

### Theoretical modelling and simulation of membrane distillation for desalination

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Membrane distillation (MD) is an isothermal membrane separation process. There are four types of MD configurations. Direct contact membrane distillation is widely studied for desalination among them because it is the simplest operation mode configuration and suited for applications in which the major permeate component is water and when non-volatile components are considered.

In this study, theoretical model for hollow fiber module DCMD is presented and simulation is carried out. Simulation results are analysed in two cases: cocurrent flow and countercurrent flow. For industrialization of MD process and future module design, optimization study is indispensable. So optimization to this process is also implemented to increase process performance and research the parameters' effects.