Supplementary material

Facilely preparation photo-response TiO_2@copper wire mesh with quick on/off switchable superwetting for high efficiency oil-water separation

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Figure S9	

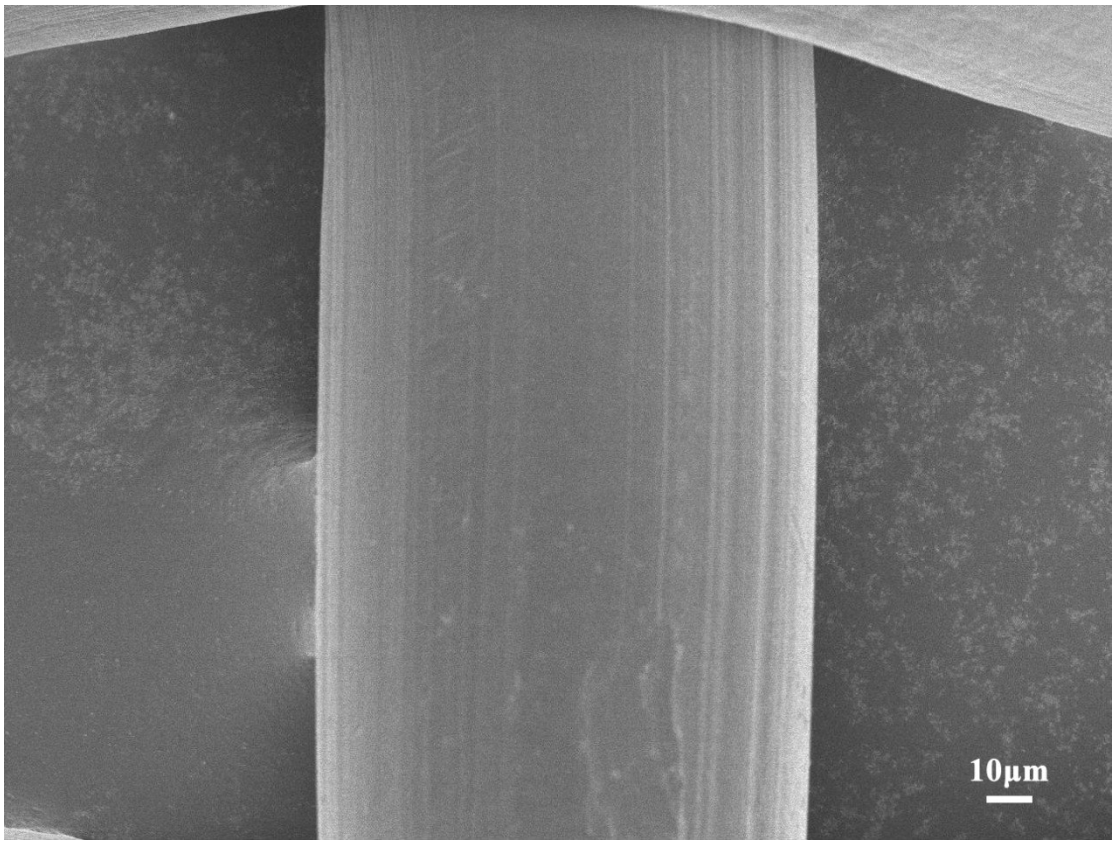

Figure S1. Local enlarged SEM image of the original copper wire mesh.

