POSITION DESCRIPTION

Position Title: Postdoctoral Research Fellow in Gradient Coils
Organisation Unit: School of Information Technology & Electrical Engineering
Position Number: 3036732
Type of Employment: Full-Time, Fixed-Term
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 (60). 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.

School of Information Technology & Electrical Engineering

It is an exciting time to get involved with the School of Information Technology and Electrical Engineering, located on UQ’s St. Lucia campus. The School is ramping up its investment in teaching, research and engagement to create an inspiring, diverse and flexible workplace. The direction is backed by a bold, new strategic vision to ensure the School is at the forefront of meaningful research outcomes and pedagogy across its core impact areas of health, data, automation and energy. Boasting strong student enrolments in professionally accredited programs, combined with world-class researchers and facilities, the School is focused on strengthening its position in the global computer science and engineering communities. By attracting the brightest minds and fostering a truly innovative and collaborative work environment, the School will develop global solutions to contemporary issues and mentor the leaders of tomorrow.

Details of the School may be accessed on its website at http://www.itee.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

The University of Queensland Enterprise Agreement outlines the position classification standards for Levels A to E.

The School recognises and values equity and diversity, and encourages applications from any individual who meets the requirements of this position irrespective of gender, sexuality, race, ethnicity, religion, disability, age or other protected attributes. The School strives to provide an inclusive working environment, and along with the University is committed to supporting staff with family and caring responsibilities by providing policies, programs and initiatives to help balance work and family responsibilities.

DUTY STATEMENT

Primary Purpose of Position

The appointee will be responsible for the design and analysis of gradient coils used in Magnetic Resonance Imaging (MRI). The successful applicant will collaborate with Professor Stuart Crozier and Professor Feng Liu, participating in, and initiating research projects. In addition to executing the proposed research plans, they will contribute to reporting project findings contributing to the supervision of undergraduate and postgraduate students.

Duties

Duties and responsibilities include, but are not limited to:
**Research**

In close collaboration with, and under the direction of Professors Crozier and Liu and the team:

- Design novel gradient coils for MRI applications.
- Develop novel methods and algorithms for gradient coil design and analysis.
- Model electromagnetic interactions between gradient coils and other system components in MRI scanners.
- Conduct research projects, including management of data collection and data analysis.
- Collaborative writing of scholarly papers for publishing in high-quality refereed journals, and assistance with preparation of external grant applications and initiation of new projects related to innovation in MRI engineering.
- Report to team leader and project stakeholders on a regular basis, and effectively summarise findings and progress.
- Collaborate with project research partners in industry and academia, both international and nationally based.
- Participate in the supervision and teaching of post-graduate students.

**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 Professor Stuart Crozier in the School of Information Technology and Electrical Engineering, The University of Queensland.

**SELECTION CRITERIA**

**Essential**

- A PhD (or equivalent accreditation and standing) in electrical engineering or biomedical engineering.
- Demonstrated expert knowledge and experience in the area of MRI gradient coil research.
• Experience in numerical simulation of MRI gradient electromagnetic field problems.
• Have the ability to take accurate and reliable records of work carried out.
• Demonstrated expertise in academic research skills, including a track record of publication of research findings in peer reviewed journals and conferences.
• Demonstrated high level of interpersonal skills, including the ability to consult and negotiate with other stakeholders to ensure the project objectives are met.
• Demonstrated high level of written and oral communication skills including the ability to write technical reports.
• Ability to work effectively both independently and as a member of a team.

Desirable
• Programming ability in Matlab and C.
• Experience in student supervision.

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.

Applications are particularly encouraged from Aboriginal and Torres Strait Islander peoples. For further information please contact our Australian Indigenous Employment Coordinator at: atsi_recruitment@uq.edu.au
Applications are also encouraged from women.
This role is a full-time position; however flexible working arrangements may be negotiated.