National Industry PhD Program
Round 2 2023 – Successful Projects

Application No.	Stream	Project Title	Project Description	Field of Research	Participating University	Industry Partner/s	State	No. of PhD Awards
35182	Industry Linked	**Intelligent sensing for a distributed radar network**	This project will develop intelligent detection and tracking algorithms for a distributed radar network by sharing information among multiple radar sensors and applying non-centralised signal processing techniques. This research will directly benefit national security organisations as they consider how to best survey the Australian coastline.	Systems Analysis and Design	The University of Melbourne	Lockhead Martin Australia / STELaRLAB	VIC	1
35214	Industry Linked	**Sound processing strategies to improve hearing with cochlear implants**	This project will develop methods of sound processing to improve hearing for Cochlear implant users. The research is expected to show that these methods improve the fidelity of Cochlear implants. This could benefit Cochlear implants users in difficult listening situations, allowing clearer and easier communication.	Biomedical Engineering	The University of Melbourne	Cochlear Limited	VIC	1
35210	Industry Linked	**Electric vehicle tariff and feed-in-tariff design for smart charger implementation**	This project will develop methodologies to calculate appropriate payment rates for electric vehicle charging in public charging stations. The expected outcome of the project is a set of market-based rules to determine the variable electric vehicle charging rates. This project will benefit both electric vehicle and charging station owners.	Electrical Engineering	RMIT University	Smart Lifestyle Australia	VIC	1
35346	Industry Linked	**Helping cultural institutions create digital environments reflective of audience neurodiversity**	This project will develop ways for galleries, libraries, archives and museums to make digital content more accessible for people identifying as neurodivergent by developing new guidelines, content environments and a design methods toolkit. Potential benefits include fuller access and greater participation in cultural heritage for people identifying as neurodiverse.	Graphic and Design Studies	RMIT University	National Museum of Australia	VIC	1

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35267	Industry Linked	**Advanced "through-the-earth" communication**	This project will develop magnetic field sensing technologies ('magnetometers') to detect low frequency communication signals. Sensitive to exquisitely weak signals, these magnetometers will enable communication through the earth over longer distances using less energy than existing technology, with applications in mining, geoscience and defence.	Natural and Physical Sciences	The University of Queensland	Orica, Research & Innovation Division	QLD	1
35285	Industry Linked	**NT rain-fed cotton: predicting yields and saving water**	Australian cotton in the Northern Territory is mainly rain-fed, making it vulnerable to rainfall variations. This project in the Katherine and Douglas-Daly regions uses field data and models to understand water use in rain-fed cotton. Predicting yields under variable rainfall will help strengthen the NT cotton industry and guide water-efficient practices.	Agricultural Science	Charles Darwin University	Department of Industry, Tourism and Trade, Northern Territory Government	NT	1
35343	Industry Linked	**Women's engagement and retention in the Northern Territory seafood sector**	This project will investigate ways to enhance the participation and retention of women in the Northern Territory seafood sector, aiming to generate new knowledge and guidance for industry and policy. The research benefits include identification of pathways for an enhanced gender inclusive, robust, and viable sector, with potential national application.	Fisheries Studies	Charles Darwin University	Fisheries Research and Development Corporation (FRDC): Northern Territory Seafood Council (NTSC); Women in Seafood Australasia (WISA)	NT	1
35293	Industry Linked	**Health promotion housing**	This project aims to improve the quality of life of people living in social housing through modular and prefabricated construction, prioritising resident adaptability. Expected outcomes include streamlining construction procedures of social housing and enhancing related programs. The project will be dedicated to developing a health-promoting housing prototype in a rural/regional setting.	Building Science and Technology	Deakin University	Development Solutions Australia	VIC	1

