A nature-inspired strategy towards superhydrophobic wood

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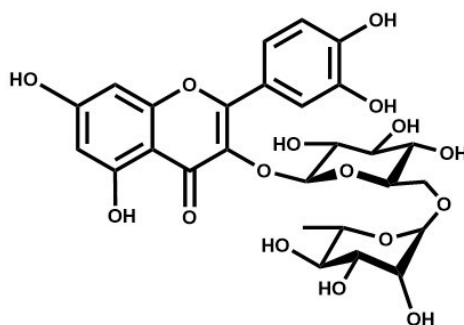
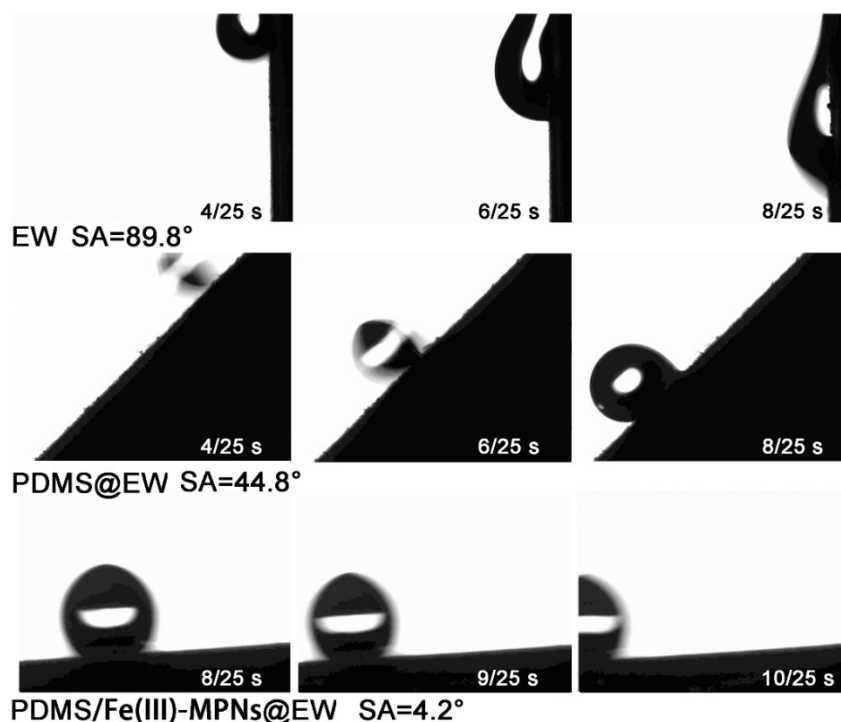**Figure S1** The structure formula of rutin molecule used for MEP calculation

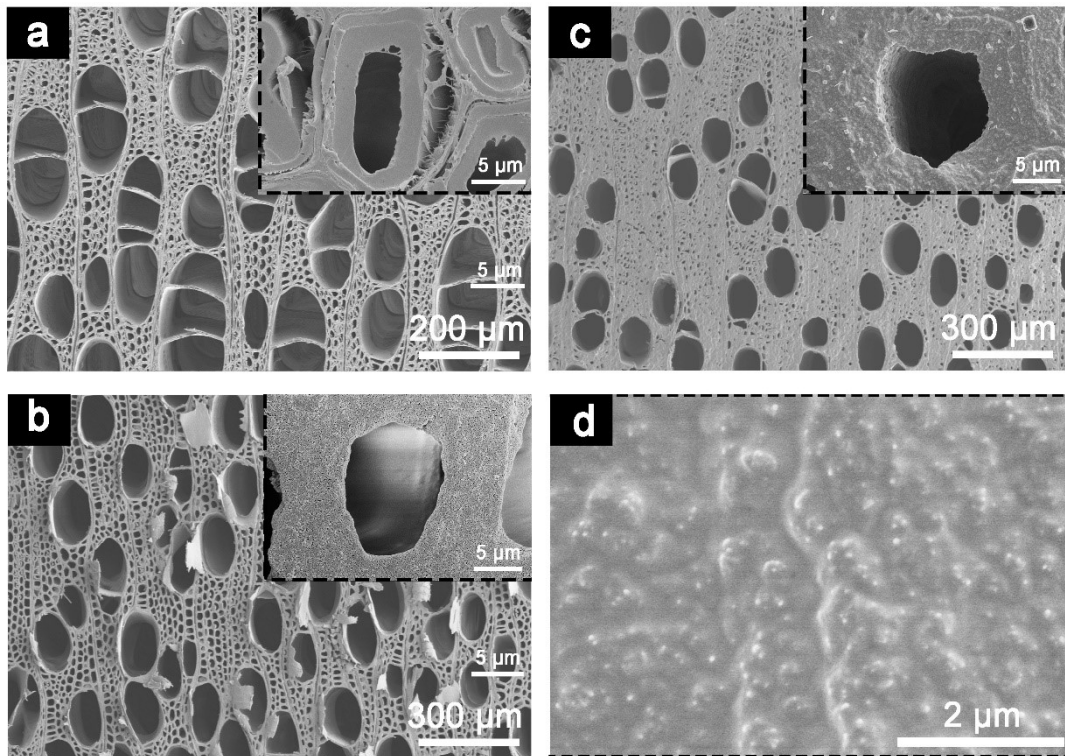**Figure. S2** Slide angle of EW, PDMS@EW and PDMS/Fe (III)-MPNs@EW

