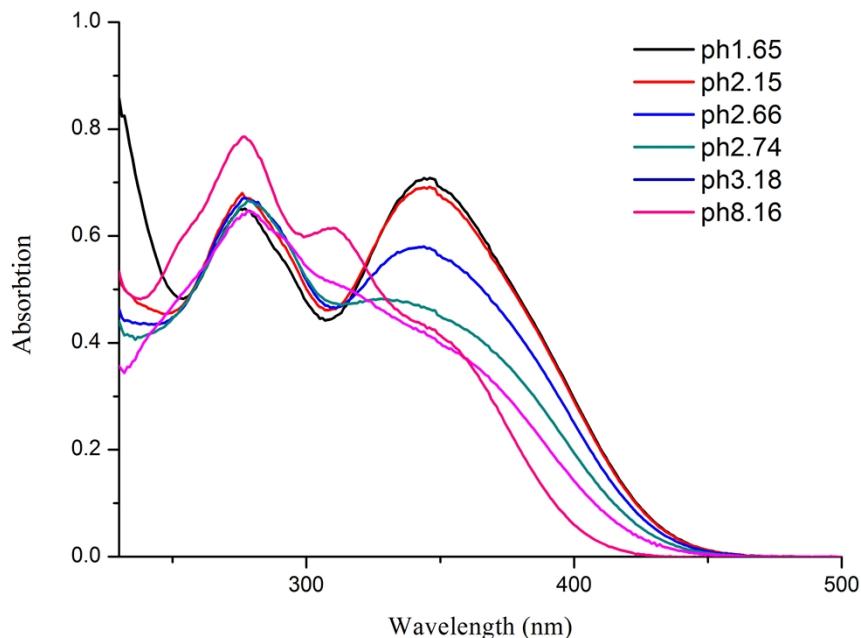


*Electronic Supplementary Information*

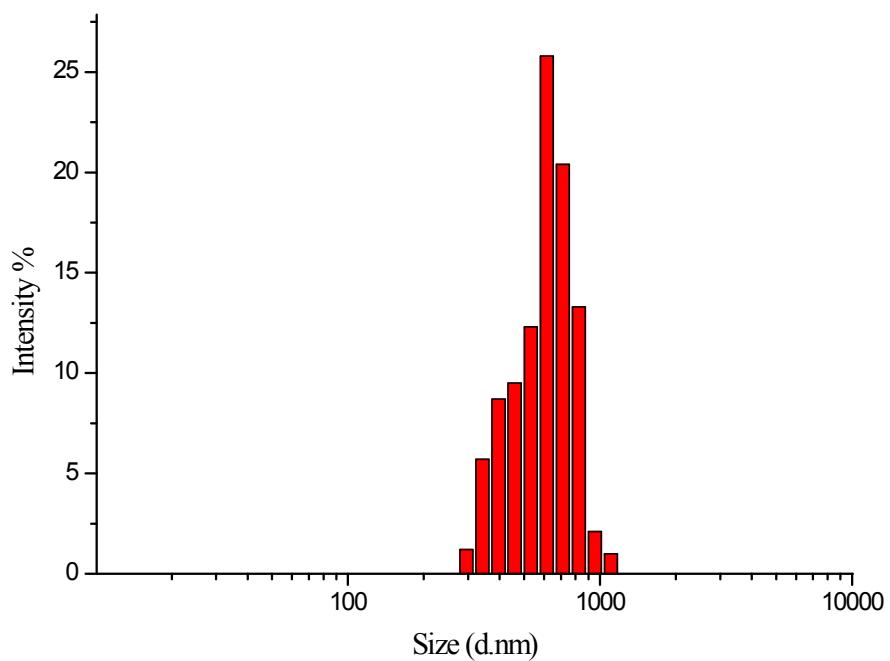
**Aggregation-Induced Emission Encoding Supramolecular Polymer Based on Controllable Sulfonatocalixarene Recognition in Aqueous Solution**

