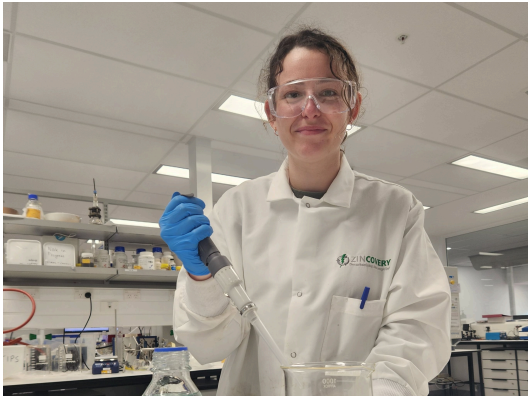




Te Mana Tangata Whakawhanake  
**MacDiarmid Institute**  
Advanced Materials & Nanotechnology

In 2011, our founder Sir Paul Callaghan said 'A hundred inspired New Zealand entrepreneurs could turn this country around.' With those words in mind, we have created a 'list' of over 100 of our science graduates who are making an impact in the deep tech sector, either by establishing their own deep tech start-up companies, by working within other deep tech start-ups, or by working in wider research-led industry here in Aotearoa New Zealand.

Here are two of them. You can [read about the rest of 'Our Inspired 100' here](#).



Lily Clague did her Masters in chemistry at the University of Otago and is now employed at start-up [Zincovery](#). Lily also featured in [this Farmers Weekly article](#).



[Dr Ratu Mataira](#) did his PhD in physics at Victoria University of Wellington and is the founder of [Openstar Technologies Ltd](#). Openstar is developing the Levitated Dipole Fusion reactor leveraging New Zealand's unique capability with HTS magnet technology.

## News and Updates

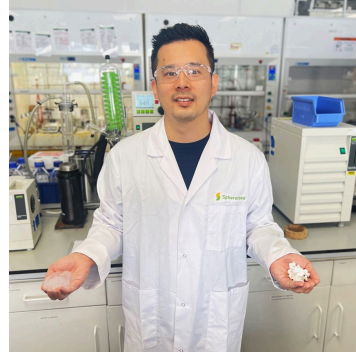
[A new method to pump carbon dioxide out of the air](#)

Associate Investigator Professor Tricia Hunt and her UK based collaborators have developed and tested a CO<sub>2</sub>-permeable synthetic membrane. Their paper was published in [Nature Energy](#).



[On a mission to disrupt the US\\$45 billion global surfactant industry with greener alternatives](#)

Currently 90% of current surfactants used in cleaning products and other surfactants are derived from fossil fuels. [Spherolose](#), a new start-up company founded by AUT-based Associate Investigator Dr Jack Chen (who was shortlisted for this month's KiwiNet Sprout Agritech Breakthrough Innovator Award), aims to offer bio-derived, biodegradable surfactants.



[MBIE Endeavour success](#)

From Scalable cryogenic memory technology for superconducting and quantum computing to A foundation for zero emissions: Low-energy, carbon-absorbing cement – [read more here](#) about our researchers successful in this year's MBIE Endeavour Fund round.



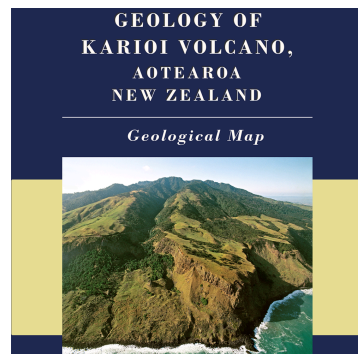
[AMN11 early bird registration closes next week!](#)

Join us in Christchurch NZ in February 2025 to hear Nobel Prize Laureate [Moungi Bawendi](#) from [Massachusetts Institute of Technology](#), [Roisin Owens](#) from [University of Cambridge](#) and more!



Our former Research Assistant Dr Oliver McLeod [launched his Karioi monograph and map book](#).

The mapping plays a crucial role in resource management and contributes to the study of new volcanic formations in the area, increasing collaboration between science and mana whenua.



