

Supporting information: Ionic transport in electrostatic Janus Membranes. An explicit solvent molecular dynamic simulation.

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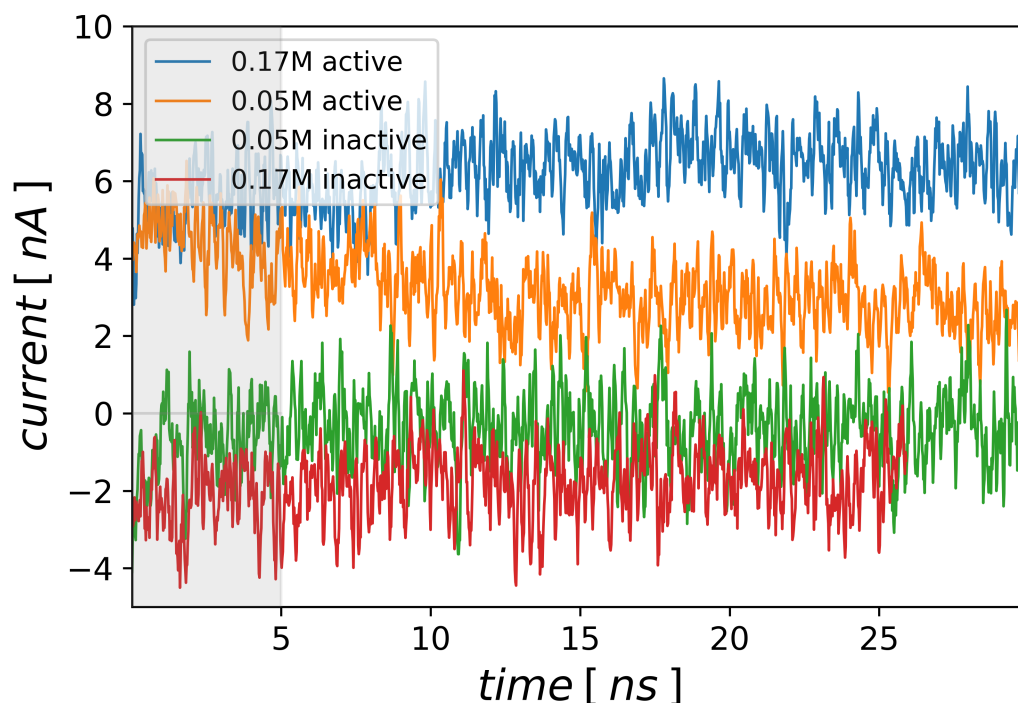


Figure S 1: The ionic current versus time is shown for the active and inactive modes at both 0.05M and 0.17M reservoir salt concentrations. There are high frequency fluctuations but the current has reached steady state over the reported time period. Hence it is expected that the simulations have converged.

