

Supplementary Information

**Microporous carbon from fullerene impregnated porous aromatic
frameworks for improving desalination performance of thin film
composite forward osmosis membranes**

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Table S1 The amount of C₆₀@PAF₉₀₀ in TFN FO membranes.

Fig. S1 Setup of a forward osmosis testing system.

Fig. S2 Raman spectrum of C₆₀@PAF₉₀₀.

Fig. S3 XRD spectrum of C₆₀@PAF₉₀₀.

Fig. S4 FTIR spectra of C₆₀@PAF-1 and C₆₀@PAF₉₀₀.

Table S2 Ratio of the heights of the characteristic amide peaks from FTIR spectra of FO membranes

Fig. S5 Contact angles of FO membranes as a function of time

Fig. S6 The comparison of salt permeability and water permeability of fabricated FO membranes with commercial membranes

Table S1 The amount of C₆₀@PAF₉₀₀ in TFN FO membranes

Sample	^a C (%)	^b C ₆₀ @PAF ₉₀₀ in membrane (wt%)	C ₆₀ PAF ₉₀₀ in organic phase (w/v%)
M0	41.81	0	0
M1	70.12	0.33	0.005
M2	70.44	0.52	0.01
M3	70.64	0.78	0.015
M4	70.90	1.47	0.02

^aThe percentage of carbon was tested by an Elementar elemental analyzer (VARIO MAX).

^bThe C₆₀@PAF₉₀₀ in membrane was measured by using the data of percentage of carbon in TFN FO membrane minus the data of percentage of carbon in the TFC FO membrane.

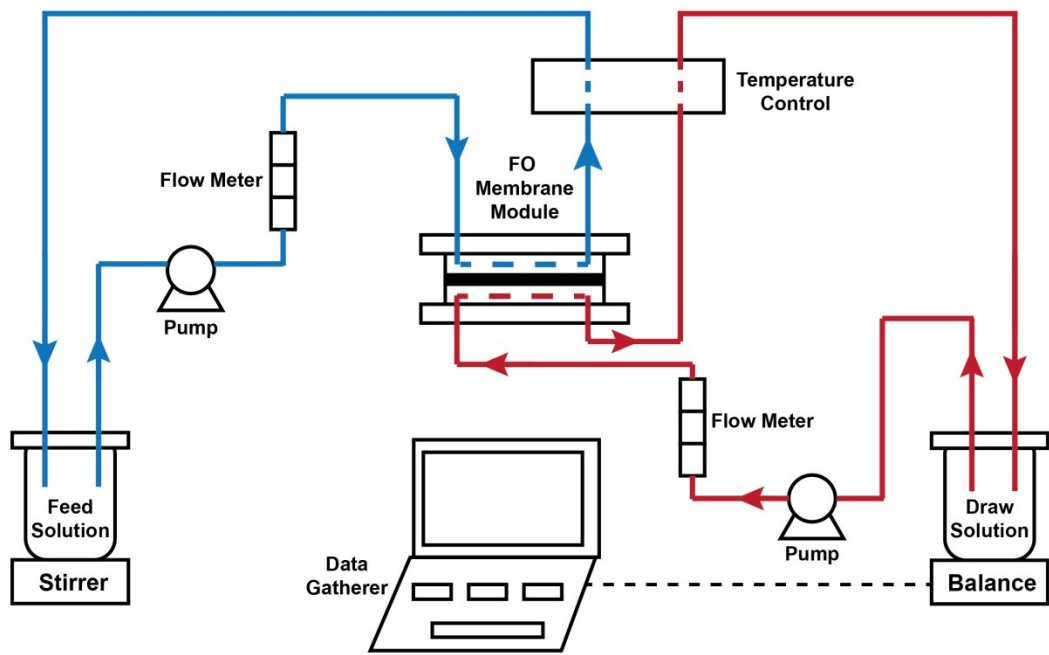


Fig. S1 Setup of a forward osmosis testing system.

