

Supplementary Information for

**Clues to membrane fouling hidden within the microbial
communities of membrane bioreactors**

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Table S1. Qualities of the synthetic wastewater used

Component	Value
Glucose (mg/L)	120
Peptone (mg/L)	90.0
Yeast extract (mg/L)	12.0
(NH ₄) ₂ SO ₄ (mg/L)	96.0
KH ₂ PO ₄ (mg/L)	17.0
NaHCO ₃ (mg/L)	300
CaCl ₂ .2H ₂ O (mg/L)	2.40
MgSO ₄ .7H ₂ O (mg/L)	24.0
MnSO ₄ .5H ₂ O (mg/L)	2.16
FeCl ₃ .6H ₂ O (mg/L)	0.12
pH	7.70 ± 0.10
TOC (mg/L)	140 ± 5
COD (mg/L)	245 ± 10
Conductivity (μS/cm)	670 ± 5

Table S2. Qualities of the primary effluent used

Component	Value
SS (mg/L)	67.0 ± 9.9
Turbidity (NTU)	33.4 ± 0.2
Turbidity after centrifugation ^a (NTU)	1.78 ± 0.17
Mean particle size (µm)	0.834
COD (mg/L)	59.5 ± 2.12
SCOD (mg/L)	22.1 ± 0.8
pH	6.79 ± 0.02
Conductivity (µS/cm)	593

^a Centrifugation was performed for 10 min at 4,000 rpm (2,951 g).

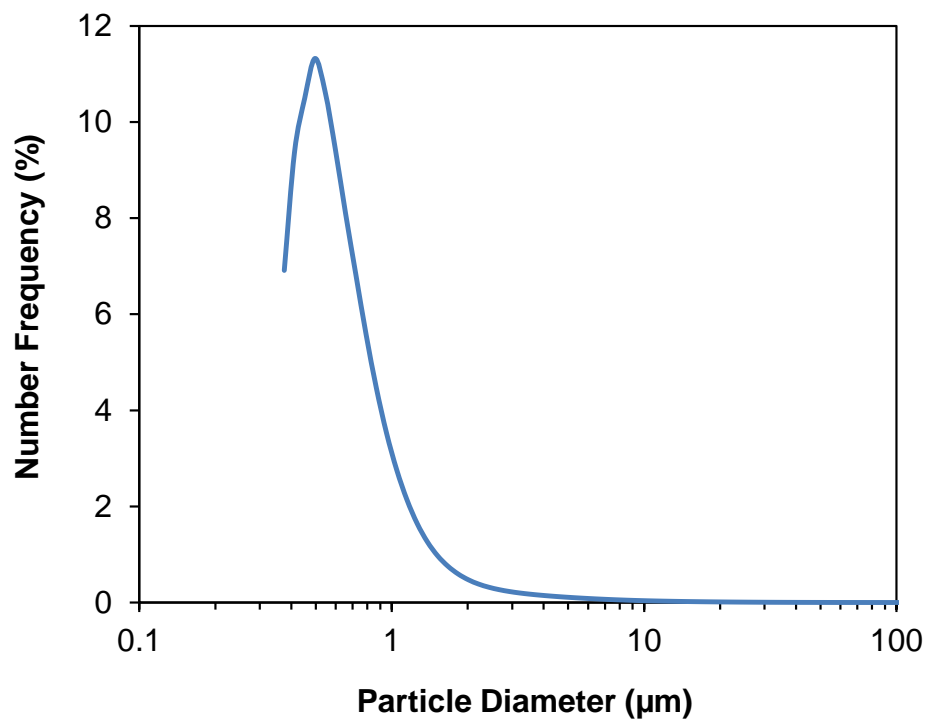


Fig. S1. Particle size distribution of the supernatant of the primary effluent used.

