

SUPPLEMENTARY INFORMATION

Novel star-shaped viologens containing phenyl and triphenylamine moieties for electrochromic applications

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Table of content

Table S1. Solubility of 1 and 2 in different organic solvents	2
Figure S1. ¹ H NMR spectra of compound (TPA)Br ₃ in CDCl ₃	3
Figure S2. ¹³ C NMR spectra of compound (TPA)Br ₃ in CDCl ₃	3
Figure S3. ¹ H NMR spectra of compound A in CDCl ₃	4
Figure S4. ¹³ C NMR spectra of compound A in CDCl ₃	4
Figure S5. ¹ H NMR spectra of compound B in CDCl ₃	5
Figure S6. ¹³ C NMR spectra of compound B in CDCl ₃	5
Figure S7. ¹ H NMR spectra of compound 1 in d ₆ -DMSO.....	6
Figure S8. ¹³ C NMR spectra of compound 1 in d ₆ -DMSO.....	6
Figure S9. ¹ H NMR spectra of compound 2 in d ₆ -DMSO.....	7
Figure S10. ¹³ C NMR spectra of compound 2 in d ₆ -DMSO.....	7
Figure S11. HR-ESI-MS spectra of compound (TPA)Br ₃	8
Figure S12. HR-ESI-MS spectra of compound A	8
Figure S13. HR-ESI-MS spectra of compound B	9
Figure S14. HR-ESI-MS spectra of compound 1	9
Figure S15. HR-ESI-MS spectra of compound 2	10
Figure S16. Normalized spectra of 2 in solvents of different polarities: ethyl acetate (▲ green), tetrahydrofuran (▼ red), dichloromethane (◆ yellow), methanol (● orange), acetonitrile (■ black).....	10

Table S1. Solubility of **1** and **2** in different organic solvents

Solvent	1 PF ₆ ⁻	1 I ⁻	2 PF ₆ ⁻	2 I ⁻	
Ethyl acetate	+	-	+	-	
Tetrahydrofuran	+	-	+	-	
Dichloromethane	+	-	+	-	
Methanol	+	+	+	+	
Acetonitrile	+	+	+	+	