### [Te Wiki o te Reo Māori 2024](#)

For Te Wiki o Te Reo Māori, we shared some new words relating to our research:  
 Hangarau mōkitokito = Nanotechnology  
 Hangarau rawa ōkiko = Technology  
 Mātu = Materials/Matter/Substance  
 Rāpoi ngota = Molecule  
 Irahiko = Electron  
 Toitūtanga = Sustainability

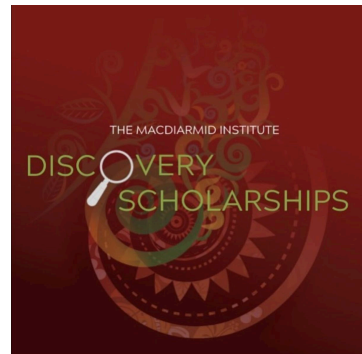


### [Deepening Māori Space Connections with NASA](#)

Our Deputy Director Māori Associate Professor Pauline Harris and Strategic Manager Māori Kirsty Doyle headed to NASA to collaborate on research and create connections with indigenous peoples and to talk about Māori aspirations in the Aerospace sector. (Left to right) Kirsty Doyle, Pauline Harris, Mana Vautier, Ockie Simmonds and Hemi Whaanga.



The MacDiarmid Institute is delighted to announce the continued funding of the [Discovery Scholarship Programme](#), for Māori and Pacific Island students in tertiary science. This programme is designed to support students studying in the physical sciences, chemical/materials engineering, Māori sciences or sciences related to sustainable innovation.



And just to finish, here are a couple more of our 'inspired 100' entrepreneurs – our alumni working in the deep tech sector in New Zealand.

[Dr Olivia Ogilvie](#) did her PhD in biochemistry at the University of Auckland and is now CEO at start-up company [Opo Bio](#), New Zealand's first company developing cell lines for biomanufacturing, including cultivated meat and collagen.



[Dr Ojas Mahapatra](#) did his PhD in physics at the University of Canterbury and is currently CEO of cryogenic technology company Fabrum.

You can [read about the rest of 'Our Inspired 100' here](#).



## Recent Media

Associate Investigator Dr Erin Leitao contributed to the [Science Media Centre's expert reaction on microplastics](#).

[Alumnus Dr Daniel Mak, Principal Investigator Professor Aaron Marshall and PhD student Sam Harris were excited to announce the public launch of their new podcast series 'In the Deep | Aotearoa'](#). They said that they are hoping to help everyone gain an understanding of the cool science, engineering and technology going on in Aotearoa New Zealand. [The first two episodes are now live](#), including one with Co-Director Professor Justin Hodgkiss, so please give them a listen.

Associate Investigator Dr Jack Chen has been announced as a finalist for the 2024 KiwiNet Sprout Agritech Breakthrough Innovator Award, and he and his new start-up company, Spherelose, feature in [this article on the MI website](#).

Take a look at the excellent article written by MacDiarmid Institute Co-Director Professor Nicola Gaston about New Zealand's 100 inspired entrepreneurs: <https://businessdesk.co.nz/article/opinion/new-zealands-100-inspired-entrepreneurs> (available via Library subscription). You can see the full list here on our website: <https://www.macdiarmid.ac.nz/what-we-do/into-the-future/our-inspired-one-hundred/>

Lily Clague (former MSc student from Anna Garden's group at Otago), who features in the above list and at the start of this newsletter), was good enough to agree to an [interview on Nine to Noon last week about her journey from being a research student to working at Zincovery](#).

[Business Desk featured a nice article about the work that Associate Investigator Dr Ben Mallett has been doing](#) as part of the new spin-out company, JXB Space Systems (paywalled).

There is a new season of SFSF <https://www.rnz.co.nz/podcast/sci-fi-sci-fact/season-6>

That's it from us for now. Thank you for your continued interest in and support for the MacDiarmid Institute and if you know anyone who is interested in signing up to our quarterly email newsletters, [please let us know](#).



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