Facile fabrication of flower-like CuO nanorods film with

tunable wetting transition and excellent stability

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Figure S1. SEM images of the brass substrate surface morphology containing 0.025 M $K_2S_2O_8$ and different concentration of KOH at 50 °C and 20 V AC etching for 15 min: (A) 0 M; (B) 0.1M; (C) 0.25 M; (D) 0.5 M; (E) 1.0 M; (F) 1.5 M.



Figure S2. SEM images of the brass substrate surface morphology containing 1.0 M KOH and different concentration of $K_2S_2O_8$ at 50 °C and 20 V AC etching for 15 min: (A) 0 M; (B) 0.005M; (C) 0.025 M; (D) 0.1 M.



Figure S3. SEM images of the brass substrate surface morphology with and without alternate current while the other experimental conditions are the same: (A) With alternate current; (B) Without alternate current.



Figure S4. TEM images of the prepared CuO nanorods.



Figure S5. Digital images of CAs of the modified surfaces with different AC etching durations: (A) 0 min; (B) 1 min; (C) 5 min and (D) 10 min.



Figure S6. Digital photographs of the process of modified surface contact the water droplet. The arrows are the moving direction of the modified surface.



Figure S7. Schematic illustration of the abrasion test.



Figure S8. Schematic illustration of the flush resistence test.