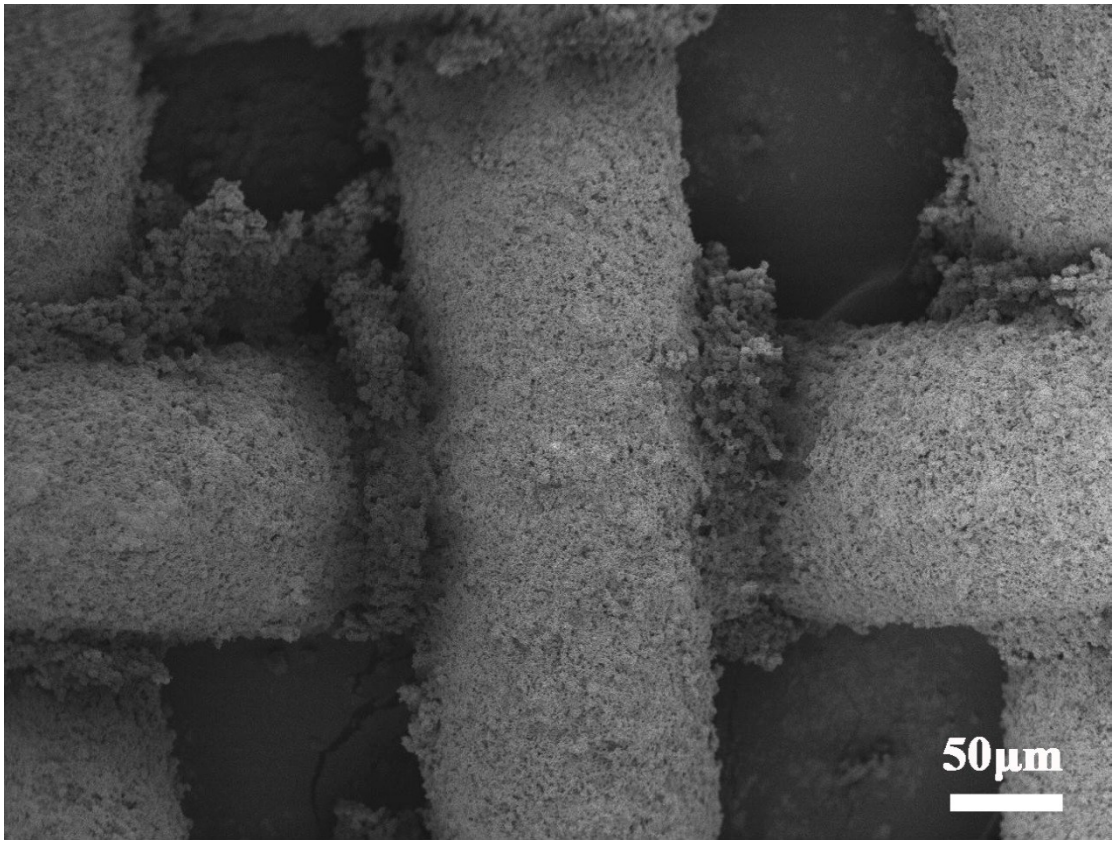

Figure S2. SEM images of CWM after STA modification

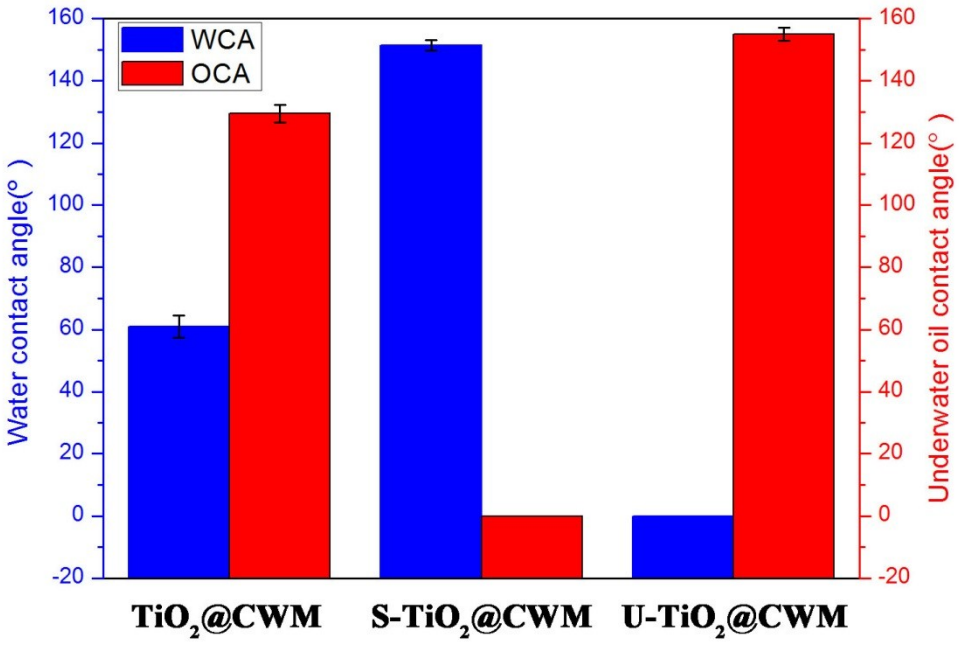

Figure S3. WCA and underwater