

ANNOUNCEMENT FOR THE AWARD OF A RESEARCH FELLOWSHIP

Title: Research Fellowship for a Master's degree holder – SmartExo; 1 vacancy

Reference: COMPETE2030-FEDER-00761900_01/2025_CMEMS

A call for applications is now open for the attribution of (one) 1 grant for a Master's degree holder within the scope of the R&D project of Center for Microelectromechanical Systems (CMEMS-UMinho), "Smart Control of a Soft Exoskeleton with a Textile-based Actuation", COMPETE2030-FEDER-00761900, co-financed by European Regional Development Fund (FEDER) and national funds, through Fundação para a Ciência e Tecnologia (FCT), through the Innovation and Digital Transition Programme | Compete2030, under the following conditions:

Scientific Area: Electrical Engineering, Electronics, and Computer Science

Recipient category: Master's degree holders in Biomedical Engineering, Electronic Engineering, Computer Engineering, Mechanical Engineering or related areas enrolled in a doctoral program or non-degree course integrated into the institution's educational project, in the area requested in the public notice or related area.

Requirement for granting the fellowship:

- The applicants may apply without prior registration in the course for which the fellowship is open. The requirement to enroll in a degree course or non-academic degree course will be verified on the date of contracting the fellowship;
- Only fellowships whose selected applicants present valid proof of enrollment in a degree course or non-academic degree course will be contracted, according to the type of the fellowship, issued by the academic services of the Higher Education Institution, indicating, respectively, the academic year or its duration (start and term).

Applicants' eligibility: Candidates who meet the conditions set out in Article 9 of the Research Grant Regulations, No. 950/2019, of 16-12-2019, of FCT I.P. are eligible.

Nationals or citizens of other European Union member states, third-country nationals, stateless persons, and citizens with political refugee status are eligible to apply for this competition.

Candidate eligibility requirements:

- Applicants must hold, at the time of application, a Master's degree in Biomedical Engineering, Electronic Engineering, Computer Engineering, Mechanical Engineering or related fields. It is required for contractualization, proof of academic qualifications completed at the deadline for applications, including those resulting from academic degree recognition processes;
- Candidates enrolled in non-conferring degree courses: cannot benefit from this scholarship candidates who, with the conclusion of the scholarship contract in question, including renewals, exceed a cumulative period of two years followed or interpolated, in this type of scholarship;
- Preferential Requirements: Clear demonstration of skills in modeling and simulating solids, fluids, and their interaction and interface; clear demonstration of skills in finite element simulation; clear demonstration of skills in biomechanical and/or physiological data analysis and processing; experience in human motion data collection.

Workplan and objectives to be achieved:

The main objective of this work plan is to simulate and validate an actuator model in which a shape memory alloy (SMA) spring is the actuating unit. Specifically, it will include the extrapolation of simulation and results within the scope of the actuating unit to an actuator integrated by several of these units and in which they interact with each other. This simulation will aim to validate the underlying SMA constitutive model and will guide the design of the actuator, namely by defining parameters such as the number of actuation units and orientation, and by defining global actuation metrics.

The scholarship work plan will also include support for determining the specifications of a textile interface where the actuator will be integrated, namely the distribution of stiffness necessary to optimize force transmission. This will include support for relevant literature research and the development and execution of an experimental protocol to determine the characteristics of a “gold-standard” interface.

These objectives are part of activities 2 and 3 of the project. Finally, the scholarship holder may contribute to the preparation/revision of a scientific article, contributing to the deliverables of Activity 8, as well as a report with the results obtained and technical documentation.

Applicable legislation and regulations: Research Fellow Statute (EBI), approved by Law n°. 40/2004 of August 18, in its current wording and FCT Research Fellowship Regulation, approved by Regulation n° 950/2019, published in the Diário da República, 2nd series, of December 16, 2019, in its current wording, and Scientific Research Fellowship Regulation (RBIC) of the University of Minho, approved

by order nº 4998/2025, published in the Diário da República, 2nd series, nº 81, of April 28, 2025
Amended and republished through amendment statement no. 634/2025/2, published in the Official Gazette, 2nd series, no. 132, of July 11.

Host/Contracting institution and scientific supervision: The workplan will be carried out in the Center for Microelectromechanical Systems (CMEMS-UMinho) of University of Minho, located in the Azurém Campus, Guimarães, under the scientific supervision of the Professor Cristina Manuela Peixoto dos Santos.

Fellowship duration: The grant will take place for a period of 3 months, with a provisional starting date on November of 2025. The fellowship grant may, eventually, be renewed up to the maximum limit allowed by the project and/or applicable legislation.

