



## POSITION DESCRIPTION

### Melbourne School of Engineering

School of Electrical, Mechanical and Infrastructure Engineering

## Research Fellow in Meta-Optical Devices

*The University plan seeks to increase the diversity of the workforce and the representation of women and Indigenous people in areas where they have been traditionally under-represented. Consistent with this, the Melbourne School of Engineering is seeking to increase the representation of Indigenous people and women in the academic workforce. Pursuant to a Special Measure under Section 12 (1) of the Equal Opportunity Act 2010 (Vic), the Melbourne School of Engineering will, therefore, **only consider applications from suitably qualified women or Indigenous candidates for this position.***

POSITION NO	0051028
CLASSIFICATION	Research Fellow (Level A)
SALARY	\$73,669 - \$99,964 p.a. (pro rata for part-time)
SUPERANNUATION	Employer contribution of 9.5%
WORKING HOURS	Full-Time  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.
BASIS OF EMPLOYMENT	Fixed-term contract for 3 years
OTHER BENEFITS	<a href="https://about.unimelb.edu.au/careers/staff-benefits">https://about.unimelb.edu.au/careers/staff-benefits</a>
HOW TO APPLY	Online applications are preferred. Go to <a href="http://about.unimelb.edu.au/careers">http://about.unimelb.edu.au/careers</a> , select the relevant option ('Current Opportunities' or 'Jobs available to current staff'), then find the position by title or number.

**CONTACT**

**FOR ENQUIRIES ONLY**

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*Please do not send your application to this contact*

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

## ***Position Summary***

You will work on the experimental realisation of new nano-optical devices and their incorporation into optical systems. You will design and simulate meta-optical devices, undertake nanofabrication to realise the devices, and develop new methods to characterise them optically and/or electrically. You will conduct independent research, leading to the preparation and publication of research outcomes in conferences and journals.

You will be located in the Department of Electrical and Electronic Engineering in the Melbourne School of Engineering and will be expected to be an active member of the Department, collaborating with other researchers in the School and in the School of Physics in the Faculty of Science. You may undertake small amounts of teaching and research supervision directly related to your area of research, as required. You will be based at The University of Melbourne Parkville campus and work under the supervision of Prof Ken Crozier and Prof Ann Roberts.

You will join a node of the ARC Centre of Excellence in Transformative Meta-Optical Systems. The ARC Centre of Excellence for Transformative Meta-Optical Systems (TMOS) brings together five Australian and 13 leading international universities as well as Australian and global companies to create entirely new optics-based technologies with enormous market potential. The Centre has received \$34.9 million funding from the Australian Research Council to operate from 2020-2027.

TMOS will develop the next-generation of miniaturised optical systems with functionalities beyond what is conceivable today. By harnessing the disruptive concept of meta-optics, the Centre will overcome complex challenges in light generation, manipulation and detection at the nanoscale. The Centre brings together a trans-disciplinary team of world-leaders in science, technology and engineering to deliver scientific innovations in optical systems for the Fourth Industrial Revolution.

As a Centre, we strongly believe that diversity improves ideas and innovation and leads to better outcomes and productivity. Diversity and fostering a culture of inclusiveness will be a key contributor to the scientific excellence of TMOS. Along with other initiatives, we will provide carer grants to support our centre members with caring / family responsibilities to participate in professional activities.

TMOS aims to develop a multidisciplinary, dynamic, interactive and collaborative culture fostering future research leaders who thrive in academic excellence and are equipped with strong transferable skills. The centre will also offer a mentoring program for early career researchers while providing opportunities to hone other skills such as outreach, industry engagement, and building international networks.

The Centre aims to understand, design, develop and demonstrate novel nanoscale devices and their integration into larger optical systems and the Research Fellow will support this goal by working on one or more Centre projects. They will work closely with their supervisors who are Chief Investigators in the Centre, other members of their research group and staff and students based at other nodes at Australian National University, RMIT University, University of Western Australia and University of Technology Sydney.

The Melbourne School of Engineering 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.

## ***1. Key Responsibilities***

### **1.1 RESEARCH AND RESEARCH TRAINING**

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.

- ▶ 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
- ▶ Facilitate collaboration between the various nodes of the Centre for Transformative Meta-Optical Systems
- ▶ Actively participate in research seminars and conferences to disseminate research findings as opportunities arise
- ▶ Contribute to the preparation, or where appropriate perform individual preparation, of research proposal submissions to internal or external funding bodies as relevant
- ▶ Undertake administrative functions and obligations primarily connected with the staff member's area of research
- ▶ Contribute to, and assist in the co-supervision and training of research students primarily at undergraduate level
- ▶ 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

- ▶ Contribute to and assist in 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

- ▶ Actively contribute to the research culture of the Melbourne School of Engineering 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.
- ▶ Effective demonstration and promotion of University values including diversity and inclusion and high standards of ethics and integrity.
- ▶ Actively contribute to School activities such as Open Day to promote student engagement.

## 1.4 OTHER DUTIES

- ▶ Undertake administration primarily relating 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 5.

