Full time PhD Scholarship under Royal Melbourne Institute of Technology (RMIT) - University of Peradeniya (UOP) Joint PhD Programme

Title: Bond properties of fabric reinforced cementitious materials with various substrates in ambient and elevated temperatures

Brief Description:

Strengthening of existing structures using Fabric reinforce cementitious matrix (FRCM) has become preferable over conventional Fiber reinforced polymers (FRP) systems. The main attributes in the FRCM system include: good fire resistance; applicability to rough and humid substrates; facilitation of breathability; and application reversibility. The FRCM system primarily consists of open fiber textiles embedded into an inorganic matrix, generally cementitious mortars. Even though the application of FRCM to structures looks simple, the understanding on the mechanical behaviour of FRCM systems for various applications are still at its infancy. Particularly, the interface bond characteristics between the FRCM and the structural surface are the primary concerns to be explored in terms of effective design of such system. In this context, this PhD research is going to investigate into bond characteristics of between FRCM and different substrates such as concrete and masonry at ambient and elevated temperatures to formulate analytical models for analysis and design purposes. Both theoretical and experimental studies will be carried out to characterise the bond slip characteristics. Subsequently, in order to verify the applicability of the developed analytical bond slip models, a structural scale performance of FRCM strengthened concrete/masonry elements will be assessed through experimental and numerical studies.

Supervisors:

- UOP supervisors: Dr. Hiran Yapa, Dr. Ajith Thamboo (SEUSL/ Sri Lanka)
- RMIT Supervisor: Dr. Susanna Lin, A/Prof. Annan Zhou

Commencement date: March 2022

Features of the PhD:

- Duration of the PhD is 3-3.5 years on a full-time basis and the candidate will spend maximum period of one year at RMIT, Australia and the remaining time in Sri Lanka.
- The tuition fee is fully waived, and the selected applicant will be considered for the standard scholarships for living stipend during the stay in Sri Lanka and Australia.
- There will be at least one principal supervisor each from RMIT and UOP.
- Degree will be awarded from both institutions acknowledging the joint supervision. You will get two separate degree certificates, one each from RMIT and UOP.

Successful candidates should have the following:

1. BSc Engineering (Specializing in Civil Engineering) with Second Class Upper division or higher
2. IELTS overall band of 6.5 with each band above 6.0

We are looking for a dynamic candidate who meets the above qualifications.

If you are interested in this PhD research, apply via the following link on or before 2nd January 2022.

https://tinyurl.com/3etwb8sk

Note: Only the shortlisted candidates will be called for the interview.

If you have any queries, contact Dr. M.C.M. Nasvi [Email: Nasvimcm@eng.pdn.ac.lk]