

Supplemental Information

Synthesis of Graphene Oxide/Polyimide Mixed Matrix Membranes for Desalination

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Fig. S1.

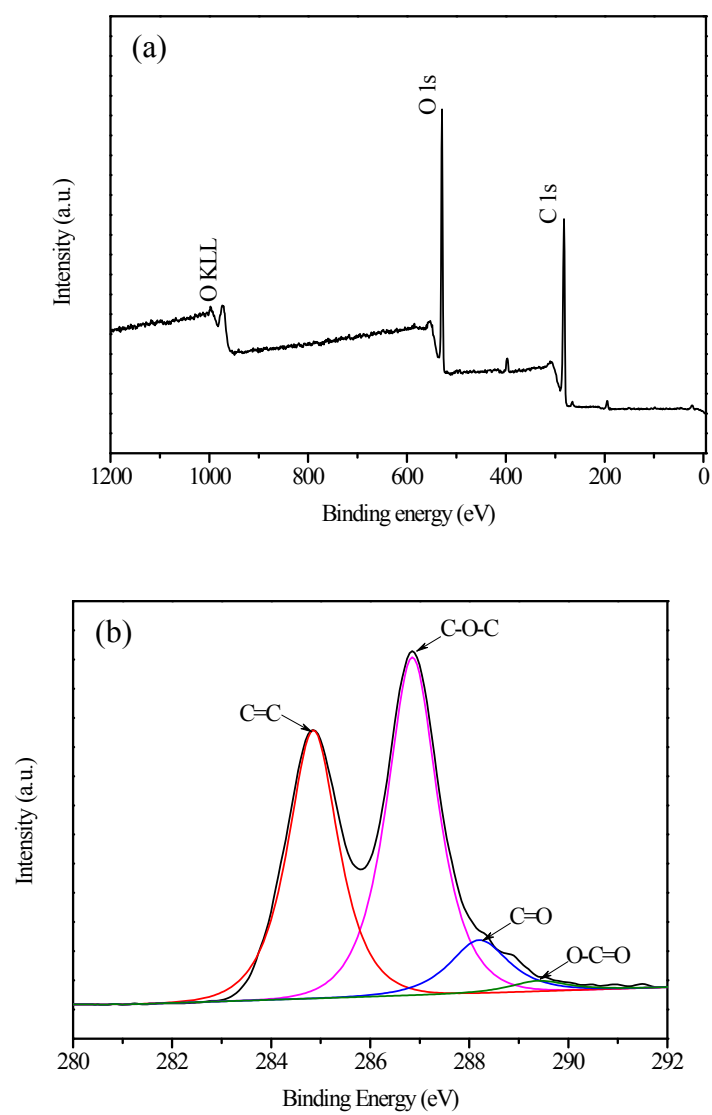


Fig. S1. (a) XPS wide-scan spectra of the GO; (b) C1s spectra of GO.

