Electronic Supplementary Information

Sunlight-driven smart windows with polymer/liquid crystal composites for autonomous control of optical properties

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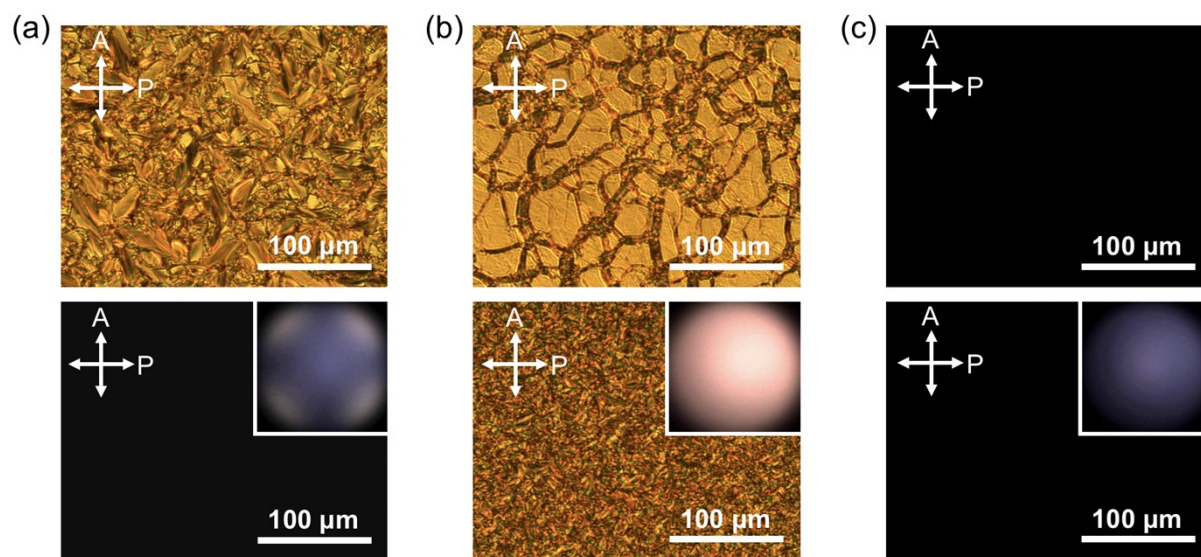
Supplementary Figures

Fig. S1 POM images of a host LC / Azo-2 (5 mol%) mixture in (top panels) planar and (bottom panels) homeotropic alignment cells at (a) 35 ˚C (SmA), (b) 50 ˚C (N*), and (c) 73 ˚C (isotropic). The insets in bottom panels show conoscopic images. P: polarizer, A: analyzer.
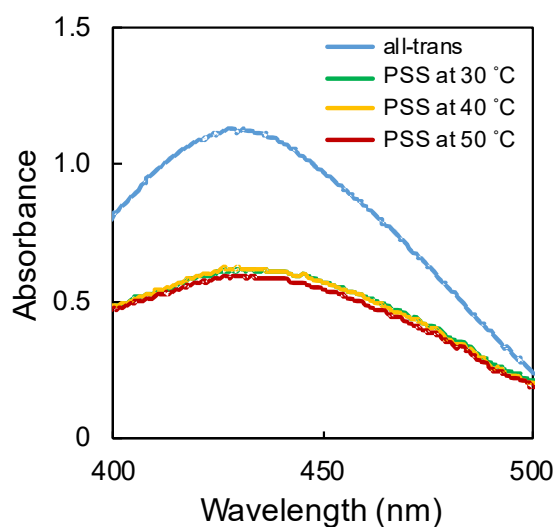

