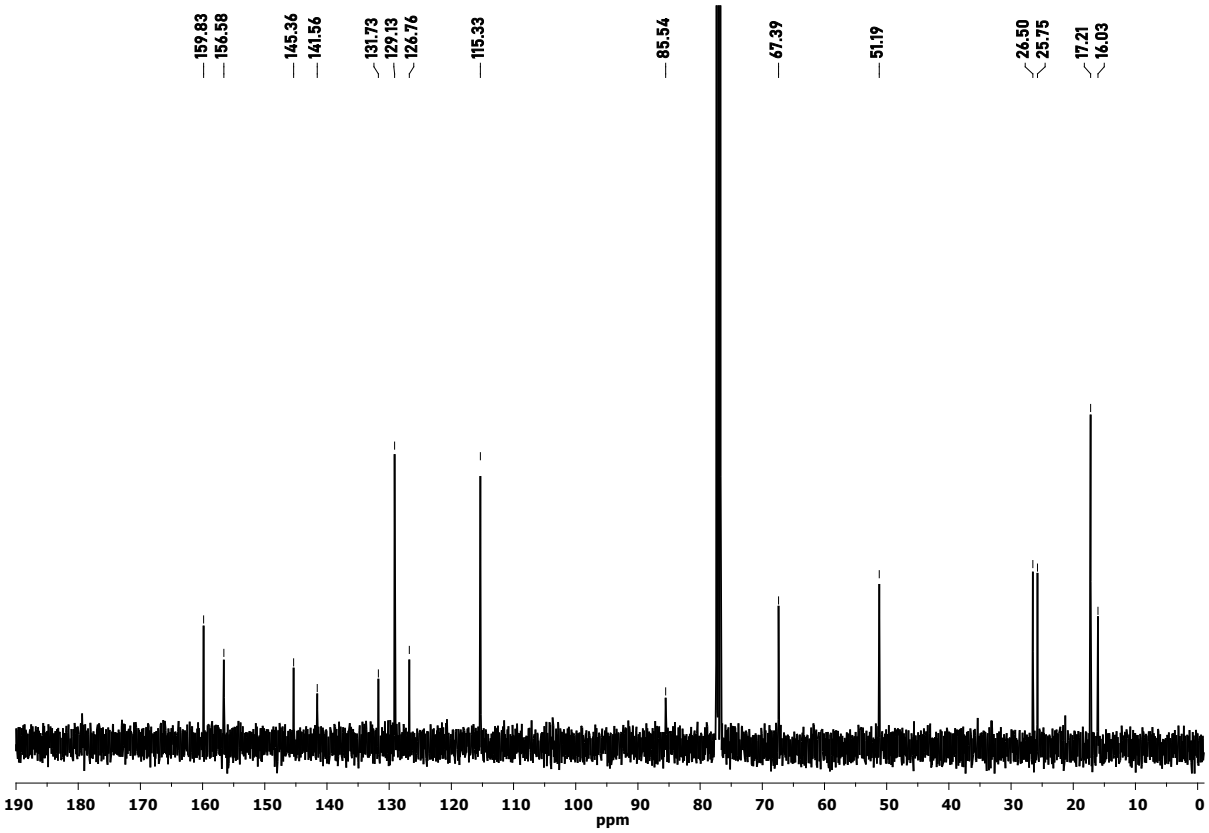
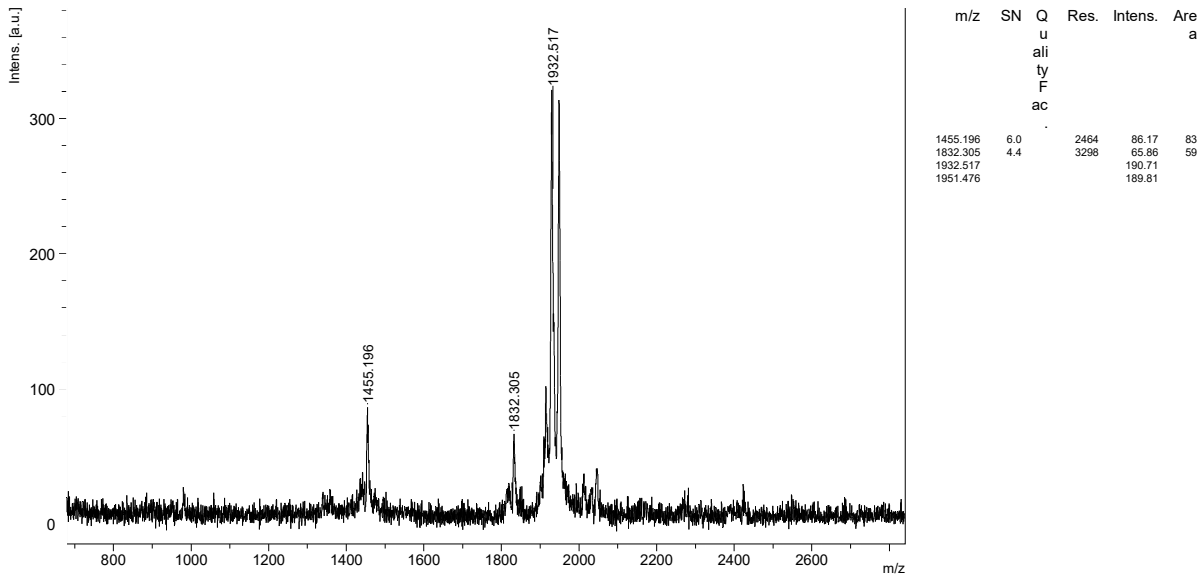


Figure S14. The ^{13}C NMR spectrum of compound **5** in $CDCl_3$



m/z	SN	Quality Fac.	Res.	Intens.	Area
1455.196	6.0		2464	86.17	83
1832.305	4.4		3298	65.86	59
1932.517				190.71	
1951.476				189.81	

