Membrane technologies for water treatment and reuse in the textile industry - DTU Orbit (08/11/2017)

Membrane technologies for water treatment and reuse in the textile industry

Textile wastewater is a challenging feed stream for treatment by membrane separation because of its complex composition and the presence of reactive components. Here we briefly present examples of reverse osmosis-, nanofiltration- and ultrafiltration-based systems as well as membrane bioreactor technology for textile wastewater remediation. However, for all of these approaches the general issue of (bio)fouling represents a major obstacle for full-scale industrial implementation. Forward osmosis (FO) membranes have recently attracted considerable interest because the low fouling propensity of FO membranes makes them an intriguing supplement to existing methods. We present the FO principle with some current FO membrane developments including biomimetic aquaporin FO membranes, and exemplify how they can be used to concentrate textile dyes.

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