POSITION DESCRIPTION

Position Title: Postdoctoral Research Fellow
Organisation Unit: School of Mechanical and Mining Engineering
Position Number: TBA
Type of Employment: Part Time (0.5 FTE), Fixed Term, for 3 years
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.

The School recognises and values equity and diversity, and encourages applications from any individual who meets the requirements of this position, regardless 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.

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

Within the School, Dr Jeff Gates leads a research group focused on understanding of the mechanisms of abrasive wear in mining industry environments and on development of improved wear-resistant materials for these environments. Dr Gates is one of the Chief Investigators in the new ARC Industrial Transformation Training Centre in Alloy Innovation for Mining Efficiency (mineAlloy, http://minealloy.com.au/), which is a collaboration between Deakin University, The University of Queensland and Monash University, with 7 industry partners.

Information for Prospective Staff

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

The University of Queensland Enterprise Agreement outlines the position classification standards for Levels A to E.

DUTY STATEMENT

Primary Purpose of Position

The Wear-Resistant Materials group within the School of Mechanical and Mining Engineering is seeking a Post-doctoral Research Engineer to join a project team researching abrasion-resistant materials for ore chute liners. The Research Engineer will contribute to two projects; “A new generation of ‘NiHard’ alloys for ore chute liners” and “Structure-property-performance relationships in ceramics for high-tonnage ore chutes.”
Duties

Duties and responsibilities include, but are not limited to:

Research
- Assist with configuration of laboratory foundry equipment for preparation of small-scale castings of experimental alloys, and participate in production of experimental alloys;
- Assist with development of facilities and methods for cutting and machining of ceramic samples for laboratory wear evaluation, and participate in intensive specimen preparation campaigns;
- Assist with the training of new HDR students in key laboratory techniques, including microstructural characterisation and measurement of wear resistance and fracture toughness;
- Conduct specific laboratory experiments when needed to meet short time-frames for the industry partners, or when the experiments are outside the capabilities of the HDR students;
- Participate in preparation for and conduct of field trials.

Service and Engagement
- Support the publication of the research results in technical reports and media releases;
- Perform a range of administrative functions in the School;
- Contribute to the processes that enable the academic team to manage the work of the School, including participate in School decision-making and serve on School committees;
- Foster the School’s relations with industry, government departments, professional bodies and the wider community;
- Any other duties as reasonably directed by the supervisor.

Other
Ensure you are aware of and comply with legislation and University policy relevant to the duties undertaken, including:
- 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 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 the Senior Research Fellow.
SELECTION CRITERIA

Essential

- PhD in Materials Engineering, Materials Science, Mechanical Engineering or closely related disciplines;
- Demonstrated laboratory and practical skills, including safe operation of rotating equipment, accurate measurements and data recording;
- Ability to operate SEM and EDS instruments;
- Experience in one or more of the following: (a) production of metal castings, (b) the science and technology of engineering ceramics, and/or (c) the science and technology of abrasive wear and wear-resistant materials;
- Demonstrated excellent written and verbal communication skills;
- Track record of high quality publications;
- Demonstrated ability to work collaboratively with colleagues, administrative and technical staff;
- Ability to work independently with minimal supervision as part of a team;
- An ability to establish effective relationships and to represent and promote academic discipline at a university and wider community level, including industry, government and professional bodies.

Desirable

- Experience with field trials at industrial sites, liaising with site personnel and taking on-site measurements in the context of an operating plant;
- Previous research and/or industry experience in fields such as foundry technology, ceramics technology, minerals industry maintenance, or fracture mechanics;
- Teaching skills at undergraduate and postgraduate levels.

The University of Queensland values diversity and inclusion.

Applications are particularly encouraged from Aboriginal and Torres Strait Islander peoples. For further information please contact our Australian Indigenous Employment Coordinator at: atsi_recruitment@uq.edu.au

Applications are also encouraged from women.
This role is a full-time position; however flexible working arrangements may be negotiated.