

Supporting Information

Self-assembly of a tripyrenylboron molecule towards solid sensor for fluoride anion

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Content:

1. ¹HNMR of TPB

2. ¹³CNMR of TPB

Fig. S1

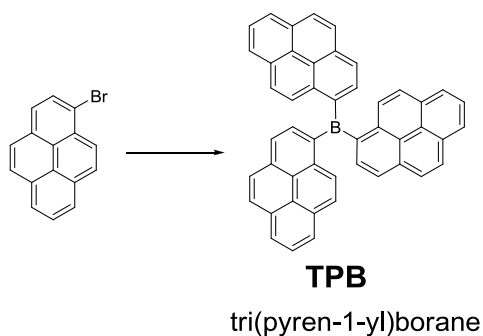
Fig. S2

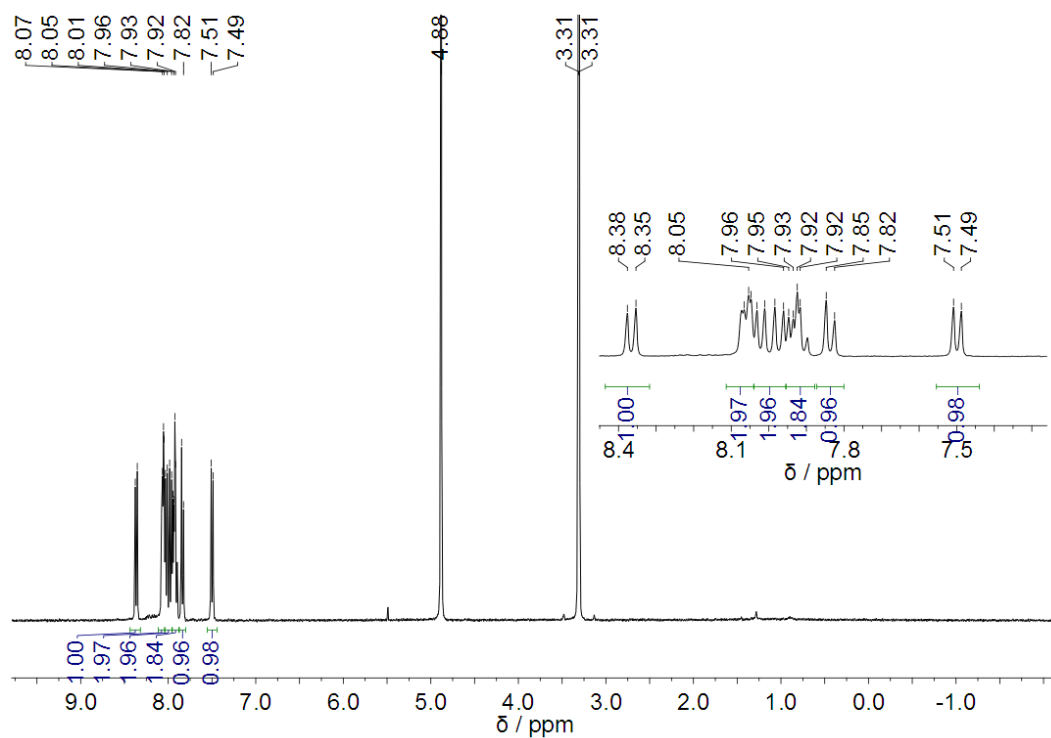
Fig. S3

Fig. S4

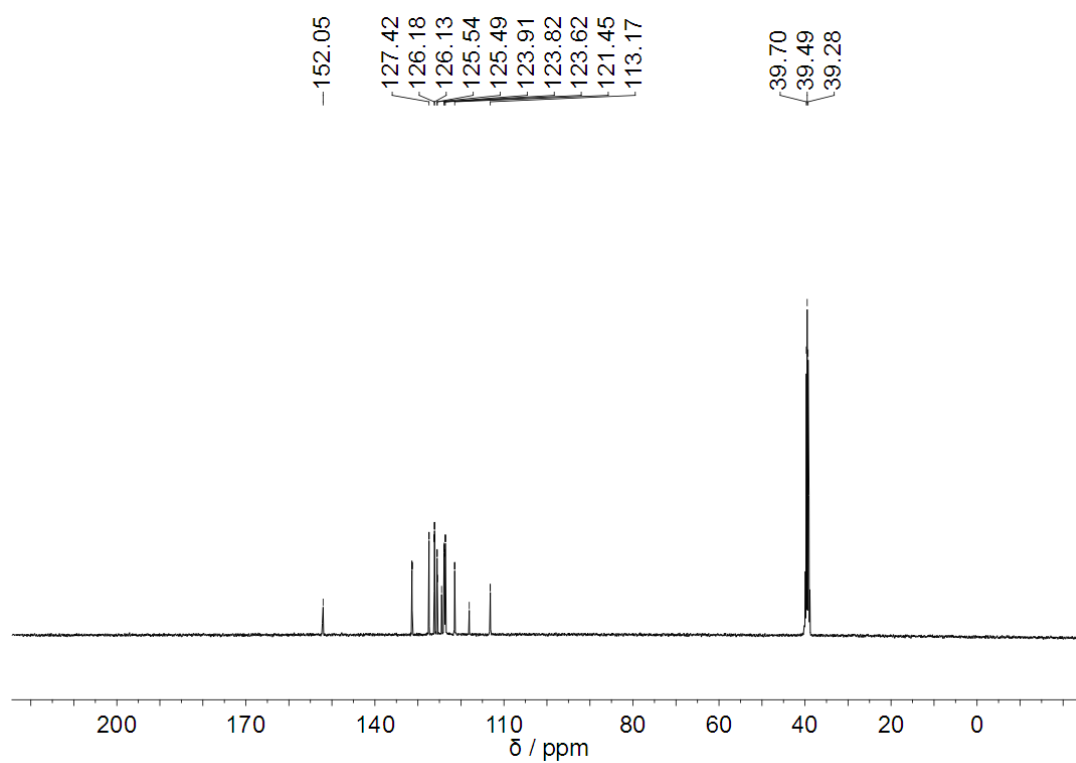
Fig. S5

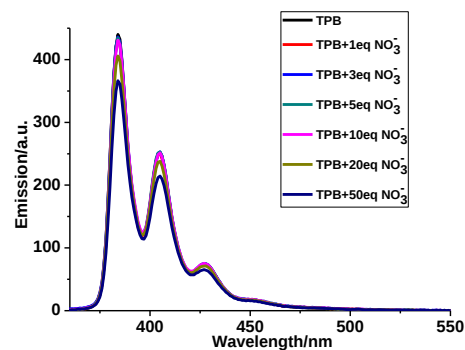
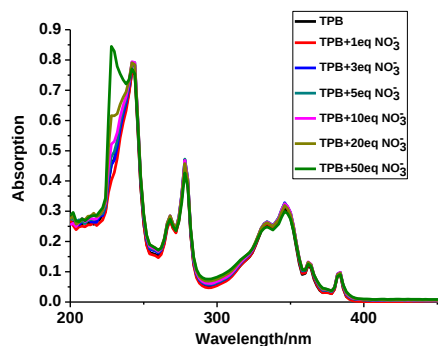
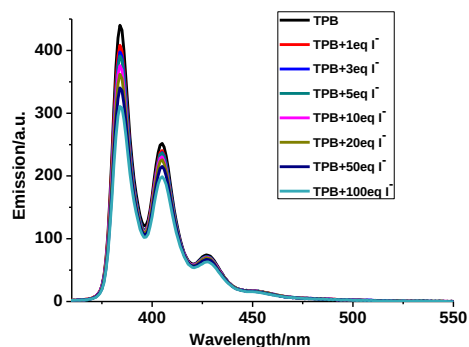