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35310	Industry Linked	**Circular economy approaches for delivering 21st-century sustainable buildings**	This study will establish definitive guidelines for delivering the most sustainable buildings in Australia, improving our understanding of how to create "living buildings".	Building Science and Technology	University of Wollongong	Cox Architecture Pty Ltd; Regional Circulatory Co-operative Ltd	NSW	1
35314	Industry Linked	**Teaching computers to recognise underwater sounds**	This research aims to develop efficient, cost-effective methods for a computer to learn and identify maritime objects from acoustic data. Implementing these methods could automate cost-effective surveillance of Australian shores. The potential benefits of this research include: significantly improving coastal security, monitoring against maritime threats, and aiding maritime exercises.	Data Structures	Flinders University	PrioriAnalytica	SA	1
35332	Industry Linked	**Physiology-Based Targeted Therapy: Development of Pharmacotherapy for Sleep Apnoea**	Obstructive sleep apnoea (OSA) is a chronic respiratory disorder that affects almost 1 billion people globally. Current device-based treatments are often poorly tolerated or have variable efficiency. This project will use cutting-edge physiology precision medicine approaches to develop the first pharmacotherapy for OSA and identify those most likely to benefit.	Medical Studies	Flinders University	Apnimed Australia Pty Ltd	SA	1
35327	Industry Linked	**Working towards infinite recycling: Engineering enzymes to break down plastics**	This project aims to create enzymes that can break down plastic. The expected outcome of this project is to produce more efficient plastic-degrading enzymes. This technology will potentially simplify plastic recycling, benefiting the people and environment of Australia.	Biochemistry and Cell Biology	The Australian National University	Samsara Eco	ACT	1
35351	Industry Linked	**Enabling Rapid and High-Precision Digital Drug Design**	This project aims to develop high-performance software for faster and more accurate virtual drug design. The expected outcome of this project is a next-generation digital platform for quicker and more cost-effective drug design. This technology will potentially lead to faster and lower-cost drug development, benefiting both everyday patients and the businesses producing these drugs.	Algorithms	The Australian National University	QDX Technologies	ACT	3
35330	Industry Linked	**The ecology and conservation of the**	This project will combine ecological and genetic approaches to improve understanding of the ecology of one of Australia's threatened insectivorous bat species, the Large-eared Pied Bat.	Ecology and Evolution	Macquarie University	Thesium Pty Ltd	NSW	1

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		threatened Large-eared Pied Bat	This project will increase knowledge of the species' habitat requirements in a changing environment, improving our ability to guide conservation efforts.					
35345	Industry Linked	**Converting Food Waste into Compostable Stretch Wrap**	This project aims to transform Australian potato waste into compostable stretch wrap using biopolymers generated by waste-consuming bacteria. Success in this project offers a sustainable solution for the next generation of compostable pallet films, promoting a circular economy, reducing petroleum-based plastics reliance and curbing plastic waste in landfills and oceans.	Chemical Engineering	Monash University	GREAT WRAP PTY LTD	VIC	1
35348	Industry Linked	**Harnessing fungal proteins to make better bone implants**	This project will investigate the use of modified fungal spore proteins to coat bone implants. The coating will be applied on 3D-printed bone implants to improve integration with human bones while preventing bacterial growth. This technology aims to shorten healing times and reduce implant failure, improving patient outcomes.	Biochemistry and Cell Biology	The University of Sydney	Chris O'Brien Lifehouse (COBLH)	NSW	1
35370	Industry Linked	**Polysaccharide-based pore-size-adjustable materials preparation and its applications.**	Purification is a main driver of costs in many industries. This project will research low-cost polysaccharide-based membranes and their use in protein, industrial gas and mineral purification. This project will develop new, cheaper, and better purification membranes that can be sold to the international market.	Biomedical Engineering	The University of Adelaide	Holocyte Pty Ltd	SA	1
35392	Industry Linked	**Private Machine Learning for Smart Energy Technologies**	This project will explore smart energy technologies, while safeguarding people's privacy and ensuring fairness. The expected outcome is to resolve conflicts between smart energy usage and ethical considerations. This solution will make it both efficient and safe for Australians to utilise smart energy.	Artificial Intelligence	Swinburne University of Technology	Commonwealth Scientific and Industrial Research Organization (CSIRO)	VIC	1
35397	Industry Linked	**Reduction of methane greenhouse gas**	This project will assist in the development of a system to reduce methane emissions within the mining and energy sectors. The proposed technology has the potential to significantly reduce	Chemical Engineering	University of Newcastle	Australian Coal Association Research Projects	NSW	1

