Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

Anomalous Effects of Water Flow through Charged Nanochannel Membranes

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Legends:

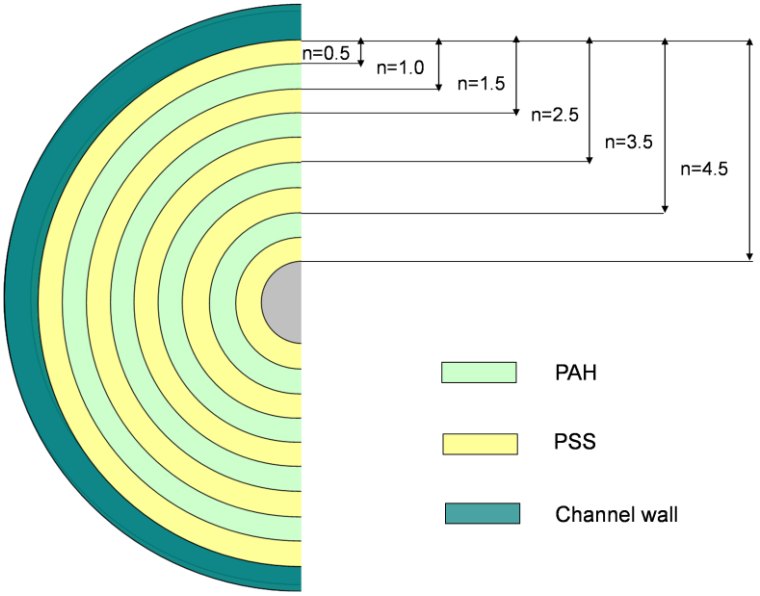

Figure S1. Illustration of the number of deposited n(PSS/PAH) multilayer in the nanochannel membrane.