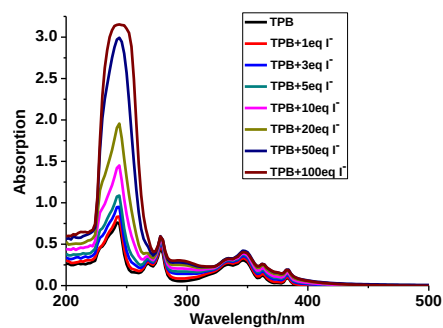
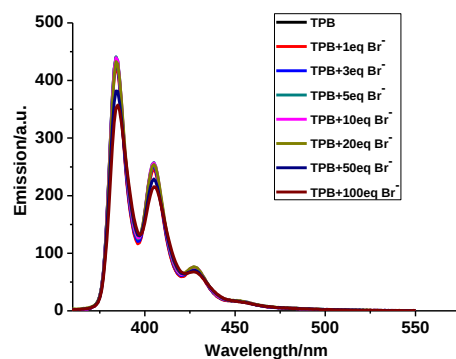
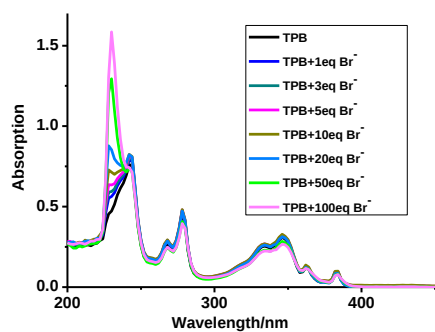
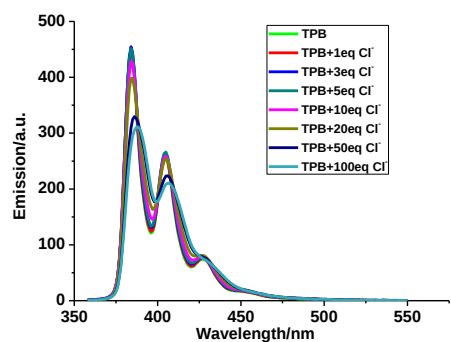
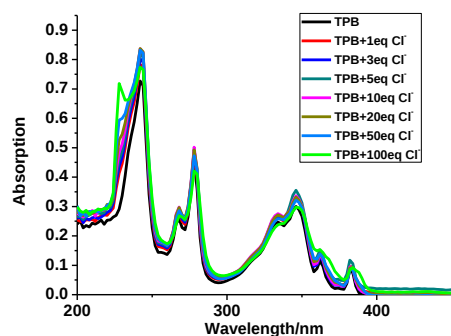
1. ¹HNMR (400 MHz, MeOH-*d*₄) of TPB

