

1     **Synergistic effect of combined colloidal and organic fouling in**  
2     **membrane distillation: measurements and mechanisms**

3                                   Electronic Supplementary Information

4  
5                                   *Environmental Science: Water Research & Technology*

6  
7  
8  
9                                   June 2016

10  
11    Wenli Qin <sup>1,2,3</sup>, Jianhua Zhang <sup>1</sup>, Zongli Xie <sup>2</sup>, Derick Ng<sup>2</sup>, Ying Ye <sup>3</sup>, Stephen R. Gray <sup>1</sup>,  
12                                   Ming Xie <sup>1\*</sup>

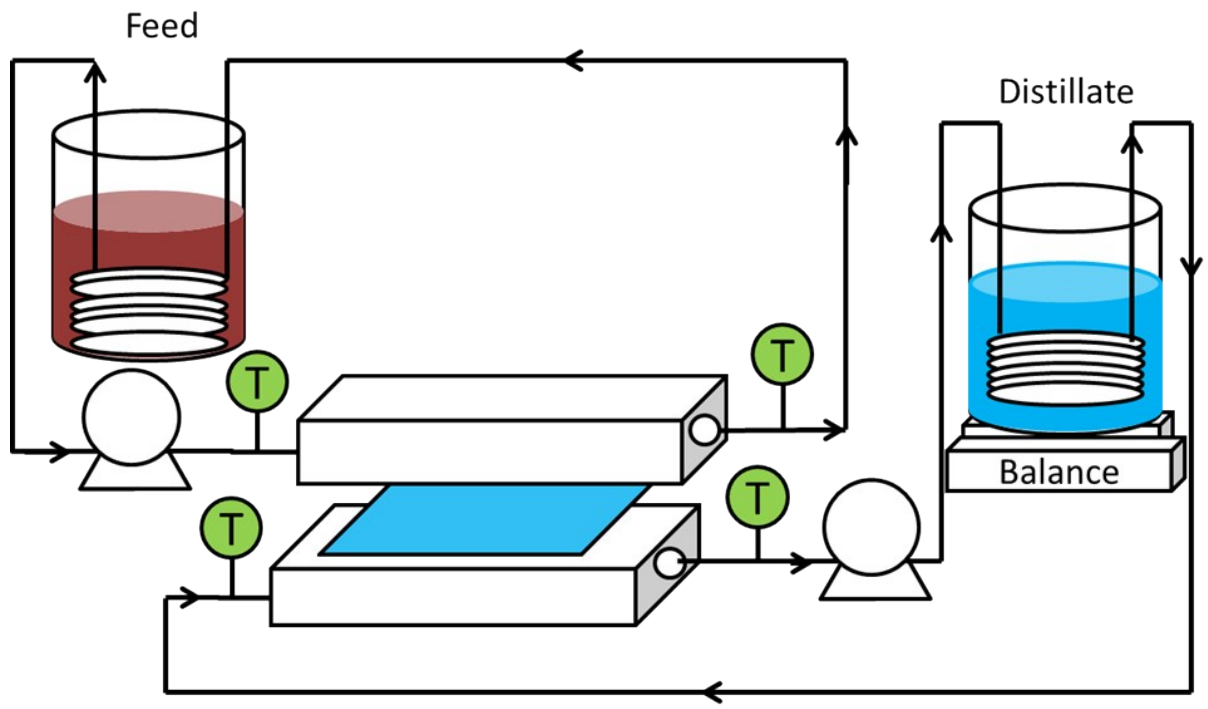
13    <sup>1</sup> Institute for Sustainability and Innovation, College of Engineering and Science, Victoria  
14                                   University, Melbourne, VIC 8001, Australia

15    <sup>2</sup> CSIRO Manufacturing, private bag 10, Clayton South MDC, VIC 3169, Australia

