

Supporting Information

Photoelectric Synergistic Anisotropic Slippery Interface for Directional Manipulation of Droplets

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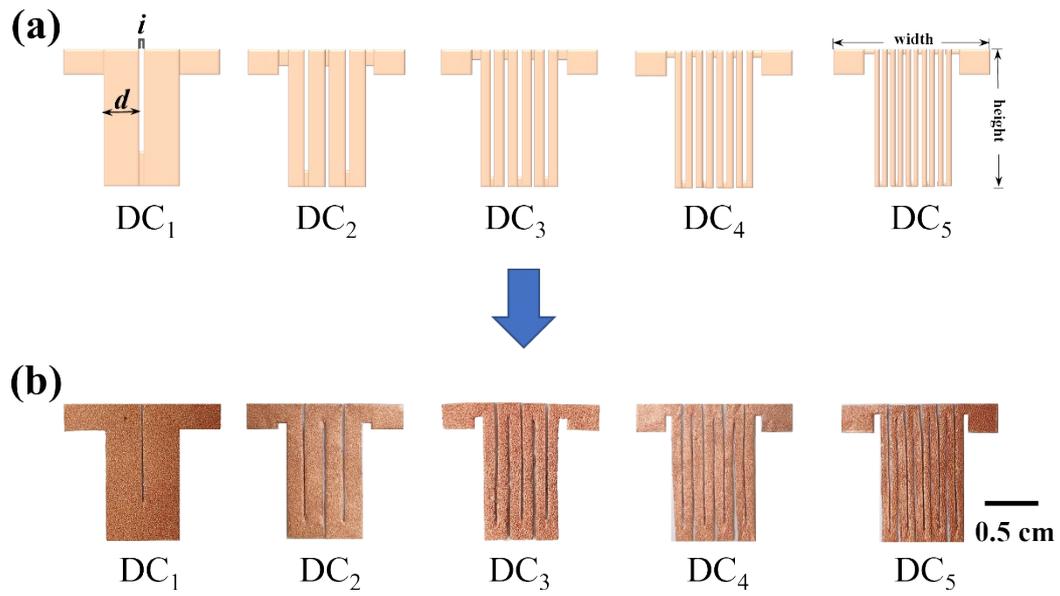


Fig. S1 (a) The schematic diagram and (b) optical diagram of DC sample with different stripe numbers. Specific size parameters: the sample height is 2.7 cm, and the width is 1.45 cm. The spacing (i) of each pair of directional structures is $500\ \mu\text{m}$. Directional structure width (d) of DC₁, DC₂, DC₃, DC₄, and DC₅ samples is 7.0 mm, 3.25 mm, 2.0 mm, 1.375 mm, and 1.0 mm, respectively.

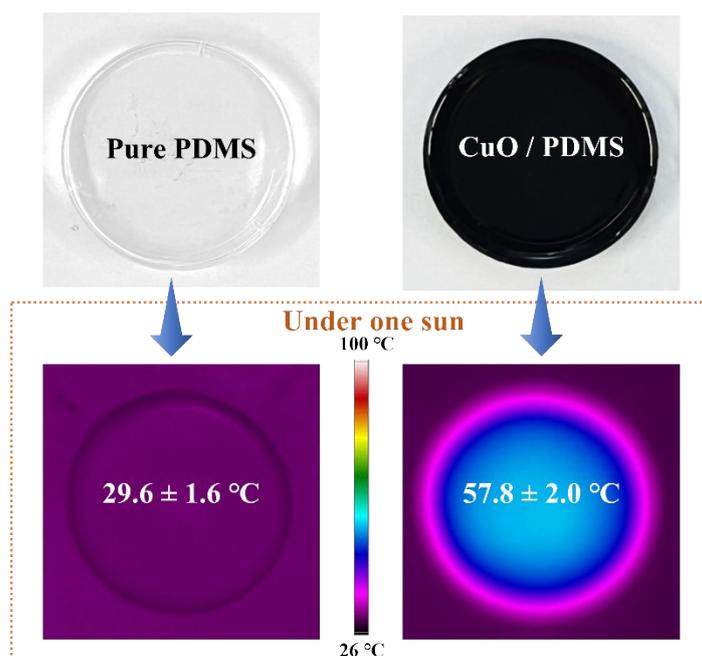


Fig. S2 The optical images of pure PDMS substrate and CuO/PDMS substrate and the infrared images of them under one sunlight.

