

Abstract Submitted  
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**Modeling of Ion Transport in Nanochannels** JUSTYNA CZERWIN-SKA, Artorg Center for Biomedical Engineering Research, Bern University, Switzerland — Transport of ions in fluidic environment is a basis for many biological processes. Microchannel ions flow is characterized by formation of electric double layer (EDL) near the solid wall. In nanochannel, however, the formation of EDL can be prevented by the constrained geometry leading to the creation of a single ion layer and resulting in the selective movement of ions. The confinement effects can be controlled by the wall charges providing a controllability to the nanoscale diffusion (pumping effect). This study will present model and molecular dynamics simulations of three-dimensional nanochannel flow of charged fluid. The various concentration of ions in solution was studied as well as the influence of the external force.

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