Aggregation-induced emission behavior of pH-controlled molecular shuttle based on tetraphenylethene moiety

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1. Partial 1H NMR spectra of [2]rotaxanes 1a

![NMR spectra](image1)

**Figure S1.** Partial 1H NMR spectra (400 MHz, CD$_3$CN, 298 K) of clipping reaction mixture (dynamic imine of 1a) (A); and 1a (B).

2. UV-vis spectra of 8 (A), 9 (B), 1a (C) and 1b (D) in CH$_3$CN/water mixtures with different fractions of water ($f_w$).

![UV spectra](image2)

**Figure S2.** UV-vis spectra of 8 (A), 9 (B), 1a (C) and 1b (D) in CH$_3$CN/water mixtures with different fractions of water ($f_w$).
3. Fluorescent and UV-vis spectra of 1a and 1b in CH$_3$OH/ glycerol mixtures with different fractions of glycerol.

Figure S3. Fluorescent and UV-vis spectra of 1a and 1b in CH$_3$OH/ glycerol mixtures with different fractions of glycerol. (A) Fluorescent spectra of 1a; (B) fluorescent spectra of 1b; (C) UV-vis spectra of 1a; (D) UV-vis spectra of 1b.

4. NMR and Mass spectra