

Composite nanofiltration membrane with tannic acid coordinated collagen fibers for enhanced molecule separation

Yinshan Xie^a, Zihao Ge^a, Xin Li^b, Yi Wang^c, Fei Liu^{d*}, Jian Li^{a*}

^a Laboratory of Environmental Biotechnology, School of Environmental and Civil Engineering, Jiangnan University, Wuxi 214122, China

^b Singapore Membrane Technology Centre, Nanyang Environment and Water Research Institute, Nanyang Technological University, 1 Cleantech Loop, 637141, Singapore

^c Laboratory of Environmental Technology, INET, Tsinghua University, Beijing 100084, China

^d School of Food Science and Technology, State Key Laboratory of Food Science and Technology, Jiangnan University, Wuxi 214122, China

* Corresponding author: Fei Liu

E-mail address: feiliu@jiangnan.edu.cn

* Corresponding author: Jian Li

E-mail address: jian.li@jiangnan.edu.cn

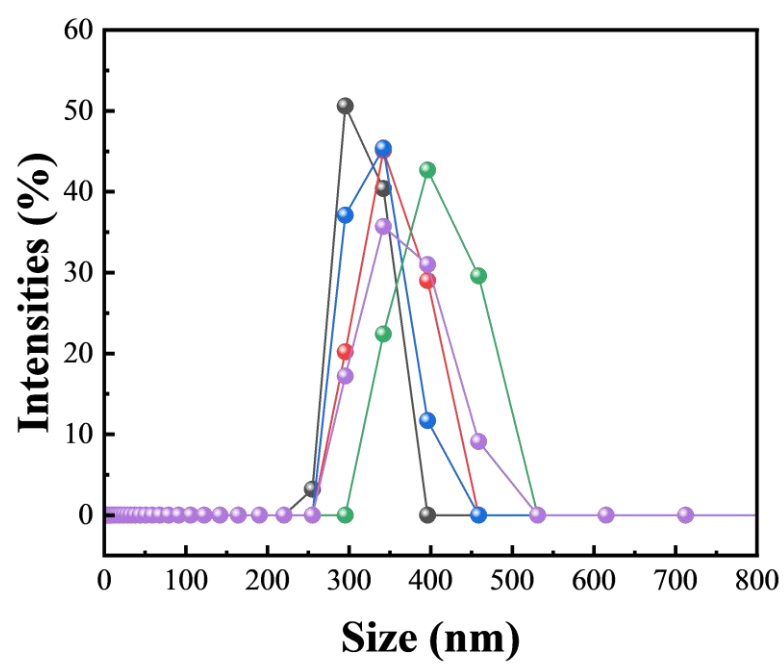


Fig. S1. Size distribution of CFs.

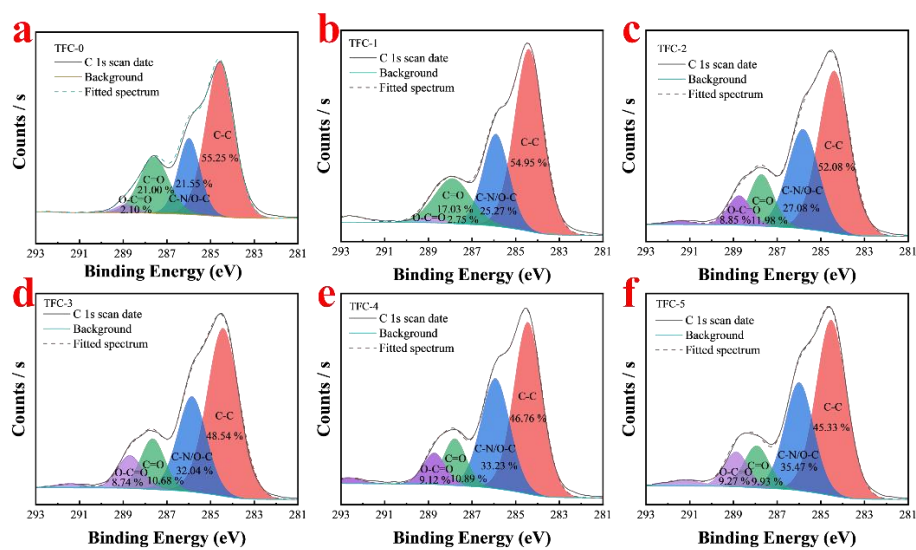


Fig. S2. High-resolution XPS of C 1s for TFC membrane.