Figure S15. The MALDI TOF spectrum of compound **6**

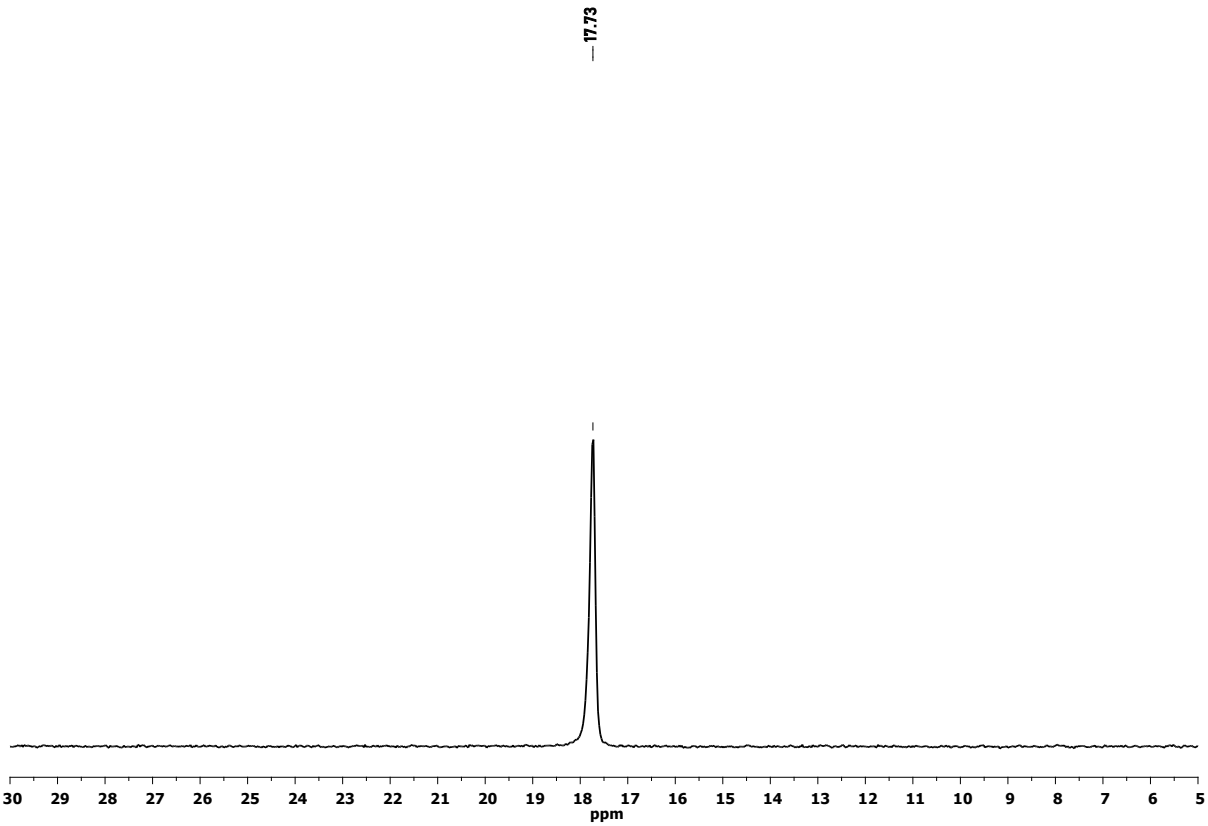


Figure S16. The proton-decoupled ^{31}P NMR spectrum of compound **6** in $CDCl_3$

