

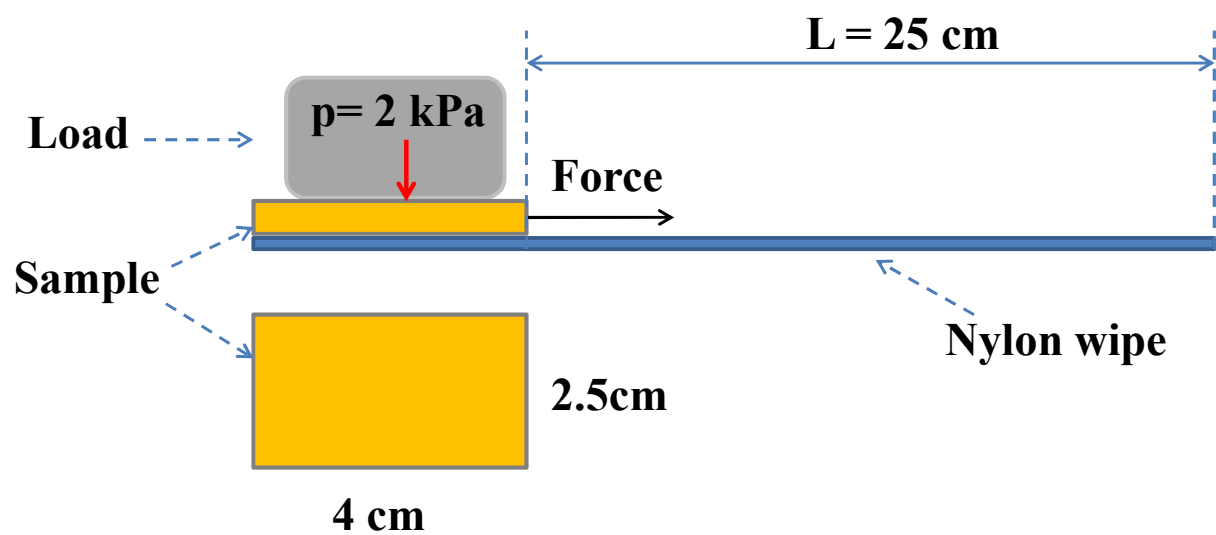
# Rapid reversible superhydrophobicity-to- superhydrophilicity transition on alternating current etched brass

