



POSITION DESCRIPTION

School of Physics
Faculty of Science

Research Fellow in Experimental Levitated Optomechanics

POSITION NO	0062417
CLASSIFICATION	Level A
SALARY	\$83,468 - \$113,262 p.a. (pro rata for part-time) (*PhD entry level \$105,518 p.a.)
SUPERANNUATION	Employer contribution of 17%
WORKING HOURS	Full-Time (1.0 FTE)
BASIS OF EMPLOYMENT	Fixed-Term for 2 years FLEXIBLE EMPLOYMENT The University of Melbourne is strongly committed to supporting diversity and flexibility in the workplace. Applications for part-time or other flexible working arrangements will be welcomed and will be fully considered subject to meeting the inherent requirements of the position.
OTHER BENEFITS	http://about.unimelb.edu.au/careers/working/benefits
HOW TO APPLY	Online applications are preferred. Please Go to http://about.unimelb.edu.au/careers , select the relevant option ('Current Staff' or 'Prospective Staff'), then find the position by title or number. Three or more letters of reference should be submitted via the Academic Jobs Online website: http://academicjobsonline.org/ajo/jobs/26585
CONTACT FOR ENQUIRIES ONLY	Dr Alexander Wood Email alexander.wood@unimelb.edu.au Professor Andy Martin Email martinam@unimelb.edu.au

Please do not send your application to these contacts

For information about working for the University of Melbourne, visit our website:
about.unimelb.edu.au/careers

Acknowledgement of Country

The University of Melbourne acknowledges the Traditional Owners of country throughout Australia. The University recognises the unique place held by Aboriginal and Torres Strait Islander peoples as the original custodians of country and their continued connection to the land, waterways, songlines and culture. The University respects all Aboriginal and Torres Strait Islander People and warmly embrace those students, staff, Elders and collaborators who identify as First Nations.

Position Summary

The Research Fellow will work within the Diamond and Atomic Quantum Technologies Lab in the School of Physics, and lead experiments designed to levitate nanodiamonds in high vacuum. This work will form the basis of an experiment whereby the torques generated by flipping a quantum spin are transduced into physical rotation of a diamond nanocrystal.

The Research Fellow will be a highly motivated and innovative researcher with strong experimental skills, who can work at an internationally competitive level, independently and as part of a team. Collaboration with theorists and experimentalists across the School will be encouraged. The position will be based at The University of Melbourne Parkville campus and work under the supervision of Dr Alexander Wood and Professor Andy Martin.

We encourage applicants from under-represented groups, including Aboriginal and Torres Strait Islander people. To allow us to consider performance relative to opportunity, we also invite applicants to provide a brief statement (up to 1 page) that describes circumstances that may have affected their career development or progression, including career interruptions or delays, periods of part time work, or forms of bias they have experienced.

1. Key Responsibilities

As with all positions, career achievements will be interpreted relative to opportunity, including career disruptions due to caring responsibilities, time in industry, illness etc.

The position description should be read alongside [Academic Career Benchmarks and Indicators](#). A level A academic is acquiring skills and building academic achievements (oriented towards the benchmarks).

1.1 RESEARCH AND RESEARCH TRAINING

The appointee will be expected to:

- ▶ You are expected to significantly contribute towards the research effort of the team and to develop your research expertise with an increasing degree of autonomy.

- ▶ Under the guidance and support of Senior Academic staff conduct internationally competitive research, resulting in publications in high impact journals.
- ▶ Contribute to and publish academic papers and other scholarly outputs to a high academic standard in accordance with the research expectations of the University of Melbourne.
- ▶ Actively participate in research seminars and conferences to disseminate research findings as opportunities arise.
- ▶ Contribute to the preparation, or where appropriate individual preparation of research proposal submissions to internal or external funding bodies as relevant.
- ▶ Engage with relevant professional and industry bodies and stakeholders to foster collaborative partnerships.
 - ▶ Demonstrate initiative and conduct independent research.
 - ▶ Undertake other research activities as required.

1.2 TEACHING AND LEARNING

The appointee will be expected to:

- ▶ Contribute to the co-supervision, mentoring and training of postgraduate or research higher degree students in the appointee's area of expertise.

1.3 LEADERSHIP AND SERVICE

The appointee will be expected to:

- ▶ Actively contribute to the research culture of the School of Physics and of the research group by attendance and active participation in meetings and seminars associated with the research work of the project, as well as School meetings and seminars.
- ▶ Actively participate in activities within the School and Faculty to support Diversity and Inclusion.
- ▶ Contribute to, or present research to the public to elevate public awareness of educational and scientific developments and promote critical enquiry and public debate within the community where appropriate.
- ▶ Effective demonstration and promotion of University values including diversity and inclusion and high standards of ethics and integrity.