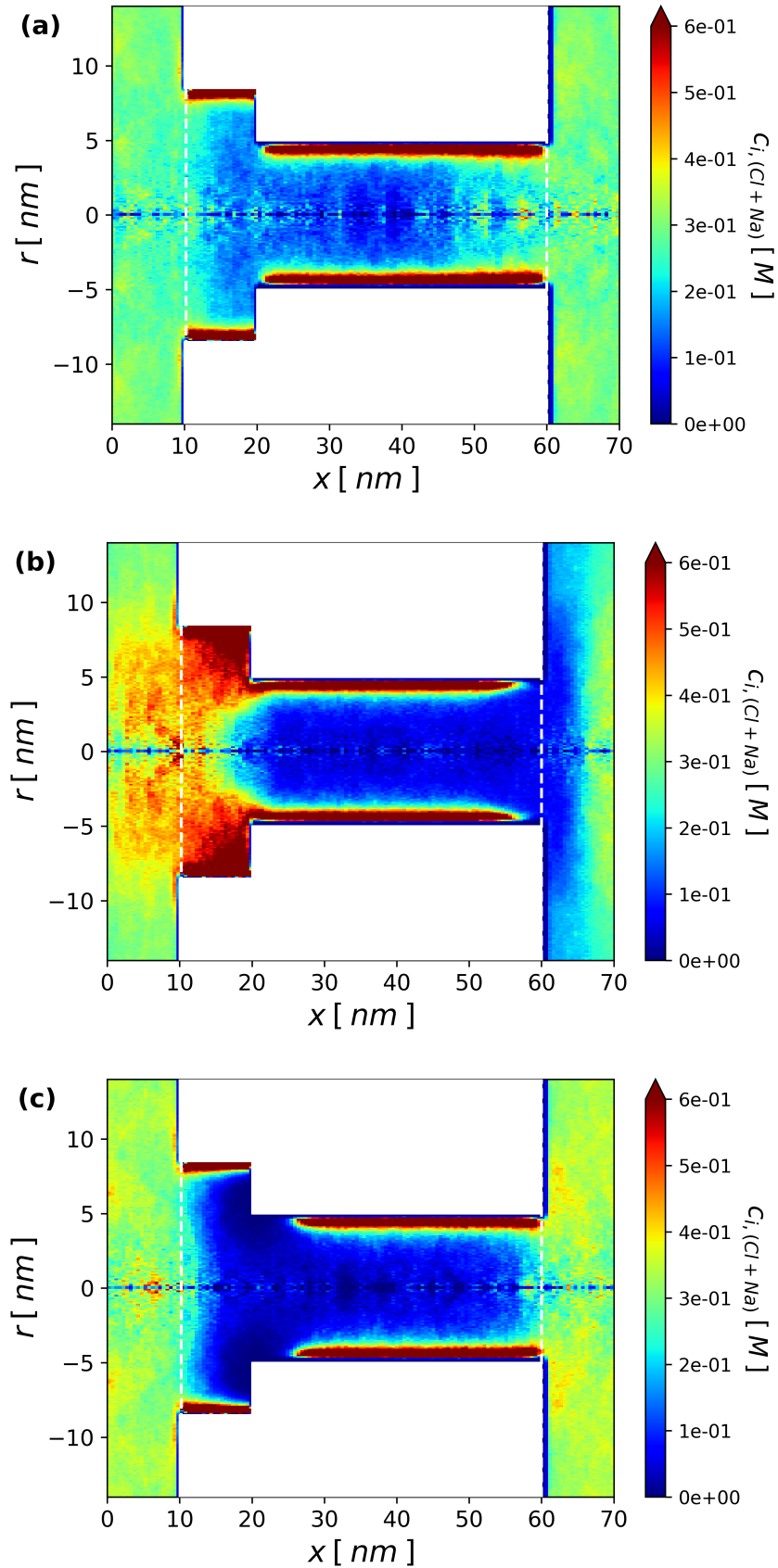


Figure S 2: 2D Ionic (Na+Cl) concentration distribution for a reservoir concentration of 0.17M. The top is the equilibrium state at 0V, the middle is the activated state while the bottom is the inactivated case.

