



**Australian
National
University**

Position Description

College/Division:	ANU College of Science (COS)
Faculty/School/Centre:	Research School of Physics and Engineering (RSPE)
Department/Unit:	Department of Quantum Science (DQS)
Position Title:	Postdoctoral Fellow/Research Fellow
Classification:	Academic Level A or Academic Level B
Position No:	
Responsible to:	Node Director, Department of Quantum Science
Number of positions that report to this role:	
Delegation(s) Assigned:	

PURPOSE STATEMENT:

The Australian Research Centre of Excellence for Quantum Computation & Communication Technology (CQC2T) is Australia's flagship effort to develop the science and technology of a global quantum computing information network, encompassing ultra-fast quantum computation, absolutely secure quantum communication and distributed quantum information processing. The Postdoctoral/Research Fellow will join a team of talented researchers and PhD students to work on experiments in the field of Quantum Optics.

KEY ACCOUNTABILITY AREAS:

Position Dimension & Relationships:

The Postdoctoral Fellow will report to the Node Director, Department of Quantum Science and is expected to undertake research activities associate with the Centre's research initiative and to carry out quantum information and quantum communication research activities.

Role Statement (Academic Level A):

Under the broad direction of the Node Director, Department of Quantum Science, the Postdoctoral Fellow will:

1. Undertake independent research in the area of Quantum Optics with a view to publishing original and innovative results in refereed journals, present research at academic seminars and at national and international conferences, and collaborate with other researchers at a national level. This includes working as part of a team on an externally funded project subject to deadlines
2. Collaborate with senior staff to actively seek and secure external funding, assist to prepare and submit research proposals to external funding bodies as appropriate
3. Subject to the requirements of the funding source and where an opportunity exists, the occupant may be encouraged/asked to contribute to the teaching activities of the School at the undergraduate and graduate levels. This includes, but is not limited to, the preparation and delivery of lectures and tutorials, the preparation of online material, marking and assessment, consultations with students or acting as subject coordinators
4. Supervise students working on individual or group projects at undergraduate, honours, graduate-coursework levels. Assist with supervision of research students
5. Assist to supervise research support staff in your research area
6. Actively contribute to all aspects of the operation of the School
7. Assist in outreach activities including to prospective students, research institutes, industry, government, the media and the general public
8. Maintain high academic standards in all education, research and administrative endeavours
9. Comply with all ANU policies and procedures, and in particular those relating to work health and safety and equal opportunity
10. Undertake other duties as required, consistent with the classification of the position.

Skill Base

A **Level A Academic** will normally have completed four years of tertiary study in the relevant discipline and/or have equivalent qualifications and/or research experience.

In many cases a position at this level will require an honours degree or higher qualifications or equivalent research experience.

Research experience may have contributed to or resulted in publications, conference papers, reports or professional or technical contributions that give evidence of research potential.

Role Statement (Academic Level B):

Under the broad direction of the Node Director, Department of Quantum Science, the Research Fellow will:

1. Undertake independent research in the area of Quantum Optics with a view to publishing original and innovative results in refereed journals, present research at academic seminars and at national and international conferences, and collaborate with other researchers at a national level and/or international level. This includes working as part of a team on an externally funded project subject to deadlines and being primarily responsible for project delivery in some areas
2. Actively seek and secure external funding including the preparation and submission of research proposals to external funding bodies.
3. Subject to the requirements of the funding source and where an opportunity exists, the occupant may be encouraged/asked to contribute to the teaching activities of the School at the undergraduate and graduate levels. This includes, but is not limited to, the preparation and delivery of lectures and tutorials, the preparation of online material, marking and assessment, consultations with students or acting as subject coordinators and the initiation and development of course/subject material.
4. Supervise less senior academic staff, research support staff and students working on individual or group projects at undergraduate, honours, graduate-coursework levels. Assist with supervision of research students
5. Actively contribute to all aspects of the operation of the School
6. Assist in outreach activities including to prospective students, research institutes, industry, government, the media and the general public
7. Maintain high academic standards in all education, research and administrative endeavours
8. Comply with all ANU policies and procedures, and in particular those relating to work health and safety and equal opportunity
9. Undertake other duties as required, consistent with the classification of the position.

Skill Base

A **Level B Academic** will normally have completed a relevant doctoral qualification or have equivalent qualifications or research experience.

In addition he/she may be expected to have had post-doctoral research experience that has resulted in publications, conference papers, reports or professional or technical contributions that give evidence of research ability.

SELECTION CRITERIA (Academic Level A):

1. A PhD (or awarding of a PhD within six months of appointment commencement) in experimental physics, or equivalent qualifications and experience in a related area, with a track record of independent research in the field of continuous variable quantum optics as evidenced by publications in peer-reviewed journals and presentations at conferences
2. Evidence of the ability to articulate and prosecute innovative research in the field of quantum key distribution and demonstrated experience in experiments in a quantum optics laboratory.
3. Advanced understanding of quantum optical systems and space based systems as well as the requirements for space qualification.
4. An ability and commitment to contribute to bids for competitive external funding to support individual and collaborate research activities
5. Ability and willingness to teach at all levels within the scope of the project
6. The ability to assist in the supervision of students working on research projects, including mentoring and providing research guidance
7. The ability to work as part of a team and to deadlines
8. Excellent oral and written English language skills and a demonstrated ability to communicate and interact effectively with a variety of staff and students in a cross-disciplinary environment and to foster respectful and productive working relationships with staff, students and colleagues at all levels
9. A demonstrated understanding of equal opportunity principles and policies and a commitment to their application in a university context.