Amount of the research grant: The amount of the grant corresponds to 1 309,64 €/month, according to the table of FCT scholarship values in the country (<http://www.fct.pt/apoios/bolsas/valores>) and of the table of values of the Research scholarship of the University of Minho, updated annually, as decided by the Management Board.

Payment is made on the 23rd of each month, through bank transfer to the Bank Identification Number of the fellow identified in the contractualization process.

Other components of the research grant: Define other components of the scholarships, as provided for in Article 18º of the FCT Research Scholarship Regulations (RBI).

Other benefits: Reimbursement of Voluntary Social Insurance, if the candidate chooses to receive it, corresponding to the 1st level of discounts (for research grants with a total duration 6 months or higher) and personal accident insurance.

Exclusivity regime: The grantee will perform the activities under exclusivity, as foreseen in article 5º of the Research Fellow Statutes and applicable regulations.

Selection panel: The selection panel is composed by: President: Doctor Cristina Manuela Peixoto Santos, Assistant Professor with Habilitation from Industrial Electronics Department of School of Engineering of University of Minho;

Effective Member: Doctor Alexandre Manuel Teixeira Barros Ferreira da Silva, Assistant Professor, Industrial Electronics Department of School of Engineering of University of Minho and Doctor Graça

Maria Henriques Minas, Associate Professor with Habilitation, Industrial Electronics Department of School of Engineering of University of Minho;

Substitute member: Doctor José Augusto Afonso, Assistant Professor, Industrial Electronics Department of School of Engineering of University of Minho and Doctor Luís Miguel Valente Gonçalves, Associate Professor, Industrial Electronics Department of School of Engineering of University of Minho.

The first effective member will substitute the President of the selection panel in case of impediment, being nominate the first substitute member in the place of the first effective member.

Criteria and procedures for applications assessment and selection: The applications assessment will focus on the candidate's Merit, following evaluation criteria, valued on a scale of 0 to 5 values (or another scale)¹:

Applicant Merit - AM (100%):

- a) Academic path (considering the classifications of academic degrees), with a weighting of 100%.
 - 1. Academic path (considering the classifications of academic degrees), with a weighting of 40%;
 - 2. Proven experience in the areas listed in the requirements, with a weighting of 60%:
 - i. Relevant experience in modeling and simulation with OpenFOAM, 55%
 - ii. Analysis and processing of human data, 10%;
 - iii. Experience in data collection, 10%;
 - iv. Experience in modeling mechanical structures and force distribution for a given material, 25%

The final classification of the applicant's merit with the achieved through the following formula:

$$MC=(a1*0.4) +(a2*0.6)$$

If none of the candidates demonstrate to have a suitable profile for the execution of the work plan, the Jury is entitled to close this call without selecting a candidate.

Documents proving academic degrees and diplomas, or their recognition when awarded by foreign higher education institutions, may be waived at the application stage and replaced by a declaration of honor from the candidate, with verification of this condition only occurring at the scholarship contract stage. This declaration must attest to facts that occurred prior to the application. In cases of discrepancy between the information contained in the declaration and the documentation submitted for the purposes of contracting the scholarship, only the information contained in the latter will be considered. If it is found that the documents proving the academic degree and diploma, or their

recognition under Decree-Law No. 66/2018 of August 16, do not correspond to the grades awarded in the evaluation of the academic record and may, consequently, alter the candidate's ranking, the scholarship will not be awarded.

Note: Applicants with degrees obtained abroad must present proof of recognition of qualifications in Portugal and conversion of the final classification obtained in them to the Portuguese classification scale or declaration under the terms indicated in the previous point. Candidates who do not comply with one of these provisions, the selection panel will assign “0” in the grade of the graduation and/or master course. Candidates will be evaluated on the remaining parameters.

Application deadline and submission: The call for applications is open for a period of 10 working days, counted from the date of publication of the announcement on the Euraxess portal.

Applications must be submitted by email to secretaria@cmems.uminho.pt, indicating the reference number of the competition in the subject line. Only applications submitted within the established deadline and accompanied by the following documents will be accepted:

- a) Candidate's updated curriculum vitae;
- b) Certificates of the academic degrees obtained or, if applicable, the candidate's declaration of honor that he/she has completed the degrees required in the notice by the application deadline (not applicable to research initiation grants).

For degrees obtained abroad, the record of recognition of the academic degrees and record of the conversion of the respective final classification to the Portuguese classification scale must be presented, or, alternatively, a declaration of honor from the candidate.

