

## **ANNOUNCEMENT FOR THE AWARD OF A RESEARCH FELLOWSHIP**

### **Research Fellowship; 3 vacancies**

A call for applications is now open for the attribution of 3 (three) grants for Masters, within the scope of the R&D project UIDB/04650/2020 - Physics Centre of Minho and Porto Universities (CF-UM-UP), School of Sciences, Univerisit of Minho, Strategic Line 2 – *Physics of Quantum Materials and Bionanostructures*, financed by national funds through Portuguese Foundation for Science and Technology (FCT), under the following conditions:

**Scientific Area:** Physics

**Recipient category:** Masters in Biophysics and Bionanosystems

**Typology of research fellowship:** The research grant (BI) is intended for carrying out R&D activities by Masters enrolled in courses that do not confer an academic degree, as part of the institution's educational project, developed in association or cooperation with one or more R&D units.

#### **Requirement for granting the fellowship:**

- The applicants may apply without prior registration in the course for which the fellowship is open. The requirement to enroll in a 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 non-academic degree course will be contracted, issued by the academic services of the Higher Education Institution, indicating, respectively, the academic year or its duration (star and term).
- Enrollment in non-certified courses (without curricular units) will not be considered as proof of enrollment.

#### **Candidates profile:**

- a) The candidates must hold, at the time of application, a Master's degree in Biophysics and Bionanosystems;
- b) Applicants must have a profile that fits the research activities described in the research project(s) to which they are applying. Specifically, it is intended that candidates have experience in the preparation of magnetoliposomes containing magnetic and/or plasmonic nanoparticles.

**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).

**Work plan and objectives:** It is intended that scholarship holders collaborate in CF-UM-UP research activities, integrating one of the projects (BI-1, BI-2 or BI-3) whose description and respective supervisors can be found listed below.

#### **BI-1 Project: Magnetoliposomes as antitumor drug carriers**

**Workplan and objectives to be achieved:** Development of magnetoliposomes containing anisotropic magnetic nanoparticles for cancer therapy.

#### **Description of tasks**

- 1: Synthesis and characterization of magnetic nanoparticles and magnetoliposomes.

- 2: Drug encapsulation assays, with determination of encapsulation efficiency.
- 3: Controlled drug release assays.
- 4: Publication of results.

**Supervisors:** Elisabete M. S. Castanheira Coutinho ([ecoutinho@fisica.uminho.pt](mailto:ecoutinho@fisica.uminho.pt)), Ana Rita O. Rodrigues ([ritarodrigues@fisica.uminho.pt](mailto:ritarodrigues@fisica.uminho.pt))

### **BI-2 project: Magnetic/plasmonic nanosystems for multimodal therapy**

**Work plan and objectives to be achieved:** Development of liposome-based magnetic/plasmonic nanosystems for application in combined therapy (magnetic hyperthermia and phototherapy).

#### **Description of tasks**

- 1: Synthesis and characterization of magnetic and plasmonic nanoparticles.
- 2: Incorporation of nanoparticles in lipid-based nanosystems.
- 3: Characterization of the final nanosystems, with evaluation of their potential for combined hyperthermia (magnetic and photothermia).
- 4: Publication of results.

**Supervisors:** Paulo José Gomes Coutinho ([pcoutinho@fisica.uminho.pt](mailto:pcoutinho@fisica.uminho.pt)), Ana Rita O. Rodrigues ([ritarodrigues@fisica.uminho.pt](mailto:ritarodrigues@fisica.uminho.pt))

### **BI-3 project: Microfluidic evaluation of drug-loaded magnetoliposomes**

**Work plan and objectives to be achieved:** Evaluation of the efficiency of functionalized magnetoliposomes loaded with an antitumor drug using an optimized microfluidic platform.

#### **Description of tasks**

- 1: Preparation of drug-loaded functionalized magnetoliposomes containing anisotropic magnetic nanoparticles.
- 2: Evaluation of an optimized microfluidic platform with magnetic actuation.
- 3: Evaluation of the efficiency of the drug-loaded magnetoliposomes on tumour cells behaviour using 3D cultures.
- 4: Publication of results.

**Supervisor:** Elisabete M. S. Castanheira Coutinho ([ecoutinho@fisica.uminho.pt](mailto:ecoutinho@fisica.uminho.pt))

**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 Physics Centre of University of Minho, located in the Campus de Gualtar, 4710-057 Braga, Portugal, under the scientific supervision of the researchers indicated above in each project.

