

Supplementary material

Two spirobifluorene-based fluorescent probes with aggregation-induced emission properties: synthesis and application in the detection of Zn^{2+} and cell imaging

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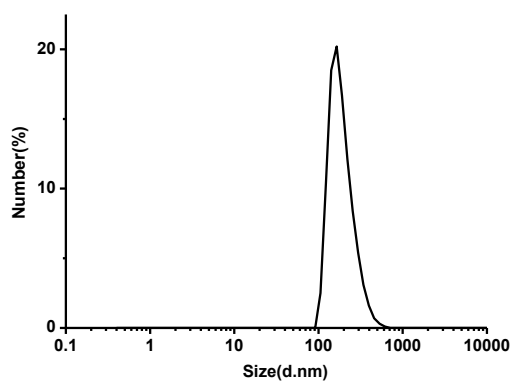


Fig.S1. DLS profiles of **SPF-1**(50 μ M) in DMF / water mixtures (40% water in volume).

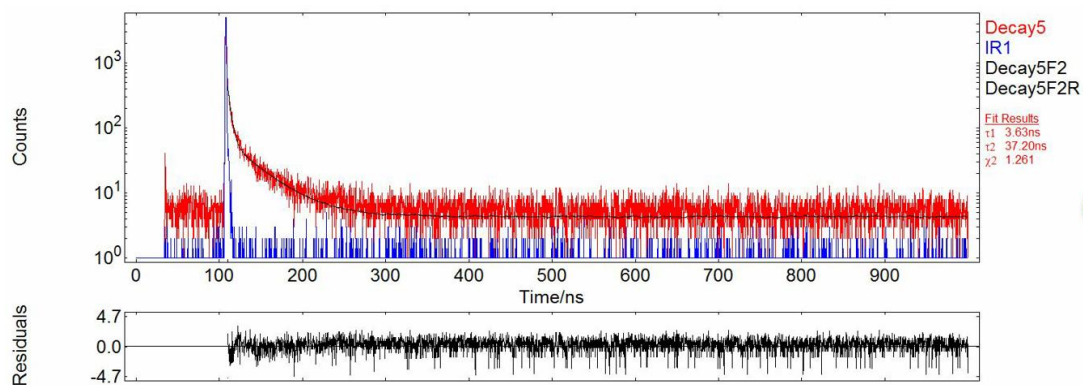


Fig S2. The time-resolved fluorescence decay behaviours of **SPF-1**.

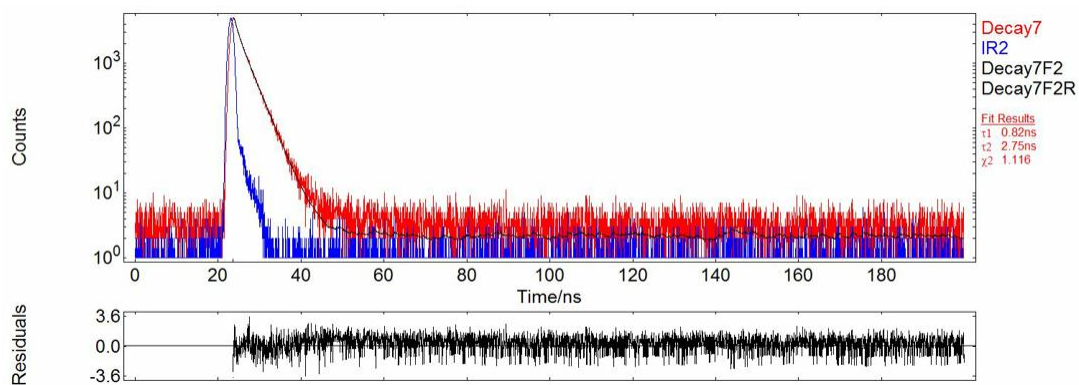


Fig S3. The time-resolved fluorescence decay behaviours of **SPF-2**.