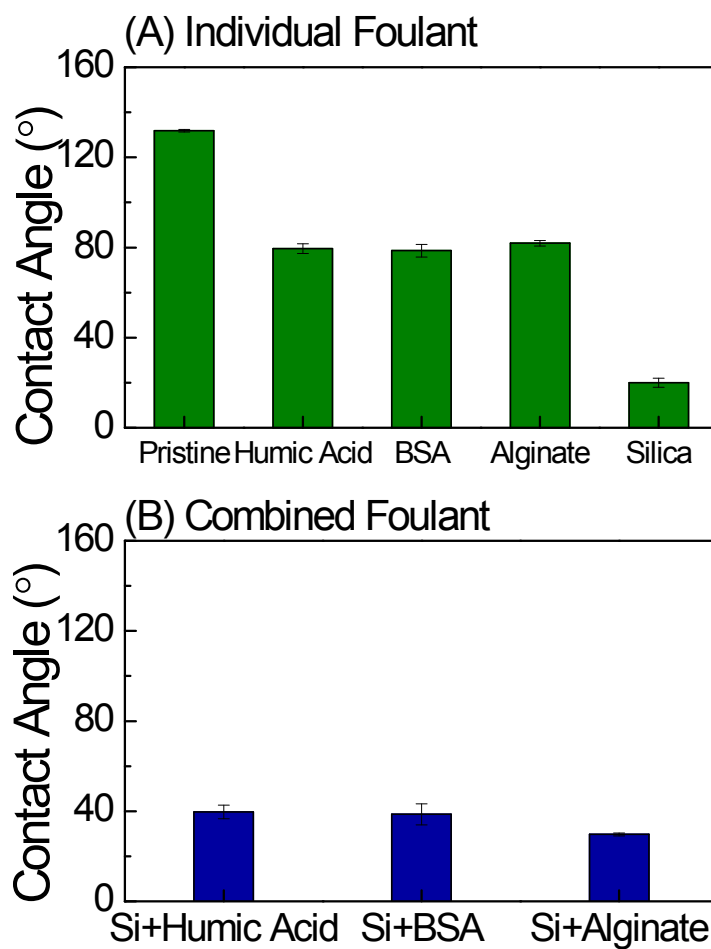
16    <sup>3</sup> Institute of Marine Geology and Resource, Ocean College, Zhejiang University, Zhoushan,  
17                                   Zhejiang 316021, China

---

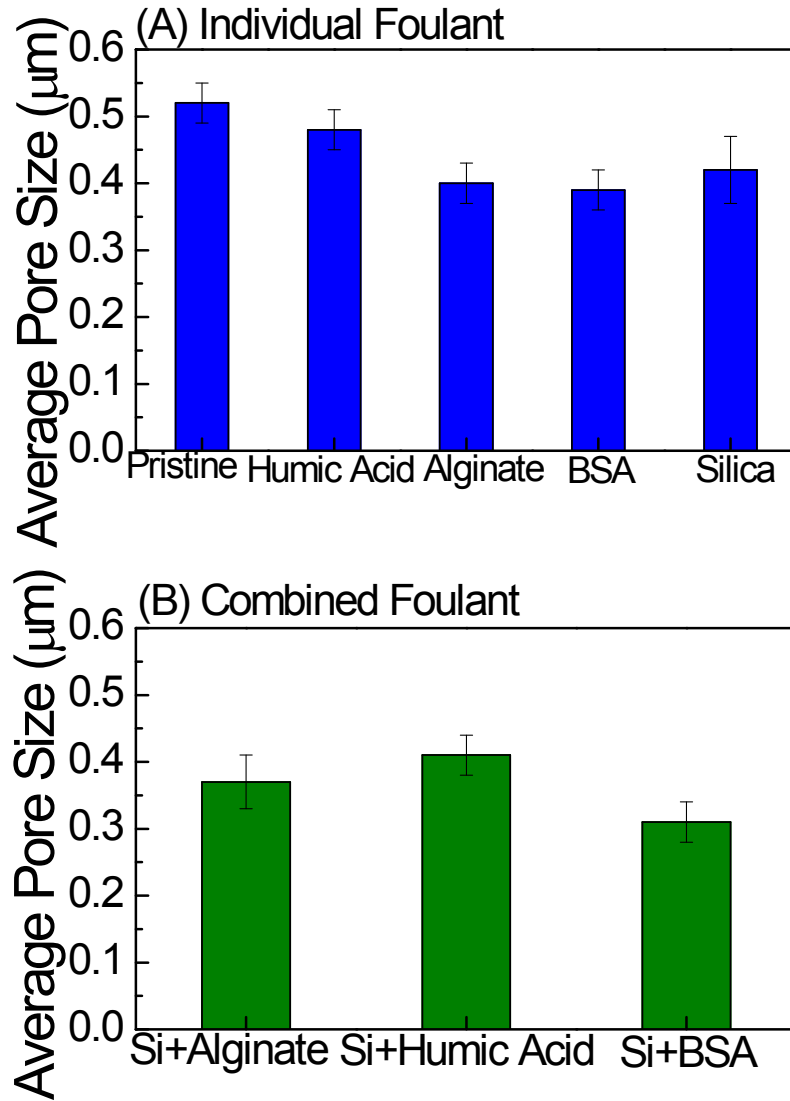
\* Corresponding author: [ming.xie@vu.edu.au](mailto:ming.xie@vu.edu.au); Ph: +61 (3) 9919 8174.



