Minister's Approval for Industry Laureate Fellowships for Funding Commencing in 2023 Schedule

Approved Organisation, Leader of Approved Research Program	Approved Research Program	Estimated and Approved Expenditure ($)		Indicative Funding ($)			Total ($)	Industry Partner(s)
(Columns 1 and 2)	(Column 3)	2023-24 (Column 4)	2024-25 (Column 5)	2025-26* (Column 6)	2026-27* (Column 7)	2027-28* (Column 8)	(Column 9)	(Column 10)
New South Wales								
The University of New South Wales								
IL230100072 Hamilton, Prof Alexander R	**Unleashing the combined power of electrons and holes for quantum computing** Large scale quantum computers promise unprecedented power with applications ranging from searching large databases for images and video, to optimising traffic routing, cryptography, and simulating advanced new materials and drug designs. This Fellowship will partner with Diraq, a world-leading Australian company developing a revolutionary new silicon quantum computing technology, to solve key issues in the race to scale from small scale prototypes to industrially relevant quantum computers. It will integrate electrons and holes, semiconducting and superconducting functionalities, into a single platform, link with industrial partners, and reinforce Australia's leadership position in quantum computing technologies.	735,960.00	764,863.00	764,866.00	758,773.00	735,362.00	3,759,824.00	DIRAQ PTY LTD
	National Interest Test Statement Quantum computers will have the potential to revolutionise almost every aspect of modern life from cybersecurity to drug discovery. This powerful new technology requires millions of high-speed quantum components, which necessitates the development of advanced materials and new technical approaches. To address this challenge, this proposal aims to develop a groundbreaking silicon quantum computer technology to dramatically speed up quantum computing capabilities. The outcomes of this research will create new quantum components operating thousands of times faster than current approaches. Through the licensing of IP and in close partnership with the key industry partner Diraq, a world-leading Australian quantum computing company, these new quantum technologies will be commercialised and made available to end users in industries with complex simulation and optimisation needs, such as BioTech, aeronautics, automotive and finance. These advances will enable Australia to maintain its global lead in quantum technologies – a sector with predicted global productivity gains of $450B in annual operating income.							
IL230100205 Sahajwalla, Prof Veena	**Recycling Innovations to Transform Electronic Waste into Green Metals** Essential materials needed to achieve sovereign capability and electrification goals are in critical short supply yet are being discarded in mountains of electronic waste. This Green Metals project aims to develop scalable technology to recover valuable metals from complex wastes, to be deployed locally and regionally. The significance of the proposal is it directly addresses key national priorities around reducing waste, boosting recycling, creating advanced manufacturing capability. Outcomes expected are recovering metals needed for future products, scalable microrecycling solutions and new materials supply chains. Significant benefits include new jobs and skills, reduced waste, advanced capability, new business opportunities and markets.	727,196.00	725,566.00	691,066.00	686,566.00	679,196.00	3,509,590.00	RENEW IT GROUP PTY LTD, PANELCYCLE PTY LTD, SHOALHAVEN CITY COUNCIL, NEW ENGLAND SOLAR POWER
	National Interest Test Statement More than 50% of e-waste is going to landfill and the remainder is usually stockpiled/shipped overseas due to limited innovation and commercialisation of effective technologies in Australia. This project aims to develop novel approaches to use waste as a resource – enabling the recovery of valuable metal alloys, rare earth elements and other critical materials which have high market values. This approach will provide the foundation for recovery of high value materials to boost supply networks for local manufacturing, and open export market opportunities for technology and recovered materials. Through licensing of IP and partnership with RenewIT and other industry and council participants, this research will enable the development of scalable, locally deployable facilities to local councils and businesses for waste reduction and recycling, and advanced manufacturing capability. The development of decentralised solutions that can be implemented locally anywhere in Australia where waste is collected, will thereby deliver significant environmental and economic benefits for Australia.							
