

Abstract Submitted
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Ionic transport across atomically-thin graphene membranes LAUREN CANTLEY, Dept. of Mechanical Engineering, Boston University, SCOTT BUNCH, Dept. of Mechanical Engineering, Division of Materials Science and Engineering, Boston University — Graphene is an attractive material for applications in single molecule sensing and molecular sieving, in part due to its atomic thinness, strength and barrier properties. In this study, we examine ionic transport across a suspended single-layer graphene membrane separating two reservoirs of aqueous ionic solution. Molecularly sized, sub-nm pore(s) are introduced by chemical etching, which allow for only proton transport across the graphene membrane. The pore is further opened and ionic conductance measurements are carried out to further investigate and characterize ionic transport across sub-nm and nm-scale pores.

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