

Modified nanofiltration membrane treatment of saline water: a review

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ABSTRACT

Nanoparticles have received much attention recently due to their unique properties in terms of photoemission, antimicrobial, and catalytic activity. NPs incorporated membranes have gained attention due to their ability to increase membrane permeability, mechanical properties, hydrophilicity, and selectivity in some cases. This review focuses on the modification on zeolite and carbon nanotube (CNTs) membranes in the treatment of saline water, and factors affecting the desalination process during this modification and how to control and mitigate them. Therefore, the objective of the research is to evaluate the effectiveness of desalination technology based on the modified zeolite and CNTs membranes, the focus point will be the energy-efficient, greener approaches to synthesis and modification of a variety of nanomaterials to meet the present and future challenges.

keywords: Water treatment; Modified nanofiltration; Nanotechnology; Saline water; Water quality; Zeolite membrane, Carbon nanotubes (CNT)

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