

# Membrane Distillation

## Overview:

Membrane distillation (MD) is a process where warm water is evaporated at a membrane surface and condensed downstream of the membrane. This process has shown value in the concentration/desalination of ultra-high salinity waters (such as brines from oil and gas production and industrial and mining wastewaters). The system is adaptable to various MD configurations (direct contact, vacuum, air gap) and membrane geometries (flat sheet, hollow fiber, tubular).

## Description of the test bed:

- The test bed is equipped with a ceramic membrane in tube channel geometry with a length of 250 mm, an outer diameter of 10 mm and an inner diameter of 7 mm.
- Adaptable to flat sheet geometry and to longer tube channel substrates
- **Working pressure:** less than 10 psi
- **Working temperature:** max. to 80 °C
- **Liquids:** aqueous solutions only
- **Analysis system:** PLC controlled, automated data recording of pressures, temperatures, and flows.

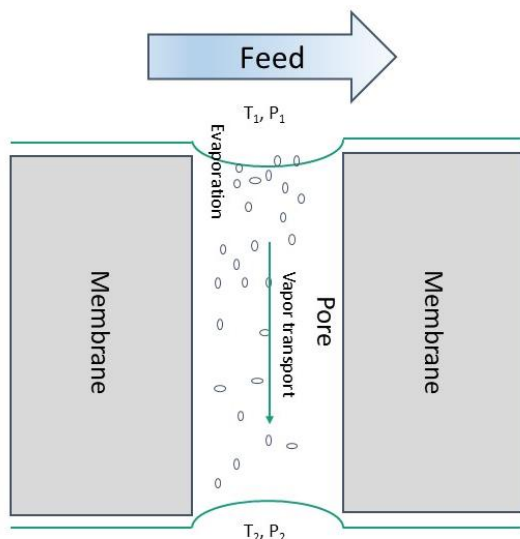
## Services offered:

- Application testing for membrane processes
- Membrane characterization
- Development of membranes
- Delivery of membrane prototypes
- Assembly of bench-scale and pilot-scale plants



1 Principle scheme of membrane distillation

2 Membrane distillation test rig at CEI laboratory which is equipped with a module for tube channel substrates.



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