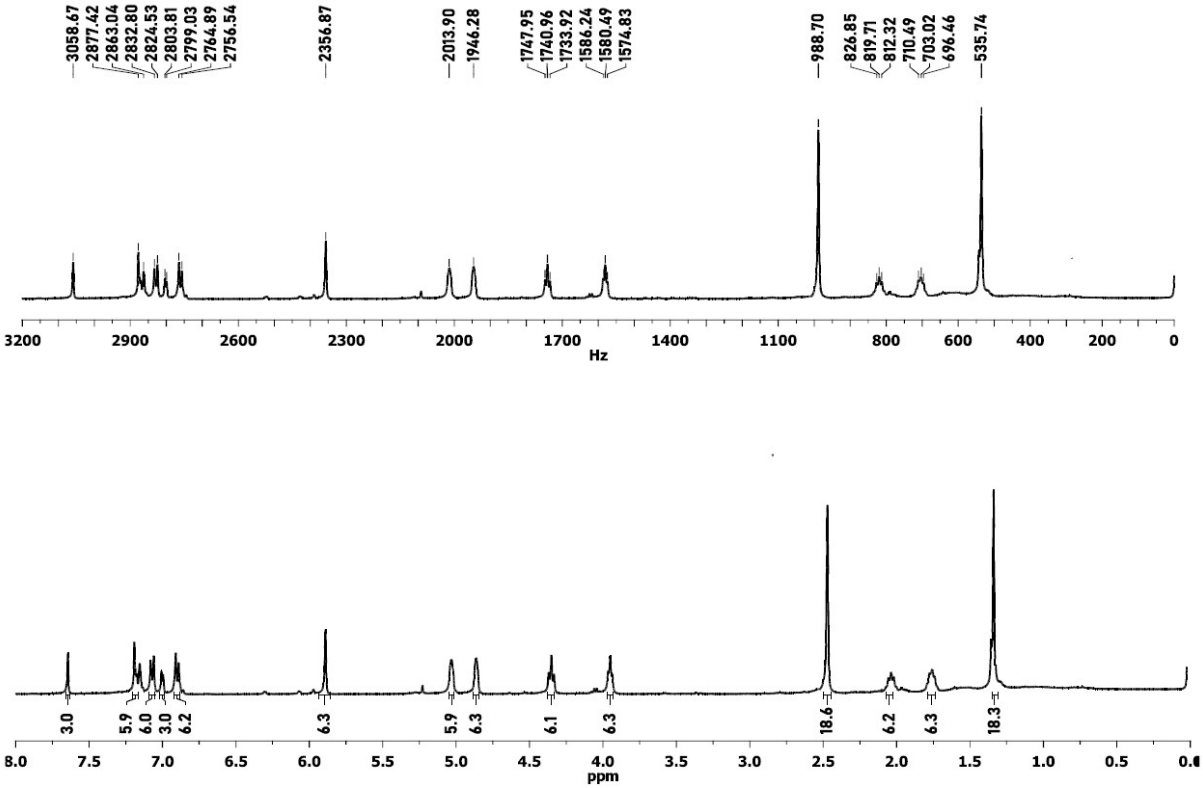


Figure S17. The ^{1}H NMR spectrum of compound **6** in $CDCl_3$

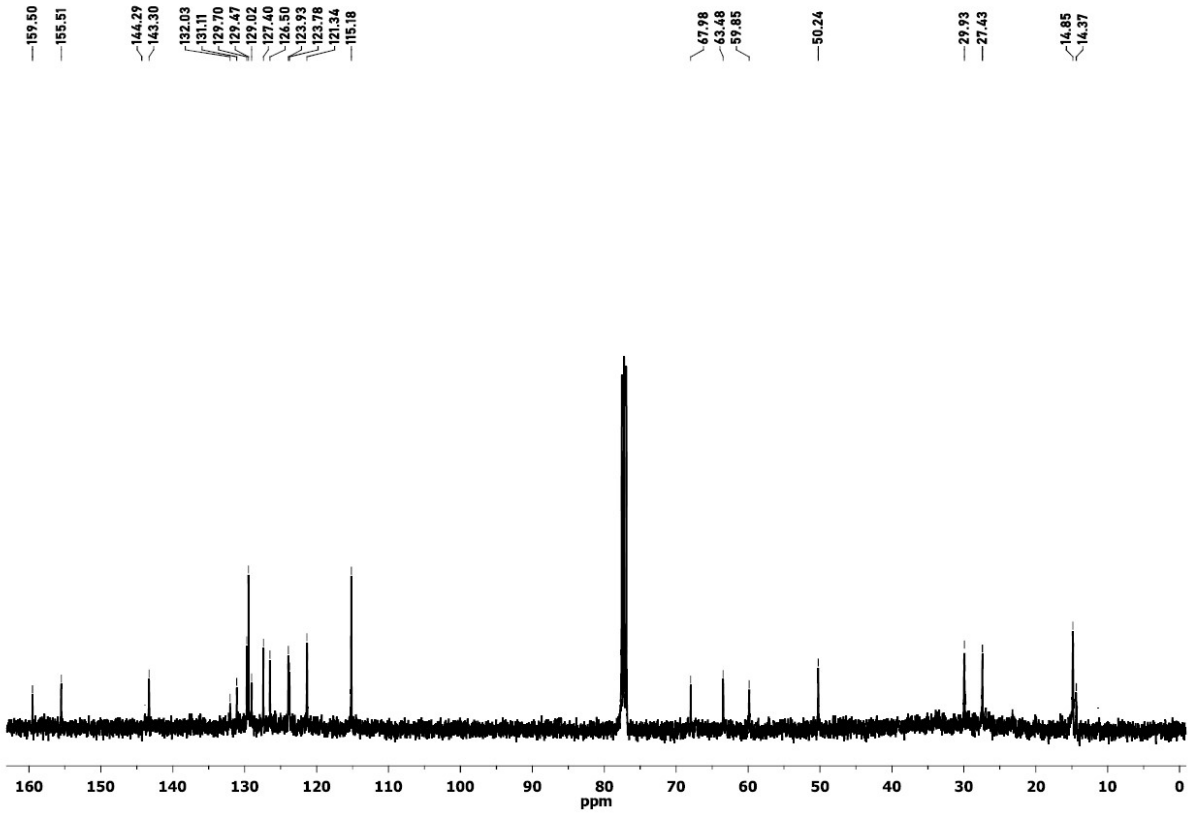
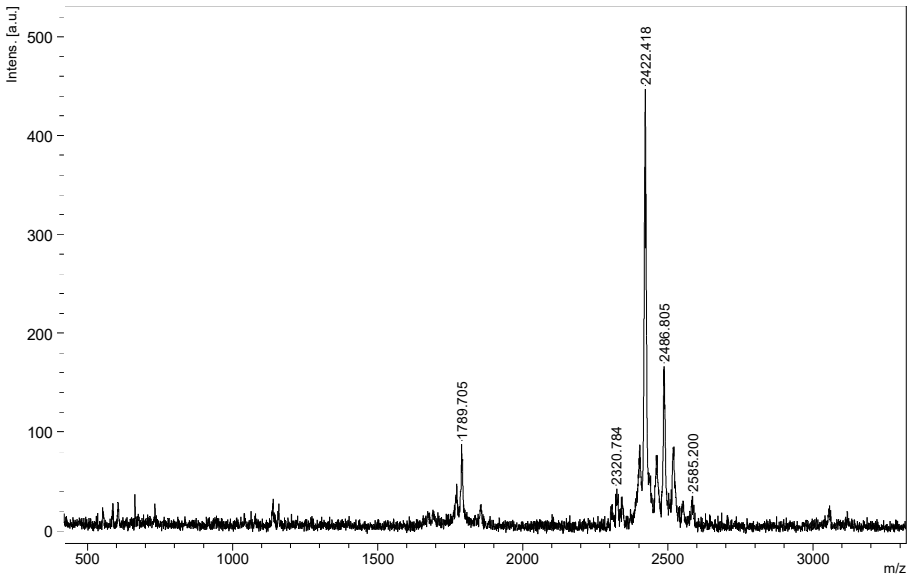


Figure S18. The ^{13}C NMR spectrum of compound **6** in $CDCl_3$



m/z	SN	Quality Fac.	Res.	Intens.	Area
1789.705	8.5		3564	87.43	65
2306.619	2.2		6991	25.40	14
2320.784	3.2		2009	36.40	54
2339.534	2.9		2409	32.88	38
2402.327	7.1		6135	80.55	58
2422.418	39.8		769	446.36	2001
2459.918	6.8		3742	75.50	67
2486.805	14.9		2385	165.55	252
2518.038	7.6		2967	83.45	107
2552.482	2.7		5392	29.36	22
2585.200	3.1		4594	34.12	35

Figure S19. The MALDI TOF spectrum of compound **7**

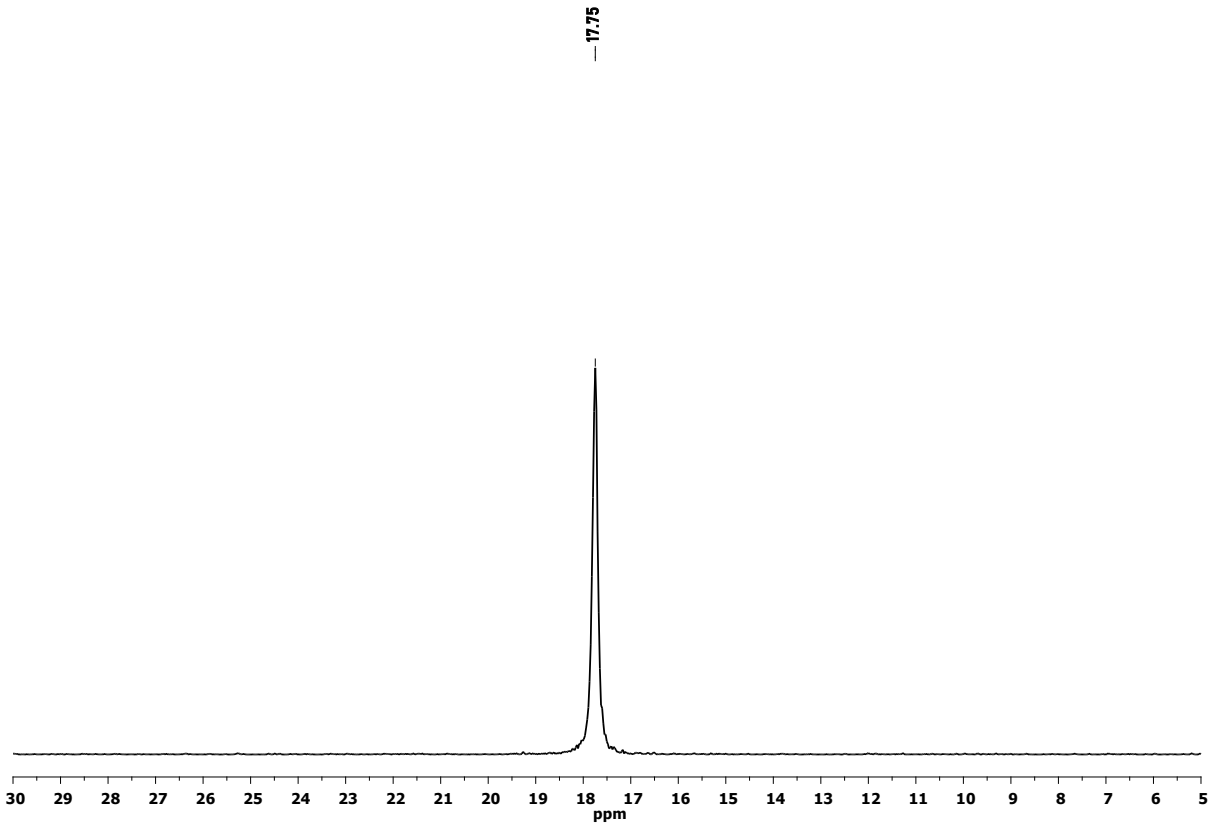


Figure S20. The proton-decoupled ^{31}P NMR spectrum of compound **7** in $CDCl_3$

