

# DOCTORAL TRAINING CENTRES

FOR INDUSTRY



THE UNIVERSITY OF  
NEWCASTLE  
AUSTRALIA

nier

SOLUTIONS FOR GLOBAL CHALLENGES  
ENERGY RESOURCES FOOD WATER

[NEWCASTLE.EDU.AU/DTC-NIER](http://NEWCASTLE.EDU.AU/DTC-NIER)

# Inspiring the next generation of industry leaders with transformative knowledge, new ways of working and smarter solutions to industry challenges.



Doctoral Training Centres (DTCs) provide a framework to support industry embedded PhD programs, drive impactful research outcomes, and promote strong links between industry and universities.

## SUPPORTING KEY SECTORS

Research projects undertaken by our PhD candidates are developed in collaboration with industry partners and backed by a diverse, solutions-focused academic team. The DTCs provide our partners with important opportunities to be invested in the next generation of industry leaders working to solve global challenges affecting key sectors through new technologies and commercial innovations.

NIER currently administers Doctoral Training Centres across three crucial sectors:

- Resources
- Food & Agribusiness
- Energy

## BENEFITS TO INDUSTRY

By linking industry challenges with University research, DTCs provide the opportunity to unlock novel ideas and innovative solutions to benefit the industry partner, including:

- Access to highly skilled University researchers to develop emerging technologies and transform innovative research into competitive advantage for your organisation.
- Opportunity to engage with an established network to build connections and drive business development and commercialisation.
- Utilisation of University facilities and research capabilities that would otherwise be inaccessible.
- Connection to potential future employees, trained to be the industry leaders of tomorrow.

## RESOURCES

The DTC for Resources is aimed at delivering transformational technologies supporting innovation, optimisation, efficiency productivity and sustainability in the sector.

To improve enterprise across the minerals and resource recovery value chains, research projects in this DTC focus on:

- Application of new technologies
- Sensor Systems and automation
- Resource recovery and circular economy
- Health, safety and environment

## FOOD & AGRIBUSINESS

As the first centre of its kind on the Central Coast, the DTC for Food & Agribusiness provides a platform for interdisciplinary research and training in a growing industry with strong regional ties, and is committed to collaboration through education and research.

This DTC focuses on four key themes:

- Product science
- Climate resilience and sustainability
- Advanced technology
- Market access

## ENERGY

The DTC for Energy is committed to creating new knowledge and driving better solutions to challenges and opportunities shaping the sector.

Research undertaken in this DTC has a focus on:

- Energy generation and storage
- Renewable energy and alternative energy sources
- Emissions reduction technologies
- Grid systems and stability

**“There has never been more urgency, or more enthusiasm, for innovation in the energy sector. To meet the challenges of the new energy economy, we need as much cross sector collaboration as possible. This DTC brings people together with a shared vision of achieving emissions reductions while progressing clean energy solutions.”**

- Dr Jessica Allen,  
Academic Convenor of the Energy DTC

## CAROLINE GOMES DE OLIVEIRA

### CASE STUDY - DTC RESOURCES

Caroline's project, supervised by Professor Kenneth Williams, is investigating the lifespan of various liner materials that are applied in transfer chutes inside mining machinery. These liners are designed to protect the chute's structure while particulate materials pass through. Caroline is undertaking research into how these liner materials behave, and from that information will propose a method of predicting how they will last under different conditions before no longer functioning the way they need to.

The development of the model will significantly help the mining industry in planning around the replacement of the lining of the chutes, resulting in minimal disturbance to production.

**“Caroline's erosive wear research will help us select the most appropriate lining materials for our customers' materials handling equipment.”**

- Luke Muras,  
Global Product Manager - RTD & Solutions  
Engineering (Chute Lining)  
Metso Outotec

## IRMA DUPUIS

### CASE STUDY - DTC FOOD & AGRIBUSINESS

Irma's Wine Provenance Project, co-supervised by Professor Lisa Toohey from the University's Law school, Dr Sidsel Grimstad from the Business School, and Dr Tamara Bucher from the School of Environmental and Life Sciences, is focusing on blockchain enabled wine labels and their effects on consumer trust.

Through research, focus groups, and analysis of what concerns wine consumers may have around wine authenticity, Irma hopes to help producers find out how to best use blockchain technology to communicate authenticity and provenance information to consumers. Tamburlaine Organic Wines has released two million bottles into the market with smart label technology, making Irma's research a valued asset.

**“Irma's innovative research scope has already generated many exciting product development challenges for Laava, including new consumer browsing and interaction tracking capabilities, as well as insights from the deployment of on-product calls-to-action and consumer prompts.”**

- Gavin Ger,  
Joint-CEO and Commercial Director  
Laava



## PATHWAYS

Your business requirements are unique, and there is no one size fits all solution when setting up a partnership with a university. That's why at the University of Newcastle we have different pathways to deliver a workable solution for you.

### **PATHWAY 1 - RECRUIT A NEW PHD STUDENT TO HELP YOU SOLVE YOUR BUSINESS CHALLENGE**

Students completing their PhD through the DTC are high-achieving researchers equipped to tackle real world industry challenges. We can work with you to recruit the appropriate candidate for your project. The successful candidate, and the progress of your project, will be supervised by an experienced researcher within the University to help drive outcomes for your research project.

### **PATHWAY 2 - UPSKILL A CURRENT EMPLOYEE**

The DTC provides the unique opportunity for you to put a current, high performing employee through the program to help solve your business challenges. By providing this opportunity for professional development, you are increasing the technical skillset and knowledge base of your organisation, with the added benefit that your PhD candidate will already know your business well. Your employee will continue to work for you and be based at your workplace, while completing their PhD program part-time.

The DTCs outlined in this brochure are administered by NIER. Our objective is to strengthen regional resilience through the delivery of sustainable solutions to global challenges related to energy, food and water security and resource sustainability through collaborative research, translation, and education.

Clear pathways through the DTCs make it easier for businesses, industry, and community to connect and collaborate with the University.

Get in touch today to find out more.

### **FOR FURTHER INFORMATION:**

Please email [DTC-NIER@newcastle.edu.au](mailto:DTC-NIER@newcastle.edu.au)  
or visit <https://www.newcastle.edu.au/dtc-nier>



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