

OVERVIEW ON REVERSE OSMOSIS TECHNOLOGY FOR WATER TREATMENT

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ABSTRACT

Reverse osmosis (RO) is becoming more used both in water treatment & salinity applications throughout the globe. It is a pneumatically process in which dissolved components in the input water are rejected by a semi-permeable membrane. Size exclusion, charging exclusion, and physiological interactions between the solute, solvent, and membrane all contribute to this rejection. The efficiency of the process is determined by operating factors as well as membrane and appropriate water characteristics. Iterative and hollow fiber modules are the most widely accessible. This article examines current developments in reverse osmosis technique in relation to the main problems that have arisen in this fast expanding distillation technique. Fouling research and control approaches, membrane characterization methods, and applicability to various water types and components present in the feed solution are among these problems. A review of key advancements in RO efficiency and mechanism modelling is also provided, as well as an introduction to current transport models. The two major problems of RO brine discharge as well as energy prices and recovery techniques are also addressed. Finally, future studies trends and requirements in the field of robotics are discussed.

KEYWORDS: *Brine, Characterization, Costs, Fouling, Models, Reverse Osmosis.*

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