POSITION DESCRIPTION

Job Title: Postdoctoral Research Fellow – Organic Optoelectronic materials synthesis

Organisation Unit: Centre for Organic Photonics and Electronics (COPE)

Position Number: 3021878

Type of Employment: Fixed term, full-time for 2.5 years

Classification: Academic Research Level A

BACKGROUND

Organisational Environment

The Federal Government’s 2010 Excellence in Research for Australia survey confirmed The University of Queensland as one of the nation’s top two universities, measured on a combination of research quality and breadth. ERA reported that research at UQ is above world standard in more broad fields than at any other Australian university: this reflects UQ’s leading global role in many areas of discovery. More researchers at UQ are working in research fields that ERA has assessed above world standard than at any other Australian university. UQ’s outstanding critical mass offers researchers significant interdisciplinary capability.

UQ integrates its research strengths with excellent teaching and learning and has won more national teaching awards than any other Australian university. The Times Higher Education-QS table ranks UQ in the top 100 universities globally, and the Shanghai Jiao Tong University World Rankings names UQ as a top 20 Asia-Pacific institution. 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’s 44,000-strong student community includes 10,000 postgraduate scholars and almost 10,000 international students from 134 countries. The University has 6300 academic and professional staff and a $1.4 billion annual operating budget. Its major campuses are at St Lucia, Ipswich, Gatton and Herston, in addition to teaching and research sites around Queensland and Brisbane city. The University has six faculties and eight institutes. The institutes — funded by government and industry grants, philanthropy and commercialisation activities — have built scale and focus in research areas that UQ regards as strategically important.

The Centre for Organic Photonics & Electronics (COPE) draws together expertise from Chemistry and Physics in a combined facility (www.physics.uq.edu.au/cope). COPE has more than 40 senior research staff, postdoctoral fellows and research students and is housed in newly refurbished laboratories on the 9th Floor of the Chemistry Building that include state-of-the-art synthesis and materials characterisation facilities; a Class 1000 clean room incorporating gloveboxes with integral evaporators for device fabrication; and prototype measurement capability. The laboratory is located on the St. Lucia campus, one of the most spacious and attractive university campuses in Australia.
The Centre has extensive experimental and theoretical research programs in optoelectronic organic materials for organic photovoltaics, organic light emitting diodes, organic field effect transistors and circuit elements, organic chemisensors and unconventional superconductors. The Centre plans to expand the organic optoelectronic materials research program to encompass active channel field effect transistor devices through a newly awarded Australian Research Council Discovery Program grant.

The laboratory is located on the St. Lucia campus, one of the most spacious and attractive university campuses in Australia.

Information for Prospective Staff

Information can be found at https://www.uq.edu.au/uqjobs.

Schedule 10 of The University of Queensland Enterprise Agreement 2010 – 2013 outlines the position classification standards for Levels A to E.

DUTY STATEMENT

Primary Purpose of Position

The main area of research will be the design and synthesis of organic materials for use in optoelectronics devices. In this context organic includes both all-organic and/or organometallic materials. In addition, the materials classes range from small molecules to dendrimers and polymers.

Duties

Duties and responsibilities include, but are not limited to:

- Conduct research in the area agreed with the supervisor and publish scholarly papers.
- Work with colleagues and postgraduates in the development and carrying out of joint research projects.
- Publish scholarly papers.
- Present research findings at seminars and conferences.

Other

- Comply with the University’s Code of Conduct (see the University’s web site at http://www.uq.edu.au/hupp/?page=24987)
- Adopt sustainable practices in all work activities and comply with associated legislation and related sustainability responsibilities and procedures developed by the University (see the University’s web site at http://www.uq.edu.au/sustainability/responsibilities

Occupational Health and Safety

- Comply with requirements of Queensland occupational health and safety (OH&S) legislation and related OH&S responsibilities and procedures developed by the University or School. (see the University’s web site at http://www.uq.edu.au/ohs/index.html?page=133956)

Reporting Relationships

The position reports to Professor Paul Burn, Professor Paul Meredith and Dr Ebinazar Namdas.
SELECTION CRITERIA

Qualifications

Essential
- Hold a PhD in a relevant area of Chemistry (organic, dendrimer, polymer).
- Experience of organic optoelectronic materials synthesis and characterisation.
- Demonstrate a sound knowledge of organic devices and the factors that are important in designing organic materials for these applications.

Knowledge and Skills

Essential
- Have recent experience of carrying out synthesis.
- Have experience in characterisation of organic compounds and materials.
- Be expected to be able to demonstrate competence/success in any of these areas, eg as judged by publications (or papers in press) in peer reviewed journals.
- Be able to plan and execute synthetic schemes successfully and safely with minimal supervision.
- Have the ability to analyse and optimise reaction processes, the ability and experience independently to select, and the skills to execute successfully, appropriate purification techniques, particularly chromatographic methods for isolating analytically pure compounds on a range of reaction scales.
- Have the ability to take accurate and reliable records of work carried out.
- Have the ability to carry out, interpret and properly record the results of modern spectroscopic techniques, particularly NMR.
- Have a general broad working knowledge of modern organic synthesis, including understanding of reaction mechanisms, the ability to convey this understanding, and the awareness of current important trends and developments reported in the recent “organic optoelectronic materials” literature. Particular evidence will be sought of deeper understanding of the applicant’s previous fields of research and evidence of independent intellectual and practical contributions to previous research projects - as evidence that such attributes can be brought to bear on the present project.

Desirable
- Familiarity with online database searching and Chemical Abstracts for use in the selection and planning of synthetic routes.
- Experience of electrochemical, DSC, TGA and GPC analyses.
- The ability to work supportively in a laboratory environment with junior co-workers.
- The ability to present work to other scientists in the field in a clear and concise manner.
- Experience in the synthesis and processing of conjugated materials.

Personal Qualities

Essential
- Ability to work collaboratively with colleagues.
- High level of communication and inter-personal skills.

The University of Queensland is an equal opportunity employer.

Smoking is prohibited in all University buildings.