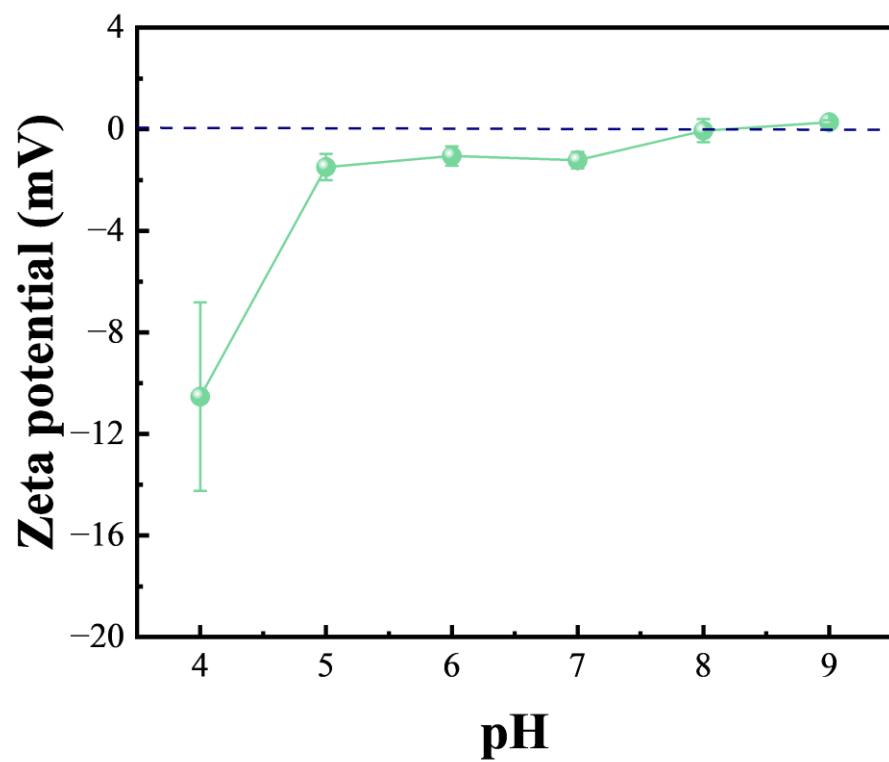


Fig. S3. Zeta potential of tannic acid solution.

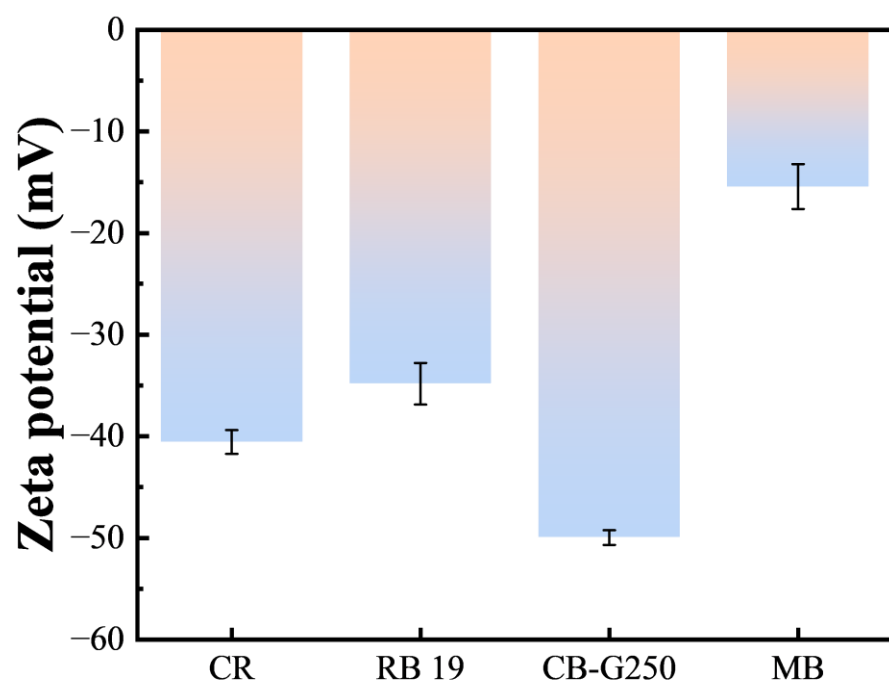


Fig. S4. Zeta potential of dyes at neutral conditions.

