Supporting Information for:

A ratiometric fluorescent probe for fluoride ion based on naphthoimidazolium receptor

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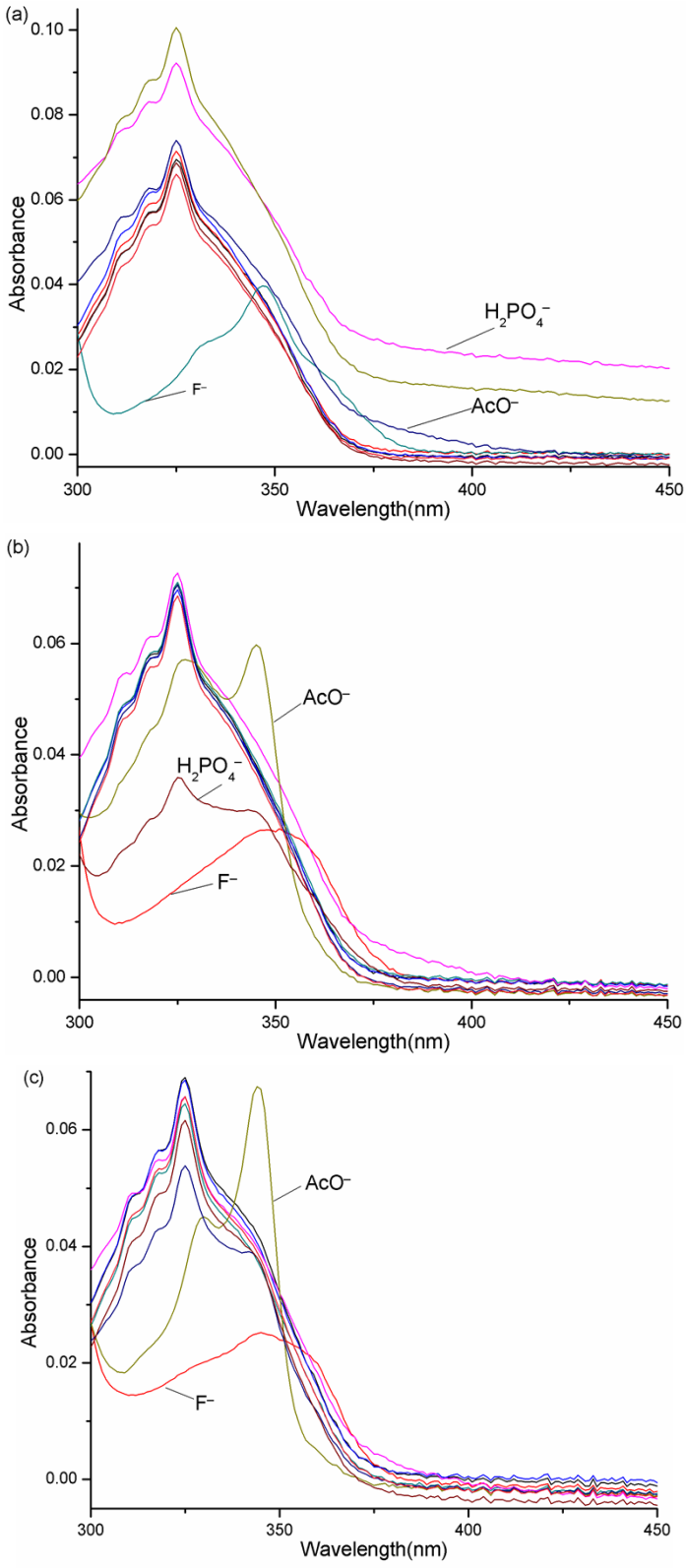


Fig. S1. Absorbance spectra of compound **3-5** (10 μM) in acetonitrile with different anions (50 μM, Cl^-, Br^-, I^-, AcO^-, $H_2PO_4^-$, and HSO_4^-, as *n*-Bu_4N^+ salts). (a) compound **3,** (b) compound **4,** (c) compound **5.**

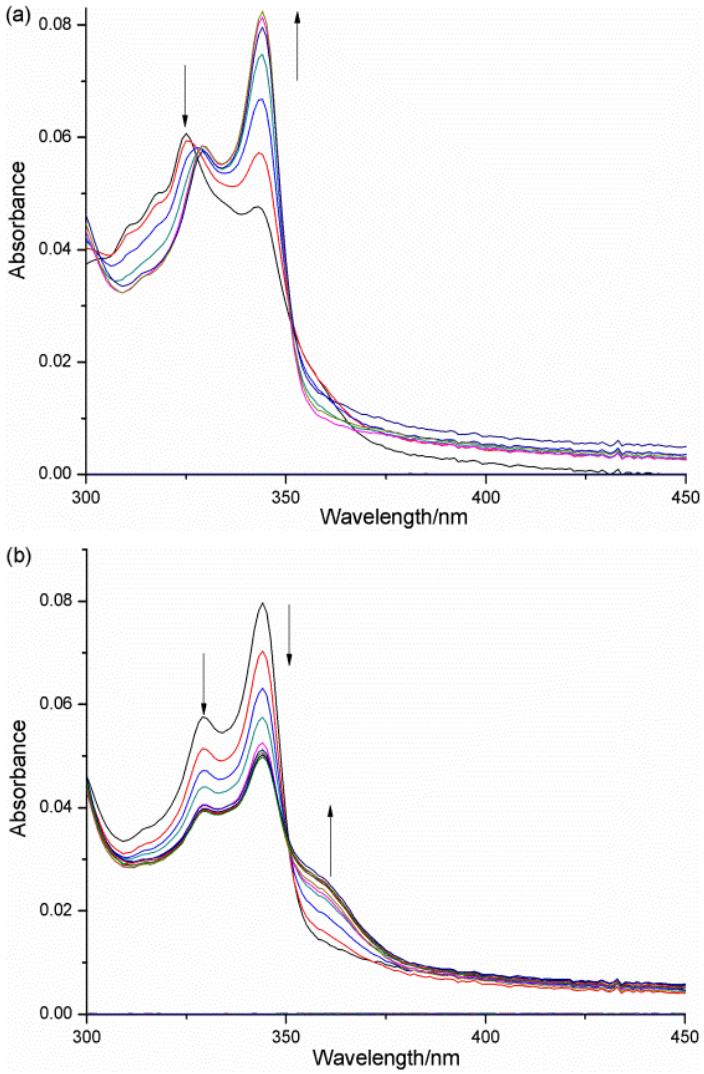
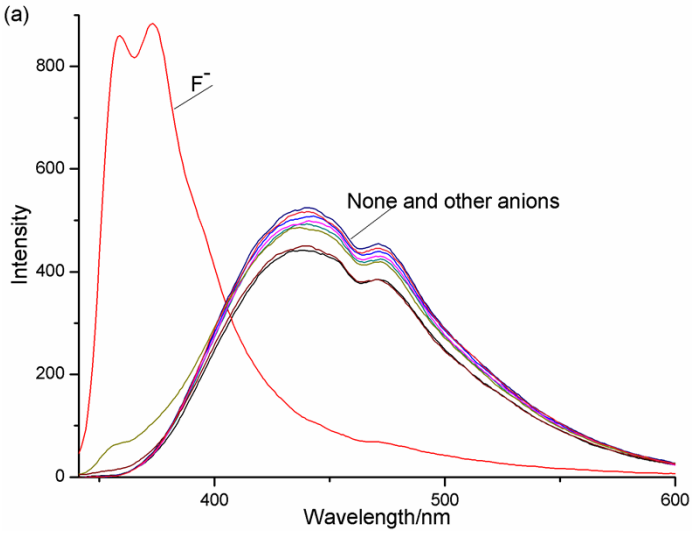


Fig. S2. Changes in UV-Vis spectra of compound **5** (10 μM) upon the addition of 0−40 equiv. of F− in CH_3CN. (a) in the range of 0-4 equiv. of F−, (b) in the range of 4-40 equiv. of F−.