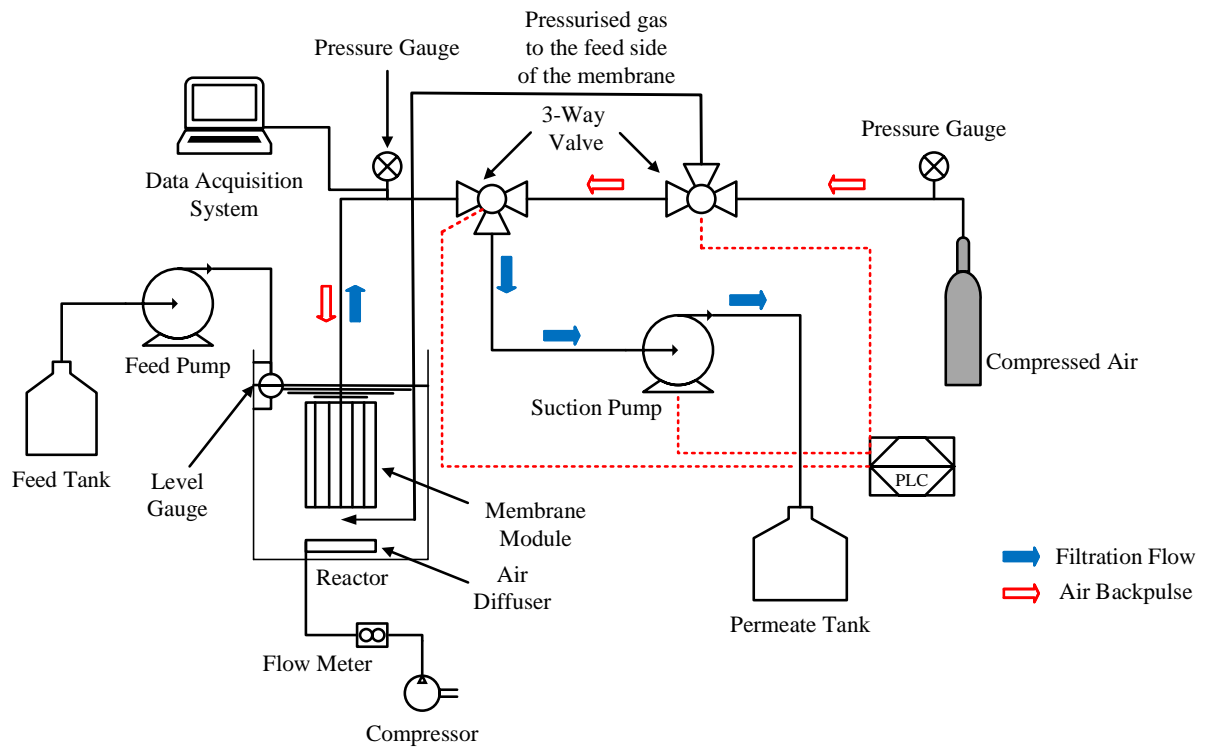


Fig. S2. A schematic of the laboratory-scale MBR used in this study.