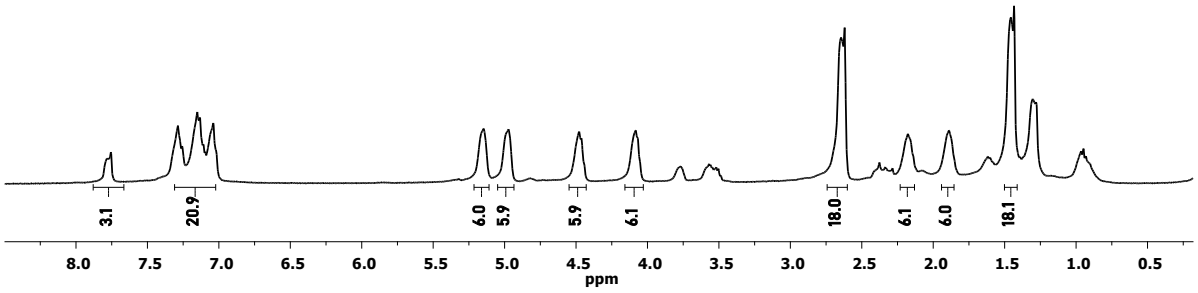


Figure S21. The ^{1}H NMR spectrum of compound **7** in $CDCl_3$

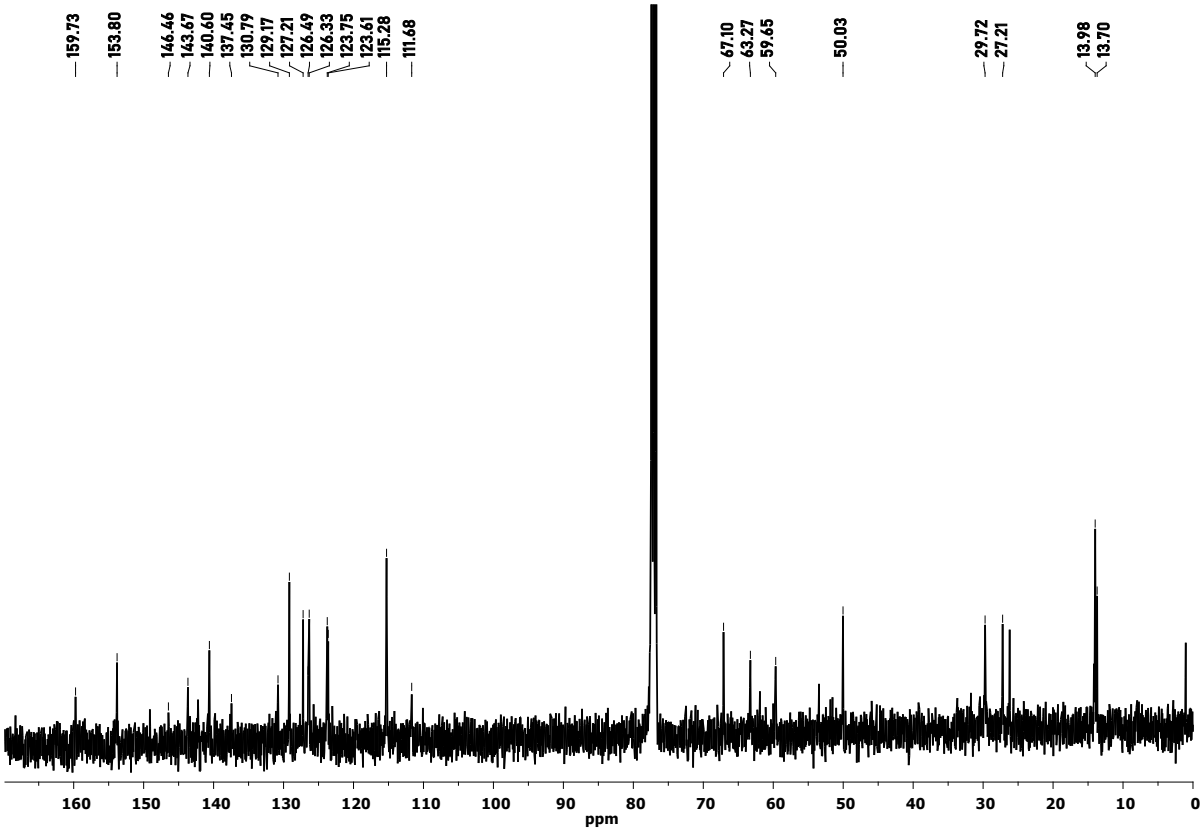
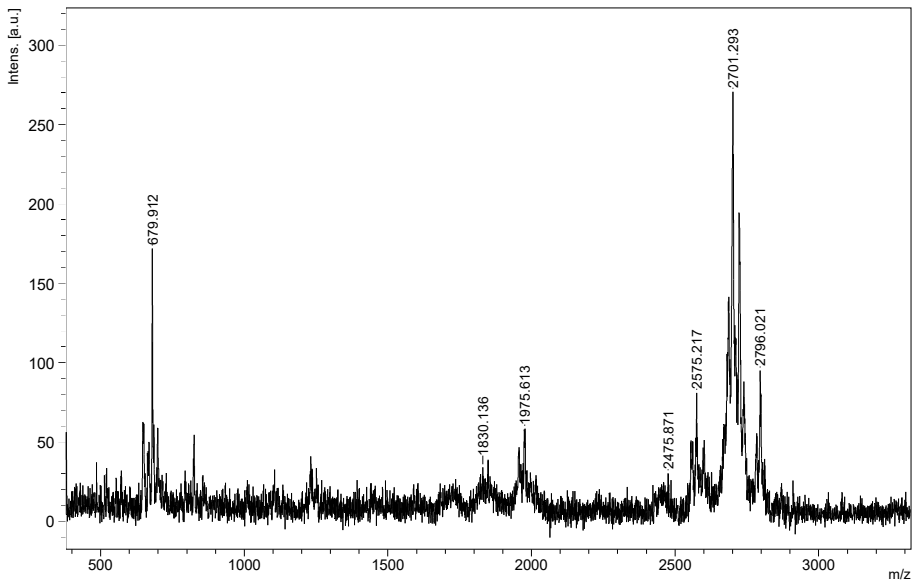


Figure S22. The ^{13}C NMR spectrum of compound **7** in $CDCl_3$



m/z	SN	Quality Fac.	Res.	Intens.	Area
679.912	9.6		419	171.39	342
1830.136	2.0		1783	33.71	38
1975.613	3.4		4781	57.60	53
2475.871	1.7		3144	30.63	34
2575.217	4.3		2127	79.99	150
2701.293	15.0		2785	269.78	568
2796.021	5.4		3853	94.17	114