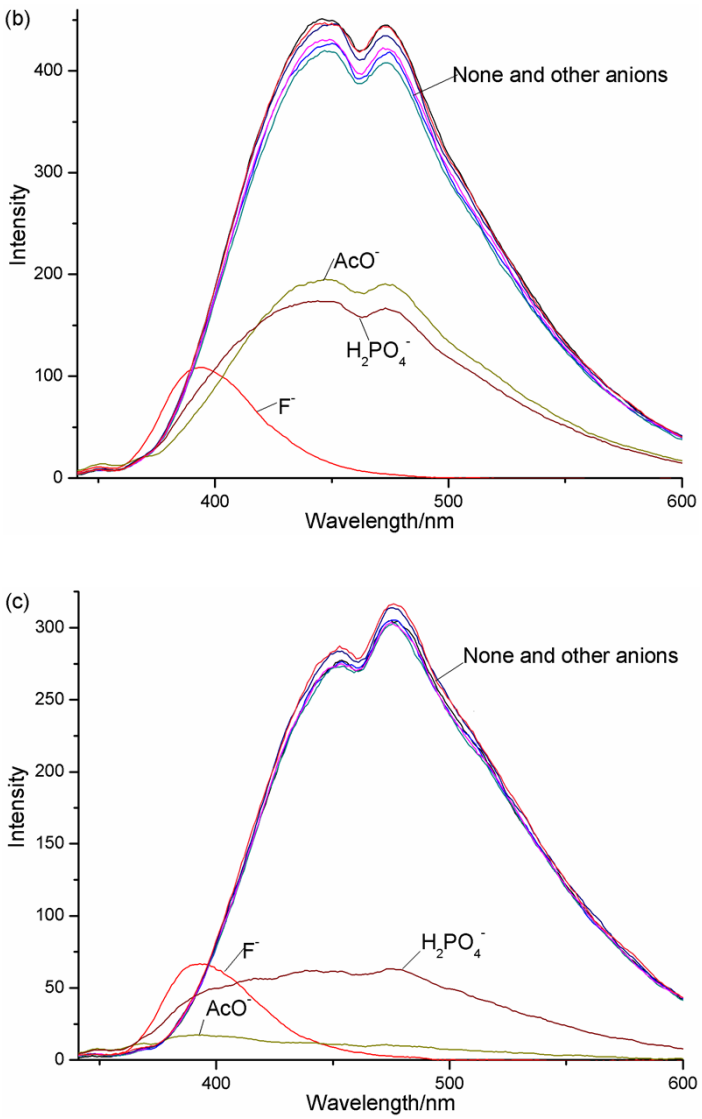
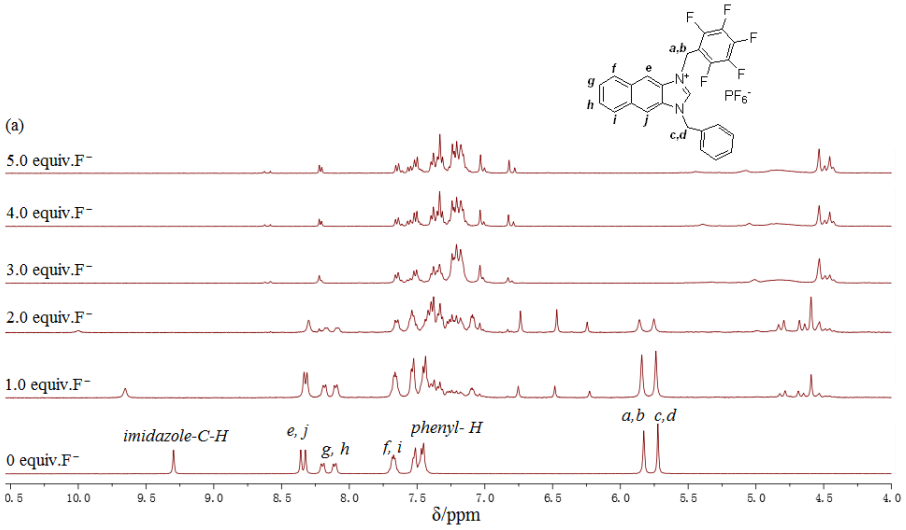


Fig. S3. Fluorescence responses of **3-5** (10 μM) to various anions (50 μM) in CH_3CN. λex=331nm. (a) compound **3,** (b) compound **4,** (c) compound **5.**



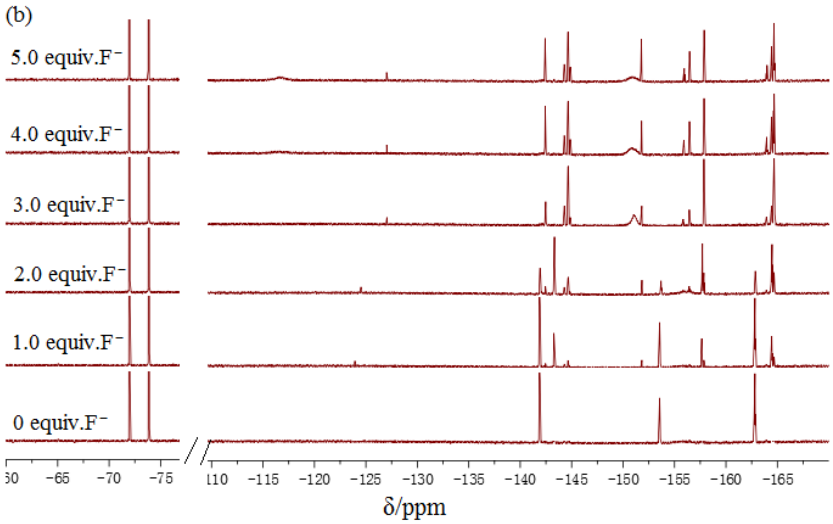


Fig. S4. ^{1}H NMR (a) and ^{19}F NMR (b) spectra of **4** with fluoride in CD_3CN at room temperature. [**4**] = 2×10^{-2} mol/L.