	The University of New South Wales	1,463,156.00	1,490,429.00	1,455,932.00	1,445,339.00	1,414,558.00	7,269,414.00	

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The University of Sydney								
IL230100154 Smith-Merry, Prof Jennifer L	**Fixing the NDIS: cost, effectiveness and access for psychosocial disability** This project aims to address serious deficits in the operation of the National Disability Insurance Scheme for one of its largest participant groups: people with psychosocial disability. This project expects to develop new data on scheme outcomes, cost-effectiveness and participant experiences to develop an appropriate and implementable program logic to improve supports for this group. Expected outcomes will be scheme reform by implementing a new framework of supports for psychosocial disability and data to improve the operation of national policy for this group more broadly. This should provide significant benefits for the cost-effective operation of the National Disability Insurance Scheme and build research capacity in disability policy.	471,417.00	539,787.00	539,787.00	539,787.00	491,641.00	2,582,419.00	NATIONAL DISABILITY INSURANCE AGENCY
	National Interest Test Statement The National Disability Insurance Scheme (NDIS) is a $35 billion annual investment providing essential support for Australians living with disability. This project addresses broad concerns around NDIS access, effectiveness, efficiency, and outcomes. It focuses on people with severe mental illness, one of the largest groups in the NDIS who often have the most complex needs. The research will map the experience of clients within the NDIS as it currently operates and use new data to model improvements to the Scheme. To ensure the improvements will enable the NDIS to deliver better outcomes, they will be tested from client, economic and policy perspectives and take into account how the NDIS interacts with state and territory health and social care systems. Project deliverables will be directly transferable into NDIS design through the partner, the National Disability Insurance Agency, and into federal and state policy. By making the NDIS more effective and efficient, this project will directly benefit participants in the scheme and at the same time deliver strong social and community benefits to all Australians.							
	The University of Sydney	471,417.00	539,787.00	539,787.00	539,787.00	491,641.00	2,582,419.00	
University of Wollongong								
IL230100173 Swiegers, Prof Gerhard F	**Accelerating Green Hydrogen Production with High Efficiency Electrolysers** This project aims to accelerate the decarbonisation of high-carbon industries (eg heavy transport, chemical production, and steel) by advancing the manufacture of high efficiency water electrolysers in Australia. Innovative electrochemical and other techniques that exploit all of the levers for high efficiency in electrolysers, will be applied to support the commercial development of this key component of green hydrogen production. Expected outcomes of this project, in collaboration with industry partner Hysata, include a low-cost, simplified design, and ultra-high energy efficiency. This should provide significant benefits to the green hydrogen sector, industry, and contribute to achieving net-zero emissions globally.	528,866.00	832,087.00	838,934.00	852,523.00	637,231.00	3,689,641.00	HYSATA PTY LTD
	National Interest Test Statement The National Hydrogen Strategy aims to leverage Australia's abundance in solar and wind power to generate renewable electricity and then convert this to green hydrogen - an energy-dense renewable fuel. Green hydrogen will be essential for us to achieve net-zero. A key future enabler of this plan is the recent development by the applicant, of a new type of electrolyser that is being commercialized by Hysata Pty Ltd. This electrolyser has ultra-high energy efficiency, consuming about 20% less energy with accompanying higher yields of green hydrogen from renewable sources. This will reduce the cost of producing green hydrogen to well below $2/kg, making it cost-competitive with fossil fuels. This project will support the development of a sovereign Australian hydrogen manufacturing capacity at GW scale, with accompanying decarbonisation and employment benefits. It is estimated that green hydrogen, will provide 15-20% of global energy demand in 2050, worth USD$1.7 trillion. The new technology is expected to help Australia capture a large share of that market.							
