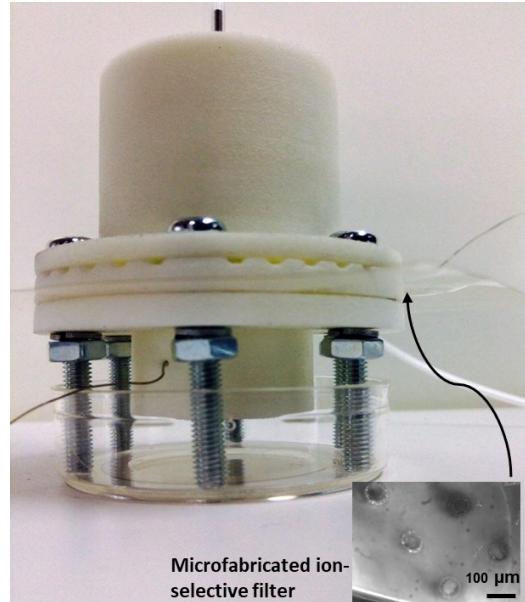




RESEARCH MARKETING SUMMARY

MICROFABRICATED ION-SELECTIVE FILTER FOR IONS AND MOLECULES

High-throughput separation of particles, ions, and molecules



SUMMARY

With over 1.2 billion people lacking access to clean water and growing global water scarcity, the demand for cost-effective and energy-efficient desalination technologies is at an all-time high. Reverse osmosis and thermal distillation are energy-intensive methods and vulnerable to scaling and corrosion. Therefore, innovative alternatives to these traditional technologies are needed, with opportunities with a global water filtration market that is projected to reach U\$30 billion by 2030.

Researchers at New York University Abu Dhabi have developed a novel ion-selective filtration membrane designed for the high-throughput separation of particles, ions, and molecules, offering a novel approach in desalination and purification technologies. The technology incorporates micropores (or nanopores), conductive layers, and a voltage-driven ion-selective layer, enhancing filtration efficiency and scalability.

VALUE PROPOSITION

Effectiveness

The patented voltage-driven ion-selective layer minimizes fouling, offering a significant energy advantage over reverse osmosis.

Scalability

The membrane is adaptable for high-throughput applications, overcoming limitations of microfluidic approaches.

Versatility

Its unique architecture enables the membrane to be used in diverse sectors, including water treatment, industrial processing, and sample preparation.

Durability

Unlike conventional thermal desalination technologies, the membrane is designed to resist corrosion and scaling, making it ideal for long-term industrial applications.

Precision

The technology allows for ion, particle and molecule filtration, enhancing efficiency for specialized separation applications.

Microfabricated ion-selective filter for ions and molecules

APPLICATIONS AND USES

Compared to Reverse-Osmosis systems and conventional thermal processes, the microfabricated ion-selective membrane offers superior filtration efficiency with significantly lower energy consumption. Its design allows for small-scale deployment, making it a key player in meeting the global demand for fresh water.

This patented technology presents a compelling opportunity for investors in the water-technology, environmental and biotechnology sectors. The global need for sustainable high-sensitivity filtration method continues to grow, and this technology offers a scalable, cost-effective, and energy-efficient solution.

It is ideally suited for:

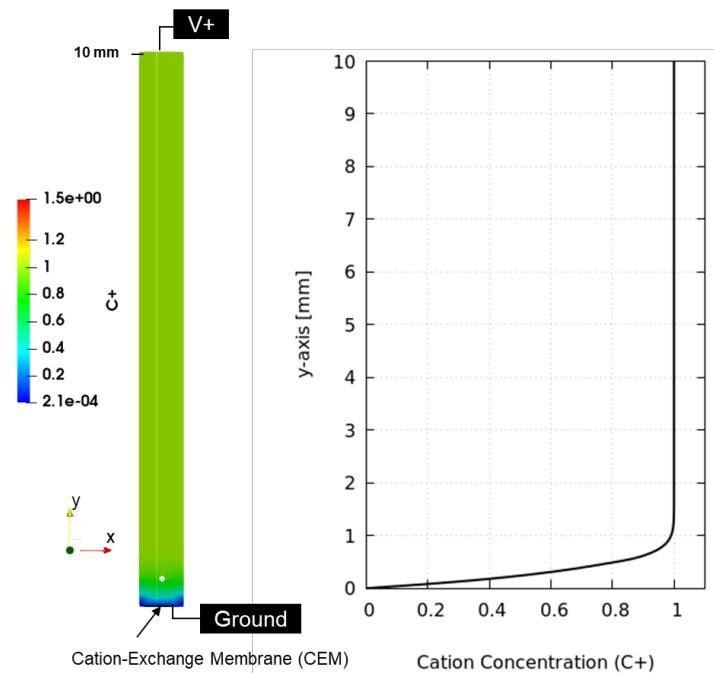
- Desalination.
- Water Filtration.
- Sample preparation.
- Biotechnology.

ENGAGEMENT OPPORTUNITIES

We are offering opportunities for joint ventures, collaborative pilot studies and licensing with industry partners to further develop and commercialize this technology.

CONTACT DETAILS FOR ENQUIRIES

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Ion concentration profile along the vertical y-direction shows a removal of cations at the bottom.

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Intellectual Property
Patent Number: US009956529B2
Current Assignee: New York University in Abu Dhabi Corp.