

**Announcement of the Call for
Awarding of 5 Doctoral Research Fellowships**

The **HERCULES Laboratory** – Cultural Heritage, Studies and Safeguard announces a call for applications for **5 (five) research grants**, hereinafter referred to as Doctoral Research Grants, in the area of the Sciences Applied to Cultural Heritage, under the FCT Research Grant Regulations (RBI) and the Research Grant Holder Statute (EBI).

The grants will be financed by the Foundation for Science and Technology (FCT) under the terms of the Protocol of Collaboration for Financing the Pluriannual Research Grant Plan for Doctoral Students, signed between the FCT and the HERCULES Laboratory – University of Évora, ref. UID 04449.

1. SUBMISSION OF APPLICATION

The call is open between August 23, 2021 and the 24.00h September 17, 2021 (Lisbon time).

Applications and supporting documents for the application foreseen in this Call must be submitted by e-mail sent to cmbd@uevora.pt, indicating in the subject of the email: HERCULES PhD Studentships Application - topic X (where X is the number of the topic you are applying for).

Each candidate may submit only one application, under penalty of cancellation of all applications submitted.

False statements or plagiarism from any of the candidates will be grounds for cancellation of the application without prejudice to the adoption of other sanctionary measures.

2. TYPE AND DURATION OF THE FELLOWSHIPS

These Doctoral Research Grants are intended to fund research activities leading to a doctoral degree in portuguese universities.

The research activities leading to a doctoral degree will take place at the HERCULES Laboratory, which will be the host institution for the grantees, but the work may be carried out in collaboration with more than one institution.

The research activities leading to a doctoral degree for the selected grantees must be included in the activities and strategy plan of the HERCULES Laboratory, and must be developed within the scope of the following Doctoral Programs:

- Doctoral Program in Biochemistry, Institute for Advanced Studies and research (IIFA), University of Évora.
- Doctoral Program in Earth and Space Sciences, Institute for Advanced Studies and research (IIFA), University of Évora.
- Doctoral Program in Chemistry, Institute for Advanced Studies and research (IIFA), University of Évora.

The work plan may take place fully or partially in a national institution (in-country or mixed Doctoral Research Grant, respectively).

The duration of the Doctoral Research Grants is, as a rule, one year, renewable up to a maximum of four years (48 months), and no fellowship may be awarded for a period of less than three consecutive months.

In the case of a mixed Doctoral Research Grant, the period of the work plan that takes place in a foreign institution cannot exceed 24 months.

3. RECIPIENTS OF THE FELLOWSHIPS

These Doctoral Research Grants are intended for candidates enrolled in a Doctoral Programmes listed under item 2 of this Announcement, and that intend to carry out research activities leading to the award of a doctoral degree at HERCULES Laboratory or at associated host institutions.

4. ADMISSIBILITY

4.1 Candidate Admissibility Requirements

The following may apply to this competition:

- National citizens or citizens of other member states of the European Union;
- Third Country Citizens;
- Stateless persons;
- Citizens benefiting from political refugee status.

To apply for these Doctoral Research Grants it is necessary:

- To hold a bachelor's or master's degree in the areas of Archaeology, Archaeometry, Biochemistry, Conservation, Geology, Chemistry, or in similar areas;
- To be permanently and habitually resident in Portugal if the work plan associated with the grant is partially carried out in foreign institutions (mixed grants), a requirement applicable to both Portuguese and foreign citizens.
- Not have benefited from a PhD or PhD in Enterprise grant directly funded by FCT, regardless of its duration.

4.2 Admissibility Requirements of the Application

The following documents must be attached to the application, under penalty of non-admission to the competition:

- Elements of the identity card/citizen card/passport;
- Curriculum vitae of the candidate;
- Certificates of the academic degrees held, specifying the final grade and, if possible, the grades obtained in all courses taken, or, alternatively, a declaration of honor from the candidate that he/she has completed a bachelor's or master's degree by the application deadline;
- Record of recognition of academic degrees awarded by foreign higher education institutions and record of the conversion of the respective final classification into the Portuguese classification scale, or alternatively, declaration of honour from the candidate that he/she has obtained the recognition of the foreign degree equivalent to a bachelor or master by the application deadline;
- Motivation Letter;
- Letters of Recommendation (2);
- Write the application and all the documents associated with it, including the letters of motivation and recommendation, in portuguese or English.