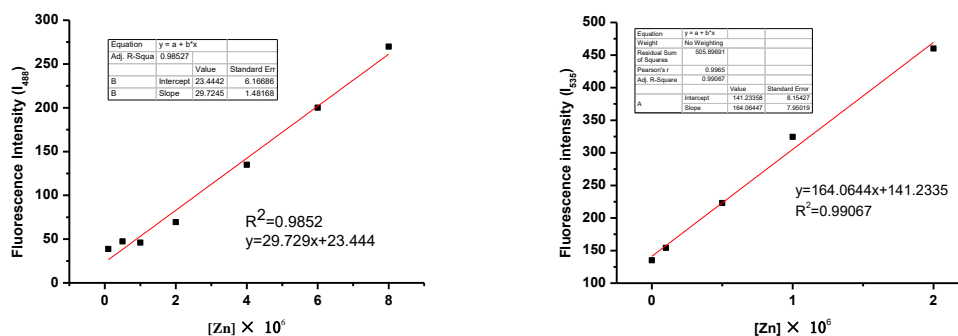


Fig. S4. The fluorescence intensity (I_{488}) of **SPF-1** DMF/H₂O solution (9:1, v/v, 10 μM) as a function of Zn²⁺ concentration in the range of 0.5 μM to 20 μM (left). The fluorescence intensity (I_{535}) of **SPF-2** 1,4-dioxane/water (13/7, v/v, 10 μM) as a function of Zn²⁺ concentration in the range of 0 M to 4 μM (right).



Fig. S5. The photograph of **SPF-1** solution (10 μM) in the presence of various metal ions (from left to right: Zn²⁺, Ag⁺, Al³⁺, Ba²⁺, Cd²⁺, Co²⁺, Cu²⁺, Fe³⁺, Hg²⁺, Li⁺, Mg²⁺, Mn²⁺, Ni²⁺, Pb²⁺) under the UV light (365 nm).



Fig. S6. The photograph of **SPF-2** solution (10 μM) in the presence of various metal ions (from left to right: Ag⁺, Al³⁺, Ba²⁺, Cd²⁺, Co²⁺, Cu²⁺, Fe³⁺, Hg²⁺, Li⁺, Mg²⁺, Mn²⁺, Ni²⁺, Pb²⁺, Zn²⁺) under the UV light (365 nm).

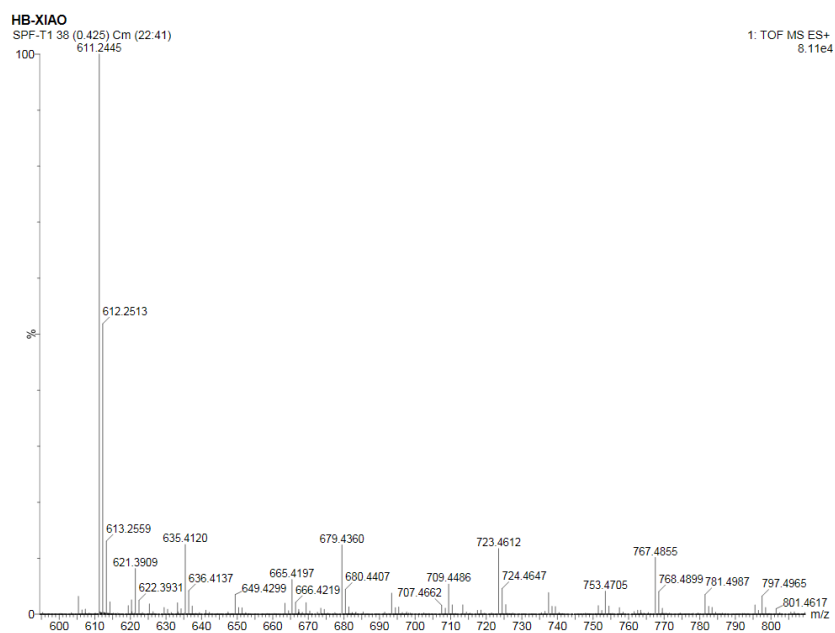


Fig S7. HRMS spectrum of the reaction mixture of probe **SPF-1** with Zn^{2+} .