Xuyang Yao, Xiang Ma\* and He Tian

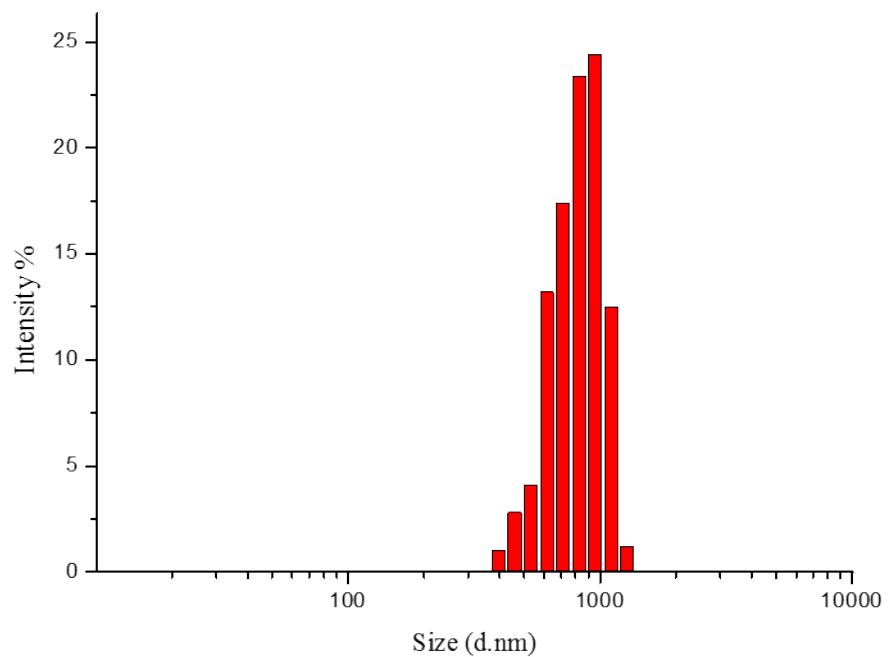
Key Laboratory for Advanced Materials and Institute of Fine Chemicals, East China University of Science & Technology, Shanghai 200237, P. R. China, Fax: (+86)-21-64252758, E-mail: [maxiang@ecust.edu.cn](mailto:maxiang@ecust.edu.cn)



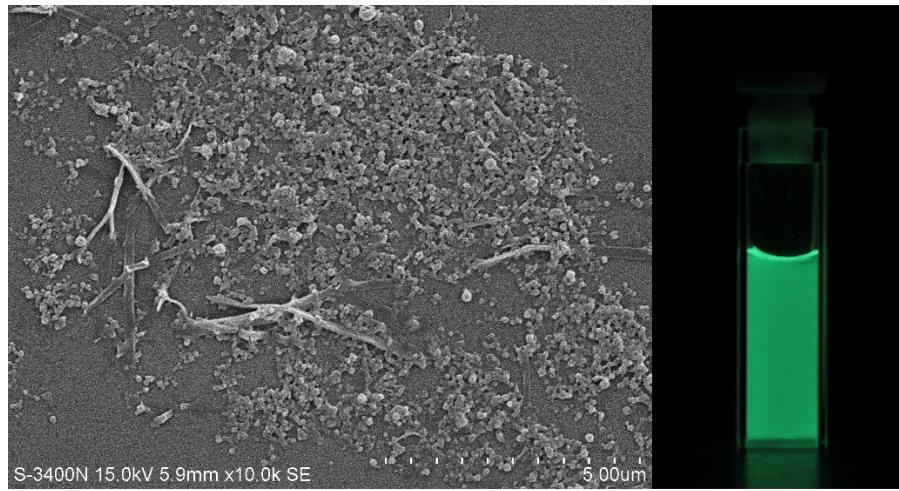
**Fig. S1** UV-vis spectrum of TPPE in solution of H<sub>2</sub>O: THF=1:1 at different pH.



