

CALL FOR AWARDING RESEARCH FELLOWSHIPS WITHIN PROJECT GRANTS AND R&D INSTITUTIONS

1 (one) Research Fellowship (BI) for a PhD Student

1 Research Fellowship(s) (BI) is(are) open at the **FCiências.ID – Associação para a Investigação e Desenvolvimento de Ciências**, for the project/R&D institution “DC4MND - Multidimensional mechanistic investigations of trans spinal direct current stimulation in motorneuron disease”, “JPND/0003/2022”, funded by the Fundação para a Ciência e a Tecnologia, I.P./MCTES through national funds (PIDDAC) under the programme ERA-NET Cofund JpcofuND-2, under the following conditions:

- 1. Scientific Area:** Non-invasive Neuronal Stimulation, Computational Modelling, Biomedical Engineering and Biophysics
- 2. Requirements for admission:** Must have a Master degree in Biomedical Engineering and Biophysics. Must have participated in outreach activities and projects related to the topic of this call.
- 3. Additional optional skills and qualifications:** Previous experience in modelling non-invasive direct current stimulation of the brain or spinal cord using software such as SimNIBS or COMSOL; segmentation and processing of magnetic resonance images, skills in Python programming and Machine learning, previous contact with neurostimulation techniques, collaborations in multidisciplinary projects.
- 4. Contracting requirements:** Presentation of the academic qualifications and/or diplomas. Enrolment in PhD programme in Biomedical Engineering and Biophysics of Ciências ULisboa.
- 5. Work plan:** The work plan is under the scope of the European Consortium DC4MND, with the aim of determining the effects of trans-spinal direct current stimulation (tsDCS) in mice models of Amyotrophic Lateral Sclerosis. The student will have to perform the following tasks: 1) Generate realistic models of mice full bodies, including the spinal cord and vertebrae, using magnetic resonance images (MRI) provided by one of the consortium members, with open-source software, such as ITK-SNAP and GMSH (year 1); 2) Calculation and optimization of the electric field induced by tsDCS in the realistic mice models of the spinal cord, using specific software available at the lab, such as COMSOL or using custom-made Python scripts (year 1); 3) Design a realistic model of an in vitro apparatus from the consortium to be used to address tsDCS effects in neuron cultures, and optimize electric field delivery induced by this apparatus (year 2) 4) Develop open-source solutions for a) semi-automatic segmentation and generation of MRI-based realistic mice models, b) optimization of the tsDCS-induced electric field at specific spinal targets (years 2-3); 5) thesis dissertation (year 3).
- 6. Legislation framework:** Research Fellowship Holder Statute, in accordance with Law 40/2004, of 18 August, in its current version and the FCT Regulation for Research Studentships and Fellowships, in its current version (Reg. 950/2019 published in DR on 16th December: <https://dre.pt/application/file/a/127230968>, or at the FCT website: <https://www.fct.pt/apoios/bolsas/regulamento.phtml>), and FCiências.ID Fellowship Regulation, as approved on 12th May 2020 (available at [Regulamento de Bolsas de Investigação Científica da FCiências.ID](https://www.fciencias.id/regulamento-de-bolsas-de-investigacao-cientifica-da-fciencias.id)).
- 7. Place of work:** The work will be developed at the Instituto de Biofísica e Engenharia Biomédica, Ciências ULisboa under the scientific supervision of Professor Sofia Rita Fernandes.
- 8. Fellowship duration:** This position is initially opened for 6 months due to start in February 2024. The fellowship contract may be potentially renewed for until the end of the project, in accordance with the provisions of Regulation of Research Fellowships from the Foundation for Science and Technology, I.P.
- 9. Monthly allowance:** The fellowship amounts to € 1199,64, according to [table values](#) of the fellowships awarded directly by the FCT, IP. The fellowship holder will have a personal accident insurance and can ensure the

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right to social security through adherence to the voluntary social insurance scheme, if not covered by any other social protection scheme, pursuant to *Código dos Regimes Contributivos do Sistema Previdencial de Segurança Social*. The fellowship will be paid monthly by bank transfer.