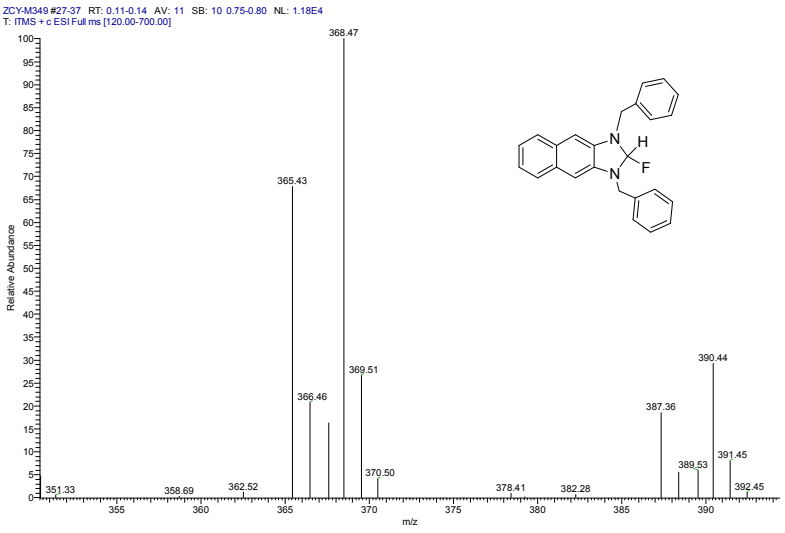


Fig. S5. Part of ITMS-ESI spectrum of compound **3** with 5 equiv. F^- addition.

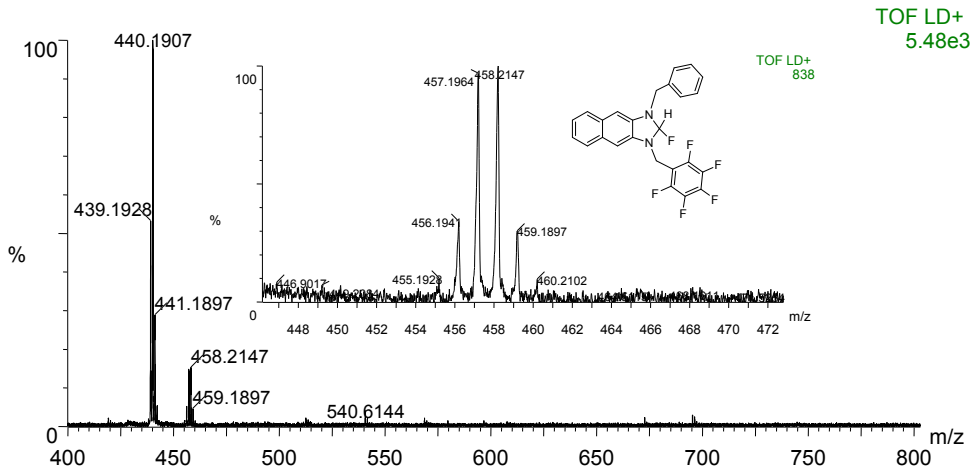


Fig. S6. MALDI-TOF (LD+) spectrum of compound **4** with 5 equiv. F^- addition.

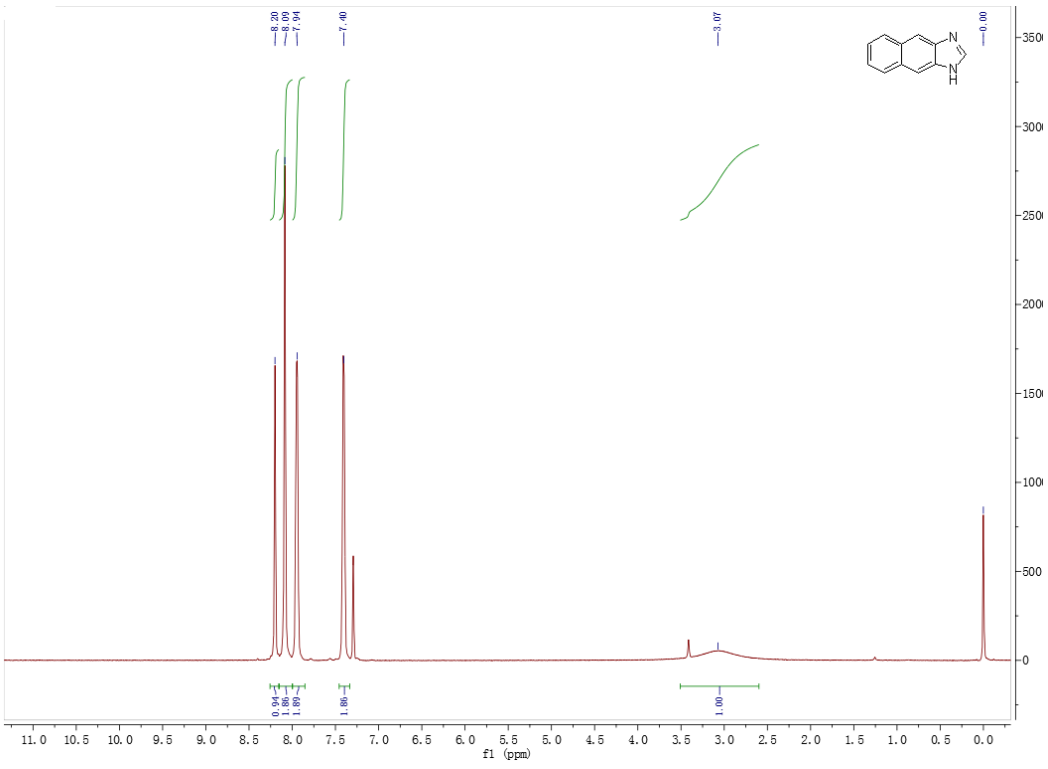


Fig. S7. ^{1}H-NMR of compound **8** in $CDCl_3$.

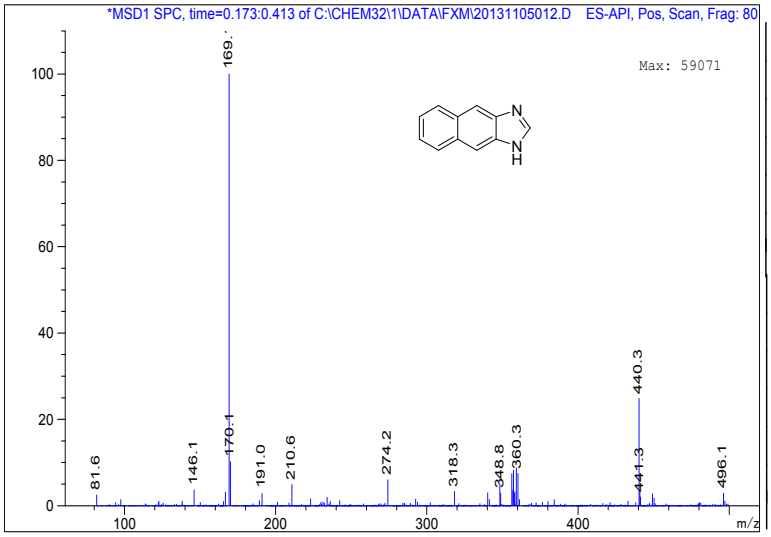


Fig. S8. MS (ES API+) of compound **8**.