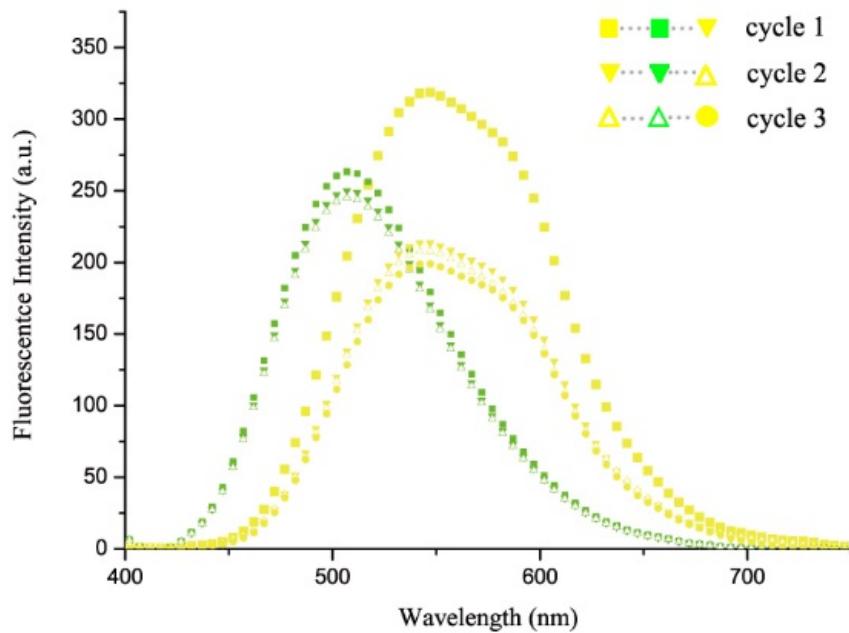
**Fig. S2** DLS result of supramolecular polymer **SP1** constructed with **TPPE** and **BSC4** in pH=2 phosphate buffer.



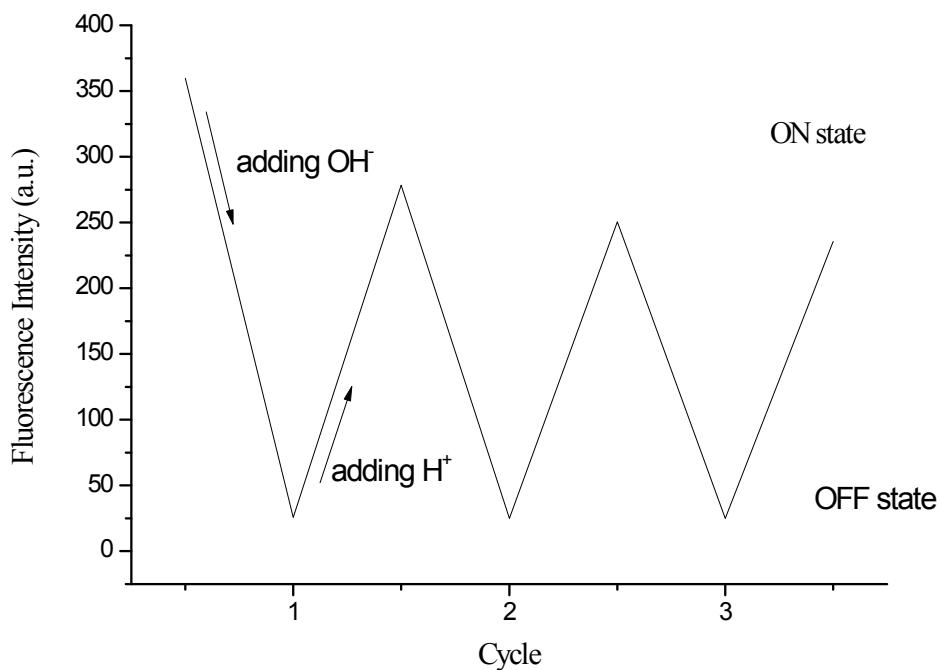
**Fig. S3** DLS result of supramolecular polymer **SP2** constructed with **TMPPE** and **BSC4** in pH=2 phosphate buffer.