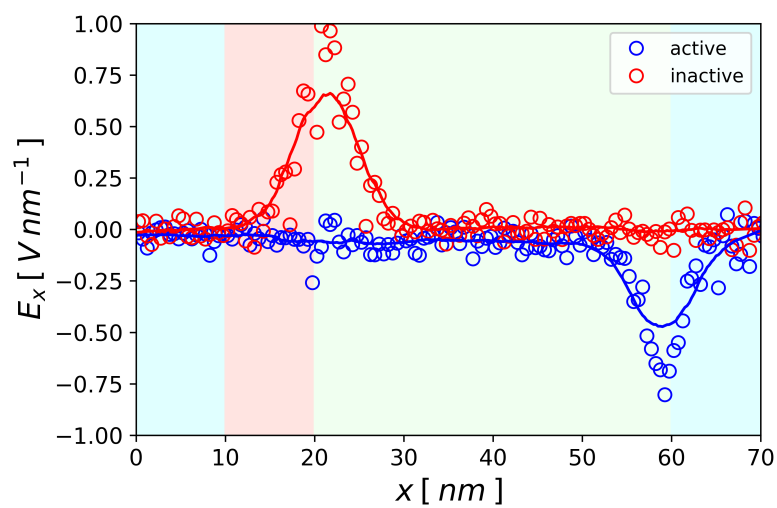


Figure S 3: The radially averaged local electric field along the x direction is shown as a function of the axial coordinate x for the active and the inactivate states at a reservoir salt concentration of 0.17M. These results are nearly identical to those in the main figure 4 performed at 0.05M reservoir concentration.

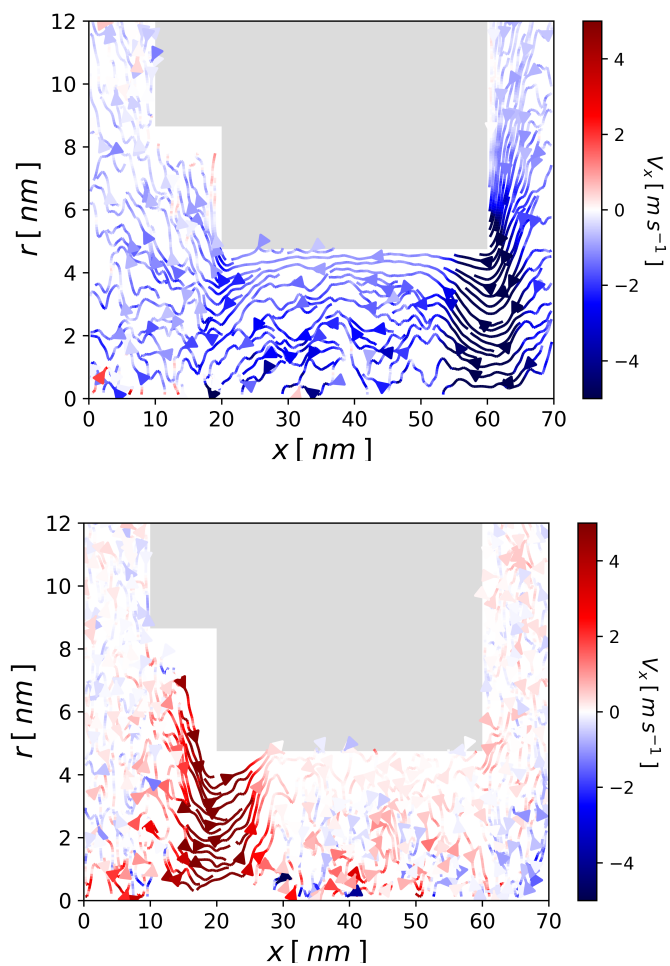


Figure S 4: Streamlines of the ion velocity are shown at 0.05M reservoir concentration for the active (a) and inactive (b) states. The radially averaged result is shown in figure 5.

