

Position Description – Research Fellow

Position Details

Position Title:	Research Fellow
Position Number:	NEW
College/Portfolio:	Science, Engineering and Health
School/Group:	School of Engineering
Campus Location:	Based at the city campus but may be required to work and/or be based at other campuses of the University.
Classification:	Academic Level B
Employment Type:	Fixed Term – 2 years
Time Fraction:	1.0

RMIT University

RMIT is a global university of technology, design and enterprise in which teaching, research and engagement are central to achieving positive impact and creating life-changing experiences for our students.

One of Australia's original educational institutions founded in 1887, RMIT University now has 83,000 students including 12,000 at postgraduate level.

The University enjoys an international reputation for excellence in professional and vocational education, applied and innovative research, and engagement with the needs of industry and the community.

With three campuses in Melbourne (City, Brunswick and Bundoora), two in Vietnam (Hanoi and Ho Chi Minh City) and a centre in Barcelona, Spain, RMIT is a truly global university. RMIT also offers programs through partners in Singapore, Hong Kong, mainland China, Indonesia and Sri Lanka, and enjoys research and industry partnerships on every continent.

RMIT prides itself on the strong industry links it has forged over its 130-year history. Collaboration with industry is integral to the University's leadership in applied research and education, and to the development of highly skilled, globally focused graduates.

We are a 5-Star university under the QS Stars international evaluation system, and are 16th in the world among universities less than 50 years old (2016–17 QS Top 50 Under 50 index).

In the 2016 QS World University Rankings by Subject, RMIT is 16th in the world (highest ranked in Australia) in Art and Design, and 36th in the world (fourth highest in Australia) in Architecture and the Built Environment. We are also among the world's top 100 universities in Engineering (Civil and Structural; Electrical and Electronic; and Mechanical, Mechanical, Aeronautical and Manufacturing); Accounting and Finance; and Business and Management Studies).

Our research was ranked among the best in the world in the 2015 Excellence in Research for Australia evaluation. RMIT was rated "well above world standard" in 13 fields and "above world standard" in a further nine fields.

www.rmit.edu.au

College/Portfolio/Group

The College comprises four Schools delivering a broad range of programs in science, engineering, health and technology at apprenticeship, certificate, bachelor, masters and PhD levels. Many programs articulate between vocational and higher education, creating pathways for further study. There is a vibrant research community

attracting funding from a range of government and industry sources. The College has an annual income of approximately \$425 million and employs over 1,000 staff providing on and offshore programs to approximately 20,000 students.

School of Engineering

The School of Engineering comprises a diverse range of disciplines: Aerospace Engineering & Aviation; Chemical & Environmental Engineering; Civil & Infrastructure Engineering; Electrical & Biomedical Engineering; Electronic & Telecommunication Engineering; Manufacturing, Materials & Mechatronic Engineering; Mechanical & Automotive Engineering.

As a top 100 university in the world for engineering (2015 QS Rankings by Faculty; Engineering and Technology), RMIT Engineering provides students with work-relevant education programs, access to excellent research facilities and opportunities to engage in creative real-world project work through robust relations with local and international industry leaders.

RMIT Engineering's education is based on innovation and creativity. Key discipline areas in the School of Engineering provide programs with flexible pathways to global careers or postgraduate research.

Details relating to the School/College Office may be found on at: www.rmit.edu.au/seh

Position Summary

The primary objective of the position is to support the delivery of research within two projects. One supported by the ARC Training Centre on Surface Engineering for Advanced Materials and involving industry partner RUAG is investigating high-speed laser metal deposition for a range of applications. The successful candidate will conduct process modelling research in the field of additive manufacturing of metallic alloys for improved mechanical properties. The candidate will focus on the laser deposition process and interaction between the laser beam and metallic powder particles and how these are deposited onto metallic substrates. The modelling study will complement and feed into the experimental program on the topic. The second project is funded by the Austrian Research Council (FFG) as part of its 'Beyond Europe' program. This project will focus on prediction of microstructure and performance in wire deposited additive manufacturing of high strength Aluminium Alloys. RMIT will focus on prediction of defects and grain morphology, particularly hot tearing and porosity formation and in particular the influence of process parameters.

In developing these modelling capabilities the candidate will regularly publish relevant analyses of the literature, and will provide direct support to an associated postgraduate student. They will contribute to the academic output of the School, assist with postgraduate and undergraduate student mentoring and work collaboratively and collegially with fellow researchers in the Centre for Additive Manufacturing.

Reporting Line

Reports to: Associate Dean, Manufacturing, Materials and Mechatronics Engineering

Day to day reporting: Project Leaders, Professor Mark Easton and Professor Milan Brandt

Direct reports: Nil

Organisational Accountabilities

RMIT University is committed to the health, safety and wellbeing of its staff. RMIT and its staff must comply with a range of statutory requirements, including equal opportunity, occupational health and safety, privacy and trade practice. RMIT also expects staff to comply with its policy and procedures, which relate to statutory requirements and our ways of working.

Appointees are accountable for completing training on these matters and ensuring their knowledge and the knowledge of their staff is up to date.

Key Accountabilities

1. Undertake research and development activities in additive manufacturing (AM) with a particular focus on the modelling simulation of (A) the interaction between the laser beam and metal powder particles in flight and during deposition on a metallic substrate and (B) the influence of process parameters and alloy on the development of microstructure particularly defect formation.
2. Prepare high profile novel research publications as lead or co-author.
3. Co-supervision of postgraduate by research students.
4. Communicate research outcomes through high quality papers/journal articles, delivery of seminars and conference attendance.
5. Participate in the teaching and learning program appropriate to areas of expertise up to 10% of a full time load.
6. Perform other duties that may be required for the efficient operation of the research team.

Key Selection Criteria

1. Demonstrated research track record in the modelling of solidification processes such as laser cladding or welding processes using commercial software packages.
2. Demonstrated track record in the modelling of microstructure formation such as defect formation and/or grain morphology.
3. Demonstrated ability to link experimental data to modelling simulation and analyse and interpret data.
4. Preferred research track record in the design and manufacture of components using metal based additive manufacturing (AM) techniques.
5. Proven ability to undertake scientific research and development in research programs with multiple partners.
6. Demonstrate ability to clearly communicate research results, concepts and knowledge.
7. Demonstrated initiative in research and problem solving and ability to work effectively both as a member of a research team and independently when required, to meet project outcomes and milestones.

Qualifications

Mandatory: PhD or equivalent in relevant field

Appointment to this position is subject to passing a Working with Children check

Endorsed:	Signature: Name: Title: Date:	Approved:	Signature: Name: Title: Date:
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