

## ANNOUNCEMENT FOR THE AWARD OF A POST-DOCTORAL RESEARCH FELLOWSHIP

**Title:** *Research Fellowship - SmartOs; 1 vacancy*

**Reference:** POCI-01-0247-FEDER-039868\_BI\_07\_2022\_CMEMS

A call for applications is now open for the attribution of one grant of Research Fellowship within the scope of the R&D project, of Center for Microelectromechanical Systems (CMEMS-UMinho), “*SmartOs: SMART control of a sTand-alone active Orthotic System*”, POCI-01-0247-FEDER-039868, co-financed by European Regional Development Fund (ERDF) through the Operational Programme Competitiveness and Internationalization (POCI), of PORTUGAL 2020, under the following conditions:

**Scientific Area:** Medical Electronics

**Recipient category:** The research fellowship is intended for:

- doctorates in Biomedical Engineering, who cumulatively meet the following requirements:
  - Holders of a PhD degree obtained in the three years prior to the date of submission of the fellowship application\*\*\*;
  - Have carried out the research work that led to the attribution of a PhD degree in an entity other than the host unit Center for Microelectromechanical Systems (CMEMS-UMinho)\*\*;
  - Do not exceed, with the conclusion of the contract in question, including possible renewals, a cumulative period of three years in this type of fellowship, consecutive or interpolated.

Candidates who do not cumulatively meet the requirements described above will be excluded.

- candidates with a master’s degree in Biomedical Engineering enrolled in a PhD programme, or enrolled in a non-academic degree course integrated into the educational project of the institution, in the scientific area for which the call is open or related areas. Requirements for granting the fellowship to a master degree holder:
  - 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 a 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).
  - Enrollment in non-certified courses (without curricular units) will not be considered as proof of enrollment

\*\* Different R&D Units are included, even if located in the same Organic Unit (UOEI) of UMinho (no. 4 and 5 of article 7 of the FCT I.P Research Grant Regulation, in force)

\*\*\*Documents proving the ownership of academic degrees and diplomas, or their respective recognition when they have been awarded by foreign higher education institutions, when applicable for the type of scholarship in the call for applications, may be waived at the application stage, being replaced by declaration of honor of the candidate, with the verification of this condition occurring only in the phase of contracting the scholarship. This statement must attest facts that occurred on a date prior to the application. In situations of divergence between the information contained in the declaration and the documentation submitted for the purpose of contracting the grant, only the information contained in the latter will be considered. If it is verified that the documents proving the ownership of the academic degree and diploma, or the respective recognition under the terms of Decree-Law No. 66/2018, of August 16, do not correspond to the classifications awarded in the evaluation of the academic path and may, consequently, change the candidate's ranking, the fellowship contracting will not be done.

#### **Candidates profile:**

- Preference will be given to candidates with a PhD and only be admitted candidates with a master degree if there's no candidates with doctor degree or if the PhD candidates doesn't have the intended training and/or the professional experience in the scientific area mentioned above. 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 courses: who have already benefited from a BI for a period of 2 years followed or interpolated, or who exceed this period with this grant, cannot benefit from this scholarship;
- Other requirements: Specialization area in Medical Electronics. Relevant experience in artificial intelligence algorithms applied to health; clear demonstration of technical-scientific skills in deep learning algorithms to support clinical diagnosis; clear demonstration of technical-scientific skills in data and analysis of movement data.

**Applicants eligibility:** Applicants must comply with the eligibility conditions laid down in article 9 of the Research Grants Regulation of the Portuguese Foundation for Science and Technology (2019).

**Workplan and objectives to be achieved:** This workplan has as its main goal the optimization of deep learning computational tools for quantification of the motor state and level of human motor disability.

The workplan will consist in: (i) development of computational tools based on deep learning neural networks for torque estimation based on electromyography signals; (ii) development of computational tools based on deep learning neural networks for the objective assessment of the level of disability based on different clinical scales (FMA, 10MWT, TUG); iii) study of the most representative sensory. These objectives fall within the scope of Activities 4 and 5. Also, the work plan includes data collection for the development of computational tools. Finally, the grantee must prepare 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 Fellowship Holder Statutes, approved by Law no. 40/2004 of August 18, in its current version published by Decree-Law no. 123/2019 of August 28; Regulation of Scientific Research Fellowships of the University of Minho (RBIC), published in “Diário da República”, 2nd series, no. 119, through dispatch no. 6524/2020 of 22-06-2020, ratified by ratification declaration no. 447/2021 of 22-06-2021 and Regulation of Research Studentships and Fellowships (RBI) of the Foundation for Science and Technology, I.P. - in force.