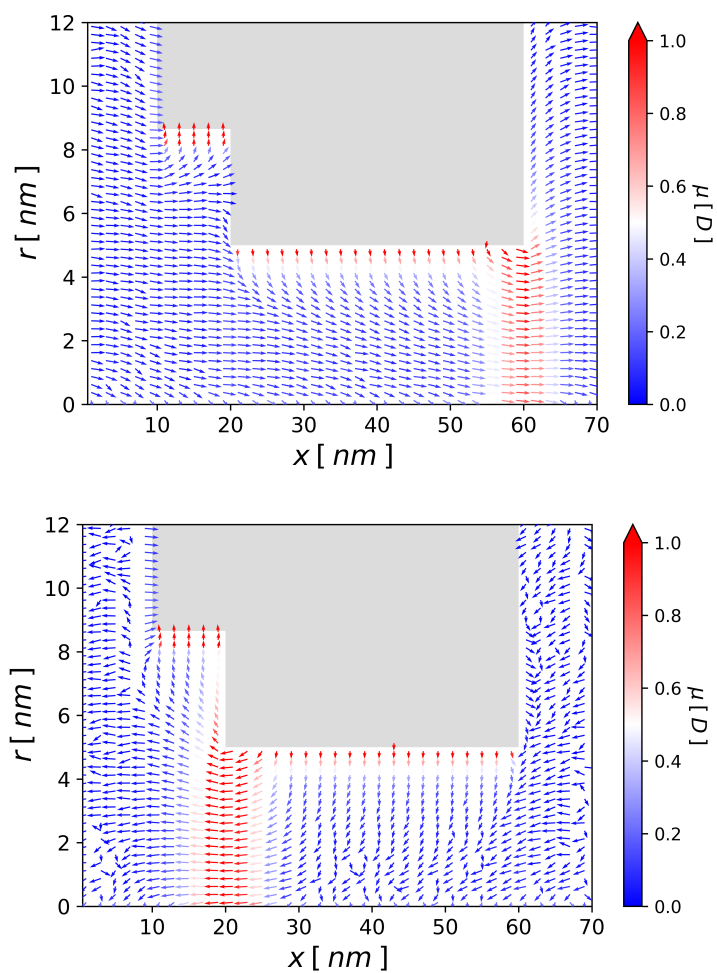


Figure S 5: At 0.17M reservoir concentration the dipole moment of water is shown for both the active (a) and inactive (b) pore. This results do not strongly differ from the 0.05M result shown in main figure 7.

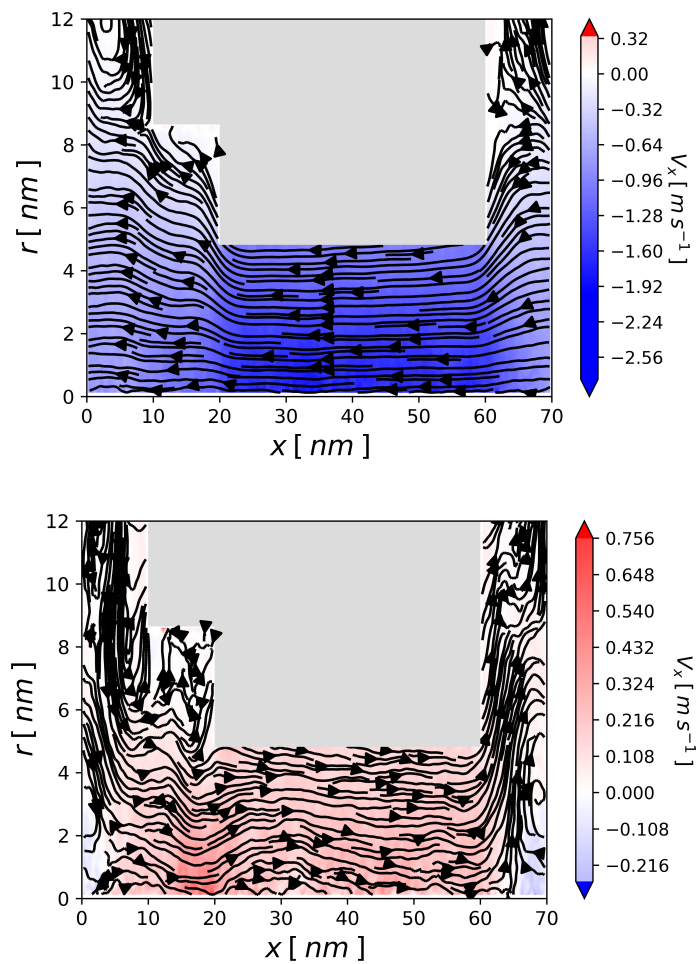


Figure S 6: Water streamlines for the activated (a) and inactivated (b) pores are shown for calculations performed at 0.05M. The radially averaged result is shown in figure 8 (a).