Figure S23. The MALDI TOF spectrum of compound **8**

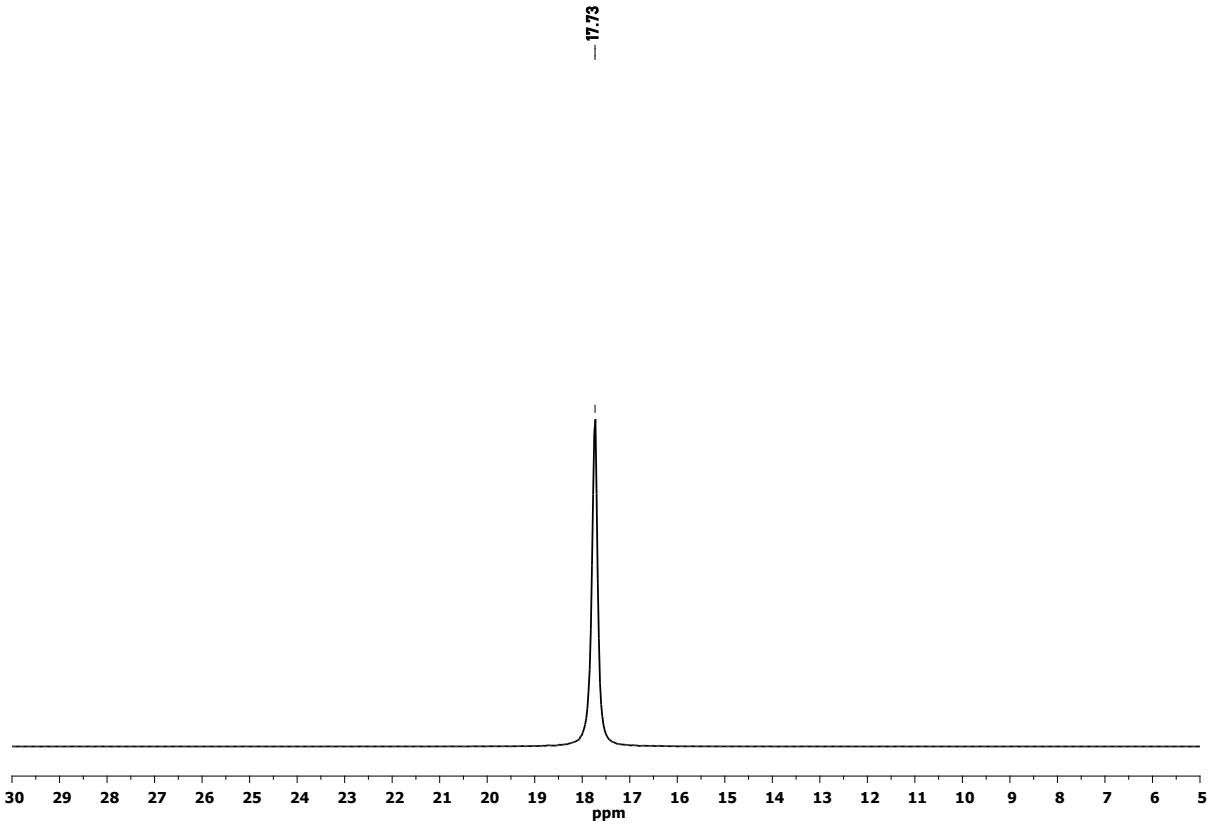


Figure S24. The proton-decoupled ^{31}P NMR spectrum of compound **8** in $CDCl_3$

