

12/02/2020



ESR7: PhD Student Position at Politecnico di Torino within EU MSCA-ITN-ETN NewFrac

Where to apply

Application Deadline: 30/06/2020 17:00 - Europe/Brussels

Contact Details

Where to send your application.

COMPANY

Politecnico di Torino

WEBSITE

<https://www.newfrac.eu/application-form>

Hiring/Funding Organisation/Institute

ORGANISATION/COMPANY

Politecnico di Torino

COUNTRY

Italy

DEPARTMENT

DISEG -Dipartimento di Ingegneria
Strutturale, Edile e Geotecnica

CITY

Torino

ORGANISATION TYPE

Higher Education Institute

POSTAL CODE

10129

WEBSITE

<https://www.polito.it/>

ORGANISATION/COMPANY

Politecnico di Torino

RESEARCH FIELD

Engineering › Civil engineering

Engineering › Mechanical engineering

RESEARCHER PROFILE

First Stage Researcher (R1)

APPLICATION DEADLINE

30/06/2020 17:00 - Europe/Brussels

LOCATION

Italy › Torino

TYPE OF CONTRACT

Temporary

JOB STATUS

Full-time

HOURS PER WEEK

40

OFFER STARTING DATE

01/11/2020

EU RESEARCH FRAMEWORK PROGRAMME

H2020 / Marie Skłodowska-Curie Actions

REFERENCE NUMBER

NEWFRAC

MARIE CURIE GRANT AGREEMENT NUMBER

861061

The Marie Skłodowska-Curie Innovative Training Network "**NEWFRAC**" (www.newfrac.eu) is a high-level training of a new generation of creative, entrepreneurial and innovative early-stage researchers (ESRs) through the development and engineering applications of a new modeling framework focused on the prediction and analysis of multi-field fracture phenomena in heterogeneous engineering systems at different scales. NEWFRAC in its mission of training students capable of solving the current problems of multi-field fracture phenomena in heterogeneous engineering systems, offers **13 PhD positions** for early stage researchers (**ESRs**) distributed in a network of 5 European countries (**France, Germany, Italy, Portugal and Spain**) and 2 countries associated (**Israel and Switzerland**), with the participation of prestigious academic and industrial institutions that will allow researchers to grow and develop their technical skills in a multisectoral environment.

Besides working on their project at their home institutions, the researchers will participate in network-wide training events like summer schools. Moreover, they will conduct secondments at other network partners combining academic and industrial experiences.

The following position and project is available at **Politecnico di Torino in Torino, Italy**:

ESR 7: Debonding of the reinforcement in Fiber Reinforced Polymer and Fiber Reinforced Cementitious Matrix externally strengthened beams

Objectives: *Externally reinforced structures are composite structures where the heterogeneity is due to the application of an external reinforcement to an existing structure in order to restore it or to increase its bearing load. The main objective of this ESR project is the analysis of the delamination of the external reinforcement in rectilinear and curved beams strengthened by thin Fiber Reinforced Polymer (FRP) or Fiber Reinforced Cementitious Matrix (FRCM) composite. The problem has a great relevance since external bonding of Fiber Reinforced Composites is nowadays a common practice in strengthening of existing structures in general and in restoring of stone and masonry arches in particular. Furthermore, among the different failure mechanisms of strengthened structures, the reinforcement debonding is probably the most important one to be investigated because of his typical brittle and catastrophic character. A first goal of the project is to develop an analytical approximate solution for the interfacial stresses between the structure and the reinforcement, under different mechanical and thermal loading conditions. A second goal is the application of LEFM, FFM and its comparison with the numerical solution of the problem by means of the Cohesive Crack Model (CCM). A third goal is to understand the effect of cyclic loads by assessing the fatigue behavior of FRP-to-concrete joints. Cooperation with a research team testing large-size beams from an existing infrastructure undergoing different kinds of retrofitting is also expected. For more information about this position please go to <https://www.newfrac.eu/phd-positions/esr7>*

PhD in Civil and Environmental Engineering

Contract signing and incorporation dates are orientative and have yet to be defined. For **more information** about the call and application process visit www.newfrac.eu

ADDITIONAL INFORMATION

Benefits

A full-time fixed-term contract is offered. Marie Curie ITNs provide competitive financial support to the ESR including: a competitive monthly living and mobility allowance and salary, coverage of the expenses related to the participation of the ESR in research and training activities (contribution to research-related costs, meetings, conference attendance, training actions, etc.). The recruited researchers will have a regular contract with the same rights and obligations as any other staff member of the institution.

Eligibility criteria

Applicants must at the time of recruitment: **1)** Be in the first four years (full-time equivalent) of their research careers. The four years start to count from the date when a researcher obtained the degree (e.g. Master's degree) which would formally entitle him/her to embark on a doctorate. **2)** Candidates could be of any nationality but have not resided in the host country for more than 12 months in the last 3 years **3)** Have NOT been awarded a doctoral degree.

Selection process

Applicants are evaluated by a selection committee on the basis of past academic performance (grades) and background, scientific relevance and aptitude to research, and any other additional pertinent data submitted in the application (such as scientific publications, if any). The candidates that pass the initial assessment of the applications will be invited for an interview with the selection committee, either in person at the campus, or via standard internet videoconference. Equal opportunities are ensured to all candidates throughout the evaluation process.

Web site for additional job details

<https://www.newfrac.eu/application-form>

REQUIREMENTS

Offer Requirements

REQUIRED EDUCATION LEVEL

Engineering: Master Degree or equivalent

REQUIRED LANGUAGES

ENGLISH: Excellent

Skills/Qualifications

- Master's degree in Mechanical/Aeronautical/Civil Engineering/ Physics/ Applied Mathematics, earned before 31/10/2020
- Excellent undergraduate and Master's degree grades
- High level of written and spoken English
- Teamwork ability

Specific Requirements

- Excellent mathematical knowledge
- Focus on solid mechanics and fracture mechanics

- Familiarity with Mathematica, Matlab and FEM programs

Map Information



Job Work Location



Personal Assistance locations

WORK LOCATION(S)

1 position(s) available at

Politecnico di Torino

Italy

Torino

10129

Corso Duca degli Abruzzi, 24

EURAXESS offer ID: 491918

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