POSITION DESCRIPTION

Position Title: Postdoctoral Research Fellow  
Organisation Unit: School of Chemical Engineering  
Position Number: NEW  
Type of Employment: Full-Time, Fixed-Term for 2 years  
Classification: Research Academic Level A/B

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://uniqest.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 17 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 25 worldwide in the 2016 QS subject rankings for chemical engineering and was the top ranking school in Australia. It was given the highest score awarded for chemical engineering in Australia in the most recent ERA study.

Information about the School may be accessed at http://chemeng.uq.edu.au; about the Faculty of Engineering, Architecture and Information Technology (EAIT) at www.eait.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

A Postdoctoral Research Fellow is required for 2 years to provide research support to the Dow Centre Team as directed by the Director and Senior Research Fellow.

The successful candidate will be part of a multi-disciplinary team from academia and industry, including engineers, industrial managers, mathematicians, environmental scientists and economists.

Duties

Duties and responsibilities include, but are not limited to:

Research

- Research supply chains and construct advanced models for deployment of low/no carbon:
- Electricity generation
- Transport options
- Industrial manufacturing
- Agriculture

- Investigate tools / methods for integrating individual supply chains and optimising economy-wide solutions for decarbonisation
- Attempt to optimise models to produce a timeframe for a global transition to a low/no carbon economy as directed by the Centre Director or Senior Research Fellow.
- Provide research support as directed by the Centre Director or Senior Research Fellow.
- Identify, investigate and propose new initiatives for the Dow Centre to pursue
- Supervision or support for students and staff, as required.

**Administration**

- Work with Centre Director and Centre Manager in day-to-day management of the projects and reporting requirements
- Contribute, as required, to the processes that enable staff to manage research projects and meet project targets
- 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 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 Dr Simon Smart, School of Chemical Engineering.
SELECTION CRITERIA

Qualifications

Essential
A PhD, in the fields of engineering (chemical, mechanical or systems preferred), applied mathematics, applied economics (computable general equilibrium (CGE))

Knowledge and Skills

Essential
• Demonstrated knowledge and skills in modelling integrated engineering and economic systems (eg CGE models) and computer programming.
• Ability to work in a multi-disciplinary team.
• Sound knowledge of standard software packages, including MS Office and programming languages (eg python and matlab).

Desirable
• Knowledge of advanced mathematics, CGE modelling, numerical methods and optimisation.
• Knowledge of energy conversion or related sciences.
• Skills in the quantitative analysis of research results.

Experience

Essential
• Modelling integrated and/or complex systems

Desirable
• Experience with CGE models is highly desirable
• Demonstrated experience of working in a multidisciplinary team environment.

Personal Qualities

Essential
• High level of scientific curiosity (asks questions) and out-of-the-box thinking
• Ability to work collaboratively with colleagues in a multidisciplinary environment
• High-level communication, inter-personal and presentation skills
• A high level of drive and enthusiasm

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.