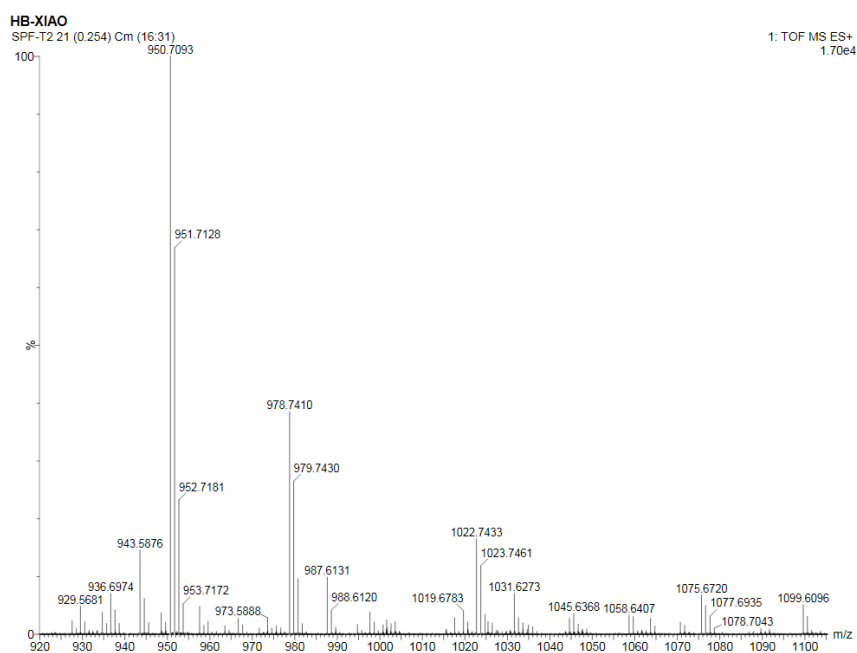


Fig S8. HRMS spectrum of the reaction mixture of probe **SPF-2** with Zn^{2+} .

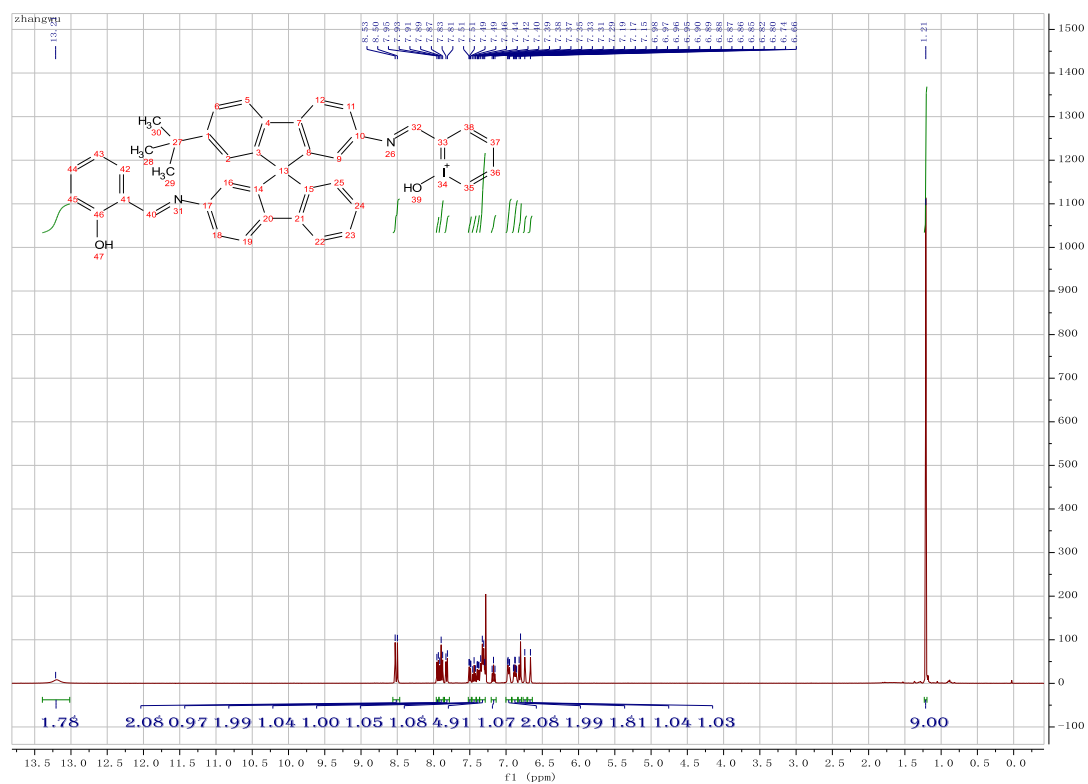


Fig S9. ^1H -NMR spectrum of **SPF-1** in CDCl₃.

