

PhD Scholarship - Australian Postgraduate Award (Industry) (APAI)

Understanding the mechanisms of freezing damaging in the cryopreservation of plant species for post-mining restoration.

We are seeking an outstanding student who is highly motivated and interested in an interdisciplinary project combining fundamental science with an important environmental application. The research is funded by an ARC Linkage grant: “Development of cryopreservation for high value provenance collections of recalcitrant plant species used in post-mining restoration”. It is a collaboration between RMIT, Curtin University, the University of Queensland, the University of Western Australia, Alcoa of Australia, BHP Billiton Worsley Alumina and the Botanic Gardens & Parks Authority (WA).

The overall aim of the research project is to better understand the molecular mechanisms of cryo-induced cell damage (and its prevention by cryo-protective agents) using a combination of molecular modelling and experimental studies on model systems, and to correlate these results with cryopreservation studies of recalcitrant and endangered plant species in order to maintain long-term collections of key genotypes required for post-mining environmental rehabilitation.

The PhD project will focus on the biophysical characterization of model systems, using a wide range of experimental techniques including Small and Wide Angle X-ray Scattering (SAXS), Small Angle Neutron Scattering (SANS), Differential Scanning Calorimetry and Solid State NMR. The successful candidate will be working in the discipline of Physics within the School of Applied Sciences at RMIT University city campus, and will liaise closely with other members of the research team working on molecular modelling and cryopreservation. Travel to Synchrotron and Neutron Scattering facilities (in Melbourne and Sydney), and potential travel to WA may be required from time to time. The Supervisors will be A/Prof. G. Bryant (RMIT University) and Dr. R. Mancera (Curtin University).

Selection Criteria: Applicants are expected to have completed a degree with first or upper second class honors in Physical/Chemical sciences. Applicants with degrees in Biological sciences with significant Physics/Chemistry would also be considered. Experience with any of the experimental techniques described above would be an advantage. You must be either an Australian citizen/permanent resident or a New Zealand citizen to apply.

Stipend: \$26,699 pa. (tax free). A relocation allowance may also be available.

Closing Date: Friday 17th July 2009

For further information contact A/Prof. Gary Bryant: gary.bryant@rmit.edu.au

Application can be submitted by email or post to:

A/Prof. Gary Bryant

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