

Announcement for the attribution of a Research Grant – 1 vacancy

A call for tenders is now open for the attribution of one Research Scholarship – Master, within the scope of the project MCTools21 – “Manufacturing of cutting tools for the 21st century: from nanoscale material design to numerical process simulation”, Ref.^a POCI-01-0247-FEDER-045940, co-financed by European Regional Development Fund (ERDF), through the Operational Programme for Competitiveness and Internationalization (POCI) - COMPETE 2020, under Portugal 2020 and by National Funds through Fundação para a Ciência e Tecnologia, I.P. (FCT), project managed by Agência Nacional de Inovação, under the conditions set out below:

Scientific area: Physics, Engineering Physics, Materials Engineering.

Recipients and Admission Requirements: Candidates must have, at the time of application, a Master's degree in Physics, Biophysics, Physics Engineering, Materials Engineering or related fields.

On the date of the respective hiring, candidates must prove enrollment in one of the following courses:

- PhD (in the area or related areas to that requested in the call);
- Masters enrolled in courses that do not confer an academic degree, integrated in the educational project of a higher education institution, in the area or area related to that requested in the call (eg: postgraduate studies, advanced studies, specialized training).

Priority will be given to candidates with consolidated knowledge in:

- I. computational modeling of material properties and heterostructures;
- II. Familiarity with the following computational methods: Density Functional Theory, Tight Binding, classical molecular dynamics;
- III. Experience in molecular dynamics force field parameterization;
- IV. Publications in the tender area, in particular in ISI international journals indexed.

Eligibility of applicants: applicants must meet the eligibility conditions established in article 9 of the FCT I.P Research Grant Regulation (2019) and Research Scholarship Regulation of the University of Minho

Work plan: It is intended that the fellows carry out research focused on the optimization of the properties of TiSiN:Ag coatings used in cutting tools for difficult to machine materials, using simulation studies based on density functional theory and classical molecular dynamics.

Applicable legislation and regulations: Law No. 40/2004, of 18 August (Statute of Scientific Research Fellows); amended by Decree-Law 202/2012 of 27 August, by Law no. 12/2013 of 29 January 2013, by Decree-Law no. 89/2013, of 9 July, and by Decree-Law no.123/2019 of August 28; Regulation of Research Scholarships of the University of Minho and the Foundation for Science and Technology I.P., in force. <https://www.fct.pt/apoios/bolsas/regulamentos.phtml.pt> and Research Scholarship Regulation of the University of Minho

Host institution and scientific supervision: The work will be developed at the Centre of Physics of Minho University, Campus de Gualtar-Braga, under the scientific guidance of Professor Luís Silvino Alves Marques.

Duration of the Research Scholarship: The research scholarship will last for 18 months, non-renewable, starting on September 2021.

Monthly Maintenance Allowance: The monthly maintenance allowance corresponds to the basic value of 1104.64 euros, according to the table of scholarships of FCT, I.P. in the country: <http://www.fct.pt/apoios/bolsas/valores>.

Other benefits: Reimbursement of the Voluntary Social Insurance, corresponding to the 1st tier of the contribution base (for scholarships of 6 months or more) and Personal Accident Insurance. Payments are made by bank transfer to the account identified by the scholarship holder.

Jury: President: Professor Luís Silvino Alves Marques; Effective members: Dr. Veniero Lenzi and Dr. Sergey Pyrlin, Substitute members: Professor Bernardo Almeida and Professor Maria de Jesus Matos Gomes

If the President of the Jury is unavailable, he shall be replaced by the first effective member. The first substitute member will replace the effective member.

Evaluation and Selection Process: The evaluation of the applications will focus on the merit of the applicant, by applying the following criteria on a scale of 1 to 5:

A. Candidate's Merit - CM (80%):

- a) A.1: Academic qualifications (reflecting the final classification obtained in the academic degrees, according to reference table), with a 40% weighting;
- b) A.2: Personal curriculum (which reflects the scientific and professional path, the experience in the tender area will be valued) with a 60% weighting.

The candidate's Merit (CM) classification will be obtained by applying the following formula:

$$CM=(A1*0,4) + (A2*0,6).$$

The jury may use selection interviews for candidates classified in the first 2 positions, having a minimum classification of 3 in candidate merit, with the Jury proceeding to evaluate the following sub-criteria:

B. Interview – INT (20%):

B1: interpersonal skills

B2: knowledge demonstrated in the contest area

B3: Motivation

B4: Linguistic competences

$$INT=(B1*0,3) + (B2*0,4) + (B3*0,2) + (B4*0,1)$$

The final classification (FC) of the Candidate Merit (CM) and Interview (INT) will be obtained by applying the following formula:

$$FC = (CM*0,8) + (INT*0,2)$$

Documents proving the ownership of academic degrees and diplomas, or their respective recognition when they have been awarded by foreign higher education institutions, may be dispensed with at the application stage, being replaced by a declaration of honor by the candidate, with the verification of this condition occurring only in phase of contracting the scholarship. This statement 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 the purpose of contracting a grant, only the information contained in the latter will be considered. If it is verified that 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 and may, consequently, changing the candidate's ranking, the scholarship will not be contracted.

Note: 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 jury will assign the minimum grade in the grade of the degree and/or master's course, according to the defined scale of values. of a higher education institution, in the area or area related to that requested in notice.

Communication of results: The project evaluation results, based on the minutes, will be sent to candidates by email, within 90 working days after the deadline for submission of applications. If the result is unfavourable to the granting of the requested scholarship, the candidates have a period of 10 working days to comment, if desired, in the context of a prior hearing to interested parties, pursuant to articles 121 and 122 of the Code of Administrative Procedure (DL n° 4 /2015 of January 7th).

Complaint and appeal procedures: The final results of the evaluation will be publicized through an ordered list (alphabetically, by final grade obtained), by email to all candidates, attaching, for that purpose, the minutes with the deliberations of the jury. The selected candidate must state in writing their intention to accept the scholarship. In case of non-acceptance, the scholarship will be awarded to the candidate in order of final ranking. A complaint may be filed against the final decision, within 15 working days, addressed to the President of the Jury. Interested parties may also present an optional hierarchical appeal, addressed to the Pro-Rector for Research and Projects, Professor Dr. Filipe Vaz.

Deadline for application and form of submission of applications: The competition is open from 23 July to 5 August 2021.

Applications must be formalized, obligatorily, through the following documents: curriculum vitae; certificate of qualifications or declaration of the candidate; document attesting the enrolment in one of courses mentioned above.

Applications must be sent exclusively to the e-mail lsam@fisica.uminho.pt and bolsas@ecum.uminho.pt indicating the reference in the subject (003/ECUM/CFUM-MCTools21).

Non-discrimination and equal access policy: UMinho promotes a policy of non-discrimination and equal access, whereby no candidate may be privileged, benefited, harmed or deprived of any right or exempt from any duty due to, in particular, of ancestry, age, sex, 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 and union membership.