



Te Mana Tangata Whakawhanake

MacDiarmid Institute

Advanced Materials & Nanotechnology

As we welcome spring, we congratulate the graduates of this season from the MacDiarmid Institute. The past three months have seen the tertiary sector welcome back international students, and we also celebrated the MacDiarmid Institute's 20th birthday. The Institute's first Director, Sir Paul Callaghan, had a vision for a vibrant and prosperous New Zealand transformed through science and technology. He saw it was people who would change the landscape of our hi-tech-economy, and set about training them, bringing together not just the scientists but the scientists and the businesspeople, educators, and communities. As we reflect on the past 20 years, it is clear, that as much as we have changed over the years, the most important things are as true now as they were 20 years ago. We are spinning science into commerce, sending data savvy PhD graduates into industry, creating opportunities for Māori and Pacific Island science students and inspiring young people around the country to love and study science. Thank you for being with us on this journey. There is so much more to come.

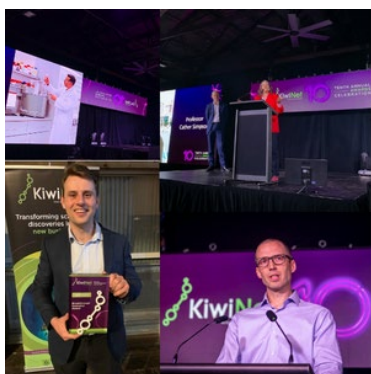
In this spring issue, we share stories of your fellow alumni, announce our [Call for Independent Post-Doctoral Fellowships](#) and applications for our [Alumni Business Scholarships](#) and share other external opportunities available to you.

We also would love to hear any feedback you may have. If you can spare a moment, please fill in this [quick anonymous survey](#) to tell us about what you read in the newsletter and what is useful to you. Remember this is your newsletter and we want to make sure it's as relevant to you as possible. Once again we thank you for being part of our readership for this newsletter and invite anyone who is also interested in receiving our General Newsletter to [please let us know](#).

News and Updates



Regional Lecture Series: To Industry and Beyond
Back by popular demand, this year's series reprises our 2019 theme To Industry and Beyond. Upcoming talks will take place in [Nelson \(3 November\)](#), [Tauranga \(21 November\)](#), and Hawke's Bay (28 November). Our speakers feature current and former MacDiarmid researchers and will take audiences behind the scenes for a look at the pathways from the lab bench to industry. We hope to see many of your there!e held successful Techweek events in May in Auckland and Christchurch 'Building Kaitiaki for Intergenerational Deeptech Impact'. These were valuable networking opportunities for our scientist entrepreneurs, industry partners, investors, and others in our network. Speakers included Investigators, [Associate Professor Franck Natali](#) and [Dr Matthew Cowan](#), and alumni Dr Humphrey Feltham and Dr Maryam Shojaei, and others from the deeptech ecosystem.



[Deep tech was the winner at the 2022 KiwiNet Research Commercialisation Awards](#)

Three of the six [MacDiarmid finalists for the annual KiwiNet Research Commercialisation Awards](#) won awards. We congratulate alumnus [Jonathan Ring](#), Co-Director Professor [Justin Hodgkiss](#), MacDiarmid affiliated spinout, [Magritek](#). Plus Emeritus Investigator [Professor Cather Simpson](#) won the Commercialisation Icon for her work in the “deep-tech commercialisation space and raising the external profile of the sector in NZ.”. [Read about the winners here.](#)



Call for Independent Post-Doctoral Fellowships

[MacDiarmid Institute Call for Independent Post-Doctoral Fellowships – 24 months max](#)

Several Independent Post-Doctoral Fellowships are available. Candidates must be supported by a [MacDiarmid host Investigator](#) at one of our partner organisations and research proposals must align with at least one of the [MacDiarmid Institute Research Programmes](#) Application deadline: Tuesday 8th November 2022, for information and [how to apply see our website.](#)



[MacDiarmid Institute Alumni Business Scholarships – Applications for 2023 open!](#)

Every year we offer a limited number of competitive business scholarships to our alumni to enable them to undertake further postgraduate study in business-related areas. Applications for 2023 are open and close October 25 at 8am, [more information is available here.](#) Questions about the application process can be directed to: Deputy Director, Commercialisation and Industry Engagement, [Associate Professor Geoff Willmott.](#)



[AMN10: The 10th International Conference on Advanced Materials and Nanotechnology 7-10 February 2023.](#)

AMN10 Early Bird Registrations close on Friday 21 October. We have already received hundreds of abstracts for our biennial AMN conference. We are looking forward to hosting our first international conference since 2019! [Check out our awesome speaker line-up.](#) We look forward to reconnecting with international visitors and current and past MacDiarmid whānau again! [Be sure to register before the deadline.](#)



[Physics Symposium in Honour of Joe Trodahl's 80th birthday \(PSJT\) rescheduled to 8–10 December 2022](#)

You are invited to join for a lively program of physics across a wide range of topics, presented in our poster and oral sessions. A joint event celebrating some of the most recent advances in physics and the life work of [Professor Joe Trodahl.](#)



[Science Advisory Panels](#)

We commenced an online platform for regular engagement between technology companies and our scientists in the form of Science Advisory Panels. Each panel session hosts a company that is interested in pursuing research to overcome a technical challenge with commercial relevance. If you or your company is interested in being part of our Science Advisory Panel, please contact [Kevin Sheehy](#).

