Electronic Supplementary Material (ESI) for Soft Matter.
This journal is © The Royal Society of Chemistry 2015

Supporting Information

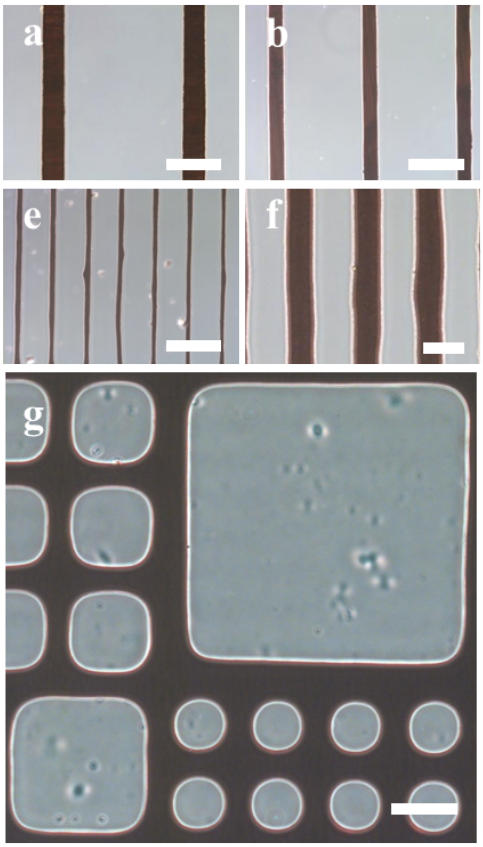

Table h

	$2a$(μm)	d_2(μm)
B50	429	80
B70	281	57
B100	197	56
B150	130	34
B200	98	24
B300	48	34
S100	213	37
S200	103	21
S300	63	17
R400	39	20

Figure S1. Optical images (a-g) and the corresponding information (h) of the exposed area (D_1) and unexposed area (D_2) of different morphologies of Cu grids: (a) 50 mesh-sized striped hole (B50); (b) 70 mesh-sized striped hole (B70); (c) 100 mesh-sized striped hole (B100); (d) 150 mesh-sized striped hole (B150); (e) 200 mesh-sized striped hole (B200); (f) 300 mesh-sized striped hole (B300); (g) simultaneously containing 100, 200, 300 mesh-sized square hole (S100, S200, S300) and 400 mesh-sized round hole (R400). Scale bars in f and g correspond to 50 μm, while the rest of scale bars correspond to 200 μm.

