POSITION DESCRIPTION

Position Title: Lecturer / Senior Lecturer in Experimental Condensed Matter Physics

Organisation Unit: School of Mathematics and Physics

Position Number: TBA

Type of Employment: Full Time Continuing

Classification: Academic Level B or 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 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 $11 billion+ (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

UQ Physics is located in the School of Mathematics and Physics in the Faculty of Science. The Discipline is internationally recognised for its research excellence, and hosts a number of world-class research centres. Details of the research interests of academic staff may be accessed on the School’s web site at http://www.smp.uq.edu.au/

Information about the Faculty of Science may be found at http://www.science.uq.edu.au/.

Physics is one of the University of Queensland’s top 30 research strengths, and the School of Mathematics and Physics is proud to support a major research effort in condensed matter physics. In the recent Excellence in Research for Australia 2015 assessment, the University of Queensland was rated “well-above international standard” in 02 Physical Sciences, as well as in the sub-categories 0204 Condensed Matter Physics and 0206 Quantum Physics. We also have research strengths in astrophysics, and biophotonics and laser science.

The School of Mathematics and Physics has a total of 110 full-time academic staff members, and 21 professional staff who provide professional, technical and administrative support. The School teaches a comprehensive undergraduate program in physics, as well as performing service teaching for students of engineering and the life sciences. There is also an extensive postgraduate research program, which currently has more than one hundred Research Higher Degree students enrolled.

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.

DUTY STATEMENT

Primary Purpose of Position

The University of Queensland is committed to providing research leadership towards a sustainable future for society. The School of Mathematics and Physics is seeking to appoint an experimental condensed matter physicist with research interests relating to sustainable technologies to further enhance the University’s international profile in this area.

The appointee will have a record of performing high quality research, and will have a vision for developing and leading their own research group. It is desirable, though not essential,
that their planned research program incorporate interdisciplinary research, and/or industry collaboration.

The School is particularly interested in candidates working in the area of organic semiconductors/optoelectronics, or related areas of soft-condensed matter physics. However, applicants with an outstanding track record in any area of experimental condensed matter physics with synergies with other research programs within the School, or elsewhere in the University of Queensland, are encouraged to apply.

An exciting opportunity exists for the right candidate to join the UQ Centre for Organic Photonics & Electronics (COPE), which is a joint venture between the School of Mathematics & Physics and the School of Chemistry & Molecular Biosciences led by Professor Paul Burn FAA FRSC. The Centre has more than $10m of world-class infrastructure available, including a materials characterisation facility, a transport physics laboratory, spectroscopy suite, a class 1000 clean room containing device fabrication and testing facilities, and a chemistry facility (19 fume hoods plus analytical capability) for synthesis of organic semiconductor materials. COPE is currently investing more than $1m in state-of-the-art deposition and testing facilities.

The University of Queensland has a broad range of nanofabrication, characterisation and imaging infrastructure that may be of interest to candidates. This includes the:
- Queensland node of the Australian Nano Fabrication Facility (link)
- UQ Centre for Microscopy and Microanalysis (link)
- Nanolith@UQ: State of the art electron beam lithography
- UQ Centre for Advanced Imaging (link)
- UQ Precision Sensing Initiative (link)

Further details about UQ’s research infrastructure is available on request.

Cognate research centres that may be of interest to potential candidates include:
- ARC Centre of Excellence for Engineered Quantum Systems (link)
- ARC Centre of Excellence in Future Low-Energy Electronics Technologies (link)
- ARC Centre of Excellence for Quantum Computation & Communication Technology (link)
- Australian Institute for Bioengineering and Nanotechnology (link)

Other condensed matter physics research at the University of Queensland includes: strongly correlated electron systems, superconductivity, frustrated and quantum magnetism, superconducting quantum devices, thin film superfluidity, and ultracold quantum gases.

The successful candidate will participate in undergraduate and postgraduate teaching, postgraduate supervision, as well as perform administrative and other activities associated with the School and the discipline of Physics.

Duties

Duties and responsibilities include, but are not limited to:

**Teaching and Learning**
- Teach undergraduate and postgraduate subjects in physics and related programs as required
- Initiate and develop course material
- Coordinate courses
- Teach and supervise at honours and postgraduate level
• Provide leadership in developing programs in condensed matter physics
• Where appropriate, teach subjects in flexible delivery mode
• Consult with students
• Provide support for other positions during absences.

Research
• Lead an experimental condensed matter physics research program, including attracting and leading internal, national and international collaborations
• Secure research funding by applying for national and international competitive grant schemes
• Conduct research and publish scholarly papers
• Work with colleagues and postgraduates in the development of joint research projects.

Service and Engagement
• Perform a range of administrative functions in the School
• Contribute to the processes that enable the academic team to manage the work of the School, including participate in School decision-making and serve on School committees
• Foster the School’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 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 Head, School of Mathematics and Physics.
SELECTION CRITERIA

**Essential**

- A PhD or equivalent in condensed matter physics, or a related area.
- Demonstrated ability or potential for coordinating and lecturing courses at undergraduate and postgraduate levels, including to non-physics majors. A level C appointment will have a record of successfully coordinating and delivering quality undergraduate courses.
- A strong publication record relative to opportunity, and the capacity to develop competitive external grant applications. A level C appointment should have a record of obtaining and successfully managing significant external research funds as a named chief investigator.
- Demonstrated ability or potential to mentor Research Higher Degree students. A level C appointment will have supervised Research Higher Degree students with demonstrated outcomes.
- Demonstrated ability or potential to establish effective relationships and to represent and promote the discipline of physics at a university and wider community level, including industry, government and professional bodies.

**Desirable**

- Capacity to develop successful collaborative research projects with other academic disciplines and end-users, particularly related to sustainability.

Applicants should include a statement addressing how they meet each of the selection criteria with their application.

**Seminar and lecture**

Applicants invited for interview will be asked to present a research seminar in conjunction with the selection interview process, as well as deliver a mock lecture at an undergraduate level.

**Research statement**

The application should include an outline of the research program you plan to implement at the University of Queensland that is accessible to non-specialists.

**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 particularly encouraged from women. This role is a full-time position; however, flexible working arrangements may be arranged. Accessibility requirements and/or adjustments can be directed to the contact person listed in the job advertisement.