

Supporting Information

Controllable Wettability and Adhesion of Superhydrophobic Self-Assembled Surfaces Based on a Novel Azobenzene Derivative

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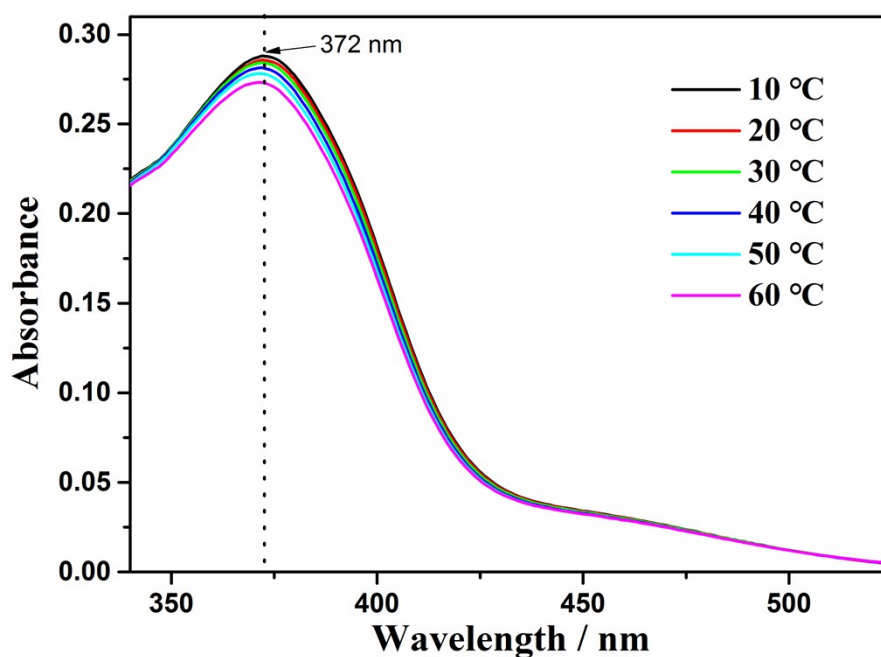


Fig. S1 Temperature-dependent UV/Vis absorption spectra of AOB-Y8 in 50:50 CHCl₃/CH₃CN (5×10^{-5} M).

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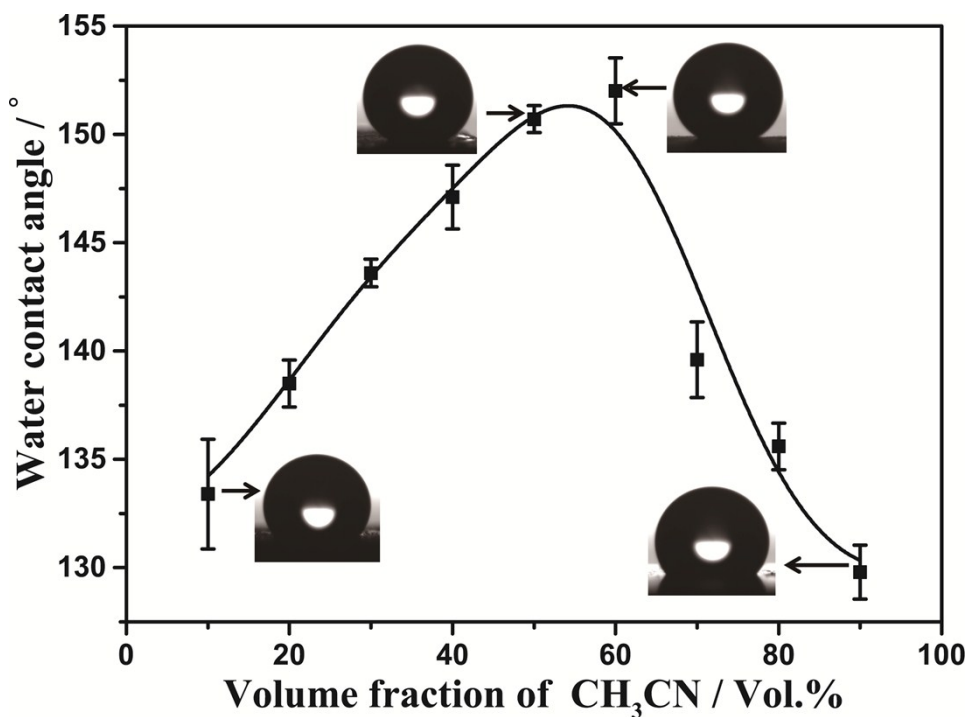


Fig. S2 Experimental water contact angles of surfaces prepared with different CH₃CN volume fractions.