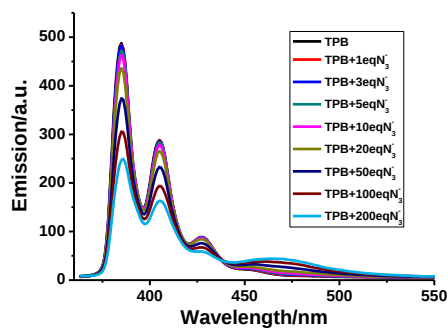
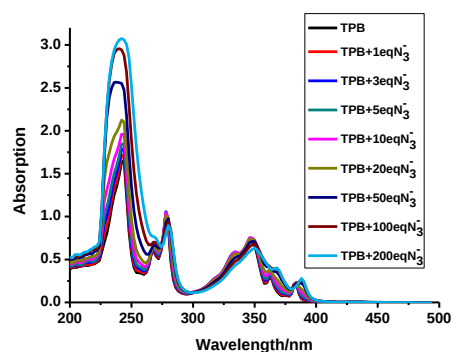
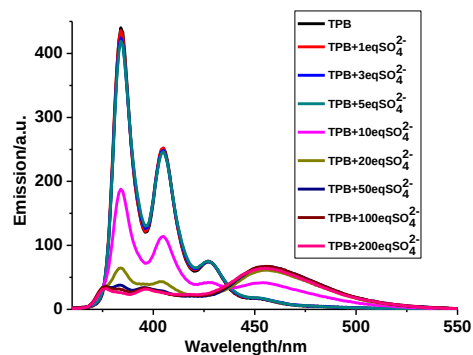
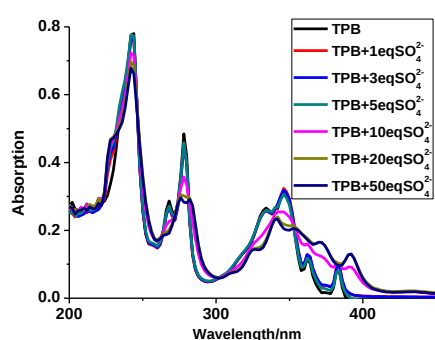
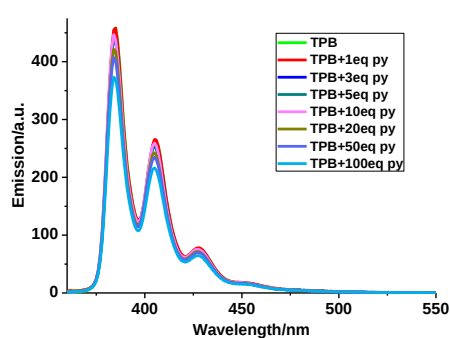
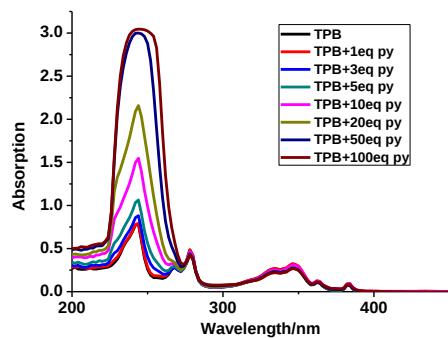
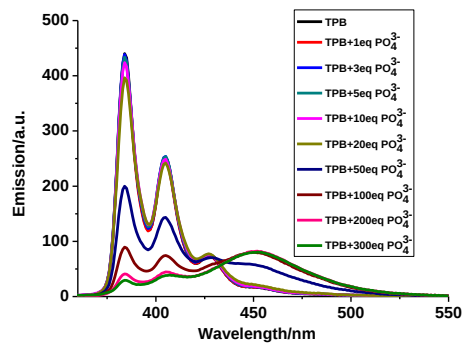
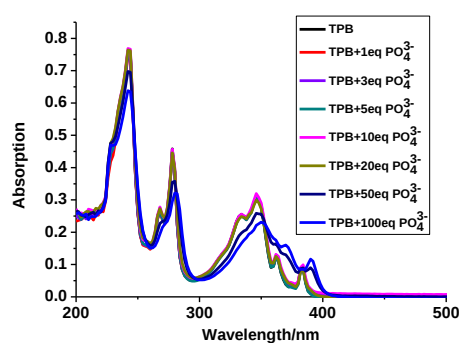




2. ¹³CNMR (400 MHz, DMSO-*d*₆) of TPB







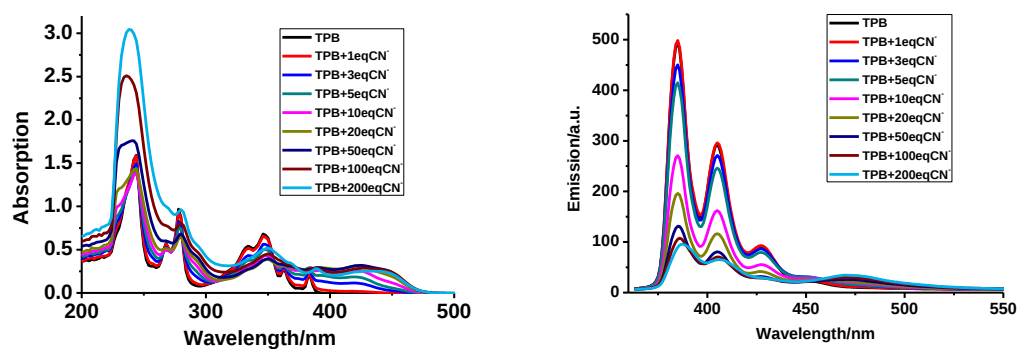


Figure S1. The absorption and fluorescence spectra of **TPB** upon titration with $n\text{-Bu}_4\text{NCl}$, $n\text{-Bu}_4\text{NBr}$, $n\text{-Bu}_4\text{NI}$, $n\text{-Bu}_4\text{NNO}_3$, $n\text{-Bu}_4\text{NH}_2\text{PO}_4$, Pyridine, $(n\text{-Bu}_4\text{N})_2\text{SO}_4$.

