POSITION DESCRIPTION

Position Title: Postdoctoral Research Fellow

Organisation Unit: Julius Kruttschnitt Mineral Research Centre (JKMRC)

Position Number: 3045797

Type of Employment: Full time, Fixed term, 1 year appointment

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 CWTS Leiden Ranking (32), the Performance Ranking of Scientific Papers for World Universities (40), the US News Best Global Universities Rankings (42), QS World University Rankings (47), Academic Ranking of World Universities (54), and the Times Higher Education World University Rankings (66). Excluding the award component, UQ is now ranked 45th in the world in the ARWU, and is one of the only two Australian universities to be included in the global top 50.

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 53,000-plus strong student community includes more than 16,400 postgraduate scholars and more than 17,000 international students from 135 countries, adding to its proud 260,000-plus alumni. The University has more than 6,600 academic and professional staff (full-time equivalent) and a $2.15 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+.

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

Organisational Environment

The University of Queensland's Sustainable Minerals Institute (SMI) is a world-leading research institute integrating the expertise of technical, environmental and social specialists to deliver responsible resource development across the life of mine. We are dedicated to finding knowledge-based solutions to the sustainability challenges of the global minerals industry, and training the next generation of industry leaders.

SMI is home to six research centres and a Centre of Excellence based in Chile. We have a strong track record in developing world leading solutions in exploration, mining, mineral processing, workplace health and safety, mine rehabilitation, social responsibility, water and energy.

At SMI, we are truly independent, objective and rigorous and our researchers have experience working across the research, government and industry sectors. We offer professional development training to many of our partners and can tailor courses to suit industry trends or company needs. We offer supervision to PhD students and are proud that our alumni are now in senior roles in resource companies and government organisations around the world.

SMI comprises seven major research Centers:

- WH Bryan Mining and Geology Research Centre
- Julius Kruttschnitt Mineral Research Centre
- Centre for Social Responsibility in Mining
- Minerals Industry Safety and Health Centre
- Centre for Mined Land Rehabilitation
- Centre for Water in the Minerals Industry
- International Centre of Excellence in Chile


The Julius Kruttschnitt Minerals Research Centre (JKMRC) is a world-renowned research and postgraduate education organisation, located at Indooroopilly in Brisbane, approximately 7 km from the main University of Queensland campus. It was established in 1970, and now forms part of the University's Sustainable Minerals Institute.

The mission of the JKMRC is 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. It has graduated in excess of 200 Masters and PhD students, and won many awards for its research. It has a proven record of technology transfer through JKTech, which has significant experience in the commercial delivery of JKMRC research outcomes, particularly in simulation software and ore characterisation methodologies.

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

Information for Prospective Staff

Information about life at UQ including staff benefits, relocation and UQ campuses is available online.

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 in the topic area of mineral flotation and mineral processing technologies. In particular a large portion of the work will be dedicated to the project titled “Overcoming pyrite challenges in Queensland’s ore reserves and mine tailings”, which will involve testing and evaluation of treatment strategies for pyrite rich base metal sulphide ore bodies.

The person filling the position is also expected to become familiar with a wide range of mineral processing research areas, such as microwave assisted dewatering, mineral surface analytical techniques, mineral liberation analysis and novel reagent addition techniques.

Duties

Duties and responsibilities include, but are not limited to:

Research and training

- Experimental development and design of key aspect of research activities within large industry-funded projects
- Conducting laboratory experiments and data analysis in mineral flotation testing
- Assisting in the performance of industrial surveys and subsequent data analysis
- Assisting with the performance and data processing of mineral surface analysis and mineral liberation tests.
- Contribute to the development of new research ideas and research funding proposals and/or fellowships
- Writing up findings for publications in reputed and high impact international journals in relevant subject areas
- Participating in postgraduate training and supervision

Management

- Assist with project management
- Plan and conduct work at external sites including at remote mine locations
• Support additional projects on aspects of relevant disciplinary knowledge and skills when required

**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 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 Group Leader of the Separation Program.

**SELECTION CRITERIA**

**Essential**

- PhD relevant to mineral processing
- Demonstrated ability to develop research initiative and to conduct innovative research in the field of mineral processing and mineral flotation
- Demonstrated ability and experience with working in a metallurgical laboratory, with particular emphasis on batch flotation testing and analysis
- Demonstrated ability to conduct onsite surveys and sample collection in industrial mineral processing plants
- Demonstrated time management skills and the ability to work across multiple projects with multidisciplinary teams
- Demonstrated ability to produce innovative research outcomes and publish in high impact and mainstream journals, in relevant research fields,
- Ability to analyse complex experimental data by using statistical packages

**Desirable**

- Developing skills in performing and analysing surface analysis techniques, such as ToF-SIMS and X-Ray tomography
- Developing skills in the area of microwave dewatering
- Developing skills in the analysis of mineral liberation data obtained via MLA or QEMSCAN
- Developing skills in electrochemically controlled flotation techniques
- Experience in technical assistance and training to research high degree postgraduates
- Experience in interactions with industry
**Seminar**
Applicants invited for interview may be expected to present a seminar in conjunction with the selection interview process.

**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](#) 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 recruitment@uq.edu.au.*