

# Position Description

*School of Chemistry/Faculty of Science  
The University of Melbourne*



## RESEARCH FELLOW GRADE 2 (SPECTROSCOPY OF ALIGNED POLYMERS)

<b>Position No:</b>	
<b>Organisation Unit:</b>	School of Chemistry
<b>Budget Division:</b>	Faculty of Science
<b>Classification:</b>	Research Fellow Grade 2, Level B
<b>Salary:</b>	\$64,602 - \$76,714 p.a
<b>Superannuation:</b>	Employer superannuation contributions of 9%
<b>Employment Type:</b>	Fixed Term – 1 year in the first instance with a possible extension to a maximum term of 3 years
<b>Other Benefits:</b>	Salary packaging and staff training and development opportunities are available
<b>Current Occupant:</b>	Vacant
<b>Advice to applicants:</b>	<ul style="list-style-type: none"><li>• Applicants must complete an 'Application Cover Sheet' found at <a href="http://www.hr.unimelb.edu.au/jobs/appcoversheet.rtf">http://www.hr.unimelb.edu.au/jobs/appcoversheet.rtf</a></li><li>• Applications must address the selection criteria, quote the position number and include the contact details of three referees.</li><li>• Applications can be forwarded to one of: <b>Email: hr-applications@unimelb.edu.au</b> <b>Fax: +61 3 8344 6080</b> <b>Mail: Vice-Principal (Human Resources), The University of Melbourne Victoria 3010</b></li></ul>
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## **1 Position Summary**

This position is for a motivated post-doctoral researcher with strong skills in the design and conduct of spectroscopic measurements. The appointee will undertake steady-state and time resolved fluorescence measurements on luminescent polymers under a variety of conditions. Advanced optical microscopy, and fluorescence polarisation techniques will also be utilised. Some skills in the synthesis of photo-luminescent polymers and the preparation of films of these materials would also be an advantage. A strong theoretical background will be an advantage for the interpretation of the data. The appointee will report to academic staff members of the School of Chemistry, and be closely involved in a collaborative project with staff members of the Department of Chemical and Biomolecular Engineering and the Department of Mathematics and Statistics. Interactions with other academic departments and international collaborators will also be necessary. The position requires a scientist with a strong experimental Ph.D. who is interested in developing their science in the exciting area of the spectroscopy and microscopy of photoluminescence polymer materials. The appointee will require good interpersonal skills and be able to liaise effectively with other academic and industry groups. A strong publication record is essential. The appointee will have an experimental background in photophysical methods particularly fluorescence spectroscopy and microscopy. Ideally the candidate may also have some additional background in the rheology of complex fluid experiments.

The School of Chemistry at the University of Melbourne incorporates expertise in the application of advanced optical microscopy techniques and ultrashort (femtosecond) pulsed lasers. The Department of Chemical and Biomolecular Engineering hosts expertise in rheo-optical measurements, and the Department of Mathematics and Statistics provides expertise in molecular dynamics, Monte Carlo and continuum modelling. The current position is to work with ultrafast lasers and micro-spectroscopy as applied to aligned macromolecular systems and apply theoretical modelling of these systems. The appointee will take responsibility for a vigorous program of experimental work in imaging aligned molecular systems.

## **2 Selection Criteria**

### **2.1 Essential**

This project incorporates a range of activities relating to the conduct of research, and/or publications arising from scholarship and research. In assessing the applicant's contribution to research, the following will be taken into account:

- A PhD in experimental physical chemistry, materials science, optical physics or related experimental discipline.
- Previous post-doctoral research experience

- Experience in ultra-sensitive fluorescence methods including confocal and time resolved micro-fluorescence spectroscopy.
- Demonstrated ability to manage highly challenging projects.
- Experience and a solid track record of research, innovation and publication in the use of lasers and/or advanced imaging research. A strong publication record including refereed publications in international journals arising from your research
- Excellent communication skills, both oral and written
- Highly developed interpersonal skills
- Demonstrated ability to work co-operatively in a team environment.
- High level of computer literacy and experience
- A demonstrated problem solving ability
- The number and quality of research projects completed or currently engaged in, and the extent of the applicant's personal contribution to such research.
- The standing of publishers and journals in which publications appear in relation to the relevant discipline or branch of the discipline.
- Breadth of scholarship, through contributions to more than one restricted area of specialty.
- Level and quality of research supervision.
- Provision of advice on research to students and colleagues.

## **2.2 Desirable**

- Experience in photoluminescent polymer synthesis and film formation
- Experience in optical rheology of complex fluids
- Experience in postgraduate student supervision.
- Experience in some aspects of fluorescence image and data analysis.
- Experience as a member of a research team

## **3 Special Requirements**

The position requires knowledge of the requirements and responsibilities under the Occupational Health and Safety Act as they apply to the position, and the incumbent will contribute to safe working conditions in the School of Chemistry and other departments by following all safety procedures and practices as required.

## **4 Key Responsibilities**

The incumbent is expected to show initiative and application and to become independent in day-to-day operations.

In their duties the Fellow will be required to:

- Undertake internationally competitive research leading to journal publications.
- Oversee all aspects of the experimental work.
- To contribute ideas and play a leadership role in sample preparation and fluorescence measurements of the program.
- To pursue independent research activities in the above areas.
- Provide active support to the activities of the group.
- Liaise closely with other members of the project.
- Assist in the supervision and training of research students.

