SUPPORTING INFORMATION

Contactless control of local surface buckling in photoaligned gold/liquid crystal polymer bilayers

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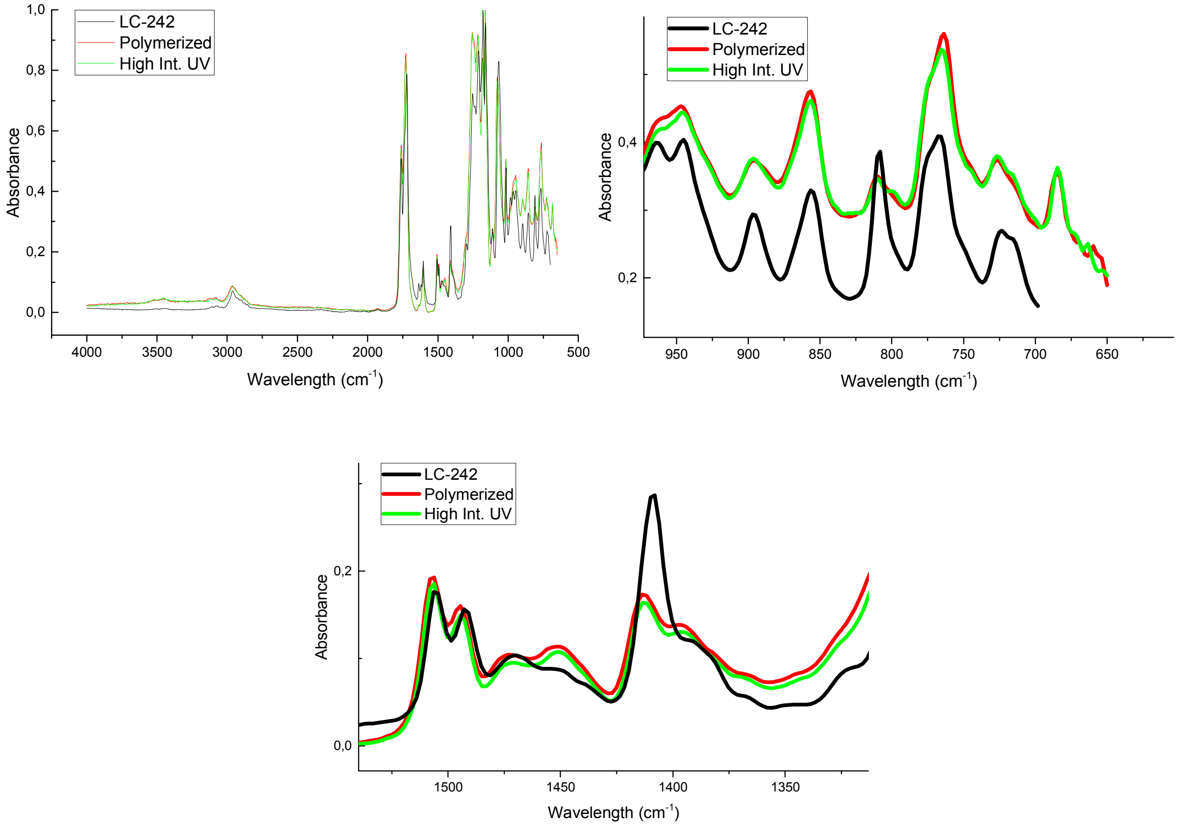

Figure S1. (Top left) IR spectra of pure LC-242, polymerized LC-242 layer and after high intensity UV light. (Top right) IR spectra of pure LC-242, polymerized LC-242 layer and LC-242 layer after high intensity UV light exposure (1000-650 cm^{-1}). (Bottom) IR spectra of pure LC-242, polymerized LC-242 layer and LC-242 layer after high intensity UV light exposure (1550-1300 cm^{-1}). The primary peaks corresponding to the acrylates are around 810 and 1410 cm^{-1}: these peaks are absent in the spectra in the UV-exposed LC networks.

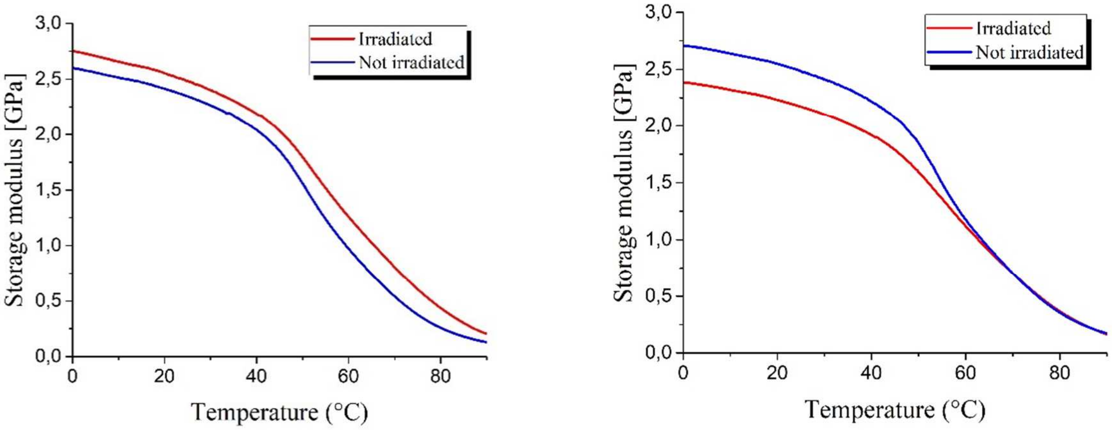

Figure S2. Measured storage modulus of representative LC films (left) parallel and (right) perpendicular both before (blue) and after (red) after exposure to 10 minutes of high intensity UV light (9.2-10.5 J/cm^2). The film measured demonstrated a somewhat modest degree of order, resulting in somewhat similar moduli measured for the two directions, parallel and perpendicular to the liquid crystal director.

