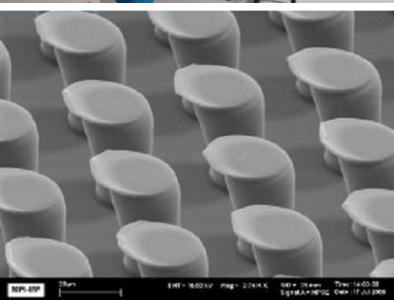




THE UNIVERSITY OF AUCKLAND
NEW ZEALAND



PhD Opportunities: Dry adhesion inspired by the Gecko's feet



We invite applications for PhD positions from candidates who meet the registration requirements of the University of Auckland, New Zealand.

Research Overview

Natural evolution has resulted in adhesion systems with capabilities well beyond those of current man-made adhesives. For example, geckos move easily on a variety of highly inclined surfaces, from rough to smooth as glass, from clean to dirty. They exploit weak intermolecular attraction forces to strongly adhere to almost any material surface, with no surface preparation, yet when desired easily detach without leaving a residue.

This multidisciplinary programme will address key questions about the engineering of synthetic versions of the gecko's foot, and the role of both chemistry and mechanics, in relation to its many potential applications.

Programme Objectives

- Prepare multi-scale hierarchical structures on macro, micro, and nano-scale;
- Graft polymer chains on these structures;
- Investigate multi-scale mechanics of adhesion, friction, and detachment through simulations and experiments;
- Sense and control a stimuli-responsive, "on-demand" adhesive system.

Selection criteria

This is a multidisciplinary research programme that is open to students with degrees in chemistry, physics and engineering. We are looking for:

- Sound research skills
- Background in at least one of the following: nanotechnology, polymer chemistry, microfabrication, mechatronics, MEMS, and computational micromechanics. Skills in more than one of these areas will be an advantage.

Stipend

There is one PhD Scholarship available through this research programme, and other scholarships are available through the University of Auckland and other sources for suitable students. The PhD Scholarship includes tuition fees and a stipend of NZ\$25,000 per annum for 3 years. These may be extended to a fourth year subject to a review of progress.

Interested?

We invite you to submit **by the end of October 2010** your statement of interest and a CV with a list of courses and grades to one of the following:

Dr Emilio P Calius (Industrial Research Ltd): e.calius@irl.cri.nz

A/Prof Jadranka Travas-Sedjic, University of Auckland: j.travas-seidic@auckland.ac.nz

Dr John Kennedy (Institute of Geological & Nuclear Sciences): j.kennedy@gns.cri.nz

The chosen candidates will be invited to submit an online Expression of Interest at <http://www.postgrad.auckland.ac.nz/doctoral/interest/>