	University of Wollongong	528,866.00	832,087.00	838,934.00	852,523.00	637,231.00	3,689,641.00	
	New South Wales	2,463,439.00	2,862,303.00	2,834,653.00	2,837,649.00	2,543,430.00	13,541,474.00	

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South Australia								
The University of Adelaide								
IL230100039 Qiao, Prof Shizhang	**Aqueous sodium batteries for household and smart-grid electricity storage** This project aims to design and commercialise safe, cost-effective, long-lasting, fast-charging, high energy density aqueous sodium-based batteries to store renewable energy for use in households and smart grids. With a focus on developing and scaling technology and in collaboration with industry partners, the project's expected outcomes include an enhanced ability to store excess energy and modulate its release into a smart grid during peak demand. Of benefits to Australia, this project will deliver access to reliable, safe and cheap batteries for smart-grid electricity storage in households and a competitive industry manufacturing capability. The downstream benefit is a reduction in energy costs and a contribution to net-zero emissions.	731,382.00	748,621.00	696,476.00	694,331.00	645,712.00	3,516,522.00	IONDRIVE TECHNOLOGIES PTY LTD, AUFU GROUP PTY LTD
	National Interest Test Statement The Australian renewable energy industry is rapidly increasing, with high demand driving the need for new storage technologies. Based on this growth rate, Australia could be powered 100% by renewable energy shortly after 2030 as long as energy storage technology can keep pace with demand. Current batteries are not up to the task of safely, cost-effectively, and efficiently storing renewable energy. This project will design and commercialise sodium-based batteries, in collaboration with two Australian industry partners (Iondrive Technologies and AUFU Group), that can be used in households and smart-grids. The outcomes of the project include pilot-scale production of cheap, safe, durable and "green" batteries. The benefits to Australia will be reliable capacity to store and distribute electricity. In addition, an innovative industry manufacturing capability will be established, provided economic benefits including export opportunities, all while helping to reduce energy costs and contribute to achieving net-zero emissions.							
IL230100116 Ebendorff-Heidepriem, Prof Heike	**Breaking through the manufacturing 'glass ceiling' for ZBLAN glass fibres** This project aims to develop innovative methods to improve the purity and manufacture scale of fluoride glass (ZBLAN) optical fibres to deliver faster and more efficient internet. This project expects to produce ZBLAN fibres with lower light loss than the best fibres to date by integrating innovations in glass science, materials purification, process automation and space manufacturing. Expected outcomes include industrial scale production of ZBLAN fibres with 10 times better performance than existing production. The project should provide innovative new manufacturing methods and improved economic and social prosperity by increasing the availability of ZBLAN for a wealth of applications touching many aspects of Australian lives.	851,633.00	841,618.00	841,618.00	824,595.00	0.00	3,359,464.00	FLAWLESS PHOTONICS PTY LTD, FLAWLESS PHOTONICS INC, FLAWLESS PHOTONICS S.A R.L.
	National Interest Test Statement The increasing demand for faster internet and global connectivity is anticipated to outpace what can be achieved with current fibre optic cables made from silica glass. The shift to optical fibres made from the different glass called ZBLAN is predicted to overcome this bottleneck because these ZBLAN fibres have the potential to transport light over much longer distances than the best available optical fibres. A key challenge is that current ZBLAN fibres have impurities that limit their full potential. This fellowship aims to overcome this challenge by working with industry partner Flawless Photonics to develop efficient purification methods to produce ZBLAN fibres without impurities. To allow production at scale, the project includes automation of ZBLAN fibre manufacture, which will be the first for any ZBLAN glass fibre in the world. These ZBLAN fibres will be commercialised for use in numerous industries (defence, mining, medical devices, data communications) through partnering with Flawless Photonics. The new ZBLAN fibre products will transform communication, mineral exploration and improve laser surgery.							

