

Superhydrophilic and Underwater Superoleophobic Copper Mesh Coated with Bamboo Cellulose Hydrogel for Efficient Oil/Water Separation

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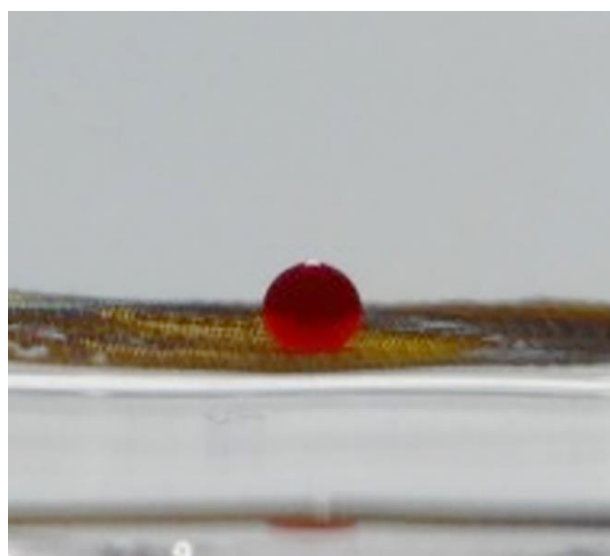


Figure S1. Optical image of an oil droplet (1,2-dichloroethane, dyed by Oil red O) on the BC hydrogel-coated super-wetting membrane surface.

The Optical image of an oil (4 μ L, 1,2-dichloroethane) was shown in Figure S1. Moreover, the underwater oil contact angle of the BC hydrogel-coated super-wetting membrane surface was 152.7°, which demonstrated remarkable underwater superoleophobicity of the super-wetting membrane.

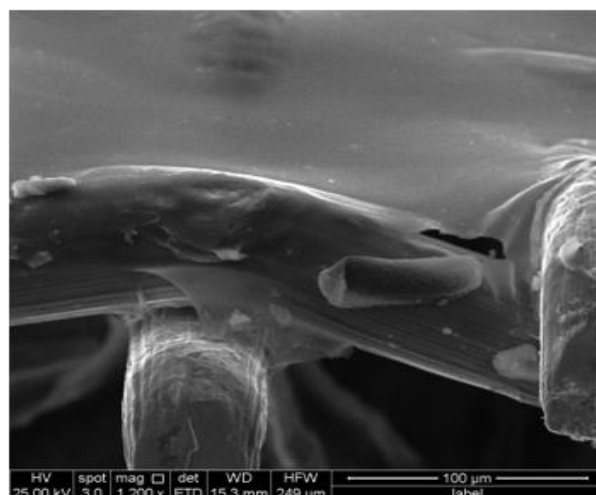


Figure S2. Cross-section SEM images of the BC hydrogel-coated super-wetting membrane.

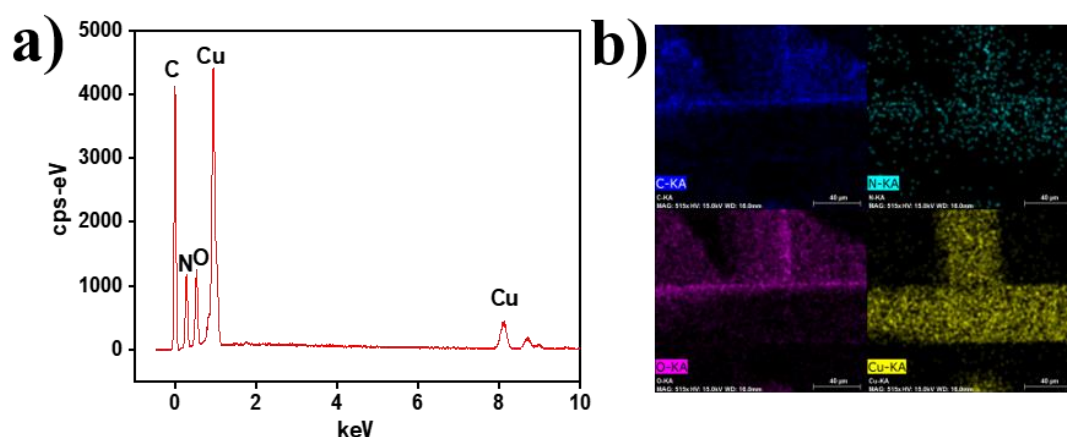


Figure S3. The EDS and elemental analysis of the BC hydrogel-coated super-wetting membrane, (a) the chart of element relative content, (b) images of surface element distribution.

The BC hydrogel-coated super-wetting membrane surface chemical compositions were further investigated through the energy dispersive spectroscope (EDS) (Figure S3.a-b). The EDS result revealed obvious characteristic peaks in a carbon element, nitrogen element and oxygen element, demonstrating the BC hydrogel has effectively coated the copper mesh.

Movie S1

Recording the water/hexane (dyed by Oil red O) separation process of the BC hydrogel-coated super-wetting membrane through a camera.

Movie S2

Recording the measuring process of the intrusion pressure of the hexane (dyed by Oil red O) on the BC hydrogel-coated super-wetting membrane by a camera.

Movie S3

Recording the rapid departure process of an oil droplet (1,2-dichloroethane) on the BC hydrogel-coated super-wetting membrane surface with a tilt angle of 5.3° through a camera.