

Stretchable superhydrophobic elastomers with on-demand tunable wettability for droplet manipulation and multi-stage reaction

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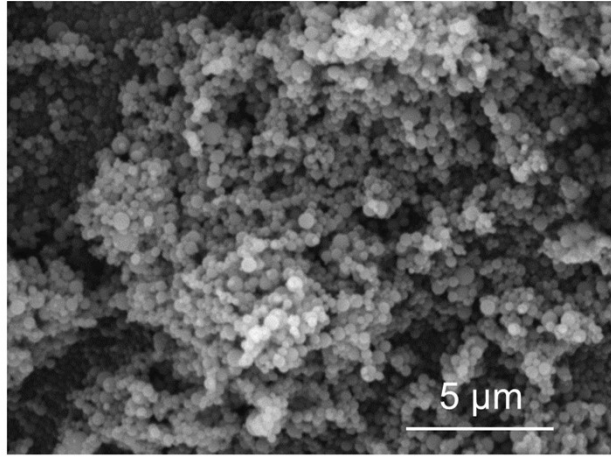


Figure. S1 SEM image of silane coupling agent (KH570) modified-SiO₂ NPs

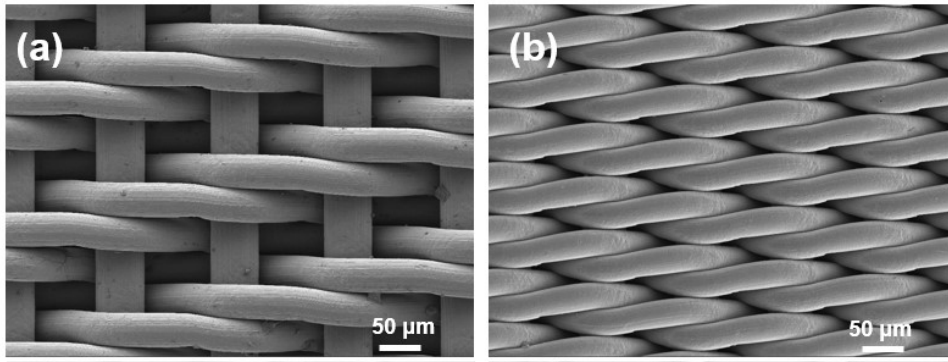


Figure. S2 SEM images of the meshes (a) grid. 800, square-shaped mesh with a line width of 35.5 μm and (b) grid. 1500, wave shaped mesh with a line width of 36.5 μm .

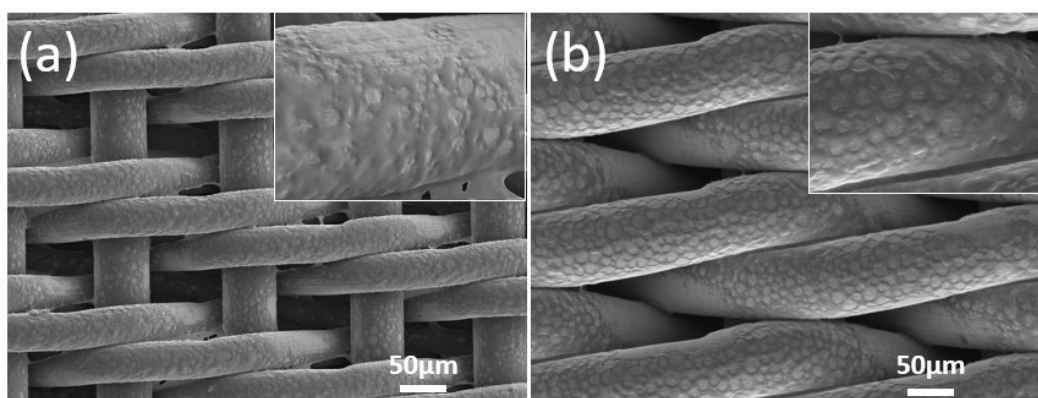


Figure. S3. SEM images of the (a) TS and (b) TW templates (meshes after spraying of silane coupling agent) with the zoom-in view shown in the insets.