1.4 OTHER DUTIES

The appointee will be expected to:

- ▶ Undertake administration primarily related to the activities of the role.
- ▶ Perform other tasks as requested by the supervisor or the Head of School.
- ▶ Actively participate in the University Professional Development Framework.
- ▶ Ensure an up-to-date record of University compliance courses, such as, but not limited to, Appropriate Workplace Behaviour, PDF for Staff and Supervisors, OH &S training courses.
- ▶ Occupational Health and Safety (OH&S) and Environmental Health and Safety (EH&S) responsibilities as outlined in section 4.

2. Selection Criteria

2.1 ESSENTIAL

- ▶ A PhD or equivalent in a relevant area of experimental physics (atomic, molecular and optical physics, condensed matter or quantum physics).
- ▶ Research experience in light-matter interactions, quantum physics and solid state physics
- ▶ A demonstrated aptitude for research, with a sound track record in relevant areas, commensurate with experience and opportunities.
- ▶ Demonstrated ability to prepare research reports and manuscripts for publication.
- ▶ Excellent interpersonal and both written and oral communication skills in English.
- ▶ Excellent ability to work co-operatively and positively in a multi-disciplinary research-based team environment and liaise with people from diverse backgrounds.
- ▶ Demonstrated excellent organisational skills to meet deadlines and bring projects to a timely completion.
- ▶ Demonstrated ability to develop, administer and see through to completion appropriately designed research projects with limited supervision.

2.2 DESIRABLE

- ▶ Experience with experimental laser cooling and trapping and/or ion trapping
- ▶ High-voltage, radiofrequency and microwave electronics expertise
- ▶ Strong theoretical skills and a desire to apply theoretical models to experimental results
- ▶ Experience in assisting with supervision of students undertaking undergraduate or higher degree research projects.

3. Equal Opportunity, Diversity and Inclusion

The University is an equal opportunity employer and is committed to providing a workplace free from all forms of unlawful discrimination, harassment, bullying, vilification and victimisation. The University makes decisions on employment, promotion, and reward on the basis of merit.

The University is committed to all aspects of equal opportunity, diversity and inclusion in the workplace and to providing all staff, students, contractors, honorary appointees, volunteers and visitors with a safe, respectful and rewarding environment free from all forms of unlawful discrimination, harassment, vilification and victimisation. This commitment is set out in the Advancing Melbourne strategy that addresses diversity and inclusion, equal employment opportunity, discrimination, sexual harassment, bullying and appropriate workplace behaviour. All staff are required to comply with all University policies.

The University values diversity because we recognise that the differences in our people's age, race, ethnicity, culture, gender, nationality, sexual orientation, physical ability and background bring richness to our work environment. Consequently, the People Strategy sets out the strategic aim to drive diversity and inclusion across the University to create an environment where the compounding benefits of a diverse workforce are recognised as vital in our continuous desire to strive for excellence and reach the targets of Advancing Melbourne.

4. Occupational Health and Safety (OHS)

All staff are required to take reasonable care for their own health and safety and that of other personnel who may be affected by their conduct.

OHS responsibilities applicable to positions are published at: <http://safety.unimelb.edu.au/topics/responsibilities/>

These include general staff responsibilities and those additional responsibilities that apply for Managers and Supervisors and other Personnel.

5. Other Information

5.1 ORGANISATION UNIT

www.physics.unimelb.edu.au/

The University of Melbourne's School of Physics is one of Australia's leading Physics Schools. It has achieved this status through the high quality of its research and teaching programs. The School offers a wide range of physics subjects to undergraduate and postgraduate students, and performs research in the following areas: Astrophysics, Atomic, Molecular and Optical Physics, Experimental Condensed Matter Physics, Experimental Particle Physics, Materials Science, Physical Biosciences, Theoretical Condensed Matter Physics and Theoretical Particle Physics.

The School of Physics hosts the following ARC Centre of Excellence groups:

- ▶ ARC Centre of Excellence for Dark Matter Particle Physics
- ▶ ARC Centre of Excellence for Transformative Meta-Optical Systems (TMOS)
- ▶ ARC Centre of Excellence for Gravitational Wave Discovery (OzGrav)
- ▶ ARC Centre of Excellence in All Sky Astrophysics (ASTRO 3D)
- ▶ ARC Centre of Excellence for Quantum Computation and Communication Technology (CQC²T)
- ▶ ARC Centre of Excellence for Quantum Biotechnology (QUBIC)

The School also plays a major role in the Australian Synchrotron research program, and in the development of the Stawell Underground Physics Laboratory.