SELECTION CRITERIA (Academic Level B):

1. A PhD in experimental physics or related area, with a track record of independent research in the field of continuous variable quantum optics as evidenced by publications in peer-reviewed journals and presentations at conferences, a record of developing and maintaining collaborations and by other measures such as awards, invitations to give talks at leading conferences etc.
2. Demonstrated ability to articulate and prosecute innovative research in the field of quantum key distribution and demonstrated experience in experiments in a quantum optics laboratory.
3. Significant experience that is relevant to quantum optical systems and space based systems as well as the requirements for space qualification with the ability to articulate and prosecute innovative research in this field.
4. An ability and commitment to win bids for competitive external funding to support individual and collaborate research activities
5. Ability and willingness to teach at all levels within the scope of the project
6. The ability to supervise and graduate high quality PhD/Masters research students
7. The ability to work as part of a team, meeting deadlines and being primarily responsible for delivery of the project in some areas
8. Excellent oral and written English language skills and a demonstrated ability to communicate and interact effectively with a variety of staff and students in a cross-disciplinary environment and to foster respectful and productive working relationships with staff, students and colleagues at all levels
9. A demonstrated understanding of equal opportunity principles and policies and a commitment to their application in a university context.

Supervisor/Delegate Signature:		Date:	
Printed Name:		Uni ID:	

References:
[General Staff Classification Descriptors](#)
[Academic Minimum Standards](#)



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Pre-Employment Work Environment Report

Position Details

College/Div/Centre	COS	Dept/School/Section	RSPE/DQS
Position Title	Postdoctoral Fellow/Research Fellow	Classification	Academic Level A/B
Position No.		Reference No.	

In accordance with the Occupational Health and Safety Act 1991 the University has a duty of care to provide a safe workplace for all staff.

- This form must be completed by the supervisor of the advertised position and forwarded with the job requisition to Appointments and Promotions Branch, Human Resources Division. Without this form jobs cannot be advertised.
- This form is used to advise potential applicants of work environment issues prior to application.
- Once an applicant has been selected for the position consideration should be given to their inclusion on the University's Health Surveillance Program where appropriate – see http://info.anu.edu.au/hr/OHS/___Health_Surveillance_Program/index.asp
Enrolment on relevant OHS training courses should also be arranged – see http://info.anu.edu.au/hr/Training_and_Development/OHS_Training/index.asp
- 'Regular' hazards identified below must be listed as 'Essential' in the Selection Criteria - see 'Employment Medical Procedures' at http://info.anu.edu.au/Policies/_DHR/Procedures/Employment_Medical_Procedures.asp

Potential Hazards

- Please indicate whether the duties associated with appointment will result in exposure to any of the following potential hazards, either as a **regular** or **occasional** part of the duties.

TASK	regular	occasional	TASK	regular	occasional
key boarding	<input checked="" type="checkbox"/>	<input type="checkbox"/>	laboratory work	<input checked="" type="checkbox"/>	<input type="checkbox"/>
lifting, manual handling	<input type="checkbox"/>	<input type="checkbox"/>	work at heights	<input type="checkbox"/>	<input type="checkbox"/>
repetitive manual tasks	<input type="checkbox"/>	<input type="checkbox"/>	work in confined spaces	<input type="checkbox"/>	<input type="checkbox"/>
catering / food preparation	<input type="checkbox"/>	<input type="checkbox"/>	noise / vibration	<input type="checkbox"/>	<input type="checkbox"/>
fieldwork & travel	<input type="checkbox"/>	<input type="checkbox"/>	electricity	<input type="checkbox"/>	<input type="checkbox"/>
driving a vehicle	<input type="checkbox"/>	<input type="checkbox"/>			
NON-IONIZING RADIATION			IONIZING RADIATION		
solar	<input type="checkbox"/>	<input type="checkbox"/>	gamma, x-rays	<input type="checkbox"/>	<input type="checkbox"/>
ultraviolet	<input type="checkbox"/>	<input type="checkbox"/>	beta particles	<input type="checkbox"/>	<input type="checkbox"/>
infra red	<input type="checkbox"/>	<input type="checkbox"/>	nuclear particles	<input type="checkbox"/>	<input type="checkbox"/>
laser	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
radio frequency	<input type="checkbox"/>	<input type="checkbox"/>			
CHEMICALS			BIOLOGICAL MATERIALS		
hazardous substances	<input type="checkbox"/>	<input type="checkbox"/>	microbiological materials	<input type="checkbox"/>	<input type="checkbox"/>
allergens	<input type="checkbox"/>	<input type="checkbox"/>	potential biological allergens	<input type="checkbox"/>	<input type="checkbox"/>
cytotoxics	<input type="checkbox"/>	<input type="checkbox"/>	laboratory animals or insects	<input type="checkbox"/>	<input type="checkbox"/>
mutagens/teratogens/ carcinogens	<input type="checkbox"/>	<input type="checkbox"/>	clinical specimens, including blood	<input type="checkbox"/>	<input type="checkbox"/>
pesticides / herbicides	<input type="checkbox"/>	<input type="checkbox"/>	genetically-manipulated specimens	<input type="checkbox"/>	<input type="checkbox"/>
			immunisations	<input type="checkbox"/>	<input type="checkbox"/>
OTHER POTENTIAL HAZARDS (please specify):					

Supervisor's Signature:		Print Name:		Date:	
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