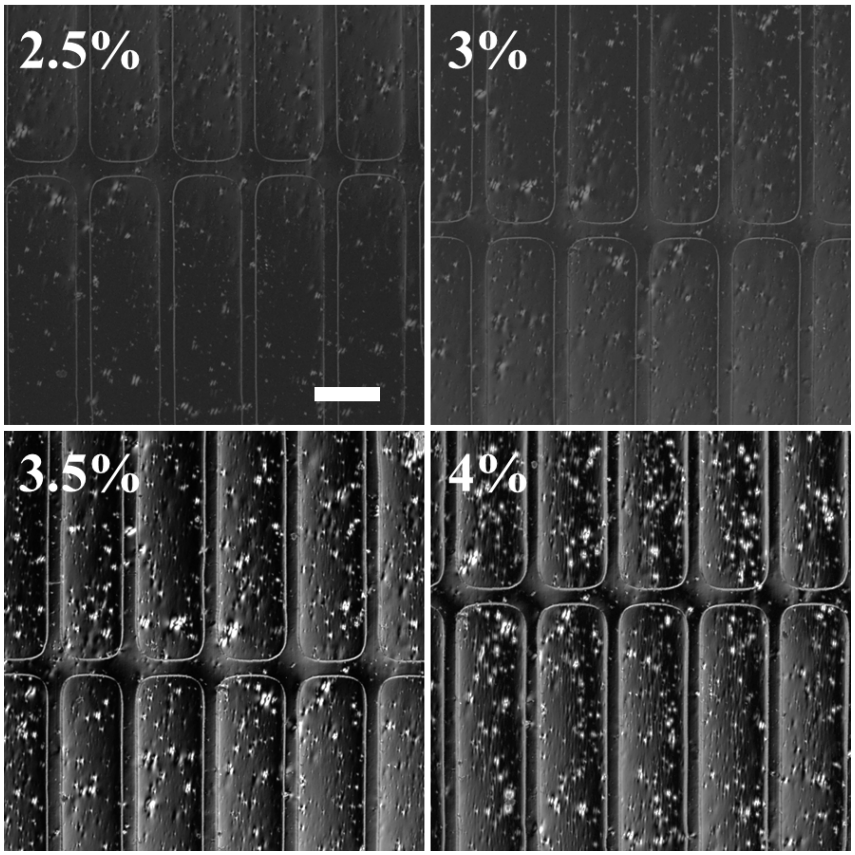

Figure S2. 3D laser microscope images of the surface morphological evolution of D_1 regions from B100 with increasing relief of the pre-strain after 30 min' selective OP exposure. Scale bar equal to 200 μm is applied in all images.

The 3D laser microscope images show that the critical wrinkling strain in the D_1 regions from B100 after t_{OP}=30 min is ~3.5%, which is well consistent with the characterization result from optical microscope (~3.5%, Fig. 2d$_4$).

