

Supporting Information

Composite Nanofiltration Membranes via the Co-deposition and Cross-linking of Catechol/Polyethylenimine

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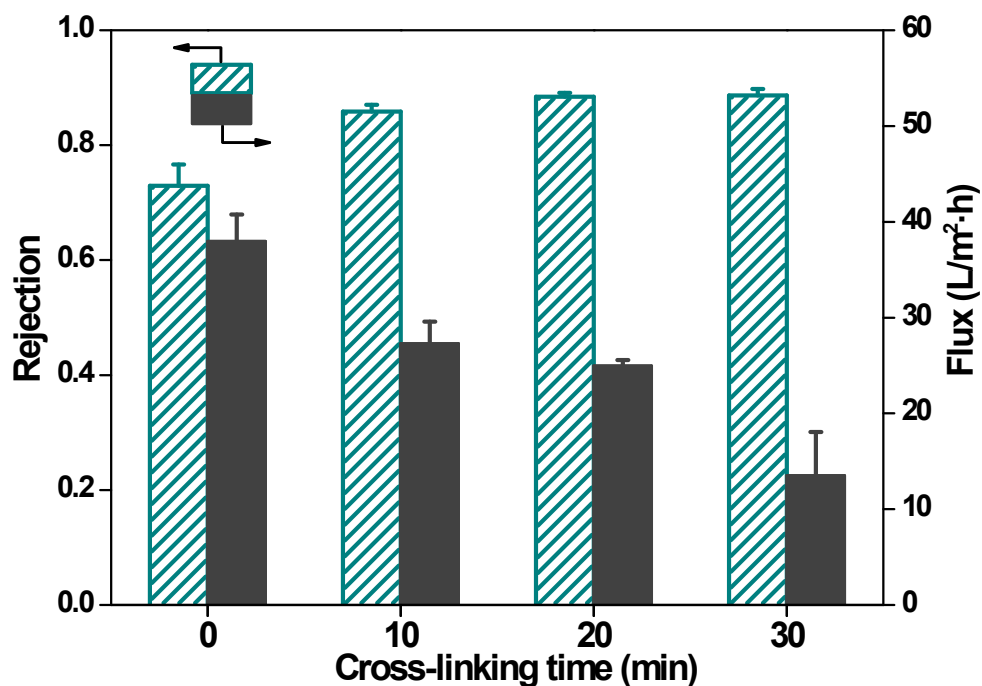


Fig. S1. Influence of cross-linking time on the NF performance of cross-linked composite membranes. Preparation conditions: CCh/PEI = 4:1, deposition time = 4 h, post-treatment time = 20 min; Test conditions: MgCl₂ concentration = 1000 mg/L, pH = 6.0, 25 °C, 0.6 MPa, cross-flow rate = 30 L/h.