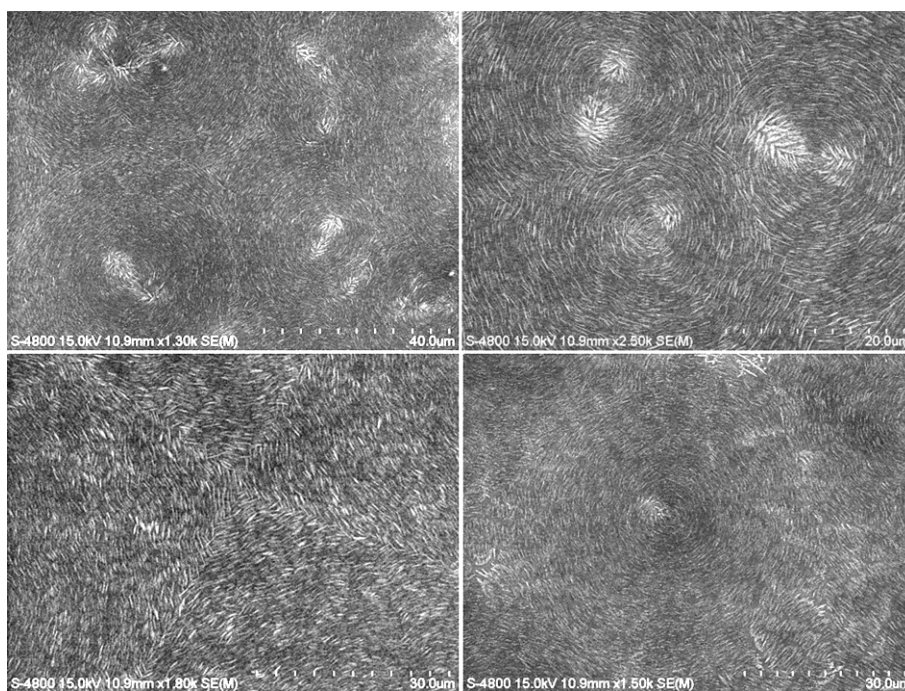


Figure S2. SEM images on silicon slices of **TPB** (5×10^{-4} M in DCM) prepared in THF/MeOH (v/v, 1:1) at the temperature of 15 °C.

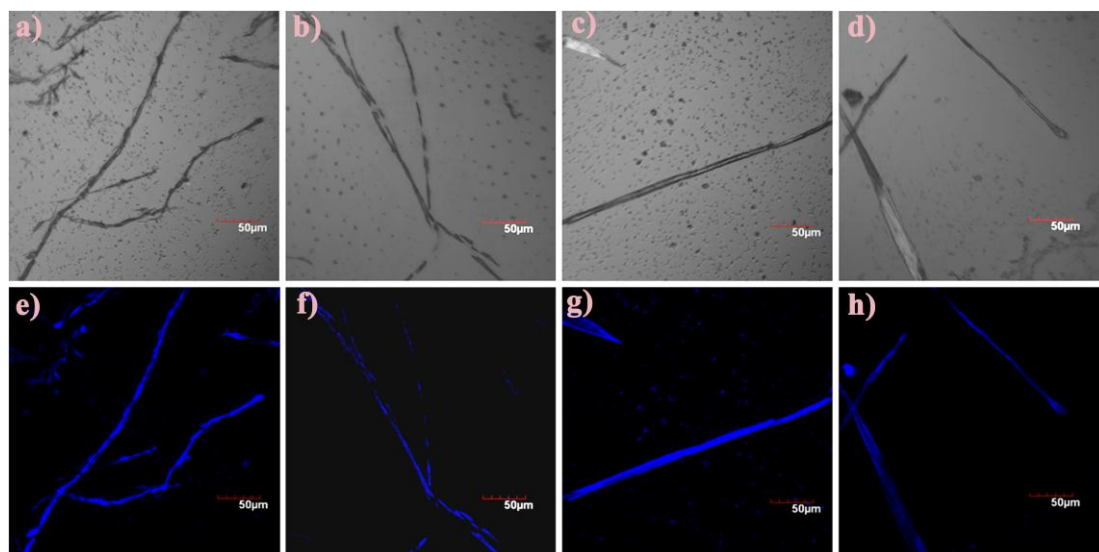


Figure S3. The microscope (a)(b)(c)(d) and LSMC (e)(f)(g)(h) ($\lambda_{\text{ex}} = 380 \text{ nm}$) images of the **TPB** on slide glass in THF/MeOH (V/V=1:1). The scale bar: 50 μm .