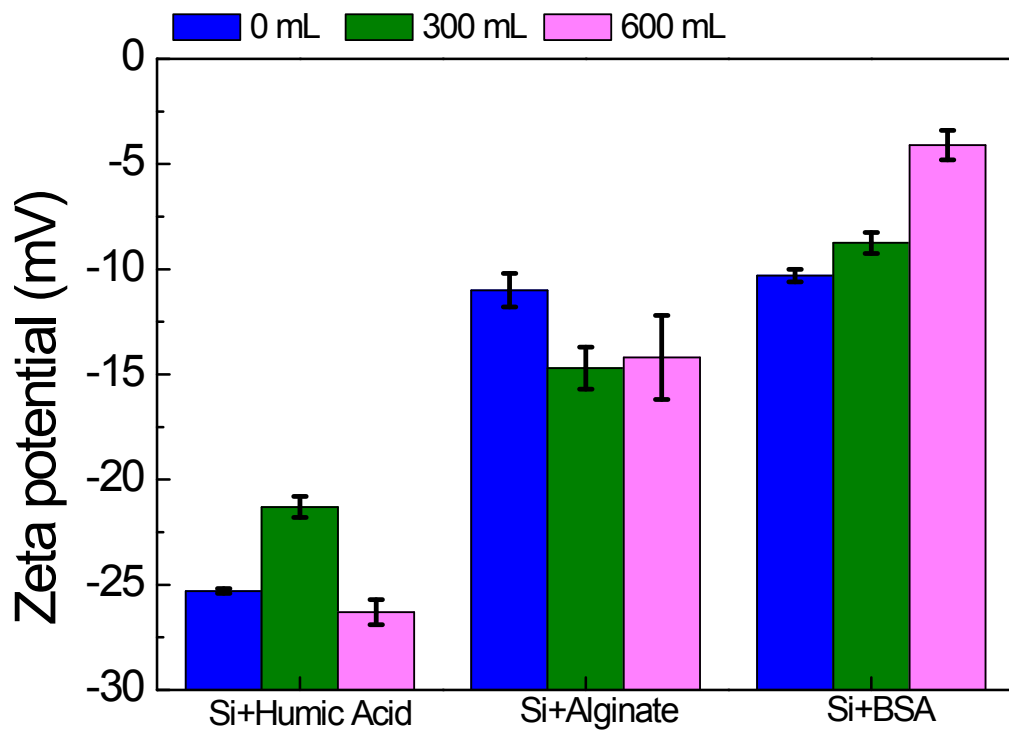
**Figure S1:** Schematic setup for direct contact membrane distillation



**Figure S2:** Contact angle measurements of pristine, individually-fouled, and combined fouled membranes. Error bar represents standard deviation from three measurements of two membrane samples. Experimental conditions were described in the Figures 2-4 in the manuscript.



**Figure S3:** Average pore size measurement of (A) pristine and individually-fouled, and (B) combined fouled membranes. Error bar represents standard deviation from three measurements of two membrane samples. Experimental conditions were described in Figures 1-4.



**Figure S4:** Zeta potential of feed solution during fouling as a function of cumulative permeate volume of combined fouling. Experimental conditions were described in Figures 2-4.