

Supporting Information

Effective Biofouling Control Using Periodic H₂O₂ Cleaning with CuO Modified and Polypropylene Spacers

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Number of pages: 4

Number of figures: 5

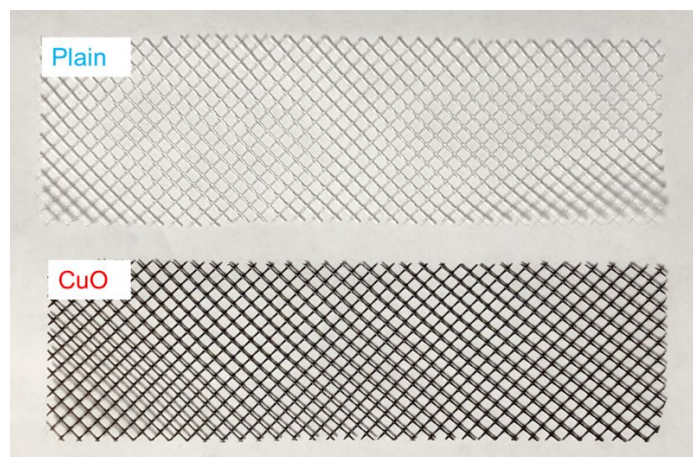


Figure S1. Plain and CuO coated polypropylene spacers with identical geometry.

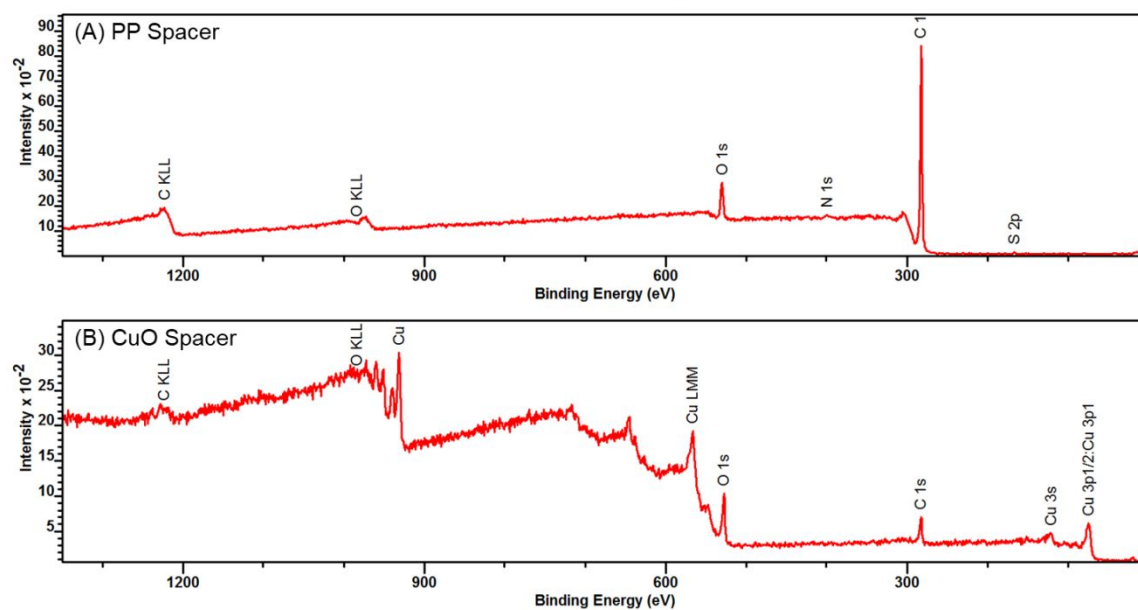


Figure S2. XPS spectra of (A) polypropylene spacer and (B) CuO coated polypropylene spacer.

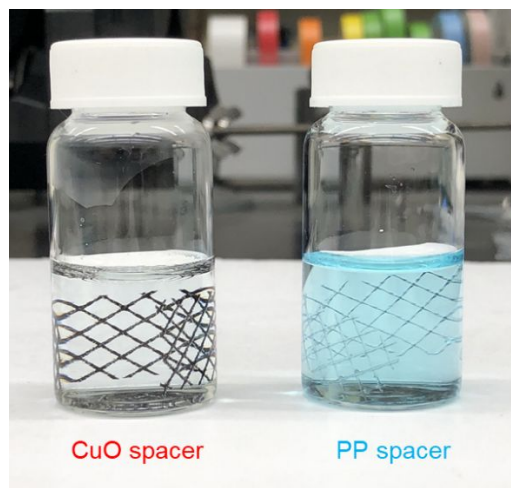


Figure S3. Decolorization of 1 mg/L methylene blue with CuO and PP spacer (1 cm \times 5 cm) in 0.3% H₂O₂ solution for 2 h.

