Supplementary Information

Improved filtration performance and antifouling property of polyethersulfone ultrafiltration membranes by blending with carboxylic acid functionalized polysulfone

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**Figure Captions**

**Table S1.** The composition of PSF and PES/PSF-4 casting solutions.

**Fig. S1.** Differential scanning calorimetric (DSC) curves of PSF and PES/PSF-4 membranes under N\textsubscript{2} atmosphere.

**Fig. S2.** FTIR spectra of the PSF membrane and PES/PSF-4 membrane.

**Table S2.** Pure water flux, BSA rejection and contact angle of the PES/PSF-4 membrane.

<table>
<thead>
<tr>
<th>Membrane</th>
<th>PVP (wt.%)</th>
<th>PES (wt.%)</th>
<th>DMF (wt.%)</th>
<th>PSF (wt.%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSF</td>
<td>1.5</td>
<td>0.0</td>
<td>81.0</td>
<td>17.5</td>
</tr>
<tr>
<td>PES/PSF-4</td>
<td>1.5</td>
<td>13.5</td>
<td>81.0</td>
<td>4.0</td>
</tr>
</tbody>
</table>
**Fig. S1.** Differential scanning calorimetric (DSC) curves of PSF and PES/PSF-4 membranes under N$_2$ atmosphere.

**Fig. S2.** FTIR spectra of the PSF membrane and PES/PSF-4 membrane.
**Table S2.** Pure water flux, BSA rejection and contact angle of the PES/PSF-4 membrane.

<table>
<thead>
<tr>
<th>Membrane</th>
<th>Pure water flux (L∙m⁻²∙h⁻¹)ᵃ</th>
<th>BSA rejection (%)ᵇ</th>
<th>Contact angles</th>
</tr>
</thead>
<tbody>
<tr>
<td>PES/PSF-4</td>
<td>816.9 ± 25.0</td>
<td>43.8 ± 1.8</td>
<td>84.5 ± 0.92</td>
</tr>
</tbody>
</table>

ᵃ Pure water flux was measured in a dead-end ultrafiltration testing system at 0.1 MPa and DI water was used as the feed solution.
ᵇ BSA rejection was measured in a dead-end ultrafiltration testing system at 0.1 MPa and 1g∙L⁻¹ BSA was used as the feed solution.