[Internships](#)

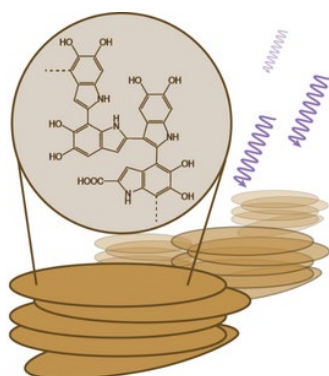
As you probably know, we offer internships to our affiliated graduates so they can experience working on real industry problems. We have a comprehensive network of companies, start-ups, NGOs, and government agencies. If your company or workplace wishes to host an internship, please [contact us](#).

Recent media



[The science camp breaking down the barriers for Māori and Pasifika students](#)

Diversity in academia is essential to expanding our knowledge systems and getting better outcomes for communities. [Read The Spinoff's article](#) featuring two DiscoveryCamp alumni speaking about their experiences on our annual [DiscoveryCamp - Te Tohu Huraina](#)- for Māori and Pacific Island students in Years 12 and 13.



[New Zealand researchers use world-first technology to discover how melanin protects skin from UV radiation](#)

'A maze of mirrors and lenses lies inside [Victoria University of Wellington](#)'s laser lab, and it's unlocking the secrets of the skin' - MacDiarmid Co-Director Professor [Justin Hodgkiss](#) featured on Newshub on new NZ technology showing how melanin protects skin from UV radiation. Research funded by Marsden Fund and published in [PNAS News](#), authored alongside alumni Dr [Aleksandra Iliina](#), Dr [Karen Thorn](#) and Dr [Paul Hume](#).



[Engaging more Pasifika students with STEM subjects](#)

Associate Investigator [Dr Taniela Lolohea](#), Chemistry lecturer at [AUT](#), says it's hard to find Pasifika students at Honours level with STEM backgrounds. Pasifika are underrepresented in STEM. The Government has recognised it and say they're pushing hard for Pasifika achievement in STEM. Listen as Dr Lolohea talks this on RNZ's [Afternoons with Jesse Mulligan](#).



[RNZ's Sci Fi/Sci Fact – Zero Point Energy](#)

[Professor Cather Simpson](#), Emeritus Investigator with the MacDiarmid Institute and a Professor of Physics & Chemistry at [University of Auckland](#), investigates Zero Point Energy from The Incredibles. "Think of one of those squeeze dolls, except you're doing it to light...mathematically."

liquium



[Investment Reflections – #14 Advemto and #15](#)

[Liquium By Andrew Chen of Matū](#)

"It's pretty tiring to hear the trope that academics make for bad founders because they don't know anything about the commercial world.". Venture Partner, [Dr Andrew Chen](#) writes about founders, MacDiarmid Institute Co-Director Professor [Justin Hodgkiss](#) of [Advemto](#), and Associate Investigator Associate Professor [Franck Natali](#) of [Liquium](#).

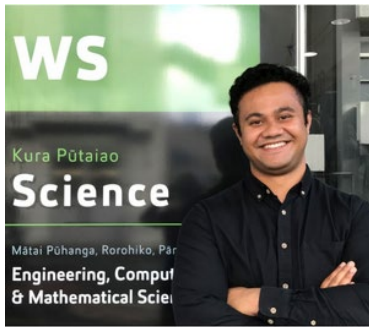


Minister Dr Ayesha Verrall [recently announced the award of 3 German-New Zealand green hydrogen research grants](#) as part of Aotearoa New Zealand's

move towards a more sustainable, low-emissions economy. Many MacDiarmid Institute are investigators involved in this programme led by Principal Investigator Professor [Sally Brooker](#), including Principal Investigators Associate Professors [Aaron Marshall](#), [Nigel Lucas](#), [Geoffrey Waterhouse](#), Drs. [Anna Garden](#) and [Chris Bumby](#), and Associate Investigators, Associate Professor [Peng Cao](#) and Dr [Kim McKelvey](#).



