



**ENHAnCE**

Featuring Engineering

## EVALUATION GUIDELINES

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# Introduction

As specified in the Grant Agreement Annex 1, an Evaluation Guidelines document for ESR recruitment is launched by the Selection Committee (see Selection Committee composition in deliverable D30).

## Selection process.

### Advertisement

Vacancies are advertised internationally, with clear visibility of eligibility and selection criteria **based on excellence**. Prerequisites for each ESR position are tailored according to the detailed work plan. Vacancies have been advertised centrally on: EURAXESS (please refer to the published link <https://euraxess.ec.europa.eu/jobs/471470>), on the partners' web pages and on ENHAnCE social media, giving a immediate international visibility. Moreover, vacancy descriptions have been placed on the MSCA Action and MCAA websites and social media interfaces. In addition, ENHAnCE have used the contacts and networks that each of the supervisors has for proactive dissemination of the programme, which includes, scientific or technical networks (like the PHM Society), industry platforms, professional councils (like the National Council of Civil Engineers), and press and media centres.

### Selection Process and Evaluation Criteria

1. ENHAnCE has been opened to **all eligible researchers irrespective of nationality, race, gender, religion or disability**. The *Science4refugees (S4R) initiative* has been present during the recruitment process by enabling the S4R indicative within the Euraxess portal.
2. ENAHnCE's fellowships are awarded on the basis of open and quality driven competition, with *applications evaluated on: (a) the scientific excellence, (b) Aptitude, (c) Ambition, (d) impact (on the fellow's career and on the European competitiveness)*.

The advertised vacancies provided contact details of the academic supervisor in order to encourage the applicant asking any information about the recruitment procedure. The applicant has been asked to develop a dedicated application including:

1. **Researcher declaration document** including: (a) self-declaration about Eligibility; (b) reasoned specification of the positions applied; (c) self-declaration about English proficiency (max. 1 page)
2. Applicant **CV** (max. 4 pages)
3. Major **academic transcripts** (bachelor and master, if any)
4. Personal **motivation letter** (max. 300 words)
5. **Research statement** in accordance to the Research Project applied (max. 500 words/per project applied). See the list of Research Projects in the Basic Information Section.
6. (optional) Up to 3 **recommendation letters** from ENHAnCE external recognized expert

## Eligibility check

The day after the proposal submission deadline, the Selection Committee (SC) led by the Coordinator with the help of the Project Manager undertake an eligibility check guided by the following criteria:

1. **Mobility Rule:** The researcher (any nationality) must not have resided or carried out his/her main activity (work, studies, etc.) in the country of his/her host organisation for more than 12 months in the 3 years immediately prior to his/her recruitment (excluding vacations and short stays).
2. **Early Stage Researchers (ESR):** ESR shall, *at the date of recruitment*, be within the first **four years** of *full-time equivalent research experience* (\*) and have not been awarded a doctoral degree. *The 4-years period is measured from the date when the researcher obtained the degree which formally entitles him/her to embark on a doctorate either in the country in which the degree was obtained or the country in which the researcher is recruited.*
3. **Completeness of the application.** Incomplete proposals are communicated to the applicants and state short comments for reasons of incompleteness, and ways and deadline to correct.

(\*) Research and development activities (R&D) in any institution (companies, research organizations, government agencies, universities, etc.) are considered as research experience. Teaching in universities is also considered as research experience since it's part of the research & academic career.

## Required background per ESR positions

- ESR1 (Reliable sensor networks for Structural Health Monitoring (SHM) systems in highly loaded composite structures).
  - o Main Supervisor: Prof. Peter Wierach (DLR)
  - o Specific requirements: Master or equivalent degree in Mechanical Engineering or equivalent degree.
  
- ESR2 (Virtual Laboratory for Modelling and Optimisation of Manufacturing of Composites Structures with embedded structural health monitoring systems).
  - o Main Supervisor: Ir. David Dumas (Cenaero ABSL)
  - o Specific requirements: Master or equivalent degree in Mechanical Engineering with affinity/background in material science and computer science.

- ESR3 (Computing Platform Based on Novel High-Order Numerical Methods for Smart FRP Composite Structures with Embedded AU-SHM sensors).
  - o Main Supervisor: Prof. Alain Lhemery (List CEA Tech)
  - o Specific requirements: Master or equivalent degree in Mechanical Engineering, Applied Mathematics.
  
