A PhD Scholarship in SPARC Hub

The Opportunity

The ARC Smart Pavements Hub (SPARC) invites applications for a PhD-position in remote sensing moisture measurement techniques.

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

The moisture content level during and after road pavement construction plays an important role in road pavement performance under repeated heavy traffic loading. However, it has been difficult to monitor the moisture content in pavement layers spatially along construction corridors in an economically feasible manner. Current state-of-the-art includes manually taking small samples from a few isolated locations along the construction corridor, often in carefully selected sites that are expected to pass. This approach is not only subjective but costly and laborious, leading to serious quality assurance concerns. This project seeks to apply the passive microwave measurement techniques developed for satellites in the context of water resources management, to vehicle-based or drone-based applications in road pavement construction and maintenance. Potential use of this technique in Intelligent Compaction (IC) of soils using automated rollers is also a major consideration.

Qualification Requirements

1. Applicants must have completed at least a bachelor’s degree in one of the following areas: Civil and Environmental Engineering, Materials Engineering, Geospatial Science or Remote Sensing. 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 the following skills: GIS and programming
4. The applicant must have an interest in undertaking field work
5. The following criteria will be taken into account 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

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): 26\textsuperscript{th} of April, 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 Theme Leader, Lead Chief Investigator and Department Head, Professor Jeffrey Walker, Dept. of Civil Eng., Monash University, Clayton Campus (Australia)

Email: jeff.walker@monash.edu