Supporting Information

Air Bubble Bursting Effect of Lotus Leaf

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Figure S1. Microscope photographs of silvery layers of air films on the lotus leaf surface, which was positioned horizontally inside water environment about 3 mm deep, at different immersion time (t). (a) Microscope photographs of the lotus leaf surface when it was just immersed into water, *i.e.* $t = 0$. The bright areas were the silvery layer of air films trapped on lotus leaf surface. The area of (a) in red pane with solid line was magnified about 3 times and illustrated in (b). Photograph (c) shows the same region of photograph (b) after the lotus immersion into water for 30 min.

The lotus leaf trapped silvery layers of air films to avoid biofouling in water as their top surfaces were immersed into water. Here, three photographs illustrate the different states of silvery layers in water environment at different immersion time. The bright areas shown in photographs were the silvery layer of air films on lotus leaf surfaces. The area of (a) in the red pane has been magnified about 3 times and is shown in (b). It was easily to recognize that, at the moment of the lotus leaf immersion, there were approximately random air films between water and the papillae (Fig. S1a and S1b). After immersing for 30 minutes, the air was transported between papillae or/and over the lotus leaf surface to

form well-proportioned an air film, as shown in Fig. S1c. Furthermore, the air film could be stabilized within the roughness papillae for more than 3 hours.

Figure S2. A typical series of optical images showing air bubbles final state and their air bubble CAs on four kinds of superhydrophobic surfaces with different size parameters, such as height, bottom width and spacing.