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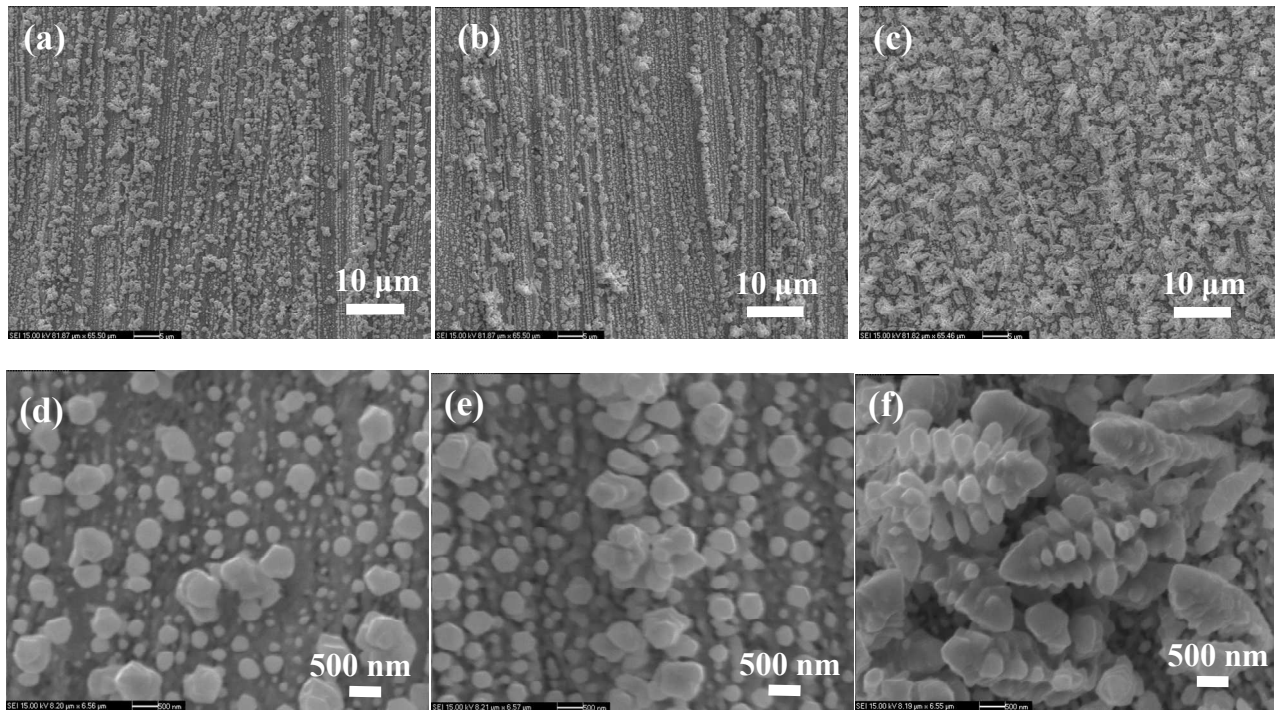
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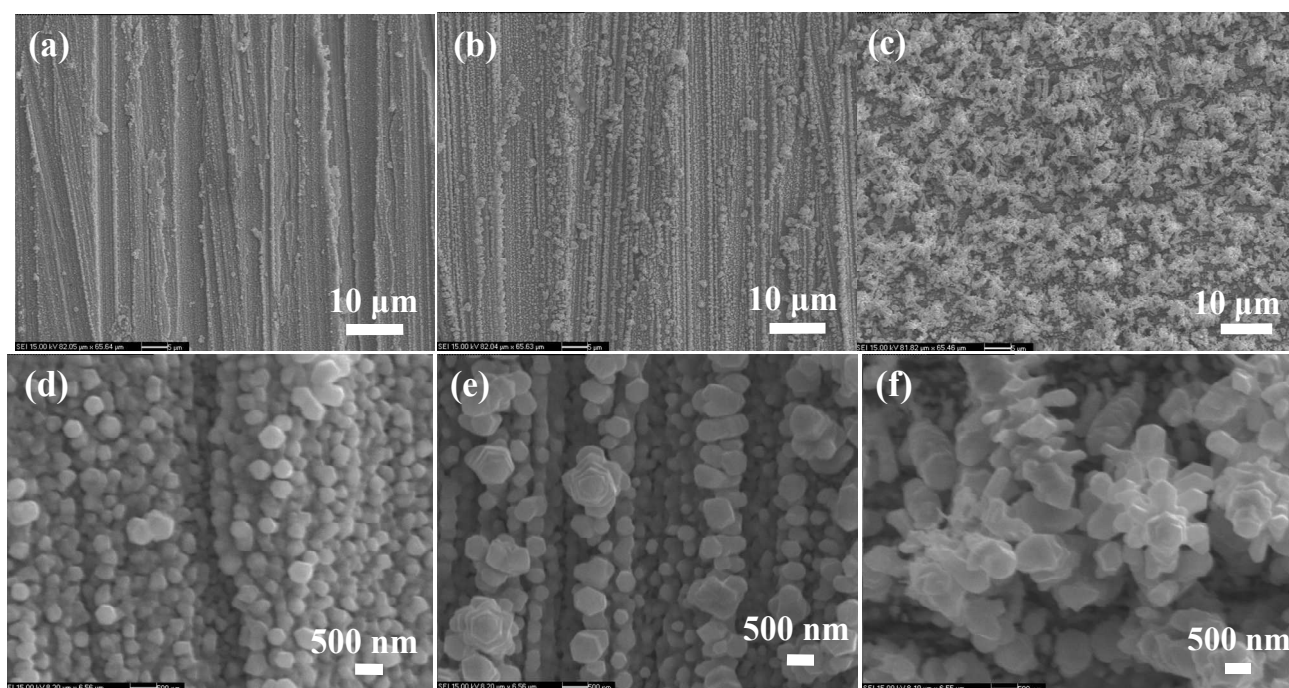
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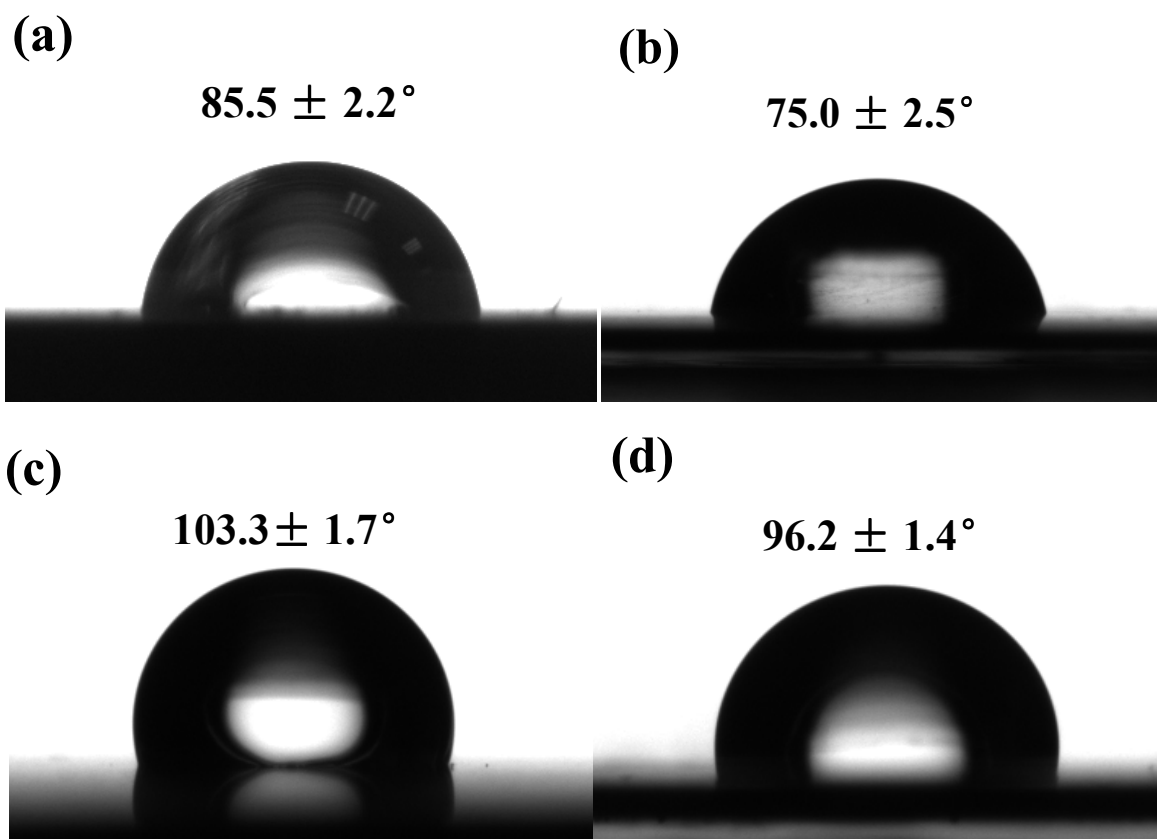
**Figure S1.** Schematic illustration of the abrasion test to evaluate the robustness of the modified annealed EB.



**Figure S2.** SEM images of etched brass with various concentrations of phosphoric acid: (a), (d) 0.1 M; (b), (e) 0.2M; (c), (f) 1.0M. (The etching duration is 5 min and the voltage is 20V.)



**Figure S3.** SEM images of etched brass with various AC etching voltage: (a), (d) 5 V; (b), (e) 10V; (e), (f) 25 V. (The etching duration is 5 min and the concentration of phosphoric acid is 0.5 M.)



**Figure S4.** Images of 6  $\mu\text{L}$  water on the (a) smooth brass; (b) smooth copper and stearic acid modified (c) smooth brass; (d) smooth copper.