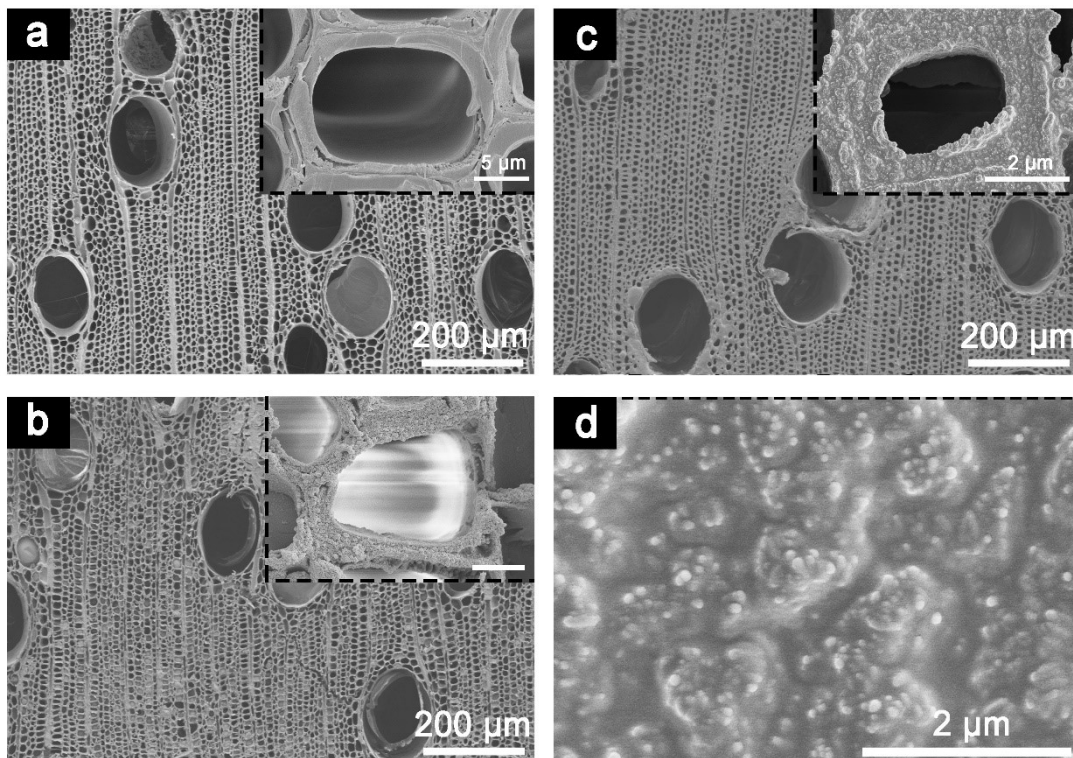**Figure. S3** SEM images of natural PW (a), MPNs@PW (b), PDMS/MPNs@PW (c) and its enlarged image (d).

