

### Supplementary information

## Superhydrophilic-superhydrophobic integrated system based on copper mesh for continuous and efficient oil-water separation

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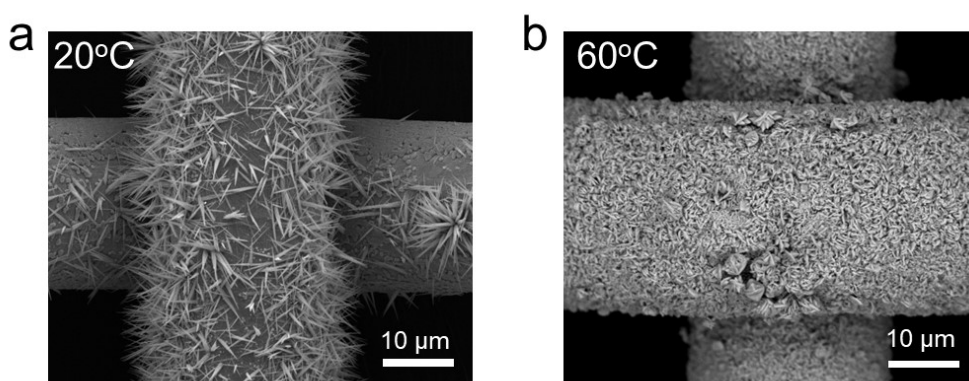


Fig. S1 SEM images of the oxidized copper mesh with the oxidation temperatures of (a) 20°C, and (b) 60°C.

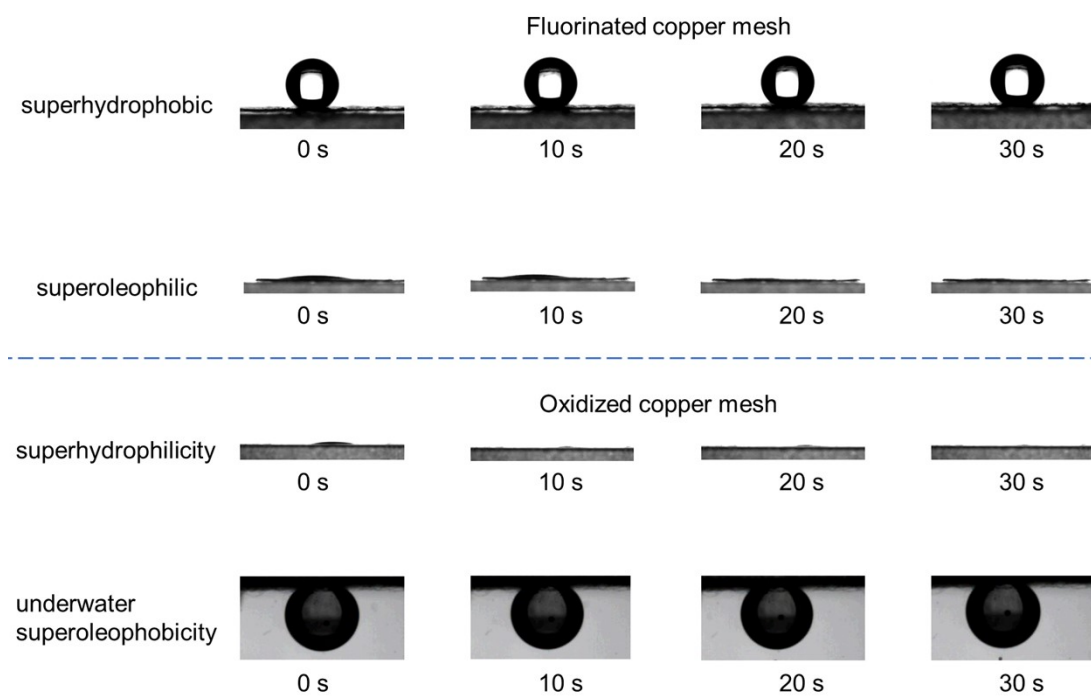


Fig.S2 The contact angles changes of fluorinated and oxidized copper meshes over time.

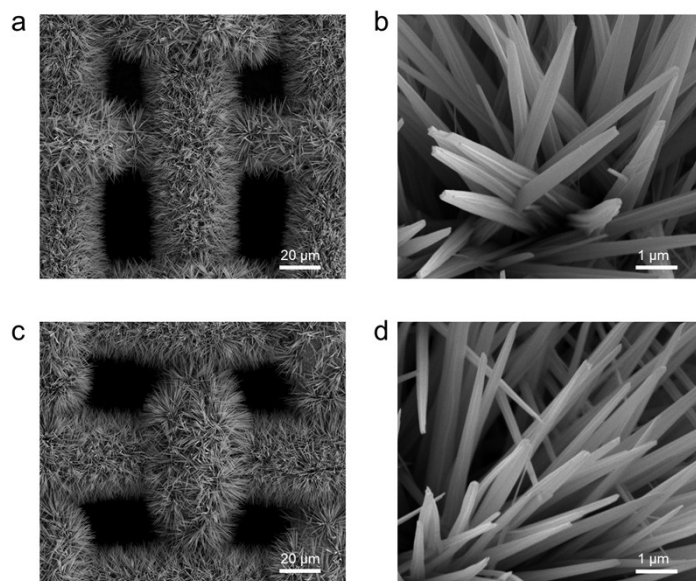


Fig.S3 SEM images of the (a, b) oxidized and (c, d) fluorinated copper meshes after oil/water separation.

