



A PhD Scholarship in **SPARC Hub**

The Opportunity

The ARC Smart Pavements Hub (SPARC) invites applications for a PhD-position in evaluating the application of smart geotextiles in smart road infrastructure.

Smart Pavements Australia Research Collaboration ([SPARC](#))

SPARC Hub, which is a partnership between Monash and 7 other Australian Universities and 20+ Industry Partners, is embarking on a range of exciting research projects, offering an unprecedented opportunity for recent graduates to establish their postgraduate career in various engineering fields. The Hub offers a coherent PhD and Masters by research program for high achieving passionate students and is committed to create an intellectually exhilarating and vibrant environment towards excellence.

Project Background

Monitoring of mechanical loading of road pavements is important for developing vehicle management procedures to ensure pavement longevity. In this regard, several monitoring methods are available. However, most existing techniques have several limitations in terms of providing only discrete partial-information or being destructive to the pavement being monitored. Therefore, new techniques that enable spatially continuous and complete information capabilities are needed, especially within the context of smart road infrastructures. The complete information stated involves the ability to infer the type of vehicle (axial configuration, loading, etc.) and its speed from the acquired measurements.

In this project, the feasibility of smart geotextiles for monitoring pavement loading under both mechanical loading conditions (repeated heavy vehicle loading) and thermal loading conditions will be investigated. Targeted laboratory experiments and numerical modelling exercises will be performed to develop analytical models for characterising the responses of the geotextile on the thermomechanical loading.

Qualification Requirements

1. Applicants must have completed at least a bachelor's degree in one of the following areas: Applied Physics, Mechanical Engineering and Civil Engineering. Both Australian and international applicants will be considered
2. The applicant must have a strong academic record, which, for example, amounts to a grade point average (GPA) of 3.7 (out of 4.0) or higher, or equivalent to H1 or First Class Honours Degree
3. The applicant should have some knowledge/background and/or interest in the following areas: Data acquisition and Analysis, Multiphysics Modelling, Road pavement systems
4. The applicant must have an interest in undertaking field work
5. The following criteria will be considered during the assessment:
 - (i) Candidate's academic performance in the bachelor's degree (or Master's degree),
 - (ii) Quality of the degree completed (preference will be given to Master's degree),
 - (iii) Completion time of the degree,
 - (iv) Knowledge in the relevant research field including any publications in reputable journals,
 - (v) English language proficiency (refer to the following link for more information: [English Language Requirements](#)), and
 - (vi) Online interviews and references.

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



MONASH University

Location: Clayton campus, Monash University

Remuneration: Stipend can range from \$27,872 to 32,300 p.a. full-time rate (pro-rata) and tax-free

Closing date for expression of interest (EOI): 23rd of August, 2019

To Apply:

- Submit an [Expression of Interest](#)
- 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)

Enquiries and EOIs shall be sent to:

The Lead Chief Investigator, [Professor Abdelmalek Bouazza](#), Dept. of Civil Eng., Monash University, Clayton Campus (Australia)

Email: Malek.Bouazza@monash.edu

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