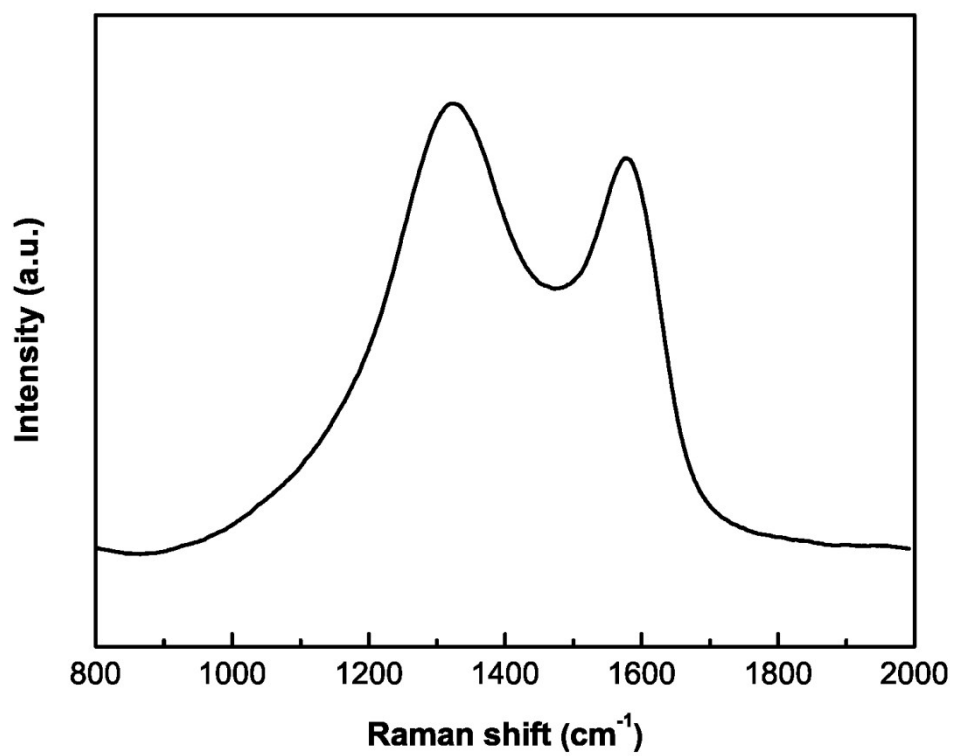


Fig. S2 Raman spectrum of C₆₀@PAF₉₀₀.

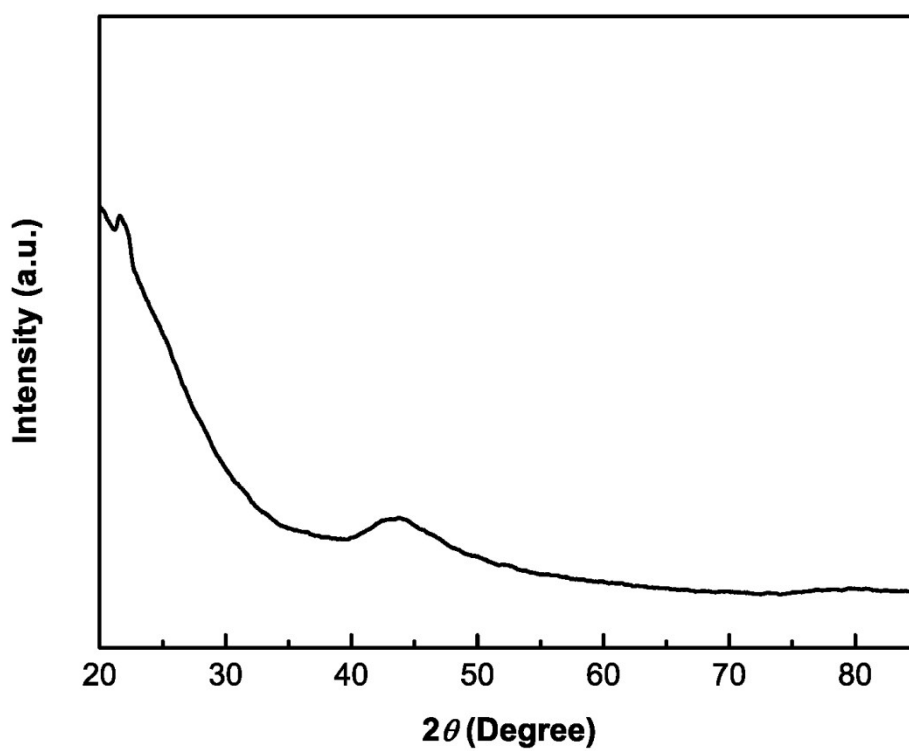


Fig. S3 XRD spectrum of C₆₀@PAF₉₀₀.