Tūhura Otago Museum's science engagement manager Jessa Barder spoke to RNZ's FirstUp programme about [taking science to the Chatham Islands](#). [Listen to the full podcast episode here](#). Pictured is MacDiarmid researcher [Dr Anna Garden](#) speaking to visitors at the Chatham Islands Museum about the MacDiarmid Institute climate change mitigation science displayed at the Far From Frozen exhibit.



[Our Changing World – Plasma jet technology](#)

Auckland University of Technology chemistry lecturer and MacDiarmid Institute Associate Investigator, [Dr Taniela Lolohea](#), is focused on how plasma jet technology can be used to improve thin, high quality, specific purpose coatings. Listen to him on [RNZ's Our Changing World](#) talking about his research into low temperature plasma jet tech for surface coatings.



Principal Investigator and Co-Director Professor [Justin Hodgkiss](#) was interviewed for [this article on Newsroom addressing the ethical dilemma for electric vehicle buyers in New Zealand](#).

“Cobalt is already the most expensive part of the battery. More than everything else put together, and the prices, availability and supply chains are wildly unpredictable... when you're manufacturing, hundreds of thousands of cars a year there's every incentive to get rid of cobalt.”

If you have something newsworthy coming up (a paper about to be published, job-related announcement, or anything cool your company is working on) and you'd like some help obtaining media around it, please email [Vanessa Young](#) (ideally before the publication or announcement – we're used working with embargoed content).



Opportunities



[Chemical Process Engineer - Senior Chemical plant - Process improvement role - Great Otago lifestyle](#)

This is a great new role at a large chemical processing / manufacturing plant in Dunedin. You'll have a great deal of autonomy driving the technical and Lab teams, with all of the process improvements and product enhancements onsite. Solid employer with excellent future career prospects. [Check out the website.](#)

[Team Lead - Avionics Test Lead at Rocket Lab New Zealand](#)

Rocket Lab are seeking a Test Lead, reporting to the Avionics Manager alongside the Leads for the Integrated Electronics & Design team(s). Your team will have 8-10 members and you'll need to guide and mentor them whilst working alongside them, as well as managing Avionics Testing projects. [For more information and how to apply, see their website.](#)



Svante



[Research Scientist - Computational Chemist at Svante, BC Canada](#)

Svante are seeking Research Scientist with background in Computational Chemistry at R&D centre of excellence of Svante located at Burnaby (near Vancouver), BC, Canada. This person will work on computational modeling/screening of various sorbents for CO2 capture. [For more information and to apply, see their website.](#)

[OncoRes Medical, Western Australia - recruiting multiple roles in Engineering and Software](#)

OncoRes is a medical device company funded by the Medical Research Commercialisation Fund. They are recruiting for multiple roles from Research Engineers, Software Engineers, Electrical and Mechanical Engineers, a Software Program Manager and a Signal Processing Lead. [For more information on the roles, see their website.](#)

[AquaFortus – recruiting multiple Technician, Engineer and Chemist roles](#)

[AquaFortus](#) is a company specialising in reducing water waste with a Zero Liquid Discharge technology. They are recruiting for eight roles from R&D Engineers and Chemists, Lab and Process Technicians and Engineers in Chemical Processing and Electrical. [For more information on specific roles and how to apply see their website here.](#)

[Postdoctoral Fellow - Polymer chemistry/physics and interface sciences](#)

Associate Professor Amy Xu from the Department of Chemistry, Louisiana State University is recruiting a postdoc in polymer chemistry/physics and interface sciences at the. The project focuses on understanding the phase transition of polymer-colloid complexes and their deposition mechanism on various surfaces. Initial appointment is for one year and can be extended. Please send your curriculum vitae and a list of three referees to amyxu@lsu.edu

As you'll know from your time as a MacDiarmid student or early career researcher, we're always looking for volunteers to help with our educational outreach ([Regional Lecture Series](#), events organised through our [museum partnerships](#), and our [RNZ series](#) etc.) If outreach is your thing, and you'd like to stay involved with this, please [contact us](#).



Anything to share?

We'd love to celebrate your journey post-graduation. It helps us tell stories and paint pathways for secondary school students and others who are keen to see where science can lead them. If you would like to share with us your story or a recent discovery, achievement, media appearance etc. [Contact us!](#) We'll take care to only share where and how you'd like us to.

As always, there are plenty of opportunities to stay connected with the MacDiarmid Institute whānau, by joining our [LinkedIn Alumni Group](#) in particular. We'd love to continue receiving feedback on this newsletter, and to hear if there's anything else MacDiarmid-related that you'd like to be kept up to date on. Please also forward this newsletter to other alumni you know.

If you are a MacDiarmid alumni and have been forwarded this email by someone else and would like to join our quarterly alumni newsletter mailing list (and also hear of opportunities in between newsletters, e.g. jobs, scholarships and updates on the Techweek events etc.), please [contact us](#) and we'll add you to our mailing list.