Insets are the shapes of water droplets (4 μ L) on the surface prepared from 1 mg/mL of AOB-Y8 in CHCl₃/CH₃CN mixtures.

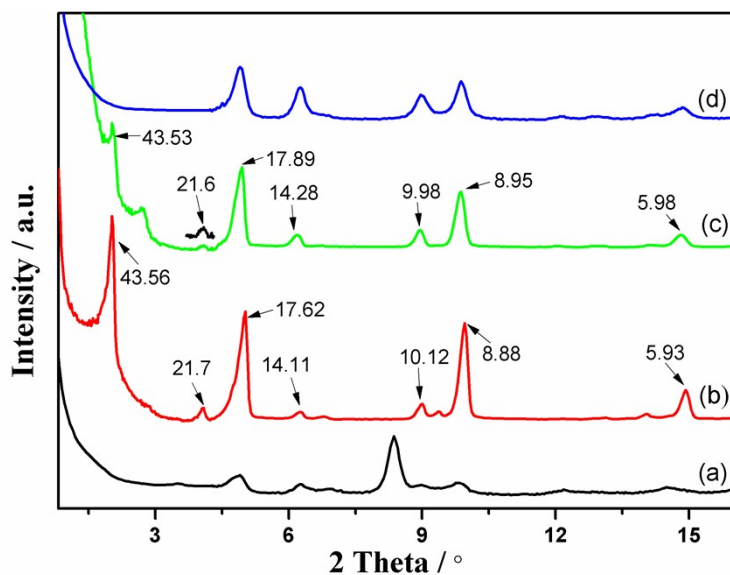


Fig. S3. X-ray diffraction patterns of AOB-Y8 surfaces prepared from 3 mg/mL in CHCl₃:CH₃CN solution with different solvent ratio: (a) 90:10, (b) 50:50, (c) 40:60, (d) 10:90.

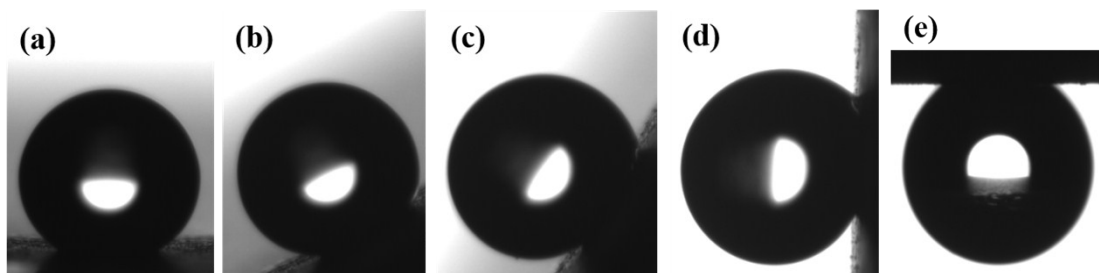


Fig. S4 Shapes of water droplets (4 μL) with different title angles: (a) 0° , (b) 30° , (c) 60° , (d) 90° and (e) 180° on the AOB-Y8 surface prepared from 1 mg/mL in 50:50 $\text{CHCl}_3/\text{CH}_3\text{CN}$ mixed solvents.

