



PhD Scholarship in Civil Engineering

The Opportunity

Expressions of interest are sought from outstanding candidates for PhD study in Civil Engineering (Computational mechanics & material modelling).

PhD Project – Development of an efficient computational approach for flow modelling of fragmented rock in cave mining

A full scholarship is available for a PhD student to conduct research on development of a new generation of computational approach for flow modelling the field scale of fragmented rocks in cave mining. The project is supported by the Australian Research Council (ARC) with partner organisation (OZ Minerals), and will be conducted in Assoc Prof Ha Bui's Lab (MCG-Lab) in the Department of Civil Engineering, in collaboration with research groups at the University of Adelaide (Assoc Prof Giang Nguyen and Assoc Prof Murat Karakus), industry and overseas.

This project will develop a next generation of computational approach that combines the high-performance computing SPH platform, advanced constitutive models and Discrete Fracture Network (DFN) to provide realistic simulations of block caving process at the field scale. It aims to provide unprecedented insights into the initiation and development of fragmentation and caving, while accelerating the simulation speed and maintain the quality of the obtained results at the field scale. It is expected that the new computational tool will help generate data for a wide range of scenarios, which are ultimately used to optimise the cave mining processes, e.g. where to cave first, how far apart the draw points, drawing strategies. A strong background in mathematics and physics are essential. Additional experience in computational mechanics, mechanics of materials and computer programming are desirable.

Applicants must show excellent communication and inter-personal skills, and the ability to conduct self-motivated research. They should have research-based Honours or Masters Degree (or equivalent) in the relevant research areas and have a record of publishing their research in mainstream scientific journals.

Note: applicants who already hold a PhD will not be considered.

Faculty / Portfolio: Department of Civil Engineering, Faculty of Engineering

Location: Clayton campus, Monash University

Main Supervisor: Associate Prof. Ha H. Bui

Remuneration: AUD\$28,092.00 per year (extra top-up scholarship may be provided depending on the funding availability).

Shortlisted candidates will be interviewed, over Skype if necessary. The interviews will be conducted in English.

Candidate Requirements



MONASH University

Applicants will be considered provided that they fulfil the criteria for PhD admission at Monash University and demonstrate excellent research capability. Details of the relevant requirements are available at <http://www.monash.edu/graduate-research/future-students/apply>

Submit an Expression of Interest

EOIs shall comprise:

A cover letter that includes a brief statement of the applicant's suitability

- A curriculum vitae, including a list of published works
- A full statement of academic record, supported by scanned copies of relevant certified documentation
- Contact details of two academic referees
- Evidence of English-language proficiency (international applicants only)

Please submit this **Expression of Interest (EOI)** form <https://forms.gle/Mxj9cfzzcUCiAekT6>, preferably in the form of a single PDF attachment

Contact name

Email: ha.bui@monash.edu

Closing date

15 March, 2022