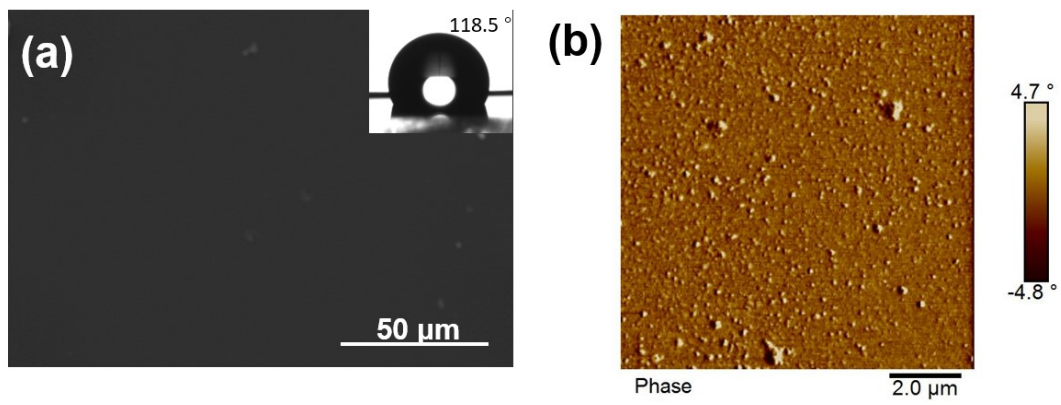


Figure. S4. (a) SEM and intrinsic water contact angle and (b) AFM images of the PDMS elastomer without microstructures.

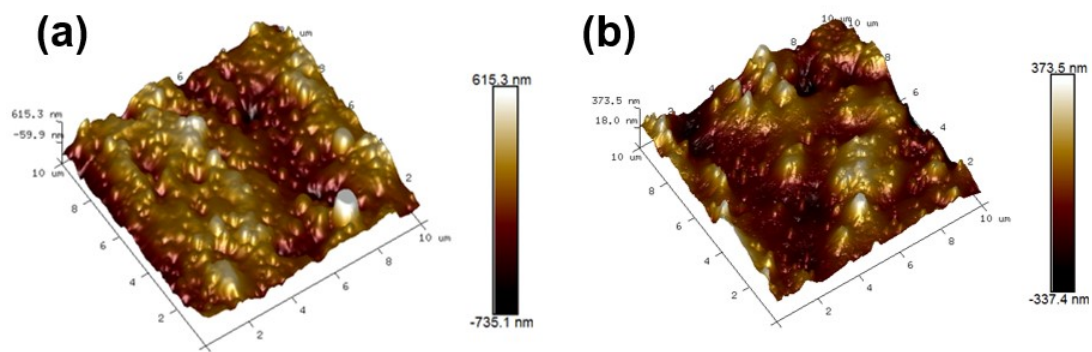


Figure. S5. AFM images of SH PDMS elastomers (a) TS-60 and (b) TW-60.

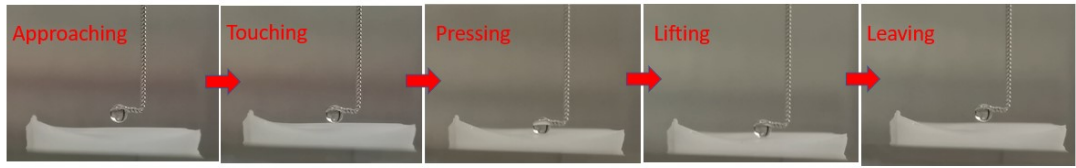


Figure. S6 The setup and the testing process for the adhesion force.