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		emissions by catalytic oxidation	greenhouse gas emissions with much lower energy requirements than current technologies.			(ACARP); Howden Australia		
35158	Industry Researcher	**Tailored support for Aboriginal children in out-of-home care**	This project will create a psycho-education and support program for Aboriginal children in out-of-home care. It has the potential to increase engagement with support services, contributing to evidence-based policies and practices in child welfare.	Indigenous Health	Southern Cross University	Abcare (Coffs Harbour Aboriginal Family Community Care Centre Aboriginal Corporation)	NSW	1
35181	Industry Researcher	**Forensic analysis of home-made explosives for counter-terrorism and forensic intelligence**	This project will analyse the chemical composition of homemade explosives with the aim of linking these explosives to their sources. This research will improve the ability of law enforcement officers to conduct counter-terrorism investigations and operations.	Chemical Sciences	Curtin University	ChemCentre	WA	1
35323	Industry Researcher	**Developing blast vibration prediction models using field delay criteria**	The project aims to improve mining blast vibration prediction by analysing field cooperate delay with factors like blast design and geology. This research will assist mining companies in predicting and mitigating ground vibrations and safeguarding heritage sites. It will also enhance predictive models, advancing vibration control knowledge.	Mining Engineering	Curtin University	Fortescue Metals Group	WA	1
35268	Industry Researcher	**Queensland grouper: bigger and better through selective breeding**	Using advanced genotyping technology, this project will undertake the world's first selective breeding program of the Queensland Grouper. This research will increase Australian farm productivity and profitability, provide opportunity for new aquaculture entrants, and expand Australia's competitive reach in international markets.	Aquaculture	James Cook University	The Company One	QLD	1
35281	Industry Researcher	**Green future quest: teamwork for a cleaner world**	This project is dedicated to finding the most efficient clean energy and anti-pollution technologies. The goal is to assist businesses and governments to make eco-friendly and cost-effective technology choices, thus reducing pollution and saving money.	Chemical Engineering	Monash University	Woodside Energy Group Ltd	VIC	6

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35284	Industry Researcher	**Repatriation of Aboriginal ancestral remains: South Australian Museum and beyond**	This project will analyse the South Australian Museum's Aboriginal ancestral remains repatriation program to develop models of culturally appropriate consultation, engagement, empowerment, co-design, and elevation of Aboriginal cultural authority. It will enable cultural institutions and other organisations to develop more equitable repatriation policies and practices that support reconciliation and healing.	Indigenous Studies	University of South Australia	South Australian Museum	SA	1
35296	Industry Researcher	**Increasing commercialisation success in public research organisations: focusing on healthcare**	This project will develop managerial guidelines on how to increase commercialisation success and R&D investment efficiency. This research will help research organisations translate scientific knowledge into new solutions and develop innovation ecosystems.	Business Management	Macquarie University	National Acoustic Laboratories	NSW	1
35328	Industry Researcher	**Novel cattle feed for reduction of greenhouse gases**	This project aims to develop feed additives that can reduce greenhouse gas emissions produced by cattle. If successful, this project will create an anti-methanogenic supplement for use on Australian farms. This could significantly reduce the nation's greenhouse gas emissions and provide economic benefits to agricultural communities.	Microbiology	Macquarie University	Number 8 Bio	NSW	1
35302	Industry Researcher	**AI-enhanced resilient, efficient and cyber-secure power management system**	This project will help create a more sustainable and resilient energy landscape. The potential benefits of this research include: contributing to identifying security vulnerabilities in the smart grid; addressing the inefficiency problem for residential power management; improving battery system longevity and performance; and enhancing power consumption prediction.	Artificial Intelligence	Griffith University	REDX TECHNOLOGY AUSTRALIA PTY LTD	QLD	4
35316	Industry Researcher	**Tank-based challenge model for enteritis in Yellowtail Kingfish**	This project will develop a tank-based model for studying enteritis in farmed Yellowtail Kingfish. The expected outcome of this project is a greater understanding of enteritis in yellowtail kingfish, leading to practical treatment solutions. This will potentially result in greater production outcomes and profitability for yellowtail kingfish farmers.	Fisheries Studies	Flinders University	Clean Seas Seafood Ltd	SA	1