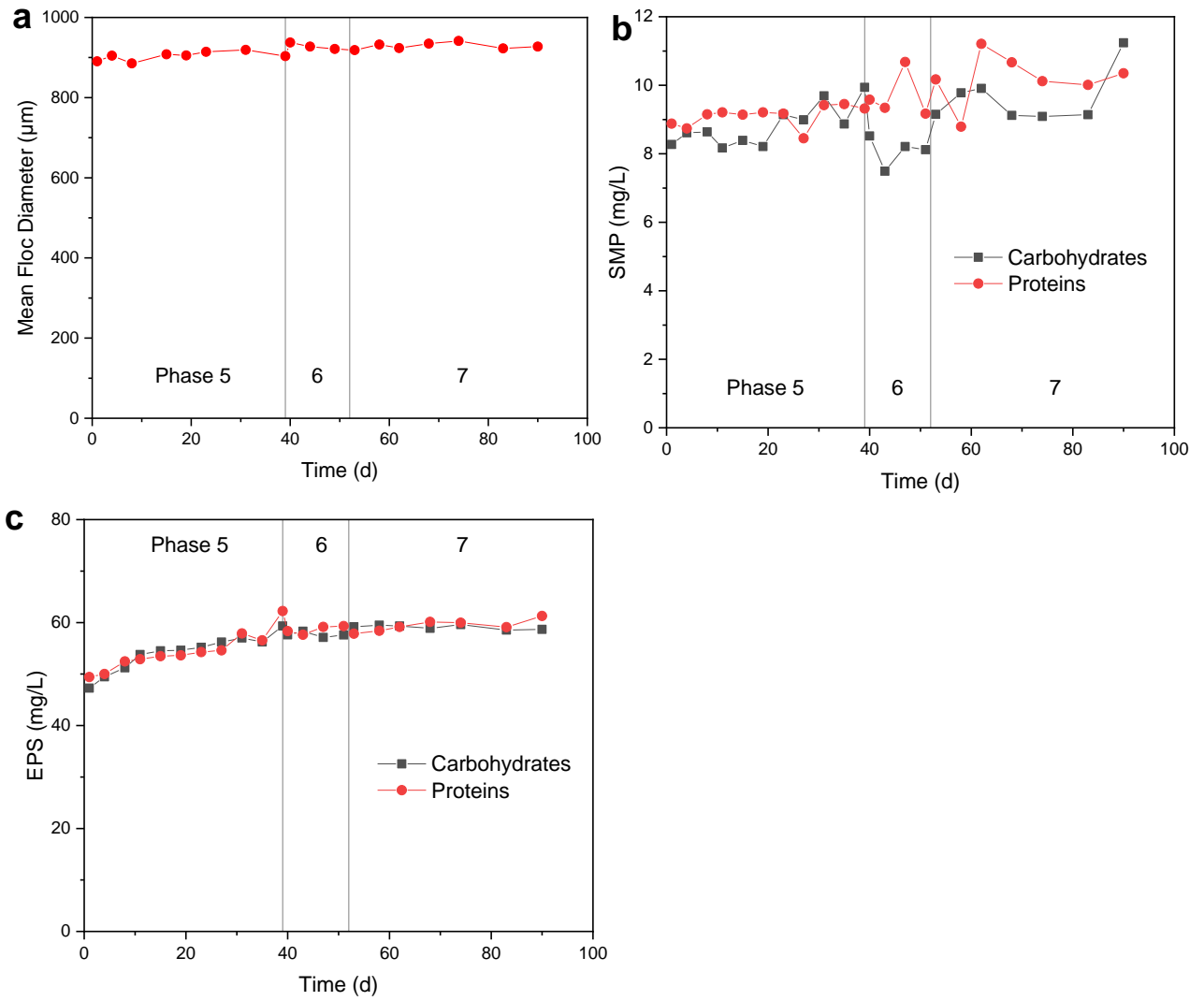


Fig. S3. Variations in mixed liquor properties during Phases 5 through 7: (a) mean floc size, (b) SMP, and (c) EPS levels.

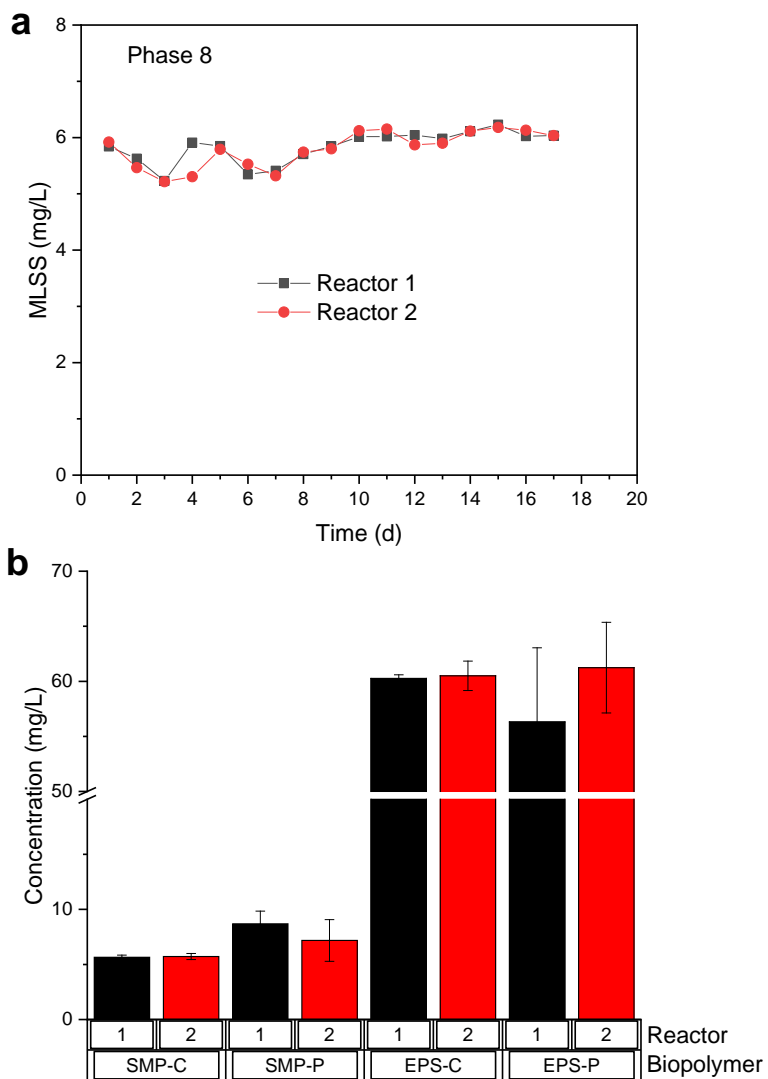


Fig. S4. Variations in the concentration of (a) biomass and (b) biopolymer in mixed liquor of Reactors 1 and 2 with time. C and P in SMP and EPS indicate carbohydrates and proteins, respectively.