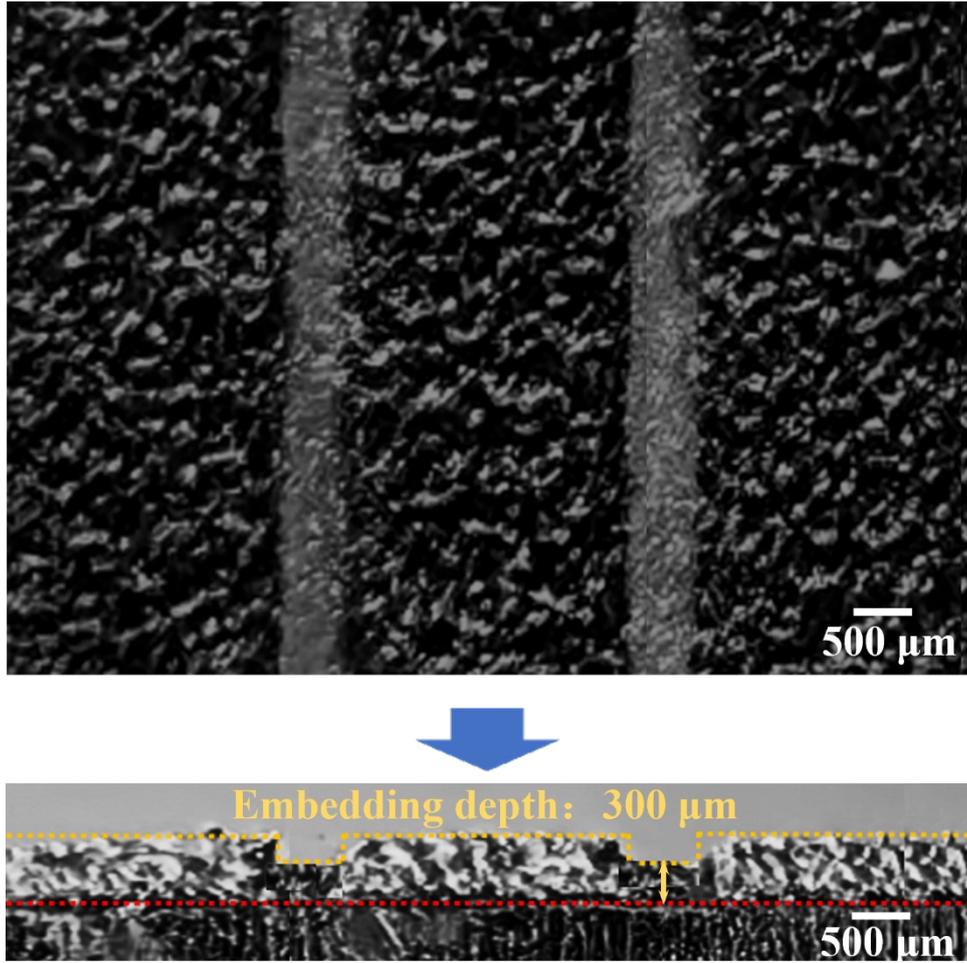


Fig. S3 Top-view optical image and side-view optical image of DOC₃-S.



Fig. S4 Process of the copper foam was oxidized to copper hydroxide and copper oxide and their surface optical images (scale: 1 cm).

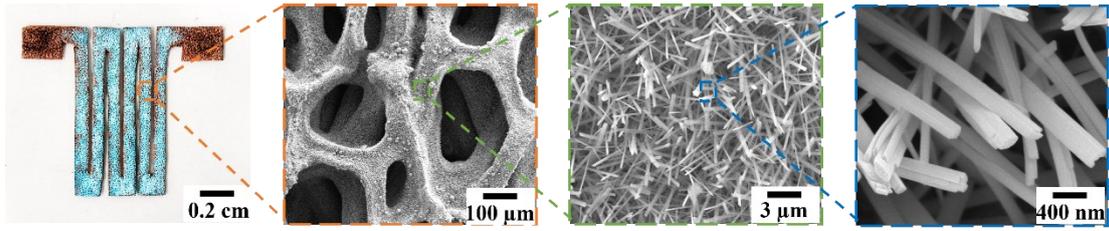


Fig. S5 Optical image of the sample after preliminary oxidation, SEM image of $\text{Cu}(\text{OH})_2$ grown on the surface of copper foam, and its enlarged image.