## **Occupational Health and Safety (OHS) and Environmental Health and Safety (EHS) Responsibilities**

All staff are responsible for the following safe work procedures and instructions:

Employees must:

- cooperate with the University in relation to activities taken by the University to comply with OHS and EHS legislation.
- comply with the OHS and EHS manuals
- adopt work practices that support OHS and EHS programs
- take reasonable care for their own health and safety and the health and safety of other people who may be affected by their conduct in the workplace
- seek guidance for all new or modified work procedures
- ensure that any hazardous conditions, near misses and injuries are reported immediately to the supervisor
- participate in meetings, training and other environment, health and safety activities
- not wilfully place at risk the health or safety of any person in the work place
- not wilfully or recklessly interfere with or misuse anything provided in the interest of environment health and safety or welfare

In addition, Academic Staff are responsible for ensuring that an equivalent standard of OHS and EHS is afforded to their students as is afforded to University staff generally. Academic staff are deemed to have principal supervisory duty for undergraduate and postgraduate student activities.

### **5 Job Complexity, Skills, Knowledge *(For General Staff only)***

### **6 Other Information**

#### **6.1 Organisation Unit**

The School of Chemistry has 24 teaching/research staff, 30 professional staff and around 30 research only staff. It is one of the largest budgeting departments in the University. The School teaches 1600 first year students, 260 second year students and 100 third year students. The Honours class (4<sup>th</sup> year) is about 40 students and 105 MSc and PhD students are enrolled in research degrees and carry out research projects in one of the many advanced laboratories. The research in the School is supported by skilled technical staff who operate, maintain and develop complex instrumentation and equipment. Further information about the School is available at <http://www.chemistry.unimelb.edu.au>

The School houses extensive ultrafast laser and advanced optical microscopy facilities, in addition to a wide range of other research facilities (<http://www.chemistry.unimelb.edu.au/staff/trevoras/research/>).

## **6.2 Budget Division**

Established in 1887, the Faculty of Science is one of the University's largest faculties and has approximately 7000 students across its courses. There are four schools and five departments, which include the Schools of Botany, Chemistry, Earth Sciences and Physics, and the Departments of Genetics, Information Systems, Mathematics & Statistics, Optometry & Vision Sciences and Zoology.

The Faculty is a partner in 19 externally funded research centres. These include the Mathematics and Statistics of Complex Systems Centre of Excellence, the Quantum Computing Technology Centre of Excellence, the International Centre of Excellence for Education in Mathematics, the Centre of Excellence in Coherent X-ray Science and the Centre of Excellence in Free Radical Chemistry and Biotechnology. Funding for Cooperative Research Centres (CRCs) include the CRC for Bioproducts, the CRC for Predictive Mineral Discovery, the CRC for Innovative Dairy Products and the Smart Internet CRC. Involvement in Special Research Centres (SRCs) include the SRC for Particulate Fluids Processing Centre and the SRC for Environmental Stress and Adaptation Research. Funding from the Grains Development Research Council (GRDC) is provided for the GRDC Research Centre for Functional Genomics, and from the ARC/GRDC for the ARC Centre for Functional Genomics. State Government funding via the STI (Science, Technology & Innovation) Initiatives Program supports the Victorian Institute for Chemical Science (VICS), the Victorian Centre for Plant Functional Genomics and the Australian Mathematical Sciences Institute (AMSI). The Statistical Consulting Centre, the Micro-Analytical Research Centre and The Melbourne Experimental Particle Physics group all function as centres within the Faculty.

The Faculty provides integrated programs of teaching, postgraduate training and community activity, all of which are based on a solid foundation of research in both the pure and applied sciences.

The Faculty's international agenda includes joint research ventures, exchange of staff and students, recruitment of overseas students and the inclusion of a global perspective in curricula.

## **6.3 The University of Melbourne**

The University of Melbourne is an international research and teaching university. We employ people of outstanding calibre and offer a unique environment where staff are valued and rewarded.

Founded in 1853, the University commenced teaching its first students in 1855. The University has over 40,000 students in a broad range of professional disciplines. Over 6000 students are higher degree students. The University has over 6000 staff members.

The University is one of Australia's leading research based universities, with an international profile through its reputation for scholarship and teaching. It is a founding member of Universitas 21, an international federation of universities.

The University is committed to equal opportunity in education, employment and welfare for staff and students. Students are selected on merit and staff are selected and promoted on merit.

The Vice Chancellor is the Chief Executive Officer of the University and responsible to Council for the good management of the University. The Academic Board is responsible to Council for academic matters. Reporting to the Vice-Chancellor are the Deans of each Faculty, two Deputy Vice-Chancellors, and the Senior Vice-Principal. Reporting to the Senior Vice-Principal are Vice-Principals of Human Resources, Information, Property & Buildings, and University Development; the Vice-Principal & Chief Financial Officer; the Vice-Principal & General Counsel; and the Vice-Principal & Academic Registrar.

**This position description is approved by:**

Occupant: ..... Date:.....

Supervisor: ..... Date:.....

Head of Organisation Unit: ..... Date:.....