

Recent Developments in Forward Osmosis Processes

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Forward osmosis (FO) is an emerging membrane technology with a range of possible water treatment applications (desalination and wastewater treatment and recovery).

Recent Developments in Forward Osmosis Processes provides an overview of applications, advantages, challenges, costs and current knowledge gaps. Commercial technology, hybrid FO systems for both desalination and water recovery applications have shown to have higher capital cost compared to conventional technologies. Nevertheless, due to the demonstrated lower operational costs of hybrid FO systems, the unit cost for each m³ of fresh water produced with the FO system are lower than conventional desalination/water recovery technologies (i.e. ultrafiltration/RO systems).

There are key benefits of using FO hybrid systems compared to RO:

- chemical storage and feed systems may be reduced for capital, operational and maintenance cost savings,
- reduced process piping costs,
- more flexible treatment units,
- higher overall sustainability of the desalination process, while producing high quality water.

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