

Abstract Submitted
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Simulation of Steady-State Non-Equilibrium Ion Distributions Within a Finite-length Nanofluidic Channel WILLIAM BOOTH, JARROD SCHIFFBAUER, JOSH FERNANDEZ, KATHLEEN KELLEY, AARON TIMPERMAN, BOYD EDWARDS, West Virginia University, EDWARDS MICROFLUIDICS RESEARCH GROUP TEAM, TIMPERMAN'S ANALYTICAL CHEMISTRY GROUP TEAM — Steady-state non-equilibrium distributions of two species of mono-valent ions near and within a charged 2D nanofluidic channel have been examined with and without electroosmotic flow. Large reservoirs are connected by the nanofluidic channel to simulate bulk conditions. Far-from-equilibrium applied voltages create a charge polarization across the nanochannel when the Debye length is comparable to the channel width. Depletion zones of each ion species are observed.

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