Supporting Information

Pressure-Assisted Preparation of Graphene Oxide Quantum Dots Incorporated Reverse Osmosis Membranes: Antifouling and Chlorine Resistance Potentials

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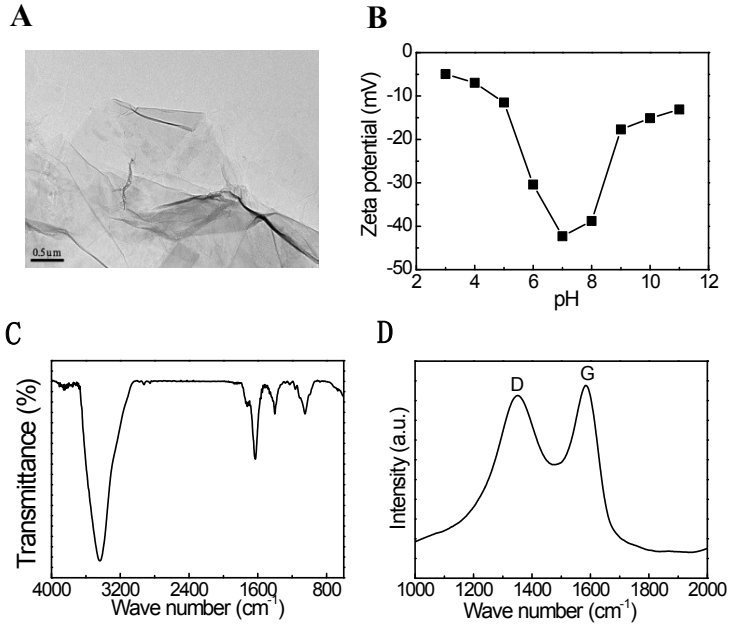

Fig. S1 Characterization of GO. (A) TEM image (inset), (B) zeta potential, (C) FTIR spectrum, and (D) Raman spectrum of GO.

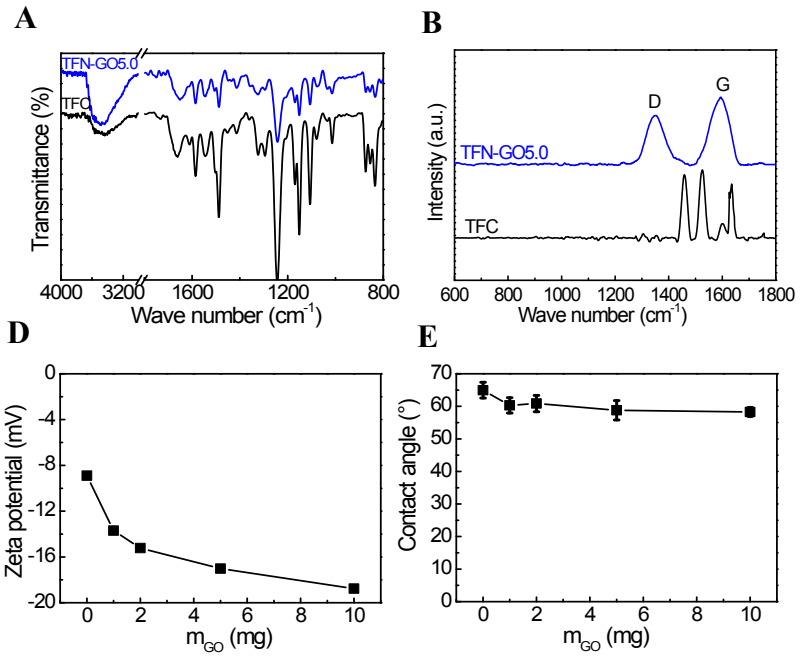

Fig. S2 Characterization of GO incorporated membranes. (A) ATR-FTIR spectrum, (B) micro-Raman spectrum, (C) zeta potential, and (D) contact angle of the GO incorporated membranes.

