

### Supplementary material

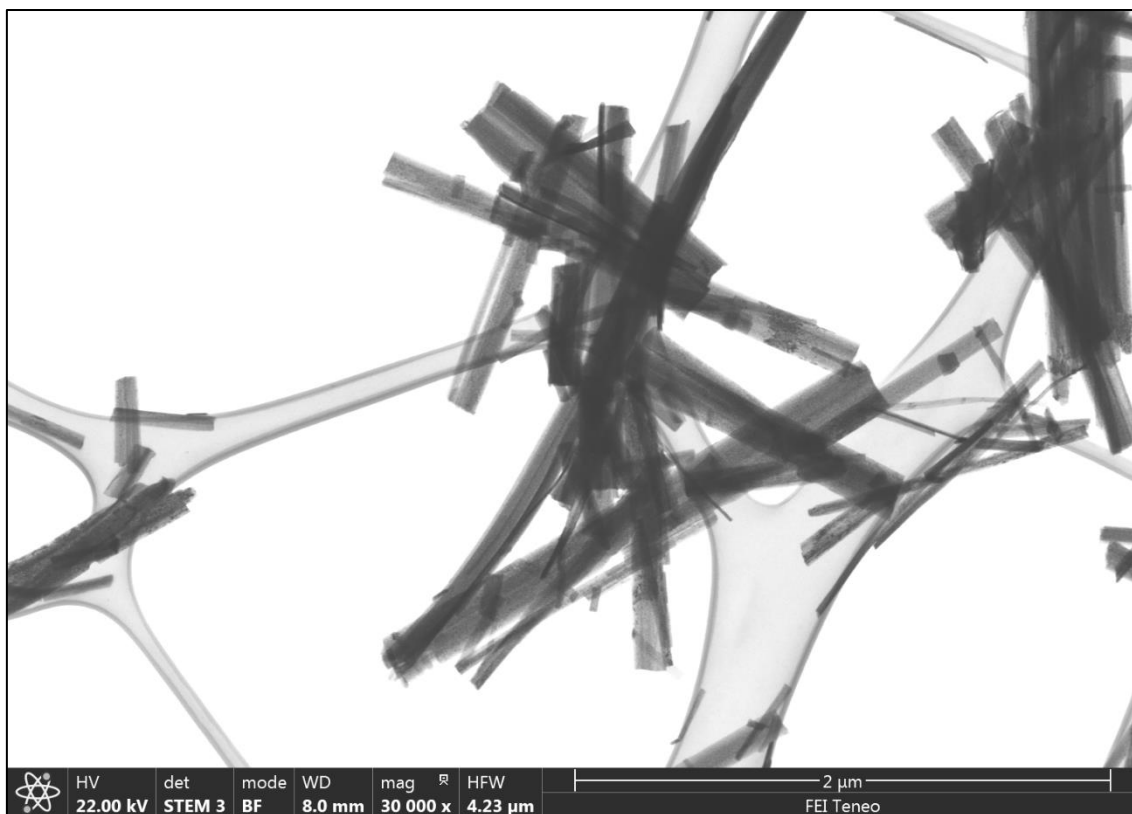


Figure S1. STEM image of  $\text{TiO}_2$  (B) nanowires synthesized by the hydrothermal method and employed for sPSU / x%  $\text{TiO}_2$  (B) membranes.

Table S1. FTIR peak assignment for sPSU/2% $\text{TiO}_2$ (B) composite membrane.

Wave number ( $\text{cm}^{-1}$ )	Vibration type	Assignment
400-700	Stretching	Ti-O-Ti
925	Stretching	Ti-OH
1024	Stretching	- $\text{SO}_3\text{H}$
1630	Bending	-OH
3200-3600	Stretching	$\delta\text{OH}$