**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 Santos.

**Fellowship duration:** The grant will take place for a period of 5 months, with a provisional starting date on January of 2023. The fellowship grant may eventually be renewed up to the maximum duration allowed in the project and/or in the law and regulations in force.

**Amount of the research grant:** The value stipend (Monthly Maintenance Allowance) is 1686 euros, per month, for candidates with doctor degree or, 1144,64 euros for candidates with master degree, in accordance with the stipends values published by the Foundation for Science and Technology (FCT I.P.) in the country (Annex I – Monthly Stipends Values for the maintenance allowances of the [FCT Regulation for Research Studentships and Fellowships](#)) and Annex II of the Regulation of Scientific Research Fellowships of the University of Minho (RBIC), published in “Diário da República”, 2nd series, no. 119, through dispatch no. 6524/2020 of 22-06-2020, ratified by ratification declaration no. 447/2021 of 22-06-2021, according to the applicable regulation.

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 benefits:** Reimbursement of Voluntary Social Security (Social Security contributions), 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 Graça Maria Henriques Minas (Associate Professor at the Department of Industrial Electronics of the University of Minho);

- Effective Members – Doctor Susana Oliveira Catarino (Researcher at Center for Microelectromechanical Systems of University of Minho) and Doutora Joana Sofia de Campos Figueiredo (Investigadora Júnior do Centro de Microssistemas Eletromecânicos da Universidade do Minho);
- Substitute members – Doctor Alexandre Ferreira Silva (Assistant Professor at the Department of Industrial Electronics of the University of Minho) and Doctor Paulo Mateus Mendes (Associate Professor at the Department of Industrial Electronics of the 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 1 to 5 values:

Applicant Merit - AM (100%):

- a) Personal curriculum (considering professional and scientific background), with a weighting of 100%
  1. Academic Qualifications (scientific adequacy to the scholarship are valued), with a weighting of 30%;
  2. Experience in the characterization techniques to be used, with a weighting of 45%:
    1. relevant experience in physical-motor robotics, 30%;
    2. motion data analysis, 20%;
    3. planning and execution of experimental protocols for data analysis of motion, 40%;
    4. Language skills, ability to communicate in English, spoken and written, 10%.
  3. Scientific and Technological Production, with a weighting of 20%: number of articles (SCI) published in the preferred areas indicated above in "Application requirements" (15%); number of articles (SCI) (5%)
  4. Motivation letter, with a weighting of 5%: It should describe the scientific relevance for the profile and the goals for its career.

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

$$MC=(a1*0,3)+(a2*0,45)+(a3*0,20)+(a4*0,05)$$

Candidates with a Doctor's degree with training and/or professional experience in the scientific area indicated in this call, will be valued at 20% in their final grade, due to having the academic degree and experience more appropriate to the required profile.

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.

The academic degrees and diplomas documents, or their respective recognition when awarded by foreign higher education institutions are not mandatory in the application phase, being replaced by a

declaration of honor of the candidate with the contents of academic results. The documents of academic qualification or respective recognition will be required in the contracting phase and must attest facts that occurred on a date prior to the application. In situations of divergence between the information contained in the declaration and the documentation submitted for contracting the grant, only the information contained in the latter will be considered. If the documents proving the ownership of the academic degree and diploma, or the respective recognition under the terms of Decree-Law No. 66/2018, of August 16, do not correspond to the classifications awarded in the evaluation of the academic path, which can change the candidate's ranking, the fellowship won't be contracted.

**Disclosure of results:** The provisional results of applications, based in the selection panel minutes, will be sent to the applicants by email until 90 working days from the applications deadline.

If case of unfavourable results, the candidates have a period of 10 working days to comment, if desired, in a prior hearing to interested parties, pursuant to articles 121 and 122 of the Code of Administrative Procedure (DL no. 4 / 2015 of January 7th).

*[The hearing of the interested parties, if excluded, should be justified accordingly with article 124º of CPA]*

**Complaint and appeal procedures:** The final results of the evaluation will be published through an ordered list (*alphabetically, by final grade obtained*), posted in a visible and public place of the host unit, as well as by email to all applicants, enclosing for that purpose, the minutes of the jury deliberations.

The selected candidate must inform its willingness to accept the grant, in writing. In case of rejection, the fellowship will be awarded to the next candidate in the ordered list of applicants.

