

Characterization and benchmarking of membranes

In the “CaBeMem” project, innovative membranes are characterized and benchmarked in collaboration with the University of Twente for the removal of harmful pollutants.

THE CONTEXT

At Pentair, we help the world sustainably move, improve, and enjoy water, life’s most essential resource. From our residential and commercial water solutions, to industrial water management and everything in between, Pentair is focused on smart, sustainable water solutions that help our planet and people thrive.

As part of the “Zero Pollution Action Plan”, the European Union will implement “New rules on Water Pollution”. One major goal is to reduce the emissions of harmful pollutants, introducing additional steps in urban wastewater treatment.

All around the world in a variety of markets and industries, Pentair X-Flow B.V. technologies are used. Pentair X-Flow’s membranes “stand up” and “stand out” in the water treatment and wastewater treatment fields. Pentair X-Flow’s vast experience across a broad range of industries allows to develop significant know-how of various industry-specific information.



Factsheet on the review of the urban wastewater treatment directive (doi:10.2779/683532)



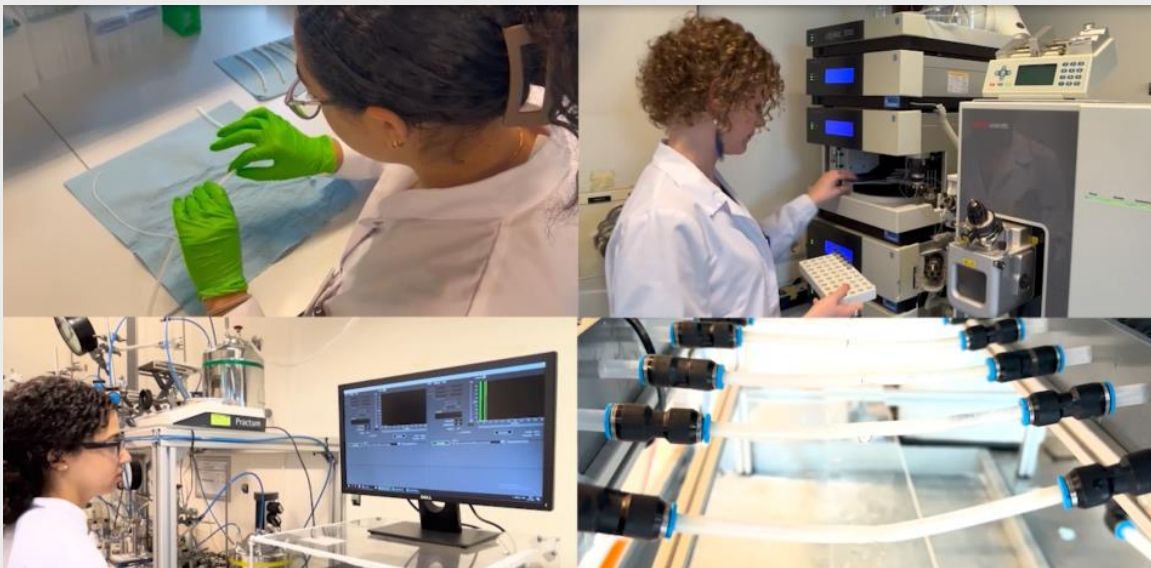
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THE CHALLENGE

With growing demands to reduce water usage and recycle wastewater, the EU's "Zero Pollution Action Plan" is expected to introduce new rules on water pollution. A key goal is to cut harmful emissions and improve urban wastewater treatment. We believe membrane technology will be crucial in this effort.

Through constant innovation of membrane technology, we at the Pentair X-Flow RD department strive to tackle the challenges of maintaining safe and healthy water.

In the INNOMEM project "CaBeMem", the University of Twente and Pentair X-Flow collaborated to test and compare our innovative membranes with commercially available membranes for removing various harmful substances.



Overview of different techniques used by the Department of Membrane Science & Technology (University of Twente) for characterization of membranes

THE RESULTS & CONCLUSION

As part of the "Zero Pollution Action Plan", the European Union will implement "New rules on Water Pollution". One major goal is to reduce the emissions of harmful pollutants, introducing additional steps in urban wastewater treatment.

Within the "CaBeMem" project, our products were characterized, compared, and benchmarked against commercially available membranes by the Department of Membrane Science & Technology of the University of Twente. Through an initial screening, the most promising membranes for different scenarios were identified. The performance of the selected membranes will be further evaluated in a real wastewater effluent study.

We thank the European Union for giving this great opportunity for industries and universities to share their knowledge and resources in the INNOMEM framework.

At Pentair X-Flow, we continue to work to achieve the zero pollution goals and improve water - life's most essential resource - for our future generations.

TECHNIQUES USED

- Clean water permeability
- Salts and uncharged solutes retention
- Liquid chromatography with tandem mass spectrometry
- Scanning electron microscope imaging

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