Regarding the above admissibility requirements, the following should be noted:

- In the case of academic degrees awarded by foreign higher education institutions, and in order to ensure the application of the principle of equal treatment for applicants holding foreign and national academic degrees, it is mandatory to recognize those degrees and convert the respective final classification into the portuguese classification scale.

The recognition of foreign degrees and diplomas as well as the conversion of the final classification into the portuguese classification scale may be requested at any public higher education institution, or at the Directorate General of Higher Education (DGES, only in the case of automatic recognition). Regarding this matter, we suggest that you consult the DGES portal at the following address: <http://www.dges.gov.pt>.

- Applicants will only be admitted if they have completed the cycle of studies leading to a bachelor or master degree by the application deadline. If they do not yet have a degree certificate, a declaration of honor from the candidates that they have completed the necessary qualifications for the competition by the application deadline will be accepted. The conception of the scholarship is always dependent on the presentation of proof of the academic qualifications required for the scholarship to be awarded.

5. WORK PLANS AND SCIENTIFIC ORIENTATION OF THE FELLOWSHIPS

The HERCULES Laboratory has a multidisciplinary team with 35 integrated researchers from different backgrounds and areas of research, but all of them are dedicated to the study and enhancement of Cultural Heritage. In this call, HERCULES laboratory presents the 5 PhD projects listed in Table 1.

In the Motivation Letter, the candidate must frame his/her professional, academic and scientific career within the PhD project he/she is applying for.

Table 1 – List of PhD projects

PhD project 1	
Title	Art and Chemistry: A Transdisciplinary Characterization in the Study of Gilda Neuberger's Fresco and False Fresco Art Works (1911-2011)
Description	Gilda Gelmini Neuberger (1911-2011) was one of the pioneers of fresco art in Brazil in the early 20th century, having been a disciple of Candido Portinari. With a career spanning over 60 years, GN has experimented the fresco technique on various types of support as well as the false fresco technique, which is still controversial among the artistic community. This transdisciplinary project intends to study, for the first time, a set of 6 works carried out in the 60s and 90s using conventional and advanced imaging and microanalysis techniques. The aim of this work is to get to know the artist's modus operandi in the different techniques, the materials used and its current state of conservation. The results will gain recognition and repositioning of NG works in the context of Modern and Contemporary Art at national and international level, and will serve as guidelines for future conservation and restoration actions.
PhD program	Chemistry
PhD advisors	Milene Gil (UÉvora, HERCULES), Teresa Ferreira (UÉvora, HERCULES)

PhD project 2	
Title	On the biodegradation of heritage objects in museological collections – a molecular approach
Description	The project focuses on the application of new biomolecular techniques in the study of heritage objects to understand the role of microorganisms in degradation processes. In this project will be studied different objects in museum context including canvas, paper, ivory, wood among others through the application and integration of metagenomic

	phylogenetic and functional genomic
PhD program	Biochemistry
PhD advisors	Teresa Caldeira (UÉvora, HERCULES), Cátia Salvador (UÉvora, HERCULES), Ana Miller (UÉvora, HERCULES)

PhD project 3

Title	From Antiquity to new materials: Technological solutions for mortars production.
Description	A new and innovative approach to the study of lime mortars with hydraulic properties. For an understanding of the past but mainly develop new technological solutions for conservation. The work will be developed as two branches i) Production and monitoring of mortars - use of natural (volcanic lithotypes) and processed (ceramics) reactive aggregates and two types of lime (calcitic and dolomitic) and follow the performance of mortars with a multi-analytical approach. ii) conservation/historical cases - an archaeometric approach to historical lime mortars for conservation and restoration. A multi-analytical monitorization will be carried out for mineralogical and chemical changes as well physical-mechanical.
PhD program	Earth and Space Sciences
PhD advisors	Fabio Sitzia (UÉvora, HERCULES), Patrícia Moita (UÉvora, HERCULES), António Santos Silva (LNEC)

