NOTICE OF OPENING OF AN INTERNATIONAL CALL FOR THE SELECTION OF A PhD HOLDER RESEARCHER

Internal code: Researcher/FCT_ELECTRIFY_02/i3S/1611/2026

A call is opened for the position of a PhD holder, for an unfixed term work contract to carry out research duties within the project **"ELECTRIFY - a piezoelectric-based therapeutic solution for advanced heart failure"**, with reference COMPETE2030-FEDER-00830400, Operation No. 17014, funded by COMPETE2030 under Notice No. MPr-2023-12.

Scientific Area: Cardiac regenerative medicine

1. Project summary and work plan

The development of heart failure (HF) following myocardial infarction (MI) represents a major global healthcare challenge, highlighting the urgent need for novel therapeutic approaches capable of promoting the repair of damaged myocardium. In this context, the ELECTRIFY project proposes an innovative therapeutic strategy combining piezoelectric materials, tissue engineering and nanotherapy to promote functional cardiac regeneration.

Piezoelectric materials convert mechanical deformation into electrical signals, generating electrical stimulation without the need for external electronic systems. Preliminary results from the team have demonstrated that these materials promote cardiomyocyte alignment and maturation *in vitro*. Improvements in the electrical activity of the myocardium following MI have also been observed in animal models. These findings support the potential of piezoelectric materials for cardiac repair.

ELECTRIFY will develop a vascularized and electroactive cardiac implant, conceived as a hybrid platform integrating three complementary components:

1. Anisotropic piezoelectric nanofibres, pre-seeded with cardiomyocytes, which convert cellular contraction into electrical stimuli, promoting cell maturation, alignment and electrical integration within the cardiac tissue.
2. A functional vascular network, comprising microtissue building blocks incorporating endothelial and supporting cells, designed to promote vascularization and graft integration with the host myocardium.
3. Mechano-responsive piezoelectric nanoparticles, incorporated into a hydrogel, enabling the local and controlled release of antifibrotic agents in response to the heart's mechanical activity, thereby helping to modulate inflammation and limit fibrosis.

In the long term, ELECTRIFY aims to establish a novel approach to damaged myocardial repair, with the potential to improve cardiac function and clinical outcomes in patients with advanced heart failure, reducing hospitalizations and improving quality of life.

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COMPETE 2030
PORTUGAL 2030
Co-funded by the European Union

2. Applicable Portuguese legislation
Decree No. 57/2016, of August 29 – Legal Framework for Scientific Employment (RJEC) – in its current version. Portuguese Labor Code, in its current wording.

3. Jury
Chairman: Diana S Nascimento; Other Members: Susana G Santos, Perpétua Pinto-do-Ó; Substitute: Cristina C Barrias.

4. Workplace
i3S - Rua de Alfredo Allen, 208 Porto, research group *Stem Cells in Regenerative Biology and Repair.*

5. Professional category and monthly remuneration
Junior Researcher
€ 2.408,11, corresponding to index 33 of the Tabela Remuneratória Única, whose application is intended for PhD holders with reduced post-doctoral experience or without a post-doctoral scientific curriculum.

6. Obligatory requirements for admission
a) PhD degree in Bioengineering or a related area;
b) Motivation Letter in English;
c) Extensive hands-on expertise in piezoelectric Materials and the Impact of Electrical Signals on Cellular Function;
d) Experience in cardiovascular research, particularly in studies involving experimental models of cardiac injury;
e) Fluency in written and spoken English;
f) Good teamwork and interpersonal skills;
g) Immediate availability to start the contract.

7. Evaluation of the applications and publication of the results
The evaluation of the scientific and curricular background of the candidates should focus on the activity of the last five years that the candidate considers most relevant. The five-year period may be extended by the jury, at the candidate's request, when justified by suspension of scientific activity for socially protected reasons, namely for reasons of parental leave, prolonged serious illness, and other situations of unavailability for work that are legally protected.

Weight of the different curricular valuation criteria:
a) Detailed Curricula (75%):
    a. Scientific publications in areas relevant to the project (45%);
    b. Experience in immunofluorescence, animal cell culture, and high-content imaging of cardiac tissue (30%).
b) Motivation Letter in English (15%)
c) Interview - *facultative* (10%)

If the jury decides to obtain further clarifications and additional information about the curricular elements presented, the 2 (two) best candidates classified on the basis of the curriculum may be called for an interview. The candidate's final classification is expressed on a scale from 0 to 100. Candidates who are not interviewed will have their maximum score limited to 90% of the evaluation.

Candidates who submit their application incorrectly or fail to meet the required qualifications for this competition will be excluded from admission.
The jury reserves the right to request any candidate, in case of doubt, to provide supporting documents for their statements.

False statements made by candidates will be sanctioned in accordance with the law.

The jury will draw up minutes of its meetings, which can be consulted at the candidate's request within 10 working days after the selection results are released.

The jury deliberates by means of a reasoned vote according to the evaluation criteria, with no abstentions allowed, and draws up a list of excluded and admitted candidates, ordered by respective classification.
All candidates are notified of the selection results by email. After notification, candidates have 10 working days to comment.

In the 90 days following the deadline for submission of applications, the jury's final decision is communicated to the candidates. Subsequently the institute Director, who is also responsible for the final decision of hiring, will ratify the decision of the jury.

This call is intended exclusively to fill the indicated position on offer and may be canceled before the final ranking list of candidates is ratified by the Director. Accordingly, the position will no longer be available.

8. Submission of applications
Applications must include all the documents proving that they fulfill the admission requirements, namely:
a) Copy of certificate or diploma of PhD degree in Bioengineering or a related area;
b) Detailed Curriculum Vitae;
c) Motivation Letter in English;
d) Other documentation relevant for the evaluation of qualifications in a related scientific area.

The submission of applications is digital, in pdf format, from November-16 to November-29, 2026, in the following link:

https://dozer.i3s.up.pt/applicationmanagement/#/addapplications/c02a1f34c17a8d7dd4264e14be28b625

9. Start and duration of the contract

The anticipated start date of the contract is January 1st, 2027, and is subject to budget availability. The expected duration of the contract will be 12 months, eventually extendable.

10. Non-discrimination and equal access policy

i3S actively promotes a policy of non-discrimination and equal access. No applicant shall be privileged, benefited, prejudiced, or deprived of any right or exempted from any duty on the basis of ancestry, age, gender, sexual orientation, marital status, family situation, economic situation, education, origin or social condition, genetic heritage, reduced work capacity, disability, chronic illness, nationality, ethnic origin or race, territory of origin, language, religion, political or ideological beliefs, or trade union membership.

Within the framework of the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers, i3S adopts the Open, Transparent and Merit-based (OTM-R) principles for the recruitment of researchers, with the aim of conducting fair and transparent recruitment processes, bringing equal opportunities to all candidates.

11. Applicants with disabilities

Under the terms of Decree-Law 29/2001, of February 3, the candidate with a disability is given preference in equal ranking, which takes precedence over any other legal preference. Candidates must declare under oath their degree of disability, the type of disability and the means of communication/expression to be used in the selection process, under the terms of the aforementioned decree.

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