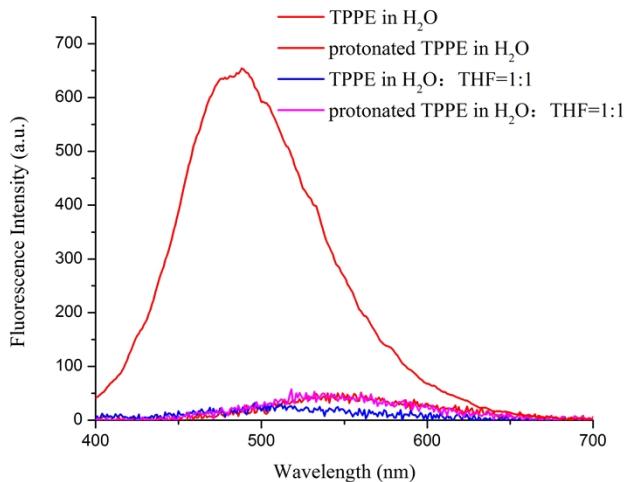
**Fig. S4** Left: SEM picture of TPPE aggregation (droplets of TPPE solution on a glass plate,  $1.5 \times 10^{-5}$ M); Right: photo of TPPE in H<sub>2</sub>O irradiated by 365nm UV light and taken in darkness,  $1.5 \times 10^{-5}$ M).



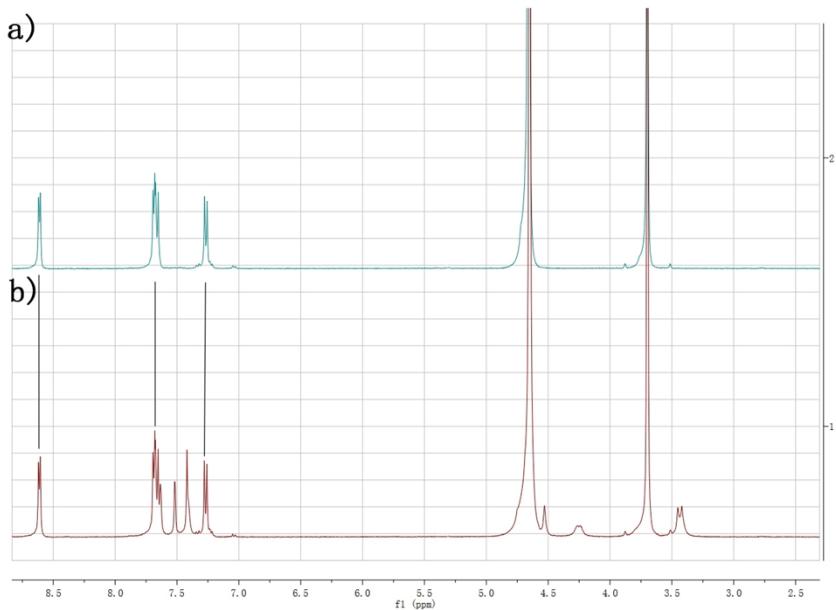
**Fig. S5** The representation of the reversibility and repeatability between state A and B modulated by pH of supramolecular polymer **SP1** constructed with **TPPE** and **BSC4**. Excited at 350 nm.



