POSITION DESCRIPTION

Position Title: Postdoctoral Research Fellow / Research Fellow in Pyrometallurgy Innovation Centre
Organisation Unit: School of Chemical Engineering
Position Number: NEW
Type of Employment: Full-Time, Fixed Term for 1 to 3 years (with possible extension)
Classification: Research Academic Level A or B (depending on qualification)

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 (45), the US News Best Global Universities Rankings (52), QS World University Rankings (51), 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 secured a greater share of Australian Research Council grants in 2016 ($24.5 million) than any other university nationally.

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 230,000-plus alumni. The University has about 7,000 academic and professional staff and a $1.7 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 will have further success in this area as an important strategic aim going forward.

Organisational Environment

The School of Chemical Engineering is an international leader in the chemical engineering field and has an excellent international reputation, which has been built over four decades at the University.

With 35 academic staff, including 20 professors, the School provides quality programs and leadership in chemical engineering education, research and development, and expert consulting to support the process industries. The School conducts undergraduate teaching in the disciplines of chemical, biological, environmental and metallurgical engineering and teaches into postgraduate programs in growing fields including integrated water management and energy studies. The School’s project centered curriculum was recently chosen in a RAE & MIT study as one of six global exemplars in leading engineering education. UQ Chemical Engineering was ranked in the top 16 worldwide in the 2012 QS subject rankings for chemical engineering and was the top ranking school in Australia. It was also given the highest score awarded for chemical engineering in Australia in the recent ERA study.

Information about the Faculty and the School may be accessed on the Faculty’s web site at http://www.uq.edu.au/chemeng

The Pyrometallurgy Innovation Centre is in the School of Chemical Engineering, within the Faculty of Engineering, Architecture and Information Technology (EAIT) and has an international reputation for the quality and innovation of its research. The principal focus of the activities of the Laboratory is in the area of high temperature processing of minerals, metals and materials. The Centre provides research to industry worldwide in the areas of non-ferrous and ferrous metal smelting and refining, and coal utilisation.

Pyrometallurgy Innovation Centre has external funding commitments for recurrent research projects from competitive ARC Linkage grants, and directly from industry.

The aims of the Centre are

- To provide a focus for research into the high temperature processing of minerals.
- To raise the national and international profile of these research activities.
- To provide an attractive, productive, research environment producing high quality outputs, and
- To further strengthen the financial stability, and long-term viability, of the research and education in this area at the University of Queensland.
Details of the current research and other activities undertaken by The Centre can be found on the website [https://pyrosearch.chemeng.uq.edu.au/](https://pyrosearch.chemeng.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](http://www.uq.edu.au/current-staff/working-at-uq)

The University of Queensland [Enterprise Agreement](https://www.uq.edu.au/about-uq/enterprise-agreement) outlines the position classification standards for Levels A to E.

**DUTY STATEMENT**

**Primary Purpose of Position**

The purpose of the current appointment is to undertake high temperature experimental studies of metallurgical systems. There is an opportunity to undertake fundamental and applied research with a dynamic team at the cutting edge of modern primary and secondary/recycling pyrometallurgy. The Centre works collaboratively with leading international resources companies.

**Duties**

Duties and responsibilities include, but are not limited to:

**Research**

In close collaboration with the team:

- Design and conduct experimental research on high temperature metallurgical systems including complex phase equilibria and heterogeneous kinetics;
- Apply and further develop microanalysis methods for slags, matte, metals and other phases occurring in high temperature pyrometallurgy systems
- Organise logistical aspects of the projects;
- Prepare reports as required by the funding entities, meeting deadlines agreed with the team;
- Report research at major conferences and publish high impact papers in top journals.
- Facilitate development of new research projects
- Other duties assigned by the Chief Investigators

**Teaching and Learning**

- Active involvement in supervision of research students at undergraduate and postgraduate levels
- Effective management and contribution to the development of the undergraduate and postgraduate programs
- Training of research staff
- Delivery of professional development courses
**Service and Engagement**

- Perform a range of administrative functions in the laboratory and/or research group as needed.
- Foster relations with industry, government departments, professional bodies and the wider community.
- Any other duties as reasonably directed by your supervisor.

**Other**

- Supervise research staff
- Assist in the development of new research projects with industry

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 Prof Evgueni Jak ([e.jak@uq.edu.au](mailto:e.jak@uq.edu.au)), School of Chemical Engineering.

**SELECTION CRITERIA**

**Essential**

- PhD in Metallurgical Engineering or related field of Science or Engineering (including but not limited to Materials, Geology, Ceramics, Physics, Inorganic Chemistry).
- Demonstrated knowledge in chemical thermodynamics, high temperature phase equilibrium and high temperature heterogeneous kinetics.
- Demonstrated skills in the development, independent design, planning, technical management and successful execution of research programs.
- Excellent written and spoken English
- Experience in writing reports and papers.
- Ability to work collaboratively with colleagues
- High level communication, inter-personal and communication skills.

**Desirable**

- Knowledge of extractive metallurgy and pyrometallurgical processes in particular.
- Demonstrated skills in high temperature experiments
- Detailed knowledge or at least practical skills in electron probe X-Ray microanalysis (EPMA), Scanning Electron Microscopy (SEM), Energy Dispersive Analysis (EDX), Laser Ablation ICPMS (LAICPMS).
- Experience of working in or with the minerals/metallurgical industry
- Experience in development/teaching of undergraduate programs.

**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](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.