

10/02/2020



ESR11: PhD Student Position at FIDAMC 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

Fundación Investigación, Desarrollo y Aplicación de Materiales Compuestos

WEBSITE

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

Hiring/Funding Organisation/Institute

ORGANISATION/COMPANY

Fundación Investigación, Desarrollo y
Aplicación de Materiales Compuestos

COUNTRY

Spain

DEPARTMENT

CITY

Getafe

Simulation and Engineering

POSTAL CODE**ORGANISATION TYPE**

28906

Research Laboratory

WEBSITE

<https://www.fidamc.es/>

ORGANISATION/COMPANY

Fundación Investigación, Desarrollo y Aplicación de
Materiales Compuestos

LOCATION

Spain › Getafe

RESEARCH FIELD

Engineering › Materials engineering
Engineering › Mechanical engineering

TYPE OF CONTRACT

Temporary

JOB STATUS

Full-time

RESEARCHER PROFILE

First Stage Researcher (R1)

HOURS PER WEEK

40

APPLICATION DEADLINE

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

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 FIDAMC in **Getafe, Spain**:

ESR 11: Analysis of the failure mechanisms associated to the unfolding failure in CFRP profiles

Objectives: *Unfolding failure consists of a delamination produced in curved composite laminates when they are loaded under a bending moment which tries to open the curvature. This failure is typically associated to the interlaminar normal stress (INS) characterized by the interlaminar tensile strength (ILTS). The ILTS is generally obtained by a four-point bending test. The four-point bending test applied to the curved composite laminates causes a thickness-dependence of the ILTS with the thickness of the specimens. Several authors have associated this dependency to manufacturing defects or porosity, but results are not conclusive. The aim of this project is to analyse numerically and experimentally the failure mechanisms involving the unfolding failure in order to demonstrate a novel idea of unfolding failure associated to intralaminar stresses instead of the INS. Preliminary analyses of existing experimental results (facilitated by an external company) have shown a good agreement with this new hypothesis. The study will be based in a set of new experimental results specifically oriented to observe the effect of the intralaminar failures. Since failure is catastrophic and difficult to be precisely observed, the experimental results will be complemented by numerical simulations, using FEM models, in which crack onset will be determined using FEM, and crack propagation (including possible migration from layers to interfaces and vice-versa) will be simulated with PF. Correlation between experimental and numerical results will provide important proof of the existence of this novel failure mechanism. For more information about this position please go to <https://www.newfrac.eu/phd-positions/esr11>*

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

REQUIREMENTS

Offer Requirements

REQUIRED EDUCATION LEVEL

Engineering: Master Degree or equivalent

REQUIRED LANGUAGES

ENGLISH: Excellent

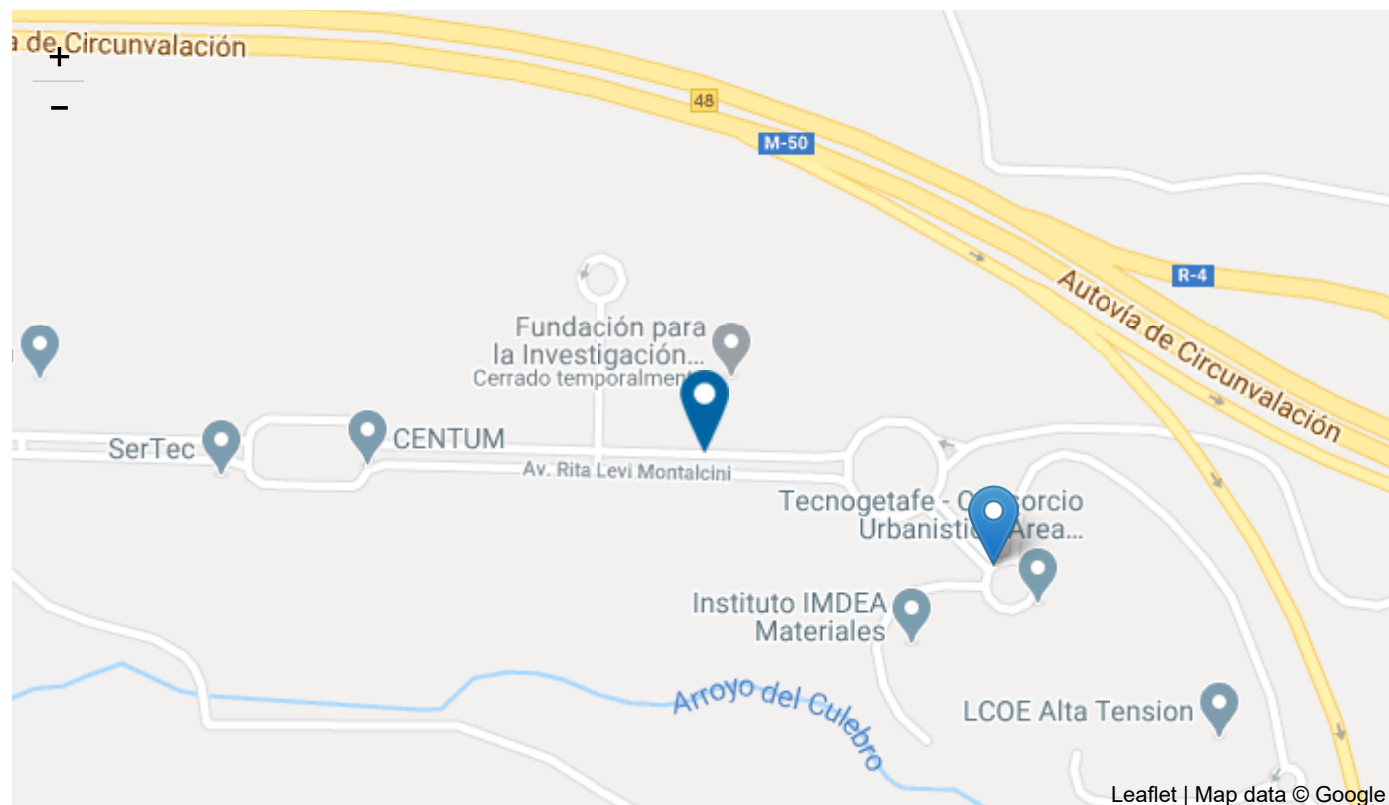
Skills/Qualifications

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

Specific Requirements

- Previous experience in the manufacturing of composite laminate and in the use of Finite Element Method will be appreciated.

Map Information



WORK LOCATION(S)

1 position(s) available at
Fundación Investigación,
Desarrollo y Aplicación de
Materiales Compuestos
Spain
Getafe
Avda. Rita Levi Montalcini, 29

EURAXESS offer ID: 491140

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