Figure. S4 SEM images of natural EW (a), MPNs@EW (b), PDMS/MPNs@EW (c) and its enlarged image (d).
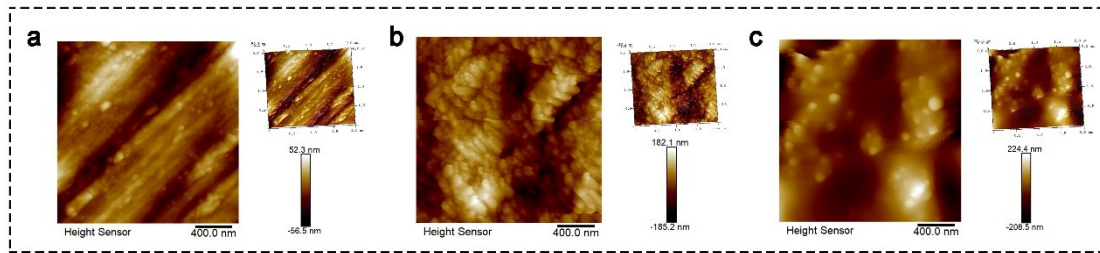
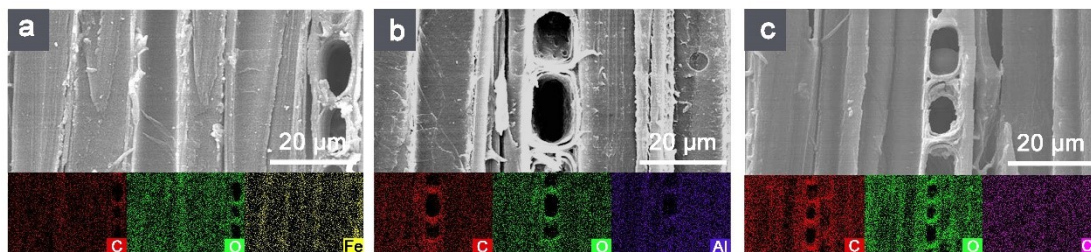**Figure. S5** AFM images of PW (a), MPNs@PW (b), PDMS/MPNs@PW (c).

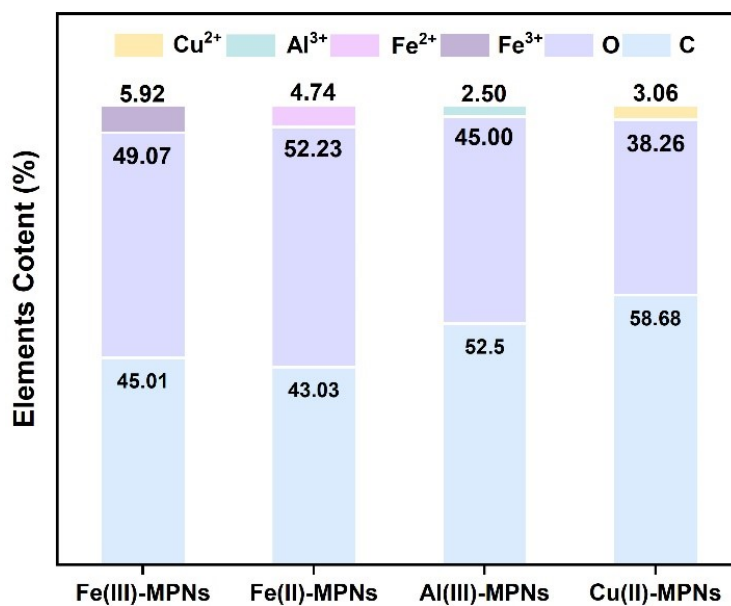**Figure. S6** SEM-EDX images of Fe (II)-MPNs@PW (a), Al (III)-MPNs@PW (b) and Cu (II)-MPNs@PW (c).