The 1 mg/L methylene blue solution was prepared by adding 1 mg of methylene blue (Sigma Aldrich, USA) and 10 mL of 30% (w/w) H₂O₂ to 990 mL of DI water. CuO and PP spacers with dimensions of 1 cm \times 5 cm were cut and placed into two disposable vials (25 mL). Each vial was then added with 10 mL of 1 mg/L methylene blue solution, and waited for 2 h to observe color change.

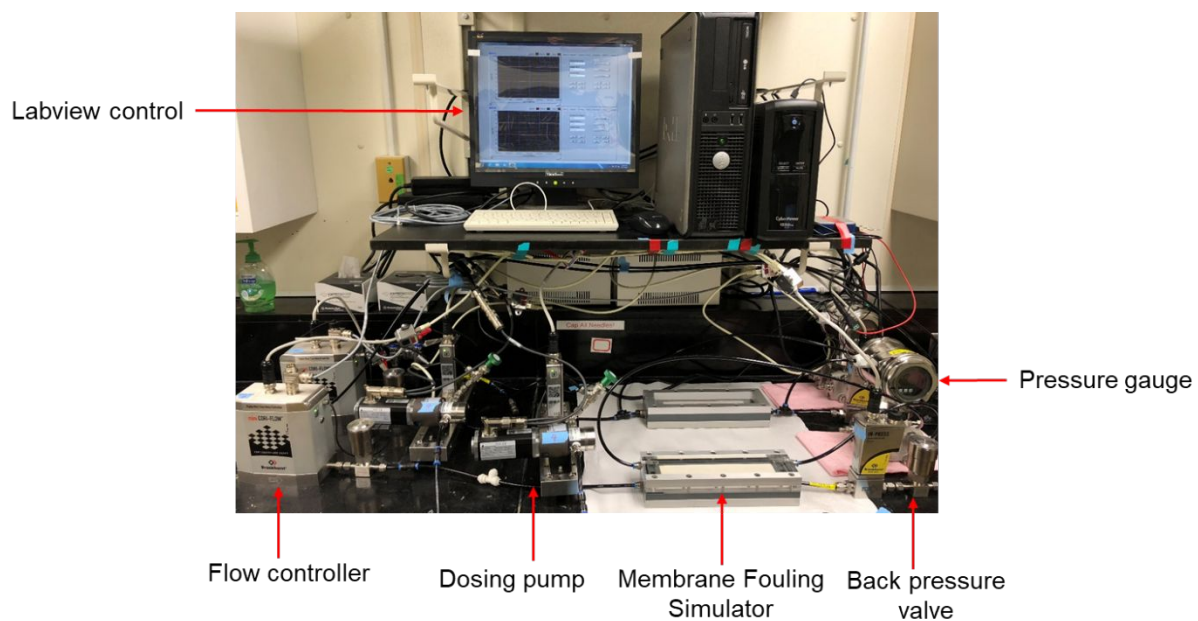


Figure S4. Setup of membrane fouling simulators.

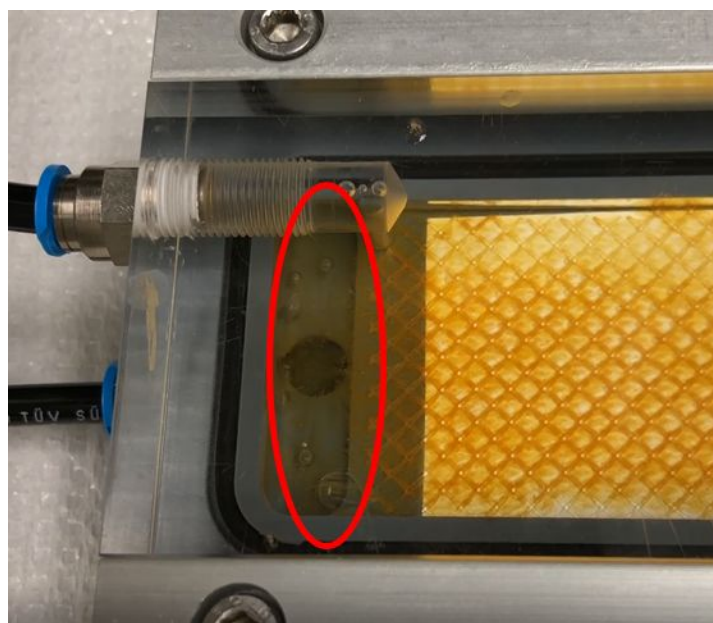


Figure S5. Bubble generation at inlet with 0.3% H_2O_2 dosing.