



AquaFit4Use

Minor component removal by membrane contactor

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PRINCIPLE

The membrane contactor assists in the removal of specific compounds from (usually aqueous) solutions. The common variant of the membrane contactor may be compared to solvent extraction. The used solvent should preferably extract the compounds of concern, but also show no or acceptable cross contamination with the water phase. The two phases have counter current flow for highest efficiency. A specific variant uses an air filled membrane, allowing the removal of volatile compounds (e.g. ammonia, trihalomethanes) by a chemical gradient.

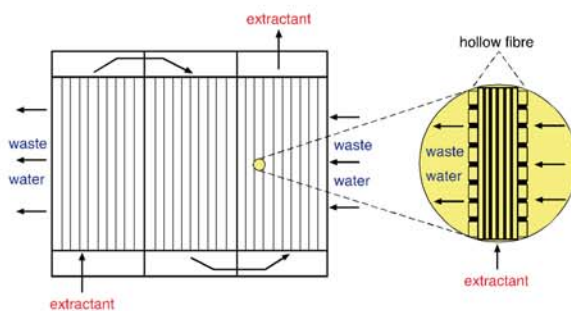


Figure 1: Principle of pertraction

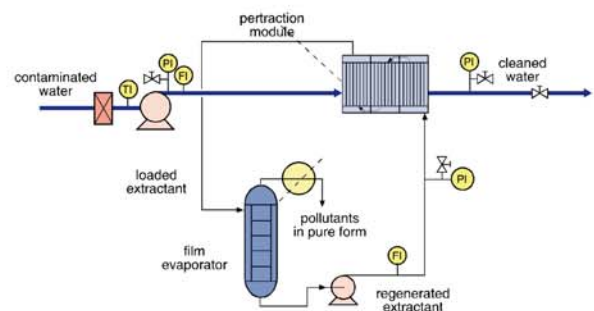


Figure 3: Pertraction flowchart

INNOVATIVE ASPECTS

The membrane avoids troublesome separation of the two phases and foaming problems.
Low energy requirement (no mixing).
Two phases may be used in all mass ratio's, therefore allowing high concentration factors.
Small volume, small footprint.

ADVANTAGES

- Successfully applied in chemical industry.
- Competitive to conventional techniques.
- Solvent selection aims at one of these options:
 - Production of valuable product.
 - Recovery of compound for reuse in the process.
 - Incineration (together with solvent).



Figure 2: Full scale application Envista



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knowledge transfer and dissemination

SP 6

DISSEMINATION AND training