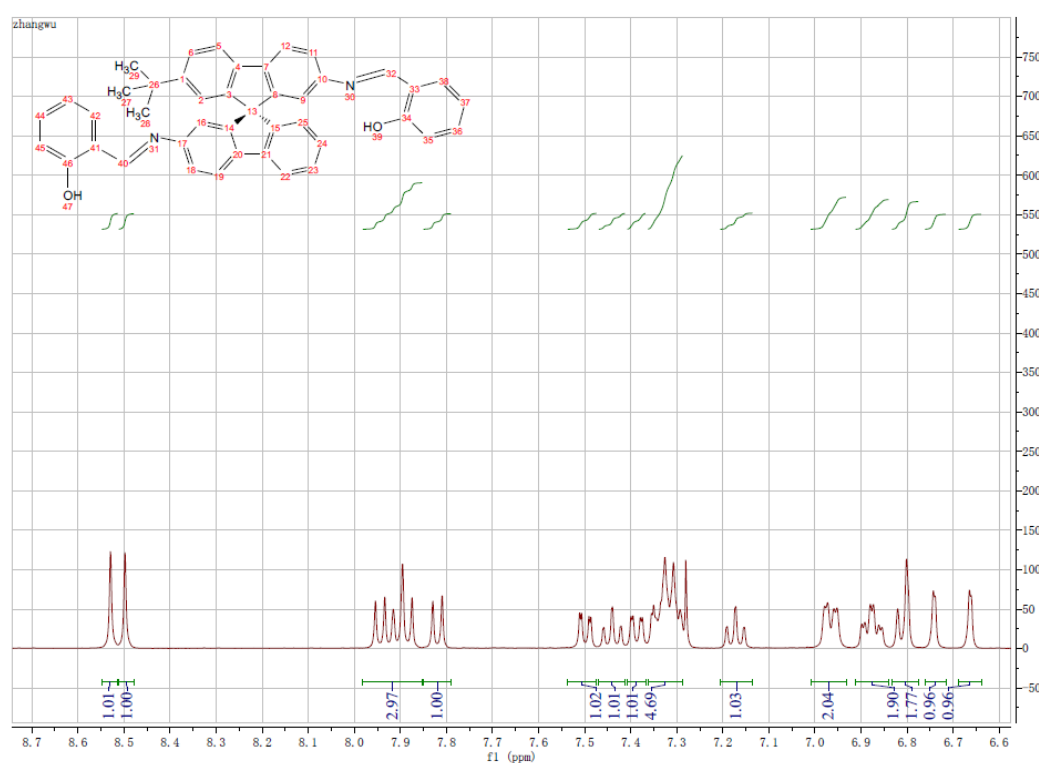


Fig S10. Partial ^1H -NMR spectrum of **SPF-1** in CDCl₃.

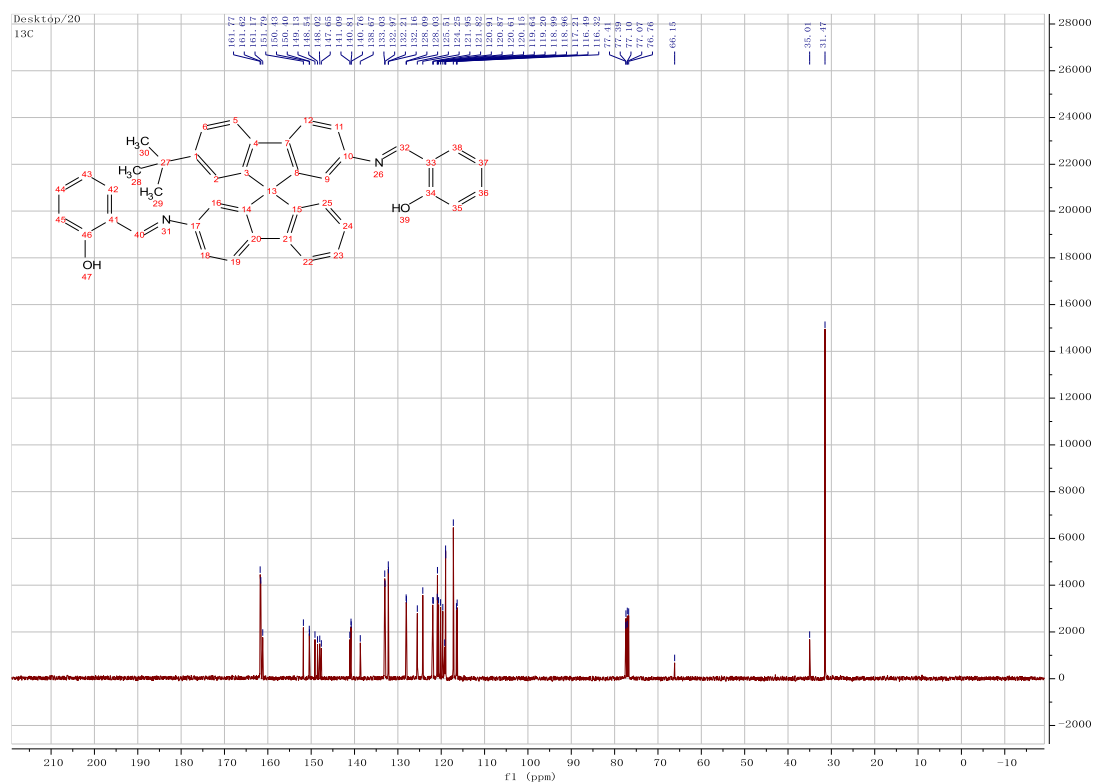


Fig S11. ^{13}C -NMR spectrum of **SPF-1** in CDCl_3 .