## 2. Selection Criteria

## 2.1 ESSENTIAL

- ▶ A PhD (or close to completion of a PhD) in a relevant area of electrical and electronic engineering or physics, including nanoscience or optics.
- ▶ A demonstrated aptitude for research, with a sound publication record in relevant areas, commensurate with experience and opportunities
- ▶ Demonstrated ability in experimental cleanroom nanofabrication and characterisation and/or developing and using custom optical systems
- ▶ Excellent ability to work co-operatively and positively in a multi-disciplinary research-based team environment and liaise with people from diverse backgrounds
- ▶ Excellent interpersonal and both written and oral communication skills in English.
- ▶ 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
- ▶ Capacity to work with people from diverse cultural backgrounds

## 2.2 DESIRABLE

- ▶ Expertise in relevant theory and modelling
- ▶ Expertise in experimental semiconductor device physics and electronics
- ▶ Ability to supervise and mentor research students
- ▶ A national or international research profile, as evidenced by publication record, active collaborations, invitations to speak and/or service to relevant professional bodies
- ▶ The ability to manage collaborations between researchers at different locations
- ▶ The ability to attract funding through competitive grant applications, commensurate with experience and opportunities

## 2.3 OTHER JOB RELATED INFORMATION

This position requires the incumbent to hold a current and valid Working with Children Check.

## 3. *Equal Opportunity, Diversity and Inclusion*

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 University's People Strategy and policies that address diversity and inclusion, equal employment opportunity, discrimination, sexual harassment, bullying and appropriate workplace behaviour. All staff are required to comply with all University policies.

All MSE employees are required to behave in a manner that creates; supports and encourages an inclusive and safe work environment for all.

<https://diversity.eng.unimelb.edu.au/#home>

## ***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:

<https://safety.unimelb.edu.au/people/community/responsibilities-of-personnel>

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

## ***5. School of Electrical, Mechanical and Infrastructure Engineering***

<https://eng.unimelb.edu.au/about/departments/school-of-electrical-mechanical-and-infrastructure-engineering>

The School of Electrical, Mechanical and Infrastructure Engineering (EMI) undertakes teaching and research across a range of disciplines that are internationally recognised for their contribution to fundamental research. EMI has several well-established industry linkages and international partnership and is building a vibrant profile of interdisciplinary research, working with industry with an aim to contribute to society. EMI offers a comprehensive range of accredited Master of Engineering and Master of Information Technology programs taught through the Electrical, Mechanical and Infrastructure departments as well as professional Masters programs. The School has a substantial cohort of research higher degree students.

A major focus of the School is to attract and retain outstanding and internationally recognised academic staff. EMI is committed to increasing the number of female engineers and scientists on its staff.

### **DEPARTMENT OF ELECTRICAL AND ELECTRONIC ENGINEERING**

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

The Department of Electrical and Electronic Engineering is a vibrant community of internationally recognised researchers focused on addressing major challenges in Power and Energy Systems; Communication Networks; Electronic & Photonic Devices and Materials; and Systems Engineering. We have long-standing, strong partnerships with industry and government that support our researchers in conducting high impact research. The Department offers both PhD and Masters level research degrees, and our research graduates are highly sought after in academia and industry.

### **5.1 MELBOURNE SCHOOL OF ENGINEERING**

Melbourne School of Engineering (MSE) has been the leading Australian provider of engineering and IT education and research for over 150 years. We are a multidisciplinary

School organised into three key areas; Computing and Information Systems (CIS), Chemical and Biomedical Engineering (CBE) and Electrical, Mechanical and Infrastructure Engineering (EMI). MSE continues to attract top staff and students with a global reputation and has a commitment to knowledge for the betterment of society.

MSE has never been better positioned as a global leader, anchored in the dynamic Asia Pacific region, creating and curating knowledge to address some of the world's biggest challenges. Through our students and our relationships with communities, we can not only respond to society's needs but anticipate and create engineering and IT solutions for the future.

<https://eng.unimelb.edu.au/>

<https://eng.unimelb.edu.au/about/join-mse>

Our ten-year strategy, MSE 2025, is our School's commitment to bring to life the University-wide strategy Growing Esteem and reinforce the University of Melbourne's position as one of the best in the world. Investment in new infrastructure, strengthening industry engagement and growing the size and diversity of our staff and student base to drive innovation and develop the transformative technologies of the future are all fundamental principles underpinning MSE 2025.

<https://eng.unimelb.edu.au/about/mse-2025>

## 5.2 THE UNIVERSITY OF MELBOURNE

Established in 1853, the University of Melbourne is a public-spirited institution that makes distinctive contributions to society in research, learning and teaching and engagement. It's consistently ranked among the leading universities in the world, with international rankings of world universities placing it as number 1 in Australia and number 32 in the world (Times Higher Education World University Rankings 2017-2018).

The University's 10-year strategy, *Advancing Melbourne* will enable the University to contribute to advancing the state and national interest and make vital contributions to Australia's standing on the world stage. We seek to be a leading force in advancing Australia as an ambitious, forward-thinking country while increasing its reputation and influence globally. <https://about.unimelb.edu.au/strategy/advancing-melbourne>

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

## 5.3 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.

#### 5.4 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 <https://about.unimelb.edu.au/strategy/governance>