

## **Supporting Information**

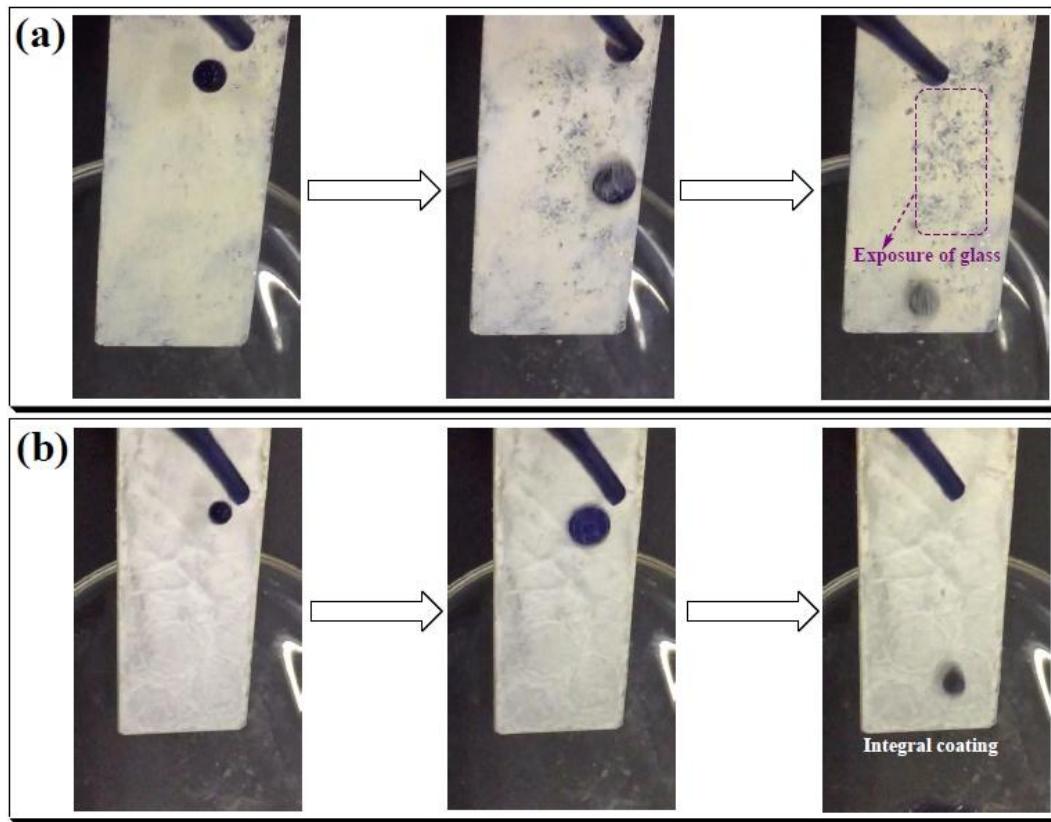
### **Mimicking from Rose Petal to Lotus Leaf: Biomimetic Multiscale Hierarchical Particles with Tunable Water Adhesion**