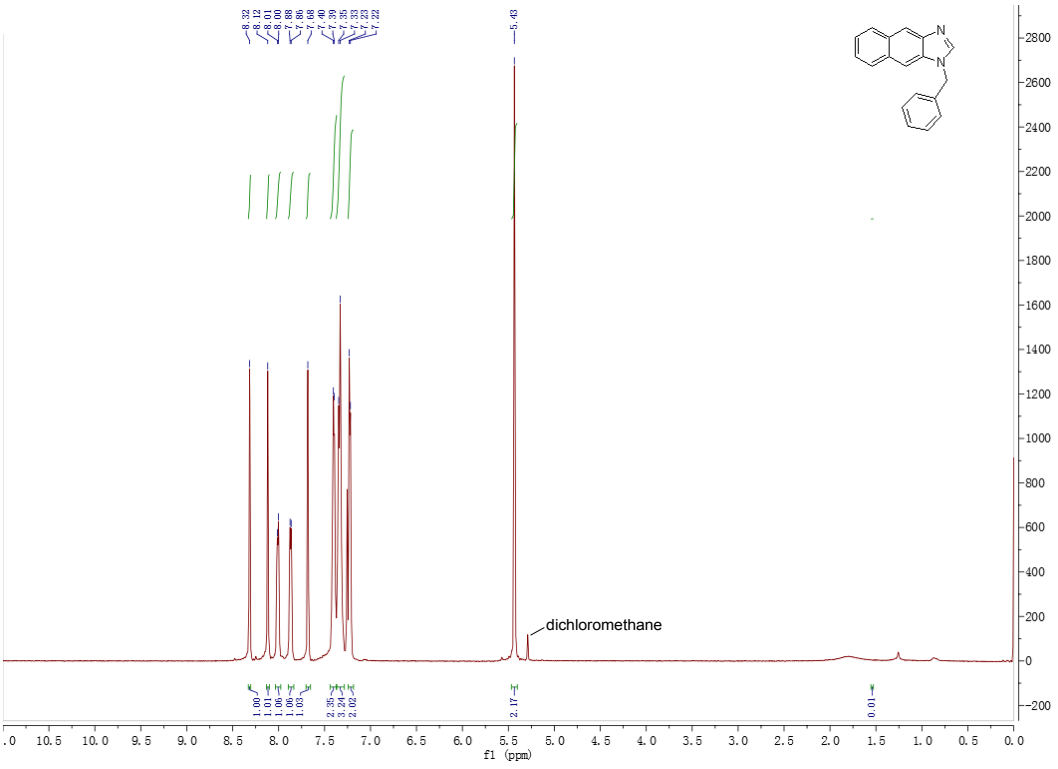


Fig. S9. ^{1}H-NMR of compound **11** in $CDCl_3$.

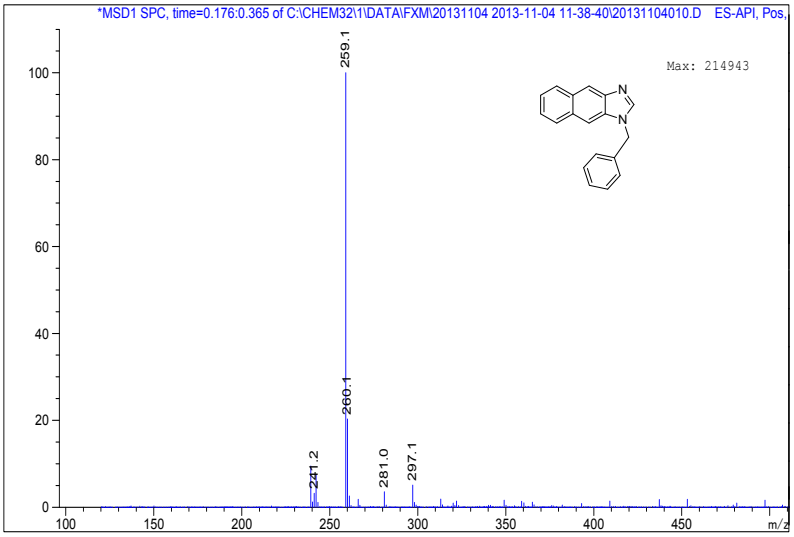


Fig. S10. MS (ES API+) of compound **11**.

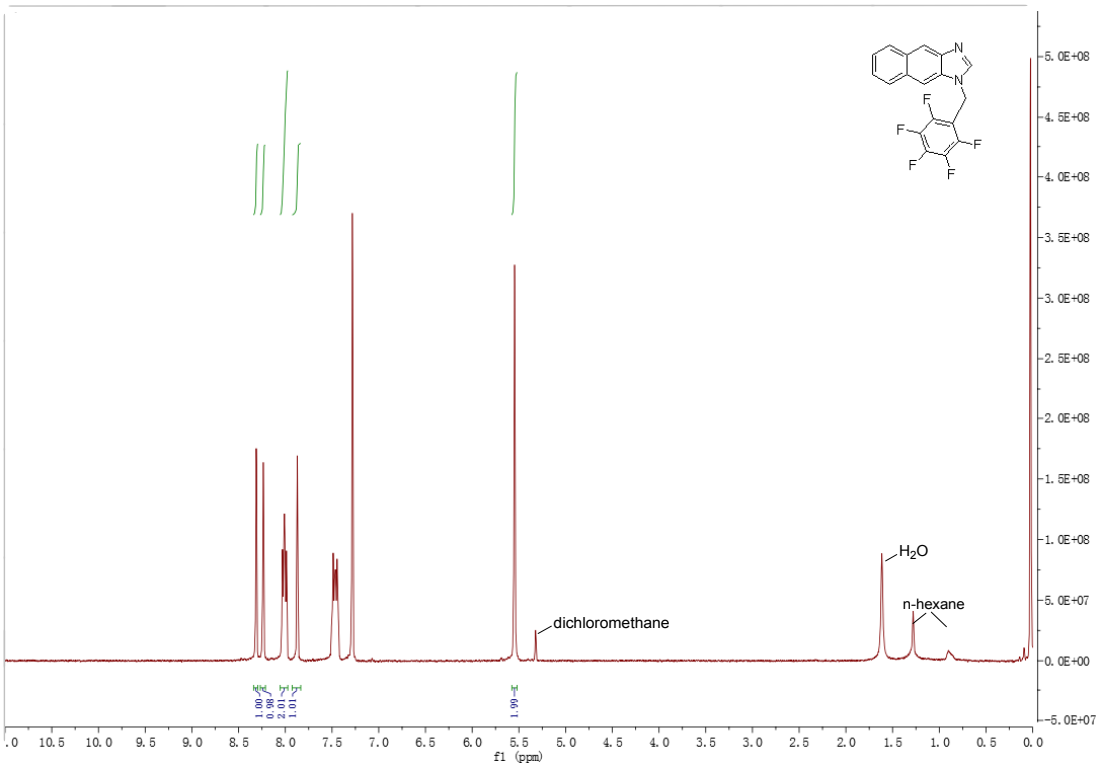


Fig. S11. ^{1}H-NMR of compound **12** in $CDCl_3$.

