

Development of in situ and on site technologies for low-cost metal remediation in cold regions.

We are seeking up to two PhD students in the area of remediation of heavy metals contaminated sites in cold regions. Applicants should have recently completed a degree in chemical engineering or chemistry with honours (H2A or H1).

The successful applicant/s would join a team of researchers in the Particulate Fluids Processing Centre in the Department of Chemical and Biomolecular Engineering at the University of Melbourne. There will also be significant co-operation with researchers at the Australian Antarctic Division as well as commercial industry partners. There are two complimentary areas of research which will be studied. The first research topic is the use of zeolites for nutrient release and removal of heavy metals from ground water. This research is divided into two areas;

1. Develop zeolite media for use in permeable reactive barriers for metal adsorption and long-term remediation in seasonally frozen ground.
2. Develop a controlled release system for nutrient (particularly nitrogen) enhancement using zeolites for the revegetation of contaminated sites.

The second research topic is the development of chemical stabilisation techniques for the in-situ immobilisation of metals at contaminated sites. These research projects will have important benefits for the effective remediation of contaminated sites in cold regions such as the Arctic, sub-Antarctic islands and Antarctica. It is envisaged there will be a field component of the research either in Canada, at Casey station in Antarctica or sub-Antarctic Macquarie Island.

For more information about the project, please contact Professor Geoff Stevens. To apply, please send a resume including a transcript of your academic results to date and contact details for at least two referees as soon as possible to:

Professor Geoff Stevens
Director, Particulate Fluids Processing Centre
University of Melbourne Vic 3010 AUSTRALIA