Position Title:	Research Associate / Research Fellow
Position Classification:	Level A / B
Position Number:	NEW
Faculty/Office:	Faculty of Engineering and Mathematical Sciences
School/Division:	School of Physics
Supervisor Title:	Professor
Supervisor Position Number:	302793

Your work area

The Faculty of Engineering and Mathematical Sciences encompasses three schools – School of Physics, Mathematics and Computing, School of Engineering and the Oceans Graduate School. Past graduates include Rhodes Scholars, Fulbright Scholars, Eureka prize winners, CEOs and seven of the most influential engineers in Engineering Australia's Top 100 list. The faculty is home to a former Scientist of the Year and award-winning inventors and is part of the state of the art Indian Ocean Marine Research Centre. The Faculty prides itself on its track-record for producing graduates who not only perform well in their chosen profession, but are equipped with the skills and social capital they need to be the very best.

The Department of Physics is a research focused department with a strong commitment to quality teaching at both undergraduate and postgraduate levels. While our core business is fundamental research, we have also successfully translated the results of research into the development of new technologies for the benefit of humankind.

The University of Western Australia (UWA) node of the Australian Research Council (ARC) Centre of Excellence in Gravitational wave Discovers (OzGrav) is currently focusing its research on developing advanced techniques for gravitational wave detectors. Our research programs include quantum measurement techniques for improving the quantum noise limited sensitivity, the control of parametric instability, optimal mode matching for reducing the loss of squeezed state injection, and silicon optics in high power cavities for next generation detectors.

We are looking for a dynamic experimentalist with motivation and drive and relevant experience. The work will involve conducting day to day research, and working closely with PhD students on experiments either with high power suspended optical cavities, or tabletop experiments.

UWA offers a vibrant research environment for gravitational wave astronomy. There is a long history of gravitational wave research at UWA. One of the first cryogenic bar detector Niobe was developed at the UWA during the 1980s. We also operating the 80m high optical power suspended cavities at the Gingin facility.

Reporting Structure

Reports to: Professor

Your role

You will conduct research primarily on experiments towards measurement in quantum noise limited sensitivity. You will also assist in supervising final year undergraduate, Master and PhD students working on opto-mechanical experiments. You will be expected to participate in proposing and developing new experiments aiming for improving the sensitivity of gravitational wave detectors.

Key responsibilities

Provide high-level research at the forefront of gravitational wave physics with emphasis on opto-mechanical system for improving the sensitivity of present and future gravitational wave detectors

Prepare research papers for publication in high impact refereed journals. Present research results at seminars and conferences

Seek additional research funding by grant applications

Contribute to the supervision of Honours, Masters and PhD research projects

Other duties as directed

Your specific work capabilities (selection criteria)

A PhD (or soon to be completed) in experimental physics

Level A

Experience in precision measurements and opto-mechanical systems.

Contribute to writing and publishing papers in high impact journals

Well-developed interpersonal and written and verbal communication skills

The ability to establish and maintain international collaborations with leading international experts

Basic knowledge of quantum measurement theory, noise analysis and vibration isolation is desirable

Level B

Demonstrated experience in precision measurements, opto-mechanical systems and feedback control systems.

Have a good track record of research, including quality publications in high impact international journals.

Strong skills in developing and executing experimental research designs

Excellent interpersonal and written and verbal communication skills

The ability to establish and maintain international collaborations with leading international experts

Demonstrated evidence of good supervision of undergraduate and postgraduate students

Special Requirements

Nil

Compliance

Workplace Health and Safety

All supervising staff are required to undertake effective measures to ensure compliance with the Occupational Safety and Health Act 1984 and related University requirements (including Safety, Health and Wellbeing Objectives and Targets).

All staff must comply with requirements of the Occupational Safety and Health Act and all reasonable directives given in relation to health and safety at work, to ensure compliance with University and Legislative health and safety requirements.

Details of the safety obligations can be accessed at http://www.safety.uwa.edu.au

Equity and Diversity

All staff members are required to comply with the University's Code of Ethics and Code of Conduct and Equity and Diversity principles. Details of the University policies on these can be accessed at http://www.hr.uwa.edu.au/publications/code_of_ethics, http://www.equity.uwa.edu.au