Fig. S2 Absorption spectra of Azo-2 in toluene at photostationary states (PSSs) under irradiation with artificial sunlight at various temperatures.
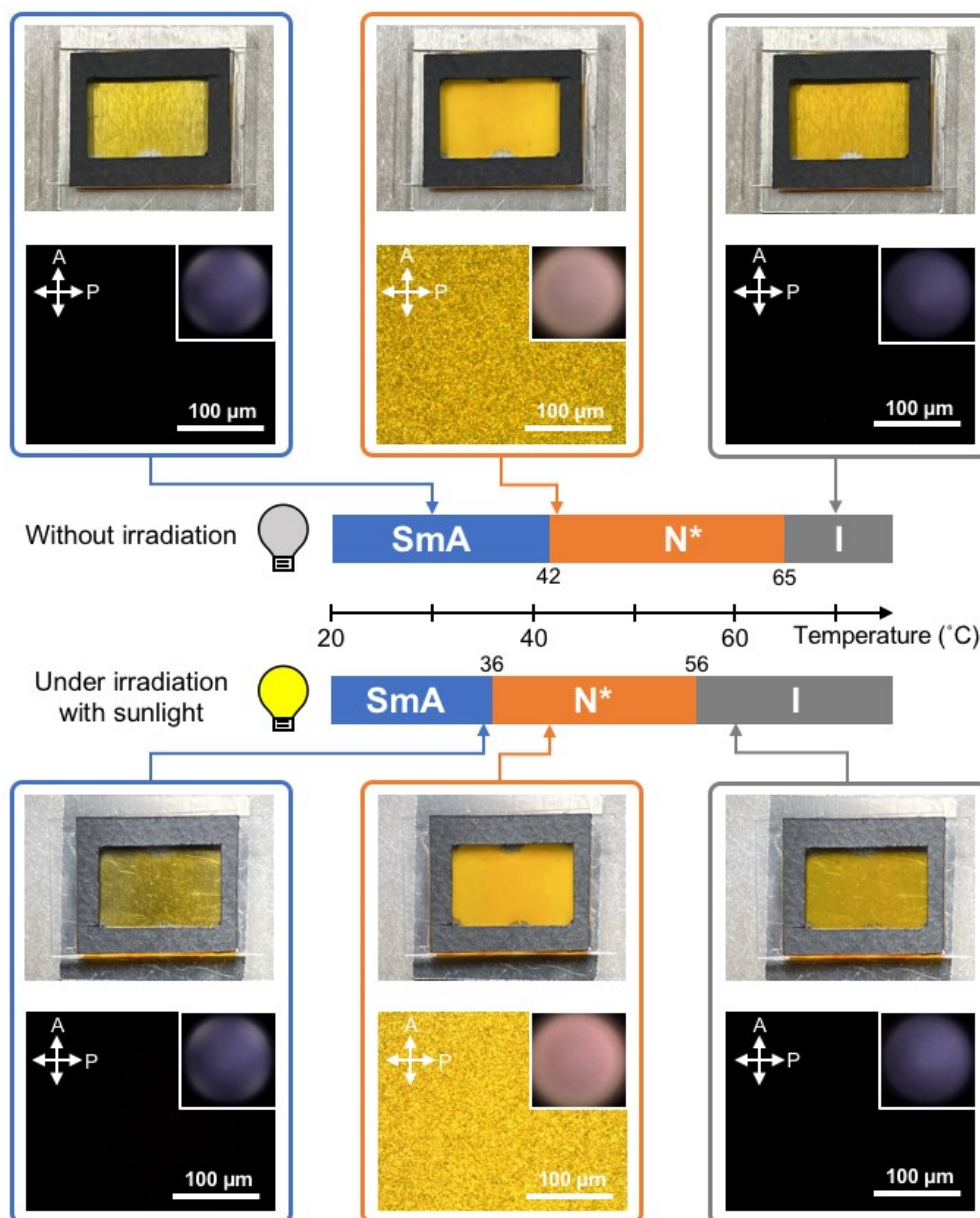
Fig. S3 Appearance and POM images of SW5 in the dark and under irradiation with artificial sunlight at various temperatures. The insets in POM images show conoscopic images. P: polarizer, A: analyzer.
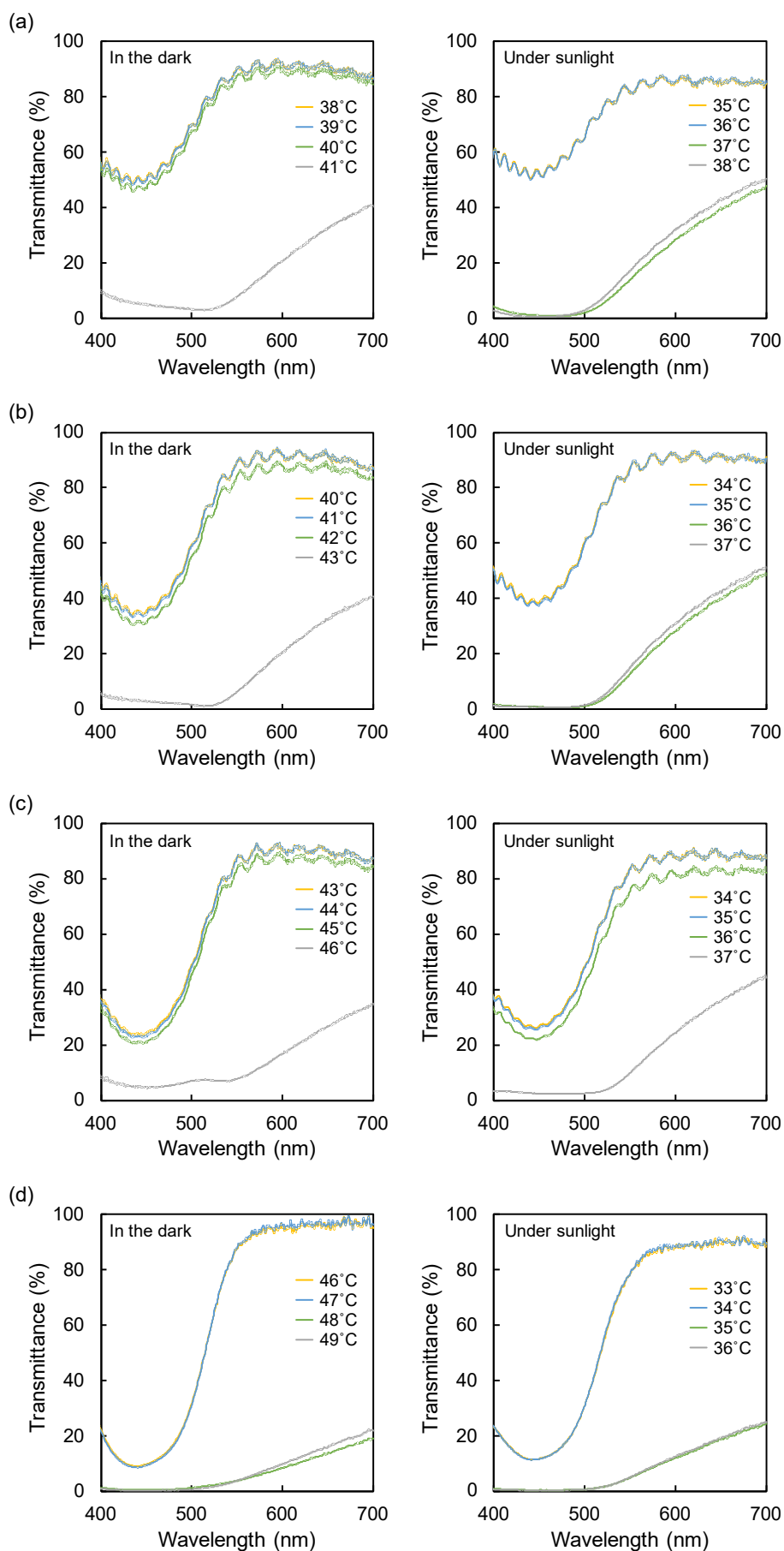