OCA of TiO_2@CWM under different modification conditions

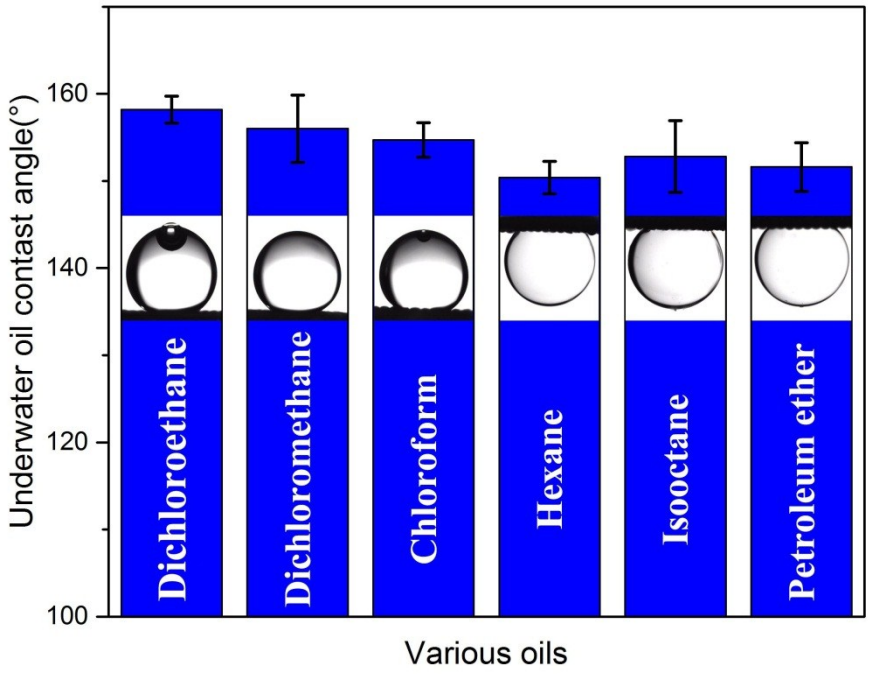

Figure S4. The underwater OCA of different oils was also tested.