(a)(e)(c)(g): the **TPB** microrods was not dipped in any solution;

(b)(f): the **TPB** microrods was dipped in $\text{n-Bu}_4\text{NH}_2\text{PO}_4$ solution ($1 \times 10^{-3} \text{ M}$ in water) for 48 h;

(d)(h): the **TPB** microrods was dipped in $(\text{n-Bu}_4\text{N})_2\text{SO}_4$ solution ($1 \times 10^{-3} \text{ M}$ in water) for 48 h.

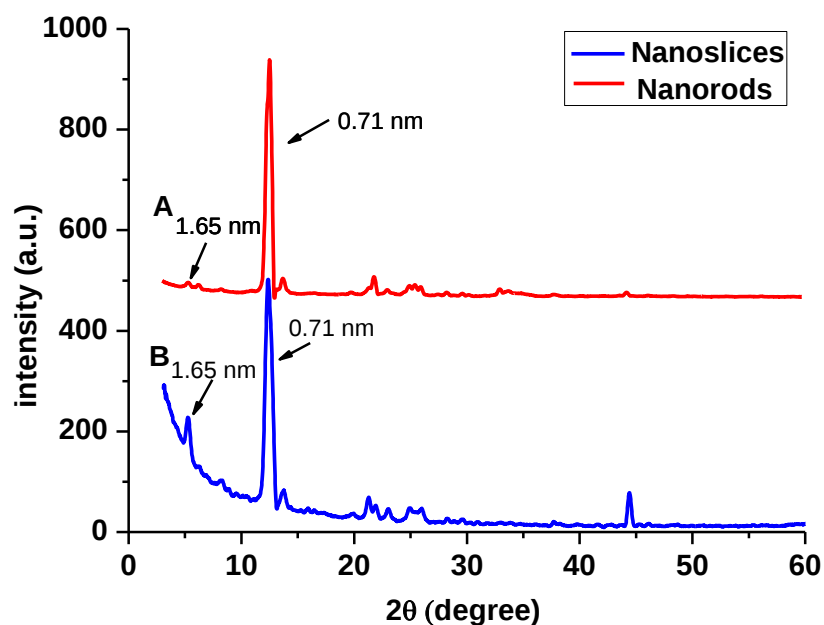


Figure S4. XRD profiles of the nanoslices (B) and nanorods (A) formed in THF/MeOH (v/v, 1:1) at the temperature of 15 $^{\circ}\text{C}$ (B), 40 $^{\circ}\text{C}$ (A), correspondingly.