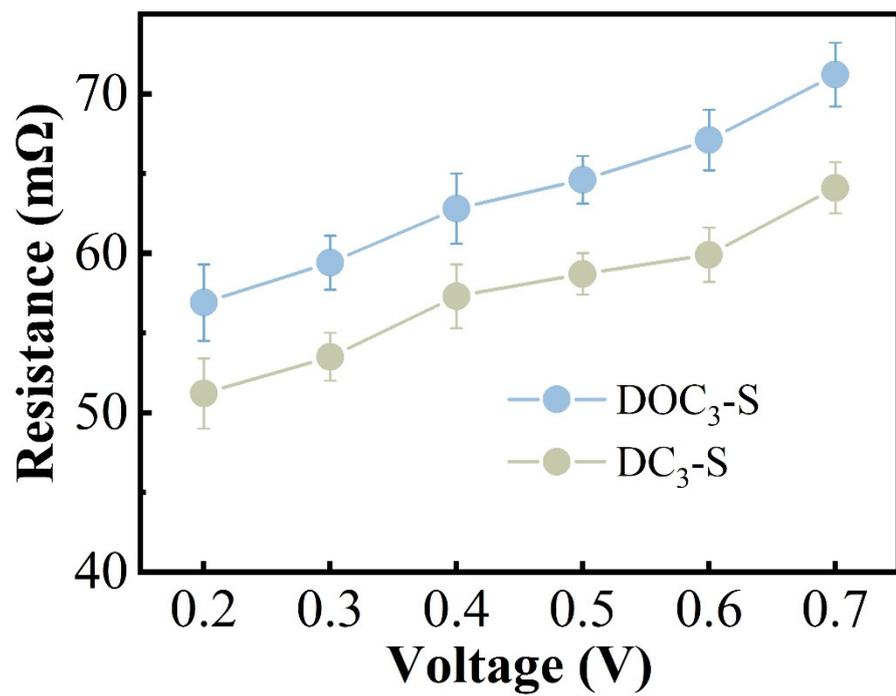


Fig. S6 The resistance changes of the sample before and after oxidation under 0.2 ~ 0.7 V voltages.

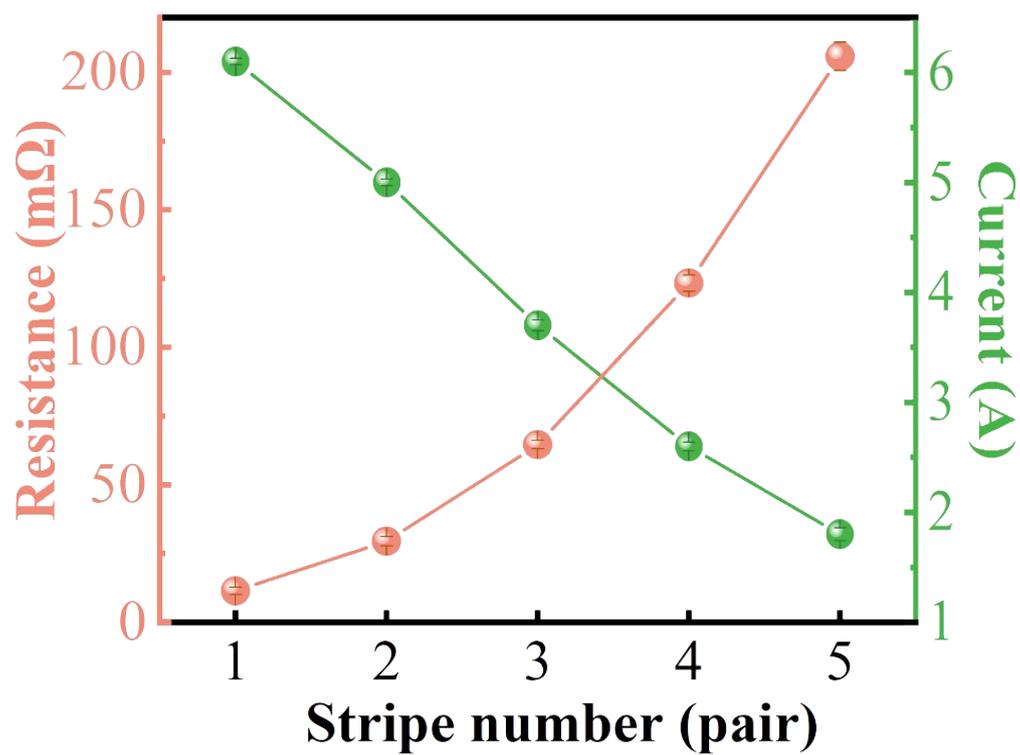


Fig. S7 Current and resistance variation of DOC-S samples with different stripe numbers at 0.5 V.