Fig. S4 Temperature dependence of specular transmission spectra of smart windows in the dark and under irradiation with artificial sunlight. (a) SW3, (b) SW5, (c) SW7, (d) SW10.
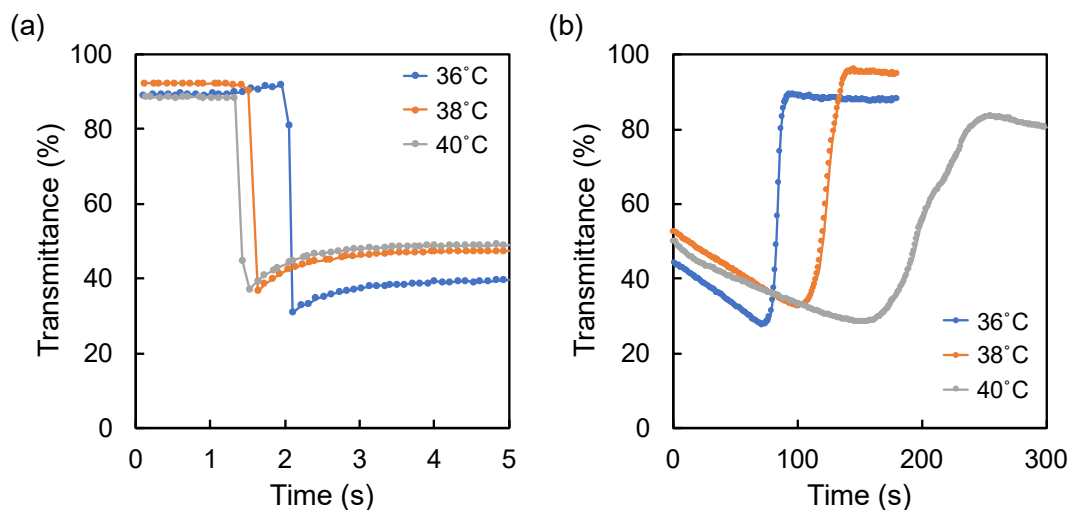
Fig. S5 Temperature dependence of response time of SW5. (a) Change in specular transmittance at 635 nm under exposure to simulated sunlight. (e) Restoration of specular transmittance at 635 nm in the dark.

Supplementary Movie

Movie S1 Change in transparency of SW5 preheated at 38 ˚C upon exposure to artificial sunlight.