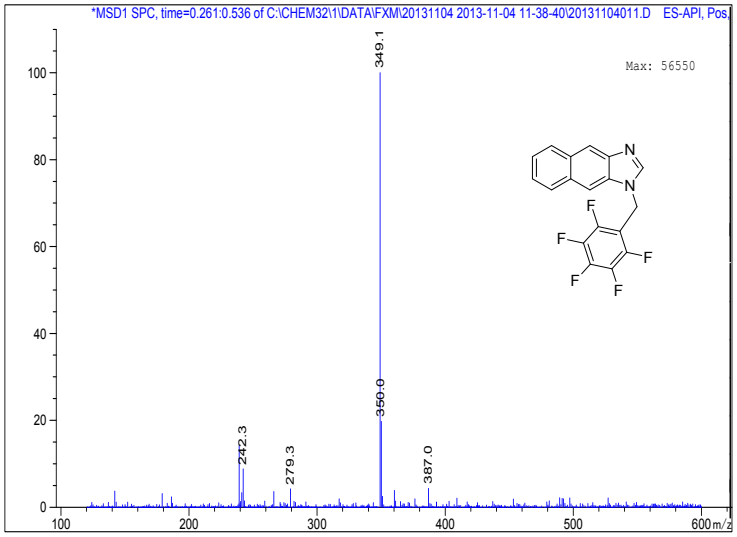


Fig. S12. MS (ES API+) of compound **12.**

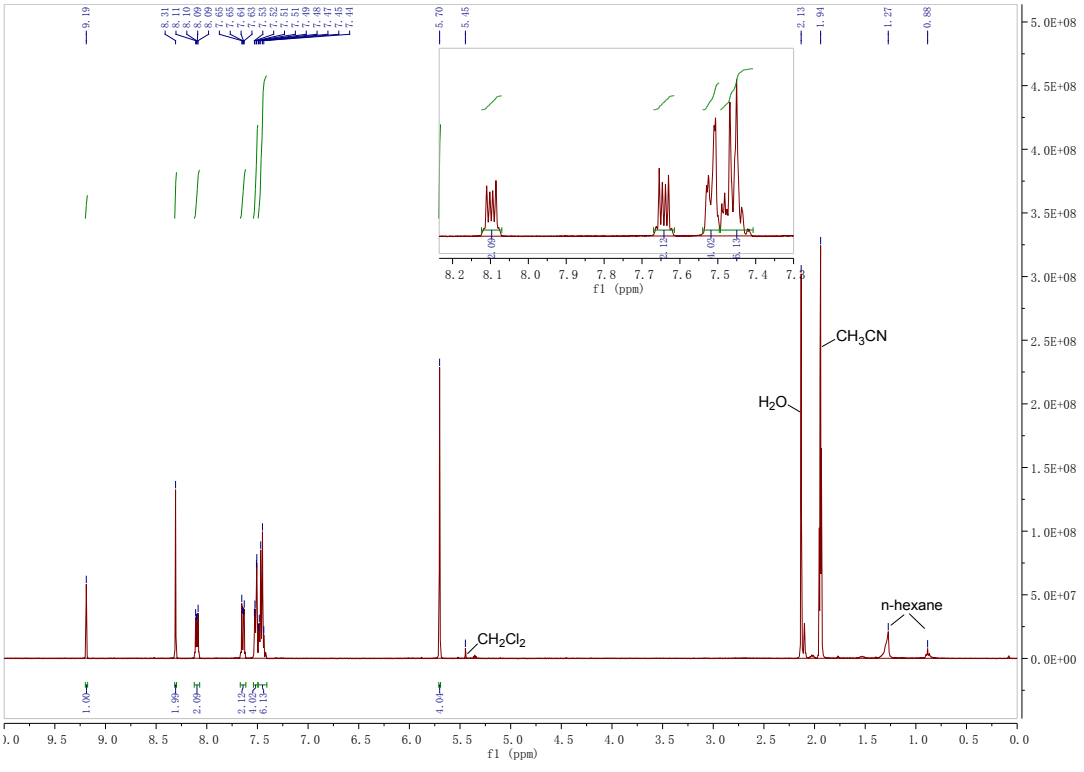


Fig. S13 ^{1}H-NMR of compound **3** in CD_3CN.

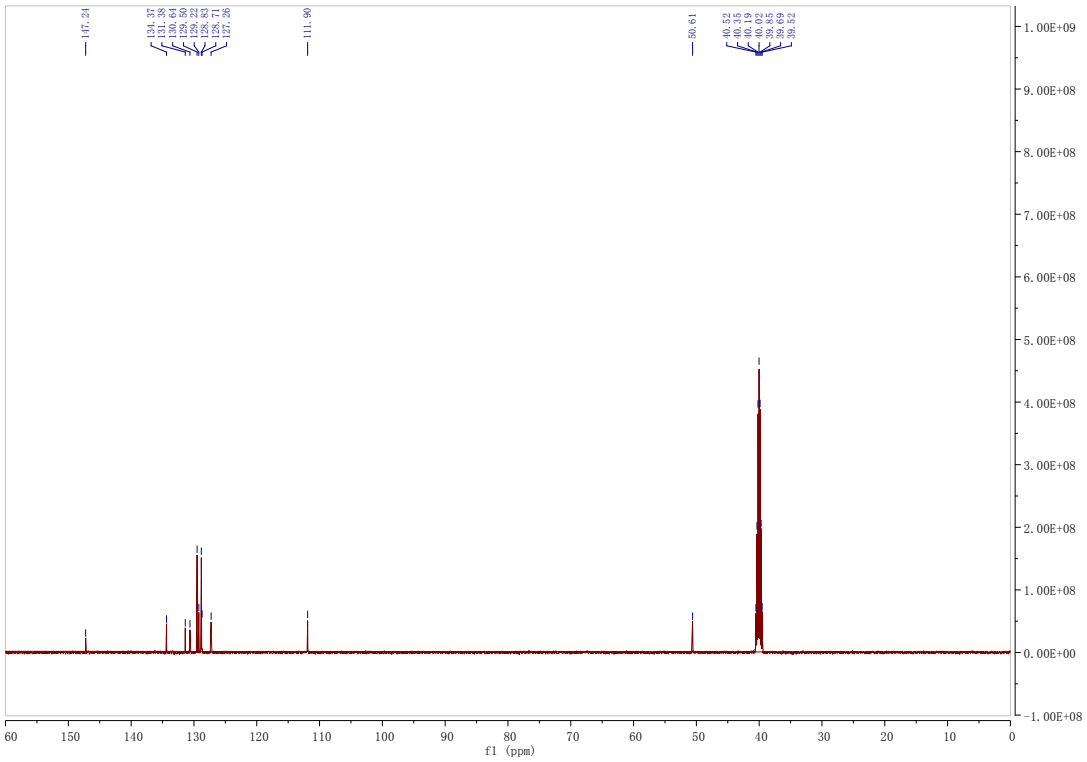


Fig. S14 ^{13}C-NMR of compound **3** in $(CD_3)_2SO$.