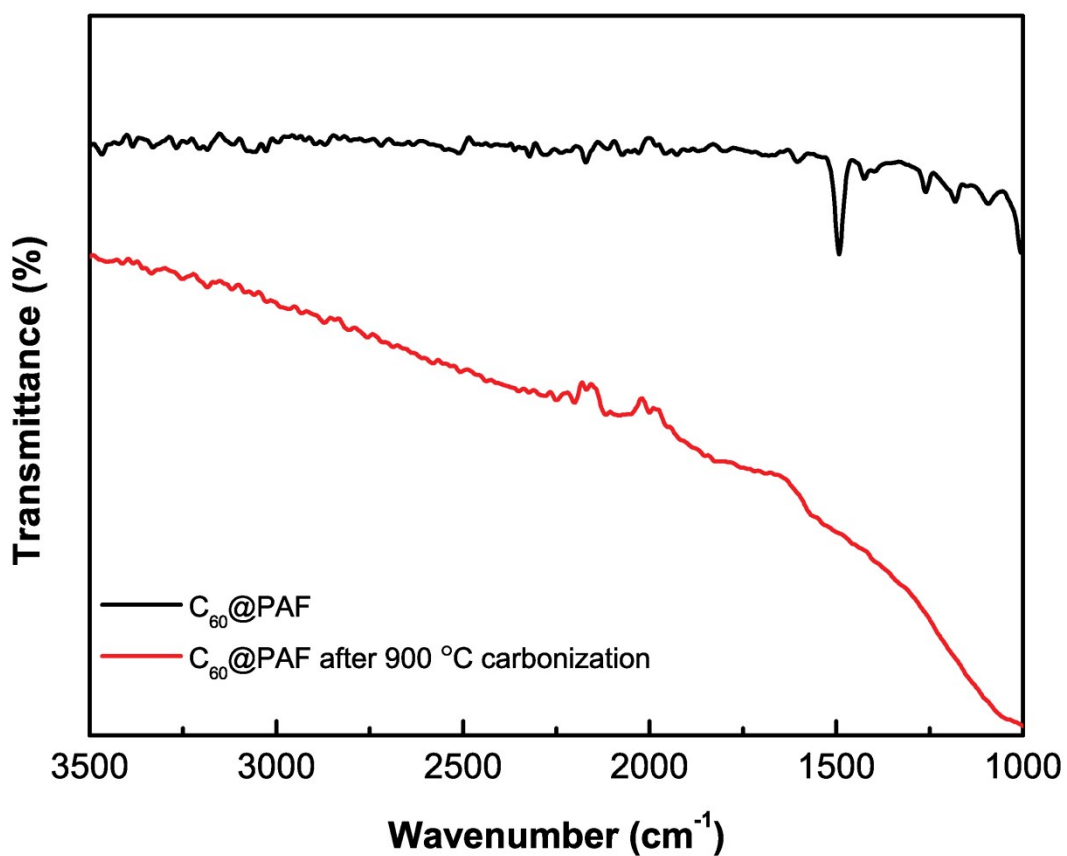


Fig. S4 FTIR spectra of $C_{60}@PAF-1$ and $C_{60}@PAF_{900}$.

