A COLLABORATIVE PARTNERSHIP BETWEEN

THE UNIVERSITY of ADELAIDE | UNSW

DEFENCE TRAILBLAZER
CONCEPT TO SOVEREIGN CAPABILITY

Next-Generation Advanced Alloy Production and Processing Technologies

Up for a challenge?

Join us to work on a Defence-led research project with Advanced Alloy Holdings

Who can apply?
- Australian Citizens & Permanent Residents
- New Zealand Citizens

Industry partner and funding body
- Advanced Alloy Holdings
- Defence Trailblazer

Start date
- By December 2024

Program of study available
- Master by Research with UNSW

Total annual stipend amount
- A base scholarship of $40,000pa plus $10,000pa top-up scholarship

About the project

This research project aims to develop next-generation alloys and modern, streamlined casting technologies for applications in cast defence components.

The key objective of the project is to achieve an alloy microstructure in an as-cast semi-finished product, suitable for forging or deep drawing with the minimal amount of processing, by harnessing the enhanced manufacturability of next-generation alloys and implementing modern near-net-shape production routes simply unachievable using regular brasses and bronzes.

The expected outcome shall be a more cost- and energy-efficient semi-finished product, whereby several prototypes shall be produced. Prototype materials will be sent to project partners to be trialled on industrial casting and ammunition forming lines.

The project is co-funded by the Australian Research Council, Linkage grant LP220200957.

Eligibility criteria

- Australian citizens and defence industry professionals are encouraged to apply.
- Applicants with a background in materials engineering or physical metallurgy would be well suited to the project.
- Students with experimental experience in alloy charge preparation, casting, metallographic sample preparation, optical and electron microscopy would be well-matched to the practical aspects of the project, along with some basic numerical modelling skills.
- Be willing to share Intellectual Property with the industry partner and University by way of a Student Deed Poll.

Benefits

- Work closely with experts on defence industry led projects
- Translate research into a tangible solution for Defence
- $50,000 p.a. tax-free* stipend (pro-rated for eligible part-time students)
- No tuition fees apply
- Acquire a unique set of skills and expertise
- Enhance your employability skills sought after by industry; graduates are highly regarded by employers
- Opportunities for local and international travel
- Work alongside world-leading researchers
- Gain industry experience and grow your networks
- Solve real life problems through industry engaged projects
- Publish your contributions
- Become an expert and make a real impact

* Conditions apply

How to apply

- Complete an expression of interest
- The primary supervisor will assess your eligibility, and if successful, will prompt your application for admission via UNSW.

More about Defence Trailblazer

The Defence Trailblazer for Concept to Sovereign Capability is a once in a generation opportunity to strengthen the collaboration between defence, academia and industry whilst accelerating research and commercialisation.

In partnership with the University of Adelaide (UoA), the University of New South Wales (UNSW), industry partners and supported by the Australian Government, the initiative will skill the workforce of the future, support defence-focussed innovation, and play a leading role in accelerating the delivery of sovereign capabilities for the nation's security and prosperity...at-speed and at-scale.

Learn more: https://dtb.solutions/

Industry Research Program

All students supported under the Defence Trailblazer initiative will participate in the Industry Research Program (IRP).

Candidates are located on-site at university and industry offices for at least 60 FTE days (pro-rated for eligible Masters candidates), to enable real-life professional development opportunities in an industry setting.

Defence Research Capability

Academics participating in Defence Trailblazer are leaders in their fields.

UNSW adds a critical dimension to preparing defence forces across areas as diverse as Autonomous Systems, Hypersonics, Sensors and Space. The UNSW Defence Capability Portfolio showcases UNSW's excellence in defence research and technology and highlights work across academia, government and industry, as well as with global policy makers, to create a hub of defence-related knowledge. The vision is to translate this knowledge into impact which can transform Australian and global societies.

There's no greater reassurance for our community than knowing we're well prepared to prevent or avert threats to our security. UofA researchers support this in every domain: on land and online; in space, the air and at sea, working extensively with the Department of Defence and defence-related organisations in a variety of ways—as an advisor, research partner and producer of high-quality, career-ready graduates equipped to make our world a better and more secure place.

Find out more about defence research, and defence capability portfolios at UNSW

Further information

For a confidential discussion contact:

A/Prof Kevin Laws
School of Materials Science & Engineering
UNSW Sydney | Kensington NSW 2052

E: k.laws@unsw.edu.au
T: 02 9385 5234

Defence Trailblazer, together with UoA and UNSW, are actively working to support equity groups. We strongly encourage applications from people with a disability, veterans and women interested in working in non-traditional work settings

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