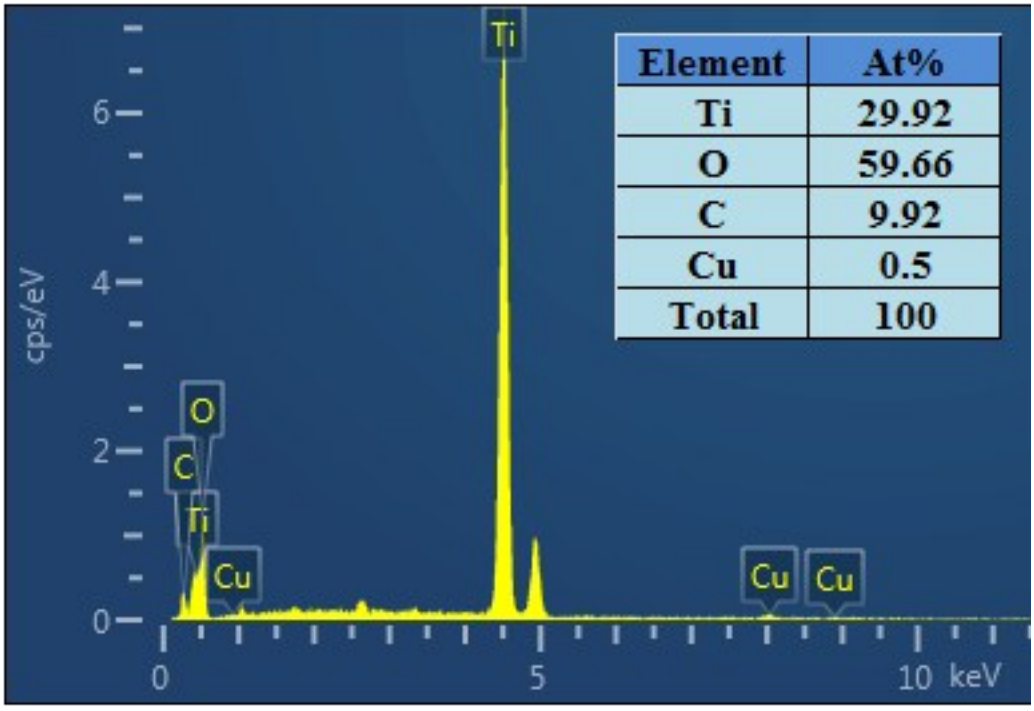

Figure S5. EDS analysis of TiO_2@CWM after UV irradiated.

