



RESEARCH FELLOW (CHARGE TRANSPORT AND RECOMINATION DYNAMICS OF SOLUTION-PROCESSED SOLAR CELLS)

DEPARTMENT/UNIT

Materials Science and Engineering

FACULTY/DIVISION

Faculty of Engineering

CLASSIFICATION

Level A

WORK LOCATION

Clayton campus

ORGANISATIONAL CONTEXT

Everyone needs a platform to launch a satisfying career. At Monash, we give you the space and support to take your career in all kinds of exciting new directions. You'll have access to quality research, infrastructure and learning facilities, opportunities to collaborate internationally, as well as the grants you'll need to publish your work. We're a university full of energetic and enthusiastic minds, driven to challenge what's expected, expand what we know, and learn from other inspiring, empowering thinkers. Discover more at www.monash.edu.

The **Faculty of Engineering** is one of the largest in Australia, renowned worldwide for the quality and calibre of our teaching, research and graduates. We offer a comprehensive range of undergraduate, graduate, postgraduate and higher degree by research programs in a wide range of engineering disciplines. Our research activities provide a platform for establishing a thriving educational enterprise and our staff are committed to creating a dynamic learning environment. The research activities range from fundamental studies to research with a strong applications orientation. To learn more about the Faculty of Engineering, [please visit our website](#).

The **Department of Materials Science and Engineering** aims to provide the highest quality teaching and research. We have been one of the most research-active departments within Monash, with much success in obtaining external government and industrial funding. Our key research focus involves physical metallurgy, mechanical metallurgy, polymer engineering, ceramics, biomaterials and regenerative medicine, nanomaterials, corrosion, energy-related research, functional materials, mechanical properties and modelling and simulation. In terms of our teaching, the enabling aspects of materials engineering combined with the multidisciplinary nature of skills learned means our graduates are in high-demand across industry, as well as in research. To learn more about our Department and the work we do, please visit our website <http://www.monash.edu/engineering/departments/materials>.

POSITION PURPOSE

The Research Fellow (Charge Transport and Recombination Dynamics of Solution-Processed Solar Cells) is within a multidisciplinary research team, and has strong interactions with other research groups and institutions working under the ARC Centre of Excellence in Exciton Science (ACEx, <http://www.excitonscience.com/>). ACEx seeks to understand how photons interact with advanced materials in order to improve the way we harness and use light energy.

The Level A research-only position focusses on understanding charge transport and recombination dynamics in solution-processed solar cells made from perovskite and related-materials. With a key focus of ACEx being materials discovery, this role is instrumental towards understanding the operational mechanisms of solar cell devices made from new solar materials. It is expected that the candidate will be skilled in materials characterisation, solar cell device engineering and their detailed characterisation. In this role the incumbent will take a leadership role in this important area across the Centre.

Reporting Line: The position reports to Associate Professor for the Department of Materials Science and Engineering

Supervisory Responsibilities: Not applicable

Financial Delegation: Not applicable

Budget Responsibilities: Not applicable

KEY RESPONSIBILITIES

Specific duties required of a Level A research-only academic may include:

1. The conduct of research under limited supervision either as a member of a team or, where appropriate, independently and the production or contribution to the production of conference and seminar papers and publications from that research
2. Involvement in professional activities including, subject to availability of funds, attendance at conferences and seminars in the field of expertise
3. Limited administrative functions primarily connected with the area of research of the academic
4. Development of a limited amount of research-related material for teaching or other purposes with appropriate guidance from other staff
5. Occasional contributions to teaching in relation to their research project(s)
6. Experimental design and operation of advanced laboratory and technical equipment or conduct of advanced research procedures
7. Attendance at meetings associated with research or the work of the organisational unit to which the research is connected and/or at departmental, school and/or faculty meetings and/or membership of a limited number of committees
8. Advice within the field of the staff member's research to postgraduate students

KEY SELECTION CRITERIA

Education/Qualifications

1. The appointee will have:
 - A doctoral qualifications in Engineering or Science within a relevant discipline or a closely related field

Knowledge and Skills

2. Demonstrated analytical and manuscript preparation skills; including a track record of refereed research publications and presentations
3. Ability to solve complex problems by using discretion, innovation and the exercise diagnostic skills and/or expertise
4. Well-developed planning and organisational skills, with the ability to prioritise multiple tasks and set and meet deadlines
5. Excellent written communication and verbal communication skills with proven ability to produce clear, succinct reports and documents
6. A demonstrated awareness of the principles of confidentiality, privacy and information handling
7. A demonstrated capacity to work in a collegiate manner with other staff in the workplace
8. Demonstrated computer literacy and proficiency in the production of high level work using software such as Microsoft Office applications and specified University software programs, with the capability and willingness to learn new packages as appropriate
9. Demonstrated expertise in fabricating and characterising high-efficiency solution-processed photovoltaics
10. Demonstrated expertise in charge transport phenomena in optoelectronic devices, preferably solar cells

OTHER JOB RELATED INFORMATION

- Travel to other campuses of the University may be required
- There may be a requirement to work additional hours from time to time
- There may be peak periods of work during which taking of leave may be restricted

LEGAL COMPLIANCE

Ensure you are aware of and adhere to legislation and University policy relevant to the duties undertaken, including: Equal Employment Opportunity, supporting equity and fairness; Occupational Health and Safety, supporting a safe workplace; Conflict of Interest (including Conflict of Interest in Research); Paid Outside Work; Privacy; Research Conduct; and Staff/Student Relationships.