Electronic Supplementary Material (ESI) for RSC Advances.

Flexible superhydrophobic paper with a large and stable floating capacity

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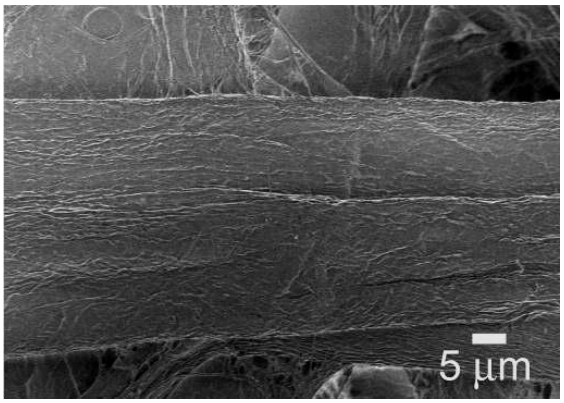

Fig. S1 SEM image of the single fiber on the uncoated paper.

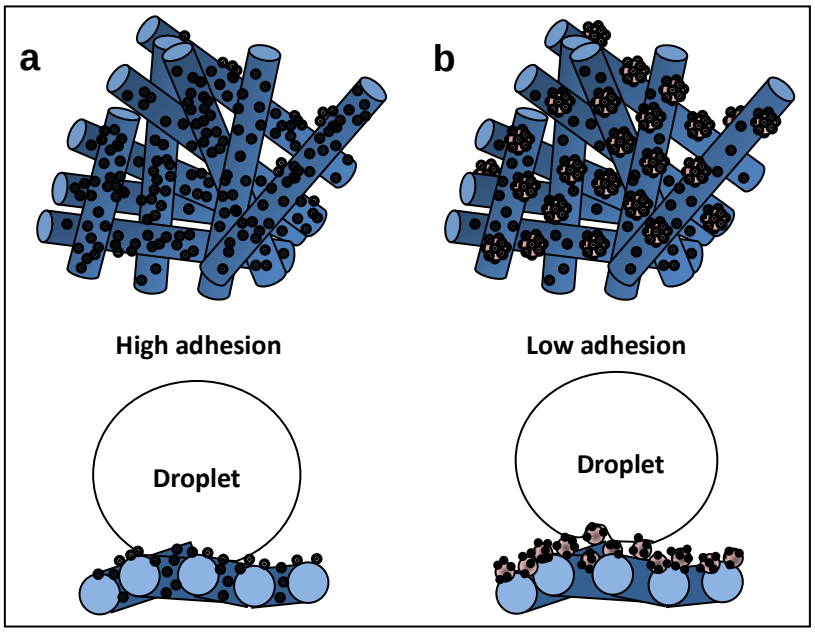

Fig. S2 Schematic of a droplet being deposited on the superhydrophobic paper with nano-sized (a) and hierarchical structures (b), respectively.

Note that a droplet deposited on paper fibers with nano-sized particles is at the Wenzel state. But hierarchical (micro/nano) structures of PS-co-PMMA coating provide a discontinuous contact line for a droplet, which suggests its low adhesion.

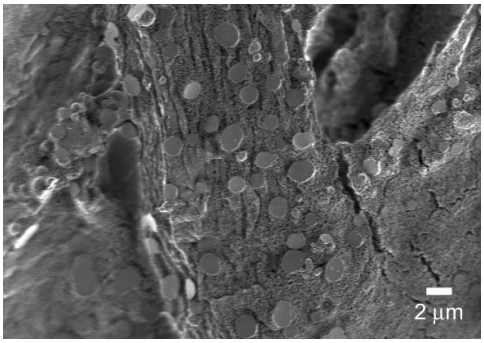

Fig. S3 SEM image of superhydrophobic paper after being pressed by one's first finger.

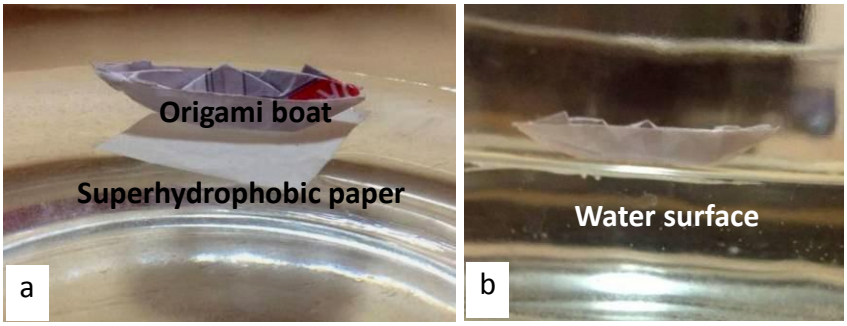

Fig. S4 Plan (a) and horizontal view (b) of an origami boat floating on a piece of superhydrophobic paper.

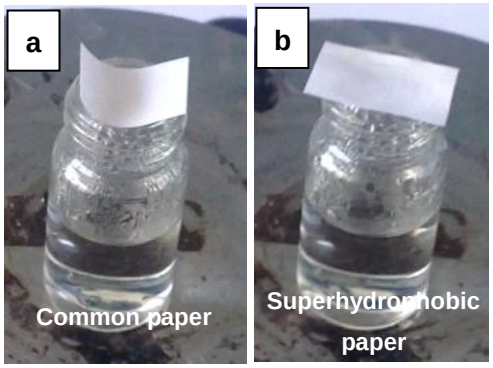

Fig. S5 Optic images of common paper and superhydrophobic paper after it contacts water vapor.

Interestingly, as-prepared superhydrophobic paper has good water vapor resistance. To show it, an open bottle with water was heated through a heating platform. A piece of common paper or superhydrophobic one was placed on the opening of the bottle. It is seen that common paper was curved once it contacted the water. In contrast, the superhydrophobic paper still stayed changeless, showing a good vapor resistance.

Video S1 State of common paper with an origami frog when water is added to the empty vessel.
Video S2 State of superhydrophobic paper with an origami frog when water is added to the empty vessel.
Video S3 Floating stability of superhydrophobic paper on water when we shake the vessel with water.