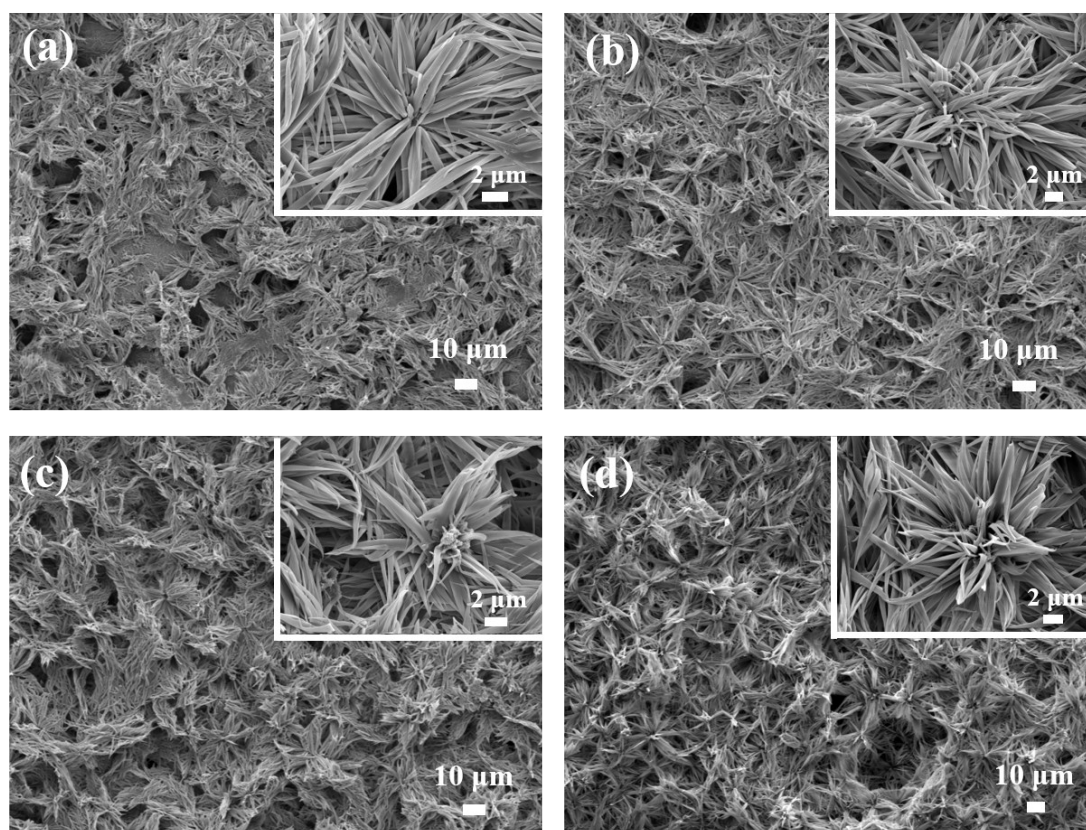


Fig. S5 SEM images of AOB-Y8 surfaces prepared from (a) 1 mg/mL, (b) 2 mg/mL, (c) 3 mg/mL and (d) 5 mg/mL in 50:50 $\text{CHCl}_3:\text{CH}_3\text{CN}$ solution on silicon substrates at 25°C .

Table S1 Advancing angle (θ_{adv}), receding angle (θ_{rec}) and contact angle hysteresis for surfaces prepared with different concentration of AOB-Y8 in 50:50 $\text{CHCl}_3/\text{CH}_3\text{CN}$ mixed solvent.

Concentration (mg/mL)	θ_{adv}/deg	θ_{rec}/deg	Hysteresis/deg
1	150.68	130.19	20.49
2	153.82	144.35	9.47
3	155.86	152.82	3.04
4	158.34	155.73	2.61
5	159.46	156.94	2.52
6	159.40	157.13	2.27