Figure. S7 Elements content of Fe (III)-MPNs, Fe (II)-MPNs, Al (III)-MPNs, and Cu (II)-MPNs on PW.
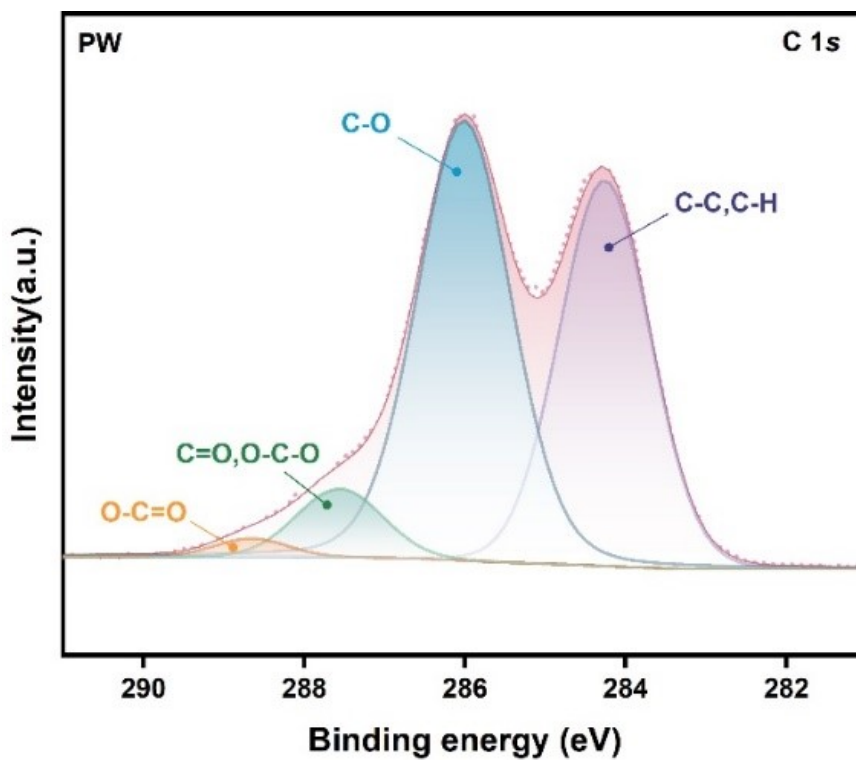
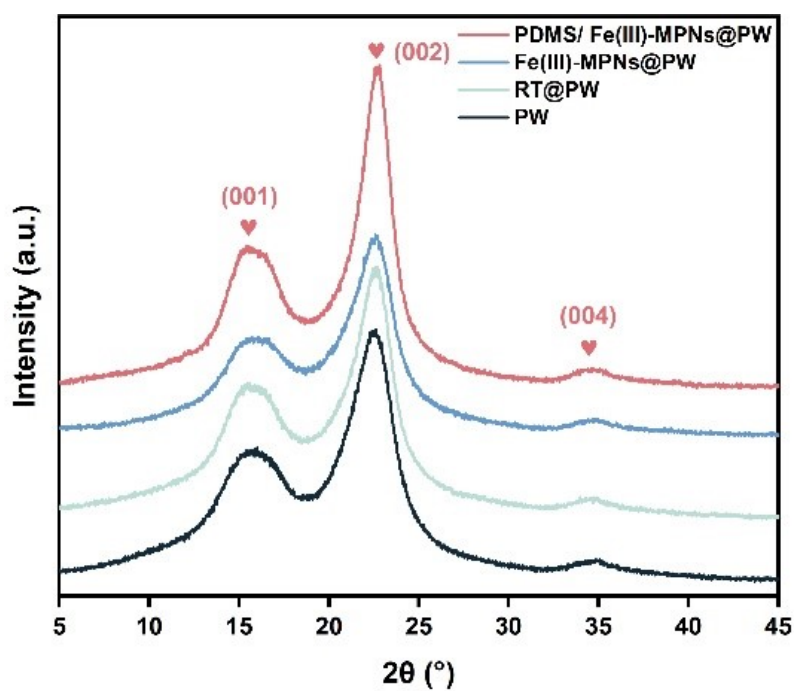**Figure. S8** C 1s XPS spectrum of PW.