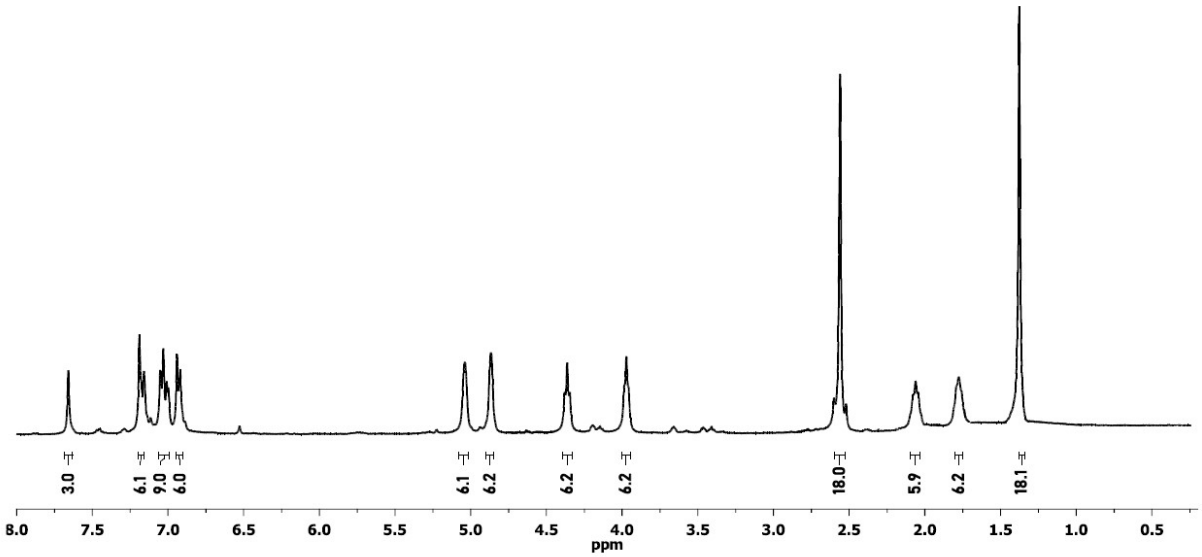


Figure S25. The ^{1}H NMR spectrum of compound **8** in $CDCl_3$

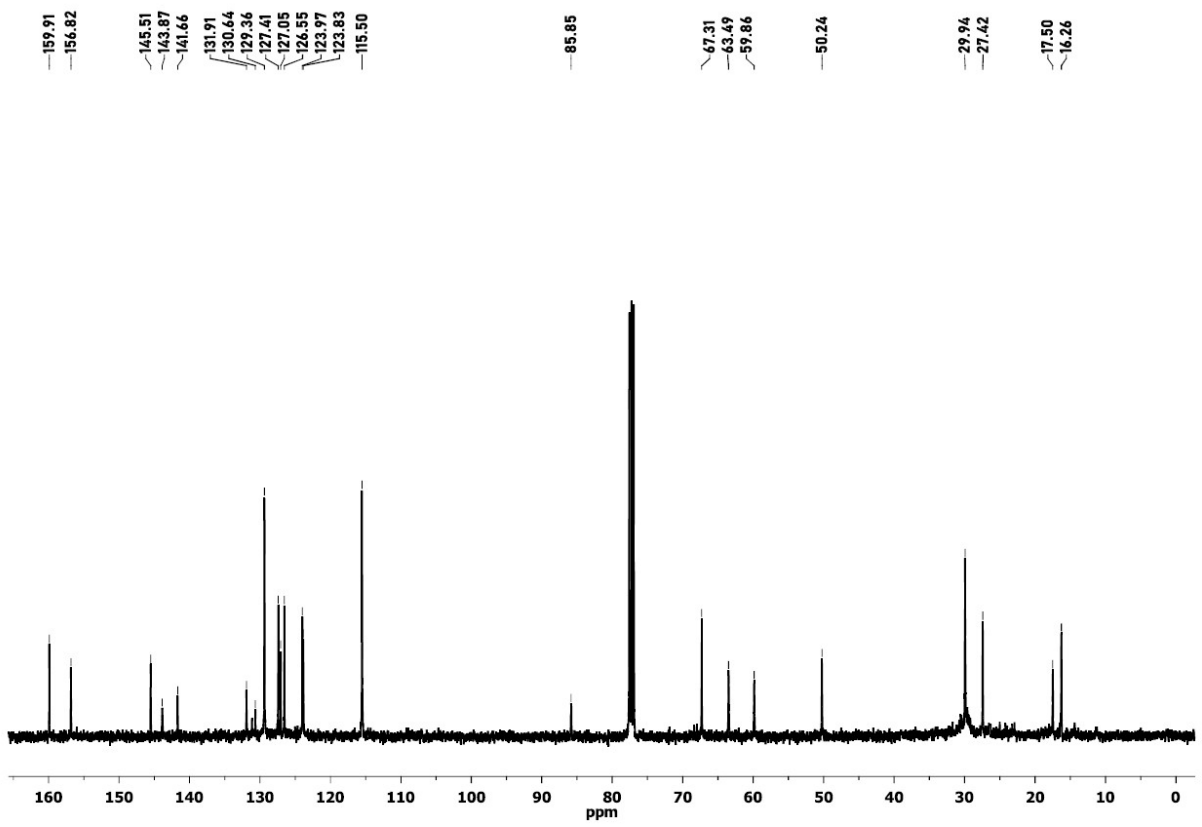


Figure S26. The ^{13}C NMR spectrum of compound **8** in $CDCl_3$

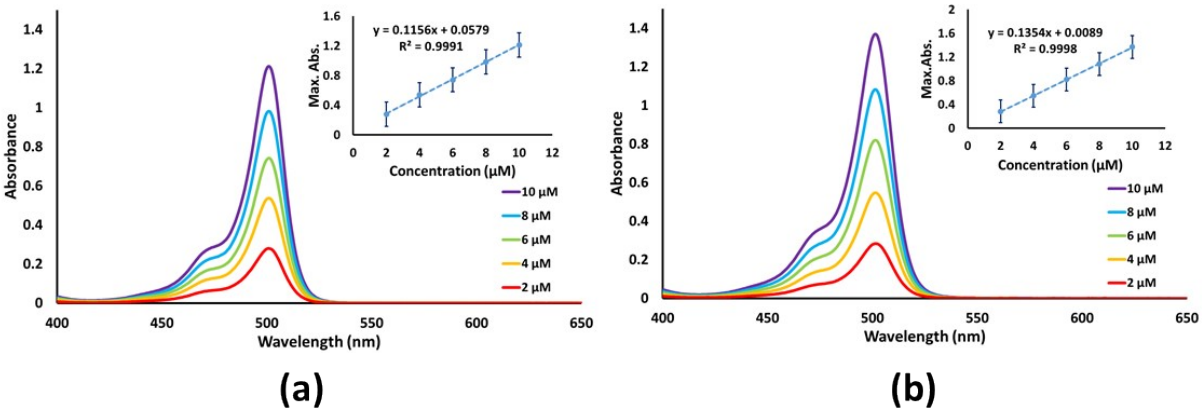


Figure S27. UV-Vis spectra of **a)** BODIPY **3 b)** BODIPY-cyclotriphosphazene **6** in DCM (10-2 μM)

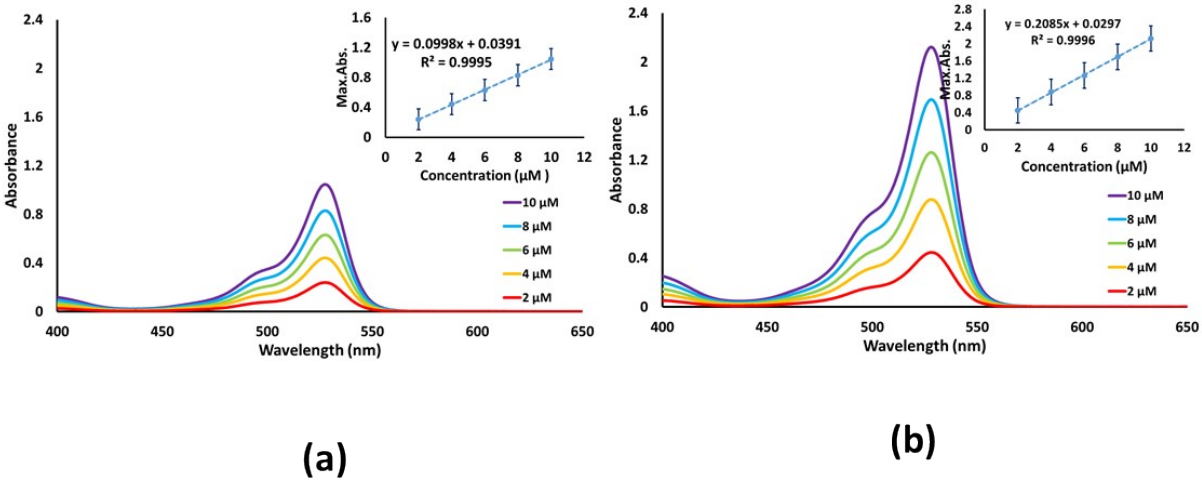


Figure S28. UV-Vis spectra of **a)** BODIPY **4 b)** BODIPY-cyclotriphosphazene **7** in DCM (10-2 μM)

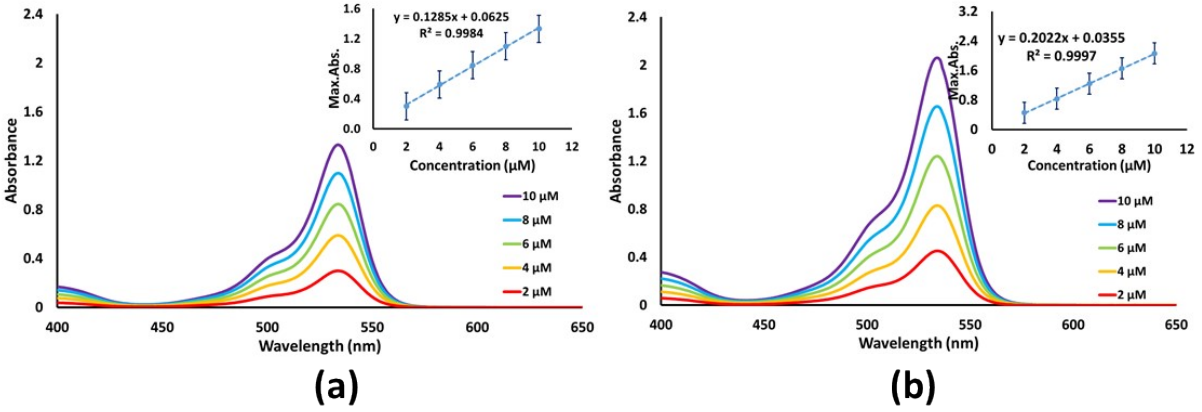


Figure S29. UV-Vis spectra of **a)** BODIPY **5 b)** BODIPY-cyclotriphosphazene **8** in DCM (10-2 μM)

