



# RESEARCH FELLOW EXPERIMENTAL CONDENSED MATTER PHYSICS

DEPARTMENT/UNIT	School of Physics and Astronomy
FACULTY/DIVISION	Faculty of Science
CLASSIFICATION	Level A
WORK LOCATION	Clayton campus

## ORGANISATIONAL CONTEXT

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Monash University is an energetic and dynamic university committed to quality education, outstanding research and international engagement. As a member of Australia's Group of Eight research-intensive universities, it seeks to improve the human condition and is committed to a sustainable future. Monash has six campuses in Victoria, a campus in Malaysia, a campus in South Africa, a centre in Prato, Italy, and numerous international partnerships and cooperative ventures. Monash has over 62,500 equivalent full-time students spread across its Australian and off-shore campuses, and over 7,400 full time equivalent staff. Almost 3,500 of these staff members are academic staff. Monash is a university of transformation, progress and optimism. Our people are our most valued asset, with our academics among the best in the world and our professional staff revolutionising the way we operate as an organisation. For more information about our University and our exciting future, please visit [monash.edu](http://monash.edu).

The **Faculty of Science** is at the forefront of innovation and discovery in biology, chemistry, physics, mathematics and earth, atmospheric and environmental sciences. We embrace the theoretical and the experimental and our research traverses industry and government. We play a leading role on the national and international stage and work with partner institutions and industries worldwide.

Fundamental to our vision is the training of graduates who will make a vital contribution to the Australian and global economies. Our students are taught, nurtured and mentored by scientists who are leaders of their disciplines and we are preparing them to think big and make an impact. From environmental sustainability and global biodiversity, to human, animal and plant health. From the development of transformative new materials and technologies to a deeper understanding of the building blocks of our planet, our researchers are helping tackle issues of global significance. For more information about our Faculty, please visit [monash.edu/science](http://monash.edu/science).

The **School of Physics and Astronomy** has very active theoretical, computational, and experimental physics programmes. Current areas of research include: condensed matter physics, ultracold atomic gases, atom, electron and X-ray optics, particle physics, and astrophysics and cosmology.

In the 2015 national audit of research excellence (ERA), the School achieved the maximum overall rating of 5 for Physical Sciences, including the maximum rating of 5 in each of our assessed fields of research (spanning astronomy and astrophysics, atomic and molecular physics, nuclear physics, particle physics, condensed matter physics and optics).

Currently the School has 27 academic staff, 25 research-only staff and 17 adjunct staff, supported by 10 professional staff. In 2016 the School's total recurrent income was approximately \$15M, with research income in the past four years totalling >\$22M.

The School provides a vibrant environment for research in Experimental Condensed Matter Physics and Nanoscience, and it is committed to further increasing the number of researchers in this area. World-class experimental science is a high priority in the School's Strategic Plan. The School's research infrastructure includes the Monash Centre for Atomically Thin Materials and the newly funded ARC Centre of Excellence for Future Low-Energy Electronics Technologies (FLEET). Both Centres are directed by ARC Laureate Fellow Prof. Michael S. Fuhrer. The School is an active user of synchrotron radiation facilities, including the Australian Synchrotron, which is located adjacent to the Clayton Campus of Monash University. The School also has strong research interests in the Monash Centre for Electron Microscopy (MCEM), which houses a FEI Titan 80-300 FEG S/TEM, a JEOL 2100F FEG STEM and other advanced microanalysis facilities. The School has access to state-of-the-art facilities in the Melbourne Centre for Nanofabrication, which is adjacent to the Australian Synchrotron at the Clayton Campus. The School's research laboratories were recently moved to a \$175M building - the New Horizons Centre. Further information about the School of Physics and Astronomy is available at: <http://www.physics.monash.edu.au/>.

Dr Agustin Schiffrin is a Lecturer in the School of Physics and Astronomy at Monash University and an ARC Future Fellow. He is part of the ARC Centre of Excellence in Future Low-Energy Electronics Technologies (FLEET). He leads a laboratory and research group for the study of low-dimensional, surface-confined organic and metal-organic nanostructures with tailored electronic, optoelectronic and chemical functionalities. The laboratory includes state-of-the-art facilities for surface preparation, materials synthesis, low-temperature scanning probe microscopy and optical characterisation in ultra-high vacuum. Further information on Dr Schiffrin's research programme is available at: <http://www.monash.edu/science/schools/physics/ourpeople/agustin-schiffrin>.

Monash University, the Faculty of Science and the School of Physics and Astronomy are invested in increasing the representation of women in the fields of physics, nanoscience and materials engineering. Applications from female candidates are highly encouraged.

## POSITION PURPOSE

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We seek a Postdoctoral Research Fellow to conduct research in experimental condensed matter physics and nanoscience. The successful candidate will investigate atomic-scale structural, electronic, optoelectronic and chemical properties of functional low-dimensional organic and metal-organic nanostructures on surfaces, by means of state-of-the-art low-temperature scanning probe microscopy, in situ optical measurements and synchrotron-based surface science spectroscopy in ultra-high vacuum. The Postdoctoral Research Fellow will be required to interface with technical staff, PhD and Honours students associated with Dr Schiffrin's research group. You will be expected to conduct cutting-edge research in condensed matter physics, publish papers in high-impact journals and present results at major international conferences.

**Reporting Line:** The position reports to Dr Agustin Schiffrin

**Supervisory Responsibilities:** Not applicable

**Financial Delegation:** Not applicable

**Budget Responsibilities:** Not applicable

## KEY RESPONSIBILITIES

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

1. Conducting research in experimental condensed matter physics, surface physics and nanophysics, under limited supervision, either as a member of a team or, where appropriate, independently
2. The production or contribution to the production of conference and seminar papers and publications from that research

3. Involvement in professional activities including, subject to availability of funds, attendance at conferences and seminars in the field of expertise
4. Limited administrative functions primarily connected with the area of research of the academic (e.g., the preparation of competitive grants)
5. Development of a limited amount of research-related material for teaching or other purposes with appropriate guidance from other staff
6. Co-supervision of PhD students
7. Occasional contributions to supervision/teaching in relation to her/his research project(s)
8. Attendance at meetings associated with research or the work of the organisational unit to which the research is connected and/or at School and/or Faculty meetings and/or membership of a limited number of committees

## **KEY SELECTION CRITERIA**

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### **Education/Qualifications**

1. The appointee will have:
  - A PhD in experimental condensed matter physics, or a closely related field, from a recognised university

### **Knowledge and Skills**

2. A strong background and expertise in experimental condensed matter physics, particularly in surface and nanophysics
3. A demonstrable record of high-impact, peer-reviewed publications in experimental physics, surface science and/or physical chemistry and materials engineering
4. Excellent written and verbal communication skills
5. Planning and organisational skills, with the ability to set and meet deadlines
6. Desirable: Research experience in ultra-high vacuum science, materials science, solid-state physics, scanning probe microscopy, molecular beam epitaxy, synchrotron-based surface science techniques, low-temperature physics and/or optics, electronic properties of materials

## **OTHER JOB-RELATED INFORMATION**

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- Travel, both domestic and international, may be required
- Shift work, overtime and out of hours work (including evenings, weekends and public holidays) may be required
- There may be peak periods of work during which the taking of leave may be restricted

## **LEGAL COMPLIANCE**

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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.