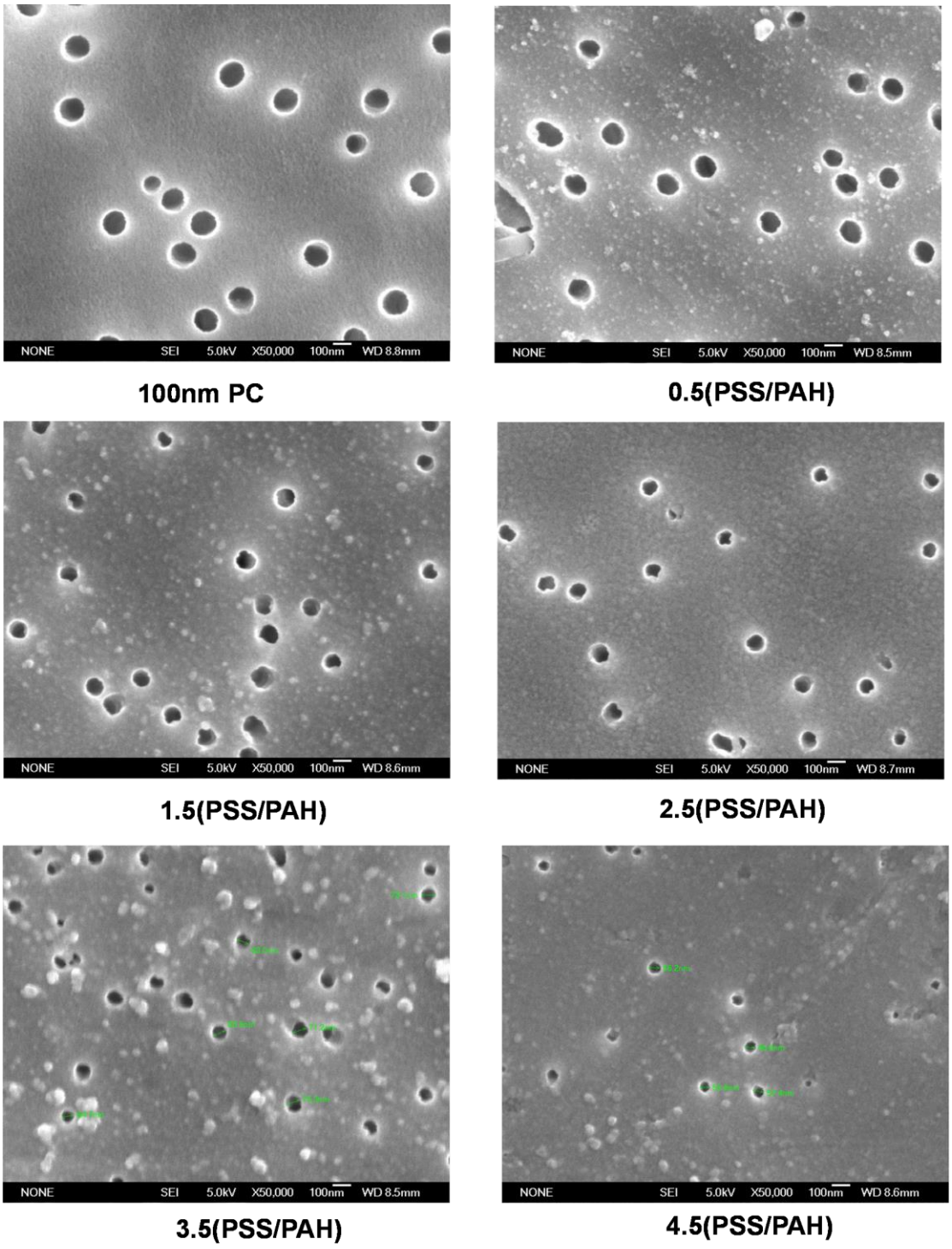

Figure S2. SEM images of n(PSS/PAH) multilayer coated 100 nm TEPC membranes.

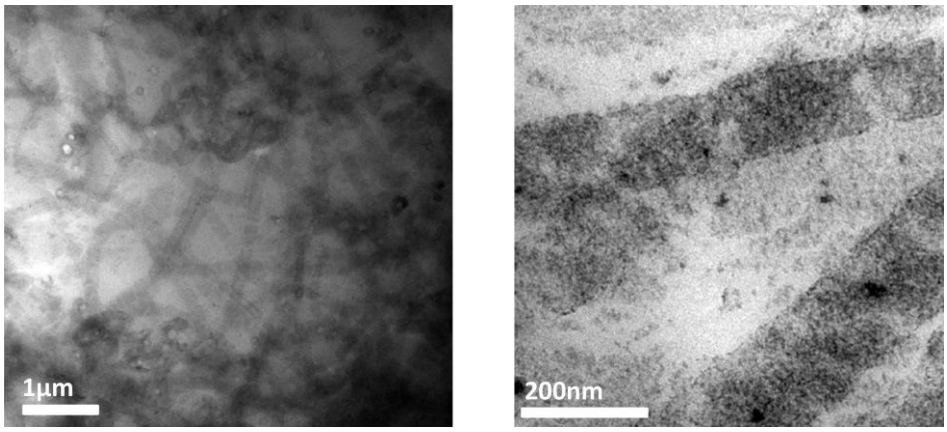

Figure S3. TEM images of 3.5(PSS/PAH) nanotubes. 3.5(PSS/PAH) multilayer coated 100 nm TEPC membranes were treated with dichloromethane to liberate the nanotubes. Subsequent nanotubes were imaged using TEM.

