



Research Fellow (Nanochannels for Virus Detection)

Department/Unit	MNC & Drug Delivery, Disposition and Dynamics
Faculty/Division	MCN/Faculty of Pharmacy and Pharmaceutical Sciences
Classification	Level A
Work location	Clayton/Parkville campus
Date document created or updated	May 2018

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 Pharmacy and Pharmaceutical Sciences** is dynamic, innovative and ambitious, engaging in world-class research and being a leading education provider for over 130 years. We have two key research initiatives: the Monash Institute of Pharmaceutical Sciences and the Centre for Medicine Use and Safety, in which we engage some of the best equipped and most experienced pharmaceutical scientists in Australia. From a teaching perspective, our education curriculum - comprised of undergraduate, postgraduate and higher degrees by research programs - is purpose designed for the study of pharmacy and pharmaceutical science and taught by discipline experts. Our premises are located in 'the Parkville Strip', Australia's premier health and biomedical precinct, and offer world-class teaching facilities and research laboratories to our students and staff. To learn more about the Faculty, please visit our website: www.monash.edu/pharm/.

The **Drug Delivery, Disposition and Dynamics (D4)** research teams within the Monash Institute of Pharmaceutical Sciences (MIPS) are designing and developing the next generation of drug delivery systems and anti-infective agents to enhance medicine effectiveness and patient treatment.

The Melbourne Centre for Nanofabrication (MCN) is a purpose-built facility, designed to fill the gap in Australia for open access, multi-scale fabrication infrastructure, spanning a range of fabrication environments and materials. It provides the means to produce complex micro and nano-science based demonstration devices using an array of tools. The MCN comprises biological and non-biological fabrication techniques; e.g. electron beam lithography, focused ion beam lithography, photolithography, embossing, deposition (self-assembly) as well as systems integration capabilities; e.g. bonding, biological spotting, microfluidics.

Position Purpose

A Level A research-only academic is expected to contribute towards the research effort of the university and to develop their research expertise through the pursuit of defined projects relevant to the particular field of research.

The successful candidate will perform original research and apply experimental techniques to perform a range of tasks. The aim is to develop sensing devices based on electrochemical transduction principles able to provide early warning of infectious disease outbreaks via direct detection of pathogens, as well as through nucleic acid analysis. Special focus will be given to enhance the performance of nanochannel-based biosensing platforms by designing new nanostructured transducers, sensing mechanisms, and functionalisation strategies, to be combined with optimised electrochemical techniques.

This position will be responsible for supporting the research on a biosensor project funded by the Australian Research Council. The project involves the development of bio-inspired nanochannels for virus detection, by exploiting advances in high-precision silicon nanofabrication methods.

Reporting Line: The position reports to Director of the Melbourne Centre for Nanofabrication, and a Senior Research Fellow.

Supervisory Responsibilities: Co-supervision of Research Associate, PhD, master and Honours students.

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. Supervision of research-support staff involved in the staff member's research
3. Guidance in the research effort of junior members of research-only Academic staff in her/his research area
4. Contribution to the preparation or, where appropriate, individual preparation of research proposal submissions to external funding bodies
5. Involvement in professional activities including, subject to availability of funds, attendance at conferences and seminars in the field of expertise
6. Administrative functions primarily connected with her/his area of research
7. Occasional contributions to the teaching program within the field of the staff member's research
8. Co-supervision or, where appropriate, supervision of major honours or postgraduate research projects within the field of the staff member's area of research
9. 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

Key Selection Criteria

Education/Qualifications

1. The appointee will have:
 - A Ph.D. degree or equivalent qualifications/experience in chemistry, biochemistry, materials science; or
 - a related discipline from a recognised university or equivalent qualifications and research experience

Knowledge and Skills

2. Demonstrated experience in micro/nanofabrication
3. Demonstrated experience in electrochemistry
4. Demonstrated experience with biosensors
5. Evidence of an emerging track record of publications and presentations
6. The ability to work under pressure and to prioritise tasks to meet deadlines
7. High levels of initiative and flexibility
8. Well-developed interpersonal and written communication skills
9. Ability to work both independently and collaboratively as a member of a team
10. Ability to work efficiently, meet project timelines, and excellent organisational skills

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
- Flexibility to travel to project partners inter-state

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.