

Supporting Information for

Exploring fast water permeation through aquaporin-mimicked membranes

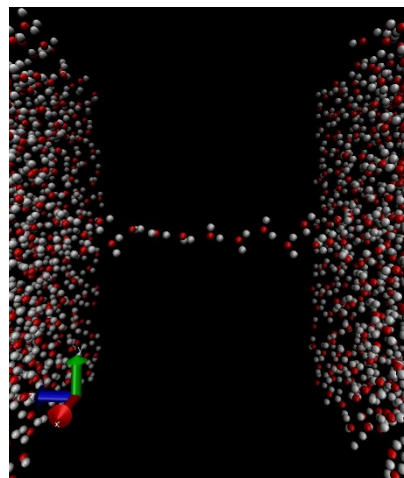
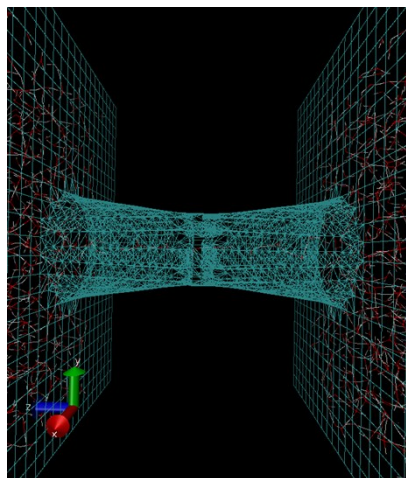
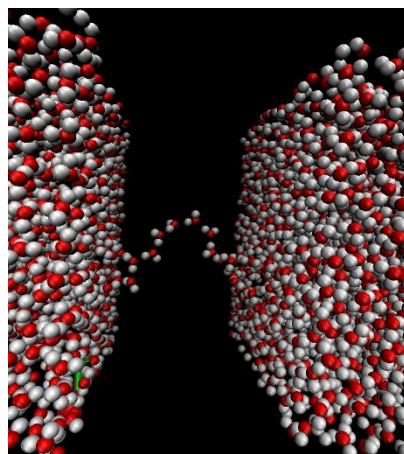
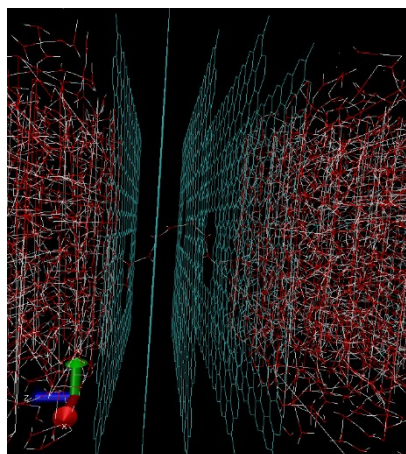
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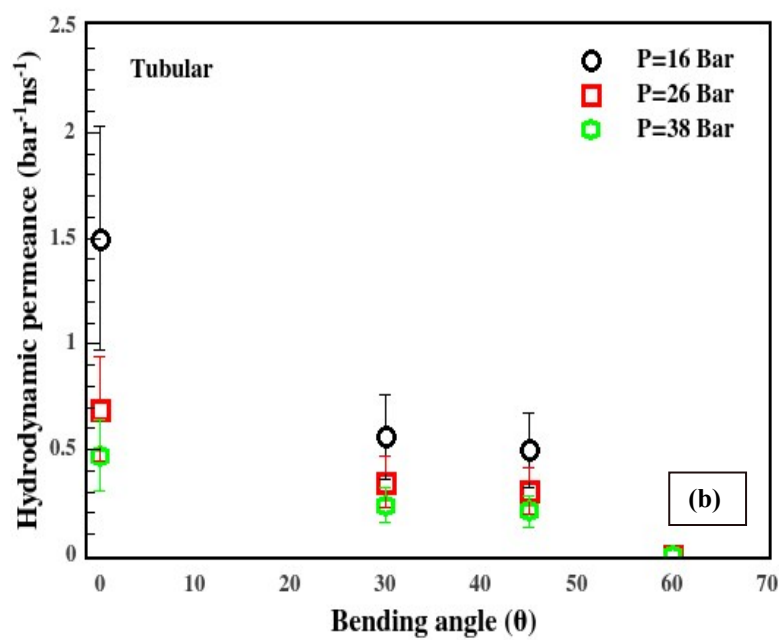
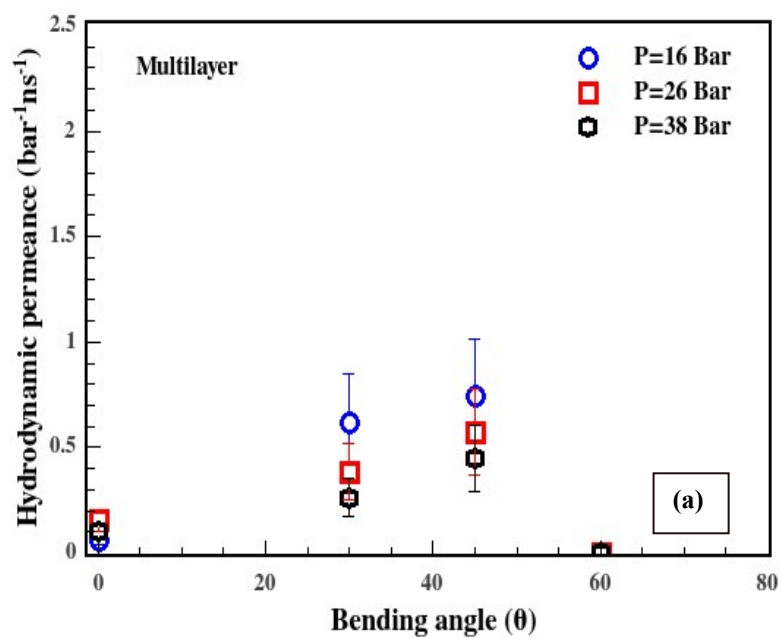
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S1. The schematic of single-file water arrangement inside multilayer (top) and tubular (down) hourglass shape membranes.



