



Opportunity for Master of Engineering studies on Durability of Geomembranes

A Master of Engineering Science (by Research) project is available within the Geomechanics Group of the Department of Civil Engineering at Monash University (Australia) in partnership with several industry partners. The project will address key aspects controlling the durability of geomembranes under adverse conditions such as encountered in the mining and the energy sectors.

Project outline

Geomembranes serviceability is highly dependent on the type of geomembrane and service condition. The service life may vary from a few years to a thousand years depending on the geomembrane formulation, the type of protection layer, exposure medium, pressure, and temperature.

The performance of geomembranes in landfill applications has been examined extensively in the past. However, the durability of geomembranes in mining or energy applications has received very limited examination. Furthermore, the conditions in mining/energy applications are generally very different to those in landfill applications. It is essential to understand the performance of geomembranes under more aggressive conditions because it is directly related to cost benefit ratio of the mine/energy operation as well as the surrounding environmental conditions. Particular focus will be on the effect of aggressive conditions on crystallinity, MFI, oxidative induction time (OIT), mechanical properties, etc. and will include the coupled effect of defects and aggressive environment on the geomembranes performance.

Opportunity

One scholarship is available for post-graduate studies commencing in 2015. The scholarship will provide support for 2 years on a full time basis for a research project leading to a Master of Engineering Science. The scholarship value is \$A27,000 p.a. (tax-free). Potential for further income is also possible through tutoring. The candidate will join an international research team currently working on the longevity of geosynthetics in mining and coal seam gas applications.

Candidates must meet the eligibility criteria for Masters candidature at Monash University:
<http://www.monash.edu.au/migr/apply/>

Selection Criteria

Applicants should have Honours¹ (H1) or H2A degree or equivalent in Engineering or Material Science and an interest in analytical and experimental research.

Applicants need to submit a cover letter setting out their career aspirations and what they would hope to learn from a Master program, a detailed CV, a copy of the academic transcripts and contact details of at least two referees to Prof. Malek Bouazza, Monash University, Department of Civil Engineering, 23 College Walk, Vic. 3800, Australia (Email: malek.bouazza@monash.edu).