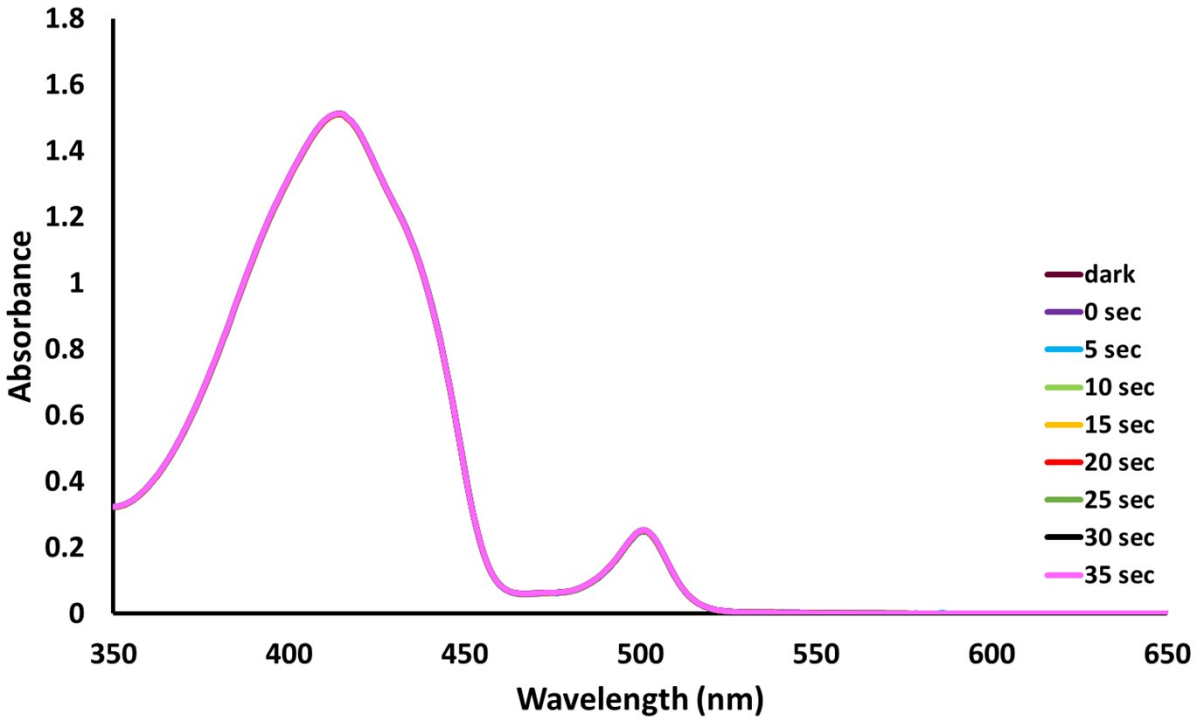


Figure S30. Decrease in absorbance spectrum of DPBF in the presence of BODIPY **3** (2.0 µM, in DCM, λ = 516 nm, 2.1 mW cm^{-2})

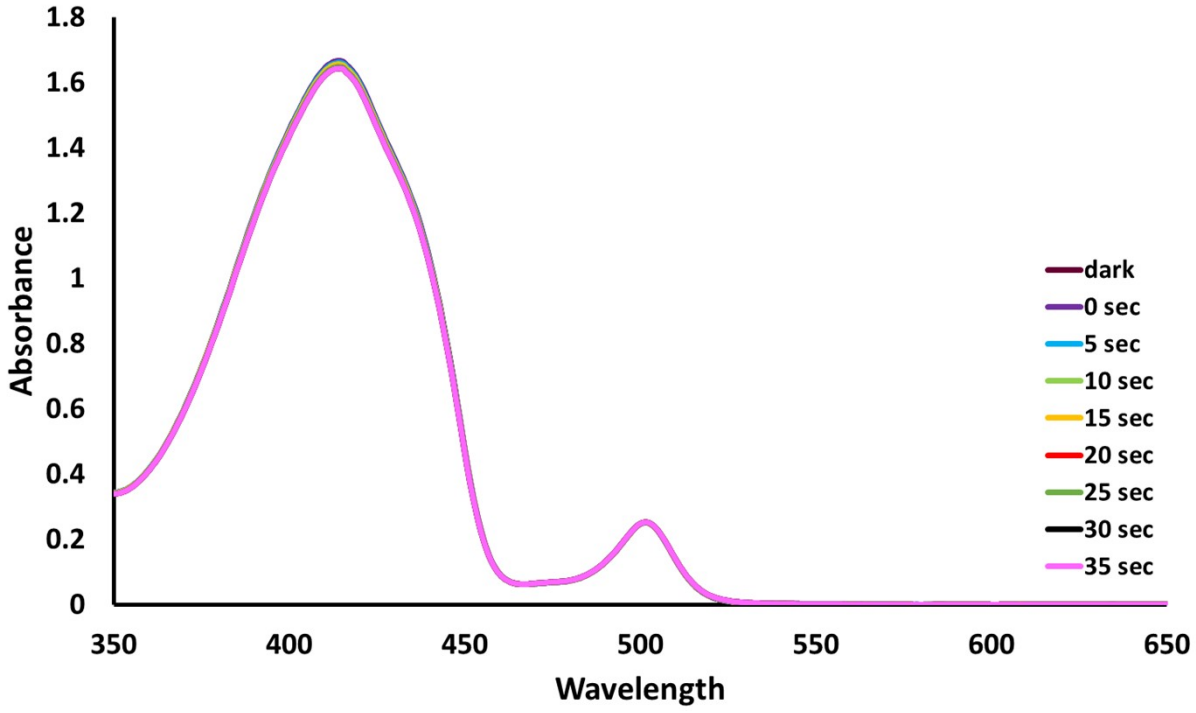


Figure S31. Decrease in absorbance spectrum of DPBF in the presence of BODIPY **6** (2.0 µM, in DCM, λ = 516 nm, 2.1 mW cm^{-2})

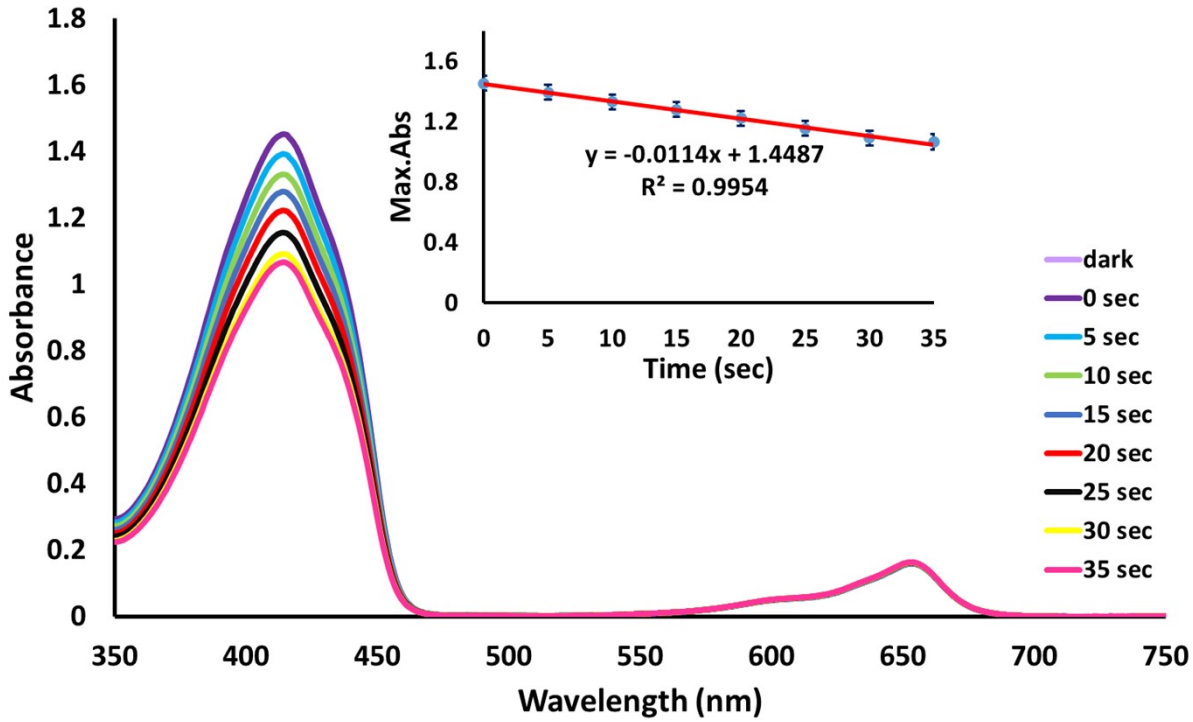


Figure S32. Decrease in absorbance spectrum of DPBF in the presence of methylene blue (2 µM, in DCM, 632 nm, 2.5 mW cm^{-2})