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35318	Industry Researcher	**Role of evaporative cooling systems in improving indoor air quality.**	This project will investigate the effect of evaporative cooling systems on indoor microbial air quality. The research aims to determine the potential for evaporative cooling systems to reduce the spread of airborne infectious disease. This information will potentially result in improved indoor air quality and reduce the spread of diseases.	Environmental Health	Flinders University	Seeley International Pty Ltd	SA	1
35347	Industry Researcher	**Decision support tool for connecting dSTATCOMs and Battery Energy Storages**	This project aims to develop an algorithm to determine the best locations for battery energy storages and other advanced equipment along power lines. The project aims to ensure that acceptable voltage profiles are maintained when more renewable energy sources are connected to these power lines. Other potential project benefits include improved energy supply to households and industries.	Engineering and Related Technologies	CQ University	eleXsys Energy Pty Ltd	QLD	1
35350	Industry Researcher	**Incorporating experimental research methods with Indigenous research methodologies**	This project will investigate quasi-experimental research methods across Indigenous policy, utilising the largest ever experimental evaluation in Indigenous education. The case study is a 5-year initiative seeking to understand the factors that contribute to Indigenous success in education. The research will contribute to the robust design of future policies and evaluations.	Econometrics	The Australian National University	Aurora Education Foundation	ACT	1
35383	Industry Researcher	**Does setting a clear purpose ensure success for an organisation?**	The aim of this project is to investigate whether setting a clear organisational purpose impacts performance. The expected outcomes are frameworks for improving performance, which will benefit organisations that are seeking to drive both purpose and performance outcomes while increasing brand, employer, and share value.	Business Management	The Australian National University	Denali Venture Partners	ACT	1
35371	Industry Researcher	**The use of value-added pond ash as a construction material**	This project is focused on developing a low-carbon concrete using pond ash, a by-product found in coal ash repositories. By developing a material passport for pond ash, this project will potentially enable using the existing 400 million tonnes of pond ash reserve in Australia.	Structural Engineering	University of Southern Queensland	BG&E Pty Ltd	QLD	1
35385	Industry Researcher	**Improvement of Hemp Meal Quality**	This project investigates advanced techniques to enhance the quality of hemp meal for broader food applications. The project aims to develop hemp meal with improved colour, higher	Food Processing Technology	University of Newcastle	Ananda Food Pty Ltd	NSW	1

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		and Its Application in Food	protein content, and increased soluble dietary fibre, enabling its broader use in food. Consequently, this benefits the hemp industry, creates employment opportunities, and fosters economic growth.					
35390	Industry Researcher	Ethical AI for Enhanced Health Insurance Risk Assessment and Decision-Making	This project aims to develop responsible and trustworthy AI practices for the health insurance industry. The expected outcomes of this project include practical and actionable solutions that can be readily implemented. The project will help to enhance insurance services, and increase customer satisfaction.	Artificial Intelligence	University of Newcastle	Nib Health Funds	NSW	1
35386	Industry Researcher	Artificial intelligence empowered warehouse robots for human-like object handling	A project that is developing artificial intelligence for warehouse robots to learn human-like object handling. The expected outcome is the widespread adoption of robots into warehouse processes, such as grocery packing and fabric folding. This technology will result in faster deliveries, better labour conditions, and a more efficient supply chain.	Manufacturing Engineering	University of Technology Sydney	Dematic Pty Ltd	NSW	1
35393	Industry Researcher	Leveraging Machine Learning to Predict Livestock Weight for Australian Producers	This project seeks to use machine learning to predict livestock growth. The project will deliver a computer tool that predicts when to sell livestock animals, and will ensure animals are ready for market at the right time. This technology could potentially result in increased profits for farmers by optimising resource use.	Artificial Intelligence	University of Technology Sydney	Agriwebb	NSW	1
35400	Industry Researcher	Improving farm productivity and sustainability planning through accurate livestock history	. This project aims to develop an algorithm that will provide farmers with a holistic and detailed perspective of their livestock, enhancing traceability, productivity, and decision-making capabilities. This will help livestock producers to effectively manage their group-oriented and individual animals. The project will set a precedent in smart farming and fostering data-driven approaches in agriculture.	Algorithms	University of Technology Sydney	Agriwebb	NSW	1
35256	Industry Researcher	Benchmarking livestock farming decisions to improve resilience	This project will enable farmers to improve their resilience to climate extremes. It will provide custom recommendations for sustainability and productivity gains derived from historical and regional benchmarking. These recommendations will deliver	Decision Support Systems	University of Technology Sydney	AgriWebb	NSW	1

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		and environmental sustainability	enhanced decision support for sustainable interventions and livestock management for Australian farmers.					