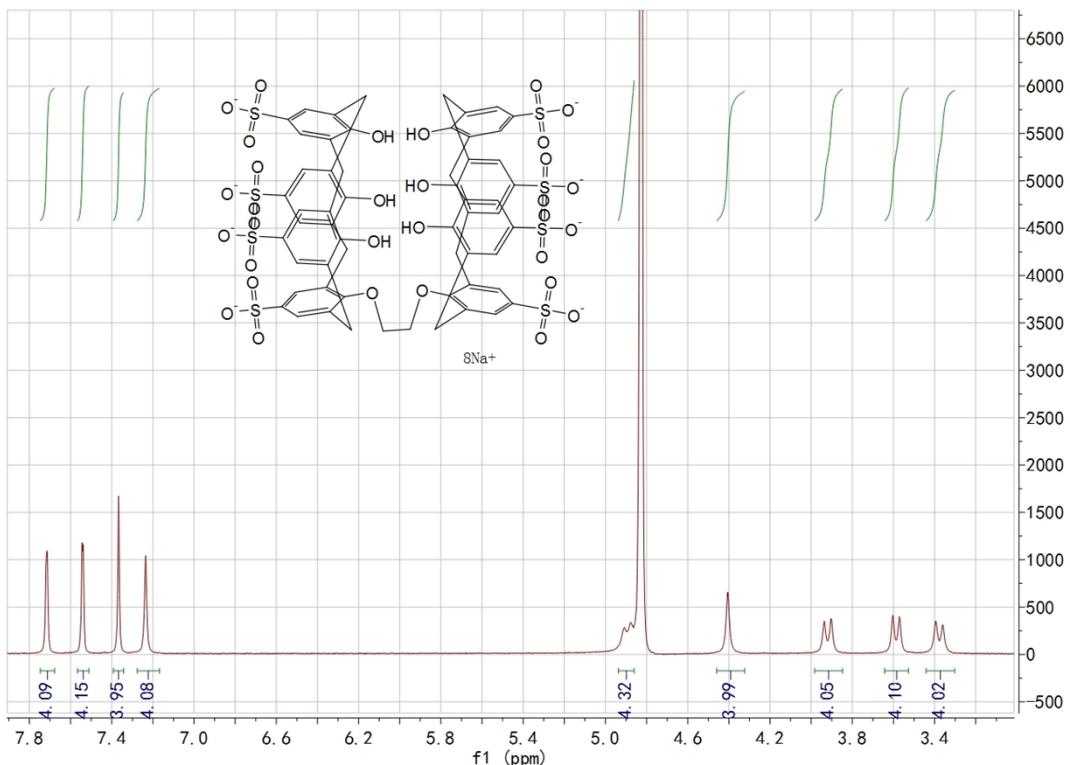
**Fig. S6** The representation of the reversibility and repeatability between state ON and OFF modulated by pH of supramolecular polymer **SP1** formed with **TPPE** and **BSC4**. Excited at 350 nm.



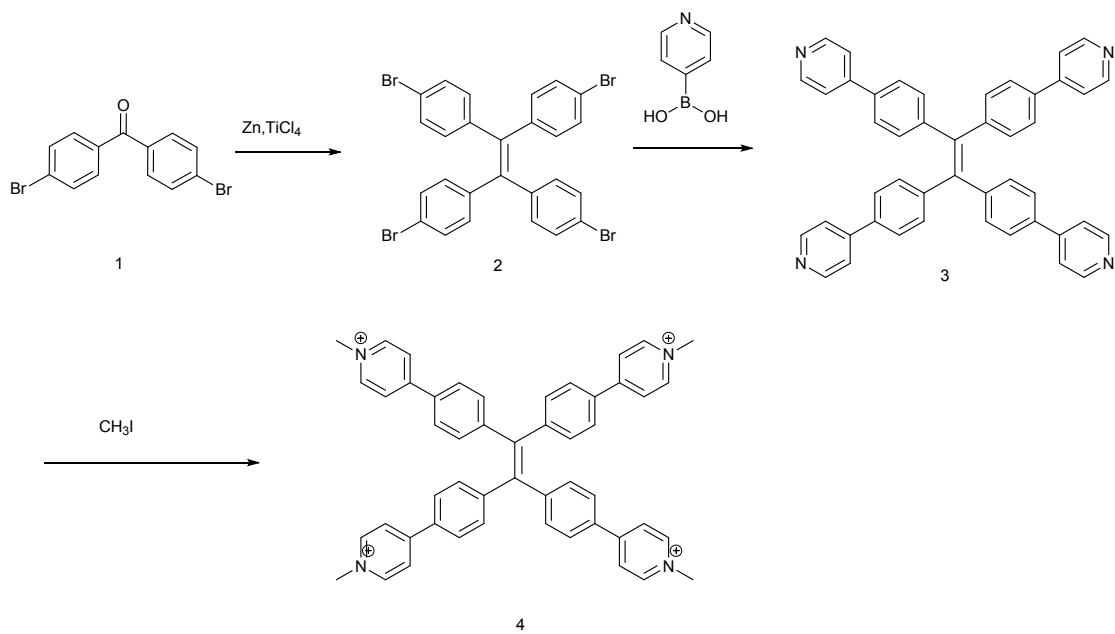
**Fig. S7** Fluorescence emission spectrum of **TPPE** and protonated **TPPE** in solution of  $\text{H}_2\text{O}$  and  $\text{H}_2\text{O}:\text{THF}=1:1$ .