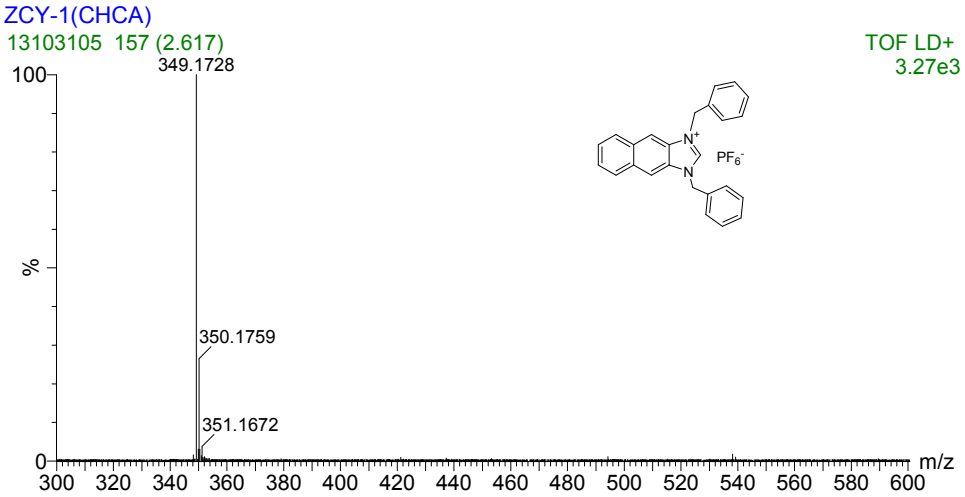


Fig. S15 HRMS (TOF LD+) of compound **3**.

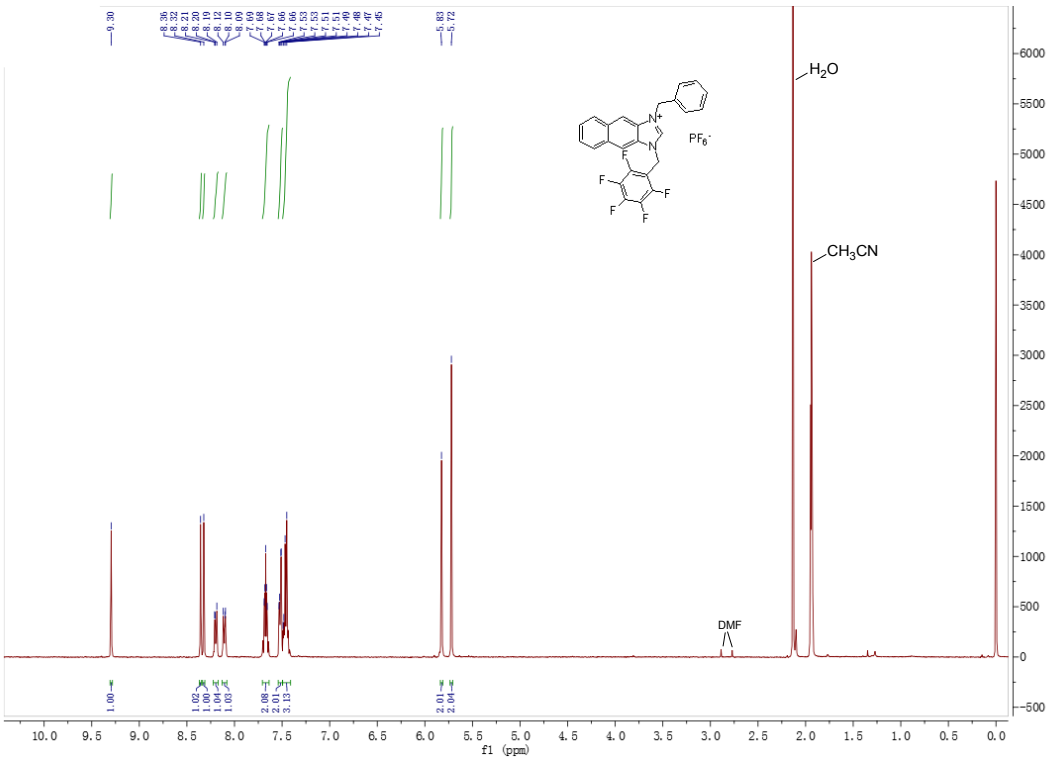


Fig. S16 ^{1}H-NMR of compound **4** in CD_3CN.

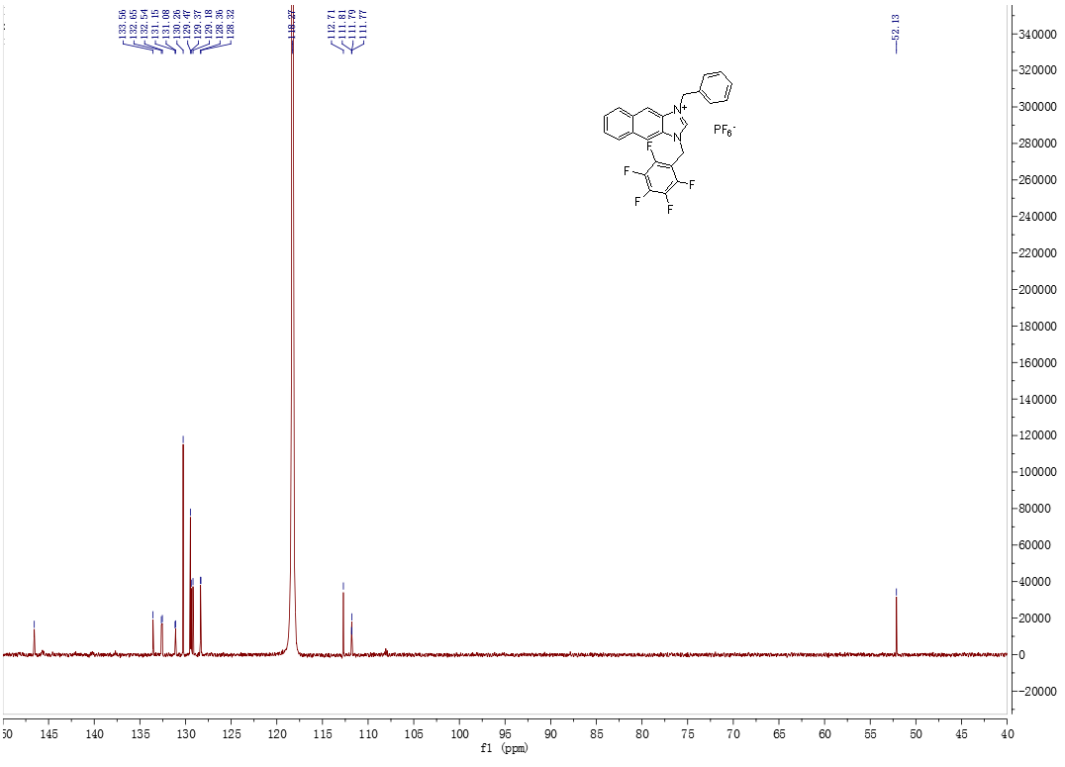


Fig. S17 ^{13}C-NMR of compound **4** in CD_3CN.