S2. The hydraulic permeance as a function of the bending angle inside (a) multilayer membranes, and (b) tubular membranes.

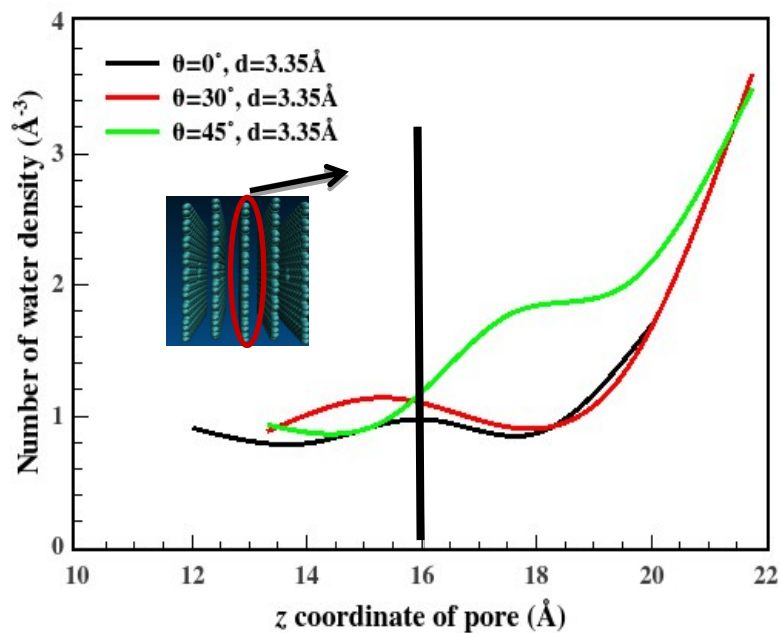


Figure S3. Profiles of the average number of water molecules crossing the layer with the smallest pore diameter in the membranes with $\theta=0^\circ$, 30° , and 45° at $d=3.35 \text{ \AA}$. The black line shows the position of the layers considered.

