

Description of additional supplementary files

Supplementary Movie 1 : Sequence of frames based on transmission images of a $33.8 \times 33.8 \mu\text{m}^2$ area of azo-SEBS composite, decorated with $1 \mu\text{m}$ spaced, $1 \mu\text{m}$ wide pillars, and residing on a PDMS slab. Frames are acquired before and after illumination steps with alternating horizontal linear and circular polarization of the laser beam. Wavelength $\lambda = 561 \text{ nm}$, intensity $I = 5.02 \text{ W}\cdot\text{cm}^{-2}$, illumination step time $t = 15 \text{ s}$.

Supplementary Movie 2 : Sequence of frames showing transmission images of a thin (thickness: $5 \mu\text{m}$) suspended azo-SEBS membrane whose center region is illuminated by a laser beam (diameter: $200 \mu\text{m}$). Frames are acquired before and after illumination steps with alternating horizontal linear and circular polarization of the laser beam. Wavelength $\lambda = 532 \text{ nm}$, intensity $I = 2.6 \text{ W}\cdot\text{cm}^{-2}$, illumination step time $t = 15 \text{ s}$.

Supplementary Movie 3 : Sequence of frames based on scattered laser beam images of a $33.8 \times 33.8 \mu\text{m}^2$ area of pure azopolymer, decorated with $1 \mu\text{m}$ spaced, $1 \mu\text{m}$ wide pillars, and residing on a PDMS slab. Frames are acquired before and after illumination steps with alternating horizontal linear and circular polarization of the laser beam. Wavelength $\lambda = 561 \text{ nm}$, intensity $I = 5.02 \text{ W}\cdot\text{cm}^{-2}$, illumination step time $t = 15 \text{ s}$.

Supplementary Movie 4 : Movie showing the smooth rotation of the bending axis of a circular azo-SEBS membrane patch placed on a needle, exposed to a $\lambda = 532 \text{ nm}$ laser beam impinging on the sample from the top (zaxis), with an intensity $I = 1 \text{ W}\cdot\text{cm}^{-2}$, and with continuously rotating polarization (green arrow).

Supplementary Movie 5 : Movie showing an azo-SEBS membrane patch undergoing deformation sequences during top illumination with a laser beam ($\lambda = 532 \text{ nm}$, $I = 1 \text{ W}\cdot\text{cm}^{-2}$). Polarization (green arrow) is altered in discrete steps, which are repeated in water, in air, and in water again.

Supplementary Movie 6 : Trapezoidal azo-SEBS membrane glued to a rigid boundary constraint undergoing deformations during top illumination (incidence direction: white arrow, $\lambda = 532 \text{ nm}$, $I = 1 \text{ W}\cdot\text{cm}^{-2}$) with polarization (green arrow) varied both in discrete steps and continuously.