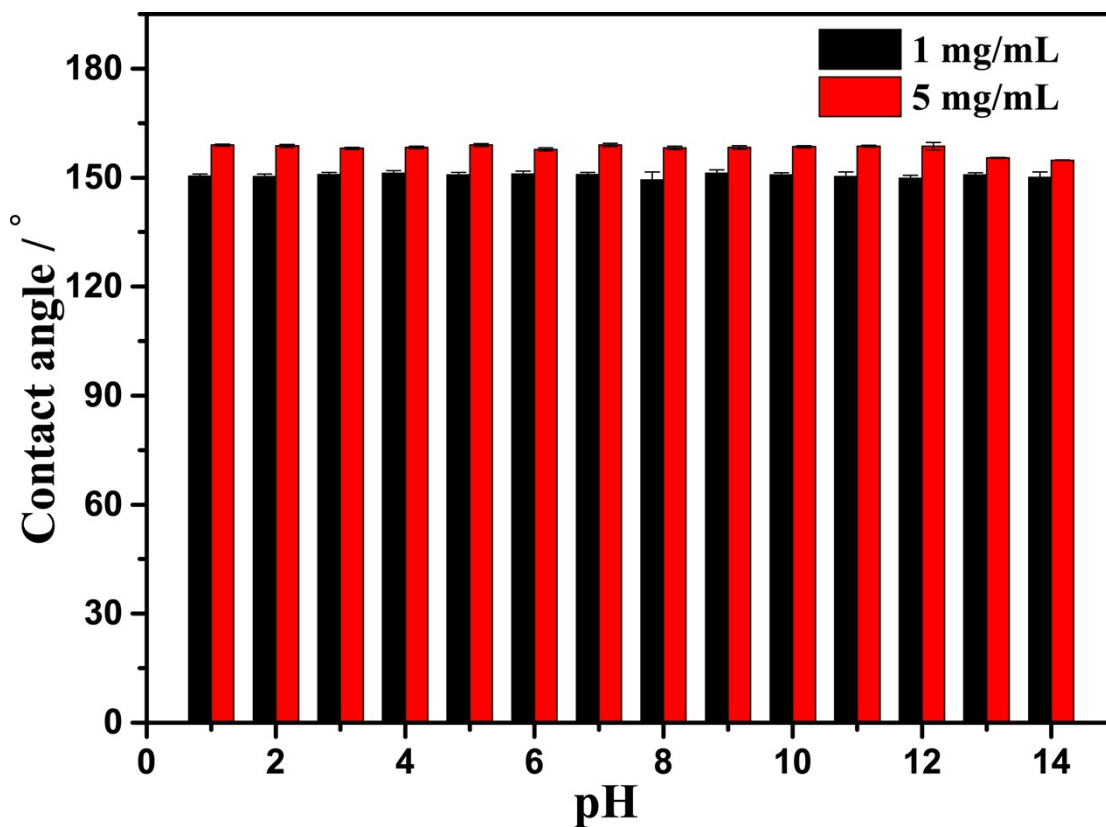


Fig. S6 Statistics contact angles for a water droplet with different pH values on the surfaces prepared from 50:50 $\text{CHCl}_3/\text{CH}_3\text{CN}$ mixtures with the concentrations of 1 mg/mL and 5 mg/mL, respectively.

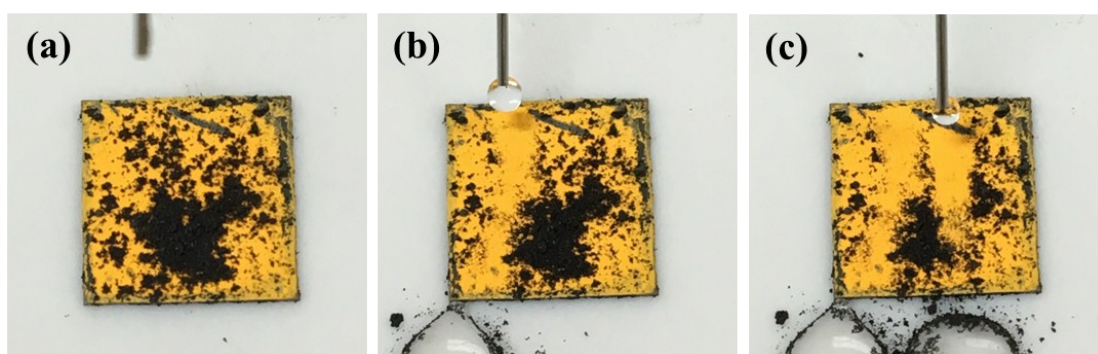


Fig. S7 Self-cleaning effect experiments: (a) dusted with carbon powder, (b) cleaned with 3 water droplets and (c) cleaned with 6 water droplets.

