

## Supporting Information

### **Synergistic Effects of Azobenzene and Thiourea Backbones in Multiresponsive Copolymers for Sensing and Adhesive Technologies**

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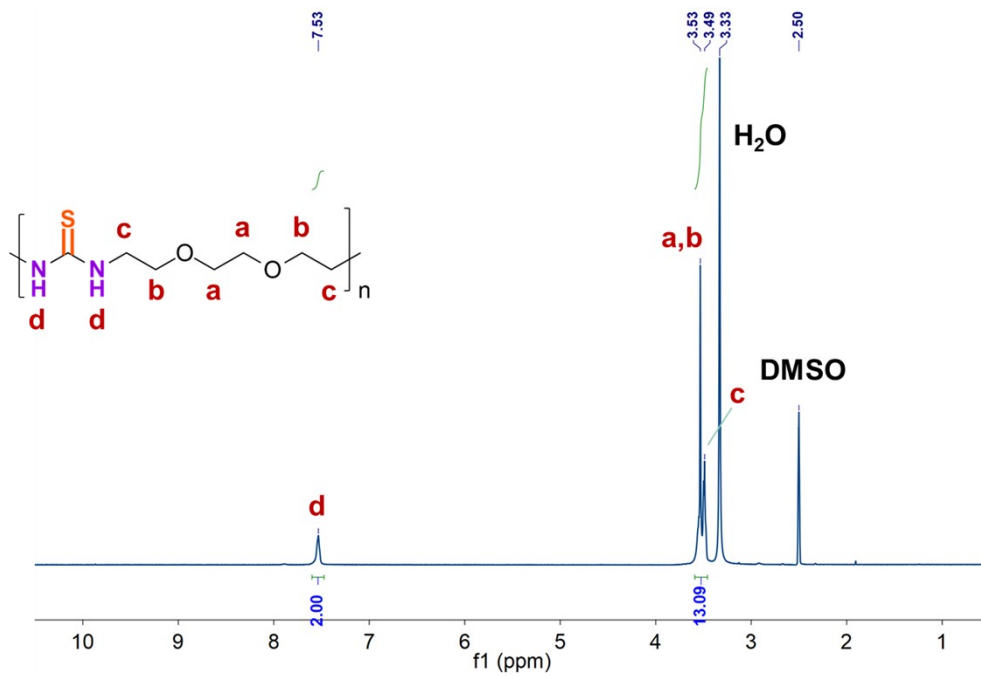


Figure S1. <sup>1</sup>H-NMR spectrum of PTUEG<sub>3</sub>.