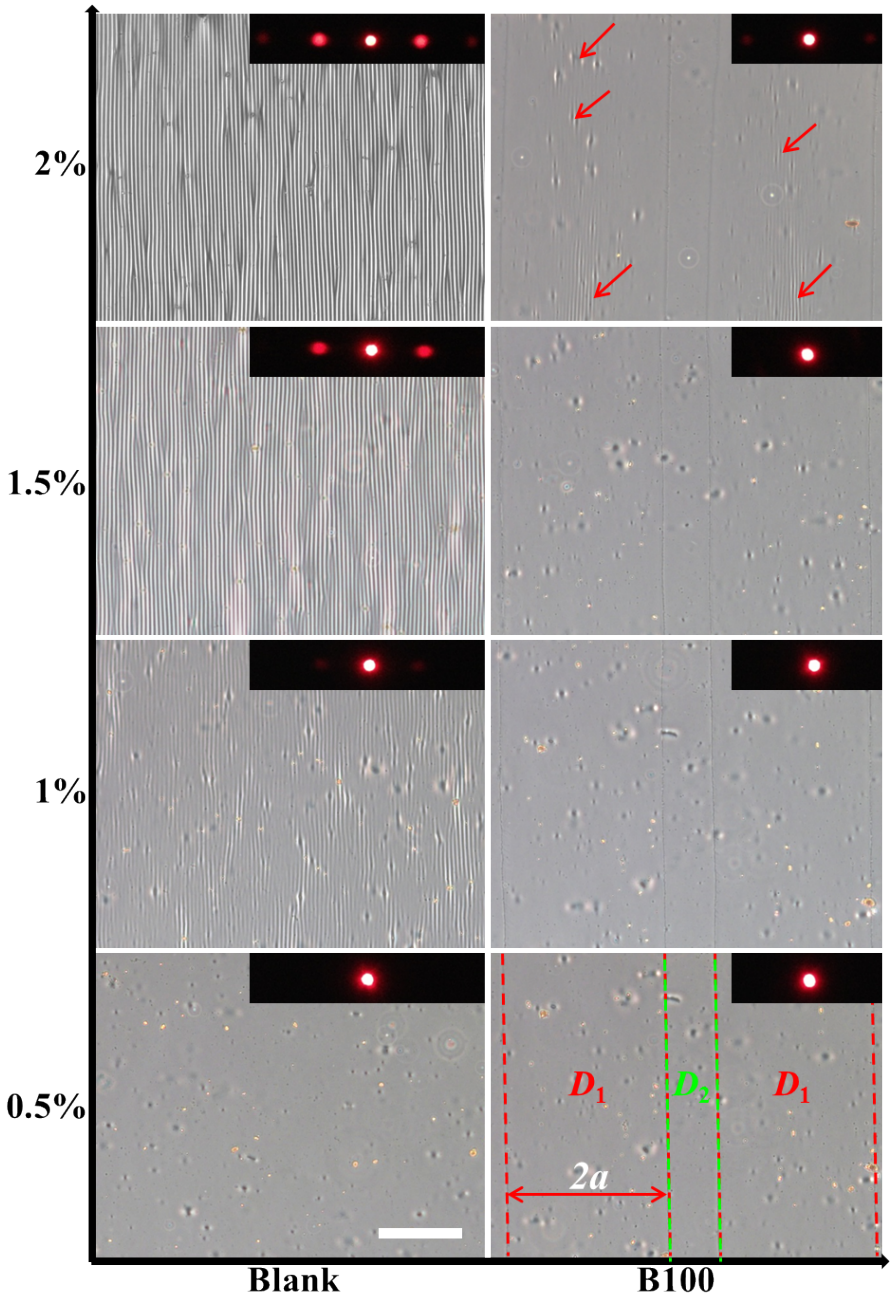

Figure S3. Optical microscope images of the surface morphological evolution of the blank region and D_1 regions from B100 with increasing relief of pre-strain after 10 min' selective OP exposure and the respective diffraction pattern obtained through laser irradiation. Scale bar equal to 100 μm is applied in all images.

It can be seen that the evident diffraction patterns through laser irradiating the blank region and D_1 regions just appear at the compressive strain of 1% and 2%, respectively, indicative of the onset of surface wrinkling. Thus the diffraction pattern characterization results are also consistent with the optical microscope characterization results shown in Fig. 3.

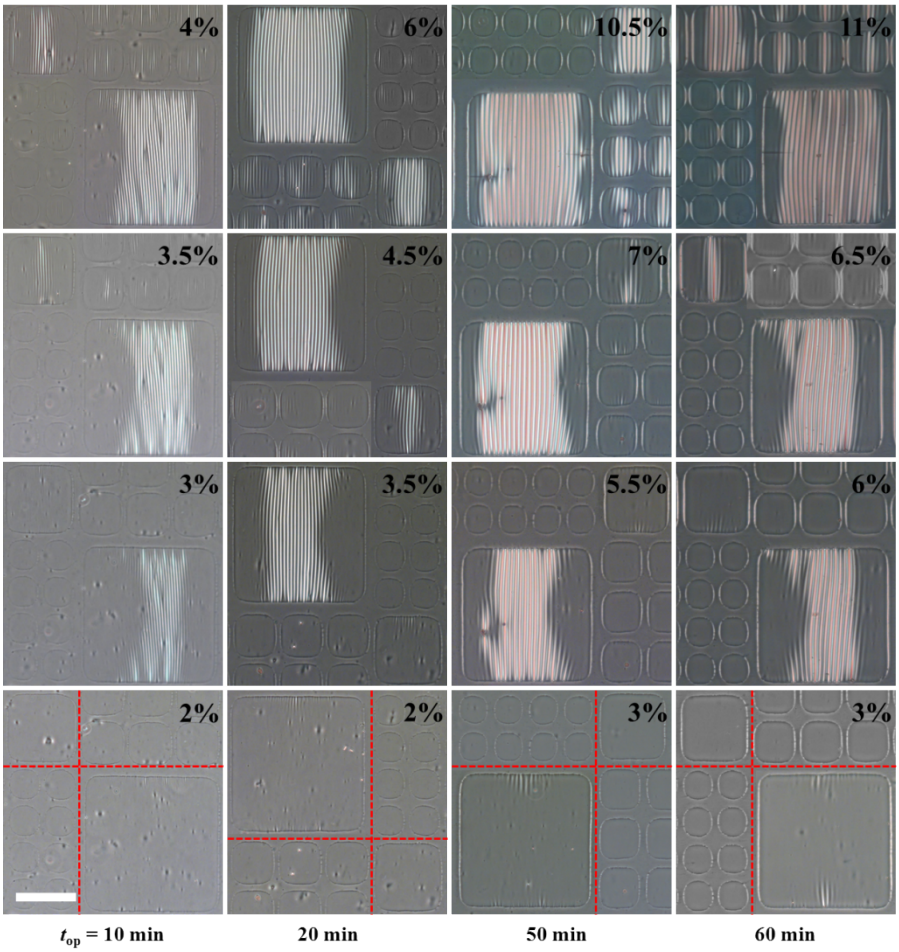

Figure S4. Optical images of the surface morphological evolution of D_1 regions with increasing relief of pre-strain after different t_{OP} in the case of composite Cu grid applied. Each image from the same composite Cu grid is divided into four parts by the red dotted lines: S100, S200, S300, and R400. Scale bar equal to 100 μm is applied in all images.