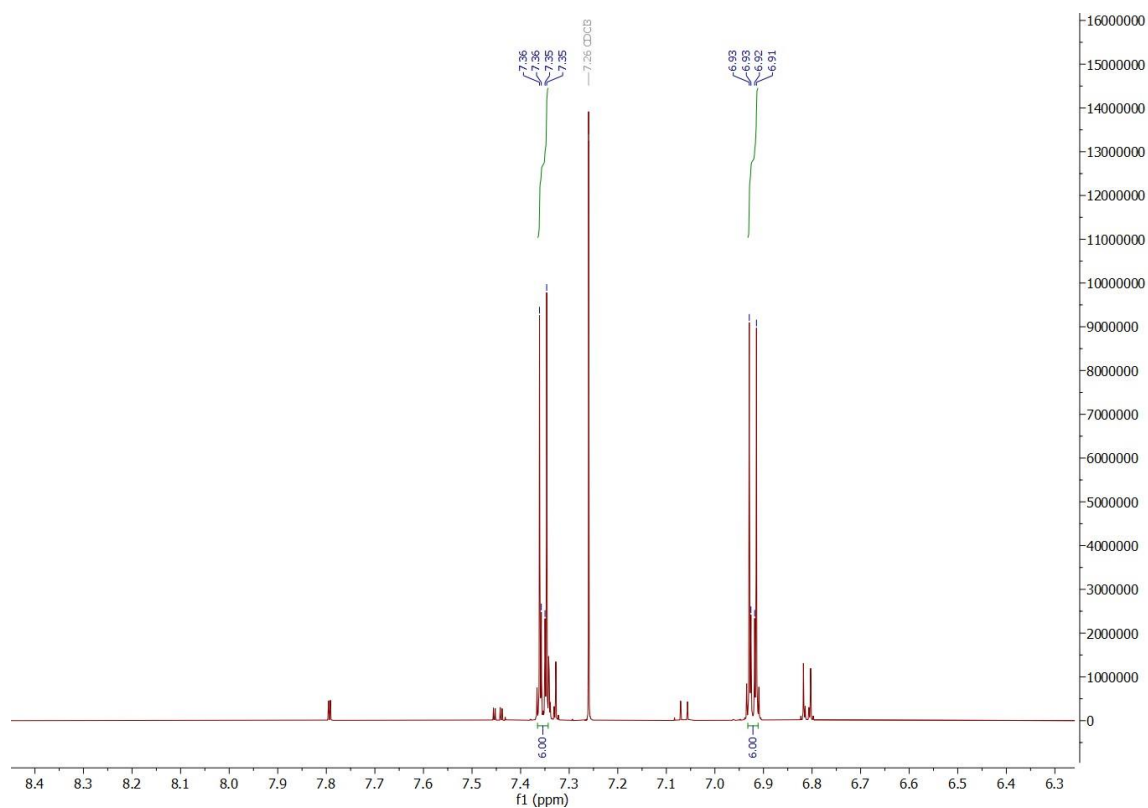


Figure S1. ^1H NMR spectra of compound $(\text{TPA})\text{Br}_3$ in CDCl_3

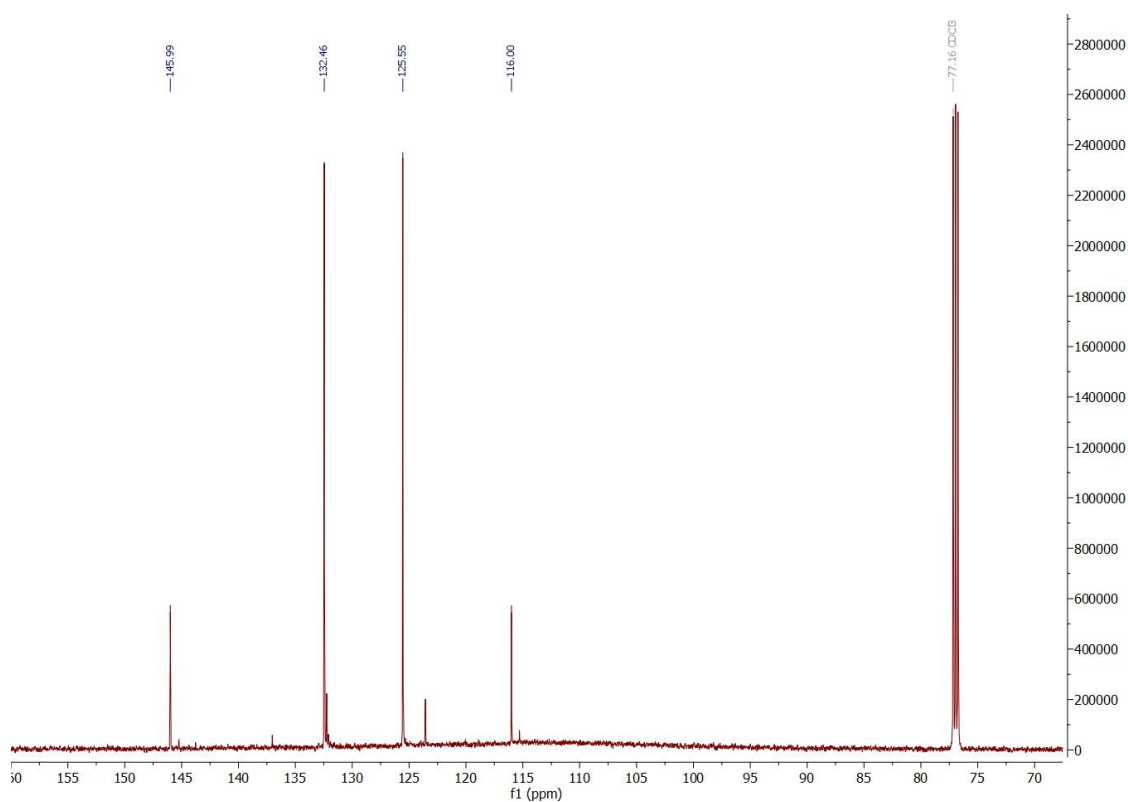


Figure S2. ^{13}C NMR spectra of compound $(\text{TPA})\text{Br}_3$ in CDCl_3