This declaration must attest to facts that occurred prior to the application. In the event of a discrepancy between the information contained in the declaration and the documentation submitted for the purposes of contracting the scholarship, only the information contained in the latter will be considered. If it is found that the documents proving the academic degree and diploma, or their recognition under the terms of Decree-Law n. ° 66/2018, of August 16, do not correspond to the classifications awarded in the assessment of the academic career and may consequently alter the candidate's ranking, the scholarship will not be contracted;

- c) Cover letter
- d) Statement proving that you meet the conditions for the type of scholarship, in accordance with the application requirements;
- e) Other documents that the candidate considers relevant to the evaluation process

Form of publication/notification of results: The results of the evaluation are published in a single list in alphabetical order, posted in a visible and public place in the host unit, as well as by email to all

candidates, attaching, for this purpose, the minutes of the jury's deliberations, within a maximum period of 90 working days from the deadline for submission of applications.

Candidates are informed, at a preliminary hearing, in accordance with Articles 121 and 122 of the Administrative Procedure Code, of the likely outcome of the final decision, and may comment within 10 working days of this notification.

An appeal may be lodged against the final decision within 15 working days, or an appeal may be lodged with the highest executive body of the funding entity within 30 days, both after the respective notification (Article 12(nº6) of the FCT Research Grant Regulations).

Within 10 working days of notification of the grant award, the applicant must declare their acceptance in writing. In case of non-acceptance, the next highest ranked applicant will be notified immediately.

Constitution of a selection reserve list: The applicants ranked in the next positions on the ordered list will be included in a selection reserve list, which can be used until 31/03/2026.

Fellowship contractualization: The scholarship is awarded through the signing of a contract between the University of Minho and the scholarship recipient, in accordance with point 2.4 of the Rules for the Award and Management of Scholarships

https://www.fct.pt/wpcontent/uploads/2022/03/Normas_de_Atribuicao_de_Bolsas_2021.pdf and the draft contract in Annex II of the University of Minho's Scientific Research Scholarship Regulations.

The contract can only be signed after receipt of all the documentation required for the type of scholarship, which must occur within a maximum period of 6 months, including proof of academic degrees or diplomas, as well as enrollment in non-degree study cycles or courses, as applicable.

Once all the documentation has been received, the contracting entity has 60 working days to sign the scholarship contract. Once received by the scholarship holder, the contract must be returned, duly signed, within 15 working days.

Term and cancellation of fellowship contracts: Without prejudice to the other grounds laid down in the University of Minho's Scientific Research Scholarship Regulation and in the Research Fellow Statute, the scholarship will cease on completion of the contracted work plan, as well as on expiry of the period for which it was granted or renewed.

The **final report** must be submitted to the scientific advisor, in accordance with the defined objectives and evaluation criteria, no later than 60 working days after the end of the scholarship and must be drawn up in accordance with Annex I of the Regulations of the University of Minho.

Non-discrimination and equal access policy: Universidade do Minho actively promotes a policy of non-discrimination and equal access, so that no candidate may be privileged, benefited, harmed or

deprived of any right or exempt from any duty due, namely, to ancestry, age, sex, sexual orientation, marital status, family status, economic situation, education, social origin or condition, genetic heritage, reduced working capacity, disability, chronic illness, nationality, ethnic origin or race, territory of origin, language, religion, political or ideological convictions and trade union membership.

Declaration of Honor

Academic qualifications

I, (full name), candidate for the vacancy for the award of a (type of scholarship), within the scope of the project (name or reference of the project), published on the Euraxess portal, with the reference (ref. notice), declare on my honor that I have completed the academic degree of (academic degree), qualifying for the type of scholarship in the competition, namely the course (designation), by the (University conferring the degree), on the date XX/XX/XXXX, with a final average of XXXXX values on the YY scale.

As it is not possible for me to present proof of qualifications until the end of the competition, I declare that I undertake to present the aforementioned certificate at the conclusion of the scholarship contract, in the event that I am selected for the vacancy in the competition.

As this is true, I hereby date and sign this declaration.

(Place), (date).

(full name)

NOTE: The declaration may only attest to facts that occurred prior to the application.

In the event of a discrepancy between the information contained in the declaration and the documentation submitted for the purpose of contracting the scholarship, only the information contained in the latter will be taken into account.

Declaration of Honor

I, (full name), bearer of identification document number (XXXX), candidate for a research grant (type of grant), within the scope of the project (name or reference of the project), published on the Euraxess portal, with the reference (ref. call for proposals), declare on my honor that (I have not received any research grants to date / I have received the following research grants) under the Research Grant Holder Statute.

University	Financing Entity	Project	Type of Grant	Duration	Start	Term
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As this is true, I hereby date and sign this declaration.

(Place), (date).

(full name)