

## Supplementary Information

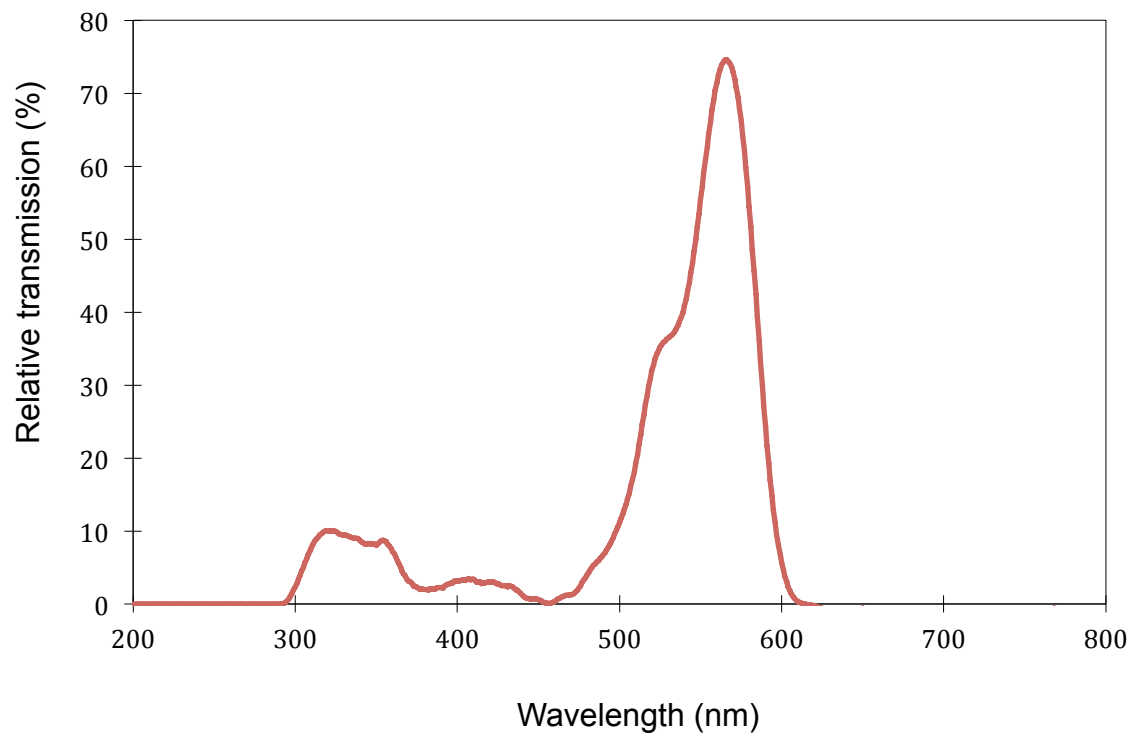
### **Guided wrinkling in swollen, pre-patterned photoresist thin films with crosslinking gradient**

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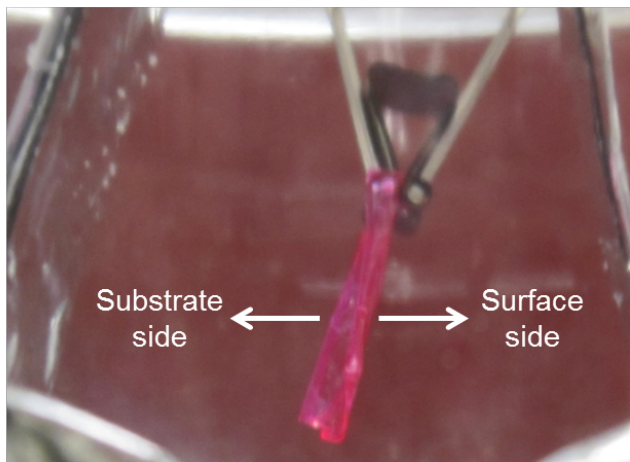
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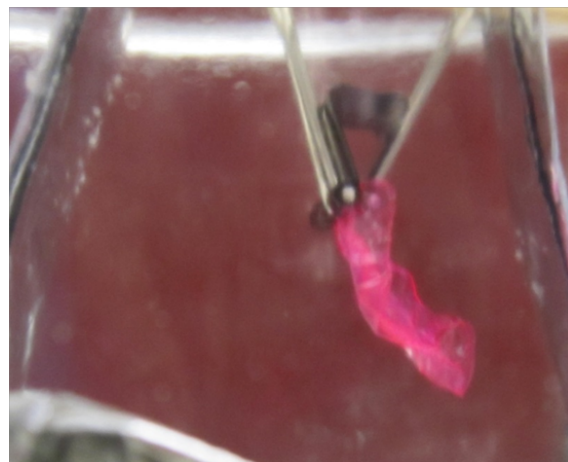


