Postgraduate Research Opportunity
Tohu paerua

Why is pounamu tough? Using materials science and mātauranga Māori to explain the special physical properties and uses of nephrite jade

Details

Academic background	Sciences
Host campus	Dunedin
Qualifications	Honours, Master's
Department	Geology
Supervisors	Prof. Dave Prior, Assoc. Prof. Anne Ford, Dr Kc Li; Drs Simon Cox and Nick Mortimer (GNS Science)

Overview

Pounamu, New Zealand nephrite jade, is highly valued by Māori and is the subject of much mātauranga (cultural knowledge). Worldwide, nephrite is known for its extreme toughness even though it is made of silicate minerals of only moderate hardness. So why is this iconic geomaterial so tough, so resistant to fracture?

This is an opportunity to join a multidisciplinary research team of scientists and pounamu carvers to explore relationships between the quality, physical properties and mineral fabrics of nephrite jade. The postgraduate student work is full time and will involve micro-mechanical deformation testing and/or electron microscope techniques at the University of Otago in Dunedin.

There is an expectation of travel within New Zealand to visit marae, carvers, museums and collections, and the possibility of travel to Taiwan to use an X-ray synchrotron.

Requirements

Applicants with a background in geoscience, material science, physics, chemistry, engineering or a related discipline at the BSc (Hons) or MSc level, are encouraged to apply.

It would be beneficial, but not essential, for applicants to have an understanding of tikanga Māori and/or whakapapa connections within New Zealand.

The postgraduate work is part of a Marsden research project funded by the Royal Society of New Zealand. The selected candidate(s) will receive a scholarship (MSc NZ$17,172 for one year; PhD: NZ$35,000 per year for three years) with a fee waiver.

How to apply

Please submit a cover letter, complete CV (including academic transcripts), and the names and contact details of at least two referees, all in a single PDF file to:

Professor David Prior
Email david.prior@otago.ac.nz

Contact

Nick Mortimer

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