

Fouling and Scaling Resistant Surface Nano-Structured Membranes

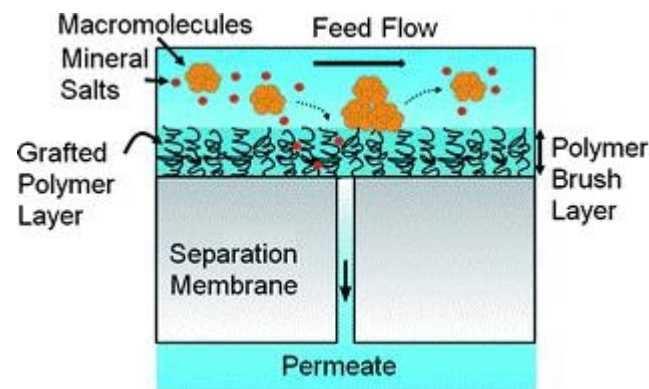
Tech ID: 23678 / UC Case 2008-736-0

BACKGROUND

"In the early years, surface plasma treatment could only be accomplished in a vacuum chamber," said Yoram Cohen, UCLA professor of chemical and biomolecular engineering. "It wasn't practical for large-scale commercialization because thousands of meters of membranes could not be synthesized in a vacuum chamber. It's too costly. With the advent of atmospheric pressure plasma, we don't even need to initiate the reaction chemically. It's as simple as brushing the surface with plasma, and it can be done for almost any surface!"

INNOVATION

Researchers from UCLA have unveiled a new class of reverse-osmosis (RO) membranes that resist the clogging which typically occurs when seawater, brackish water and waste water are purified. Professor Cohen and his research team have developed membranes capable of resisting organic- and biofouling, as well as mineral salt scaling. These novel membranes have applications in water treatment and desalination, where biomaterial buildup and salt scaling of reverse osmosis membranes represent major impediments to high recovery rates.



ADVANTAGES

- ▶ Produced using atmospheric pressure plasma
- ▶ Easily incorporated into today's commercial production system
- ▶ Significantly reduces desalination operating costs

RELATED MATERIALS

- ▶ [Lin et al. \(2010\) Polymer surface nano-structuring of reverse osmosis membranes for fouling resistance and improved flux performance. Journal of Materials Chemistry.](#)

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	8,445,076	05/21/2013	2008-736

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- ▶ [System and Method for Flexible Low-Energy Membrane-Based Liquid Purification](#)
- ▶ [A Novel Ex-situ Scale Observation Detector \(exsod\) for Mineral Scale Characterization and Online RO Process Monitoring](#)

CONTACT

UCLA Technology Development Group
 ncd@tdg.ucla.edu
 tel: 310.794.0558.



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INVENTORS

- ▶ Cohen, Yoram

OTHER INFORMATION

KEYWORDS

cleantech

CATEGORIZED AS

- ▶ Environment
- ▶ Other
- ▶ Nanotechnology
- ▶ Materials

RELATED CASES

2008-736-0

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10889 Wilshire Blvd., Suite 920, Los Angeles, CA 90095

tdg.ucla.edu

Tel: 310.794.0558 | Fax: 310.794.0638 | ncd@tdg.ucla.edu

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