POSITION DESCRIPTION

Position Title: Postdoctoral Research Fellow/ Research Officer
Organisation Unit: School of Mechanical and Mining Engineering
Position Number: NEW
Type of Employment: Full Time, Fixed Term
Classification: Academic Level A

THE UNIVERSITY OF QUEENSLAND

The University of Queensland (UQ) contributes positively to society by engaging in the creation, preservation, transfer and application of knowledge. UQ helps shape the future by bringing together and developing leaders in their fields to inspire the next generation and to advance ideas that benefit the world. UQ strives for the personal and professional success of its students, staff and alumni. For more than a century, we have educated and worked with outstanding people to deliver knowledge leadership for a better world.

UQ ranks in the world's top universities, as measured by several key independent ranking, including the Performance Ranking of Scientific Papers for World Universities (43), the US News Best Global Universities Rankings (52), QS World University Rankings (47), Academic Ranking of World Universities (55), and the Times Higher Education World University Rankings (60). UQ again topped the nation in the prestigious Nature Index and our Life Sciences subject field ranking in the Academic Ranking of World Universities was the highest in Australia at 20.

UQ has an outstanding reputation for the quality of its teachers, its educational programs and employment outcomes for its students. Our students remain at the heart of what we do. The UQ experience – the UQ Advantage – is distinguished by a research enriched curriculum, international collaborations, industry engagement and opportunities that nurture and develop future leaders. UQ has a strong focus on teaching excellence, winning more national teaching excellence awards than any other in the country and attracting the majority of Queensland’s highest academic achievers, as well as top interstate and overseas students.

UQ is one of Australia’s Group of Eight, a charter member of edX and a founding member of Universitas 21, an international consortium of leading research-intensive universities.

Our 50,000-plus strong student community includes more than 13,000 postgraduate scholars and more than 12,000 international students from 144 countries, adding to its proud 240,000-plus alumni. The University has about 7,000 academic and professional staff and a $1.8 billion annual operating budget. Its major campuses are at St Lucia, Gatton and Herston, in addition to teaching and research sites around Queensland and Brisbane city. The University has six Faculties and four University-level Institutes. The Institutes, funded by government and industry grants, philanthropy and commercialisation activities, have built scale and focus in research areas in neuroscience, biomolecular and biomedical sciences, sustainable minerals, bioengineering and nanotechnology, as well as social science research.
UQ has an outstanding track-record in commercialisation of our innovation with major technologies employed across the globe and integral to gross product sales of $11billion+ (see http://uniquest.com.au/our-track-record).

UQ has a rapidly growing record of attracting philanthropic support for its activities and this will be a strategic focus going forward.

**Organisational Environment**

With an excellent reputation for quality graduate training and research performance, the School of Mechanical and Mining Engineering delivers a comprehensive range of programs in aerospace, materials, mechanical, mechatronic and mining engineering.

Boasting strong student enrolments in professionally accredited programs, combined with world-class researchers and facilities, we are focused on strengthening our position in the engineering community. We will develop global solutions to contemporary issues and mentor the leaders of tomorrow by attracting the brightest minds and fostering a truly innovative and collaborative work environment.

Our people are our greatest asset. We offer collaborative, inclusive work and study places, which are enriched by the significant diversity of our staff, students and community. We genuinely believe that creativity and innovation flourishes in an environment where people feel supported, valued and empowered. Mutual respect, inclusivity and accountability are at the cornerstone of UQ’s culture.

The School is committed to supporting the career growth of women researchers and have a number of initiatives to support women in developing and achieving a fulfilling research career at the School.

For more information about the School, please visit: [http://www.mechmining.uq.edu.au/](http://www.mechmining.uq.edu.au/)

**Information for Prospective Staff**

The School recognises and values equity and diversity, and encourages applications from any individual who meets the requirements of this position irrespective of gender, sexuality, race, ethnicity, religion, disability, age or other protected attributes. The School strives to provide an inclusive working environment, and along with the University is committed to supporting staff with family and caring responsibilities by providing policies, programs and initiatives to help balance work and family responsibilities.

