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Harakeke Membrane for Sustainable Water Purification

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ABSTRACT

Access to clean water is a paramount humanitarian priority worldwide. Currently available water treatment tools have a significant environmental footprint. There is an increasing demand for accessible and eco-friendly water treatment options. Harakeke (*Phormium tenax*) is native to New Zealand and holds great cultural importance to Māori, the indigenous people. Throughout history, harakeke has been used for vital purposes by Māori, from medicine to textiles. Its leaves contain strong fibres and possess an intrinsically porous structure that closely resembles that of polymeric membranes. This talk endeavours to share our journey of developing a harakeke membrane for purifying household drinking water.

Beyond the technical aspects, this talk will review harakeke's historical, cultural, and social significance to Māori and New Zealand, highlighting our approach to conducting this indigenous-involved research. Our argument is that sustainable development involves not only technical and environmental considerations but also respecting cultural integrity and social responsibility.

KEY WORDS

Harakeke Membrane, Water Purification, indigenous-involved research, Sustainable Development.

BIOGRAPHY

Dr Ben Yin completed his PhD in Chemical and Process Engineering at the University of Canterbury (UC) in 2016. He has work and research experience in King Abdullah University of Science and Technology, Massey University, Victoria University of Wellington, and the Industrial Research Institute in New Zealand before his current role as a senior lecturer at UC.

He leads the Advanced Membrane Technology Group at UC, focusing on developing cutting-edge separation technologies to advance energy and environmental sustainability. His research has a strong industry emphasis, resulting in commercial products for practical applications.

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