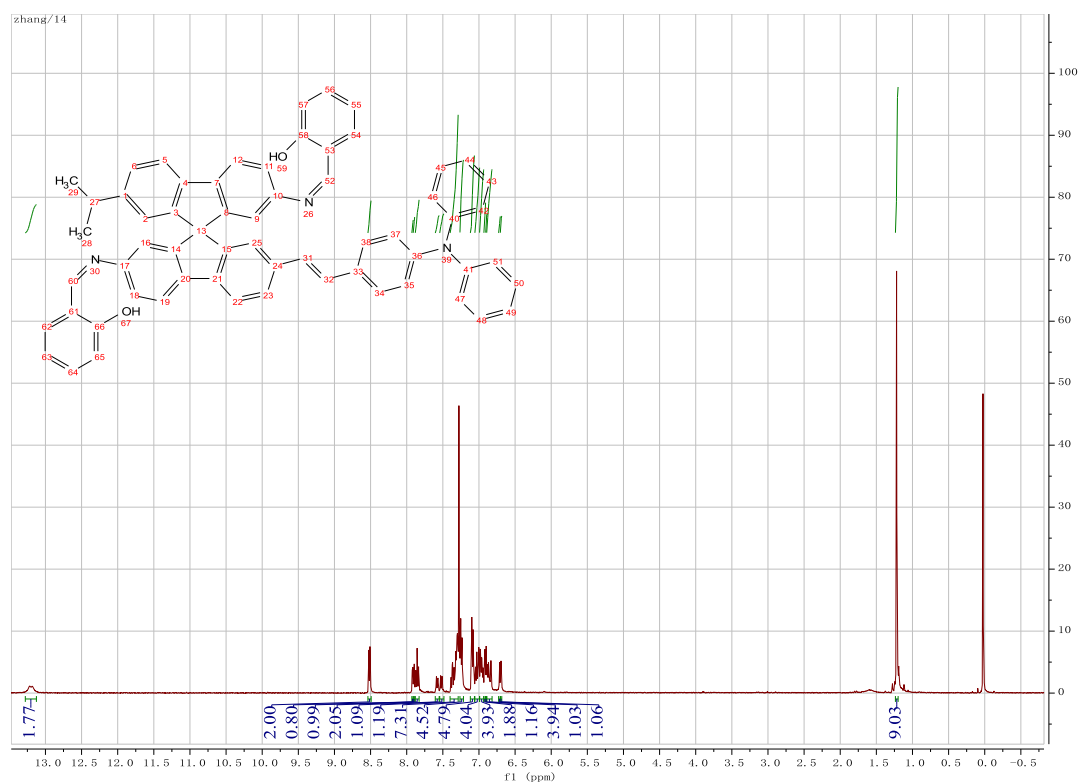


Fig S12. ^1H -NMR spectrum of **SPF-2** in CDCl_3 .