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IL230100175 Cassey, A/Prof Phillip	**Combatting wildlife crime and preventing environmental harm** Wildlife crime is one of the greatest threats to environmental and human security across the globe. In Australia, the illegal harvesting, killing, and trade of wild animals and plants endangers the country's unique biodiversity and poses serious biosecurity risks to natural and agricultural systems. This Fellowship will deliver the intelligence tools and technologies, in wildlife forensics and cyber security, that are required for step-change reductions in wildlife crime in Australia, and Asia-Pacific. The project will establish new approaches for raising public awareness of the dangers of wildlife crime and provide much needed stewardship to protect Australia's environmental assets and natural capital from current and future threats.	724,434.00	773,467.00	772,561.00	794,494.00	698,478.00	3,763,434.00	AUSTRALIAN MUSEUM RESEARCH INSTITUTE, DEPARTMENT FOR ENVIRONMENT AND WATER, DEPARTMENT OF ENVIRONMENT AND SCIENCE, DEPARTMENT OF BIODIVERSITY CONSERVATION AND ATTRACTIONS, QUEENSLAND POLICE SERVICE
	National Interest Test Statement Wildlife crimes are an escalating problem for Australia. The illegal harvest, killing, and trade of plants and animals seriously threatens Australia's $100 billion agricultural, forestry and fisheries exports, and tourism industry. This Fellowship will develop new digital and wildlife forensic tools to improve the surveillance and detection of illegal activities. These forensic tools and specialised data analysis will enable enforcement agencies to identify and halt the illegal harvest and trade of plants and animals. This project will raise public awareness about wildlife crimes and help change social attitudes towards these crimes. Project outcomes will be adopted through a community of practice approach with industry partners and environmental compliance agencies to help the uptake of forensic tools and analysis. These outcomes will also enable the development of policies for greater protection of natural resources. This multidisciplinary and highly collaborative project will improve environmental biosecurity and help to safeguard Australia's biodiversity and natural environments for everyone to benefit.							
	The University of Adelaide	2,307,449.00	2,363,706.00	2,310,655.00	2,313,420.00	1,344,190.00	10,639,420.00	
	South Australia	2,307,449.00	2,363,706.00	2,310,655.00	2,313,420.00	1,344,190.00	10,639,420.00	

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(Columns 1 and 2)	(Column 3)	(Column 4)	(Column 5)	(Column 6)	(Column 7)	(Column 8)	(Column 9)	(Column 10)
Victoria								
The University of Melbourne								
IL230100020 Fletcher, Prof Timothy D	**Making optimal use of stormwater in cities: a market-driven smart-grid** Cities suffer the cruel irony of both floods and droughts. This program aims to bring the power of markets and Real-Time Control technology to confront these challenges, and in doing so, transform the urban water industry. It will create an optimisation and control platform, along with novel economic incentives, to enable a market-driven smart-grid of stormwater storages, providing consumers with non-potable water supply, while financially rewarding them for contributions to flood mitigation and environmental flows to waterways. The program will build the capacity and products to accelerate adoption of smart water technology, establishing Australia as an international market leader at a time when the market for this technology is exploding.	739,828.00	747,482.00	712,870.00	704,692.00	623,783.00	3,528,655.00	MELBOURNE WATER CORPORATION
	National Interest Test Statement Water is critical to cities, yet urban stormwater, such as runoff from roofs and roads, is usually wasted, even though up to 50% of this is generated from private land. This stormwater could be harvested to supply the more than 80% of urban water that is currently used for non-potable purposes (uses other than drinking, cooking and bathing). This program aims to develop a control platform that can optimize, in real-time, the use of a smart-grid of networked stormwater storages on private land. This network would enable consumers to reduce water demand by supplying their own non-potable water, but also financially reward them for water releases to streams requiring greater water flows, while reducing flood-risk by automatically drawing down storages prior to large storms. The platform will be commercialised through IP sharing arrangements with private companies and Melbourne Water, the key industry partner, will facilitate translation through its established partnerships with technology providers, retail water authorities, local government and policy-makers.							
	The University of Melbourne	739,828.00	747,482.00	712,870.00	704,692.00	623,783.00	3,528,655.00	
	Victoria	739,828.00	747,482.00	712,870.00	704,692.00	623,783.00	3,528,655.00	
		5,510,716.00	**5,973,491.00**	**5,858,178.00**	**5,855,761.00**	**4,511,403.00**	**27,709,549.00**	

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