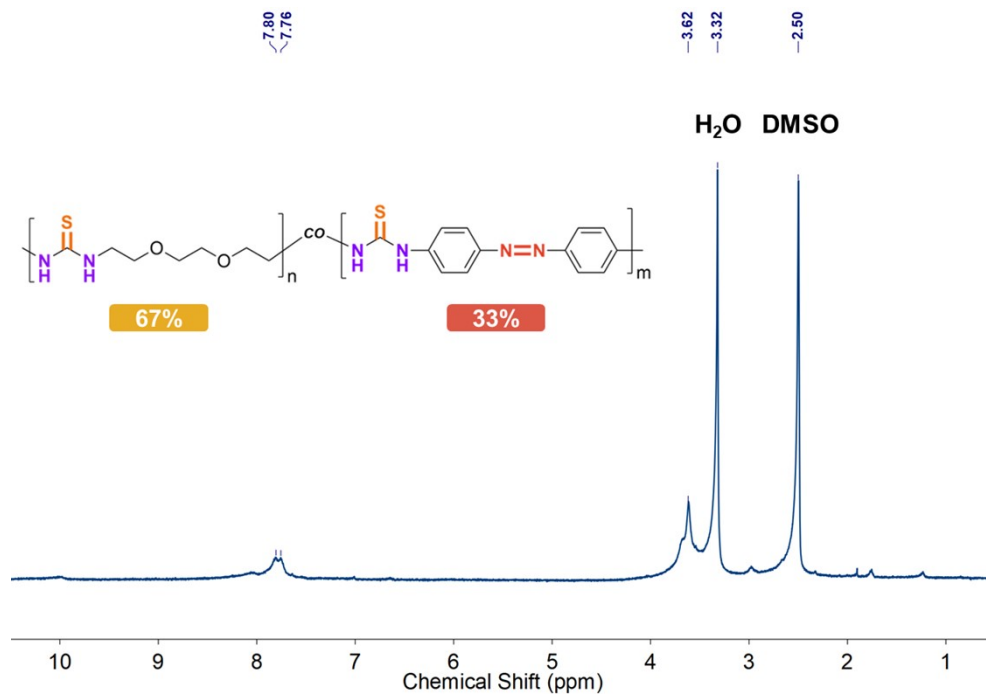
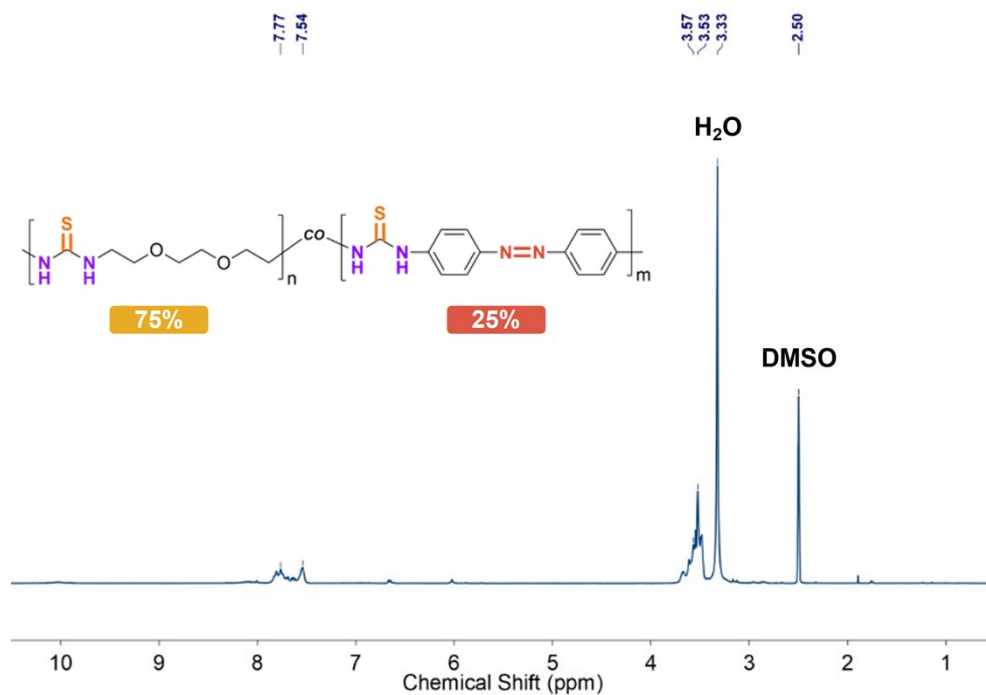
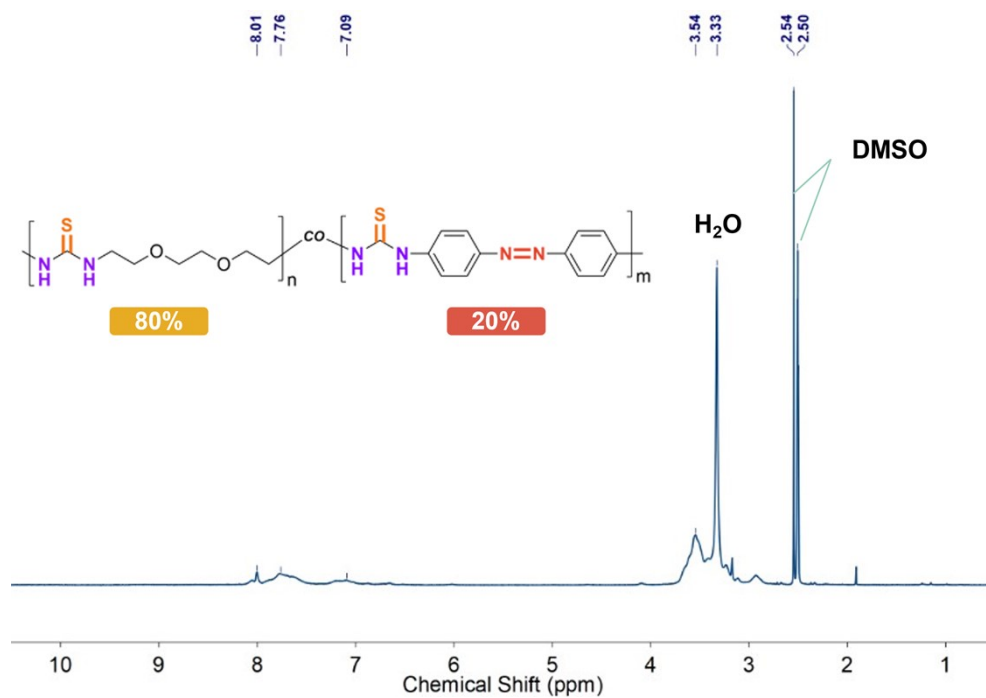


