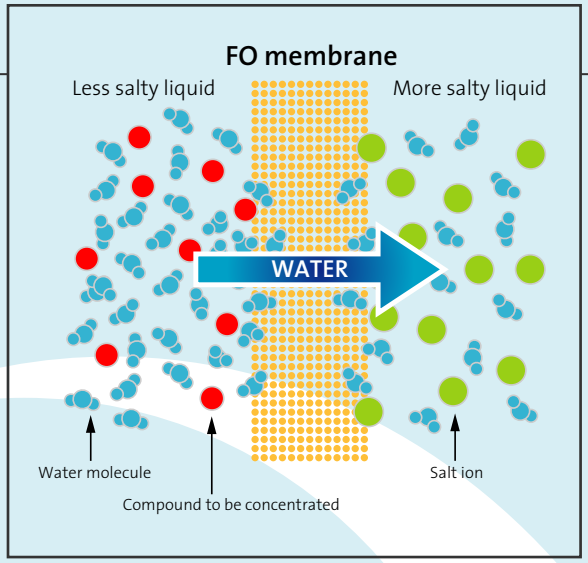
Forward Osmosis

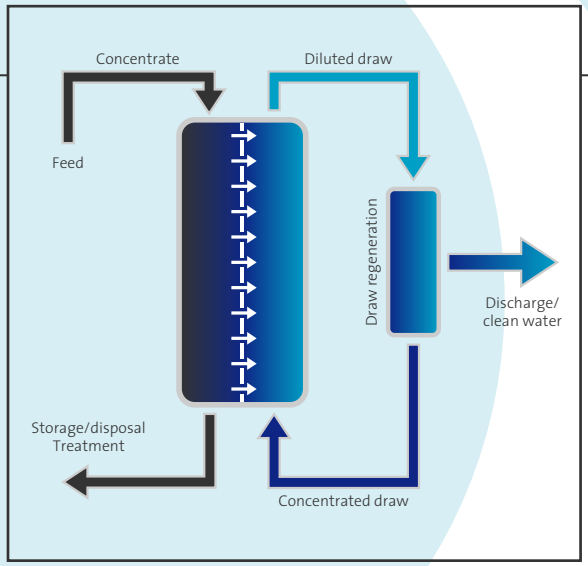
PRINCIPLE

Forward Osmosis (FO) is based on the principle that water permeates from a liquid with low osmotic pressure to a liquid with high osmotic pressure, seperated by a semi permeable membrane. This process happens spontaneously without any energy or pressure. FO is a low fouling separation process. FO membranes rejects organics, minerals and other solids, similar to RO, but doesn't have the typical fouling problems.



PROCESS

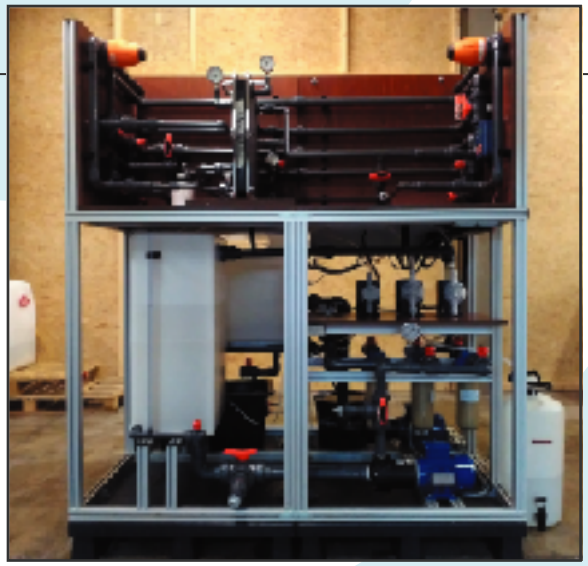
The high osmotic solution which draws the water from the feed is called draw solution. As a result the draw solution is diluted so it's necessary to recover it. This can be done by different technologies such as RO or MD. The outcome of this process is a concentrated draw and clean water.



APPLICATIONS

FO can be used in many processes, such as:

- Concentration in the food and beverage industry
- Concentration of high fouling wastewater (oil & gas, landfill leachate, chemical wastewater)
- Zero Liquid Discharge (ZLD)
- Direct concentration of wastewater with recovery of water, biogas and nutrients
- Cooling towers
- Osmotic-MBR



BLUE-tec bv | www.blue-tec.nl | info@blue-tec.nl | +31 653219323 | Wageningen, The Netherlands