

06/07/2021



PhD - XS-META ITN - ESR6 - Model order reduction algorithms for the prediction of metamaterial properties

Where to apply

Application Deadline: 20/08/2021 23:00 - Europe/Brussels

Contact Details

Where to send your application.

COMPANY

Arts et Metiers Institute of Technology

E-MAIL

xsmetaitn@gmail.com

Hiring/Funding Organisation/Institute

ORGANISATION/COMPANY

Arts et Metiers Institute of Technology

COUNTRY

France

DEPARTMENT

PIMM

CITY

Paris

ORGANISATION TYPE

POSTAL CODE

WEBSITE<https://artsetmetiers.fr/en/school>**STREET**

155 Boulevard de l'Hôpital

ORGANISATION/COMPANY

Arts et Metiers Institute of Technology

LOCATION

France › Paris

RESEARCH FIELD

Engineering › Materials engineering

TYPE OF CONTRACT

Temporary

RESEARCHER PROFILE

First Stage Researcher (R1)

JOB STATUS

Full-time

APPLICATION DEADLINE

20/08/2021 23:00 - Europe/Brussels

HOURS PER WEEK

37.5

**EU RESEARCH FRAMEWORK
PROGRAMME**H2020 / Marie Skłodowska-Curie
Actions**MARIE CURIE GRANT AGREEMENT
NUMBER**

956401

OFFER DESCRIPTION

XS-Meta is an Innovative European Training Network project with the main objective of training a new generation of researchers in concurrent material-structure design of high-technology structural systems, using functionally graded 3D-printed metamaterials.

The scientific challenge in XS-Meta is to take advantage of the metal 3D printing technology to perform a change of paradigm on how engineering structural design is performed, integrating the design of the metamaterial structure at the subscale with the engineering design of the component to develop a new generation of high-performance components. XS-Meta addresses the multiple scales of the problem, from microstructure of the material at the grain level, to the continuum-based engineering design of industrial components.

XS-Meta involves 11 partners from 7 different countries, including reference research groups in 7 leading academic institutions, one public research institute and 3 companies. XS-Meta involves different fields, from machine learning to computational and experimental materials science, manufacturing, applied mathematics, computational mechanics, and software engineering.

In the framework of this ITN, 14 early stage researchers (ESR) will be recruited with the purpose of developing research leading to a doctoral thesis. The specific profiles are listed below. The duration of each contract and of the thesis will be of 36 months. Starting date is expected between September 1st 2021 to March 1st 2022. Exact dates will be agreed between the selected candidates and the recruiting institution.

Purpose and objectives: In close team collaboration with ESR7 (1, ESR6) To develop model order reduction algorithms using the surrogate models for efficient inverse analyses, avoiding the curse of dimensionality and (2, ESR7) generate computational vademecums for a selected set of metamaterial families, (3, both) To develop machine learning tools to identify fictitious internal variables, correlations and functions controlling the dissipative mechanical behaviour of metamaterials

Enrolment in Doctoral degree(s): ENSAM – PhD in Engineering Science – Main Supervisor: Prof. Francisco Chinesta

More Information

ADDITIONAL INFORMATION

Benefits

Selected candidates will be offered a fixed-term 36-month contract with the applicable benefits for the institution and country, including health coverage. Standard competitive EU-MSCA salaries are offered. The salaries are adjusted to each country living standards. Additional mobility and family allowances will be paid on the top of the salary.

Eligibility criteria

To apply for these H2020-MSCA training positions, applicants must fulfil the following MSCA criteria:

Mobility rule: Candidates must not have resided in France for more than 12 months over the last 3 years before the starting date. This excludes holidays and (refugee status) asylum application. Candidates may be of any nationality.

Applicant with already ESR status: Applicants must fulfill the requirements for enrolling in the PhD program of the hosting institution (or the associated academic institution in case of industry hosts). At the time of recruiting, an applicant who initiated a research career must be in the first four years of their research careers and cannot have been awarded a doctoral degree. These four years refer to the time since the researcher received the degree which would entitle him/her to embark on a doctorate. There is no age limit.

Selection process

The candidates meeting any of the profiles and specific requirements below may apply until the positions are filled, and before July 15th for guaranteeing a full consideration.

Applications must contain:

A motivation letter (maximum 1 page per position applied) which should state why the applicant wishes to pursue the specific research and why s/he thinks s/he is an ideal candidate for the position. If more than one position is pursued, include a motivation letter per position.

A brief CV (typically 2 pages). If the applicant has developed previous work related to the position to which s/he is applying, an additional page may be included describing more in detail that work.

For verifying MSCA requirements, in the first page of the CV there must be a separate section with title "MSCA requirements fulfilment", in which the candidates clearly indicate exact dates of (1) degree entitling to pursue a PhD, (2) positions and country of residence in the last 5 years.

Up to 3 recommendation letters and/or contact e-mail addresses with a brief professional description (title, position, relationship with applicant) of the referring person.

Copy of the title which allows to enroll in a PhD program in the country of employment (typically a Master of Science degree or Engineering degree).

The selection process will be performed in two phases. In the first phase, a pre-selection of possible candidates will be performed the XSMETA Selection Committee. As a second step, a CV-video will be required to pass to the interview.