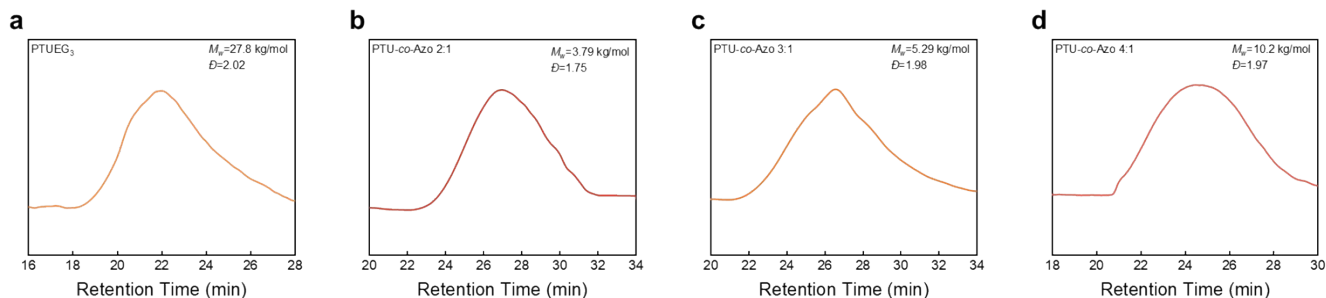
Figure S2. <sup>1</sup>H-NMR spectrum of PTUEG<sub>3</sub>-co-Azo 2:1



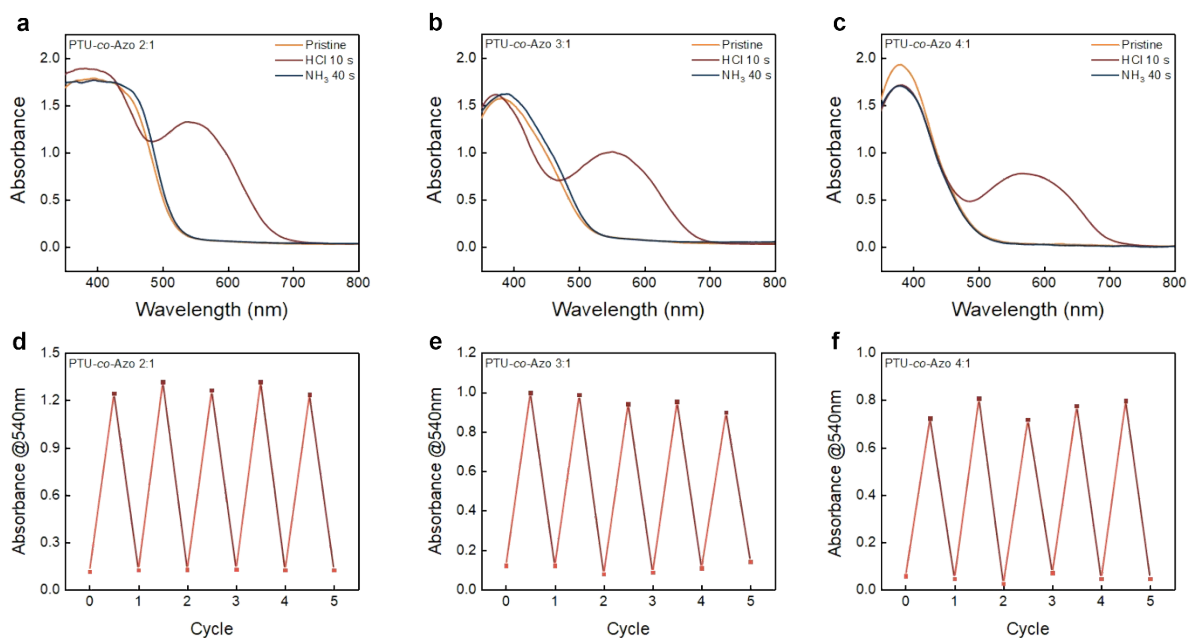
**Figure S3.** <sup>1</sup>H-NMR spectrum of PTUEG<sub>3</sub>-co-Azo 3:1



**Figure S4.** <sup>1</sup>H-NMR spectrum of PTUEG<sub>3</sub>-co-Azo 4:1



**Figure S5.** (a–c) GPC curves of PTUEG<sub>3</sub>-*co*-Azo copolymers with different DA:Azo ratios (2:1, 3:1, and 4:1).



**Figure S6.** (a–c) UV–vis absorption spectra of PTUEG<sub>3</sub>-*co*-Azo films with different TUEG-DA:Azo-DA ratios (2:1, 3:1, and 4:1) upon exposure to HCl vapors (10 s) and NH<sub>3</sub> vapors (40 s). (d–f) Plots of the absorption intensities at 540 nm for PTUEG<sub>3</sub>-*co*-Azo films with different TUEG-DA:Azo-DA ratios (2:1, 3:1, and 4:1) during cycles of exposure to HCl vapors (10 s) and NH<sub>3</sub> vapors (40 s).