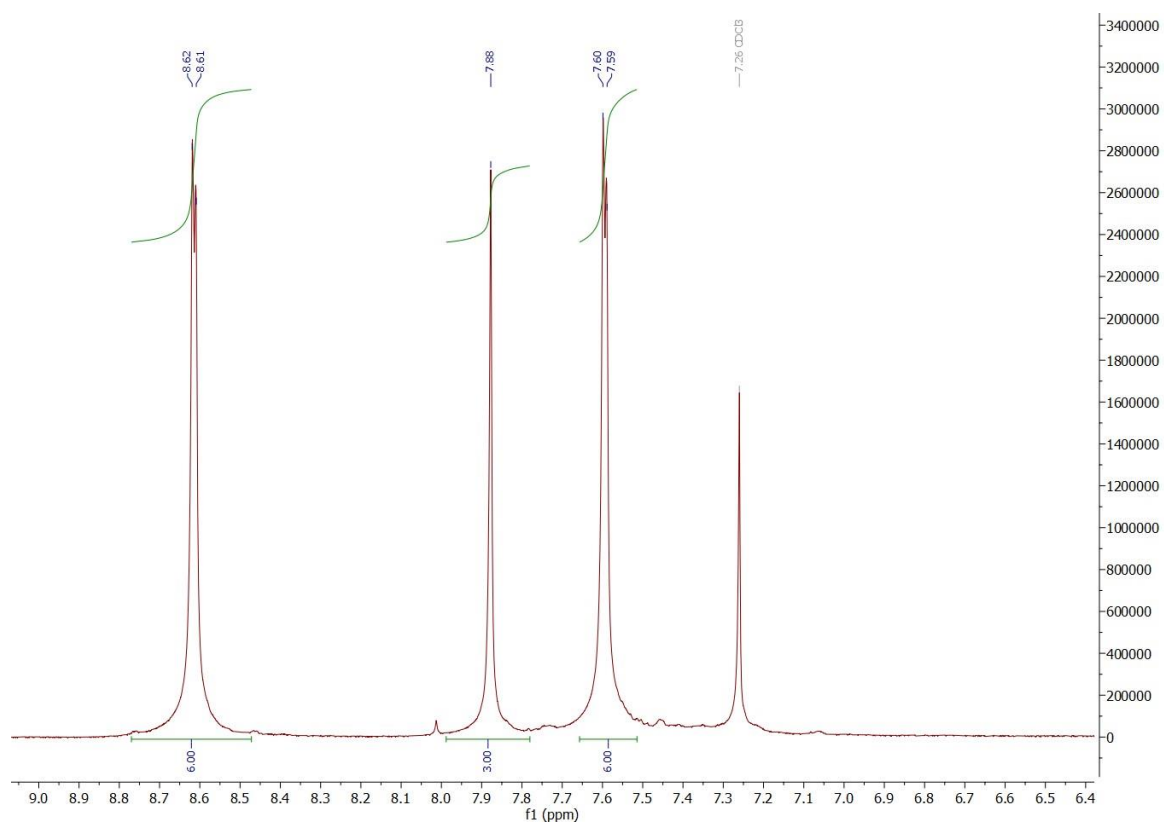


Figure S3. ¹H NMR spectra of compound A in CDCl₃

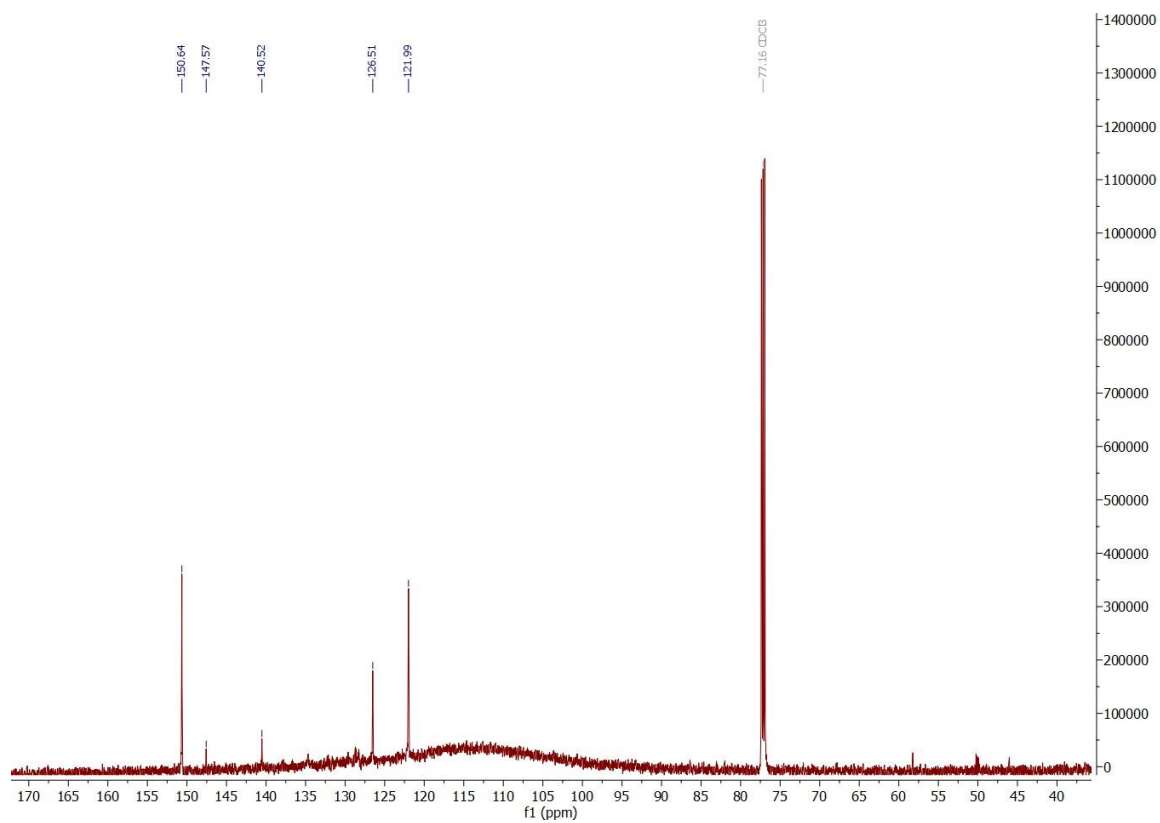


Figure S4. ¹³C NMR spectra of compound A in CDCl₃

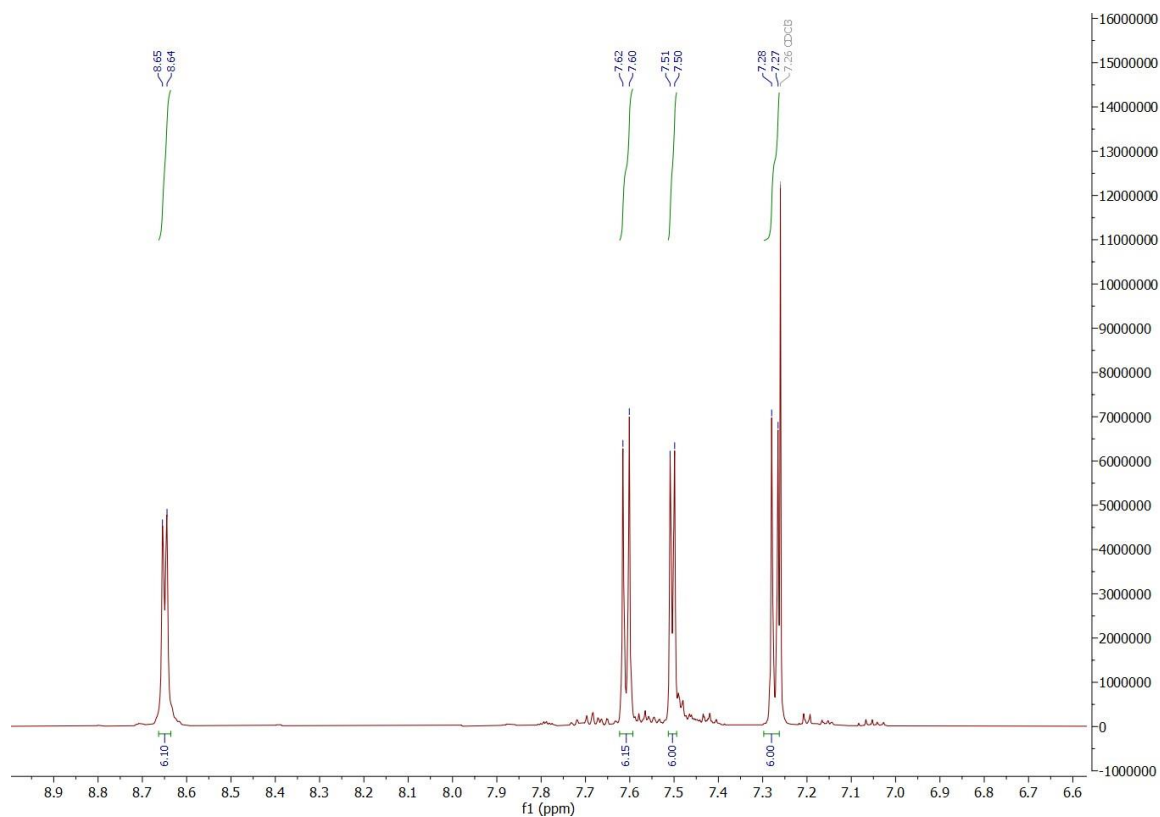


Figure S5. ¹H NMR spectra of compound **B** in CDCl₃