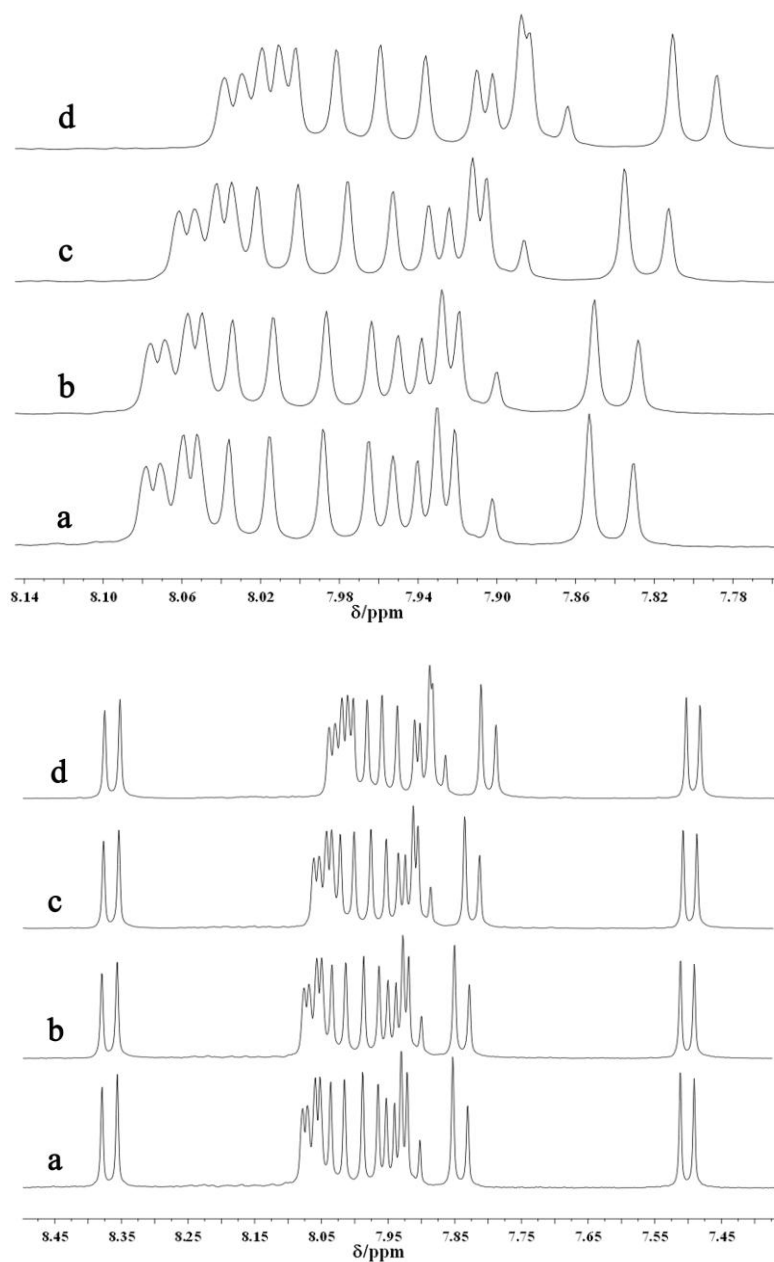


Figure S5. ^1H NMR spectra of **TPB** at different concentration in MOH: a (1×10^{-3} M), b (5×10^{-3} M), c (2.5×10^{-2} M), d (1×10^{-2} M).

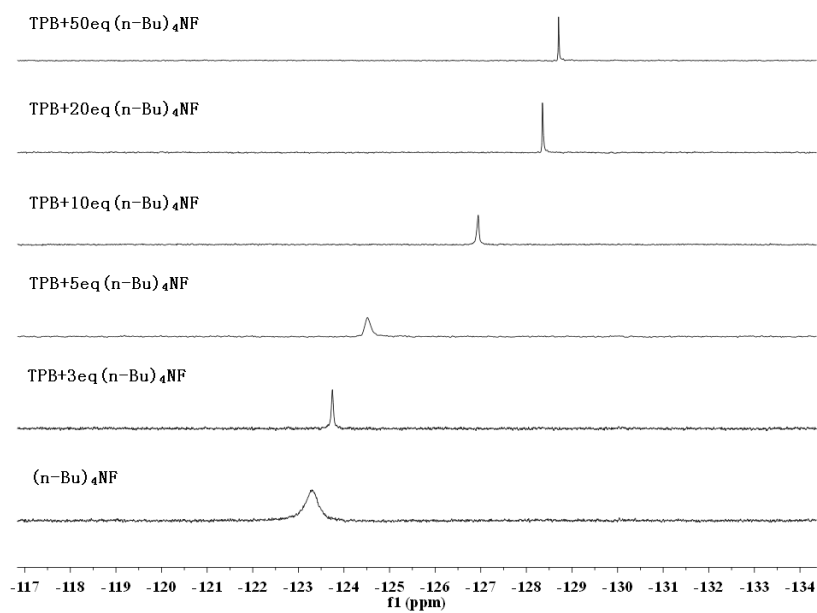


Figure S6. ^{19}F NMR-titration of **TPB** with $n\text{-Bu}_4\text{NF}$ in CDCl_3 .