Applications should be submitted to the following e-mail address:

xsmeta@n@gmail.com

Include in the e-mail subject:

XS-META, ESR application for position ESR#6

Additional comments

The consortium involves the following beneficiaries (recruiting institutions):

1. Universidad Politécnica de Madrid (UPM), School of Aeronautical Engineering and Space (ETSIAE), Spain.
2. Ecole Nationale d'Arts et Métiers (ENSAM), Paris (France)
3. National University of Galway (NUIG), Dublin (Ireland)
4. Rheinisch-Westfälische Technische Hochschule – Aachen (RWTH), Aachen (Germany)

5. Centre National de la Recherche Scientifique, UMI with Georgia-Tech Lorraine, Metz (France).

6. Engineering System International (ESI); an engineering company of virtual prototyping software. Paris (France).

7. Oxmet-Technologies (Oxmet); a start-up company, spin-off from Oxford University, dedicated to 3D metal printing and alloy design for 3D printing, Oxford (United Kingdom)

8. Instituto Nacional de Técnica Aeroespacial Esteban Terradas (INTA), is a large research institution in the fields of defence and aerospace technologies. Torrejón-Madrid (Spain)

9. X-EV, S.R.L. (XEV) is a multinational start-up company manufacturing 3D-printed electric cars, Torino (Italy)

The consortium also involves the following partners (receiving seconded ESRs and giving training)

10. Georgia Tech, Atlanta (USA).

11. University of Florida (USA)

REQUIREMENTS

Offer Requirements

REQUIRED LANGUAGES

ENGLISH: Excellent

Skills/Qualifications

Applicants should hold a Master degree in a relevant field

Excellent English communication skills (speaking, listening, reading and writing)

Motivation to pursue a PhD, travel, and work independently

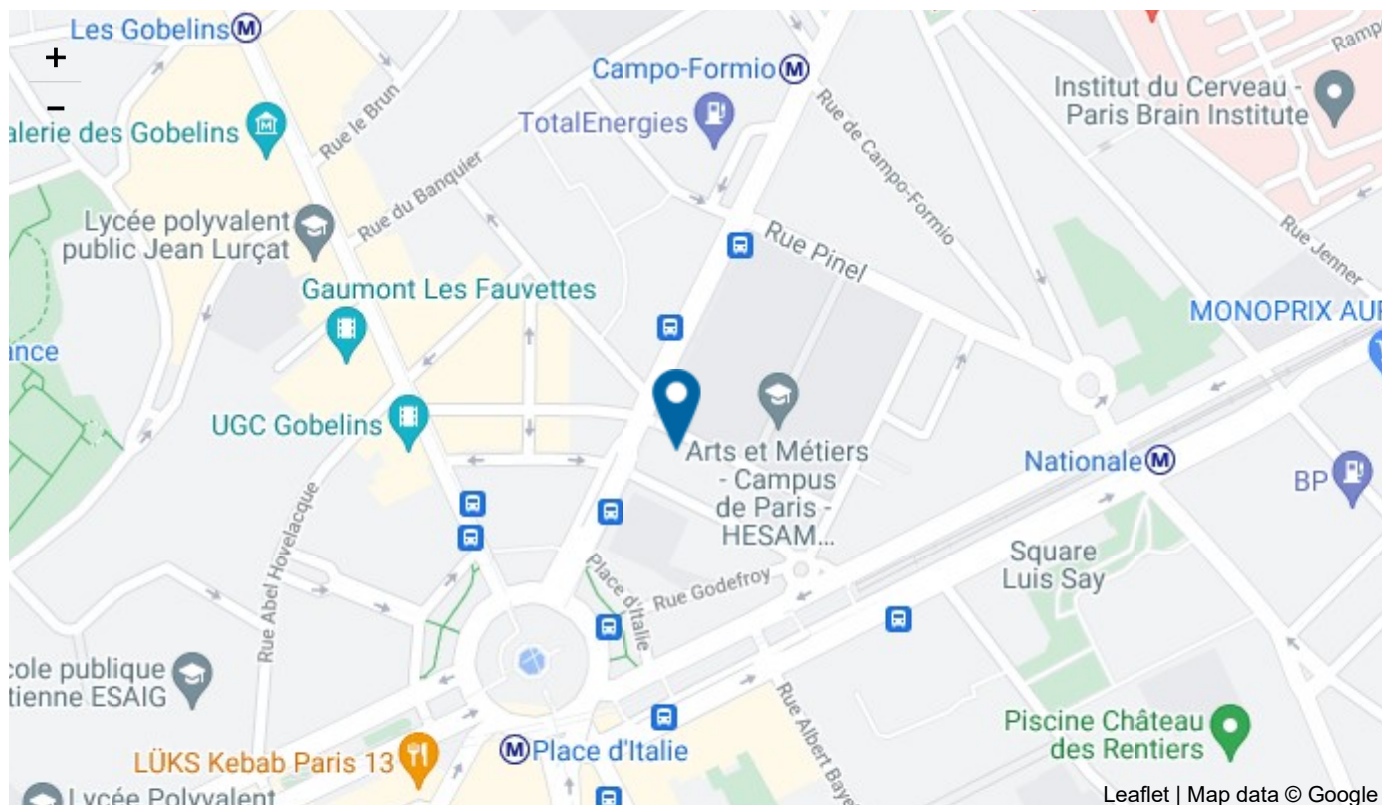
Applicants must be available to start the PhD position before 31 December 2021.

Specific Requirements

Degree requirements: MS in Mechanical Engineering, Mathematics (applied), Physics or related field.

Additional skills: Communication skills. Programming skills (Matlab, Fortran, C, Python...). Finite element analysis.

Map Information



 Job Work Location  Personal Assistance locations

WORK LOCATION(S)

1 position(s) available at
Arts et Metiers Institute of
Technology
France
Paris
75013
155 Boulevard de l'Hôpital

EURAXESS offer ID: 660562

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