POSITION DESCRIPTION

Position Title: Senior Research Fellow
Organisation Unit: Julius Kruttschnitt Mineral Research Centre (JKMRC)
Position Number: New
Type of Employment: Full-time appointment for a fixed term for 12 months.
Classification: Level C

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 well within the top 100 universities worldwide, measured through a number of major independent university rankings: the Academic Ranking of World Universities, Times Higher Education World University Rankings, US News Best Global Universities Rankings, QS World University Rankings and Performance Ranking of Scientific Papers for World Universities, and is indeed in the top 50 in some of these rankings. In 2013, UQ attracted more Australian Research Council funding than any other Australian university or research body.

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 Australian Teaching and Learning Council Awards for Teaching Excellence 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, and a founding member of Universitas 21, an international consortium of leading research-intensive universities. UQ is also the largest university in Queensland.

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 215,000-plus alumni. The University has more than 7,000 academic and professional staff and a $1.6 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.

Organisational Environment

One of the UQ’s eight research institutes, the Sustainable Minerals Institute (SMI) consists of some 240 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.

Information about the Institute may be accessed on the Institute’s web site at http://www.uq.edu.au/smi.

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, 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 at - http://www.uq.edu.au/current-staff/working-at-uq
DUTY STATEMENT

Primary Purpose of Position

This role will act as a senior researcher within the JKMRC, developing strategy, coordinating, managing and developing high quality research for the JKMRC. Primary focus of the role is the development of mineral sorting, ore characterisation and classification systems based on blast hole drilling, laboratory testing, mineralogical texture and distribution of minerals, and application into practical mineral processing control.

Duties

Duties and responsibilities include, but are not limited to:

Research

- Develop an independent and/or team research program including external funding, and achieve national recognition in the research area,
- Conduct research and publish scholarly papers in high quality journals and conferences,
- Develop an ongoing program of discovery, applied and contract research in the area of Mineral Sorting, Ore characterisation and Classification,
- Develop, manage and undertake a lead role in experimental work programs at plant, pilot and laboratory scale and in the subsequent data analysis, modelling, simulation and reporting;
- Lead applied and on-site research and development work;
- Contribute as a chief investigator to collaborations which yield new insights and opportunities.
- Develop relationships with industry and other research institutes and academic institutes to form research partnerships,
- Manage research projects to deliver the research outcomes on time and within budget to the satisfaction of sponsors;

Teaching and Learning

- Provide effective supervision of research higher degree students acting as principal supervisor and mentor.
- As a ‘Research focussed’ position there is no formal requirement for undergraduate teaching. However it is encouraged that you actively seek teaching opportunities.
- Participate in events to attract postgraduate students to the Institute,
- Provide leadership within the Centre in research training and supervision,

Industry Liaison

- Represent the University in industry or funding body forums,
• Develop and deliver original presentations to Industry,
• Prepare high quality research reports and presentations for sponsors, and ensure a high standard of reporting by all staff and students in the group.
• Produce and deliver educational material for Industry,
• Develop and maintain a relevant industry network.

**Service and Engagement**

• Perform a range of administrative functions in the Institute,
• Contribute to the processes that enable the academic team to manage the work of the Institute, including participation in Centre decision-making and serving on Institute committees,
• Perform a range of internal duties and provide contribution to activities relevant to the Centre and Institute and the external community – including industry.
• Foster the Institute’s 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:

• 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 Principal Research Fellow.

**SELECTION CRITERIA**

**Qualifications**

*Essential*

• PhD in the area of mineral processing.

**Knowledge and Skills**

*Essential*
• Demonstrated expert knowledge in the area of Mineral sorting, Ore characterisation and Classification,
• A comprehensive knowledge of the whole mine to concentrator value chain from exploration to metal production,
• Ability to conceptualise, develop and critically review new research initiatives – a clear grasp of the scientific method and ability to implement scientific rigour while implementing research projects
• Extensive knowledge in various sensors used in mineral sorting,
• Knowledge of process control systems and theory
• Mathematical modelling and coding in Matlab,
• Ability to work independently and collaboratively with colleagues,
• Ability to mentor less experienced Institute staff and students
• Track record of supervision of Research Higher Degree students to successful completion.

Desirable

• Ability to build and maintain positive relationships with a wide range of stakeholders including national and international industry liaisons and professional contacts,
• Published research outputs in relevant research fields in peer-reviewed journals and international conferences.

Experience

Essential

• 5-10 years of experience in applied research in mineral processing, this must include mineral sorting, ore characterisation and classification,
• Experience and demonstrated ability in leading research projects,
• Demonstrated ability to design, modify and improve various equipment through simulation and building prototypes,
• Demonstrated ability to design and conduct experiments in the laboratory and at pilot scale,
• Experience in analysing large sets of data,
• Have conducted high quality laboratory testing in a mineral processing laboratory
• Experience in supervision of HDR students,
• Demonstrated experience in conducting research from the initial idea, formulate the experiment plan, design the experiment equipment, sue the equipment to conduct laboratory and pilot scale testing, then take the design and test outcomes to apply to pilot- or full-scale equipment design and on-site application,
• Experience in developing strategic research initiatives in industry or in academia.

Desirable

• Significant contribution to research, including successful external grant applications,
• High quality laboratory testing in a mineral processing laboratory.

Personal Qualities

• Innovative, with a strong desire to conduct applied research underpinned by sound fundamental understanding;
• Self-driven, with a sense of ownership and vision;
• Enthusiastic about sharing knowledge and mentoring
• Ability to lead and motivate a group of high calibre research staff and postgraduate students;
• Ability to work harmoniously within a team, while maintaining a high individual profile;
• Good inter-personal and communication skills;
• Good organisational abilities.

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 is committed to equity, diversity and inclusion.

Employment opportunities are not limited by race, ethnicity, religion, disability, age, sexuality, gender or other protected attributes. Applications are encouraged from Aboriginal and Torres Strait Islander peoples. For further information please contact our indigenous Employment Coordinator at: atsi_recruitment@uq.edu.au