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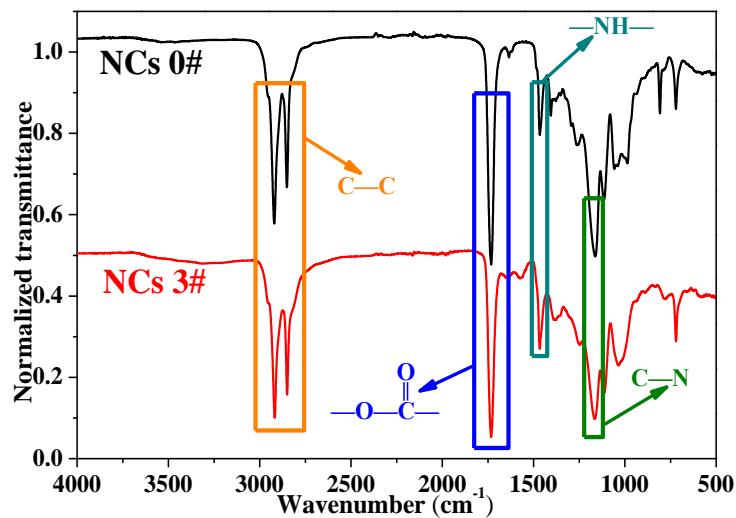
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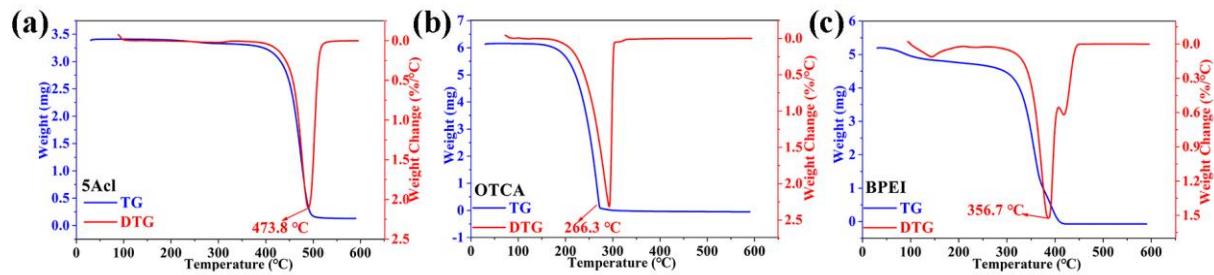
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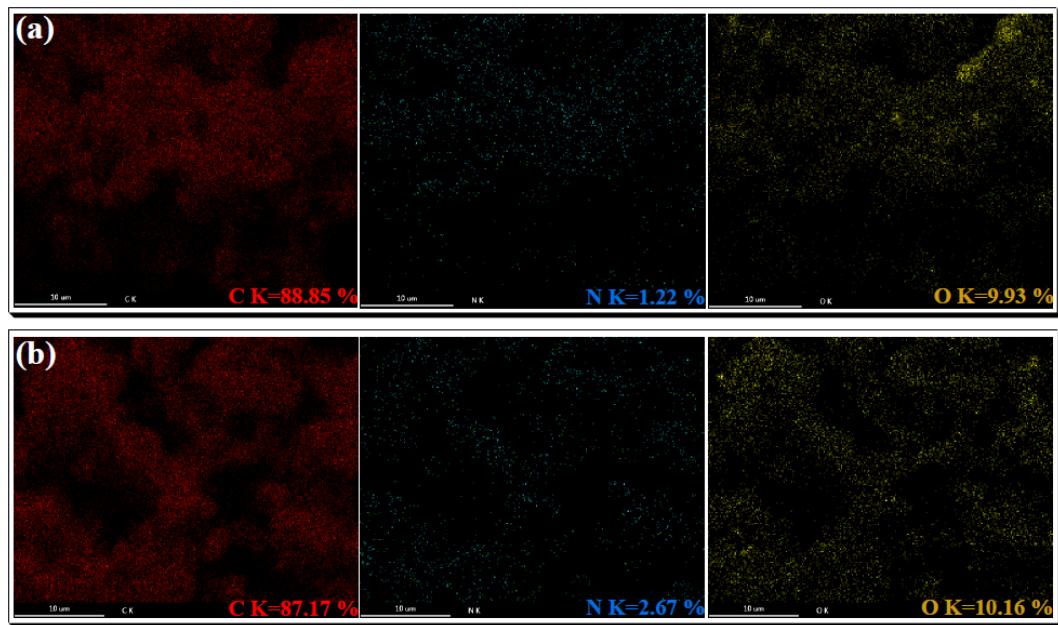
**Figure S1.** (a) MHPs onto original glass slide and (b) MHPs onto glass slide treated by methacrylic resin adhesive DM5128.



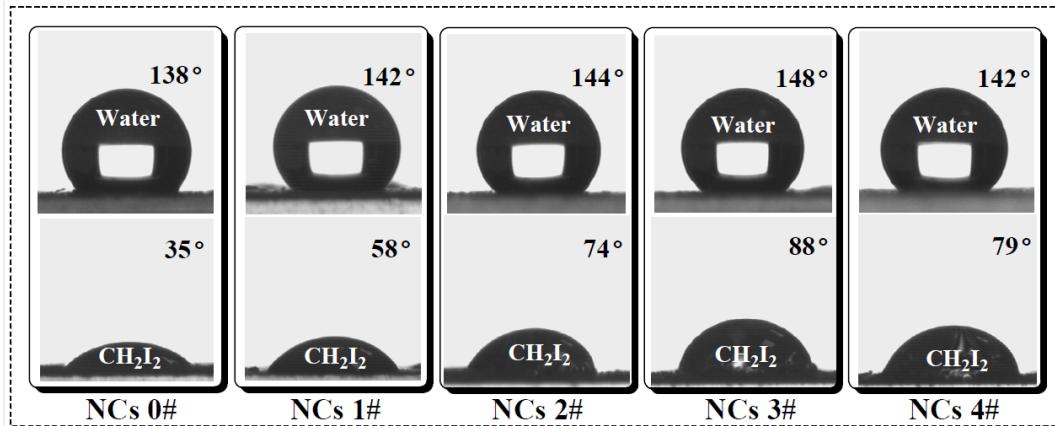
**Figure S2.** FTIR-ATR spectra of NCs 3# and NCs 0#.



