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Porous Graphene for Water Desalination

Disclosure Number

201403320

Technology Summary

Graphene has great potential to serve as a separation membrane due to its unique properties such as chemical and mechanical stability, flexibility and most importantly its one-atom thickness. In this study, we demonstrate experimental evidence of the use of single-layer, porous graphene as a desalination membrane. Nanometer-sized pores are introduced into single layer graphene. The graphene membrane exhibited high rejection of salt ions and rapid water transport, thus functioning as an efficient water desalination membrane. Salt rejection selectivity of nearly 100% and exceptionally high water fluxes were measured.

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