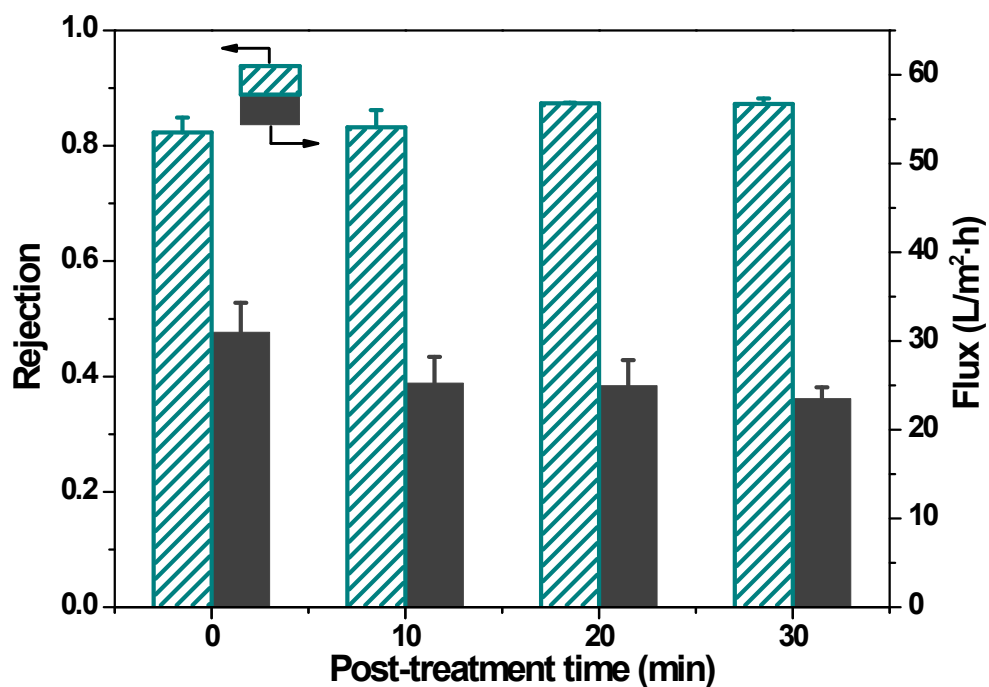


Fig. S2. Influence of and post-treatment time on the NF performance of cross-linked composite membranes. Preparation conditions: CCh/PEI = 4:1, deposition time = 4 h, cross-linking time = 20 min; Test conditions: MgCl₂ concentration = 1000 mg/L, pH = 6.0, 25 °C, 0.6 MPa, cross-flow rate = 30 L/h.

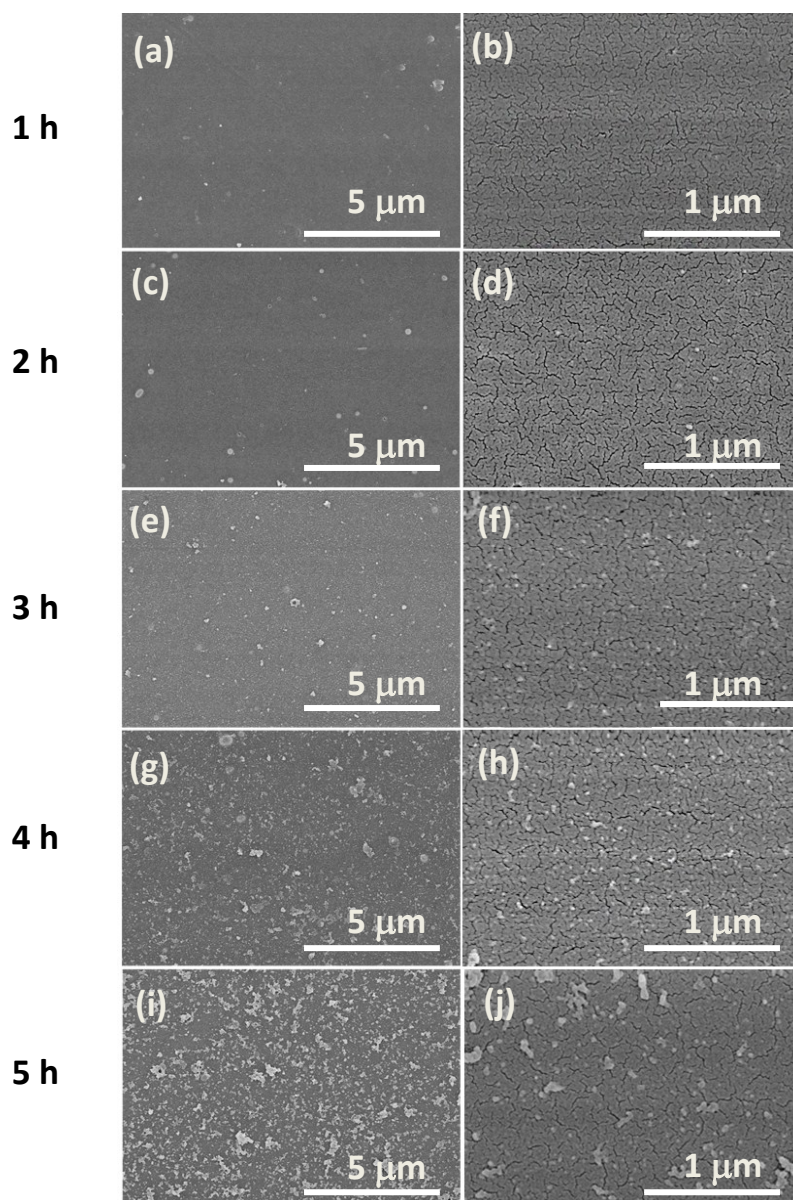


Fig. S3. Surface SEM images of cross-linked composite membranes with different co-deposition time (CCh/PEI = 4:1).