- ESR4 (Novel procedure for designing, manufacturing and assembling smart composite wind turbine blades with embedded AU-SHM sensors).
  - o Main Supervisor: Dr. María Rodríguez Gude (FIDAMC)
  - o Specific requirements: Master or equivalent degree in Engineering or Applied Physics, background in Materials and Computer Science. Previous experience in acoustic sensors, composite materials, numerical modelling (e.g. using MATLAB) and/or multiphysics simulation would be highly valuable.
  
- ESR5 (Prognostic signatures based on data-fusion techniques from Lamb-wave and acoustic emission in real-world FRP laminates subjected to random fatigue damage).
  - o Main Supervisor: Dr. Dimitrios Zarouchas (TU Delft)
  - o Specific requirements: Master degree in Aerospace/Aeronautics Engineering or Mechanical Engineering with solid background on mechanics of composite materials and experimental mechanics. A combination of strong mathematical/analytical skills and advanced programming skills is required. Understanding of the principles of structural health monitoring techniques such as Acoustic Emission, Lamb waves.
  
- ESR6 (Development of super-fast Bayesian algorithms for real-time prognostics in composite structures using structural health monitoring).
  - o Main Supervisor: Dr. Claudio Sbarufatti (POLIMI)
  - o Specific requirements: Master or equivalent degree in Mechanical Engineering, Aerospace Engineering, Industrial Engineering. Required strong background in computer science and programming. Highly valuable background in Prognostics and Health Management (PHM).
  
- ESR7 (Development of a System-Level Post-Prognostics Reasoner for FRP turbine blades using on-board SHM).
  - o Main Supervisor: Prof. Athanasios Kolios (University of Strathclyde)
  - o Specific requirements: Master or equivalent degree in Engineering (ie. Mechanical, Electrical, Structural, Civil).

- ESR8 (Modelling risk of failure using guided wave propagation and interaction with damage in complex composite structures).
  - o Main Supervisor: Dr. Dimitrios Chronopoulos (University of Nottingham)
  - o Specific requirements: Master or equivalent degree in Engineering or Applied Mathematics/Physics.
  
- ESR9 (A Paradigm-Shift Research for System-Level Real-Time Prognostics of Cyber-Physical Assets using Deep Learning approaches).
  - o Main Supervisor: Dr. Juan Chiachío Ruano (University of Granada)
  - o Specific requirements: Master degree in Structural Engineering, Mechanical Engineering, Aeronautical Engineering, Naval & Oceanic Engineering, Civil Engineering. Required strong background in computer science and programming. Highly valuable background in PHM.
  
- ESR10 (Development of a prognostics-based self-adaptive Expert System for smart Composite Structures).
  - o Main Supervisor: Dr. Manuel Chiachío Ruano (University of Granada)
  - o Specific requirements: Master degree in Structural Engineering, Mechanical Engineering, Aeronautical Engineering, Civil Engineering. Required strong background in computer science and programming. Highly valuable background in PHM.

## **Shortlisting and Interview process**

Each beneficiary assesses the applications by awarding points on the three pillars of Excellence, Aptitude, and Ambition, based on which the shortlisting is made. A consensus meeting follows the shortlisting of the candidates that will be available for all supervisors, apart from those belonging to the SC. The respective HR departments and/or the supervisors will then contact candidates to inform them of the outcome by email and the interviewing arrangements. A subsequent coarse scanning of the applications is done by the SC during interviews, identifying 2-3 strong candidates for each ESR vacancy. These are called for an interview by the team of supervisors plus a key senior staff member from the HR department of the corresponding beneficiary, if required. The principal supervisor for each ESR will be the one to get the final decision, after considering however the assessments of the other interviewing members. *The assessments during interview are based on the aforementioned three pillars (Excellence, Aptitude, and Ambition) along with adequateness of the candidate to the specific requirement per ESR position, described above. The weight factors among the four criteria can be conveniently scaled by each beneficiary, with the only rule that the Excellence factor should not be less than 0.5 (50% of the score).*

Ways to measure Excellence are diverse however the following aspects can be considered (among others): Academic transcripts, CV and professional career, and societal impacts.

Should any conflict or lack of agreement arise during the selection, the SC will provide support by: (a) incorporating two external peers from the institution where the potential ESR will be incorporated; (b) counting with a double vote of the Coordinator.

The successful candidates are provided with information from the SC in order to prepare for the mobility and to organise practical arrangements such as housing, contact with local authorities and national contact points (where available), visa and immigration matters. Where available, the selected candidates are directed to the Local Contact Points of the Euraxess Service Network (like the UGR IWC) for guidance on legal issues, tax and social security advice, as well as personal support.