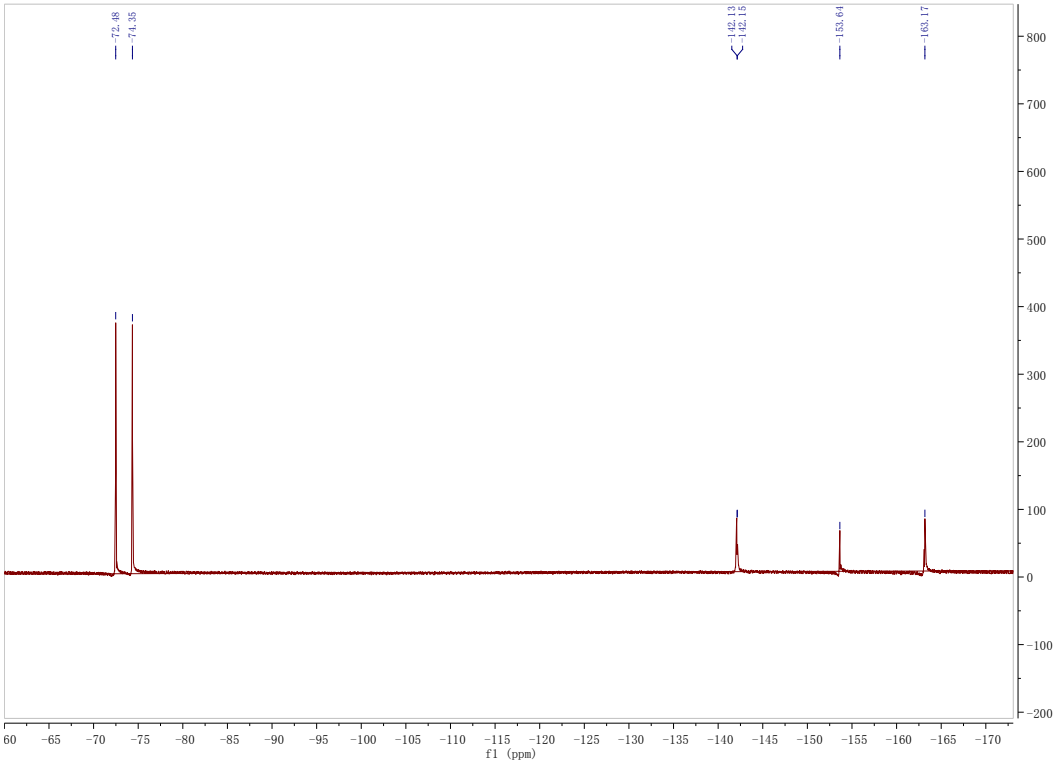


Fig. S18 ^{19}F-NMR of compound **4** in CD_3CN.

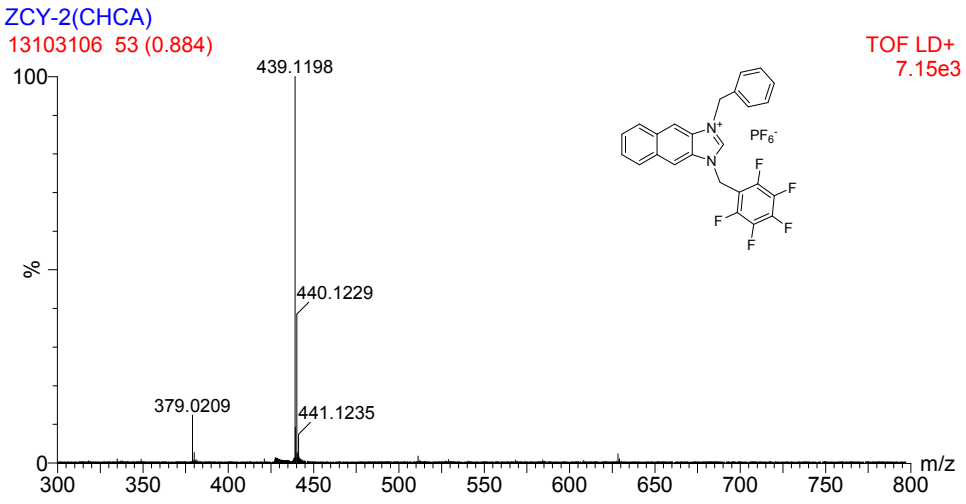


Fig. S19 HRMS (TOF LD+) of compound **4**.

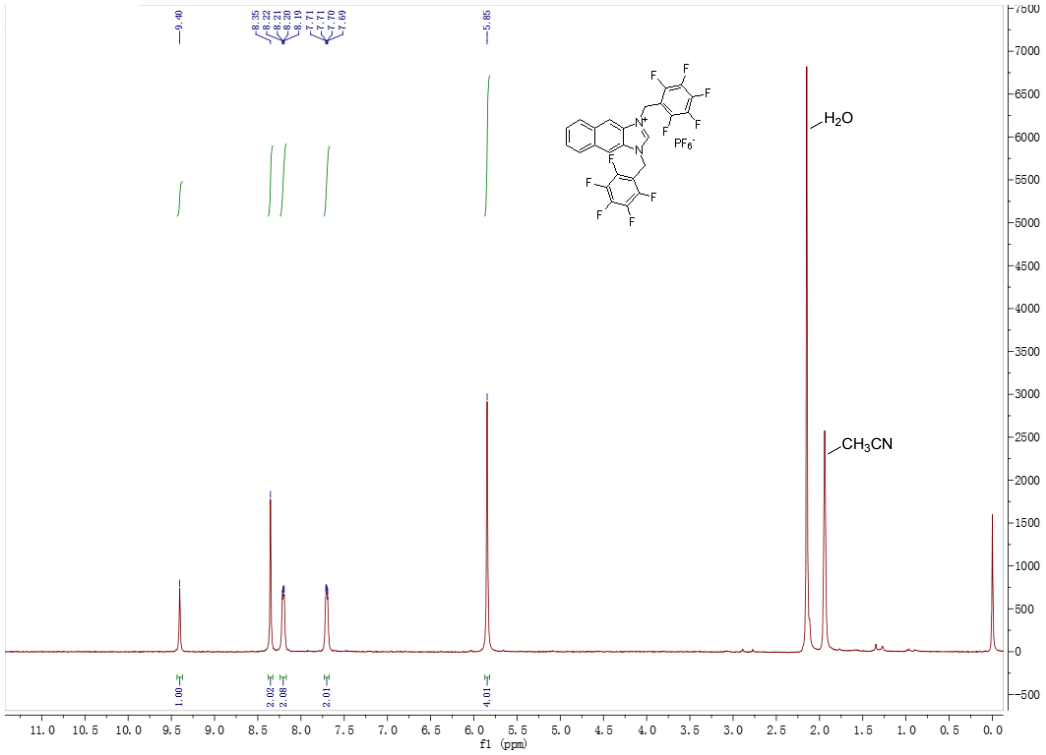


Fig. S20 ^{1}H-NMR of compound **5** in CD_3CN.