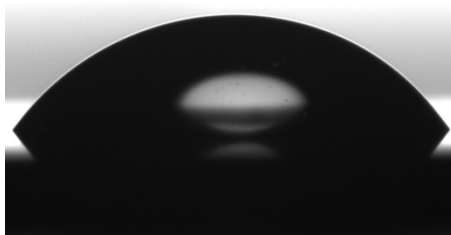
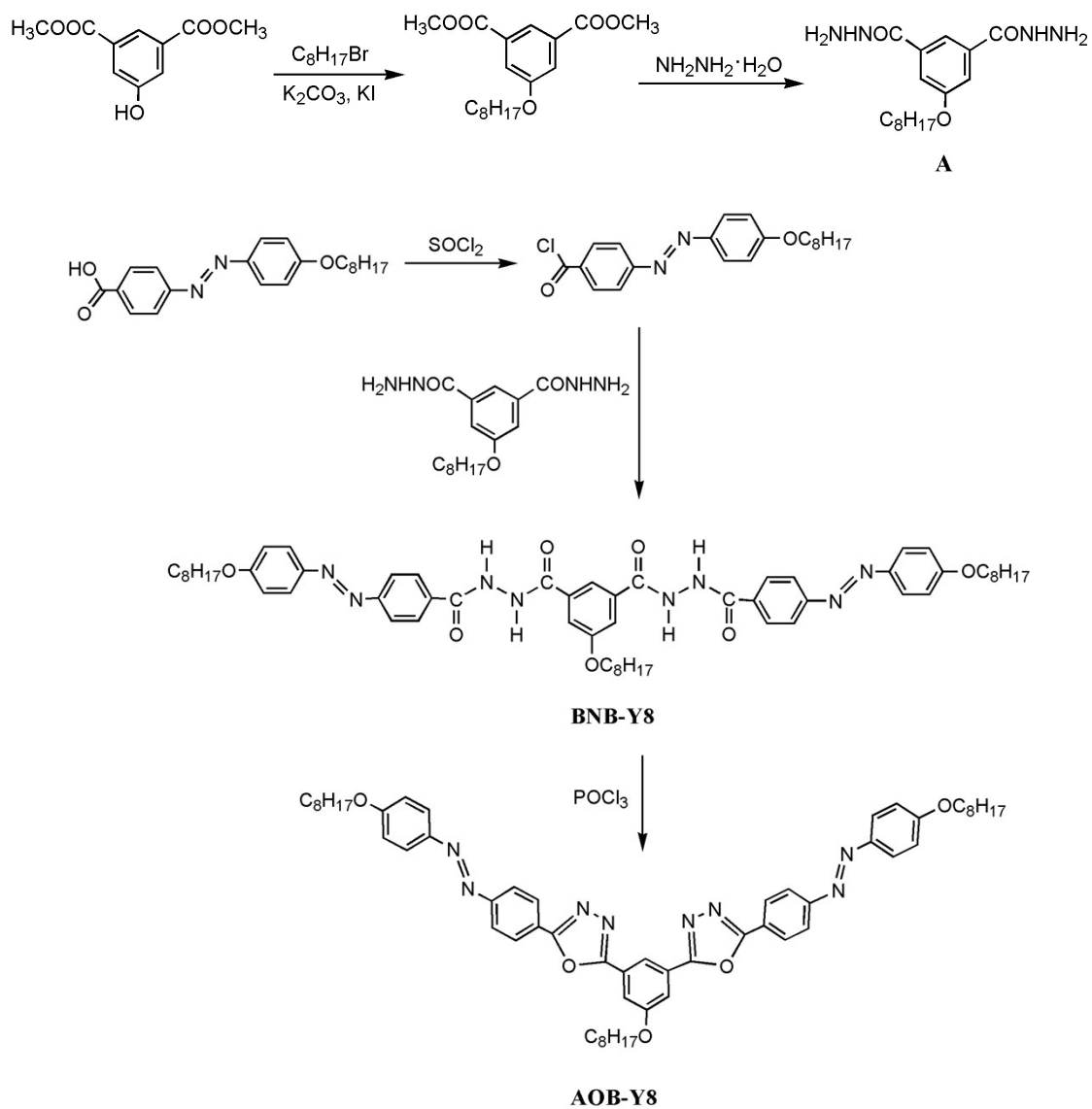


Fig. S8 Water CA photographs of the silicon plates cleaned by CHCl_3 .



Scheme S1 Synthetic route for AOB-Y8 compound.