POSITION DESCRIPTION

Position Title: Postdoctoral Research Fellow
Organisation Unit: Julius Kruttschnitt Mineral Research Centre (JKMRC)
Position Number: NEW
Type of Employment: Full Time, Fixed Term for 12 months
Classification: Research 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 (65). 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

One of UQ’s eight research institutes, the Sustainable Minerals Institute (SMI) consists of some 400 staff and postgraduate students covering the areas of mining and geology, mineral processing, environment and rehabilitation, social responsibility, safety and risk, water and unconventional gas. SMI is industry-focused and consequently works with many leading global resources companies and many small-medium enterprises and suppliers. SMI interacts strongly with governments and community. A priority for SMI is the development of talent and providing an environment for successful and rewarding careers.

SMI was founded in 2001 and since its inception has established a reputation as a unique institution for integrated sustainable development research in the resource sector. SMI is a truly global institute with staff and students from around the world. SMI’s people are also diverse in their discipline backgrounds, which range across disciplines including anthropology, geology, soil science, sociology, hydrology, environmental science, engineering and mine management.

SMI comprises six major research Centres which are organised into pairs:

SMI’s Production Centres are the: WH Bryan Mining and Geology Research Centre
Julius Kruttschnitt Mineral Research Centre

SMI’s People Centres are the: Centre for Social Responsibility in Mining
Minerals Industry Safety and Health Centre

SMI’s Environment Centres are the: Centre for Mined Land Rehabilitation
Centre for Water in the Minerals Industry

The Julius Kruttschnitt Minerals Research Centre (JKMRC) is a world-renowned research and postgraduate education organisation with a mission to deliver world-class, customer-focussed education, research and technical services to the world minerals industry and allied sectors. The JKMRC has an international reputation for applied research in the areas of mineral processing and geometallurgy. It specialises in ore characterisation, mineral processing unit operations such as comminution and flotation, applied mineralogy, and the interface between mining and processing. Its emphasis on systems analysis by mathematical modelling and process simulations has led to major new methodologies in the design and optimisation of mineral processing operations. It works closely with the international minerals industry and with other research providers in Australia and overseas.

Further information on the JKMRC may be accessed via https://smi.uq.edu.au/jkmrc

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

To undertake high quality research and project management in the SMI-JKMRC. In particular, develop expertise around model development, model testing and experimental data curation as an integral part of the simulation model delivery team in the AMIRA P9Q project. AMIRA P9Q is the latest in a long line of P9 projects focused on translating the previous P9 research projects to industry process improvement tools. Additionally, this role will work on advancing data structure in simulation platforms to handle a wider range of physical properties than currently available.

Duties

Duties and responsibilities include, but are not limited to:

**Research/Technical**
- Data collection and data analysis techniques
- Experimental development and design
- Curation of data base relevant to role
- Model development and testing
- Modelling mineral process circuits using JKSimMet, JKSimFloat, or research simulation packages
- Work with colleagues and postgraduates in the development of new research ideas
- Assist with technical project management of SMI-JKMRC projects
- Plan and conduct work at external sites including at remote mine locations
- Support additional research projects within the SMI-JKMRC when required

**Service and Engagement**
- Perform a range of administrative functions in the Centre
- Foster SMI-JKMC relations with industry, government departments, professional bodies and the wider community.
- 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 the Program Leader – Advanced Process Prediction and Control

SELECTION CRITERIA

Essential
• PhD relevant to mineral processing and extensive applied research experience in comminution process modelling and optimisation with a comprehensive knowledge about the whole process chain from exploration to metal production.
• Demonstrated ability to use simulation software packages (such as JKSImMet, JKSImFloat, or similar mineral processing simulation packages)
• Advanced computer skills: proficiency in Microsoft Excel/VBA is necessary and additional coding languages will be well regarded
• Ability to develop expertise and an emerging profile in research with an increasing degree of autonomy.
• Experience and / or publications that indicate a proven research ability
• Well-developed presentation and communication skills
• Demonstrated record of publication in relevant research fields
• Use of data base tools and data analytics packages
• High level of interpersonal skills, including the ability to work collaboratively with colleagues, particularly from different disciplines, as well as with administrative and technical staff.
• Demonstrated ability to manage competing priorities and excellent time management skills
• Excellent written and oral communication skills

Desirable
• Experience in, or working with, industry
• Experience in models throughout the mining value-chain

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.