## **Supporting information**

## A Bioinspired Flexible Film Fabricated by Surface Tension-assisted Replica Molding for Dynamic Control of Unidirectional Liquid Spreading

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## **Supplementary Figures**



**Figure S1.** The particle size distribution of SBS was measured by dynamic light scattering method(DLS). The results of volume distribution show that the average particle size is 1.5nm.



**Figure S2.** The swelling behavior of PDMS in toluene. a) Original size of PDMS. b) Complete swelling of PDMS in toluene. The swelling ratio is 30%. c) After volatilization of toluene, PDMS recovered to its original size.



Figure S3. The SBS surface be totally wet by ethanol. Contact angle  $\theta$  of toluene on SBS is 8°.



**Figure S4.** Optical microscopic images of the artificial peristome film at a stretch ratio of 100%. The destroyed arch-shaped microcavity marked by the red dotted line.



Figure S5. Three-dimensional equal scale model of the artificial peristome film surface.

The model length is 32mm and the microcavity wedge angle is 20°.