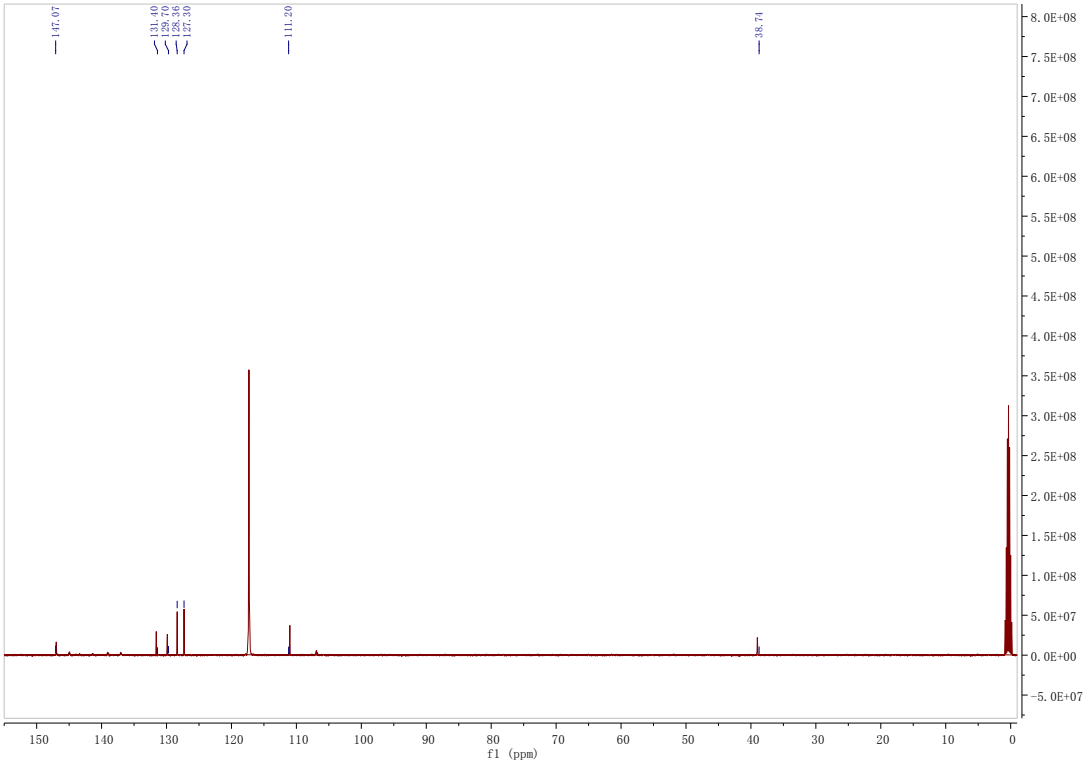


Fig. S21 ^{13}C-NMR of compound **5** in CD_3CN.

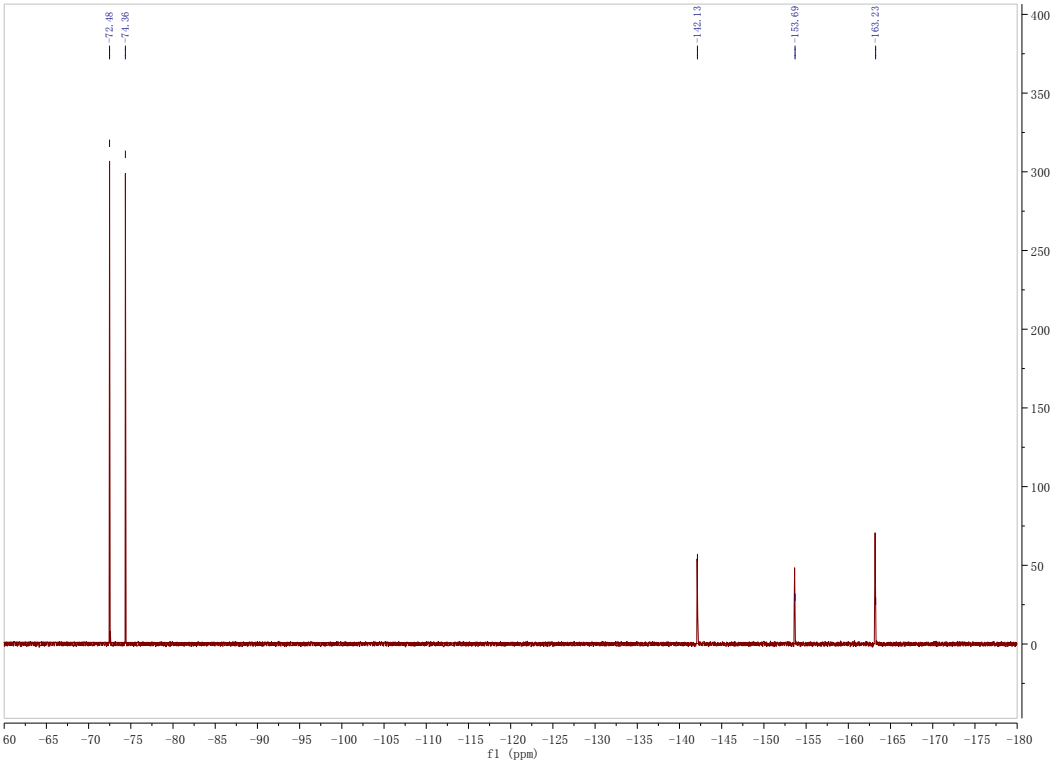


Fig. S22 ^{19}F-NMR of compound **5** in CD_3CN.

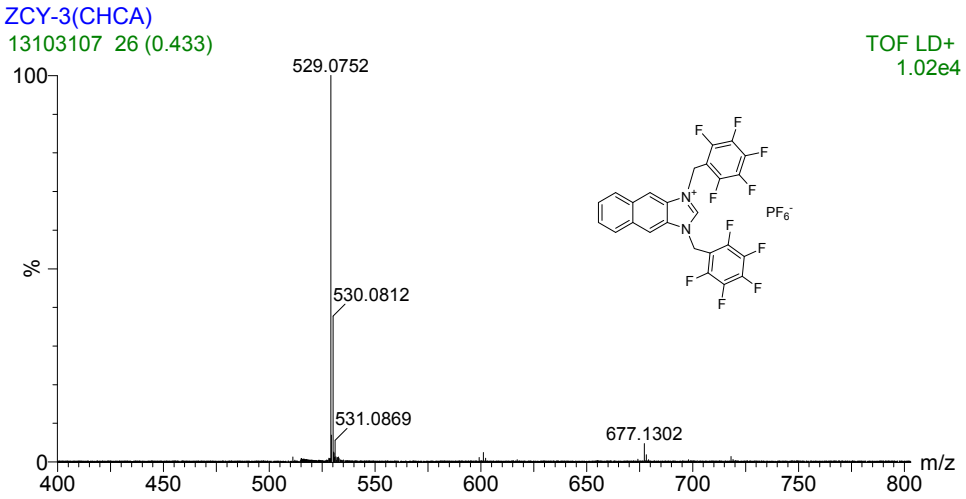


Fig. S23 HRMS (TOF LD+) of compound **5**.