

Supplementary Information

Direct observation of athermal photofluidisation in azo-polymer films

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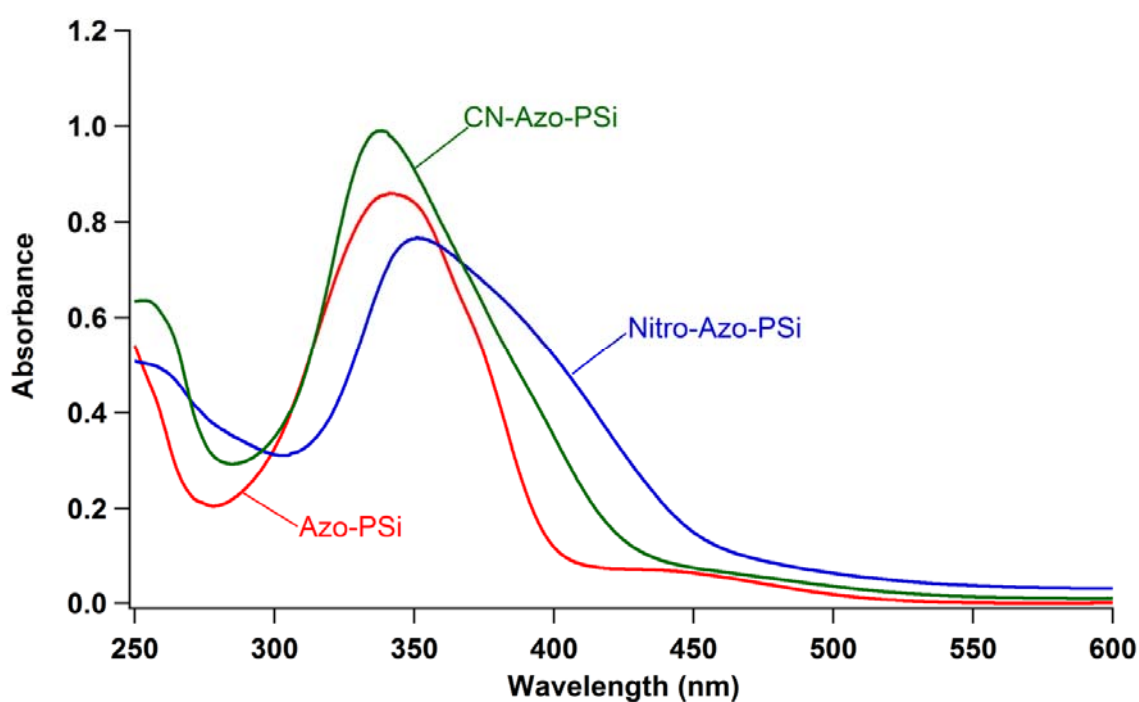


Figure S1. UV-VIS absorption spectra for the synthesized azo-polysiloxanes.

