

POSITION DESCRIPTION

Academic Positions

(In addition to the Position Classification Standards)

Position Title: Associate Research Fellow / Research Fellow Level: A/B
 Faculty: Faculty of Engineering and Information Sciences
 Department/Location: ARC Research Hub for Australian Steel Manufacturing
 School of Mechanical, Materials and Mechatronic Engineering

Primary Purpose of the Position:

You will lead the experimental activities in this project C3 of the Steel Research Hub and provide supervisory assistance to a PhD student and undergraduate final year thesis students within this project. You should have sufficient knowledge and skill to design and conduct experiments via chemical or hybrid chemical/physical pathways to achieve protective coatings, carry out and analyse the results of mechanical, tribological, and corrosion testing, and microstructural characterisation. You should ensure that the research conducted as part of the supporting PhD and undergraduate projects is well aligned with the broader objectives of the surface treatment project.

Position Environment:

You will be a member of ARC Research Hub for Australian Steel Manufacturing, hosted by the University of Wollongong (UOW). The Steel Research Hub has 5 core Industry Partners (BlueScope, Arrium, the Australian Steel Institute, Bisalloy Steels and Cox Architecture), with BlueScope providing a major investment. In addition, the Steel Research Hub partners with 5 Australian Universities (the University of Queensland, University of Newcastle, Swinburne, RMIT and the University of NSW).

The Steel Research Hub aims to develop breakthrough process and product innovations to enable the Australian steel industry to improve its global competitiveness. It is based on an integrated, value chain-wide approach to innovation in the steel sector, including projects on innovation strategy and management, customer-focused product development, innovation in coating and surface engineering technology, and economic and environmental sustainability of iron and steelmaking. By ensuring sector-wide industry representation and collaboration with leading Universities, the Hub will deliver tangible and lasting economic and environmental benefits, and ensure the nation's future research capacity in the field.

Major Accountabilities/Responsibilities:

Responsibilities	Outcome
1. Designing and implementing a research program related to Steel Research Hub objectives under limited supervision either as a member of a team or, where appropriate, independently, in the area of surface engineering of metal coated steel product.	Reproducible, accurate and appropriate experimental data achieving targets or milestone outcomes in a timely manner.
2. Develop candidate films and produce samples in the lab on metal coating surfaces; Identify functional additives and examine effect of different functionalities on the properties/performance of the films.	Films with sound mechanical properties and bonding strength are developed and tested for tribological and corrosion performances.

3.	Preparation of intellectual property, scientific papers, conference presentations and other reports describing the results of the research program.	10 papers published in ISI journals and conference presentations at national and international events.	
4.	Assistance with project management and administration, including preparation of reports, assisting with workshops, preparation of newsletter items and maintenance of publications records.	Proper functioning of the project and Steel Research Hub objectives.	
5.	Assistance with mentoring and training for HDR students and supervision of student projects.	Students working in the area of surface engineering of metal coated products for the Steel Research Hub are properly supported.	
6.	Assistance with the preparation of competitive research grant proposals to expand the activities of the Steel Research Hub.	Grant proposals are prepared to a high standard and by relevant deadlines.	
7.	Supervisory roles: Communicate and consult with staff on workplace and staffing matters.	To foster direct relationships with staff and enhance engagement with the organisation.	
8.	Observe principles and practices of Equal Employment Opportunity	To ensure fair treatment in the workplace	
9.	Have WH&S responsibilities, accountabilities and authorities as outlined in the http://Staff.uow.edu.au/ohs/commitment/responsibilities/ document	To ensure a safe working environment for self & others.	

Reporting Relationships:

Position Reports to:	Dr Yue Zhao
The position supervises the following positions:	N/A
Other Key Contacts:	Oscar Gregory, (Hub Director); Joe Williams (Industry Champion)

Key Relationships:

Contact/Organisation:	Purpose & Frequency of contact
Yue Zhao, Project Leader	Supervisor, weekly contact
Joe Williams (BlueScope), Industry Champion	Weekly contact
Prof David StJohn (UQ), Program Leader- Academic	Quarterly
Jason Hodges (BlueScope), Program Leader – Industry	Quarterly
Julie Matarczyk (UOW), Hub Manager	Quarterly reporting

Key Challenges:

1. Develop innovative methods of surface coating through chemical or chemical/physical hybrid routine.
2. Interdisciplinary research in the areas of chemistry, polymer materials, mechanical testing, tribology and corrosion.
3. Ensuring that research outcomes are in line with the expected outcomes.
4. Preparation of high quality journal papers.

SELECTION CRITERIA - Knowledge & Skills:

Essential:

- Experience in materials engineering, chemical engineering or a relevant scientific field, with a focus on thin film technology.
- Ability to work both independently and in a team environment.

- Highly developed written and verbal communication skills in English, as evidenced by peer-reviewed research publications and presentations at conferences.
- Strong knowledge of organic and inorganic chemistry.

Desirable:

- Experience with protective thin films for Mg containing alloys.
- Experience with functional thin coatings, especially self-healing capability and hydrophobicity.
- Experience with sol-gel coatings.
- Experience with thin film characterisation techniques.
- Experience with corrosion testing or electrochemical testing.

SELECTION CRITERIA - Education & Experience:

Essential:

- PhD in a relevant field such as materials engineering, chemical engineering or a relevant scientific field, with a focus on thin film technology.
- Experience in multi-disciplinary research.
- Experience in report writing/manuscript preparation.

Desirable:

- Strong publication track record relative to opportunity.
- Demonstrated capacity to undertake collaborative research.
- Experience training students and co-supervising student projects.

