

Supplementary Material

An economical and simple method for preparing highly permeable and chlorine-resistant reverse osmosis membranes with potential commercial applications

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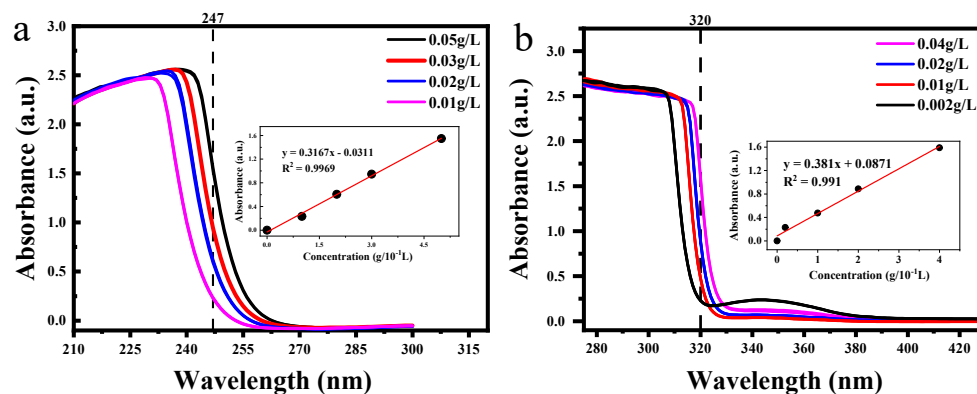


Fig. S1. (a) Relationship between PIP concentration and absorbance and (b) relationship between
MPD concentration and absorbance

