



Curtin University

CURTIN CORROSION CENTRE

A close-up photograph of a heavily corroded metal bar, showing a thick, flaking layer of rust in shades of orange, brown, and dark red. The background is a blurred, dark industrial setting.

INDUSTRIAL TRANSFORMATION TRAINING CENTRE FOR CORROSION PREVENTION

Make tomorrow better.



Industry and research organisations working together to mitigate and reduce the cost of corrosion.

Join a network of Australia's leading scientists in corrosion, materials, engineering and computational science in their effort to quantify, address and minimize the impact of corrosion and materials degradation in Australia's economy through a new Industrial Transformation Training Centre for Corrosion Prevention.

The Industrial Transformation Training Centre (ITTC) for Corrosion Prevention, jointly funded by the Australian Government through the Australian Research Council, will provide a unique opportunity to develop strategic and enduring partnerships between research organisations and industry to mitigate the ongoing impact and cost of corrosion on industry assets, community infrastructures and the Australian economy. The ITTC will strengthen and expand the current world-leading capabilities in corrosion research in Australia, consolidating the nation at the forefront of corrosion science and engineering.

WHY an ITTC for Corrosion Prevention?

The impact of corrosion on our economy is severe, with an estimated annual cost of 3.4% of Australia's GDP. Corrosion affects our everyday lives across industries, public places and households and it is well

known that inadequate corrosion management can have significant health, environmental and economic consequences.

As shown by numerous international studies, the impact of corrosion can be reduced drastically by implementing current materials, products, methods, and technologies. Further savings can be realised by implementing innovative methodologies developed by both industry and research institutions and by adapting cutting-edge computational science approaches to corrosion management. Indeed, it has been estimated that the cost of corrosion could be reduced by 10% using current best practices alone. The cost of corrosion can be substantially further reduced by combining existing corrosion solutions, new technologies with training and education. In our opinion, however, progress in reducing the impact of corrosion might be hindered by the lack of engagement between the industries that face corrosion

challenges and the academic institutions that can provide education and R&D solutions.

The proposed ITTC aims to bring together leading national and international organisations and industry partners, with the support of the Australian Research Council, to address specific corrosion issues and employ innovative solutions across various industry sectors, including, e.g., oil and gas, mining, defence, biomedical, chemical processing and manufacturing.

The ITTC for Corrosion Prevention will also provide academic and industry training programs for PhD students and post-doctoral research fellows through their placement in partner industry organisations, fostering knowledge transfer from academia to industry and deployment of cutting edge technologies.

ITTC scheme and benefits

The ITTC is jointly funded by the Australian Research Council (ARC), research organisations (including universities and government research organisations) and industry partners. The ARC will contribute a minimum of **\$650,000 p.a.** to a maximum of **\$1 million p.a.** for **4 to 5 years.**

The ARC funds are combined with cash and in-kind contributions from research organisations and industry partners and primarily used to fund PhD programs and postdoctoral research fellows.

Industry funds will be partially used towards the placement of PhD candidates or postdoctoral research fellows in the partner organisation

to pursue industrial training within the ITTC scheme.

The ITTC for Corrosion Prevention aims to attract funding to support up to **six post-doctoral fellows** and **12 PhD students** to address issues associated with both internal and external corrosion processes across a range of industry sectors.

Benefits to industry partners

Benefits to industry partners include:

- the opportunity to develop new and transform current corrosion prevention and management programs through cutting-edge research and engineering.

Research themes

- Mechanically Assisted Corrosion (Environmental Cracking and Tribocorrosion)
- Microbiologically Influenced Corrosion
- Corrosion Under Insulation
- Acid Gas Corrosion (CO₂ and H₂S)
- Atmospheric Corrosion
- Corrosion Protection (Coatings and Chemical Inhibition)
- Machine Learning for Integrity Management
- Corrosion Monitoring

Timeline

Mid-November 2019: Industry partners to lodge an expression of interest.

30 November 2019: Completion of the internal draft application.

11 December 2019: ARC deadline for submission.

Quarter 2 2020: Anticipated announcement of funding outcomes from ARC.

- collaboration with Australia's most prestigious network of corrosion, materials, and computational science researchers.
- leveraged R&D funds with the Australian Research Council and academic institutions to help advance long-term and sustainable corrosion solutions.
- access to outcomes of innovative research and new technologies in a range of corrosion and materials themes.
- access to state-of-the-art research facilities and expertise available in the corrosion research community in Australia, combined with shared knowledge from international institutions.
- participating in the development of training programs with academic institutions. Help train tomorrow's skilled workforce by hosting PhD students and research fellows to work on specific industry projects.
- opportunities to collaborate with researchers and other industry partners within the ITTC network, and access to training sessions and technical workshops.



How to join ITTC for Corrosion Prevention

Contact us to find out how you can participate and help us tailor a research program that will benefit your organisation.

We can come to you to present technical capabilities and opportunities in the proposed research themes, assess your corrosion issues and assist with selecting a suitable research scheme.

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