

PhD Vacancy in Civil / Materials Engineering

at the Department of Civil Engineering, Frederick University

Closing Date: 31 May 2022

Project description

The project addresses materials engineering and materials science, coupled to additive manufacturing techniques.

The PhD work will tackle challenges related to the design, development and validation of innovative building materials, for the protection of critical infrastructures against blast and fire incidents. One of the main outcomes of this work will be the development, through detailed experimental and analytical study, of two new composite construction materials. These new materials should conform to a number of performance parameters, including fit-for-purpose mechanical properties through optimised composition, along with blast and fire-resistance. For the development of the new materials, the concrete technology and the technology of geopolymerisation will be applied. The production of the materials will be achieved via a conventional casting method and via 3D-printing. The final products will be evaluated in terms of their mechanical, durability, blast and fire-resistance properties. Finally, the potentials of 3D-printing applications in the construction industry will be demonstrated and appraised.

Qualification requirements

All applicants must conform to the following eligibility criteria:

- A Master's degree in the field of civil engineering and/or material sciences and/or mining and metallurgical engineering and/or pertinent inter-disciplinary studies.
 - The Master's degree must be completed before formal registration to the PhD program;
- A clear interest in inter- or trans- disciplinary collaborative research;
- Enthusiasm about experimental work and handling state-of-the-art 3D-Printing equipment;
- Excellent skills in research methods;
- Excellent skills in stakeholder interaction and scientific writing;
- Excellent command of English language;
- Relevant laboratory experience will be considered an advantage.

The qualification requirements must be met by the deadline for applications.

Terms of study funding

A tuition waiver leading up to 90% tuition funding will be offered to qualified students.

Research Assistantship will be offered to the selected candidate.

Application

The application process is two-tiered.

In the first round all applicants should complete and collate the following documentation (combined in one PDF file). Documents need to be saved under the applicant's name.

- Application for Admission form ([Link](#)).
- Cover letter (approx. 500 words) detailing in a single document your research interests, qualifications and motivation for the project;
- Curriculum Vitae (CV) with a detailed course description of your research training;
- Academic transcript(s): Final and current degree transcripts including grades and degree certificates (and an official translation, if not in English) - scanned copy in colour of the original document/s;
- Degree Certificate(s) and an official translation, if needed - scanned copy in colour of the original document/s.

Please include the following information with your application:

- Your contact details and personal data;
- Contact details for at least 2 references.

In the second-round applicants who meet the selection and admission criteria will be invited to interview.

Deadlines

- Application Deadline: 31 May 2022.
Applications will be assessed by a selection panel, including the PhD position supervisors.
- Notification of second-stage candidates (for interviews): 07 May, 2022.
- Interviews will take place in May (specific dates to-be-determined).
- PhD project start: 1st June 2022.

Contact

For more information, please contact Associate Professor Demetris Nicolaidis, telephone: +35722394394 – ext. 46126, d.nicolaides@frederick.ac.cy.

Note: This PhD student position is available in the laboratory that is headed by Dr Demetris Nicolaidis.