

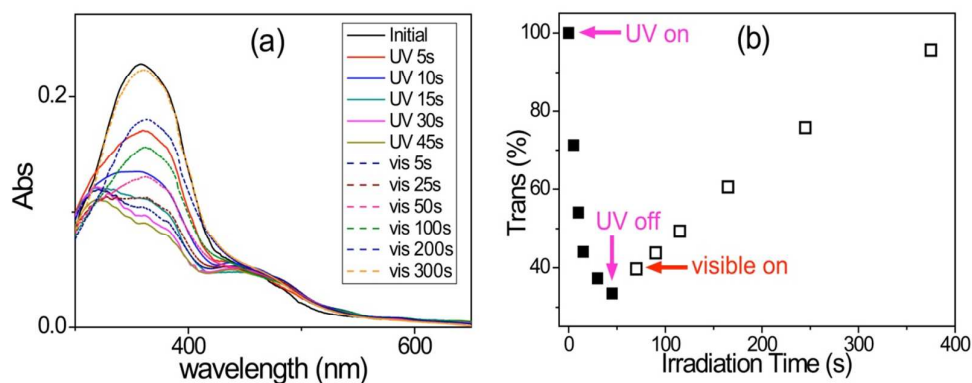
## Supporting Information

### Orientation of Azobenzene Mesogens in Side-Chain Liquid Crystalline Polymers: Interplay between Effects of Mechanical Stretching, Photoisomerization and Thermal Annealing

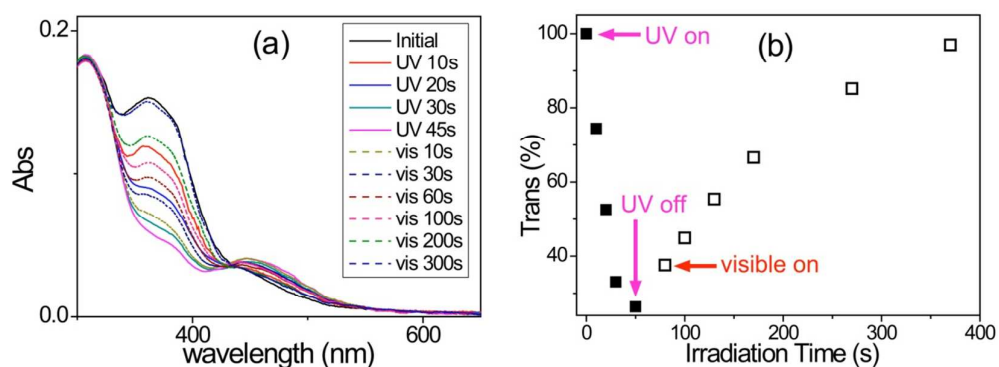
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#### 1. UV-vis Spectra

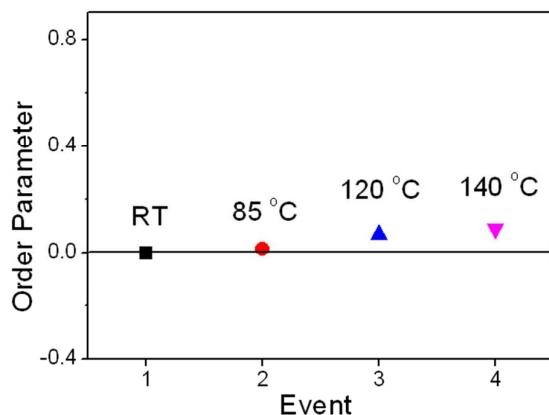


**Fig. S1** (a) UV-vis spectra of PAzMA under UV ( $\sim 50 \text{ mW/cm}^2$ ) and visible light irradiation ( $\sim 5 \text{ mW/cm}^2$ ). (b) Content of the trans isomer versus irradiation time.



**Fig. S2** (a) UV-vis spectra of PAzMA-PBiPh under UV ( $\sim 50 \text{ mW/cm}^2$ ) and visible light irradiation ( $\sim 5 \text{ mW/cm}^2$ ). (b) Content of the trans isomer versus irradiation time.

## 2. Control Test by Casting PAzMA on Pre-stretched PVA film



**Fig. S3** Order Parameter of azobenzene mesogens in PAzMA cast on the surface of a pre-stretched PVA film (draw ratio 3) following different treatments (events): 1) film dried at room temperature, 2) film annealed at 85 °C for 10 min before cooling to room temperature, 3) annealed 120 °C for 10 min before cooling, and 4) annealed at 140 °C for 10 min before cooling. A low-degree orientation was observed for the film annealed in the nematic phase (120 °C) and in the isotropic phase (140 °C). In the latter case, the orientation was developed on cooling through the nematic phase. This result shows a limited orienting power of the surface of stretched PVA film.