Supporting Information

For

Biomineralization-mimetic Preparation of Hybrid Membranes with Ultra-high Load of Pristine Metal-Organic Frameworks Grew on Silk Nanofibers for Hazards Collection in Water

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Scheme S1. Schematic diagram of electrospun setup.
Figure S1. (A) SEM image of electrospun silk nanofibers. (B) Histograms of electrospun silk nanofiber diameter distribution.
Figure S2. Cross section SEM image (A) of prepared electrospun silk nanofibers and a magnified part (B).
Figure S3. SEM images of ESF@ZIF-8 (1 h) membrane under different magnifications.
Figure S4. SEM images of commercial cellulose nitrate membrane before (A) and after ZIF-8 coating (B), as well as polypropylene membrane before (C) and after (D) ZIF-8 coating.
Figure S5. SEM image of ESF@ZIF-8 under different magnifications (A, B) and ESF@ZIF-67 (C) all prepared in 16-h reaction.
Figure S6. SEM image of the composite of regenerated silk protein and ZIF-8 prepared by directly mixing silk protein and precursors of ZIF-8.
Figure S7. SEM image of PAN/ZIF-8 at 1 min (A) and 5 min (B).
Figure S8. SEM image of micro ZIF-8 (A) and ZIF-67 (B) crystals formed in the solution after 1 h of incubation under the same condition as that for the preparation of ESF@MOFs hybrid membranes.
Figure S9. Calibration curves for As(V) (A) and Cr(VI) (B) detection obtained with ICP-OES, as well as for RB (C) and MG (D) with UV-vis spectroscopy.
Figure S10. Time dependent adsorption of 200 mg L\textsuperscript{-1} MG solution with ZIF-67 crystals and ESF@ZIF-67 membranes.
Figure S11. Time dependent adsorption of Cr(VI) using ZIF-67 crystals and ESF@ZIF-67.
Figure S12. 3D model of the filter with sandwiched ESF@MOF hybrid membranes for effective water purification.
Figure S13. The ESF@ZIF-67 based filtration system for the purification of MG contaminated water. A: syringe pump, B: 3D-printed filter equipped with ESF@MOF membrane, C: vessel with purified water.