Fig. S2

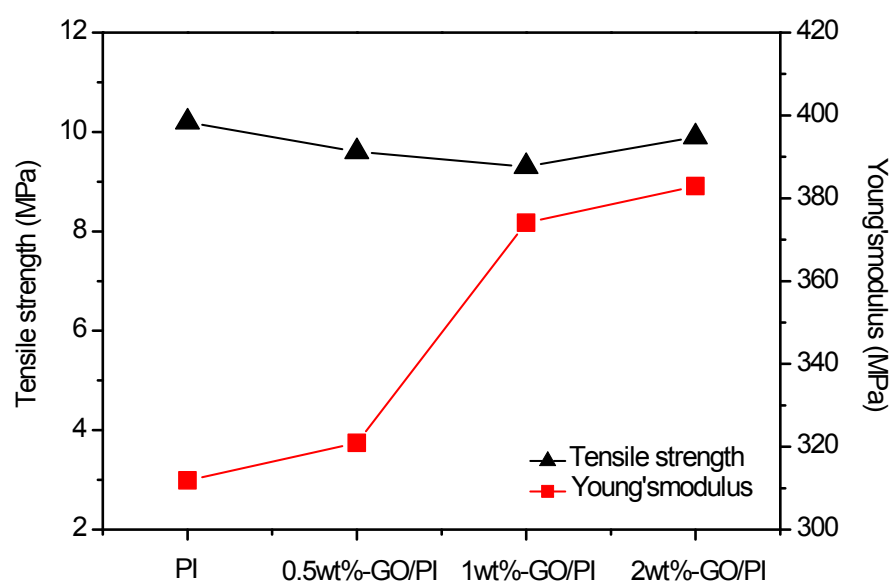


Fig. S2. Effect of the GO loading on the mechanical properties of the GO/PI MMMs.

Fig. S3

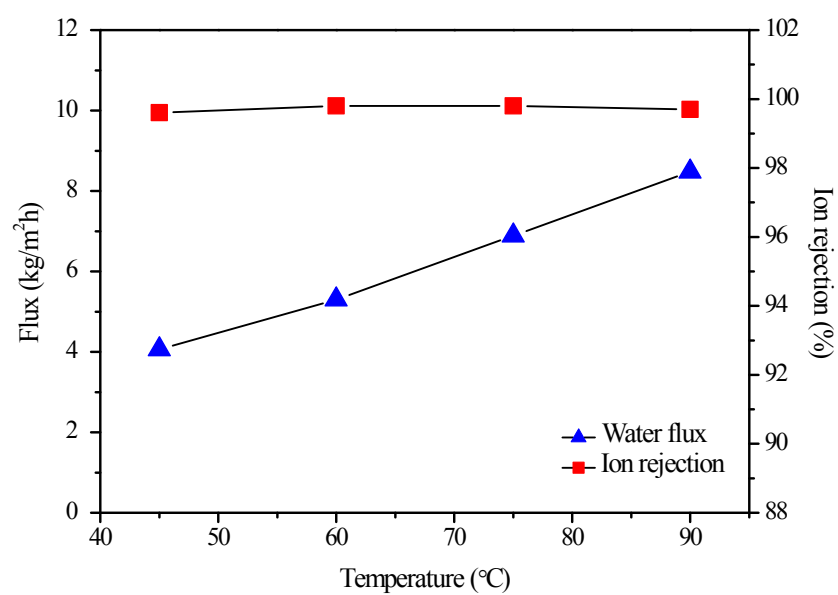


Fig. S3. Water flux and ion rejection of the PI membrane as a function of the operation temperature for desalination of 3.5 wt% seawater by pervaporation.

Fig. S4

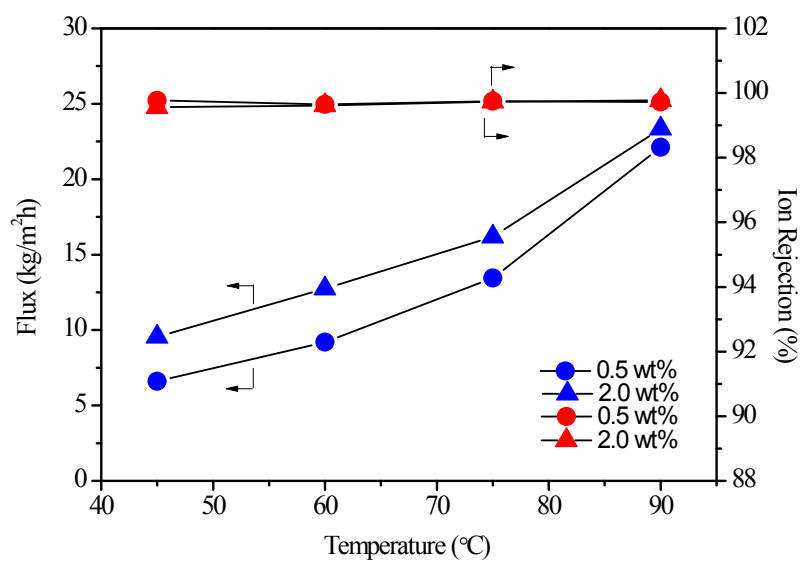


Fig. S4. Water flux and ion rejection of the 0.5wt% and 2wt% GO/PI membranes as a function of the operation temperature for desalination of 3.5 wt% seawater by pervaporation.