PhD project 4

Title	Green Bionanotechnology for Cultural Heritage Materials: Metal nanoparticles biosynthesis and its antimicrobial activity in archaeological materials.
Description	The project focuses on the creation of new auxiliary tools for the conservation of cultural heritage assets, based on biotechnology. The biosynthesis of metal nanoparticles with antimicrobial potential is thereby proposed, seeking an alternative and sustainable solution to the traditional methods of chemical synthesis. The biosynthesis process will be optimised using different microbial strains and culture media. The physico-chemical and structural properties of the nanoparticles synthesised will be characterised using traditional methods. Their antimicrobial potential, as well as the impact on the aesthetic integrity, will be further evaluated in different materials that are typically used in the manufacture of cultural heritage assets.
PhD program	Biochemistry
PhD advisors	Luís Dias (UÉvora, HERCULES), Maria Rosário Martins (UÉvora, HERCULES)

PhD project 5

Title	Synthesis of new fluorescent water soluble amine reactive reagents for biomolecules labeling: application to cultural heritage
Description	Cultural heritage assets are being continuously submitted to physical, chemical and biological degradation. Among all forms, biodegradation is the major factor for their deterioration, with microorganisms being of critical importance due to their metabolism and proliferation. In this context, it is frequently necessary identify and locate individual microorganisms and detect small amounts of biomolecules, as proteins, to know, evaluate and understand the biodeterioration processes for the most appropriate restoration procedures or conservation conditions. Labeling is one of the most common methodologies used for bioanalytical purposes, and the detection based on fluorescence techniques has received a growing attention in both fluorescence instrumentation and preparation of new fluorophores. The PhD project aims to develop new inexpensive fluorescent water-soluble coumarin derivatives for labeling biomolecules present in cultural heritage and improving new methodologies for biodegradation diagnosis, and thus to contribute to the establishment of preventive approaches and effective remediation in Cultural Heritage field.
PhD program	Biochemistry
PhD advisors	António Pereira (UÉvora, HERCULES), Sílvia Arantes (UÉvora, HERCULES)

6. EVALUATION CRITERIA AND BONUSES

6.1 Evaluation Criteria

The evaluation takes into account the applicant's merit. Applications deemed admissible will be scored on a scale of (identify scale) on each of the following evaluation criteria:

- Criterion A – Merit of the candidate, with the weight of 80%;
 - Sub-criterion A1 – Academic record considering 4.1, and previous experience on the study of cultural heritage artefacts, with a weight of 30%.
 - Sub-criterion A2 – Academic and professional CV, with a weight of 20%.
 - Sub-criterion A3- Previous experience in the analytical methodologies and techniques expected to be used in the PhD project the candidate is applying for, with a weight of 50%.
- Criterion B – Motivation Letter, with a weight of 20%.

Regarding sub-criterion A1 and if the candidate has a bachelor's and master's degree, the simple average of the marks obtained in the two degrees will be calculated; if the candidate has an integrated master degree, the final classification of the integrated master will be considered; if one of the certificates only specifies a qualitative classification (for example, pre-Bologna masters), it will be converted in the terms expressed in Table 2 of the Notice of the Call PhD Studentships -2021 (FCT).

If the candidate does not have a master's degree, the value of zero will be considered as the master's grade in the calculation of the simple average of the grades obtained.

For the purposes of the grant decision, applicants will be ranked according to the weighted average of the classification obtained in each of the 2 criteria, translated by the following formula:

$$\text{Final Classification} = (0.8 \times A) + (0.2 \times B)$$

For tie-breaking purposes, candidates will be ranked on the basis of the marks awarded for each of the evaluation criteria in the following order of precedence: sub-criteria A3, criterion B, sub-criterion A1.

Important notice for applicants with diplomas issued by foreign higher education institutions:

Applicants with diplomas issued by foreign higher education institutions may apply and will be evaluated with the same criteria as applicants with diplomas issued by portuguese institutions, provided that they present, in the application, proof of the recognition of the academic degrees and the conversion of the final classification to the portuguese grading scale under the terms of the applicable legislation.

Applicants with foreign degrees who do not submit proof of the conversion of the final classification into the portuguese classification scale will be assessed with the minimum classification of 30 points in sub-criterion A1.

In any case, scholarship contracts with applicants with degrees issued by foreign institutions will only be awarded upon presentation of proof of degree recognition and conversion of the final classification, as indicated above.

Applicants whose application is evaluated with a final classification lower than 60 points are not eligible for a scholarship.

