

Abstract Submitted
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Influence of pore charge, pressure, and electric field on protein transport through nanopores. MENI WANUNU, Northeastern University — Nanopores are miniaturized electrical sensors with arguably the smallest detection volumes (sub-yoctometers, or below 10^{-24} m^3). Detection of molecules using nanopores involves electrical monitoring of ion current flow through a pore using a pair of electrodes placed across the nanopore-containing membrane. In such small confinements, the presence of electric field and a dominant surface area impose various conditions that must be taken into account when considering polymer translocation. In this talk, I will describe how nanopores less than 10 nm in all dimensions (diameter and thickness) can be used to detect protein molecules at high resolution. I will discuss measurements of the surface charge of these nanopores, its role on the transport process, as well as the role of pressure on the sensitivity to protein transport detection.

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