Inorganic Hollow Fiber Module

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Duration: 1 year

Motivation:

Polymeric hollow fibers are widely used in various industrial fields. However, they are not fully stable in aggressive environments (e.g. high/low pH, solvents) and/or at higher temperatures. Inorganic tubes have excellent thermal and chemical resistance but are commercially not available in diameters smaller than 3 mm, which results in a low surface area per module.

Objective of this EAP project:

Performance test of inorganic hollow fibers modules in 3 industrial streams of ISPT or NL GUTS companies.

Project scope:

Inorganic hollow fibers with diameters smaller than 2 mm will be sealed in a module with a glass sealing. The performance of these modules (>10) will be tested in 3 industrial streams of ISPT or NL GUTS companies.

Applicability:

Inorganic hollow fibers modules can operate at higher temperatures (e.g. sterilization) or in aggressive environments (e.g. solvents) where the long term stability of polymeric membranes hinders its application.

Dishman envisions to use the filter modules in the upstream process flow which so far has not been possible using conventional filtering techniques. Upstream filtering will reduce maintenance and downtime.

For FrieslandCampina the use of the Inorganic Hollow Fiber Modules was technically feasible for the removal of lactose from whey permeate.

Status:

Performance tests of inorganic hollow fibers modules are performed at the moment.