Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Electrokinetic transport at a nanocapillary/microchannel interface JARROD SCHIFFBAUER, KATHLEEN KELLEY , BOYD EDWARDS, AARON TIMPERMAN, West Virginia University — Coupled electrokinetic transport phenomena play a central role in concentration polarization near the interface between a permselective nanocapillary membrane and a microchannel. Here the effects of ion concentration and potential distribution on transport through a finite-length nanocapillary are studied using both semi-empirical and fundamental models. The fundamental models are based on the coupled electrohydrodynamic transport equations for multiple charged species in aqueous solution. The semi-empirical models describe average species and fluid fluxes through the respective regions.

Jarrod Schiffbauer
West Virginia University

Date submitted: 05 Dec 2007 Electronic form version 1.4