

POSITION DESCRIPTION

School of Chemical and Biomedical 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 Bioprocessing (Analytical biochemistry)

POSITION NO	0051125
CLASSIFICATION	Level A Research Fellow
SALARY	\$73,669 - \$99,964 p.a. (pro rata for part-time)
SUPERANNUATION	Employer contribution of 9.5%
WORKING HOURS	Full-time (1.0 FTE)
BASIS OF EMPLOYMENT	Fixed-term contract for 2 years (potential to extend by 6 – 12 months) <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>
OTHER BENEFITS	https://about.unimelb.edu.au/careers/staff-benefits
HOW TO APPLY	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.
CONTACT FOR ENQUIRIES ONLY	Associate Professor Greg Martin Tel +61 8344 6613 Email gjmartin@unimelb.edu.au

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**

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

In this position you will play a key role in an applied research project in the field of food bioprocessing under the supervision of Associate Professor Greg Martin and Professor Sally Gras. The research aims to develop new understanding of the effect of yeast strain, cultivation conditions and biomass processing on the flavour and textural properties of yeast hydrolysates. The role is one of two Research Fellow positions in an ARC Linkage Project working with a major Australian food manufacturing company.

This position will focus on developing links between yeast composition, processing, and product flavour and texture, in particular in relation to protein and peptide profiles. You will be based primarily in the research laboratories location in the Department of Chemical Engineering at the University of Melbourne and will spend time working at the industry partner's production site in Melbourne working alongside their sensory and quality control team. The research will involve performing detailed analytical testing of yeast and product samples. You will be responsible for conducting detailed proteomic and flavour analysis of crude yeast extracts. The project will also require chromatographic isolation of peptides to enable determination of flavour characteristics of selected peptides. Your experience in proteomics will be combined with flavour analysis will be invaluable to gaining new insights into yeast extracts that will form the foundation for the next generation of products.

In this role you will work closely with the industry partner, reporting to and taking guidance from your supervisors, while being able to work independently in the laboratory. You will work with your supervisors to translate research findings to practical applications and to publish more general research outcomes in peer reviewed journals. You will carefully manage and organise your data and securely protect confidential information.

As a senior member of the research lab, you will lead the day-to-day operations of the lab, including maintaining chemical safety documentation and inductions and co-supervising undergraduate and PhD research students. You will be an active member of the Department of Chemical Engineering, collaborating and engaging with other researchers.

1. Selection Criteria

1.1 ESSENTIAL

- ▶ PhD in Biochemistry, Analytical Chemistry or an equivalent discipline.
- ▶ Extensive experience in analytical biochemistry, preferably involving food processing.
- ▶ Experience in proteomic and peptide characterisation including mass spectroscopy and chromatography.
- ▶ Demonstrated understanding of flavour chemistry and associated analytical techniques.
- ▶ High level of computer literacy and data analysis skills.

- ▶ A track record in research, with a sound publication record.
- ▶ Experience in experimental research including writing research reports and publications.
- ▶ Experience in the development and implementation of new laboratory methods and procedures.
- ▶ Demonstrated ability to manage competing priorities and excellent time management skills.
- ▶ Experience in combining information from many different analytical tools in pursuit of solving important problems in biochemical engineering.
- ▶ Ability to manage and protect confidential information and data.
- ▶ A demonstrated problem-solving ability.
- ▶ Outstanding communication skills, both oral and written.
- ▶ Very highly developed interpersonal skills.

1.2 DESIRABLE

- ▶ Experience in sensory analysis techniques.
- ▶ Background in peptide flavours.
- ▶ Refereed publications in international journals arising from their research.
- ▶ Experience in postgraduate student supervision.
- ▶ A track record in the preparation of grant applications.
- ▶ Experience as a member or leader of a research team.
- ▶ A current Australian driver's licence; or the capacity to obtain such a licence upon commencement.

2. Key Responsibilities

2.1 RESEARCH – ADVANCEMENT OF DISCIPLINE

- ▶ Laboratory preparation and extraction of yeast protein and peptide samples.
- ▶ Proteomic analysis of yeast proteins and hydrolysate peptides.
- ▶ Set-up and application of flavour chemistry analytical methods.
- ▶ Detailed analysis and synthesis of proteomic data in relation to sensory information.
- ▶ Development and testing of hypotheses relating to peptide-flavour relationships.
- ▶ Refinement of reliable biochemical and rheological measurement methods.
- ▶ Technical and scientific contribution towards pilot and factory scale sensory trials, which may require working outside of normal hours.
- ▶ Leading engagement, discussions and reporting to a range of personnel from the industry partner.
- ▶ Responsible for the safe day-to-day operation and management of the laboratory including ordering and storing chemicals.

- ▶ Maintaining safety documentation in the lab including, MSDS sheets, chemical handling and storage, routine inspections, inductions and risk assessments.
- ▶ Management and organisation of research data.
- ▶ Maintaining confidentiality of information and data.
- ▶ Contribution to the preparation of journal publications and presentations of the research results.
- ▶ Contribution to the preparation, or where appropriate individual preparation, of research proposal submissions to external funding bodies.
- ▶ Involvement in professional activities including, subject to availability of funds, attendance at conferences and seminars in the field of expertise.
- ▶ Administrative functions primarily connected with his/her area of research.

2.2 TEACHING AND LEARNING

- ▶ Supervision or co-supervision of Masters student research projects within the research area.

2.3 ENGAGEMENT

- ▶ Effective liaison with external networks to foster collaborative partnerships.
- ▶ Involvement in professional activities, including consultations and referrals.
- ▶ Occupational Health and Safety (OH&S) and Environmental Health and Safety (EH&S) responsibilities as outlined in section 4.

2.4 SERVICE AND LEADERSHIP

- ▶ Active participation in the communication and dissemination of research.
- ▶ Identification of sources of funding to support individual or collaborative projects.
- ▶ Active participation within the research group and Departmental committees as required.

2.5 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. Other Information

5.1 SCHOOL OF CHEMICAL AND BIOMEDICAL ENGINEERING

<https://eng.unimelb.edu.au/about/departments/school-of-chemical-and-biomedical-engineering>

The School of Chemical and Biomedical Engineering encompasses both the Department of Chemical Engineering and the Department of Biomedical Engineering. This fusion of engineering disciplines provides a dynamic and interdisciplinary environment that is world leading in both research and teaching.

DEPARTMENT OF CHEMICAL ENGINEERING

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

The Department of Chemical Engineering hosts several Research Centres including the Peter Cook Centre for Carbon Capture and Research, the ARC Dairy Innovation Research Hub, the Particulate Fluids Processing Centre and the ARC Centre of Excellence in Convergent Bio-Nano Science and Technology.

Our laboratories are housed across four locations including a substantially renovated main building, a second building devoted exclusively to research, two floors within the nearby Chemistry building and a presence within the Bio21 Institute. Our academics have been elected as Fellows of the Royal Society, the world's oldest scientific society, the Australian Academy of Science, and the Australian Academy of Technological Sciences and Engineering.

Strong collaborations with industry, government and community partners inform teaching and research programs with real-world requirements. Industry Engagement is a key focus area for the Department. We carry out research projects based on deep collaborations

with government and business and we also work with organisations that provide internship project opportunities for students.

We offer four Masters of Engineering degrees (Chemical, Chemical with Business, Biochemical, and Materials) with over 250 students, as well as undergraduate majors within the Bachelor of Science and Bachelor of Commerce.

5.2 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>

5.3 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>