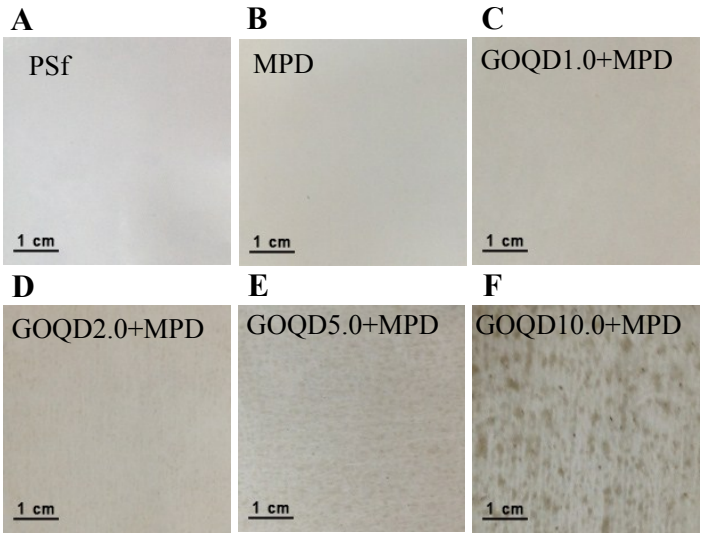

Fig. S3 Photographs of (A) PSf substrate, (B) MPD filtrated PSf substrate, (C) 1.0 mg GOQD/MPD aquaeous suspension filtrated PSf substrate, (D) 2.0 mg GOQD/MPD aquaeous suspension filtrated PSf substrate, (E) 5.0 mg GOQD/MPD aquaeous suspension filtrated PSf substrate, (F) 10.0 mg GOQD/MPD aquaeous suspension filtrated PSf substrate.

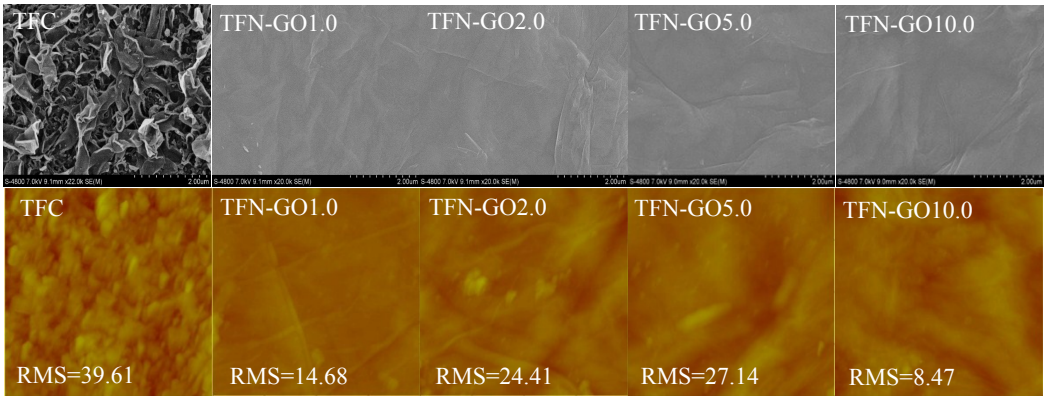

Fig. S4 SEM top view images and AFM (scan size 1 μm × 1 μm, z-scale 1 μm) images of the TFC and TFN-GO5.0 membranes.

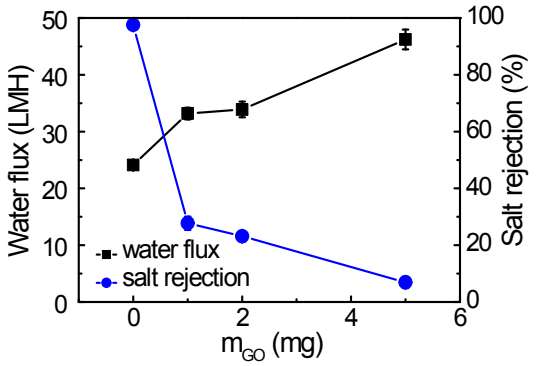

Fig. S5 Water flux (*J*) and salt rejection (*R*) of the GO incorporated membranes.