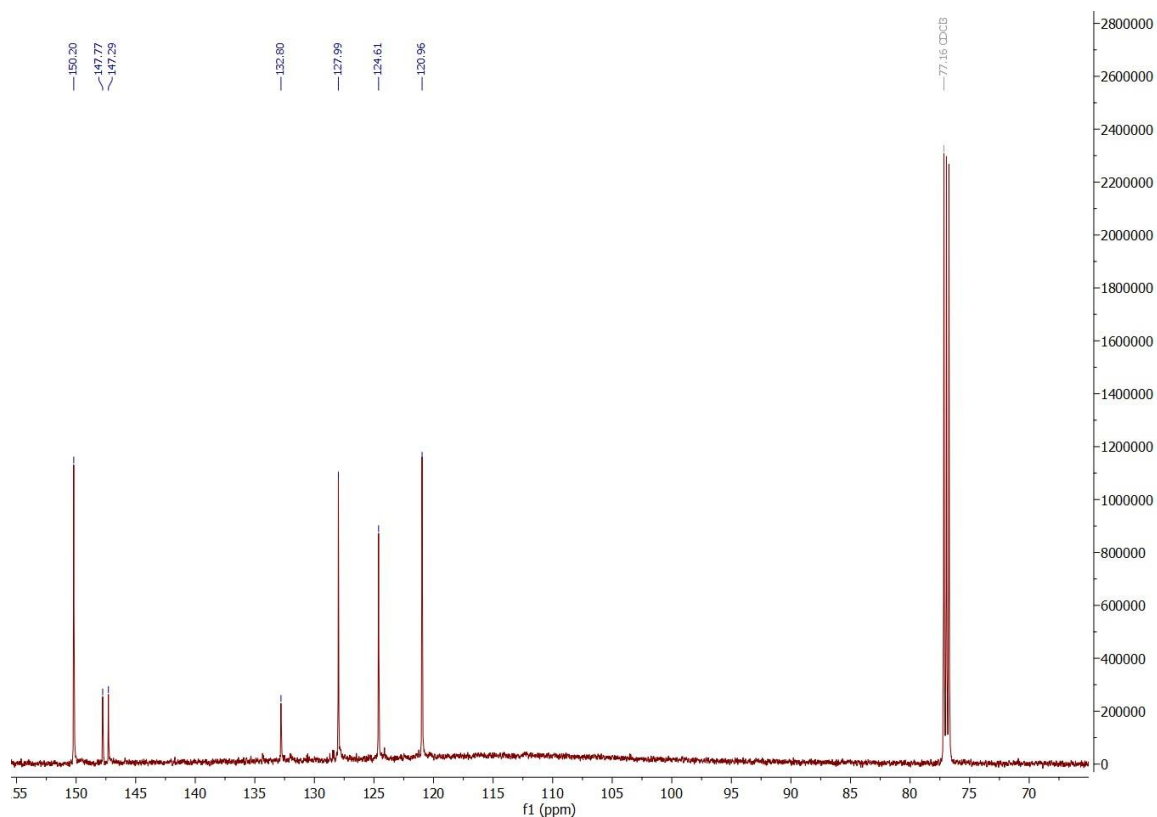


Figure S6. ¹³C NMR spectra of compound **B** in CDCl₃

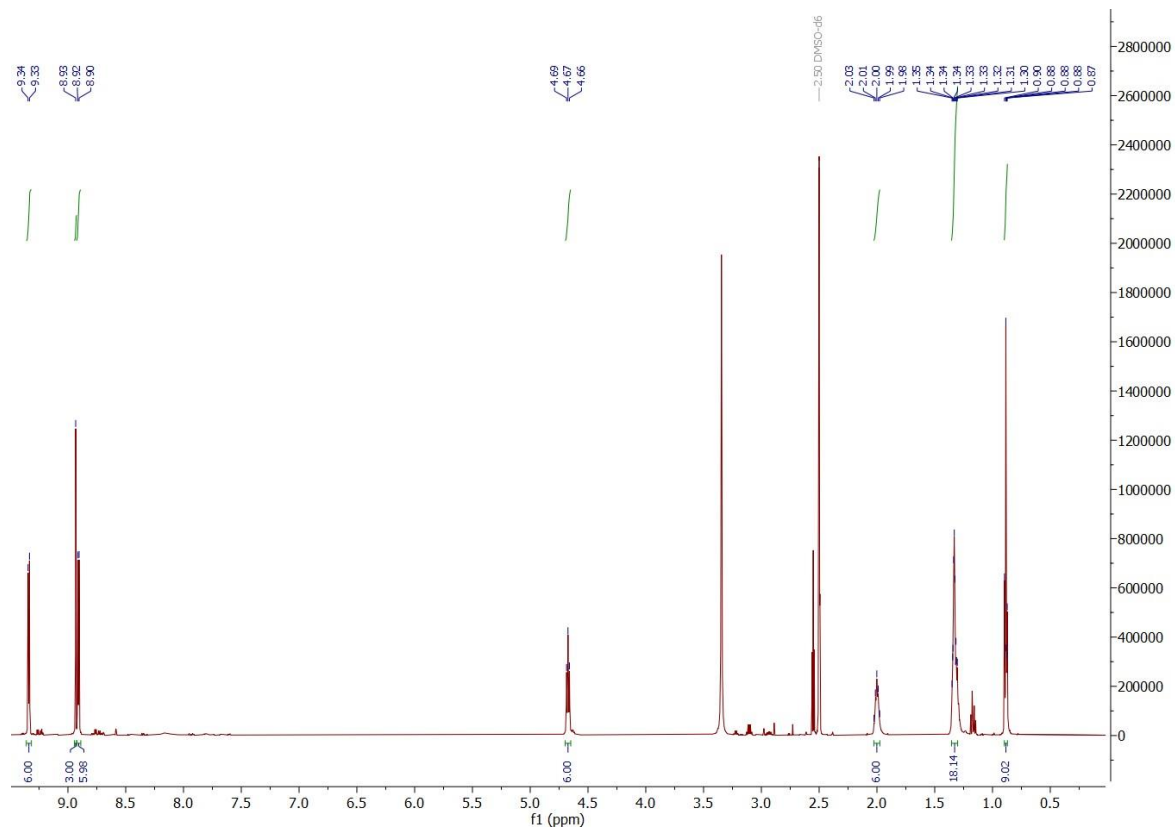


Figure S7. ¹H NMR spectra of compound **1** in d₆-DMSO

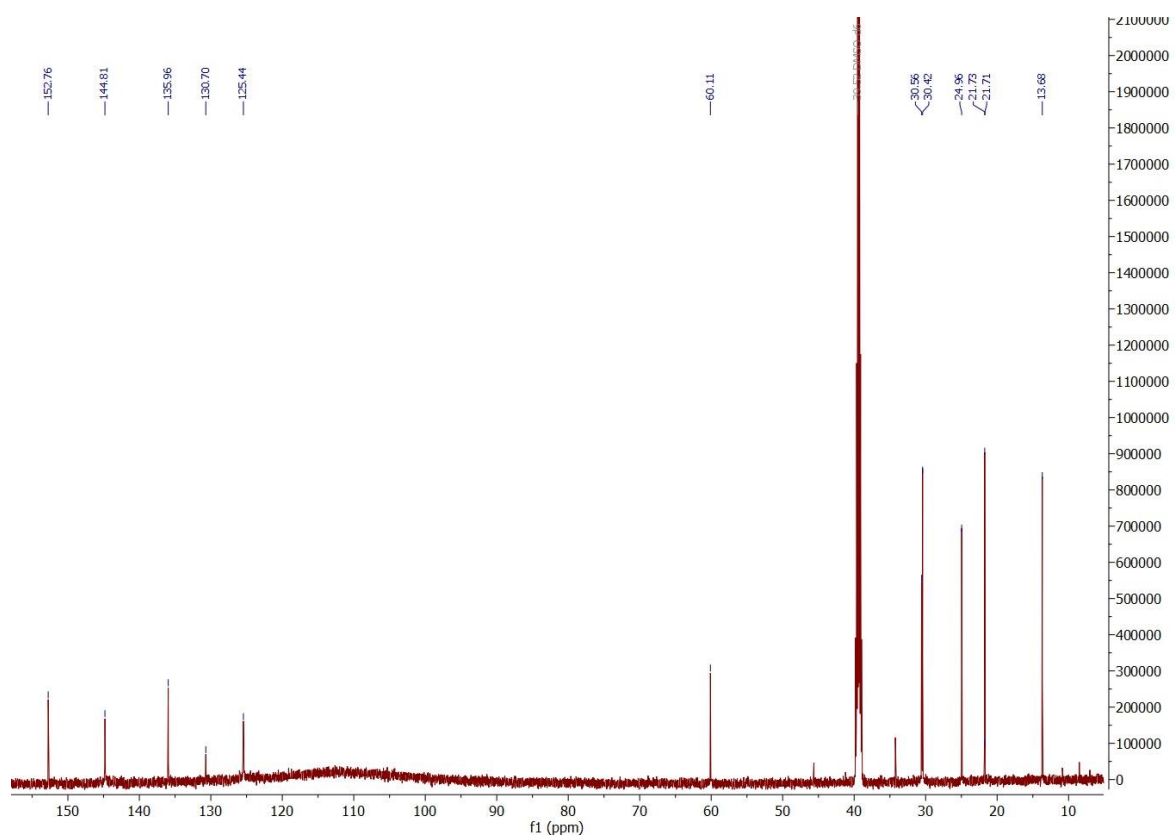


