

Fig. 1. Schematic of fabrication process and structure of MXene@MC.

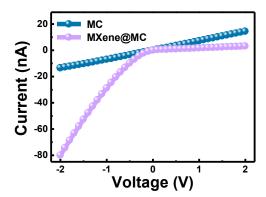


Fig. 2. I-V curves of MXene@MC and the pure MC recorded in 10 mM KCl solution. The ion rectification ratio of MXene@MC reaches a high value up to 25.6.

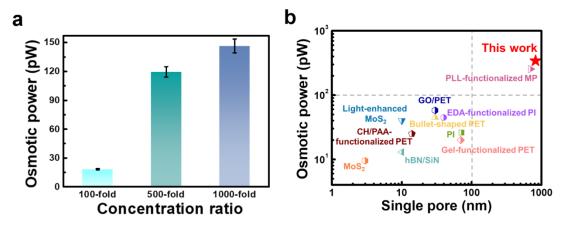


Fig. 3. (a) Generated osmotic power as a function of salinity gradient. (b) Comparison of the osmotic power generated by the present MXene@MC and the reported state-of-the-art single-channel-based osmotic power generators under a 1000-fold KCl gradient.