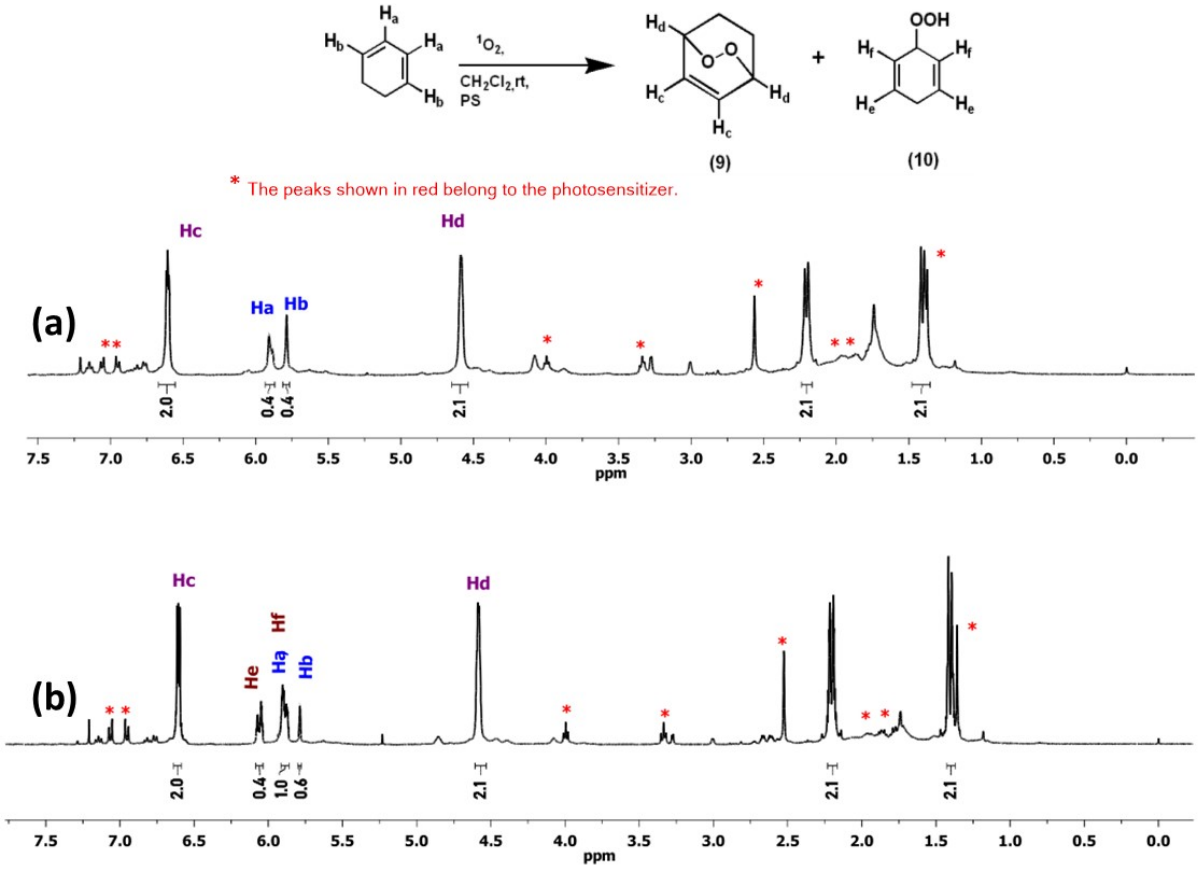


Figure S33 ^{1}H NMR spectra of (**a**) **PS-5**, (**b**) **PS-4** in the presence of 1,3-cyclohexadiene (100 eq.) after irradiation with green light for 1 h.

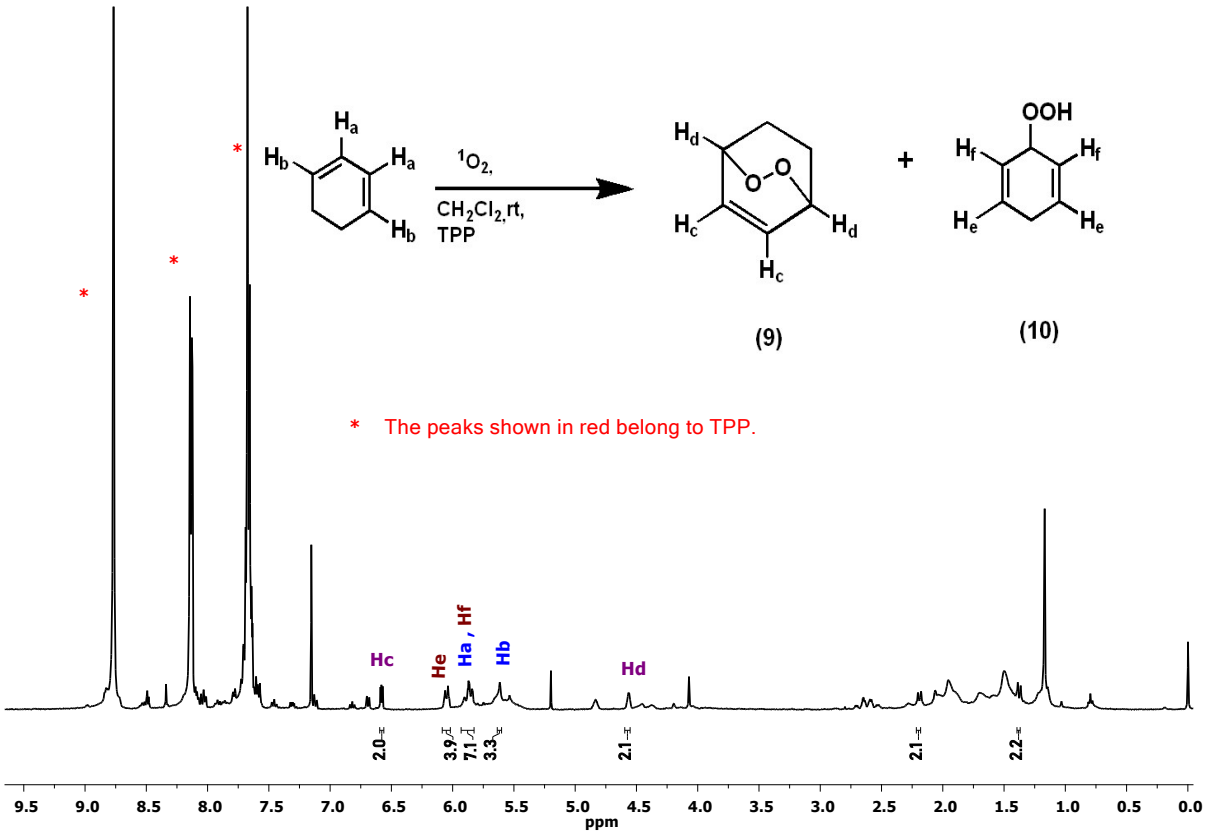


Figure S34 ^{1}H NMR spectrum of **TPP** in the presence of 1,3-cyclohexadiene (100 eq.) after irradiation with green light