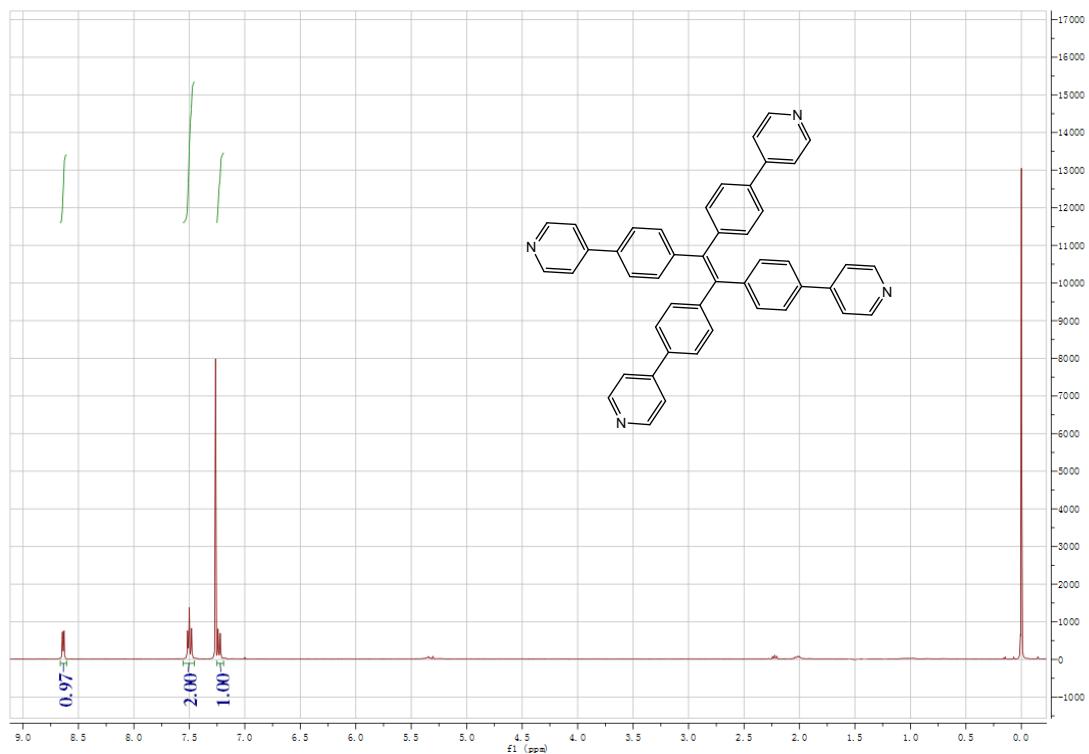
**Fig. S8** <sup>1</sup>H NMR spectra of **TPPE** (a) and **TPPE** with **BSC4** (b) in D<sub>2</sub>O: THF-d<sub>8</sub> (400 MHZ).