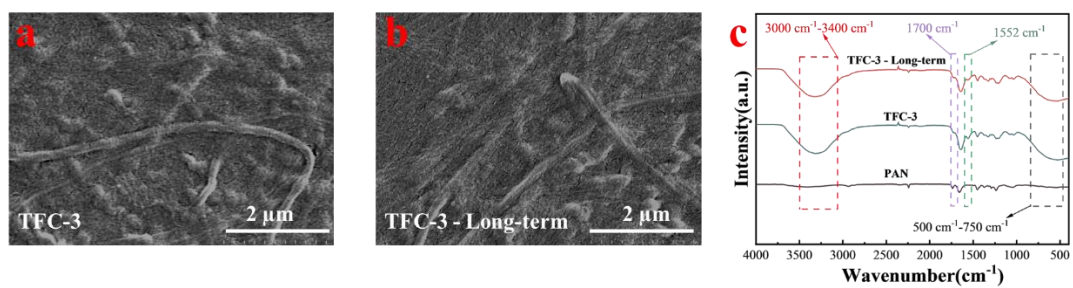


Fig. S5. (a, b) Surface morphologies and (c) FTIR spectra of TFC-3 membrane before and after the long-term filtration.

Table S1. Surface charge information and chemical structures of dyes.

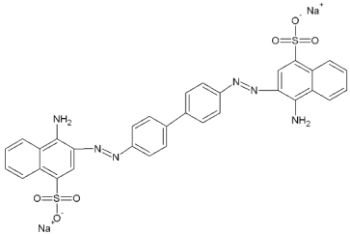
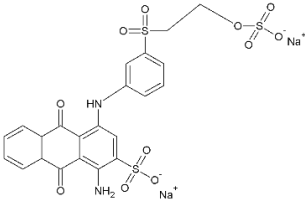
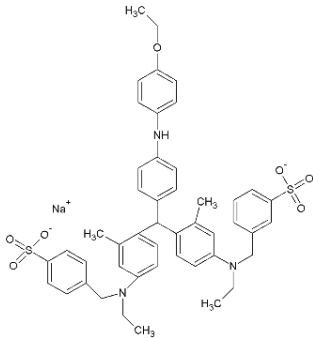
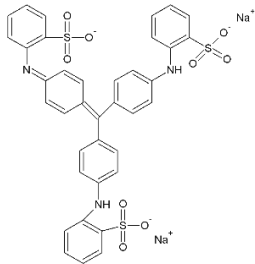
Dyes	Molecular weight (Da)	Charge	Structural formula
CR	696.7	Anionic	
RB 19	626.5	Anionic	
CB G-250	854.0	Anionic	
MB	799.8	Anionic	

Table S2. Comparison of TFC-3 membrane with other reported membranes.

Membrane	Permeability (L m ⁻² h ⁻¹ bar ⁻¹)	Type of dyes and salts	Solute rejection (%)	Ref.
TA-Fe ³⁺ /PES	13.6	NaCl	5.0	[1]
		Na ₂ SO ₄	10	
		CR	99	
		MB	70.0	
TA/GOQDs	11.7	NaCl	17.2	[2]
		Na ₂ SO ₄	66.7	
TFN		CR	99.8	
PG/ε-PL-M	7.6	MB	97.6	[3]
		NaCl	17.0	
		MB	98.9	
Fe(III)-phos- (PEI)/HPAN	8.5	NaCl	7.5	[4]
		Na ₂ SO ₄	5.9	
		MgSO ₄	20.6	
		MgCl ₂	30.5	
		MB	99.51	
SMA-PEI/PES	23	NaCl	2.4	[5]
		Na ₂ SO ₄	4.4	
		MgSO ₄	5.8	
		CR	99.7	

		MB	7.3	
		NaCl	2.7	
		Na ₂ SO ₄	6.0	
PES 30-4-0.02	15.25	MgCl ₂	3.8	[6]
		CR	97.4	
		MB	99.1	
		NaCl	26.4	
		Na ₂ SO ₄	93.3	
		MgSO ₄	83.4	
TFC-3	23.49	MgCl ₂	36.2	This work
		CR	99.8	
		RB 19	98.2	
		MB	98.4	
		CB-G250	98.2	

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