10. **Evaluation and selection process:** Candidates will be assessed by
Criterion A – Grade achieved in the Master Degree in Biomedical Engineering and Biophysics, percentage weight of 30%;
Criterion B – CV, with emphasis on academic experience, internships, research experience, work experience, percentage weight of 40%;
Criterion C – Motivation letter demonstrating the suitability of the candidate to the project, percentage weight of 30%
Interview for the first 3 (three) candidates if considered necessary by the jury. In case an interview takes place, the sum obtained in the evaluation of criteria A) to C) will correspond to 70% of the final classification and the interview will correspond to 30%.
Applicants whose application is scored with a final classification of less than 85 points are not eligible for granting a fellowship.

11. **Selection Committee:**

- President of jury: Prof. Brígida Ferreira, Instituto de Biofísica e Engenharia Biomédica, Faculdade de Ciências da Universidade de Lisboa;
- Member of jury: Prof. Ana Margarida Mota, Instituto de Biofísica e Engenharia Biomédica, Faculdade de Ciências da Universidade de Lisboa;
- Member of jury: Prof. Daniela Godinho, Instituto de Biofísica e Engenharia Biomédica, Faculdade de Ciências da Universidade de Lisboa;
- Alternate member of jury: Prof. Nuno Matela, Instituto de Biofísica e Engenharia Biomédica, Faculdade de Ciências da Universidade de Lisboa;
- Alternate member of jury: Prof Raquel Conceição, Instituto de Biofísica e Engenharia Biomédica, Faculdade de Ciências da Universidade de Lisboa.

12. **Publication/notification of results:** All the candidates will be notified by e-mail, sent by the call holder, with the selection meeting minutes enclosed.

13. **Deadlines:** This call for applications is open from 16/01/2024 to 29/01/2024 .

14. **Application:** Applications should be sent via e-mail to srcfernandes@ciencias.ulisboa.pt , by attaching the following documents:

- a. Curriculum vitae;
- b. Certificate of completion of previous degree ^{Note 1, 2;}
- c. Motivation letter.

15. **Processing of personal data:** FCIências.ID – Associação para a Investigação e Desenvolvimento de Ciências, as the controller under the General Data Protection Regulation, collects and processes the personal data requested in the context indicated in paragraph 14., under the legitimate interests in ensuring the award of the research fellowship to candidates with the indicated profile.

The personal data will be kept for the period necessary for the execution of the purposes for which they are intended, being ensured the processing and protection in an appropriate and diligent way, the confidentiality and integrity of these data, through appropriate technical and organizational measures.

Personal data may be transmitted to third parties, namely the entity funding the research project, solely for the purposes specifically established. In this sense, whenever the transfer of personal data to countries outside the

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European Union and/or international organizations is necessary, compliance with the applicable legal provisions is ensured.

You have the right to request access, rectification, elimination, limitation of processing, the right to object and also data portability (if technically feasible), through the e-mail address: dpo@fciencias-id.pt. You also have the right to lodge a complaint with the National Data Protection Commission.

For more information, we recommend consulting the Internal Rules of Data Protection of FCIências.ID - Association for Research and Development of Sciences at <https://fciencias-id.pt/>.

16. **Time limits for the appeal procedure:** In case of negative decision, the candidates have 10 business days, after the date of announcement of the results of the candidates' evaluation, to pronounce their disagreement in accordance with the *Código do Procedimento Administrativo*. Appeals against the final decision may be submitted to the Administration Board of FCIências.ID (fciencias.id@fciencias-id.pt) within 15 business days after the notification date.

Note 1: The documents that prove the entitlement of the academic qualifications and diplomas can be dismissed during the application period and replaced by a declaration on their honour from the applicant ([Minuta PT](#), [Minute EN](#)). Their delivery is mandatory for the fellowship contractualization.

Note 2: Please note that - higher education degrees and diplomas awarded by foreign higher education institutions need to be recognized by a Portuguese higher education institution, pursuant to the [Decree-Law nr. 66/2018](#) (August 16) and the [Ministerial Order nr. 33/2019](#) (January 25). The presentation of the recognition certificate is mandatory for contract signature. More information can be obtained at: <https://www.dges.gov.pt/en/pagina/degree-and-diploma-recognition>.