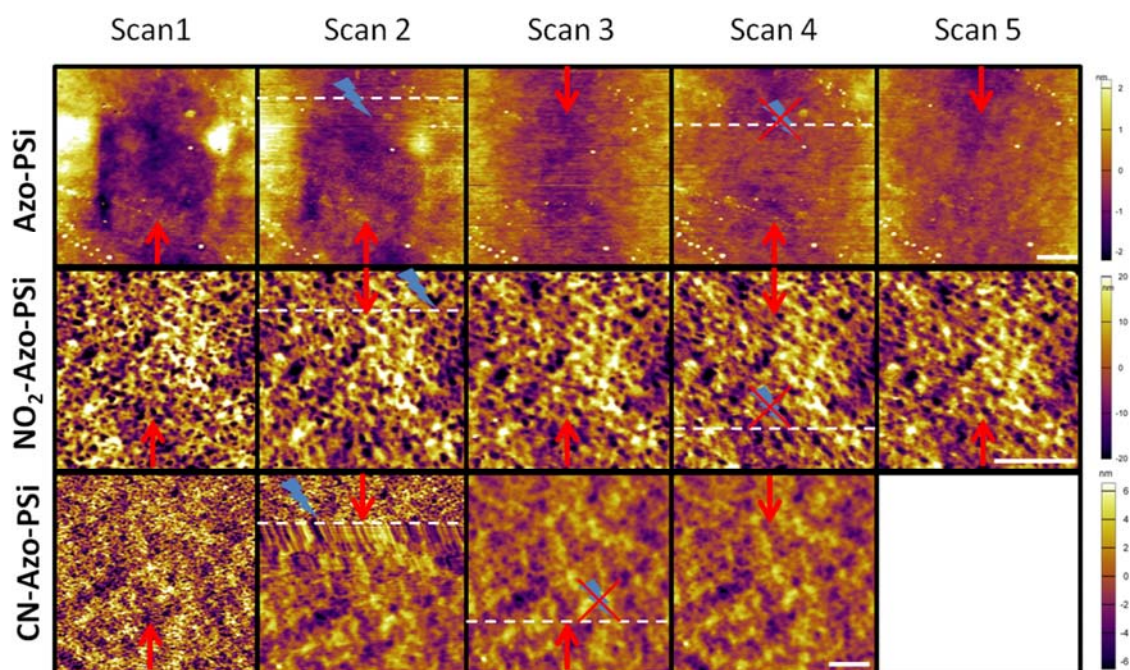


Figure S2. AFM micrographs (height) of the synthesised polymer films. Red arrows indicate the direction of scan, the blue symbols represent UV irradiation and the white dotted lines indicate the beginning of the end of irradiation. All scans were performed on the same surface. White scale bars are 2 μm .

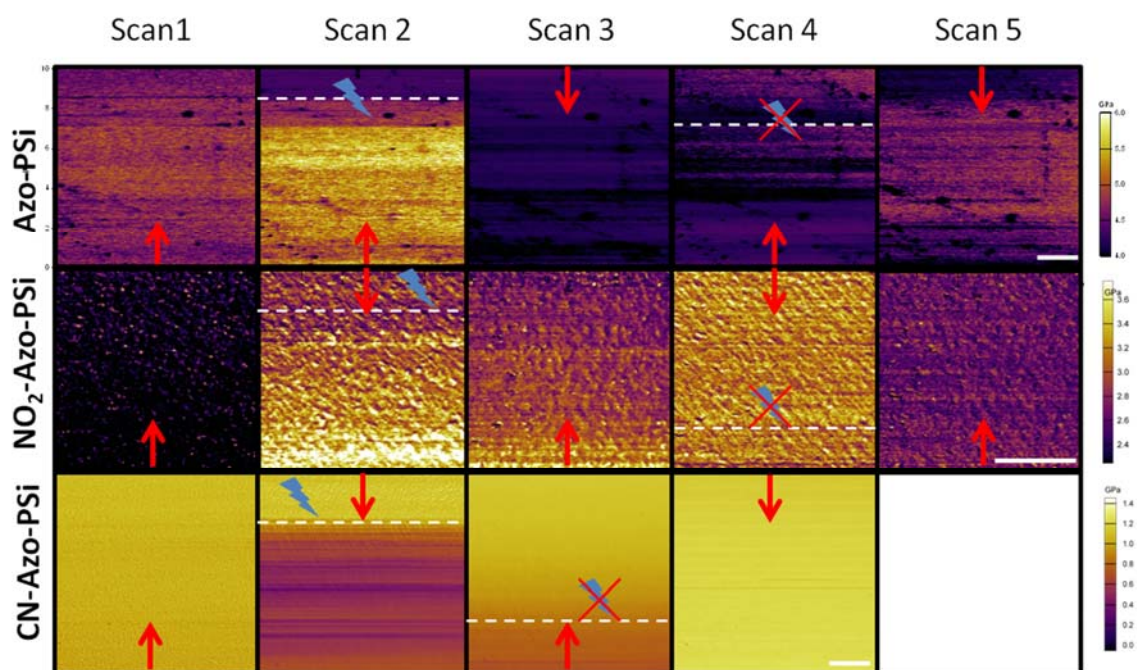


Figure S3. AFM micrographs (Young's modulus) of the synthesised polymer films. Symbols are as above.

