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Large osmotic energy harvesting from functionalized conical nanopore suitable for membrane applications

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ABSTRACT

The direct capture of energy from salinity gradient is limited by low energetic efficiency. Here we propose to investigate an original membrane for capture of osmotic energy based conical track-etched nanopore. In order to improve the surface charge at pH 7, the nanopore was functionalized with chitosan / poly(acrylic acid) self-assembly. We observed for single nanopore a large osmotic current around 0.6 nA for a concentration gradient $c_{Tip}/c_{Base} = 1000$. This

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