**Figure S3.** TG curve (For left y-axial in blue) and DTG curve (For right y-axial in red) of (a) 5Acl, (b) OTCA and (c) BPEI.



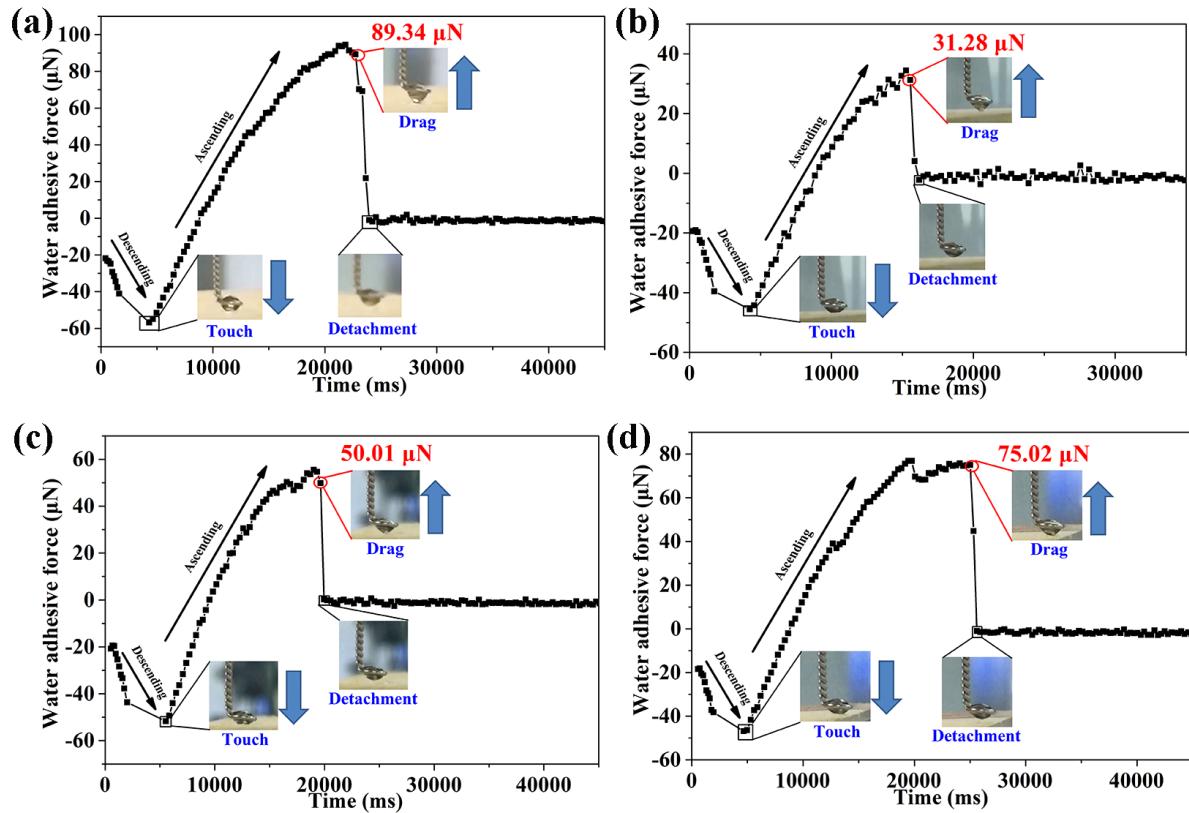
**Figure S4.** Atomic EDS mapping of (a) NCs 0# and (b) NCs 3#.