Further information about life at UQ including staff benefits, relocation and UQ campuses is available at [http://www.uq.edu.au/current-staff/working-at-uq](http://www.uq.edu.au/current-staff/working-at-uq)

The University of Queensland [Enterprise Agreement](http://www.uq.edu.au/current-staff/working-at-uq) outlines the position classification standards for Levels A to E.
DUTY STATEMENT

Primary Purpose of Position

To work on a collaborative research project with Defence Science and Technology (DST) to support the relocation of UQ’s large X3 impulse facility to its new location at Eagle Farm in Brisbane, and to expand the capabilities of the facility in its new location. Specialised analysis and design work is required to support recommissioning of the facility at the new location. The role involves detailed engineering design and analysis to address several design changes necessitated by the move.

Duties

Duties and responsibilities include, but are not limited to:

Research

- Assist with the management of relevant sub-projects, prepare and submit milestone reports, liaise with industry partner(s) and complete engineering analysis to support design work.
- Identify and procure required hardware, software, and other necessary items and commission equipment.
- Conduct research and publish scholarly papers relevant to the above topic.
- Perform X3 geometry survey and develop X3 facility configuration control
- Design and implement significant facility modifications to improve performance.
- Develop and commission new facility operating test conditions and train new personnel on facility operation and analysis.
- Prepare documentation in accordance with requirements set by the industry partner, including operating manuals, risk assessments, standard operating procedures.
- Manage workplace health and safety requirements including chemical register, equipment training, service registers and maintain all other required documentation.
- Compile and maintain essential analysis for driver tuning and flow condition development, including associated facility modelling software & input files.

Service and Engagement

- Supervise students undertaking undergraduate and postgraduate coursework engineering projects and participate in the supervision of Higher Degree by Research (MPhil and PhD students) if required.
- Perform a range of administrative functions in the laboratory and/or research group as needed, including an ability and willingness to serve as a Laboratory Manager if required.
- Foster relations with industry (including international partners), government departments, professional bodies and the wider community.
- As required, be prepared to work at the Eagle Farm site to facilitate collaborative activities and relevant design work.
- Any other duties as reasonably directed by your supervisor.
Other
Ensure you are aware of and comply with legislation and University policy relevant to the duties undertaken, including but not exclusive to:

- the University's Code of Conduct
- requirements of the Queensland occupational health and safety (OH&S) legislation and related OH&S responsibilities and procedures developed by the University or Institute/School
- the adoption of sustainable practices in all work activities and compliance with associated legislation and related University sustainability responsibilities and procedures
- requirements of the Education Services for Overseas Students Act 2000, the National Code 2007 and associated legislation, and related responsibilities and procedures developed by the University

Organisational Relationships
The position reports to Dr David Gildfind.

SELECTION CRITERIA

- PhD (or PhD near completion/submitted) in the area of hypersonic impulse facilities and hypersonic experimentation.
- Experience and demonstrated competence in the following:
  - operating an impulse facility including familiarity with operational, engineering, and OHS considerations associated with its use.
  - experience with high pressure and vacuum systems.
  - impulse facility flow condition development and simulation, including analytical techniques and 1-D CFD techniques. Experience with UQ's L1d code is an advantage.
  - mechanical design using 3D CAD.
  - stress analysis using analytical and computational techniques.
- Ability to -
  - design and review complex and safety-critical systems, including error-checking and fault-finding.
  - effectively present research findings to a broad range of audience.
  - promote and adhere to a positive safety culture including the ability and willingness to assume the role of laboratory manager if required.
- Demonstrated –
  - high level of drive and enthusiasm
  - high-level interpersonal, written and verbal communication skills.
  - industry and professional contacts and ability to liaise and collaborate with external agencies to develop cooperative research initiatives; or the ability to rapidly develop these skills.
Qualification Verification

An appointment to this position is subject to the verification of the highest academic qualification from the conferring institution.

The University of Queensland values diversity and inclusion and actively encourages applications from those who bring diversity to the University. Please refer to the University’s Diversity and Inclusion webpage (http://www.uq.edu.au/equity) for further information and points of contact if you require additional support.

This role is a full-time position; however flexible working arrangements may be negotiated.

Accessibility requirements and/or adjustments can be directed to the contact person listed in the job advertisement.