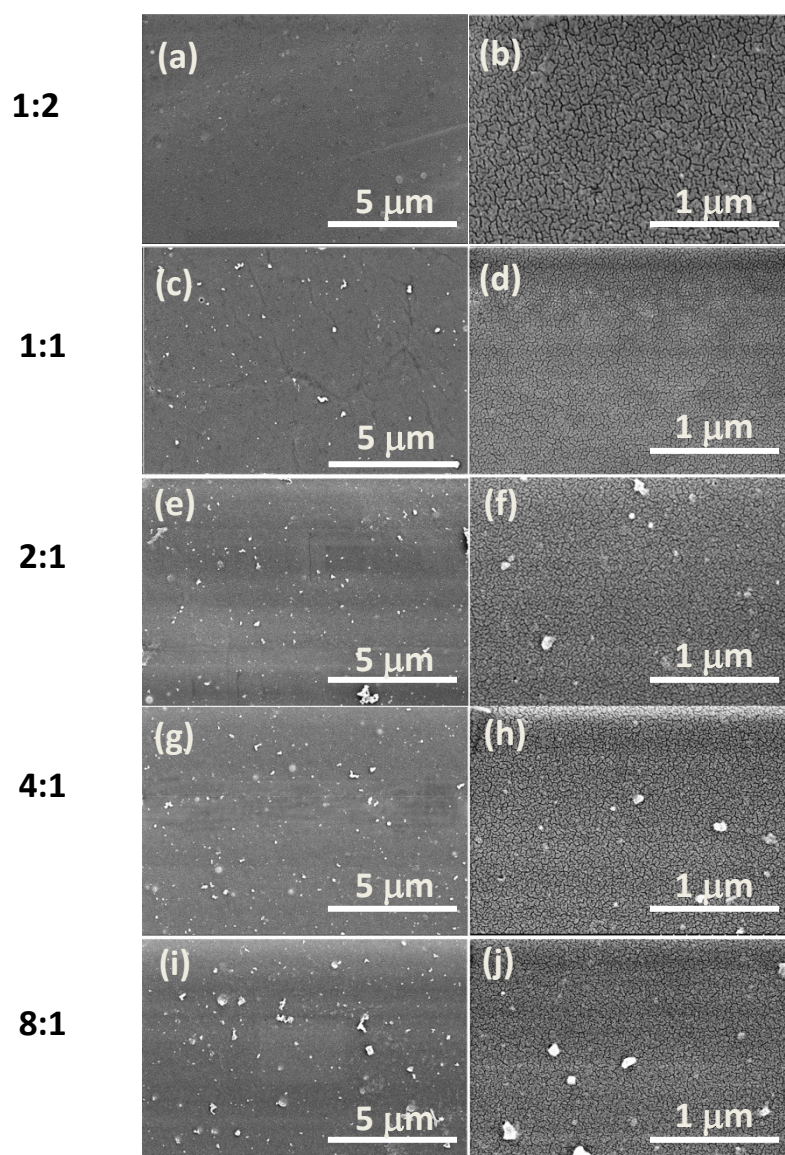


Fig. S4. Surface SEM images of cross-linked composite membranes with CCh/PEI mass ratios (deposition time = 4 h).