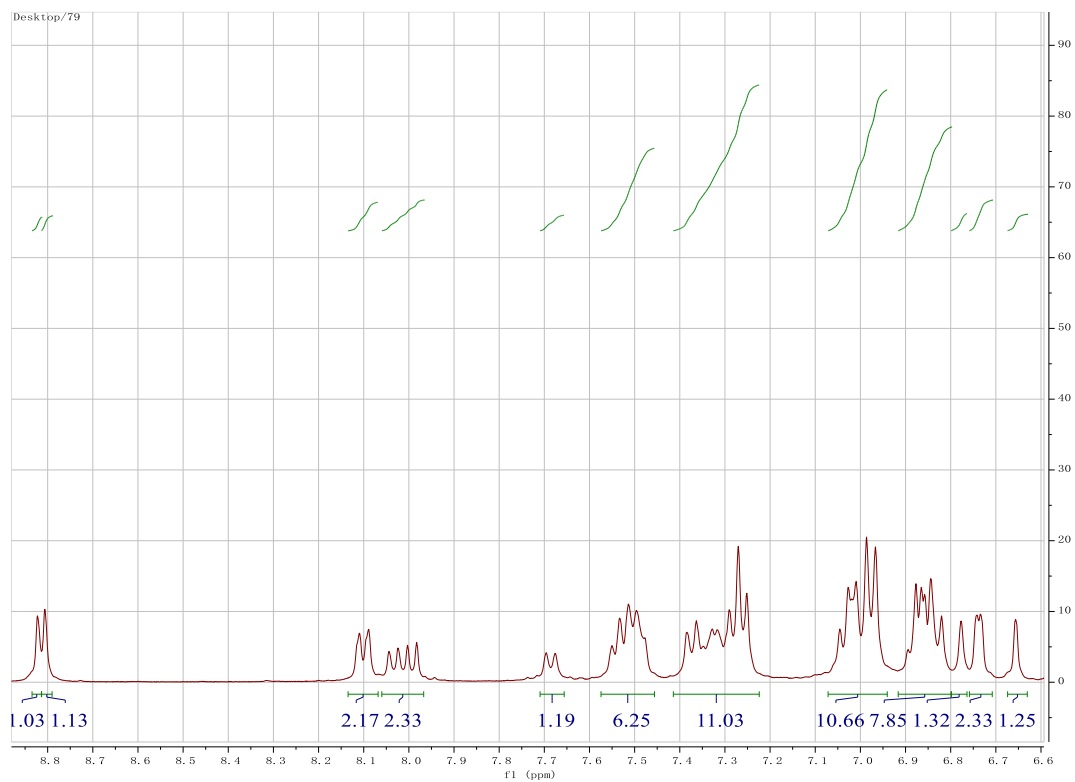


Fig S13. Partial ^1H -NMR spectrum of **SPF-2** in CDCl_3 .

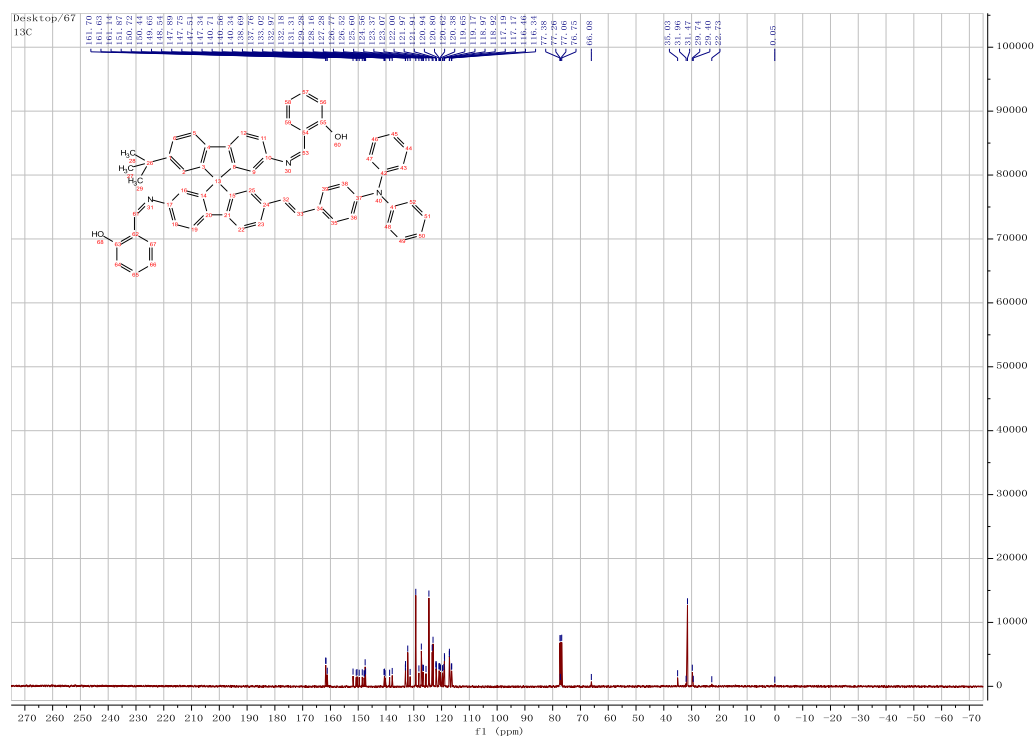


Fig S14. ^{13}C -NMR spectrum of **SPF-2** in CDCl_3 .