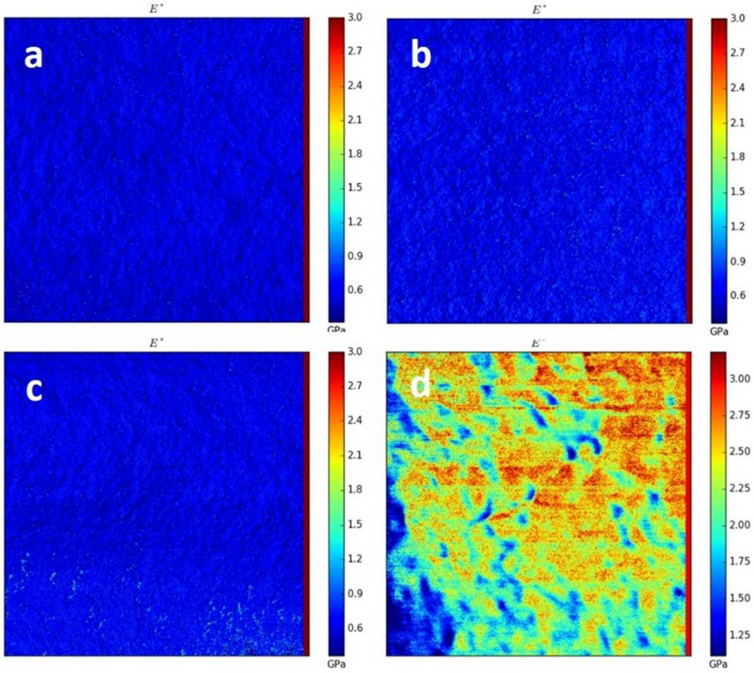

Figure S3. DMT modulus mapping of (a) non-illuminated and (b) illuminated area of film exposed to 1.9 J/cm^2; (c) non-illuminated and (d) illuminated area of film exposed to 18J/cm^2. The scan area is 2.0 µm x 2.0 µm.

Table S1. Measured surface modulus as a function of UVA light exposure

Sample	I dose (J/cm^2)	E' (GPa)	Δ E' (GPa)
1	0.0	0.570	0.025
	1.9	0.610	0.030
2	0.0	0.605	0.028
	5.9	0.725	0.022
3	0.0	0.610	0.032
	9.3	0.910	0.050
4	0.0	0.630	0.040
	18.0	2.660	0.200

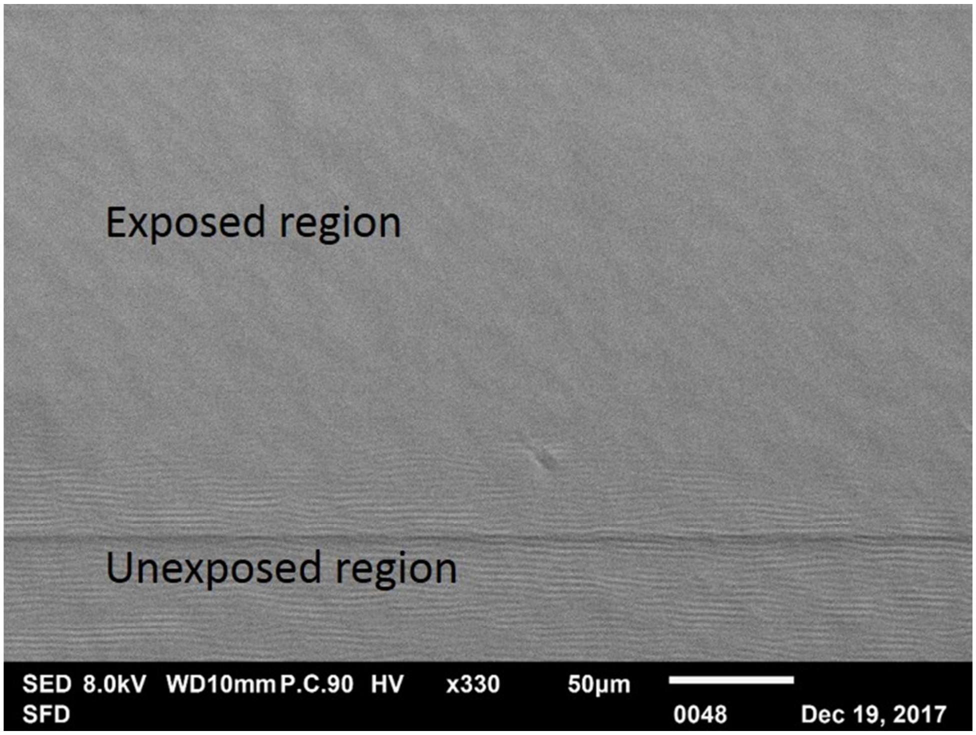

Figure S4. SEM image of the surface of the gold-topped LC film at the boundary region between UV exposed (top) and unexposed (bottom) areas after heating of the sample and generation of the wrinkles.