Figure. S9 XRD spectrum of PW, RT@PW, Fe (III)-MPNs@PW and PDMS/Fe (III)-MPNs@PW.
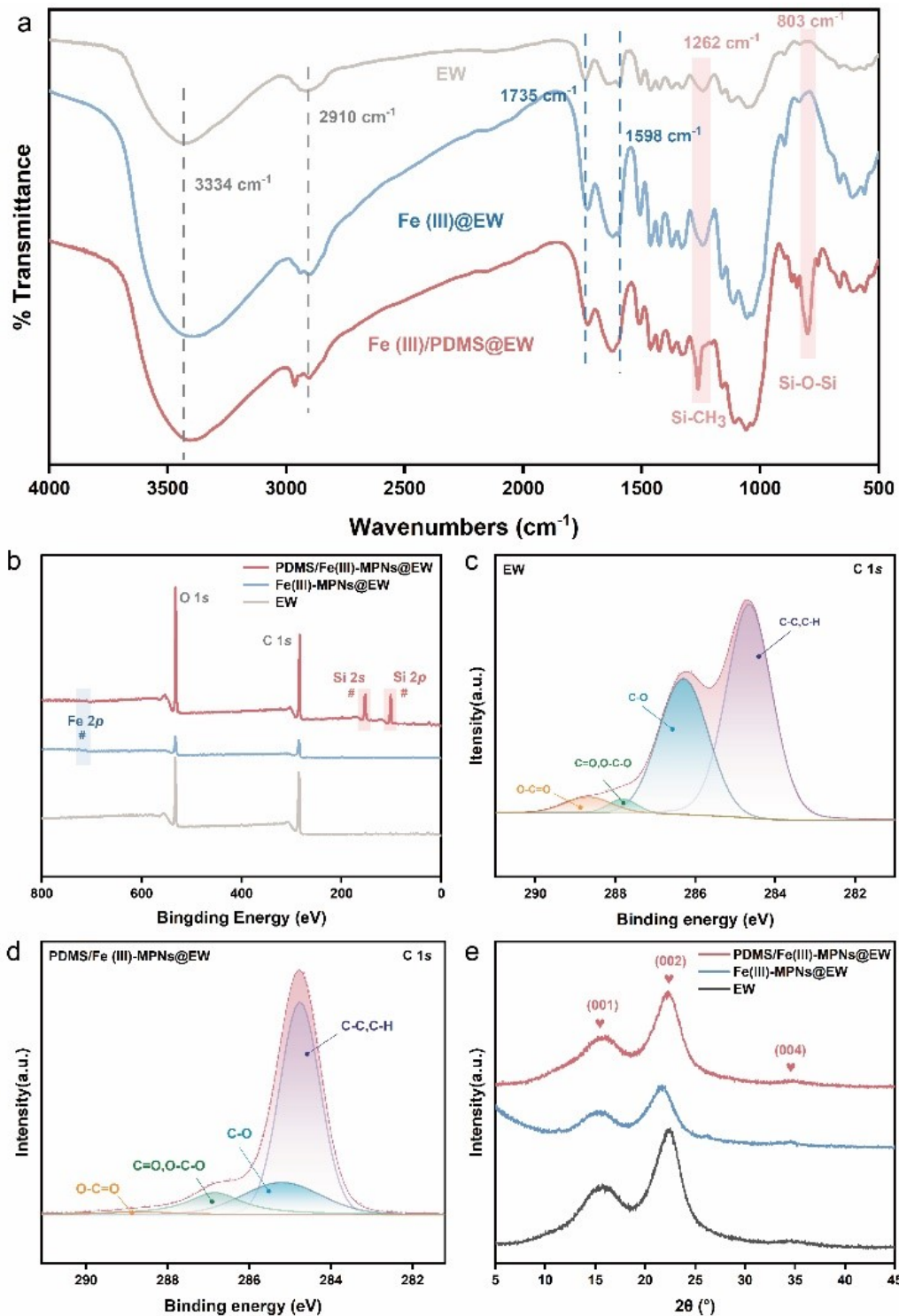
Figure. S10 FT-IR spectrum (a); total XPS spectrum (b) of PW, RT@EW, Fe (III)-MPNs@EW and PDMS/Fe (III)-MPNs@EW; high resolution orbital C 1s spectrum of EW (c) and PDMS/Fe (III)-MPNs@EW (d); XRD spectrum of PW, RT@EW, Fe (III)-MPNs@EW and PDMS/Fe (III)-MPNs@EW.
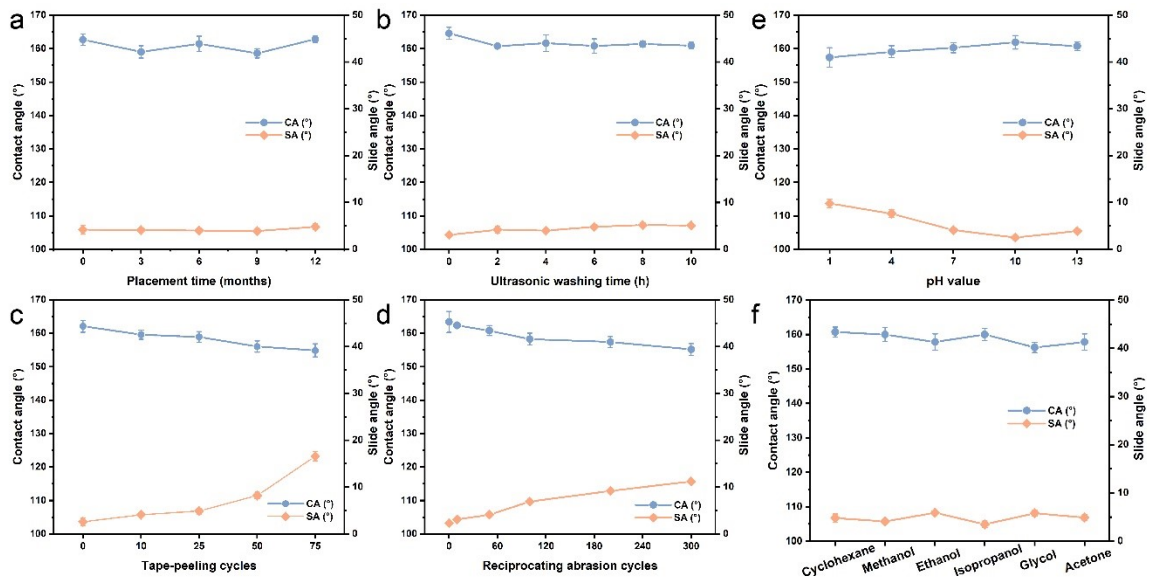
Figure. S11 Changes in CA and SA of the PDMS/ Fe (III)-MPNs@EW during the (a)Long term weather risistance,