**Fellowship duration:** Each grant will take place for a period of 4 (four) months, with a provisional starting date on February 2023. The grant may eventually be renewed in accordance with the execution of the project and the applicable legislation.

**Amount of the research grant:** The value stipend (Monthly Maintenance Allowance) is 1.144,64 per month, 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 serie, no. 119, through dispatch no. 6524/2020 of June 22nd 2020, ratified by ratification declaration no. 447/2021 of June 22nd 2021, according to the applicable regulation.

Payment is made until the 23st 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 5° of the Research Fellow Statutes and applicable research grant regulations.

### **Selection panel:**

*President:* Paulo José Gomes Coutinho, Assistant Professor of Physics Department, effective member of CF-UM-UP, School of Sciences, University of Minho.

*Effective Vowels:* Mário Rui da Cunha Pereira, Assistant Professor of Physics Department, effective member of CF-UM-UP, School of Sciences, University of Minho, and Elisabete Maria dos Santos Castanheira Coutinho, Assistant Professor of Physics Department, effective member of CF-UM-UP, School of Sciences, University of Minho.

*Substitute Vowels:* Bernardo Gonçalves Almeida, Assistant Professor with Habilitation of Physics Department, effective member of CF-UM-UP, School of Sciences, University of Minho, and Ana Rita Oliveira Rodrigues, Invited Assistant Professor of Physics Department, collaborator member of CF-UM-UP, School of Sciences, University of Minho.

**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** (weight of 70%):

- A1. Academic path (considering the classifications of academic degrees), with a weighting of 50%;
- A2. Personal curriculum (considering professional and scientific background), with a weighting of 40%
- A3. Motivation letter, with a weighting of 10%.

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

$$\mathbf{AM = 0.50 \times A1 + 0.40 \times A2 + 0.10 \times A3}$$

Candidates whose AM classification is less than 3.50 are excluded, with the remaining candidates proceeding to the interview stage.

### **INT – Interview** (weight of 30%)

- B1. Interpersonal skills (30%)

- B2. Demonstrated knowledge in the contest area (40%)
- B3. Motivation (20%)
- B4. Language competences (10%)

The classification of the Interview (INT) will be obtained by applying the following formula:

$$\text{INT} = 0.30 \times \text{B1} + 0.40 \times \text{B2} + 0.20 \times \text{B3} + 0.10 \times \text{B4}$$

### **FC - Final Classification**

The Final Classification (FC) will be obtained by applying the following formula:

$$\text{FC} = 0.70 \times \text{AM} + 0.30 \times \text{INT}$$

Candidates with FC less than 3.50 values are excluded.

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.

***Notes:** Applicants with degrees obtained abroad must present proof of recognition of qualifications in Portugal and conversion of the final classification obtained in them to the Portuguese classification scale or declaration under the terms indicated in the previous point. Candidates who do not comply with one of these provisions, the selection panel will assign "0" in the grade of the graduation and/or master course. Candidates will be evaluated on the remaining parameters.*

**Disclosure of results:** The provisional results of applications, based in the selection panel minutes, will be sent to the applicants by email, under the terms of article 12 of the FCT Research Grants Regulation.

In the project of evaluation results, information will be given on the classification obtained by each candidate and, if in position to obtain a grant, which project is associated with the grant.

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).

**Complaint and appeal procedures:** The final results of the evaluation will be published through an ordered list 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.

Each 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.

**Application deadline and submission:** The call for applications is open for a period of 10 (ten) working days from the date of publication of the notice on the Euroaxess portal.

Applications must be formalized by sending an application letter with the following documents:

- curriculum vitae;
- qualifications certificate or declaration of the applicant;
- motivation letter;
- statement proving that meets the conditions for the grant typology, according to the application requirements;
- other documents important to the evaluation process.

Applications must be sent by email to [bolsas@ecum.uminho.pt](mailto:bolsas@ecum.uminho.pt) indicating the reference of the call for applications, 60/ECUM/CFUM/2022 - UIDB/04650/2020, in the 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 Series, no. 119*, through dispatch no. 6524/2020 of June 22nd 2020, ratified by ratification declaration no. 447/2021 of June 22nd 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 (six) months [including proof of ownership of academic degrees or diplomas and enrollment in study cycles or non-degree courses, depending on the type of scholarship].

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 Series, no. 119*, through dispatch no. 6524/2020 of June 22nd 2020, ratified by ratification declaration no. 447/2021 of June 22nd 2021.