

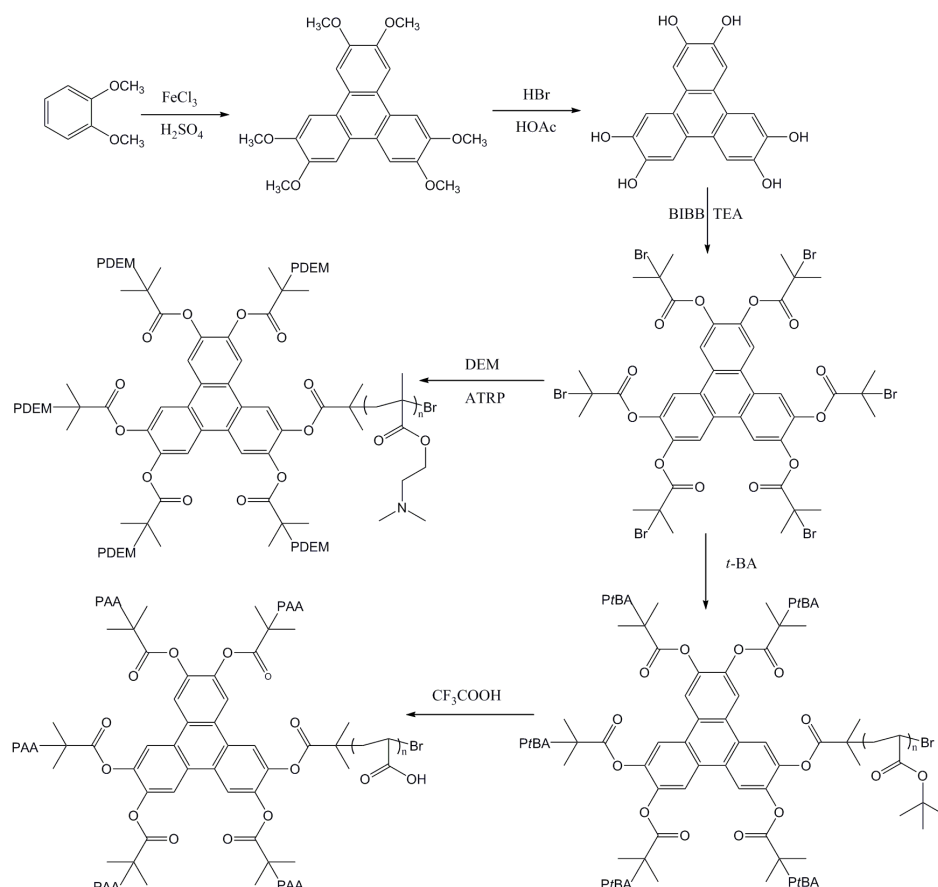
## Supplementary Information

### pH and Ion-Species Sensitive Fluorescence Properties of Star Polyelectrolytes Containing a Triphenylene Core

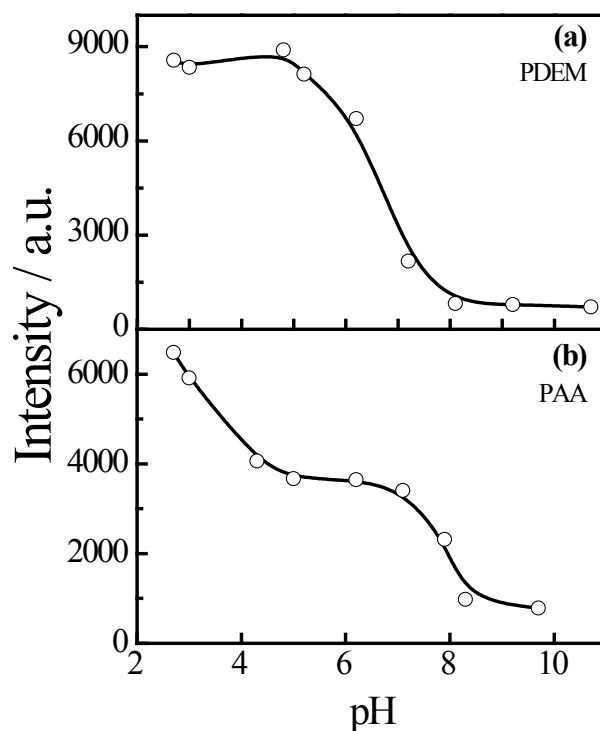
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**Fig. S1** Strategies of synthesis of 6-arm star-shaped PDEM and PAA containing a triphenylene core.



**Fig. S2** The pH dependent fluorescence intensity of the peak at  $\sim 366$  nm for star PDEM (a) and at  $\sim 380$  nm for star PAA (b) corrected by the “absorbance plus scattering”.

Fig. S2 shows the pH dependent fluorescence intensity of the emission peaks for the star PDEM ( $\sim 366$  nm) and PAA ( $\sim 380$  nm) after the corrections for the inner filter effect.<sup>S1</sup> Generally, the fluorescence intensity can be corrected by the “absorbance plus scattering” (i.e., extinction) based on the following equation:<sup>S1</sup>

$$I_{cor} = I_{obs} \cdot 10^{\frac{1}{2}(A_{ex} + A_{em})}$$

where  $I_{cor}$  is the fluorescence intensity after the correction and  $I_{obs}$  is the given observed fluorescence intensity.  $A_{ex}$  and  $A_{em}$  are the absorbances at the fluorescence excitation and emission wavelengths, respectively. Clearly, the changes of the corrected fluorescence intensities are similar to that shown in Fig. 2 (see the main text), indicating that the corrections have slight effect on the observed behavior in the fluorescence properties. In comparison with the results shown in Fig. 2, the shifts in absolute fluorescence intensity are between  $\sim 10\%$  and  $\sim 20\%$  after the corrections.

## References

S1. M. O. Palmier, S. R. V. Doren, *Anal. Biochem.* **2007**, *371*, 43.