(b) Ultrasonic washing at 60 °C, (c) tape-peeling (100g load, 3M tape, ASTM D4060), (d)reciprocating sandpaper

abrasion (100g load, 1000 meshes) (inserts are the model diagrams of corresponding tests), immersion (for 24h) in

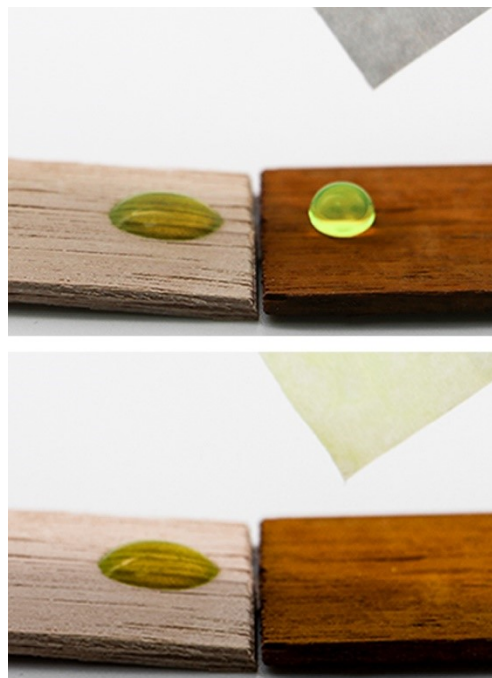corrosive liquids (e) with different pH and (f) organic solvents tests.

Figure. S12 Optical images of performance of PW (left) and superhydrophobic PW (right) surface toward alkali

solution (stained with Rhodamine B).