



POSITION DESCRIPTION

School of Electrical, Mechanical and Industrial Engineering
Melbourne School of Engineering

MSE is committed to creating a diverse and inclusive environment that welcomes and values all people. We recognise that diversity is essential in contributing to the success of MSE. Women, Aboriginal and Torres Strait Islanders, the LGBTIQ+ community, people living with disability and those from a culturally and linguistically diverse background, are strongly encouraged to apply. Those seeking support in submitting an application are welcome to contact the Faculty HR team at mse-hr@unimelb.edu.au

Research Fellow in Energy and Transport

POSITION NO	0051063
CLASSIFICATION	Level A Research Fellow
SALARY	\$73,669 - \$99,964 (pro rata for part-time)
SUPERANNUATION	Employer contribution of 9.5%
WORKING HOURS	Full-Time (1.0 FTE)
BASIS OF EMPLOYMENT	<p>Fixed-term for 2 years</p> <p><i>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</i></p>
OTHER BENEFITS	https://about.unimelb.edu.au/careers/staff-benefits
HOW TO APPLY	<p>Online applications are preferred. Go to http://about.unimelb.edu.au/careers, select the relevant option ('Current Opportunities' or 'Jobs available to current staff'), then find the position by title or number.</p>
CONTACT FOR ENQUIRIES ONLY	<p>Professor Michael Brear</p> <p>mjbrear@unimelb.edu.au</p> <p><i>Please do not send your application to this contact</i></p>

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

This two-year position is for a Post-Doctoral Research Fellow to undertake experimental and numerical research of advanced reciprocating engines and fuels. This work will include:

- experimental research on modern engines and fuels using an engine dynamometer and associated equipment;
- numerical analysis of engine and fuel performance, including both thermodynamic and chemical kinetic approaches;
- numerical analysis of the performance of different vehicles, powertrains and fuels.

The ideal candidate will be a recent PhD graduate with experience in experimental reciprocating engine research and engine/fuel modelling. A deep physical understanding of engine and fuel performance is required, as is the ability to communicate with colleagues and industry.

1. Key Responsibilities

1.1 CONTRIBUTION TO TEACHING AND LEARNING

- ▶ Co-supervise graduate students

1.2 RESEARCH AND ADVANCEMENT OF DISCIPLINE

- ▶ Undertake high quality research as requested by your supervisor.
- ▶ Publish and present high quality, peer reviewed articles.

1.3 ENGAGEMENT

- ▶ Effective liaison with industry partners.
- ▶ Active participation in outreach activities relating to research and scholarship.
- ▶ Involvement in professional activities, including consulting.

1.4 SERVICE AND LEADERSHIP

- ▶ Write and submit high quality research proposals and public reports.

1.5 OTHER

- ▶ Undertake other activities as requested by your supervisor.
- ▶ Undertake 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

- ▶ Experience in experimental reciprocating engine research.
- ▶ A PhD degree in Engineering or Science.
- ▶ Very strong written and oral communication skills.
- ▶ A record of quality research as evidenced by publications in leading journals and at conferences commensurate with opportunity.
- ▶ Ability to work independently.
- ▶ Excellent interpersonal skills.

2.2 DESIRABLE

- ▶ Experience in modelling reciprocating engines and fuels.
- ▶ Experience in supervision of students and/or research assistants.

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. The Melbourne Energy Institute

The Melbourne Energy Institute (MEI) of an institute of the University and undertakes inter-disciplinary research on the challenges of transitioning towards a low carbon energy system. We work with the community, industry and government on some of the world's most pressing energy challenges.

MEI's research involves close engagement with industry and government. We currently have strong partnerships with leading companies such as AusNet Services, AEMO, Ford and Mitsubishi, to name a few. We also work closely with Commonwealth and State Governments and the energy market agencies. In all cases, MEI strives to undertake high quality research that tangibly benefits our industry and government partners.

6. Other Information

6.1 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.

DEPARTMENT OF MECHANICAL ENGINEERING

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

The Department of Mechanical Engineering is one of the largest in Australia. The School provides teaching into subjects in the three-year undergraduate degrees of Science and Commerce, which can be followed by a two-year professional Master of Engineering.

The Department aims to attract and retain the highest quality staff available in order to maintain a vigorous research effort. We address the most urgent contemporary problems of our rapidly developing industrial society, with investigations into biomechanical engineering, fluid mechanics and thermal sciences.

6.2 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>

6.3 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>