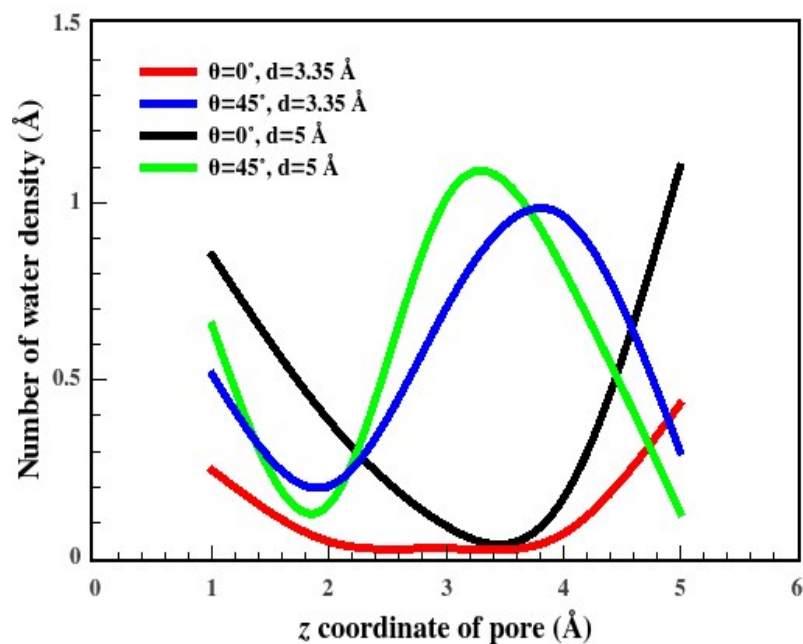


Figure S4. Profiles of the average number of water molecules crossing the layer nearby feedwater reservoir in the multilayer membrane at $d=3.35 \text{ Å}$ and $d=5 \text{ Å}$.

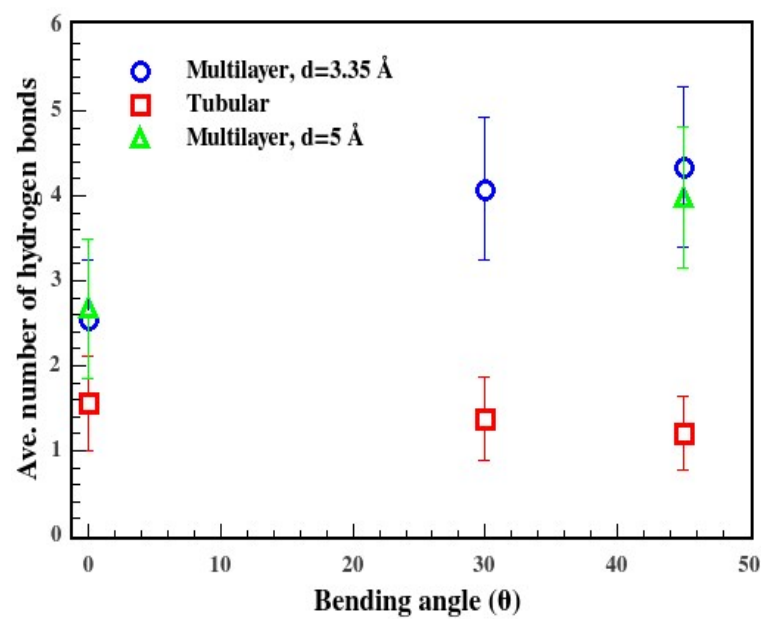


Figure S5. The average number of hydrogen bonds inside the multilayer and tubular membranes as a function of the bending angle.

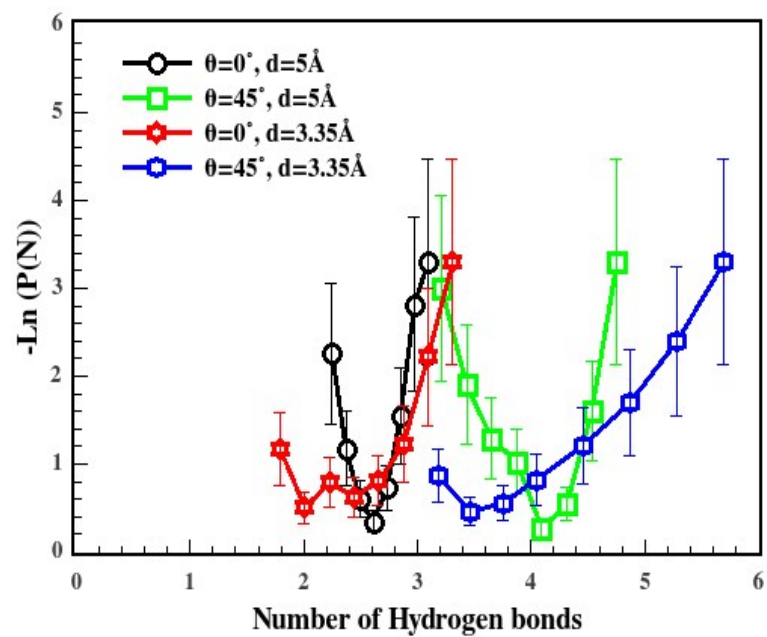


Figure S6. Comparison of fluctuations of the free energy of occupancy as a function of the number of hydrogen bonds inside the multilayer membranes with $\theta=0^\circ$ and 45° at $d=3.35\text{ \AA}$ and $d=5\text{ \AA}$.