The final decision can be contested within 15 working days, by sending to the President of the jury the corresponding claim. Interested parties may also submit an optional hierarchical appeal, addressed to the Pro-Rector for Research and Projects, Professor Sandra Paiva.

**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 31/03/2023.

The academic degrees and diplomas documents, or their respective recognition when awarded by foreign higher education institutions are not mandatory in the application phase, being replaced by a declaration of honor of the candidate with the contents of academic results. The documents of academic qualification or respective recognition will be required in the contracting phase and must attest facts that occurred on a date prior to the application. In situations of divergence between the information contained in the declaration and the documentation submitted for contracting the grant, only the information contained in the latter will be considered. If the documents proving the ownership of the academic degree and diploma, or the respective recognition under the terms of Decree-Law No. 66/2018, of August 16, do not correspond to the classifications awarded in the evaluation of the academic path, which can change the candidate's ranking, the fellowship won't be contracted.

**Application deadline and submission:** The call for applications is open from **16<sup>th</sup> of December till 29<sup>th</sup> of December of 2022**.

Applications must be formalized, mandatorily, by sending an application letter accompanied by the following documents: *curriculum vitae*; *certificate of qualifications or declaration of the candidate (if applicable)*; *letter of interest*; *other documents considered relevant to the assessment of the scientific and professional path*.

Applications must be sent by email to [secretaria@cmems.uminho.pt](mailto:secretaria@cmems.uminho.pt), indicating the reference of the call for applications in Subject. Applications submitted by other means will not be accepted.

**Fellowship contractualization:** The fellowship will be attributed by signing a fellowship contract between the University of Minho and the fellow, accordingly with the contract minute (annex IV of the Regulation of Research Fellowships of the University of Minho (RBIC), published in *Diário da República*, 2nd Série, no. 119, through dispatch no. 6524/2020 of 22-06-2020, ratified by ratification declaration no. 447/2021 of 22-06-2021, as indicated in 2.4 of the FCT document: [“Rules for Granting and Management of Grants within the scope of R&D projects, including infrastructure projects, the multi-annual financing program for R&D units and other FCT financing instruments \(Version 2021\)”](#).

The contract may only be concluded after all the documentation required is collected, which must take place within a maximum period of 6 months [including evidences of doctoral degree or its recognition in Portugal, under Decree-law no. 66/2018 of august 16th].

Once all the documentation has been received, the contracting entity has a period of 60 working days to conclude the scholarship contract. Once received, the fellow must return the contract duly signed within 15 working days.

The activities under the fellowship contract can only began after proper authorization by the contracting entity.

**Term and cancellation of fellowship contracts:** Without prejudice to the other causes provided the fellowship regulations (FCT and UMinho) and in the Statute of the Research Fellow, the fellowship ends with the completion of the work plan, as well as with the expiration date for which it was granted or renewed.

At the end of the fellowship, the grantee is obliged to present a Final Report of the work carried out, in accordance with the objectives and evaluation criteria defined with the scientific advisor, within 30 days after the end of the scholarship.

The **final report** must be prepared in accordance with Annex I of the Scientific Research Fellowships Regulation of the University of Minho (RBIC), published in *Diário da República*, 2nd Série, no. 119, through dispatch no. 6524/2020 of 22-06-2020, ratified by ratification declaration no. 447/2021 of 22-06-2021.

ANNEX:

**Declaration of Honor  
Academic habilitations**

(name), applicant to the research fellowship vacancy under the I&D project (title or reference), published in the Euraxess portal, reference xxxx, hereby declares to have a degree on **XXXX (name of the course)**, concluded in the **University of XXXX**, on the **XX/XX/XXXX**, with the final grade of XX.

I have submit my diploma for recognition in the **University of XXXX**, according to the Decree-Law nº 66/2018 of August 16<sup>th</sup><sup>1</sup>, concluded In the XX/XX/XXXX, with the final grade of XX.

I further declare that I undertake to present proof of my diploma recognition obtained under the Portuguese Law, until the date of the conclusion of the fellowship contract, in case of being selected for the vacancy in this competition.

As this is true, this declaration will be dated and signed by me.

(Place), (date).

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(name)

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<sup>1</sup> DGES (Foreign Degrees and Diplomas): <https://www.dges.gov.pt/en/pagina/degree-and-diploma-recognition?plid=1536>; University of Minho: Recognition of foreign degrees and diplomas: <https://www.uminho.pt/EN/education/Pages/recognition-of-foreign-qualifications.aspx>