**Fig. S9** <sup>1</sup>H NMR spectrum of **BSC4** in D<sub>2</sub>O (400 MHZ).



**Fig. S10** Synthetic route to TPPE (3) and TMPPE (4). 4I<sup>-</sup> of TMPPE (4) are omitted here for clarity.



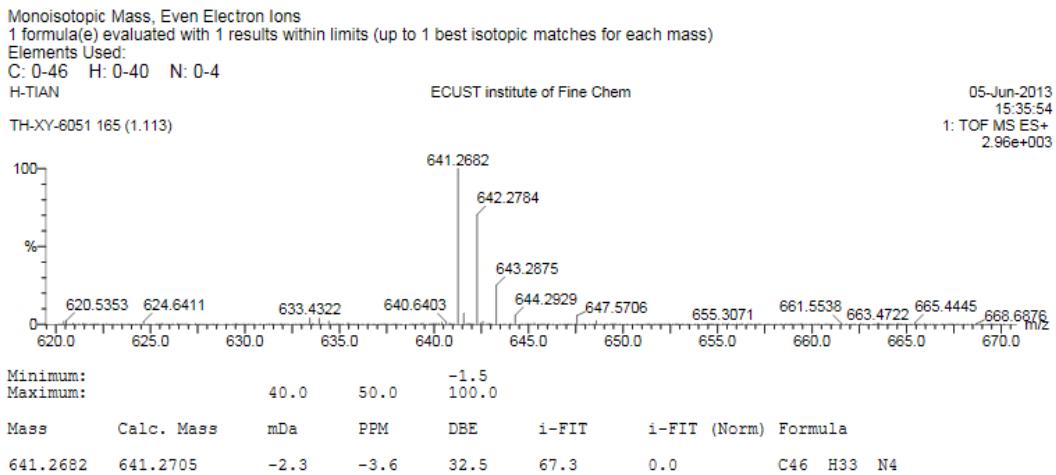
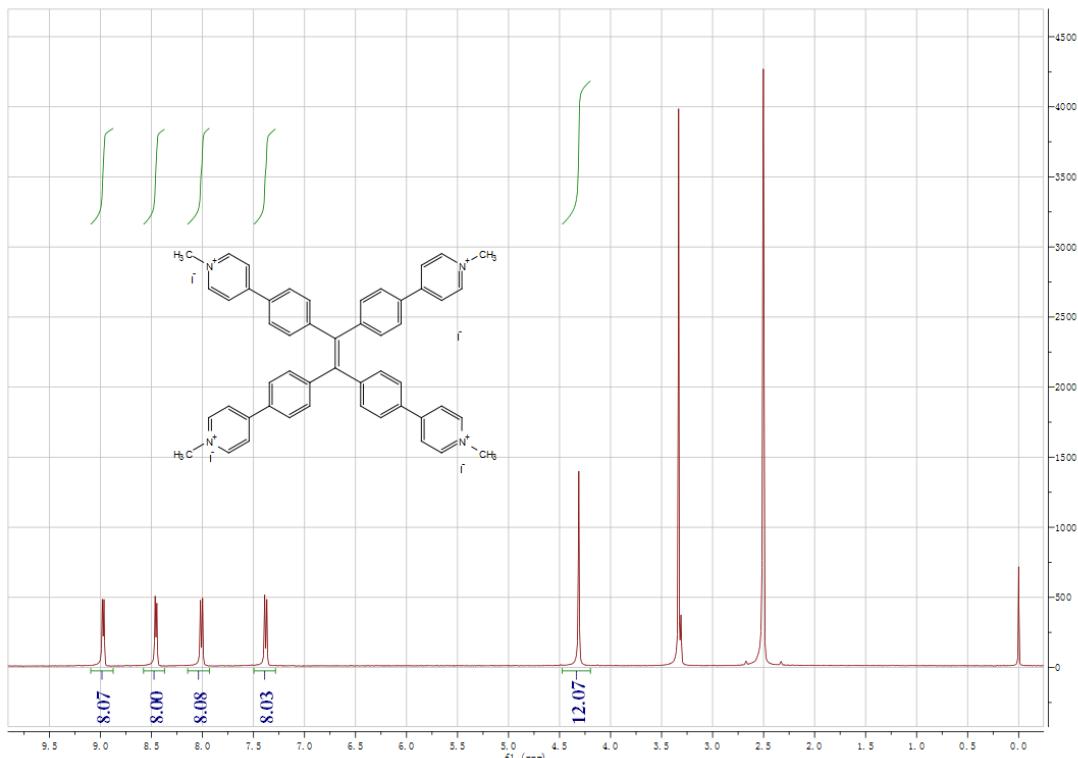
**Fig. S11** <sup>1</sup>H NMR spectrum of TPPE in CDCl<sub>3</sub> (400 MHZ).