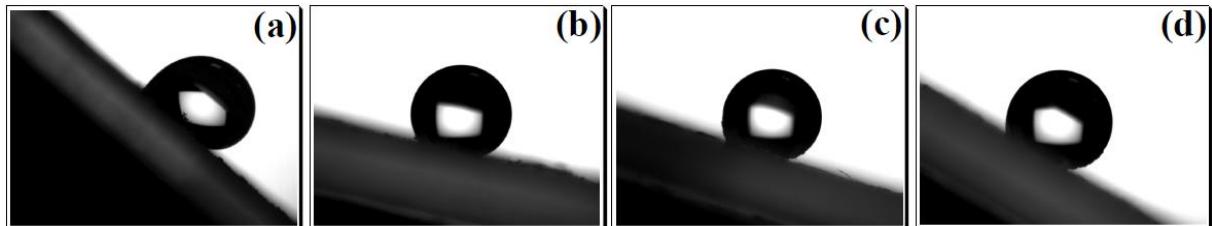
**Figure S5.** Water and CH<sub>2</sub>I<sub>2</sub> CA of NCs 0#, 1#, 2#, 3# and 4#.

**Table S1.** Surface energy data of NCs 0#, 1#, 2#, 3# and 4#.

	$\gamma$ (mN m <sup>-1</sup> )	$\gamma^d$ (mN m <sup>-1</sup> )	$\gamma^p$ (mN m <sup>-1</sup> )
NCs 0#	$24.02 \pm 3.02$	$11.55 \pm 1.43$	$12.47 \pm 1.59$
NCs 1#	$17.53 \pm 1.88$	$8.57 \pm 1.03$	$8.96 \pm 0.85$
NCs 2#	$10.65 \pm 2.50$	$4.84 \pm 1.17$	$5.81 \pm 1.33$
NCs 3#	$7.26 \pm 1.13$	$3.37 \pm 0.89$	$3.89 \pm 0.24$
NCs 4#	$6.40 \pm 1.79$	$2.20 \pm 1.18$	$4.20 \pm 0.61$



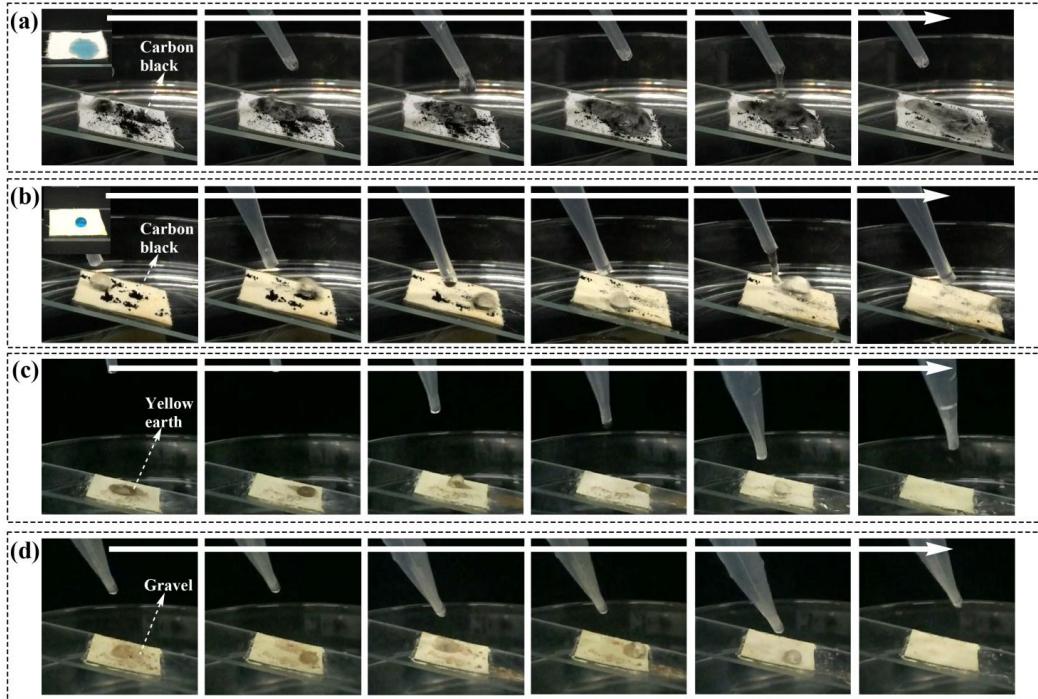
**Figure S6.** Water adhesive force of (a) MHPs 1#, (b) MHPs 2#, (c) MHPs 3# and (d) MHPs 4#.