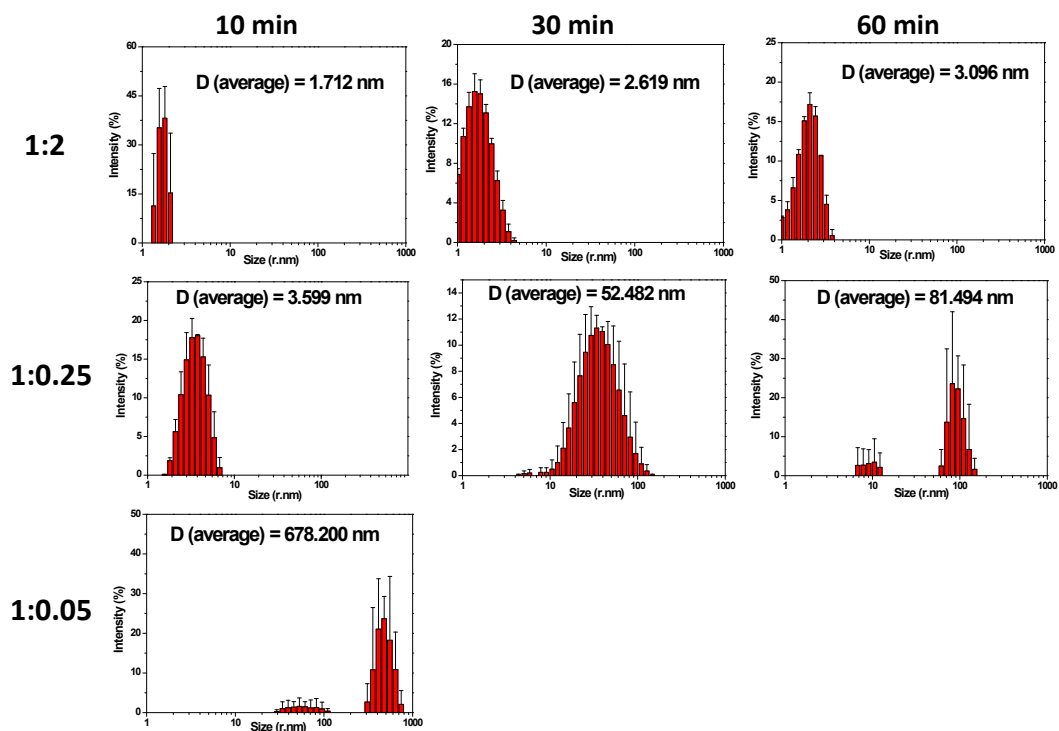


Fig. S5. The size distribution of CCh/PEI aggregates with time in various solutions of different CCh/PEI mass ratios: (a) 1:2, (b) 1:0.25, (c) 1:0.05. CCh = 1 mg/mL.

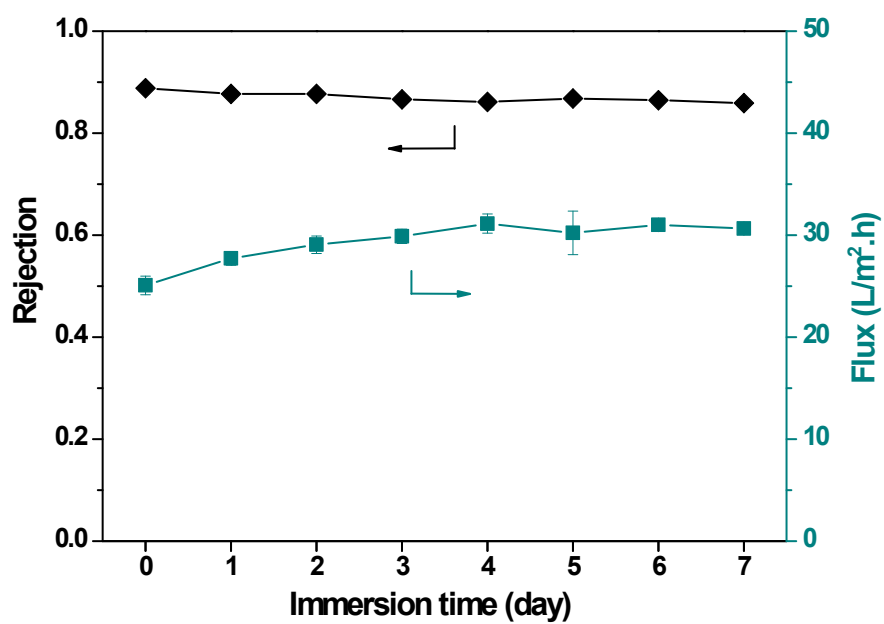


Fig. S6 Effect of alcohol treatment on the performance of the TFC membranes. Preparation conditions: CCh/PEI = 4:1, deposition time = 4 h, cross-linking time = 20 min; Test conditions: MgCl₂ concentration = 1000 mg/L, pH = 6.0, 25 °C, 0.6 MPa, cross-flow rate = 30 L/h.