Figure S8. ¹³C NMR spectra of compound **1** in d₆-DMSO

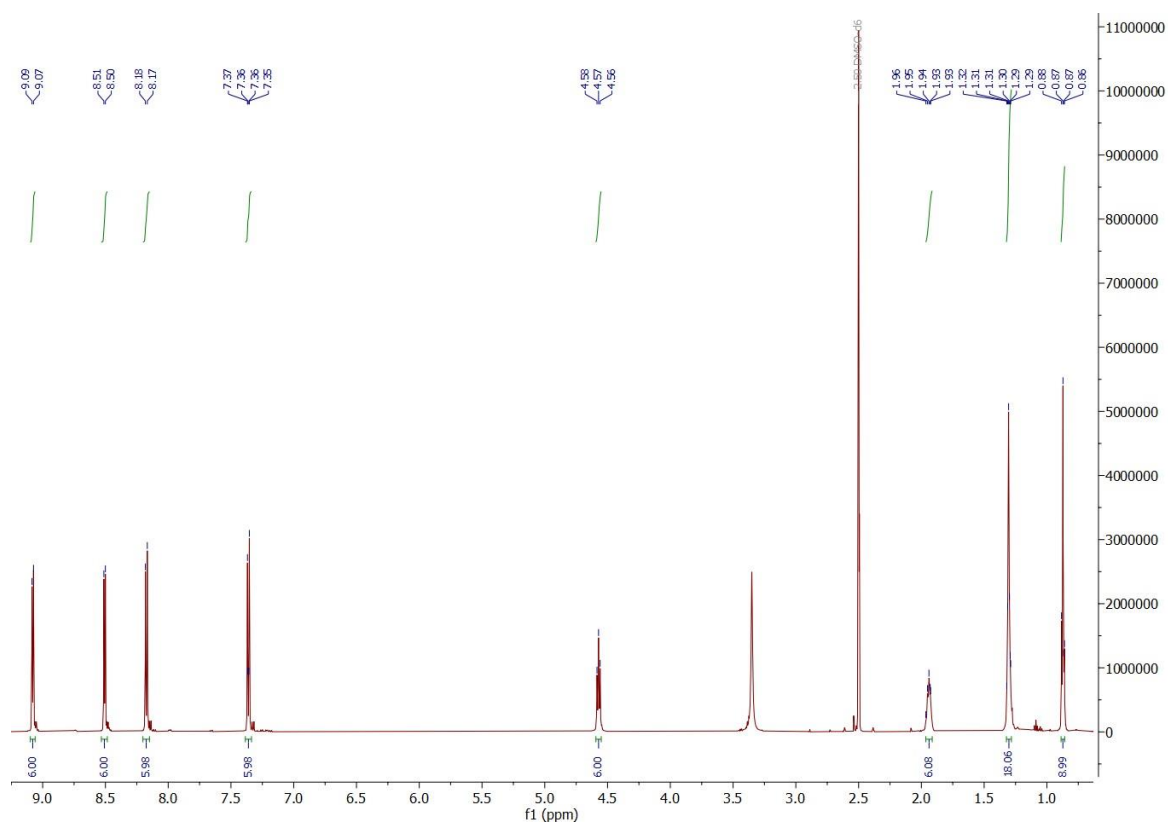


Figure S9. ¹H NMR spectra of compound **2** in d₆-DMSO

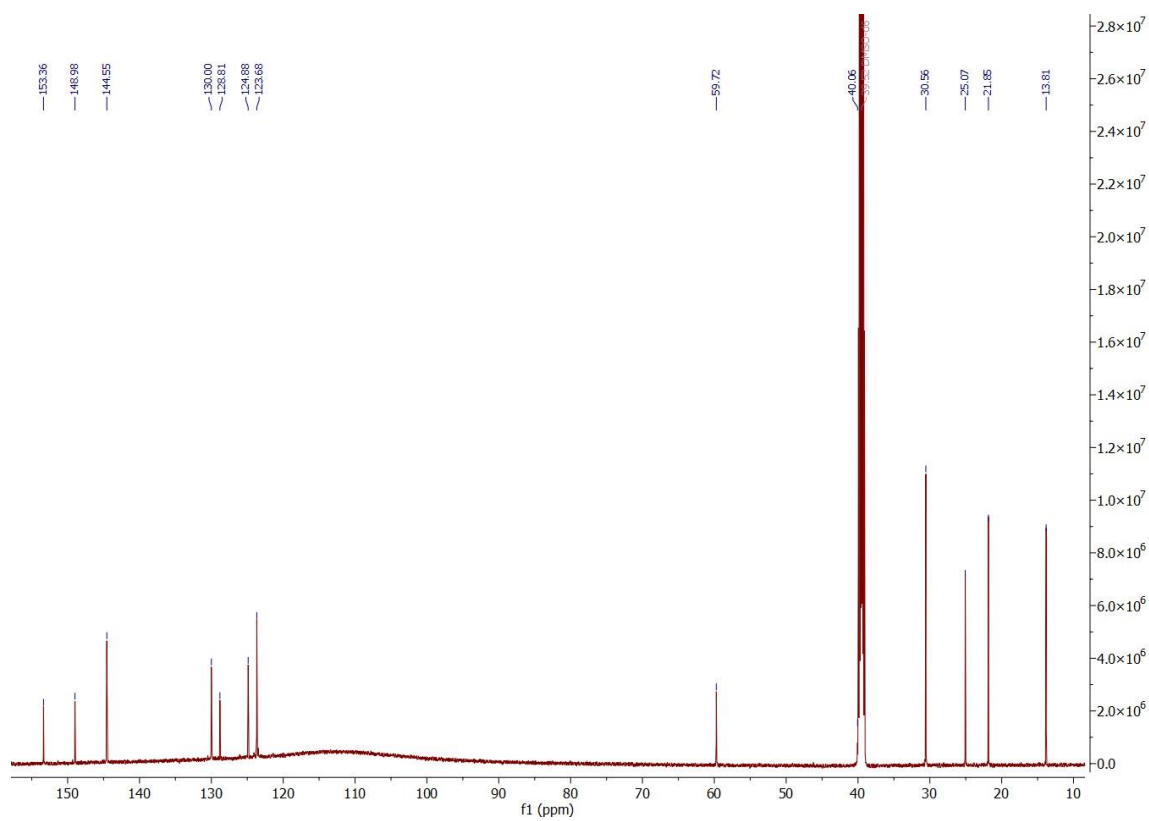


Figure S10. ¹³C NMR spectra of compound **2** in d₆-DMSO

