

CALL FOR RESEARCH FELLOWSHIP

University of Coimbra opens a call for one research fellowship, in the framework of the project “iProMo - Sistemas Inteligente para Controlo de Processos de Moagem” (reference: CENTRO-01-0247-FEDER-069730), co-financed by the European Regional Development Fund, through Centro Regional Operational Program 2014/2020 (Centro2020), of Portugal 2020, in the following conditions:

Scientific area: Electrotechnical and Computer Engineering, Informatics Engineering, Engineering Physics, Physics, Mathematics, Biomedical Engineering, or related areas.

Skills/Qualifications/Admission requirements: Students enrolled in a PhD program in Electrotechnical and Computer Engineering or in related areas, or alternatively, An MSc degree in Electrotechnical and Computer Engineering or in related areas enrolled in a non-degree course (curso não conferente de grau). The non-dregree course must be related with the Research Grant’s type of activity..

“Courses not conferring an academic degree” must be related to the research fellowship’s activity type. “Courses not conferring an academic degree” are the courses referred to in paragraph e) of number 3 of article 4 of Decree-Law no. 74/2006, of 24 March, in the current wording, provided that they are developed in association or cooperation between the higher education institution and one or more R&D units, in accordance with the provisions of paragraph e) of article 3 of the Regulation for Research Fellowships of the Fundação para a Ciência e a Tecnologia, I.P.

Although the recipients must be enrolled in a cycle of studies leading to the attribution of an academic degree or in a course not conferring an academic degree, at the time of application it is not necessary for the candidate to have made such an enrollment, and proof of enrollment must be presented until the fellowship is contractualized. Candidates are only required to meet the requirements to enroll in the training offer. If there are candidates already enrolled (including attending a course), they compete on an equal footing with those who are not enrolled.

Work plan/ Objectives: Research and development activities will be carried out in the area of hardware and artificial intelligence (Machine Learning), focusing on the

development of an intelligent sensor for rotary mills, intelligent maintenance of rotary mills and detection of anomalies in sensors, in order to increase the efficiency of the milling process and minimize downtime due to breakdowns.

To this end, the work plan consists in developing:

- (i) an intelligent sensor using artificial intelligence (Machine Learning) techniques.
- (ii) a system for intelligent maintenance of rotary mills and detection of anomalies in sensors, using artificial intelligence techniques (Machine Learning).

This project results from a consortium between the company Oncontrol Technologies, the University of Coimbra (UC), through the Institute of Systems and Robotics (ISR-UC), and the company CIMPOR - Cimentos de Portugal, as a partner in the project and demonstrator of the technology.

Regime: The attribution of the fellowship does not generate or entitle a relation of a legal-labour nature, and the fellowship is undertaken in an exclusive dedication regime. The fellowship holder is awarded the Fellowship Statute of the UC, in its current wording, according to the Research Fellowship Holder Statute, and according to the Regulation for Research Fellowships of the Fundação para a Ciência e a Tecnologia, I.P., both in their current wording.

Location: Department of Electrical and Computer Engineering (DEEC) at the University of Coimbra.

Duration: 6 months.

Renewal: Possibly renewable, by agreement between both parties, not being allowed to exceed the project's deadline.

Scientific orientation: Jerôme Amaro Pires Mendes.

Financial conditions: The amount of the fellowship is € 1104.64 corresponding to the monthly compensation stipulated in the FCT table (<https://www.fct.pt/apoios/bolsas/valores.phtml.en>), plus social security (*Seguro Social Voluntário*, first level contributions) and personal accidents insurance. The payment will be made by bank transfer. This amount will not be increased during the entire period of the fellowship duration.

Selection methods: Curricular evaluation (60%) and interview (40%) of the three best classified candidates in the curricular evaluation part.

Selection criteria: In the Curricular Assessment (CA) (60%) the following criteria will be considered:

- (1) Quality of the Curriculum (QC), including the characteristics of the academic and complementary training (30%);
- (2) Demonstrated knowledge (C) according to the work plan and desired profile; knowledge in programming, and computational intelligence techniques; knowledge in the fellowship's scope (30%).

In the Interview (E), the applicant's motivation, commitment, perseverance, merit, appropriate profile to the project's needs, knowledge within the scope of the activities and also behavioral competencies will be valued (40%). The following criteria will be considered:

- (1) Motivation, commitment, the perseverance, the suitability of the candidate's profile and merit for the needs of the project- (12.5%);
- (2) Demonstrated knowledge in the area of the work plan - (15%);
- (3) Behavioral competencies - (12.5%).

If none of the candidates has the appropriate profile (overall evaluation below 60%), the fellowship will not be awarded.

Jury responsible for selection: President: Jerôme Amaro Pires Mendes; Jury Members: Cristiano Premebida; Pedro Manuel Soares Moura.

Formalization of application: Applications must be formalized by sending the following elements: (1) Letter of motivation; (2) Curriculum Vitae (CV); The CV should include: (i) Contact; (ii) Academic qualifications, including a complete list of the concluded courses/subjects/curricular units and their classifications); (iii) List of scientific publications; (iv) Projects in which he/she has participated; (v) Other relevant information; (3) Copy of the Certificate of Qualifications with the final average. (4) Proof of enrollment in a doctoral/PhD course, or in a course not conferring an academic degree integrated in the educational project of a Portuguese

higher education institution, or a declaration on the honor by the candidate that he/she will enroll in the course until the date that eventually may be defined by the University of Coimbra (date equal or previous to the date of contract signature, a date that may exist in case a fellowship is granted).

Declaration on the honor of the candidate(s) with the indication of the fellowship(s) of the typology to which the contest was held and the respective duration(s).

Applicants with academic degrees obtained abroad will be required to present a Certificate of Recognition in accordance with applicable law. This document is mandatory only in the contractualization phase.

Applications submission: Applications must be sent by e-mail, with reference "iProMo-BIM-ML" in the subject, to jermendes@isr.uc.pt.

Submission of applications: Between 04/08/2021 and 01/09/2021.

Submission deadline date: 01/09/2021.

Additional information: The evaluation results will be announced within 90 working days after the end of the applications submission deadline, by notifying the applicants via email. After the announcement of the results, candidates are considered automatically notified to, if they wish to do so, comment on the results on a preliminary hearing period within 10 days after that date. After this, the selected candidates will have to declare in writing their acceptance. Unless a justification worthy of consideration is presented, if the declaration is not submitted within the referred period, it is considered that the candidate waives the fellowship. In case of resignation or withdrawal of the selected candidate, the next candidate with the highest evaluation score will be notified immediately.

Once the selection process is completed, the fellowship contract will be drawn up in accordance with the draft contract provided by the FCT.

After the contracted period, the fellowship holder and supervisor must prepare the final report in accordance with the respective assessment criteria that were established.

Selection reserve list: N.A.