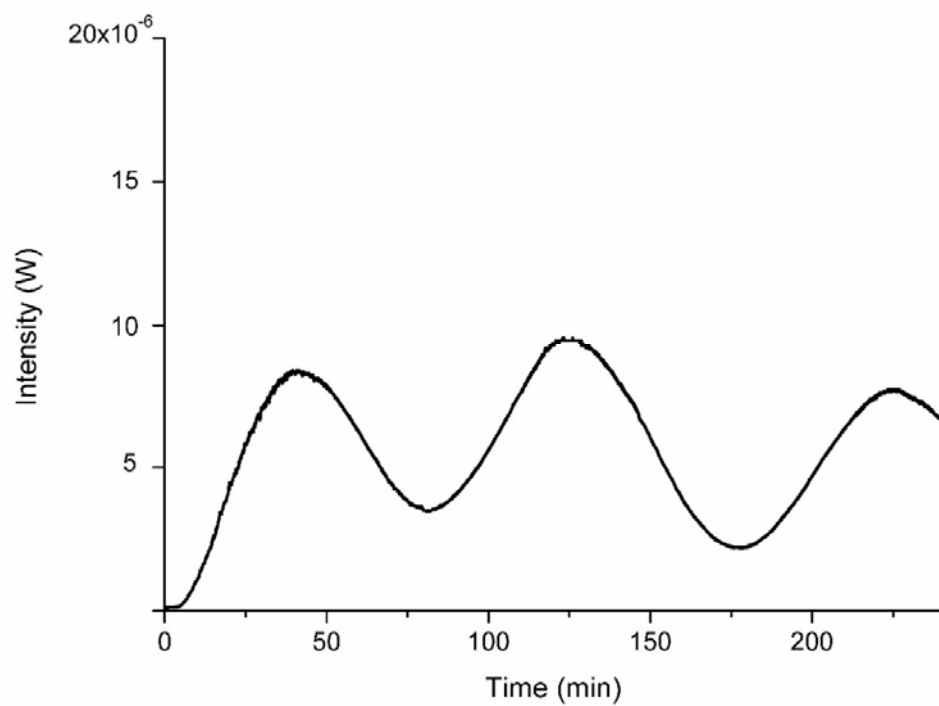


Figure S4. Diffraction curve reflecting the formation and erasure of the surface relief of a film corresponding to NO₂-Azo-Psi polymer after 4 hours of irradiation (film thickness 1140 nm)

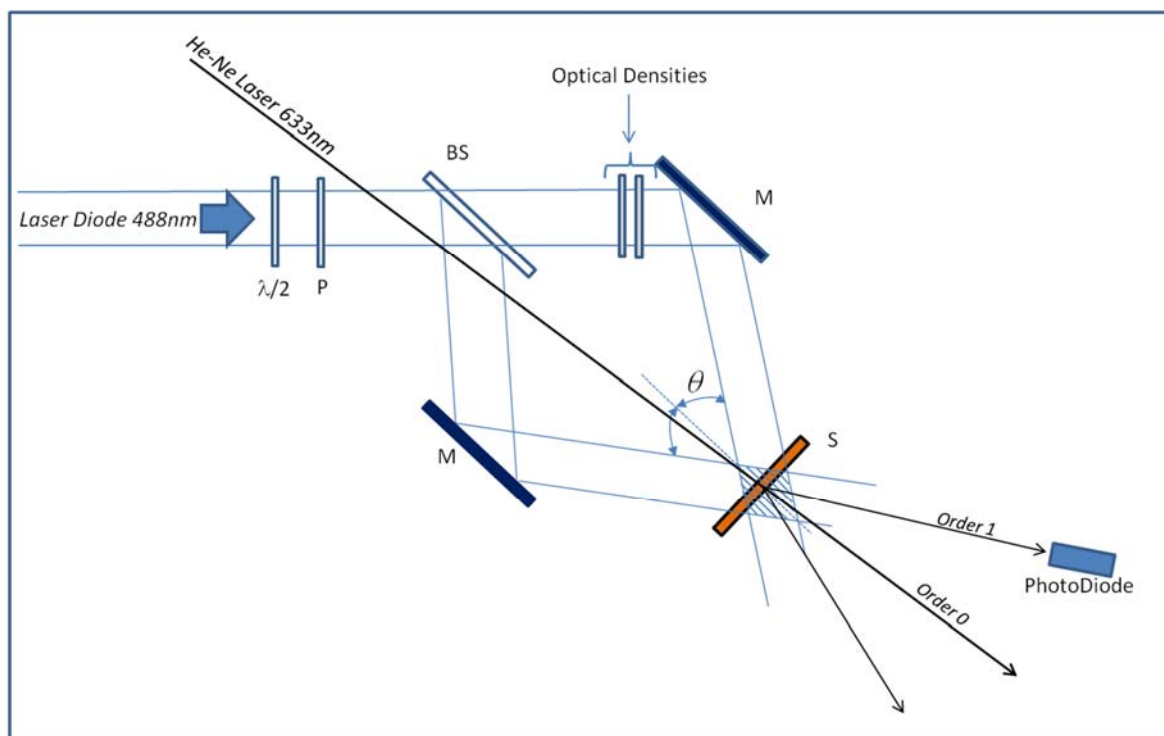


Figure S5. The half-wavelength plate ($\lambda/2$) is employed to convert the initial vertical polarization of the laser diode beam into a horizontal polarization. The polarizer (P) axis is set horizontally. The laser beam is separated by a beam splitter (BS) in two beams which are superposed onto the film surface (S) after reflection onto the two mirrors (M) to produce the interference pattern. Also represented with the 0th order helium-neon laser beam corresponding to the beam transmitted by the sample, are the ± 1 diffraction orders of the probe laser. The interference pattern is shown in the insert.

Table S1. Evolution of RMS roughness extracted from AFM micrographs height images

	RMS ₁ (nm)	RMS ₂ (nm)	RMS ₃ (nm)	RMS ₄ (nm)	RMS ₅ (nm)
Azo-Psi	1.0	0.8	0.6	0.6	0.6
NO2-Azo-Psi	11.5	10.3	9.6	9.4	9.3
CN-Azo-Psi	3.1	2.3	1.7	1.7	