Fig. S5

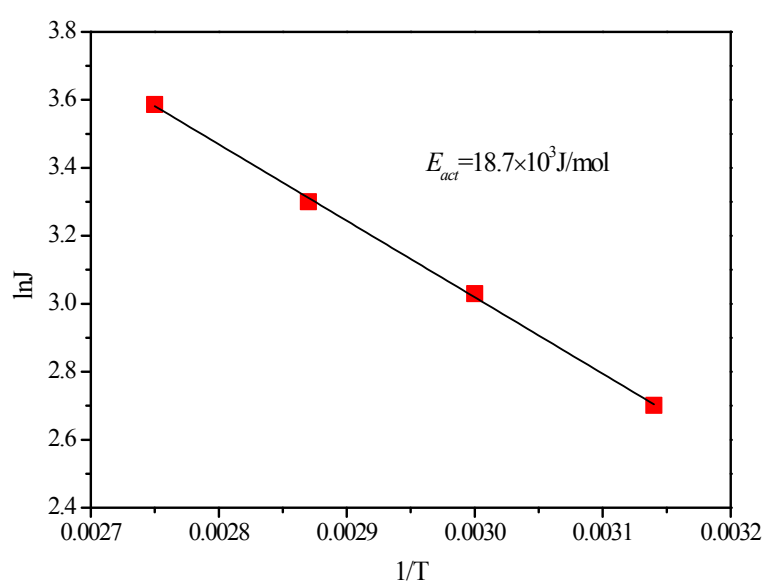


Fig. S5. Variation of $\ln(\text{water flux})$ versus $1/T$ through the GO/PI MMMs for desalination of 3.5 wt% seawater by pervaporation.

Fig. S6

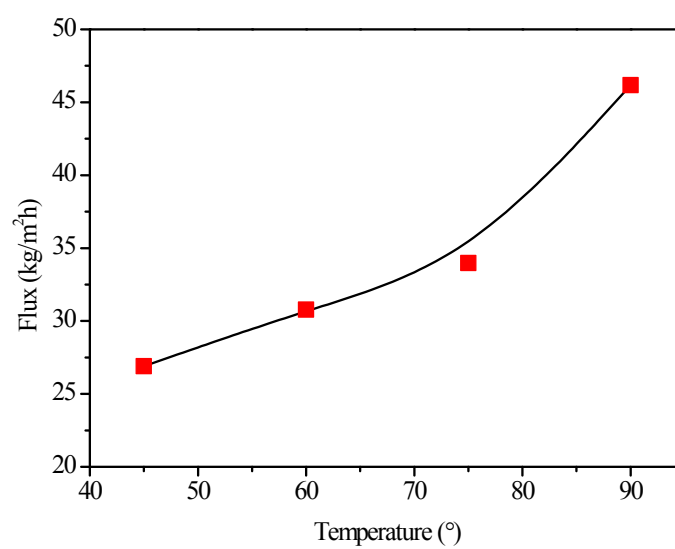


Fig. S6. Water flux of the 1wt% GO/PI membrane as a function of the operation temperature for permeation of pure water by pervaporation.

Table

Table S1. Water desalination data through GO/PI MMMs.

Ions	Feed (ppm)	Permeate (ppm)	Rejection (%)
Na ⁺	12259.5	1.1	99.99
NH ₄ ⁺	95.9	n. a.	100.00
K ⁺	840.6	0.2	99.98
Mg ²⁺	798.0	0.2	99.97
Ca ²⁺	375.0	0.2	99.95
Cl ⁻	2491.0	1.2	99.95
NO ₃ ⁻	7518.0	6.8	99.91
SO ₄ ²⁻	2012.9	2.8	99.86