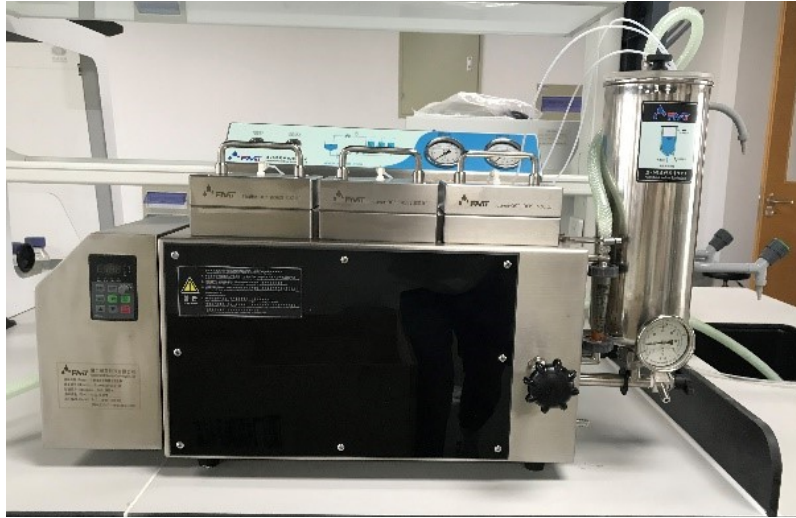


Fig. S2. Experimental setup of RO

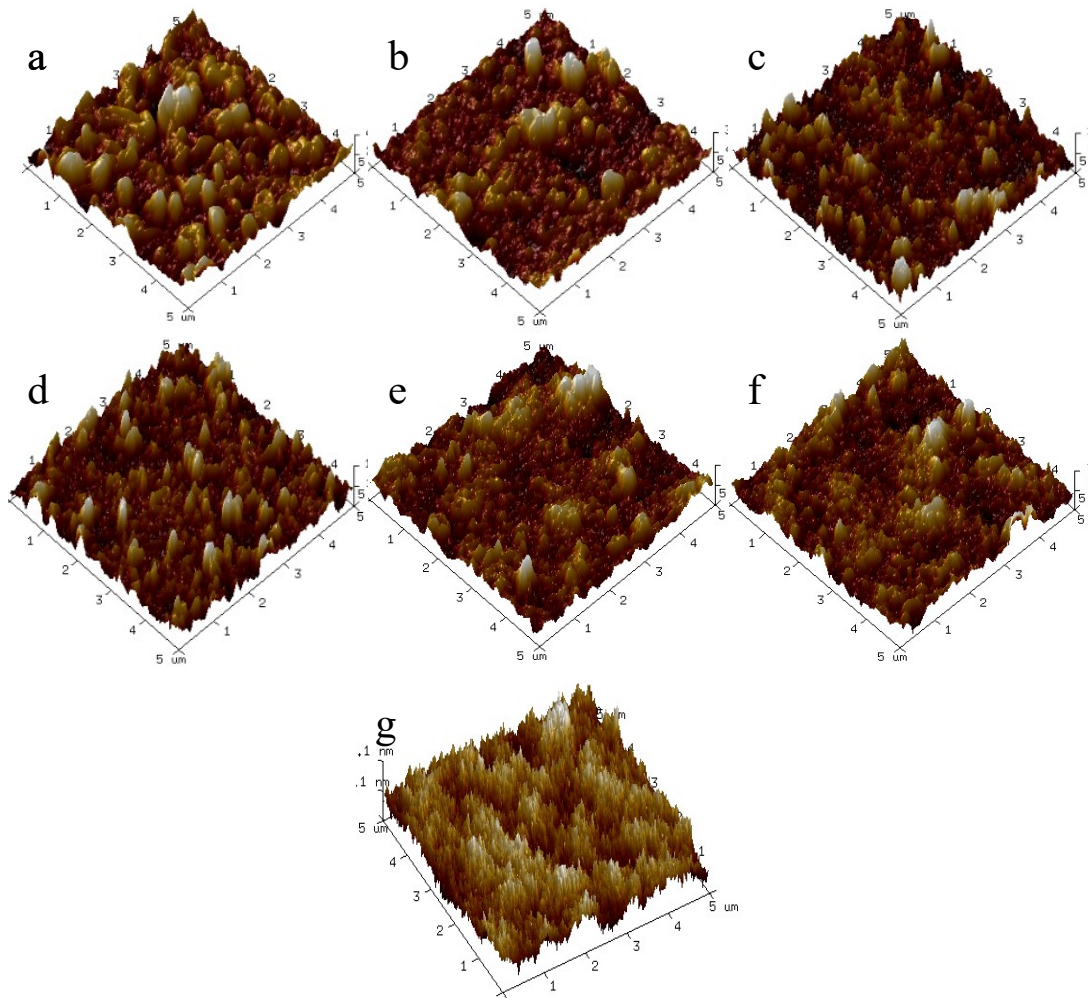


Fig. S3. 3D AFM images of TFC_W membranes corresponding to the flat AFM images in the manuscript

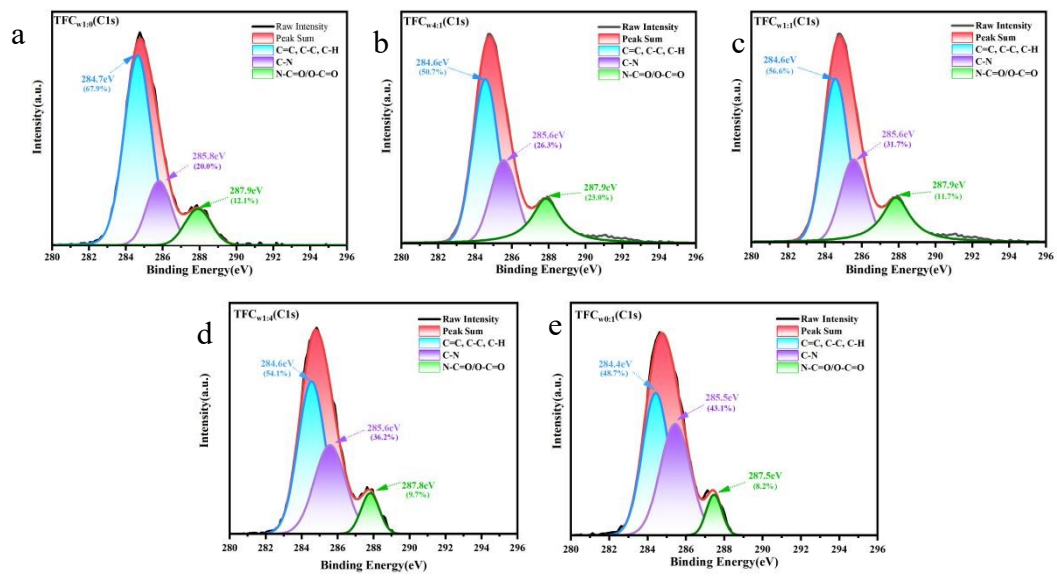


Fig. S4 C1s deconvoluted peaks in XPS spectra.

Table S1 XPS results of the TFC_W membranes

Membrane	Cl s			N 1s			O 1s		
	Energy (eV)	Species	(%)	Energy (eV)	Species	(%)	Energy (eV)	Species	(%)
TFC _{W-1:0}	284.7	C=C, C-C, C-H	67.9	398.9	C-NH ₂	10.8	531.2	N-C=O/O-C=O	62.7
	285.8	C-N	20	400	N-C=O	80.3	532.3	N-C=O...H/O-C=O...H	24.1
	287.9	N-C=O/O-C=O	12.1	401.3	C-NH ₃ ⁺	8.9	533.6	O-C=O	13.2
TFC _{W-4:1}	284.6	C=C, C-C, C-H	50.7	398.9	C-NH/C-NH ₂	17.1	531.2	N-C=O/O-C=O	64.7
	285.6	C-N	26.3	399.9	N-C=O	76.6	532.3	N-C=O...H/O-C=O...H	18.4
	287.9	N-C=O/O-C=O	23	401.3	C-NH ₂ ⁺ /C-NH ₃ ⁺	6.3	533.5	O-C=O	16.8
TFC _{W-1:1}	284.8	C=C, C-C, C-H	56.6	398.9	C-NH/C-NH ₂	11.1	531.1	N-C=O/O-C=O	51.2
	285.8	C-N	31.7	399.9	N-C=O	74.8	531.9	N-C=O...H/O-C=O...H	28.7
	288.2	N-C=O/O-C=O	11.7	400.9	C-NH ₂ ⁺ /C-NH ₃ ⁺	14.1	533.5	O-C=O	20.1
TFC _{W-1:4}	284.6	C=C, C-C, C-H	54.1	399	C-NH/C-NH ₂	20.8	531.1	N-C=O/O-C=O	65.6
	285.6	C-N	36.2	399.9	N-C=O	75.2	532.1	N-C=O...H/O-C=O...H	18.8
	287.8	N-C=O/O-C=O	9.7	401.4	C-NH ₂ ⁺ /C-NH ₃ ⁺	4.0	533.2	O-C=O	15.6
TFC _{W-0:1}	284.4	C=C, C-C, C-H	48.7	398.9	C-NH	16.5	530.8	N-C=O/O-C=O	64.4
	285.5	C-N	43.1	399.6	N-C=O	77.1	531.7	N-C=O...H/O-C=O...H	25.5
	287.5	N-C=O/O-C=O	8.2	401.3	C-NH ₂ ⁺	6.4	533	O-C=O	10.1