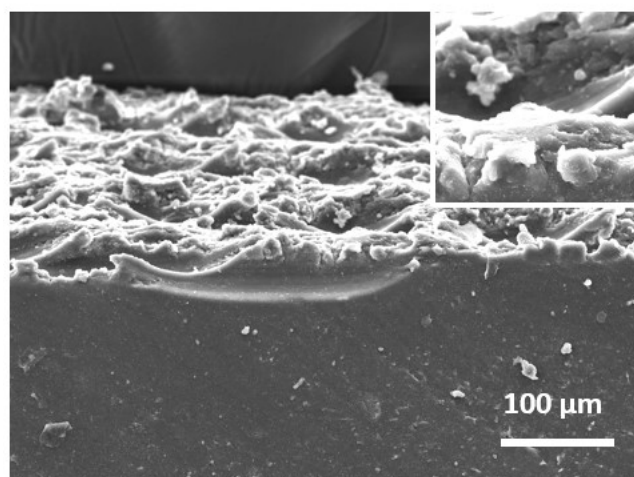


Figure. S7 SEM images showing the cross-sectional views of TS-60 with a zoom-in view shown in the inset.

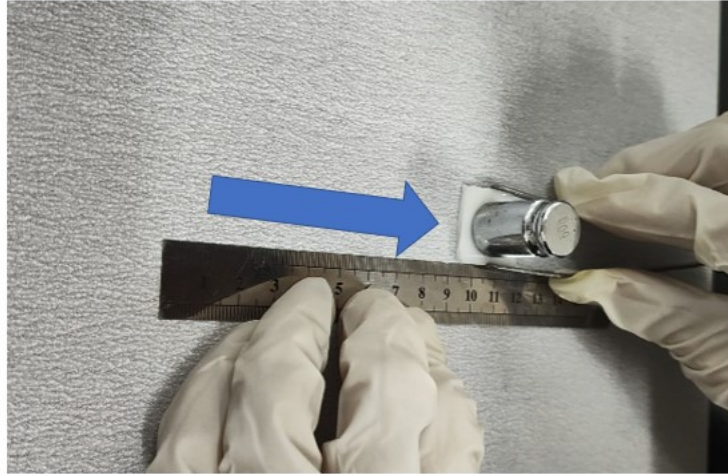


Figure. S8 Image showing the experimental setup of the abrasion resistance test. A 50g weight is applied on top with the SH surface facing down against sandpaper for displacing 10 cm each time.

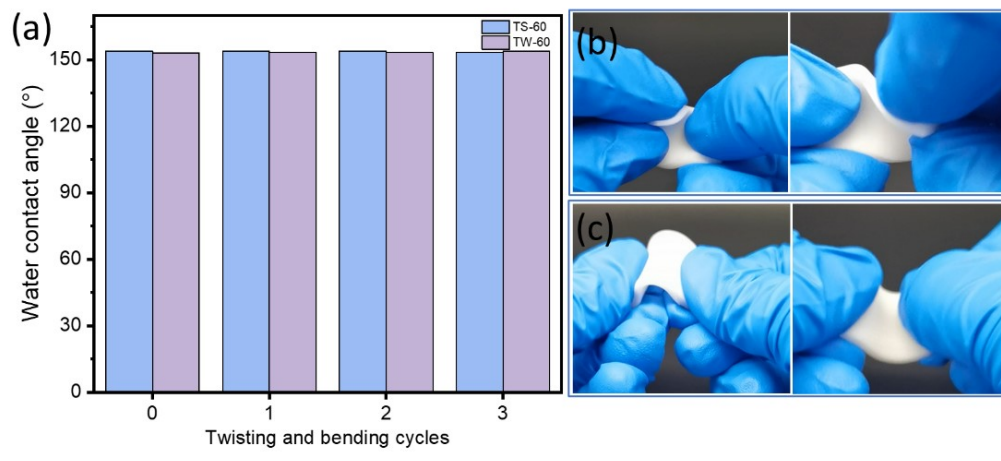


Figure. S9 (a) Water contact angle against twisting and bending cycles, (b) twisting, (c) bending.