Currently some 30 academics, 51 research-only staff, more than 95 postgraduate students and 72 associates supported by 23 professional staff make up the School of Physics. Skilled technical staff operate, maintain and develop complex instrumentation and equipment to support the teaching and research activities of the School. The School is located in the David Caro building on the Swanston Street boundary of the University campus. The Head of School and majority of the Professional staff are housed on the ground floor of the building to act as the first point of contact for students, staff and visitors.

5.2 FACULTY OF SCIENCE

<http://www.science.unimelb.edu.au>

Science at Melbourne is a global leader across fundamental and impactful scientific research and education. Science begins with curiosity, and we are dedicated to understanding the universe from the level of sub-atomic particles to the solar system. We

aim to be leaders who positively impact the community locally and globally, addressing major societal issues from climate change to disease. Our discoveries help build an understanding of the world around us.

Our strength is our breadth of expertise. We are the second largest faculty in the University comprising seven schools: Agriculture, Food & Ecosystem Sciences, BioSciences, Chemistry, Geography, Earth & Atmospheric Sciences, Mathematics & Statistics, Physics and Veterinary Science.

This depth of knowledge positions the faculty to better understand, explore and impact our world and humanity, within a truly comprehensive Faculty of Science.

We have more than 150 years of experience in pioneering scientific thinking and analysis, leading to outstanding teaching and learning and offer a curriculum based on highly relevant research. We aim to train students with the knowledge and intellectual flexibility to drive the industries of tomorrow and lead across all levels of society.

We offer a range of undergraduate, honours, graduate and research degrees, enrolling more than 11,500 undergraduate and 3,750 graduate students.

We are dedicated to delivering leading transformative educational outcomes, underpinned by research, and an inclusive and inspiring student experience.

Excellence comes in many forms and diversity of thought, perspective and disciplines is essential to deliver globally leading science. At the core of our success is our focus on an inclusive environment for all in our community. Our Faculty's focus on equity, inclusion and belonging is grounded in our endeavour to ensure we are best placed to advance research, teaching and serve diverse national and global communities.

As a Science community we sit across five of the University's campuses – Parkville, Dookie, Burnley, Creswick and Werribee. This reach provides us with a unique perspective that is beneficial to our teaching and research. It also means we can offer our students a greater variety of learning experiences and internships to engage with industry partners to solve real-world issues.

The Faculty is custodian of the Bio21 Molecular Science and Biotechnology Institute, Melbourne Energy Institute, Melbourne Biodiversity Institute, Oceania Institute, Office for Environmental Programs, Australian Mathematical Sciences Institute (AMSI) and the Indigenous Knowledge Institute and home to numerous Centres.

5.3 THE UNIVERSITY OF MELBOURNE

Established in 1853, the University of Melbourne is a leading international university with a tradition of excellence in teaching and research. The main campus in Parkville is recognised as the hub of Australia's premier knowledge precinct comprising eight hospitals, many leading research institutes and a wide-range of knowledge-based industries. With outstanding performance in international rankings, the University is at the forefront of higher education in the Asia-Pacific region and the world.

The University employs people of outstanding calibre and offers a unique environment where staff are valued and rewarded.

Further information about working at The University of Melbourne is available at <http://about.unimelb.edu.au/careers>.

5.4 ADVANCING MELBOURNE

The University's strategic direction is grounded in its purpose. While its expression may change, our purpose is enduring: to benefit society through the transformative impact of education and research. Together, the vision and purpose inform the focus and scale of our aspirations for the coming decade.

Advancing Melbourne reflects the University's commitment to its people, its place, and its partners. Our aspiration for 2030 is to be known as a world-leading and globally connected Australian university, with our students at the heart of everything we do.

- We will offer students a distinctive and outstanding education and experience, preparing them for success as leaders, change agents and global citizens.
- We will be recognised locally and globally for our leadership on matters of national and global importance, through outstanding research and scholarship and a commitment to collaboration.
- We will be empowered by our sense of place and connections with communities. We will take opportunities to advance both the University and the City of Melbourne in close collaboration and synergy.
- We will deliver this through building a brilliant, diverse and vibrant University community, with strong connections to those we serve.

The means for achieving these goals include the development of the University of Melbourne's academic and professional staff and the capabilities needed to support a modern, world-class university. Those means require a commitment to ongoing financial sustainability and an ambitious infrastructure program which will reshape the campus and our contribution to the communities we engage with. This strategy, and the priorities proposed, is centred around five intersecting themes: place, community, education, discovery and global.

5.5 GOVERNANCE

The Vice Chancellor is the Chief Executive Officer of the University and responsible to Council for the good management of the University.

Comprehensive information about the University of Melbourne and its governance structure is available at <http://www.unimelb.edu.au/governance>