

## 1 Research Grant Announcement (M/F)

Call open for applications for a research grant within the framework of project AARM 4.0 - Aços de Alta Resistência na Metalomecânica 4.0, with the reference POCI-01-0247-FEDER-068492, co-financed by the European Regional Development Fund (ERDF), through the Operational Programme for Competitiveness and Internationalization (COMPETE2020), under the PORTUGAL 2020 Partnership Agreement, under the following conditions:

**Scientific Area:** Structural Materials & Structures

**Admission requirements:** Candidates who cumulatively meet the following two requirements may apply for this grant:

- Be a student enrolled in a doctoral program in the area of Mechanical or Metallurgical and Materials or Civil Engineering, a requirement to be duly proven at the time of signing the contract.

**and**

- Hold a master's degree in Mechanical, Metallurgical and Materials or Civil Engineering.

*If the degree has been awarded by a foreign higher education institution, it must comply with the provisions of the Decree-Law no. 66/2018, of august 16th, and any formalities established there must be fulfilled until the time of signing the contract.*

**Activity Outline:** This AARM 4.0 project aims to develop cutting and welding techniques in high-strength steels, which are difficult to process but with advantages in terms of cost reduction and sustainability. The partners in this co-promotion project intend to be pioneers in the construction of structures using this type of steel. The application of high-strength steel makes it possible to design more light, slender, and simple structures. However, the increase in tensile strength typical of high-strength steels does not represent a proportional increase in fatigue strength, especially with regard to welded connections.

Within the scope of this grant, it is intended to investigate the mechanical behaviour of welded joints made of S690QL structural steel, with the development of research work in the scope of numerical simulation of the welding process with the creation of models that allow the impact analysis of the process parameters on service conditions, and validation through experimental tests of mechanical characterization, such as tensile, bending, toughness, fatigue, and residual stresses.

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**Legislation and regulations:** Law Nº. 40/2004, of 18th August, in its current wording (Statutes of Scientific Research Fellow) and Regulation of Research Grants of Fundação para a Ciência ea Tecnologia, in force (<https://www.fct.pt/apoios/bolsas/regulamento.phtml.pt>) and Regulation of Research Grants of University of Porto.

**Work place:** The work will be developed at the Faculty of Engineering of the University of Porto (FEUP), under the scientific supervision of Doctor José António Fonseca de Oliveira Correia and Professor Doctor Abílio Manuel Pinho De Jesus.

**Grant duration:** Initial duration of **6 months**, with the predicted starting date in **October 2021**, on an exclusive basis eventually renewable but never exceeding the project duration.

The eventual renewal of the scholarship will be carried out as determined in article 6 of the Research Grants Regulation of the Foundation for Science and Technology, I.P.

**Stipend:** The grant stipend amounts to 1.104,64€ according to the table of values of the grants awarded directly by FCT, I.P. in the Country (<https://www.fct.pt/apoios/bolsas/valores>).

The payment will be made by bank transfer.

**Selection procedure:**

The curricular evaluation (60%) of the candidates will be based on the merit of the candidate and the following factors will be evaluated:

a) Academic training (Master in Mechanical, Metallurgical and Materials or Civil Engineering 10 points; Others Masters – 5 points);

b) Master's final score: up to 14 points – 4 points; greater than 14 values - 5 points;

This classification is determined as follows:

- In the case of an Integrated Masters: Integrated Masters score.
- In the case of an n-year Bachelor's Degree + 2-year Master's Degree:  $n/(n + 2) \times$  Degree score +  $2/(n + 2) \times$  Master's score.

c) Research Experience in the project area – 5 points; in related areas – 3 points; Other areas – 1 point.

The curriculum of each candidate will be evaluated in a 1-20 points scale. Candidates with less than 13/20 points in the curricular evaluation will not be invited for the interview.

In the interview (40%) topics related with the work plan, and the candidate's CV will be discussed with the invited candidates.

**Selection Jury:**

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President: Professor Doctor Ana Rosanete Lourenço Reis

Effective member: Professor Doctor Abílio Manuel Pinho De Jesus

Effective member: Doctor José António Fonseca de Oliveira Correia

Supplementary member: Professor Doctor José Manuel de Almeida César de Sá

Supplementary member: Professor Doctor Laura Maria Melo Ribeiro

**Advertisement of final decision:** The results of the evaluation will be released to the candidates by email to the email address indicated in the application process.

**Deadline for applications and form of presentation of the applications:**

The call is open from **09-09-2021 a 22-09-2021** (until 23h59m, GMT time).

Applications must be formalized by email to [arlr@fe.up.pt](mailto:arlr@fe.up.pt), [jacorreia@fe.up.pt](mailto:jacorreia@fe.up.pt) and to [recursoshumanos@fe.up.pt](mailto:recursoshumanos@fe.up.pt), clearly stating the reference **FEUP-FEDER-AARM4** and including the following pdf documents: Motivation letter, Copy of certificates evidencing academic degree (referring the classification of each separated or integrated degree), detailed Curriculum Vitae; and other documents considered relevant by the applicant.

In order to assure that all documents can be read, the preferred saving format is the Portable Document Format (.pdf).

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