Table S2 Ratio of the heights of the characteristic amide peaks from FTIR spectra of FO membranes

	M0	M1	M2	M3	M4
$I_{1610}:I_{1660}$	0.73	0.89	0.94	1.05	1.19

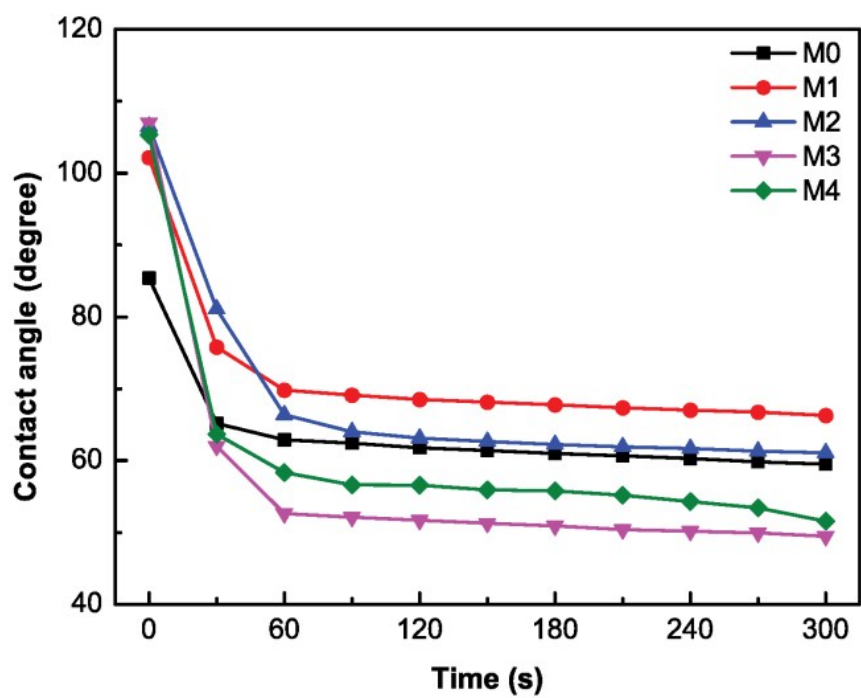


Fig. S5 Contact angles of FO membranes as a function of time

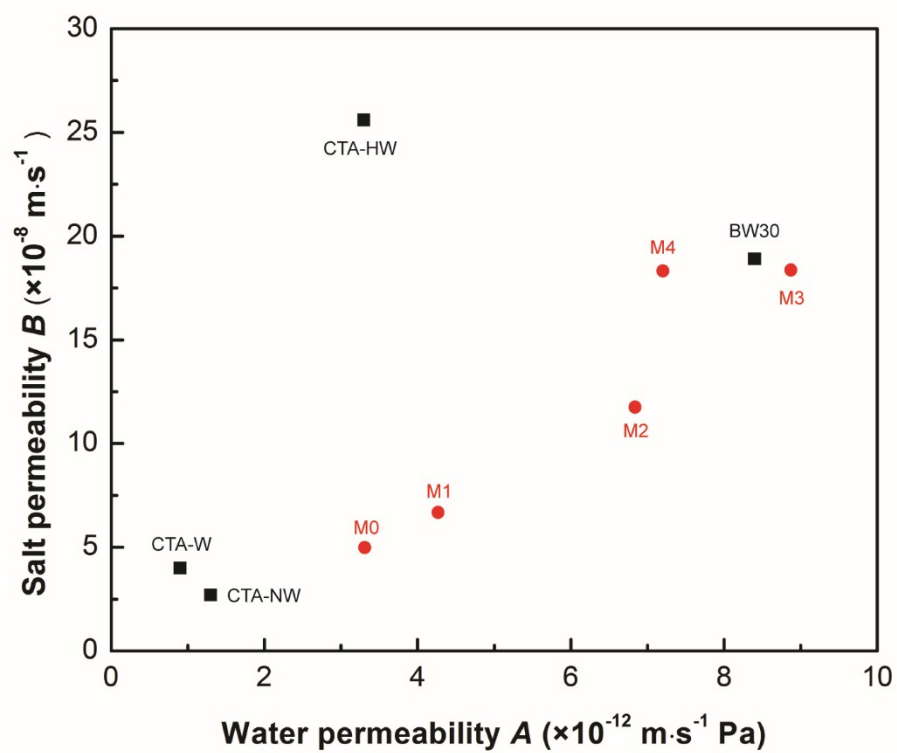


Fig. S6 The comparison of salt permeability and water permeability of fabricated FO membranes with commercial membranes