7. EVALUATION

The evaluation panel of the candidates is composed of the following elements for the following PhD projects:

PhD project 1:

- Professor Doctor Cristina Barrocas Dias, Universidade de Évora (panel coordinator)
- Doctor Milene Gil, Universidade de Évora
- Doctor Mathilda Larsson, Universidade de Évora
- Professor Doctor Patrícia Moita, Universidade de Évora

Substitute: Professor Doctor António Candeias, Universidade de Évora

PhD project 2:

- Professor Doctor Cristina Barrocas Dias, Universidade de Évora (panel coordinator)
- Doctor Cátia Salvador, Universidade de Évora
- Doctor Ana Catarina Pinheiro, Universidade de Évora
- Professor Doctor Rosário Martins, Universidade de Évora

Substitute: Professor Doctor José Mirão, Universidade de Évora

PhD project 3:

- Professor Doctor Cristina Barrocas Dias, Universidade de Évora (panel coordinator)
- Doctor Fabio Sitzia, Universidade de Évora
- Doctor Nick Schiavon, Universidade de Évora
- Professor Doctor José Mirão, Universidade de Évora

Substitute: Professor Doctor Teresa Ferreira, Universidade de Évora

PhD project 4:

- Professor Doctor Cristina Barrocas Dias, Universidade de Évora (panel coordinator)
- Doctor Luis Dias, Universidade de Évora
- Doctor Ana Miller, Universidade de Évora
- Professor Doctor Ana Teresa Caldeira, Universidade de Évora

Substitute: Professor Doctor António Pereira, Universidade de Évora

PhD project 5:

- Professor Doctor Cristina Barrocas Dias, Universidade de Évora (panel coordinator)
- Doctor Sílvia Arantes, Universidade de Évora
- Doctor Ana Manhita, Universidade de Évora
- Professor Doctor Rosário Martins, Universidade de Évora

Substitute: Professor Doctor Ana Teresa Caldeira, Universidade de Évora

The evaluation panel will evaluate the applications according to the evaluation criteria presented in this Call for Proposals, weighting the evaluation elements.

All panel members, including the coordinator, are committed to a set of responsibilities essential to the evaluation process, such as the duties of impartiality, declaration of any potential conflict of interest, and confidentiality. At all times during the evaluation process, confidentiality is fully protected and ensured in order to guarantee the independence of all opinions produced.

Panel members, including the coordinator, may not be supervisors or co-supervisors of candidates with applications submitted to the competition.

For each application, the panel will produce a final evaluation sheet where the arguments that led to the scores assigned to each of the evaluation criteria and sub-criteria are presented in a clear, coherent, and consistent manner.

Minutes of the evaluation panel meetings shall be produced under the responsibility of all its members.

The minutes and their annexes must obligatorily include the following information:

- Name and affiliation of all members of the evaluation panel;
- Identification of all excluded applications and respective justification;
- Methodology adopted by the panel for cases considered particular;
- Final evaluation sheets for each candidate;
- Provisional ranking and seriation list of candidates, in descending order of final ranking, of all applications evaluated by the panel;
- CDI statements from all panel members;
- Possible delegations of vote and competencies due to justified absence.

8. DISSEMINATION OF RESULTS

The results of the evaluation are communicated via e-mail to the e-mail address used by the candidate to submit the application.

9. DEADLINES AND PROCEDURES FOR PRIOR HEARING, COMPLAINT, AND APPEAL

After notification of the provisional list of evaluation results, the candidates have a period of 10 working days to, if they wish, make their comments during a prior hearing of interested parties, under the terms of articles 121 and following of the Administrative Procedure Code.

The final decision will be issued after the analysis of the statements presented during the prior hearing of interested parties. A complaint may be lodged against the final decision within 15 working days, or alternatively an appeal may be lodged within 30 working days, both counting from the respective notification. Candidates who choose to file a complaint must address their appeal to the member of the FCT Board of Directors with delegated authority. Candidates who choose to file an appeal must address their appeal to the FCT Board of Directors.

10. REQUIREMENTS FOR AWARDING GRANTS

Research grant contracts are entered into directly with FCT.

The following documents must be submitted, when the grant is awarded, for contracting purposes

- a) Copy of the civil, fiscal and, when applicable, social security identification document(s) ;
- b) Copy of the qualification certificates of the academic degrees held;
- c) Presentation of the record of recognition of the foreign academic degrees and conversion of the respective final classifications to the portuguese classification scale, if applicable;
- d) Proof of enrolment and registration in one of the Doctoral Programs identified in this Call;
- e) Statement from the advisor(s) assuming responsibility for the supervision of the work plan, in accordance with article 5-A of the Research Grant Holder Statute (draft of the statement to be made available by FCT);
- f) Document proving acceptance of the applicant by the institution where the research activities will take place, guaranteeing the necessary conditions for its good development, as well as the fulfillment of the duties established in article 13 of the Research Grant Holder Statute (draft statement to be made available by FCT);
- g) Up-to-date document proving compliance with the regime of exclusive dedication (draft declaration to be made available by FCT).