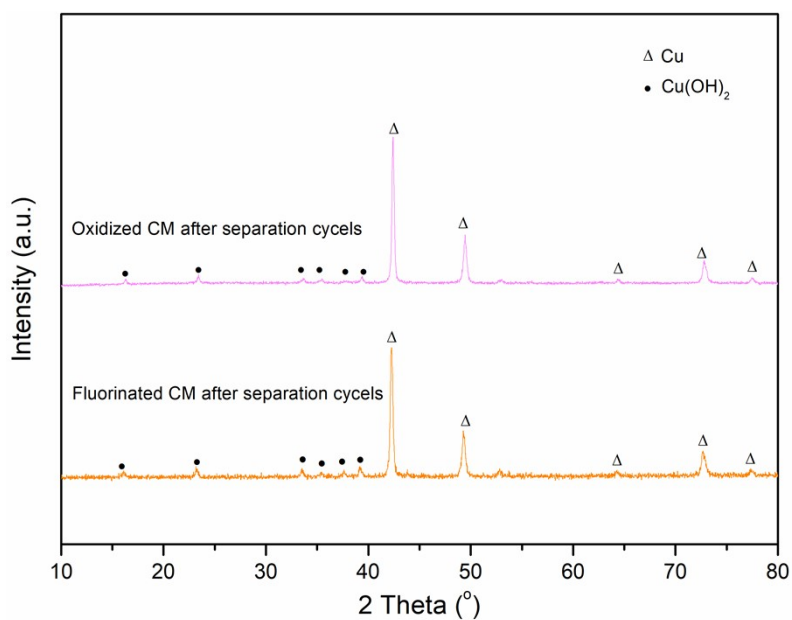


Fig.S4 XRD patterns of the oxidized and fluorinated copper meshes after oil/water separation.

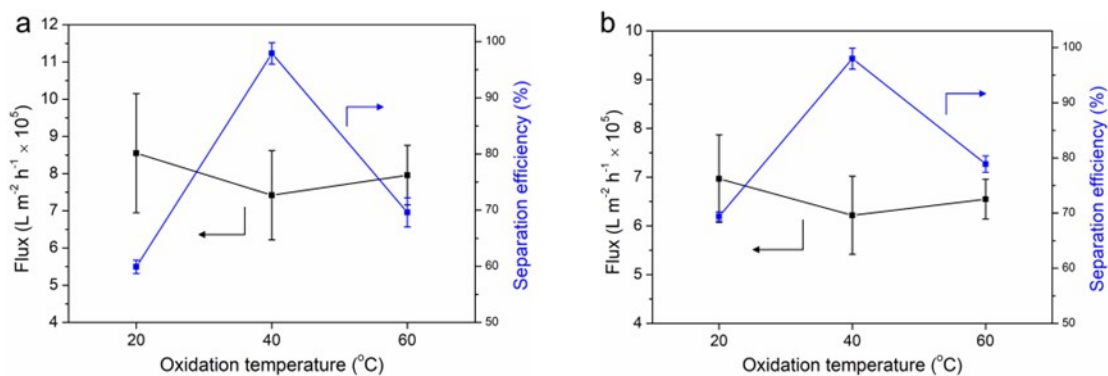


Fig. S5 The separation performance of (a) fluorinated copper mesh and (b) oxidized copper mesh at different oxidation temperature.

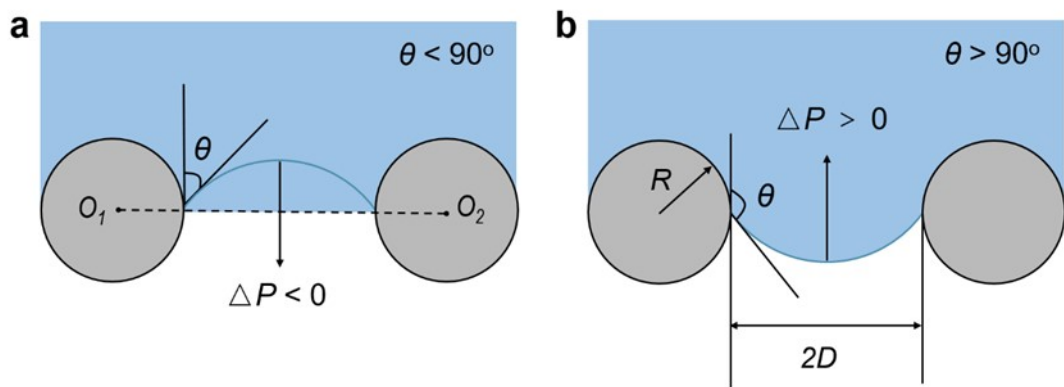


Fig. S6 Schematic diagram of the mechanism of water-removing oxidized copper oxide mesh (a) and oil-removing fluorinated copper mesh (b) for oil-water mixture separation.