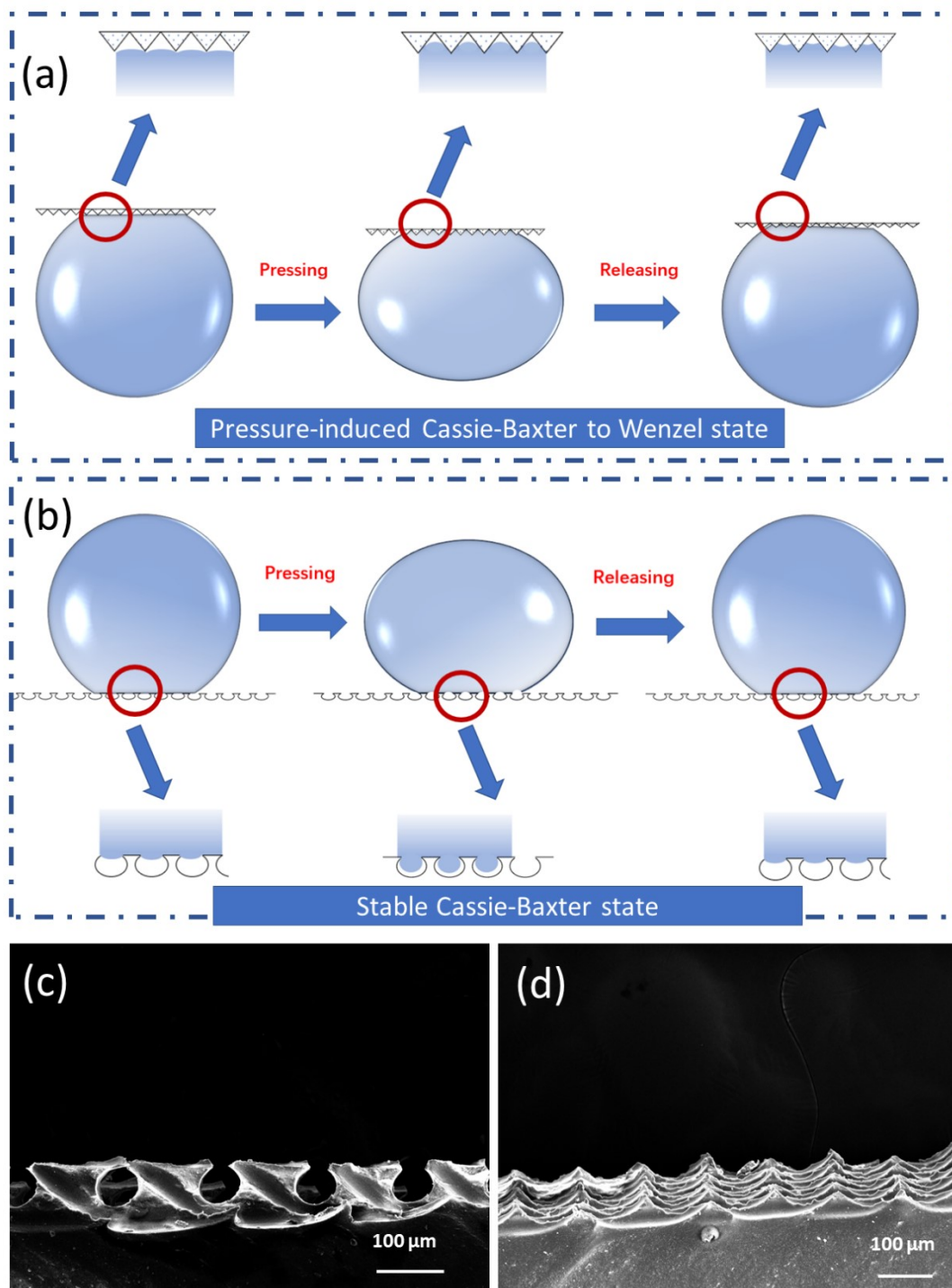


Figure. S10 Schematic illustration of the on-demand tunable wettability upon pressure for (a) TW-60, (b) TS-60; cross-sectional views of SEM images of (c) TS-60 and (d) TW-60 after releasing pressure.