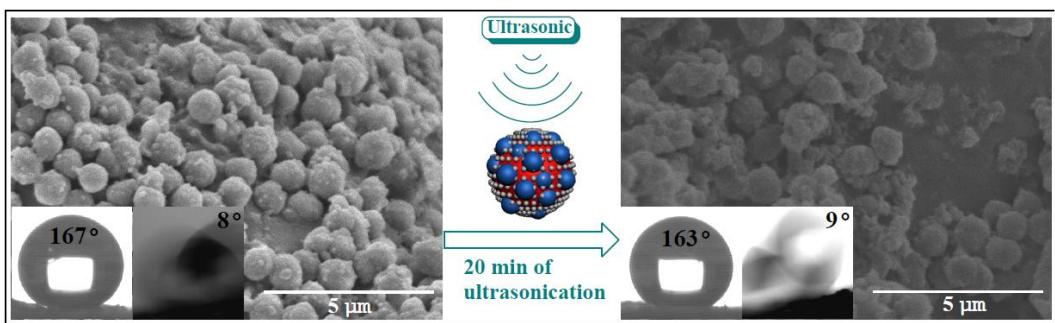
**Figure S7.** Contact angle hysteresis schematic of (a) MHPs 1#, (b) MHPs 2#, (c) MHPs 3# and (d) MHPs 4#.

**Table S2.** Contact angle hysteresis of MHPs 1#, 2#, 3# and 4#.

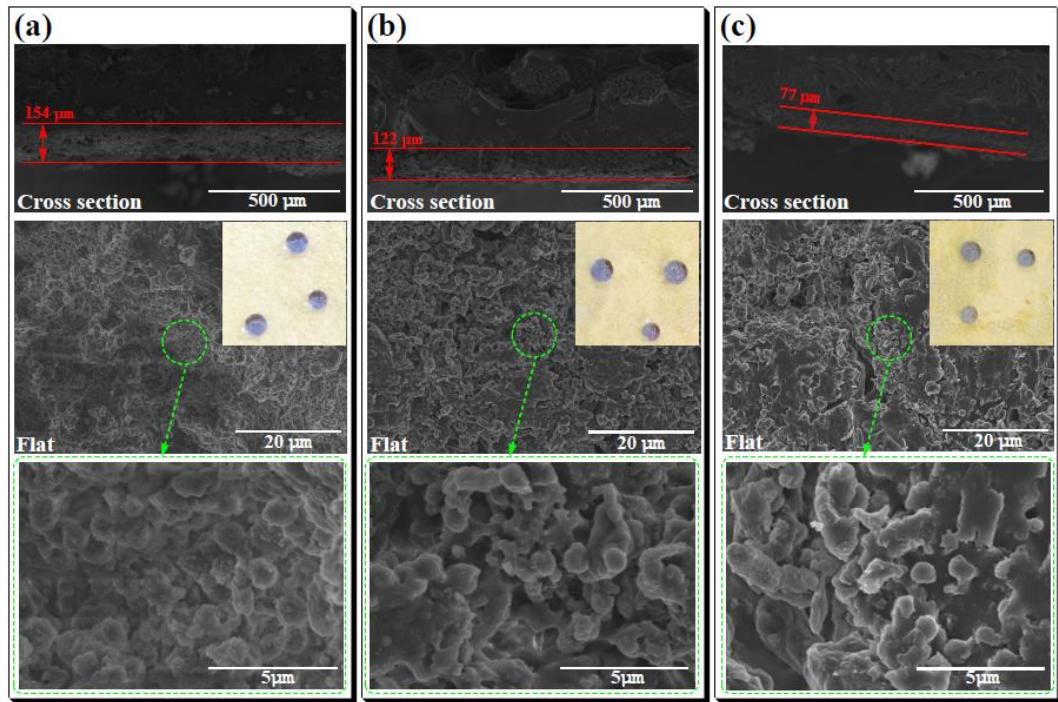
	Advancing angle (°)	Receding angle (°)	Contact angle hysteresis value (°)
MHPs 1#	150 ± 3	105 ± 2	45 ± 5
MHPs 2#	155 ± 2	140 ± 1	15 ± 3
MHPs 3#	158 ± 4	135 ± 2	23 ± 6
MHPs 4#	159 ± 1	129 ± 3	30 ± 4



**Figure S8.** (a) The process of cleaning carbon black stained on the untreated cotton fabric via dripping water, the process of cleaning (b) carbon black, (c) yellow earth and (d) gravel stained on the superhydrophobic fabric via dripping water.



**Figure S9.** Morphology and wettability of MHPs 2# before and after 20 min of ultrasonication.



**Figure S10.** Morphology and appearance of (a) original superhydrophobic fabric, (b) the fabric after 200 abrasion cycle times (load-bearing, 100 g of weight) and (c) the fabric after 200 abrasion cycle times (load-bearing, 200 g of weight).