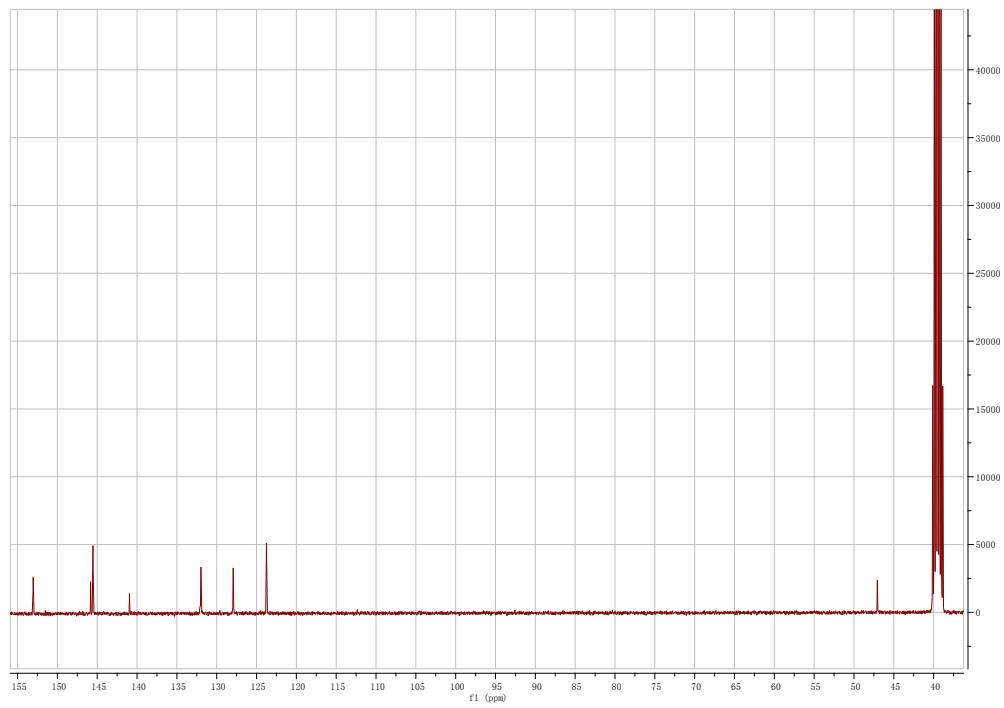
**Single Mass Analysis**

Tolerance = 40.0 mDa / DBE: min = -1.5, max = 100.0

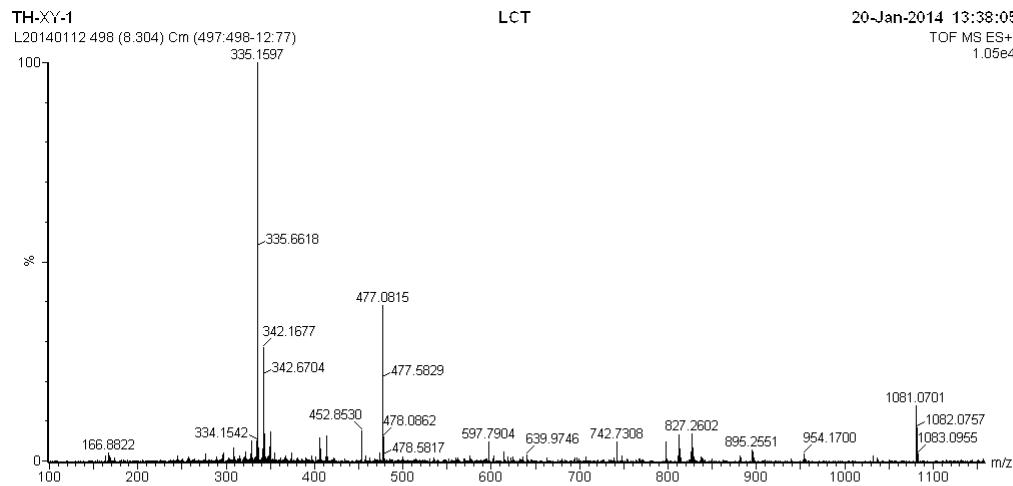
Element prediction: Off

Number of isotope peaks used for i-FIT = 2

**Fig. S12** ESI-MS spectrum of TPPE ( $[M+H]^+=641.2682$ ).**Fig. S13**  $^1\text{H}$  NMR spectrum of TMPPE in  $\text{DMSO}-d_6$  (400 MHZ).



**Fig. S14**  $^{13}\text{C}$  NMR spectrum of TMPPE in  $\text{DMSO}-d_6$  (100 MHZ).



**Fig. S15** ESI-MS spectrum of TMPPE ( $[\text{M}-\text{I}]^+=1081.0701$ ).