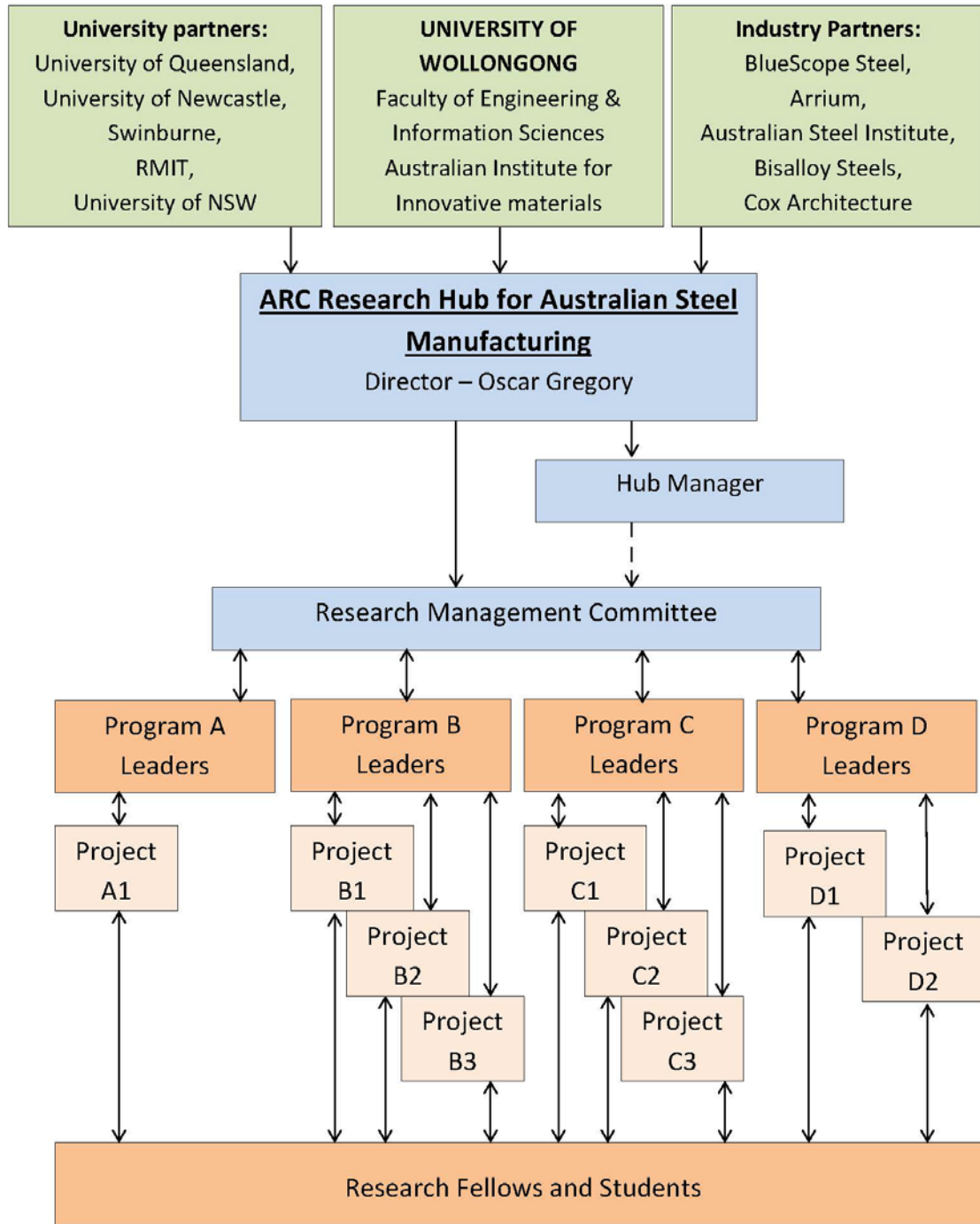
Personal Attributes:

- Work independently without constant supervision.
- Enthusiasm for research and team work.
- Willingness to receive positive feedback and constructive criticism.
- Look for solutions, rather than merely presenting problems (results driven).
- Flexible approach to work assignments.
- Responsive to change.
- Committed to working safely.

Special Job Requirements:

- OH&S inductions to workplace and laboratory procedures. This person must adhere to safe laboratory practices.

Organisational Chart:



Roles and Responsibilities in Relation to Workplace Health and Safety:

The University of Wollongong is committed to providing a safe and healthy workplace for its workers, students and visitors. All members of the University community have a collective and individual responsibility to work safely and be engaged in activities to help prevent injuries and illness.

In addition to the major accountabilities/responsibilities required for your position, you also hold the following roles and responsibilities in relation to Workplace Health and Safety:

All Staff

- Take reasonable care for your health and safety as well as others.
- Comply with any reasonable instruction by the University.
- Cooperate with any reasonable policies and procedures of the University including reporting of hazards or incidents via the University reporting process.
- Certain staff have specific responsibilities for Work Health and Safety (WHS), further information is available in the document [Roles And Responsibilities for WHS](#) and [WHS Management System](#).

Inherent Requirements:

This position description outlines the major accountabilities/responsibilities and the selection criteria against which you will be assessed as suitable for the position. As such there will be specific job requirements that we refer to as Inherent Requirements.

Inherent Requirements refer to your ability to:

- Perform the essential duties and functional requirements of the job;
- Meet the productivity and quality requirements of the position;
- Work effectively in the team or other type of work organisation concerned; and
- Do the job without undue risk to your own or others health, safety and welfare at work.

If you have any injuries, illness, disorder, impairment, condition or incapacity that may affect your ability to perform the inherent requirements of the position, we encourage you to discuss this with the University to assist in the process of identifying reasonable adjustments to enable you to perform the duties of the position. The University wants to place you in the best situation to use your skills effectively in the position you are applying for at the University.