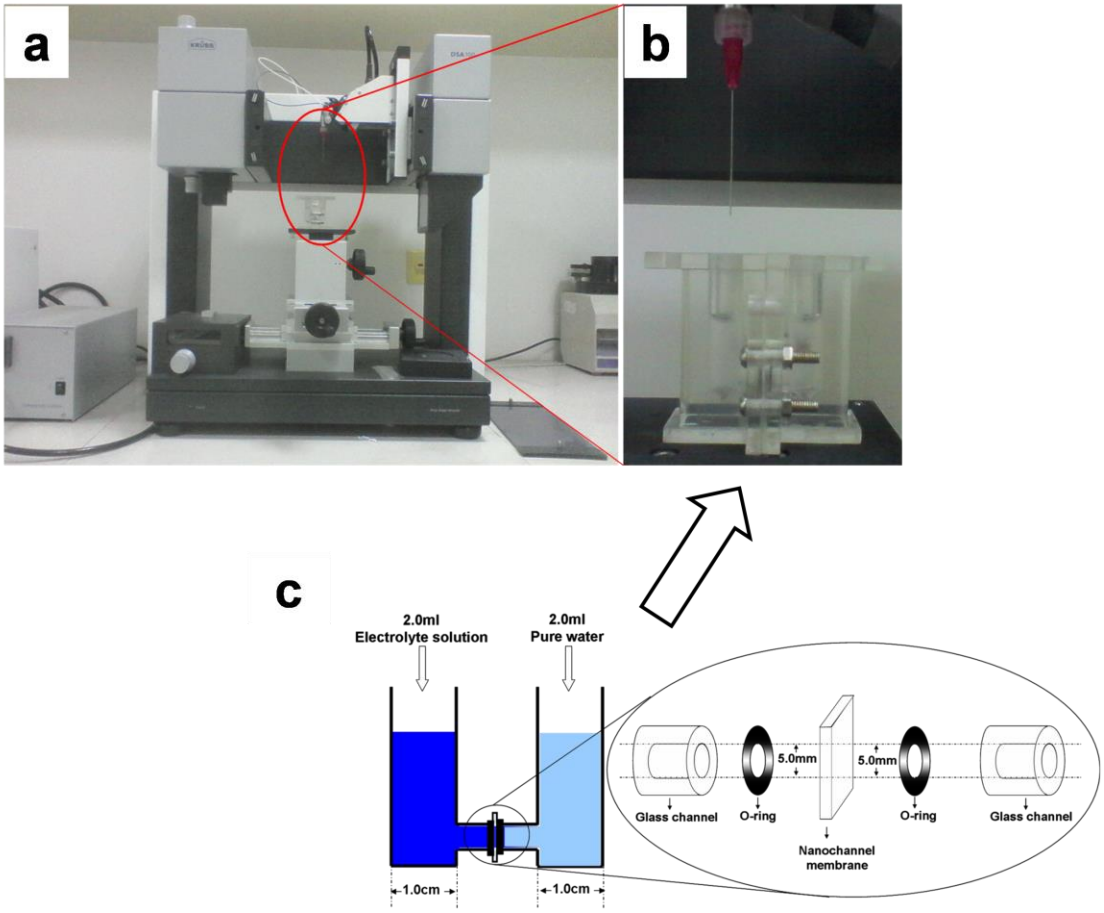

Figure S4. Photograph of the experimental system used to measure the liquid levels in two half-cells. **a.** DSA 100 Contact Angle Measuring System. **b.** A needle in the instrument was used to indicate the liquid level. **c.** Schematic representation of cell for water transport experiments.

Table S1. Ionic conductivity and diffusion coefficient at infinite dilution

Ion	λ $10^{-4}m^2Smol^{-1}$	D $10^{-5}cm^2s^{-1}$	Ion	λ $10^{-4}m^2Smol^{-1}$	D $10^{-5}cm^2s^{-1}$
	cations			anions	
H^+	349.65	9.311	Cl^-	76.31	2.032
Li^+	38.66	1.029	NO_3^-	71.42	1.092
Na^+	50.08	1.334	SO_4^{2-}	80.0	1.065
K^+	73.48	1.957	HSO_4^{2-}	52.0	1.385
Mg^{2+}	53.0	0.706	PO_4^{3-}	92.8	0.824
Ca^{2+}	59.47	0.792	HPO_4^{2-}	57.0	0.759
Sr^{2+}	59.4	0.791	$H_2PO_4^-$	36.0	0.959
Ba^{2+}	63.6	0.847			

[Lide, D. R.; Weast, R. C. *Handbook of Chemistry and Physics*, p304-305. CRC Press: 2002.]