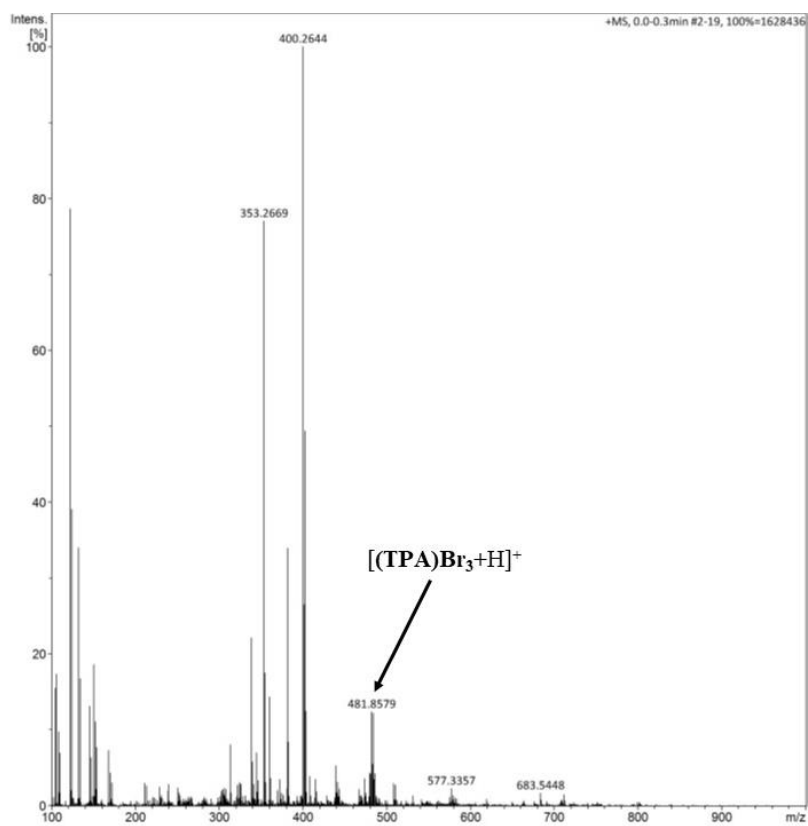


Figure S11. HR-ESI-MS spectra of compound (TPA)Br₃

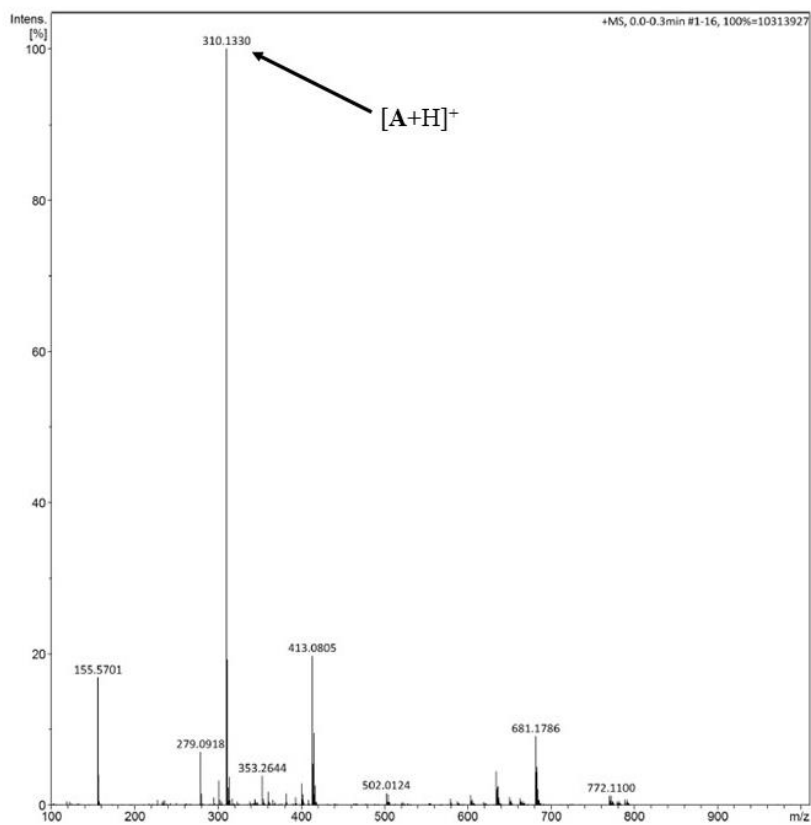


Figure S12. HR-ESI-MS spectra of compound A

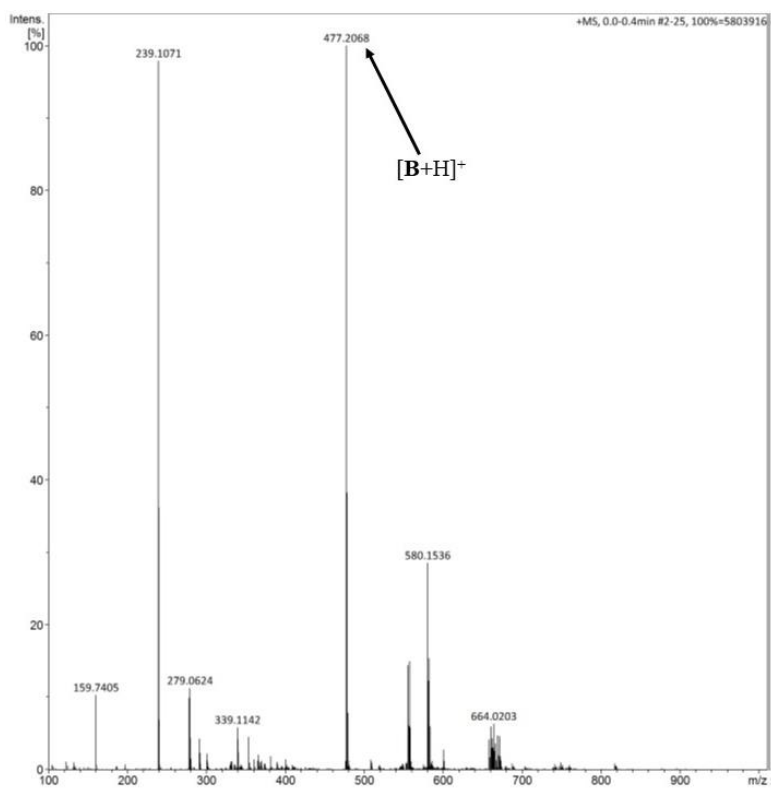


Figure S13. HR-ESI-MS spectra of compound **B**