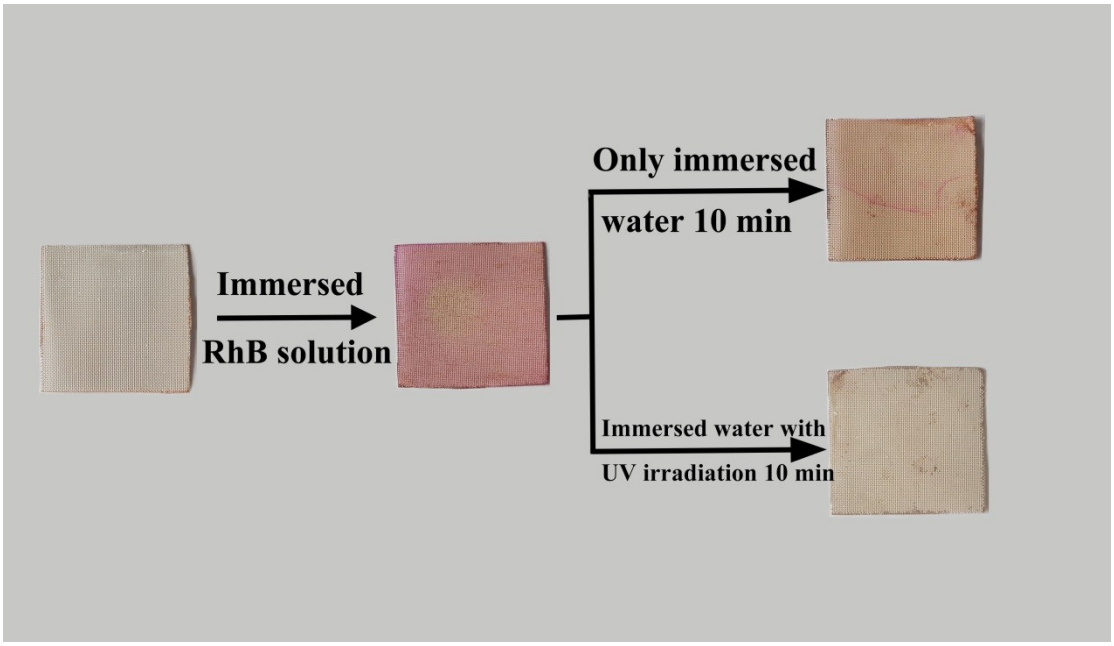

Figure S6. Pollution and self-cleaning process of TiO_2@CWM**.**

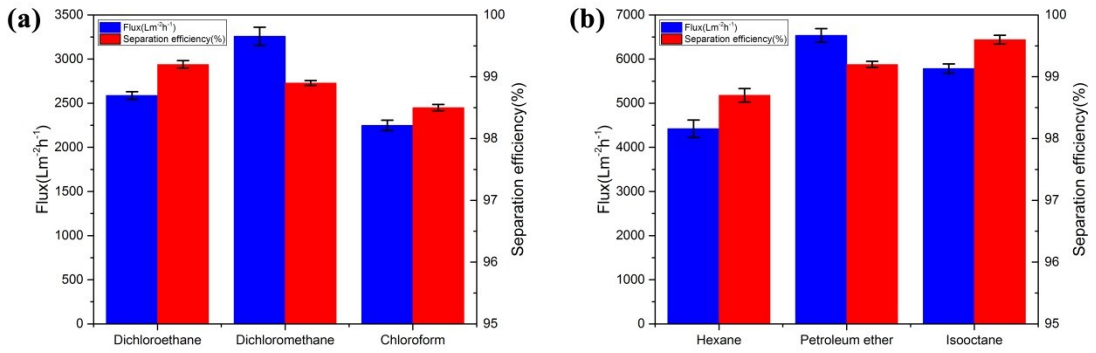

Figure S7. The separation capability of the TiO_2@CWM (a) heavy oil-water mixture and (b) light oil-water mixture after self-cleaning process.

Figure S8. The WCA of U-TiO_2@CWM after 20 cycles of abrasion.

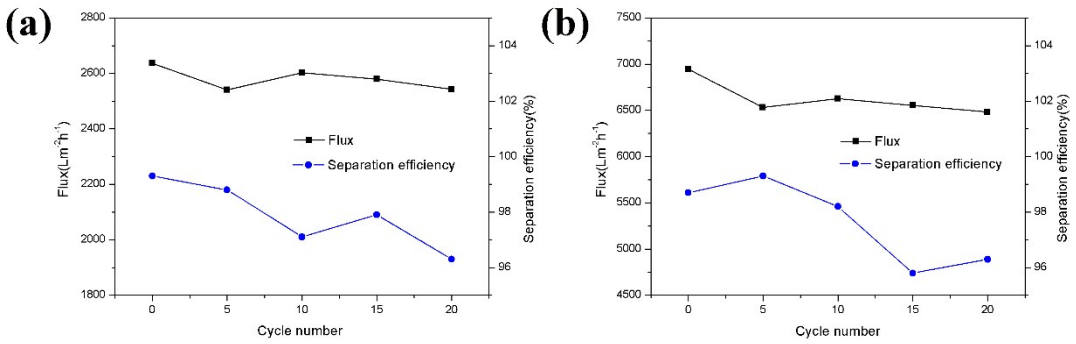

Figure S9. (a) Heavy oil - water separation efficiency and flux of S-TiO_2@CWM after abrasion test. (b) Light oil-water separation efficiency and flux of U-TiO_2@CWM after abrasion test.

Video S1. Dichloroethane-water separation process of the TiO_2@CWM: oil quickly permeated through the mesh, while water was blocked in the upper glass tube.

Video S2. Petroleum ether-water separation process of the TiO_2@CWM: water quickly permeated through the mesh, while oil was blocked in the upper glass tube.

Video S3. The friction properties of the prepared TiO_2@CWM were measured by sandpaper and weight.

Video S4. The friction surface of the TiO_2@CWM was the same as that of the non-friction surface, and the water drops can roll rapidly.