

ANNOUNCEMENT FOR THE AWARD OF A POST-DOCTORAL RESEARCH FELLOWSHIPS

Title: Post-Doctoral research Fellowship; 2 vacancy

Reference: 28/ECUM/CFUM/2026 - LaPMET (BIPD)

A call for applications is now open for the attribution of 2 (two) research fellowships, under the Programme Contract concluded with the Portuguese Foundation for Science and Technology (FCT), effective from 1 January 2021, reference No. LA/P/0095/2020, within the framework of the award of Associate Laboratory status to the Laboratory of Physics for Emerging Materials and Technologies (LaPMET), of which the Centre of Physics of the University of Minho is a member through the FCT-funded research unit, the Centre of Physics of the Universities of Minho and Porto (CF-UM-UP), under the following conditions:

Scientific Area: Physics, Physics Engineering, and related areas

Recipient category: The research grants (BIPD) are intended for doctorates in the area of Physics, Physics Engineering, and related areas.

Admission Requirements:

- Hold a doctoral degree obtained within three years prior to the date of submission of the scholarship application;
- To have carried out the research leading to the award of the doctoral degree in an organization other than the one hosting the scholarship; *
- Not exceed, with the conclusion of the contract in question, including possible renewals, an accumulated period of three years in this type of scholarship, consecutive or interpolated;
- Not to have previously held a post-doctoral scholarship contract with the same I&D Unit. Once the BIPD contract has ended, no new scholarship contract can be signed between the same host organization and the same scholarship holder.

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

* This includes different I&D Units, even if they are based in the same Organic Unit (UOEI) of UMinho (according to n° 4 and 5 of the Article 7° of the FCT I.P. Research Grants Regulations in force).

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:

- a) PhD degree in Physics, Physics Engineering, or related areas;
- b) Preferred qualifications factors:

Preference will be given to candidates who demonstrate aptitude for scientific research, whether experimental, theoretical, or computational, depending on the project associated with the fellowship to which they are applying. Prior knowledge and participation in research activities relevant to the selected project's research topic and work plan, from among the projects listed below, will also be taken into consideration.

Workplan and objectives to be achieved:

(Fellowship 1) The research fellow will investigate stochastic gravitational-wave backgrounds generated by explosive particle-production processes in the early Universe, including mechanisms associated with topological defects, phase transitions and epochs of cosmic inflation. The work will involve the analytical computation of the resulting gravitational-wave spectra and the study of correlations with complementary cosmological probes. The



REPÚBLICA
PORTUGUESA



Fundação
para a Ciência
e a Tecnologia



objectives are to identify robust observational signatures, constrain the underlying particle-physics and cosmological scenarios, and contribute to the dissemination of the results through scientific publications and presentations.

(Fellowship 2) The work programme of this fellowship will focus on the application of machine learning algorithms, continuing the development of advanced Sparse Dictionary Learning (SDL) methodologies for signal denoising, reconstruction, and classification using real detector data. The project aims to advance SDL as an interpretable and data-efficient family of machine-learning methods capable of operating under challenging conditions such as non-Gaussian noise and limited training data. At the same time, the fellowship will promote the transfer of the methods and expertise developed within gravitational-wave astronomy field to other scientific domains facing similar data-analysis challenges within LaPMET research activities, leveraging the potential experience of the candidate in machine learning to support applications such as gravimetry, signal processing, anomaly detection, and uncertainty-aware inference. Through this cross-disciplinary approach, the project seeks to establish reusable and interpretable machine-learning frameworks that can be applied across scientific disciplines while ensuring robustness and reproducibility.

As indicated below, applicants must identify the research grant for which they are applying by referring to the numbering above. Each applicant may apply for only one of the research grants listed above. Applicants who submit more than one application will be excluded.

The BIPD are restricted in time in order to stimulate scientific employment and the use of researcher contracts as a rule for hiring them - according to n° 2, article 7° of the FCT I.P. Research Grants Regulation (2019).

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 n° 4998/2025, published in the Diário da República, 2nd series, n° 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 work plans will be carried out at the facilities of the Centre of Physics of the Universities of Minho and Porto (CF-UM-UP), under the scientific supervision of Prof. Ricardo Ferreira (Auxiliar Professor at the Physics Department of the School of Sciences of University of Minho) and Prof. António Morais (Auxiliar Professor at the Physics Department of the School of Sciences of University of Minho)

Fellowship duration: The grants will take place for a period of **4 months**, with a provisional starting date on **September 2026**. The fellowship grants 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 1901 €/month, according to the table of FCT grants in the country ((<https://www.fct.pt/wp-content/uploads/2026/03/Tabela-de-Valores-SMM-2026.pdf>)) and the table of values of the Scientific Research Scholarships of the University of Minho, updated annually by decision of 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 benefits: Reimbursement of Voluntary Social Insurance, if the candidate chooses to receive it, corresponding to the 1st step of the contribution base (for scholarships of 6 months or more) and Personal Accident Insurance.

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



REPÚBLICA
PORTUGUESA



Fundação
para a Ciência
e a Tecnologia



Selection panel:

António Joaquim Onofre de Abreu Ribeiro Gonçalves, Full Professor at the Physics Department of the School of Sciences of the University of Minho (President);

João Pedro Esteves de Araújo, Associate Professor with Aggregation at the Department of Physics and Astronomy of the Faculty of Sciences of the University of Porto (member);

Eduardo Filipe Vieira de Castro, Associate Professor at the Department of Physics and Astronomy of the Faculty of Sciences of the University of Porto (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:

Applicant Merit - AM (100%):

- a) Academic path (considering the classifications of academic degrees), with a weighting of 60%;
- b) Personal curriculum (considering professional and scientific background), with a weighting of 30%;
- c) Motivation letter, with a weighting of 10%.

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

$$MC=(a*0,6) +(b*0,3) +(c*0,1)$$

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

Applications must be submitted by email to onofre@fisica.uminho.pt, indicating the reference number of the competition in the subject line - **28/ECUM/CFUM/2026 - LaPMET (BIPD), and the fellowship number the application refers to** (ex: *28/ECUM/CFUM/2026 – LaPMET (BIPD) Fellowship 1*). 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.
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.º 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) Letter of motivation.

Form of publication/notification of results: The results of the evaluation are published in a single list (in alphabetical order or by final score obtained), 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.

The waiver of the hearing for interested parties must be justified in accordance with Article 124 of the CPA.



REPÚBLICA
PORTUGUESA



Fundação
para a Ciência
e a Tecnologia



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(n°6) 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.

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 Regulations for Scientific Research Scholarships 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 moment 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.



REPÚBLICA
PORTUGUESA



Fundação
para a Ciência
e a Tecnologia



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	Funding Entity	Project	Type of Grant	Duration	Start	Term

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

(Place), (date).

(full name)



REPÚBLICA
PORTUGUESA



Fundação
para a Ciência
e a Tecnologia

