



Chemeca2026
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28 – 30 September 2026
Melbourne, Australia



*Chemeca 2026 and Hazards Australasia
28 – 30 September, Melbourne, Australia*

Hydroxsys – A story of NZ innovation and leadership in a clean tech startup

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ABSTRACT

Hydroxsys is an award winning clean-tech startup company in New Zealand manufacturing novel ultrafiltration (UF) membranes for water and wastewater treatment. Like any startup, it has navigated its share of challenges in innovation and the leadership of an entrepreneurial organisation that come with it. This paper focuses on the extrinsic and intrinsic factors that have helped shape its survival and growth in the NZ innovation ecosystem and provides practitioner level understanding and insights on what worked and why. The extrinsic factors outline the economic and ecosystem forces in NZ whilst the intrinsic factors emphasise the value of leadership, research and development practices, culture and their impact on achieving outcomes. Lessons are also shared from initiatives which did not work as expected in various phases of commercialisation and scale up and how these were overcome.

As a manufacturer dealing with scaleup challenges, Hydroxsys has relied heavily on the profession of chemical engineering to guide its transition of innovations from lab to pilot scale through to field trial applications and commercialisation. Therefore this paper also talks about the role that chemical engineering principles and practices played in a practitioner sense to achieve breakthroughs in its UF membrane manufacturing practices. The practical examples shared in this paper are intended to serve the leadership of innovation and engineering communities with knowledge, thinking and insights for consideration in their entrepreneurial ventures.

KEY WORDS

Cleantech, ultrafiltration, membranes, water, wastewater, startup, innovation, leadership

BIOGRAPHY

Boaz is General Manager of R&D and Operations at Hydroxsys, based in Auckland. He has led business transformation and innovation strategies across the New Zealand innovation ecosystem including in dairy, renewable energy and clean technology. Boaz is a chartered engineer with IChemE and an IChemE NZ board member. Boaz has a PhD in Chemical & Materials Engineering and an executive MBA from the University of Auckland.

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