The award of the grant is also subject to:

- of the fulfillment of the requirements foreseen in this Announcement of the Call;
- the result of the scientific evaluation
- the absence of unjustified non-compliance with the duties of the grant recipient under a previous grant contract funded directly or indirectly by FCT;
- FCT budget availability.

Failure to submit any of the documents needed to complete the grant contracting process within 6 months of the date of communication of the decision to award the grant conditionally will result in the expiration of the grant and the termination of the process.

11. FINANCING

Payment of the scholarships will begin after the candidates return the duly signed scholarship contract, which should occur within a maximum of 15 working days from the date of receipt.

The grants awarded under this call will be financed by FCT with funds from the State Budget and, when eligible, with funds from the European Social Fund, to be made available under the PORTUGAL2020 program, namely through the Regional Operational Program of the North (NORTE 2020), the Regional Operational Program of the Center (Centro 2020) and the Regional Operational Program of the Alentejo (Alentejo 2020), according to the regulations established for this purpose.

12. SCHOLARSHIP COMPONENTS

The grant recipients will receive a monthly maintenance allowance under the terms of the table in Annex I of the RBI.

The scholarship may also include other components, under the terms of article 18 of the RBI and at the values foreseen in its Appendix II.

All grant recipients shall be covered by personal accident insurance for research activities, borne by FCT.

All grant recipients who are not covered by any social protection scheme may exercise their right to social security by joining the voluntary social insurance scheme, under the terms of the Social Security Contributions Code.

13. PAYMENTS OF THE GRANT COMPONENTS

Payments due to the grant recipient will be made by bank transfer to the account he/she identifies. The payment of the monthly maintenance allowance will be made on the first working day of each month.

Payments of the registration, enrollment and tuition components shall be made by FCT directly to the national institution where the grant recipient is enrolled or enrolled in the doctoral program.

14. TERMS AND CONDITIONS FOR RENEWAL OF SCHOLARSHIPS

The renewal of the scholarship is always subject to a request submitted by the grant holder within 60 working days prior to the renewal date, accompanied by the following documents

- a) opinions issued by the supervisor/s and the host entity/s on the monitoring of the grant holder's work and the evaluation of his/her activities;
- b) up-to-date document proving compliance with the regime of exclusive dedication;
- c) document proving renewal of enrollment in the study cycle leading to a doctoral degree.

15. INFORMATION AND PUBLICITY OF THE FUNDING GRANTED

In all R&D activities directly or indirectly funded by the grant, namely in all communications, publications and scientific creations, as well as theses, carried out with the support provided by the grant, mention should be made of financial support from the FCT and the European Social Fund, namely through the Regional Operational Program of the North (NORTE 2020), the Regional Operational Program of the Center (Centro 2020) and the Regional Operational Program of the Alentejo (Alentejo 2020). To this end, the insignia of the FCT, the MCTES, the ESF and the EU shall be inscribed on the documents referring to these actions, in accordance with the graphic standards of each operational program.

Dissemination of results of research funded under the RBI shall comply with the rules for open access of data, publications and other research results in force at the FCT.

In all grants, and particularly in the case of actions supported by EU funding, namely from the ESF, monitoring and control actions may be carried out by national and EU bodies, in accordance with the applicable legislation in this area. The grant recipients are required to cooperate and provide the requested information, which includes surveys and evaluation studies in this area, even if the grant has already ended.

16. POLICY OF NON-DISCRIMINATION AND EQUAL ACCESS

FCT promotes a policy of non-discrimination and equal access, whereby no applicant shall be privileged, benefited, prejudiced, or deprived of any right or exempt 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 convictions, or union membership.

17. APPLICABLE LEGISLATION AND REGULATIONS

The Call is governed by this Opening Notice, by the FCT Research Grant Regulations, approved by Regulation No. 950/2019, published in the II Series of the DR of 16 December 2019, by the Research Grant Holder Statute approved by Law No. 40/2004, of 18 August, as amended, and by all other applicable national and EU legislation.