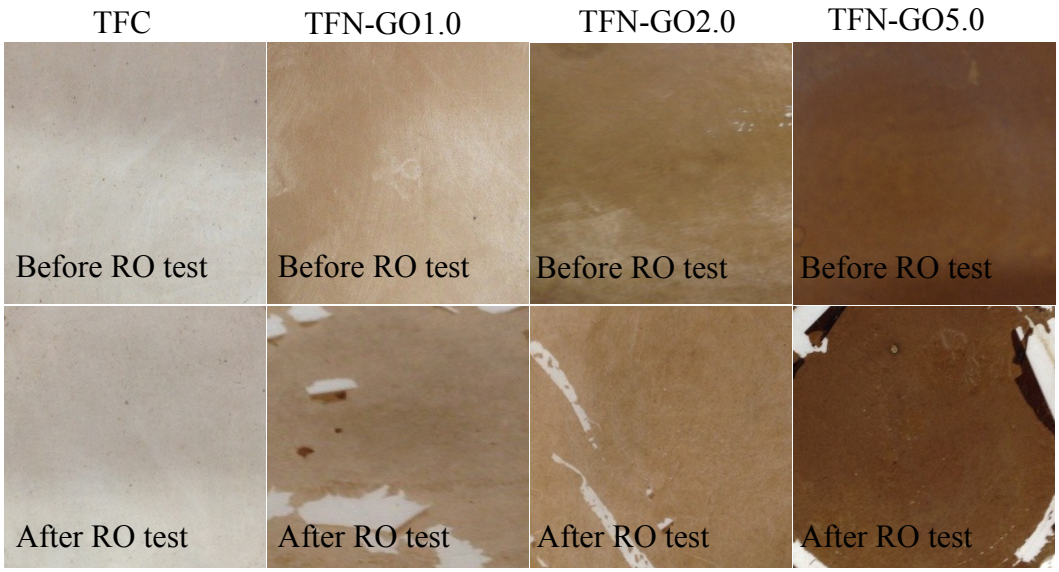

Fig. S6 Photographs of the GO incorporated membranes before RO test and after RO test.

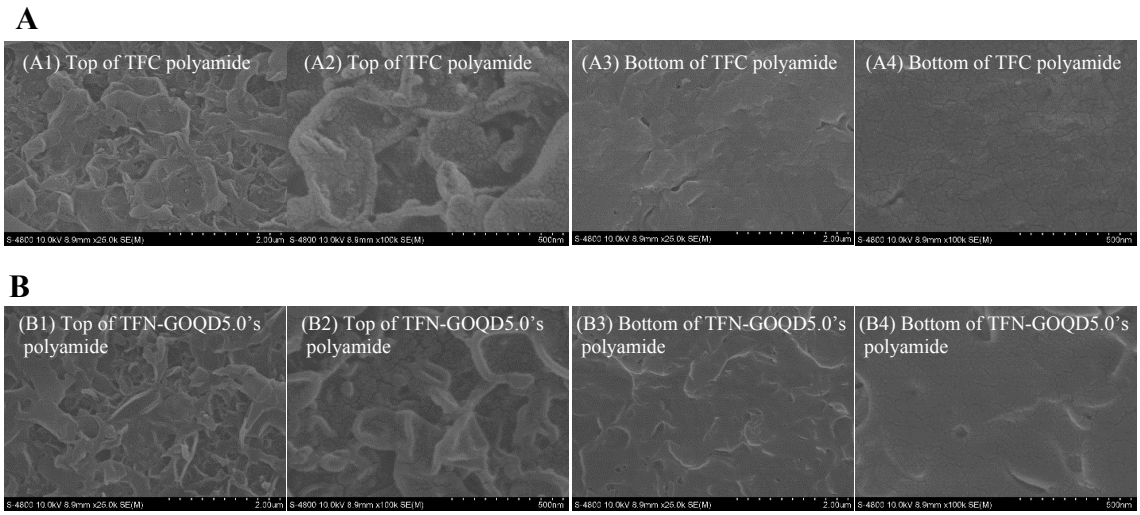

Fig. S7 SEM images of the polyamide layers of TFC (A) and TFN-GOQD5.0 (B) membranes. (A1) and (A2) top layer of TFC polyamide, (A3) and (A4) bottom layer of TFC polyamide; (B1) and (B2) top layer of TFN-GOQD5.0's polyamide, (B3) and (B4) bottom layer of TFN-GOQD5.0's polyamide. The polyamide layer was separated from the PSf support by dissolving PSf using dichloromethane.

Table S1 Comparison of the RO performance of different composite membranes.

	Pressure-assisted TFC	Pressure-assisted TFN-GOQD5.5	TFC	TFN-GOQD5.0
Jv (LMH)	24.7±0.64	37.5±0.81	24.7± 0.43	26.85±0.56
R (%)	98.5±0.89	98.8±0.82	98.4±0.36	98.7±0.58