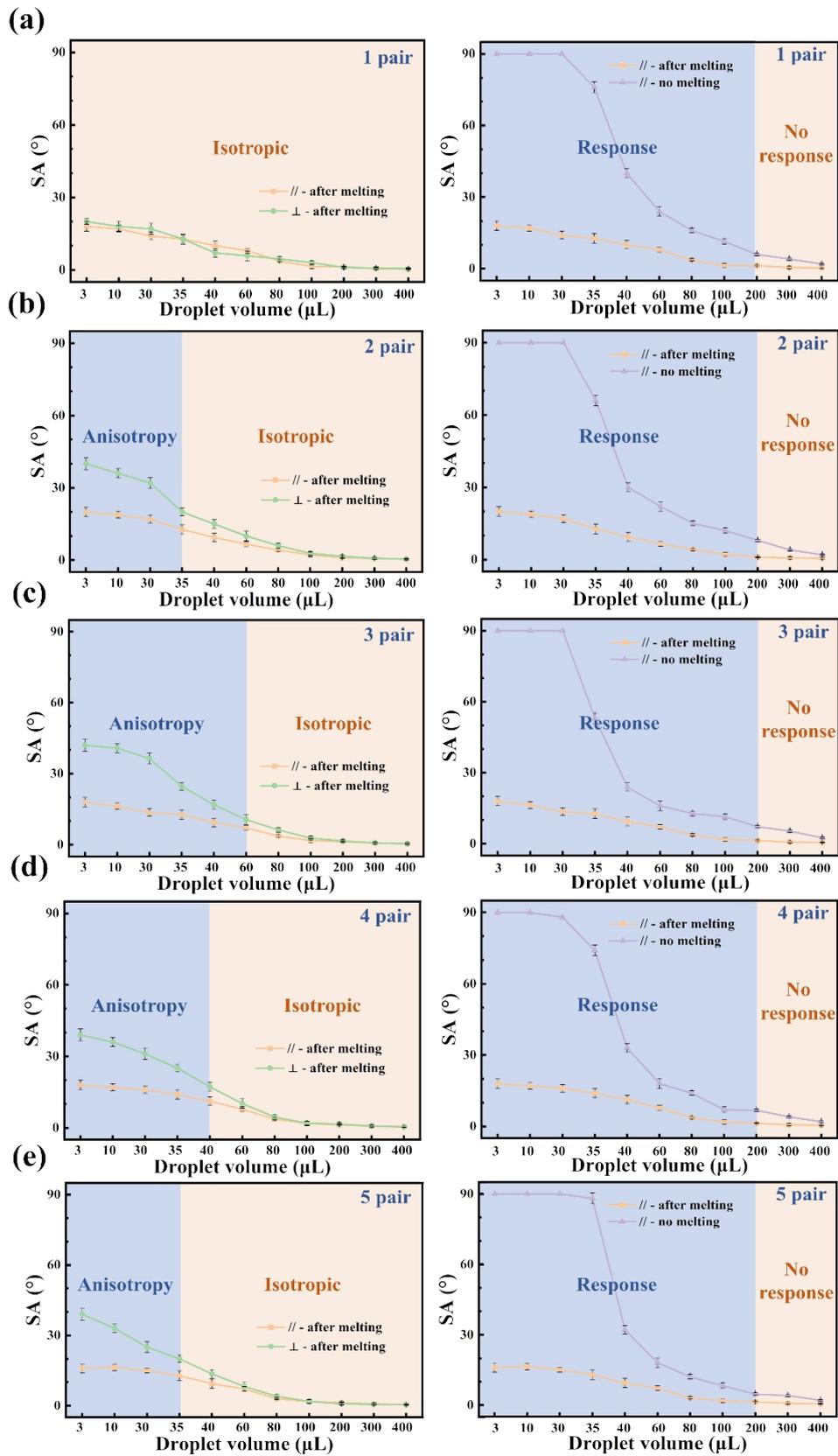


Fig. S8 SAs changes of different volume water in parallel and vertical directions before and after paraffin melting on (a) P/DOC₁-S surface, (b) P/DOC₂-S surface, (c) P/DOC₃-S surface, (d) P/DOC₄-S surface, and (e) P/DOC₅-S surface.