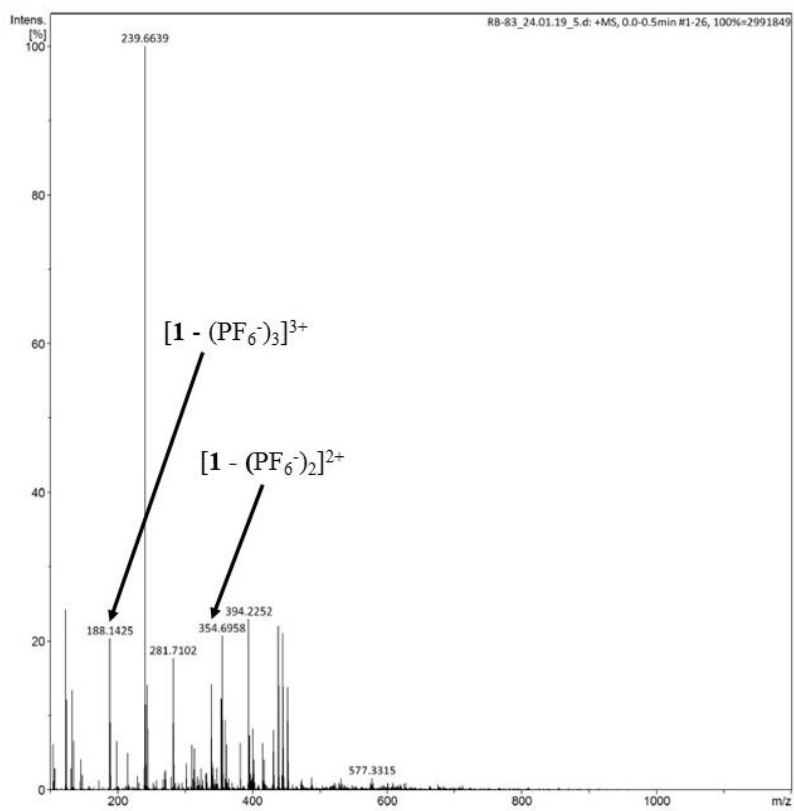


Figure S14. HR-ESI-MS spectra of compound **1**

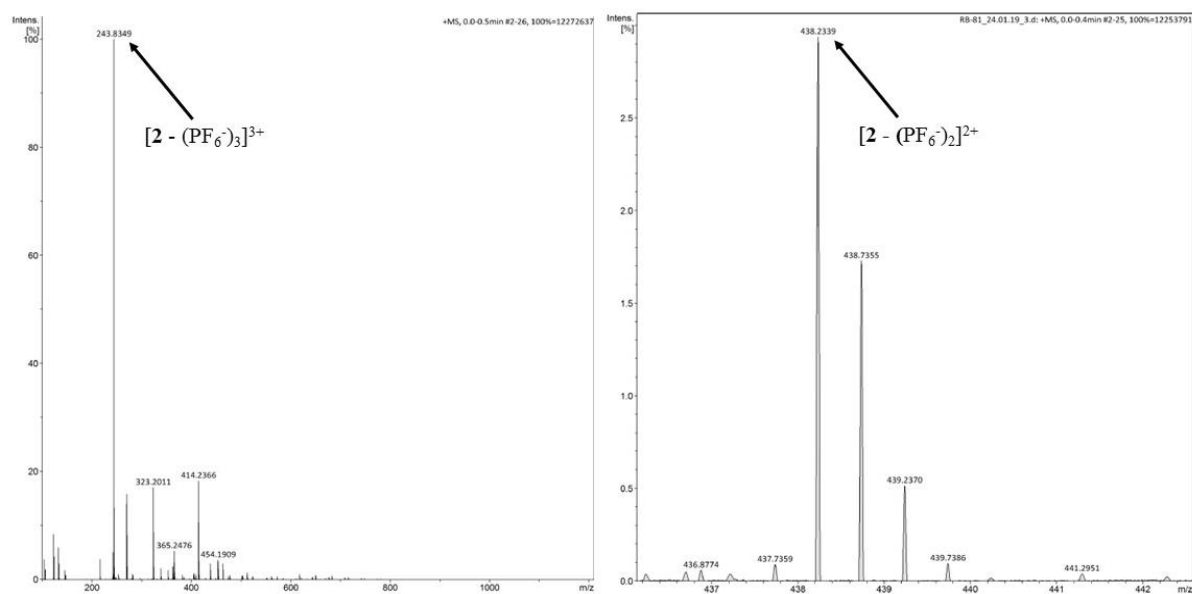


Figure S15. HR-ESI-MS spectra of compound **2**

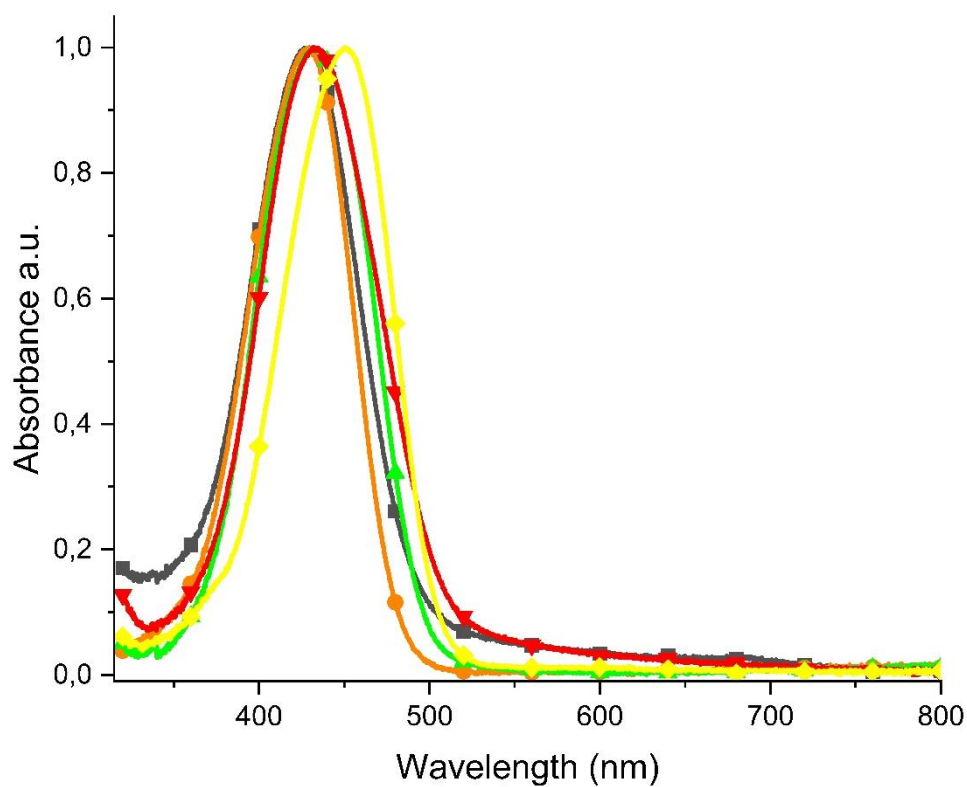


Figure S16. Normalized spectra of **2** in solvents of different polarities: ethyl acetate (\blacktriangle green), tetrahydrofuran (\blacktriangledown red), dichloromethane (\blacklozenge yellow), methanol (\bullet orange), acetonitrile (\blacksquare black).