The overarching objective of the NEWFRAC network 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 is the first coordinated initiative in EU aiming at the systematic progress in the failure prediction in heterogeneous systems through a novel computational framework by integrating Finite Fracture Mechanics (FFM) and Phase Field (PF) modelling strategies.

The potential impact of this modelling and simulation framework in the design of heterogeneous materials and structures can be enormous, for instance, in a weight reduction with respect to the current design concepts, increasing the ratios of strength/weight and stiffness/weight.

Work Packages
1. Management and Financing
2. Recruitment and Training
3. Communication, Dissemination and Exploitation
4. Novel tools for the prediction of fracture in heterogeneous materials
5. Innovative solutions to fracture problems in Energy, Health and Transport

Open PhD Positions
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NewFrac Innovative Training Network

NewFrac provides intersectoral, interdisciplinary and international training for Early Stage Researchers (ESRs). **NewFrac network** is composed of seven leading research groups (University de Sevilla, Sorbonne Université, Universidade do Porto, Politecnico di Torino, Tel Aviv University, IMT Lucca and ETH Zürich) and five high-tech companies (Robert Bosch GmbH, FIDAMC + Bottero, Cubicoff, Safran) with a special interest as end-users on the developments and outcomes of this network.

The PhD Program:

The NewFrac Network is a 36-month PhD program, where students will have intersectoral and international training throughout Europe in leading laboratories and companies in the field. The main training events of the network are:

- **Main Training Events & Conferences**
  - **CORE Winter School**
    - Venue: Sevilla
    - Date: Jan. 2021
  - **1st NEWFRAC Workshop (WS1)**
    - Venue: Sevilla
    - Date: Jan. 2021
  - **Symposia on FFM and PF at the conference ICF15**
    - Venue: Atlanta
    - Date: Jun. 2021
  - **Joint 2nd NEWFRAC Workshop (WS2) & TC08 - Numerical Methods (ESIS) Meeting**
    - Venue: Lucca
    - Date: Jan. 2022
  - **Symposia on FFM and PF at the conference ECF23**
    - Venue: Madeira
    - Date: Jun. 2022
  - **LEAD Autumn School**
    - Venue: Torino
    - Date: Oct. 2022
  - **3rd NEWFRAC Workshop (WS3)**
    - Venue: Torino
    - Date: Oct. 2022
  - **Symposia on FFM and PF at the conference CFRAC 2023**
    - Venue: to be defined
    - Date: Summer 2023
  - **Final NEWFRAC Conference (FNFC)**
    - Venue: Porto
    - Date: Apr. 2024

Moreover, each ESR will have at least two secondments, one of them with an industrial partner.

**Open PhD Positions**

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