

## *Supporting Information*

### **Anisotropic wetting and superhydrophobicity on holographically- featured 3D nanostructured surfaces**

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#### **This supplementary information includes**

Captions of Supplementary Video Clips (Video S1-S4)

Supplementary Figures (Figure S1-S3)

**Video S1. Anisotropic wetting of the as-prepared woodpile structures.** This video shows the rotation of a drop around the z-axis. The contact angle (CA) measured from the direction orthogonal to the top rods is defined as  $\theta_x$  ( $= 85^\circ$ ) and from the direction to parallel to the top rods is  $\theta_y$  ( $= 70^\circ$ ). From these two CAs measurement, the wetting anisotropy,  $\Delta\theta$  ( $\theta_x - \theta_y = 15^\circ$ ), is defined.

**Video S2-S3. Investigating the wetting state of the droplet on the 3D woodpile surface.** A 0.5 (Video S2) and 0.3  $\mu\text{L}$  (Video S3) water droplet placed on an as-prepared SU-8 woodpile surface shows a stable and static wetting state. The video recorded from the direction to parallel to the top rods.

**Video S4. Water affinity test of the ultrahydrophobic surfaces with advancing and**

**receding CAs of 170°**. This video shows the receding contact line pinning due to the slight water affinity of the SU-8 nanopatterned surface with a tip size of 30 nm.

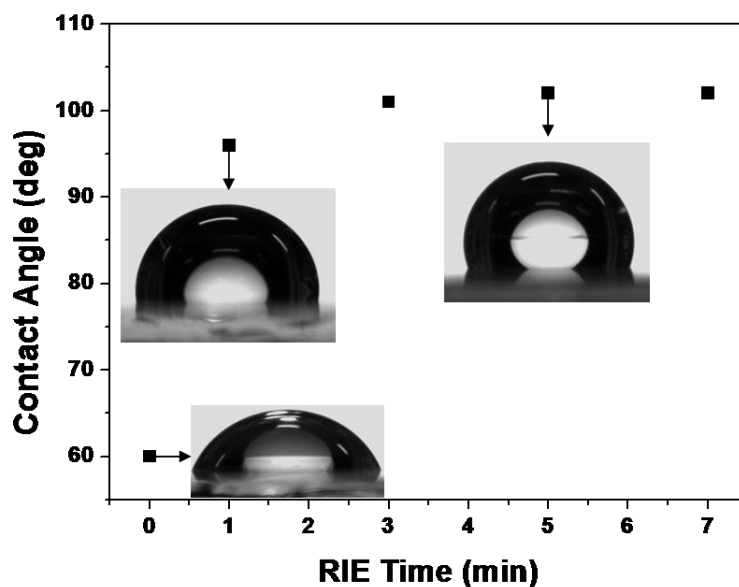


Figure S1. Water contact angle measurements of the cross-linked SU-8 smooth surfaces as a function of the RIE time.

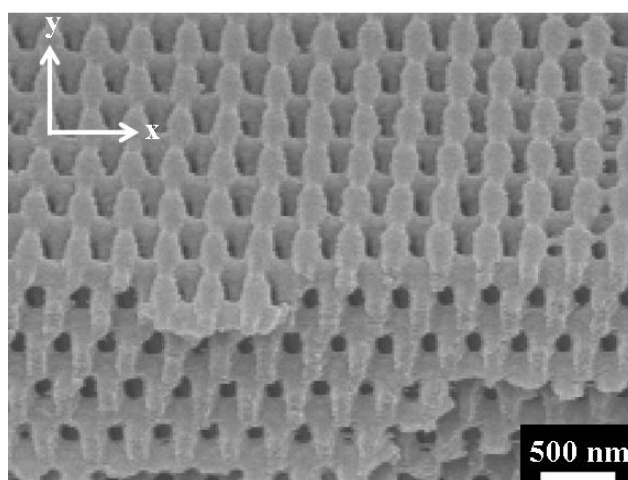


Figure S2. A tilted (45°) SEM image of as-prepared woodpile structures with a lattice constant of 350 nm. The 200 nm rods are arranged with y axis parallel on the top layer.

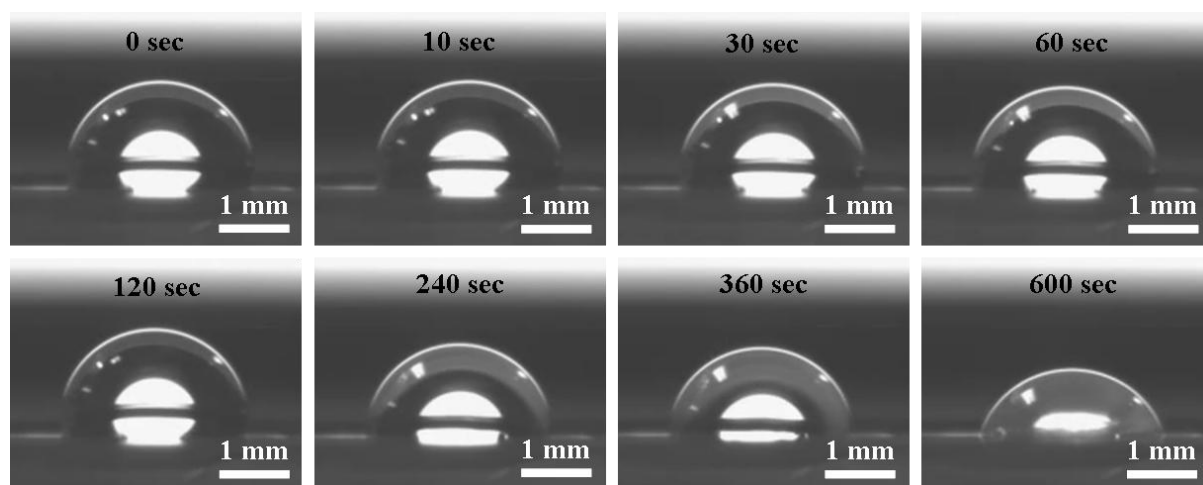


Figure S3. Sequence images of a 1  $\mu\text{L}$  water droplet on an as-prepared SU-8 woodpile surface according to time.