**Figure S1.** The relative transmittance of dyed SU-8 (3.8 $\mu$ m, 6.26 mM rhodamine B) vs. a pure SU-8 film.

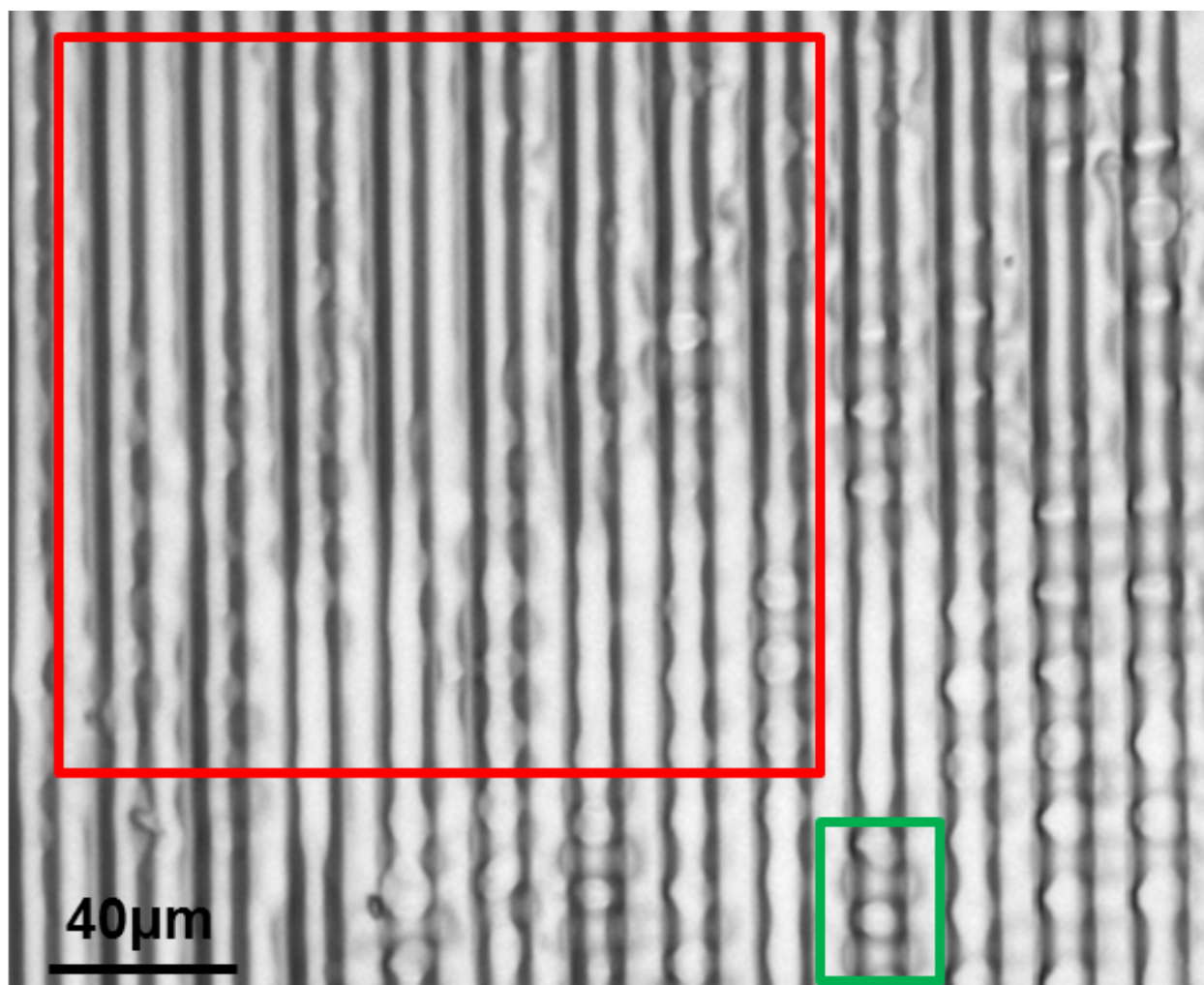
a)



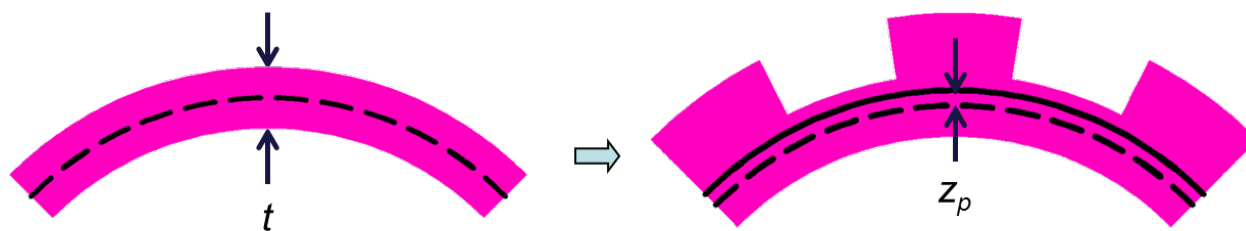
b)



**Figure S2.** Curling of a free-standing dyed SU-8 film ( $3.8\mu\text{m}$ ). (a) As-detached film. (b) Sample shown in (a) was exposed to THF vapor for 16 h.



**Figure S3.** Edge undulation (highlighted in red) and premature wrinkle on the SU-8 pre-patterns ( $p=20\ \mu\text{m}$ ,  $h=800\ \text{nm}$ ) after swollen in THF for  $\sim 30$  min. The deformation in the valley region caused by the wrinkle formation can also be observed (highlighted in green).



**Figure S4.** Schematic of the shifting of neutral plane for bending and the parameters,  $t$ : the thickness of a flat plate;  $z_p$ : the shifting distance of the neutral plane.