CALL FOR AWARDING RESEARCH FELLOWSHIPS WITHIN PROJECT GRANTS AND R&D INSTITUTIONS

1 Research Fellowship under Special Regime (BI-RE) for Master Degree Student

1 Research Fellowship(s) under Special Regime (BI-RE) is (are) open at the **FCiências.ID – Associação para a Investigação e Desenvolvimento de Ciências**, for the Project/R&D Institution "SATO – Self Assessment Towards Optimisation of Building Energy" and "SMART2B – Smartness to existing Buildings and "SMART2B – Smartness to existing Buildings"*,* financed by European Union's H2020 research and innovation programme under Grant Agreement no. 957128 and 101023666, respectively, under the following conditions:

1.   **Scientific Area**: Energy Systems on Buildings

2.   **Requirements for admission**: Portuguese nationals, foreign and stateless persons may submit applications to this selection procedure, with a Bachelor Degree in Energy and Environmental Engineering, Physical and Technological Engineering, Mechanical Engineering or Civil Engineering; Python programming experience; Experience in technical drawing software (AutoCAD).

3.   **Additional optional skills and qualifications**: Experience in dynamic thermal simulation (EnergyPlus).

4.   **Contracting requirements**: Presentation of the academic qualifications and/or diplomas. Enrollment in a Master Degree in Energy and Environmental Engineering, Physical and Technological Engineering, Mechanical Engineering or Civil Engineering

5.   **Work plan**: The combination of higher air temperatures and continuously increasing occupant expectations and standards of comfort in buildings will lead to higher energy consumption in service buildings. To reduce energy consumption in buildings, automatic energy performance diagnostics systems need to be improved. This project proposes to develop and test an Energy Performance Assessment system for Worten stores that evaluates and maximizes the performance of HVAC, lighting and equipment. The system that will be developed combines the capabilities of Predictive Control Models (PCM) with Reinforcement Learning (RL), resulting in a Learning by Predictive Reinforcement (LPR) approach. The PCM component of the system uses Deep Neural Network (DNN) models to accurately predict indoor and outdoor environmental conditions. The RL component of the system allows for the integration of occupant feedback, allowing an assessment of optimal control of passive systems with automatic and personalized adjustment to occupant preferences. The LPR rating and control system will open up new possibilities for energy consumption flexibility in Worten stores by comparing sets of two identical stores located in different cities. The experimental component is part of WPs 3, 4 and 6 of the SATO project and WPs 4 and 6 of the SMART2B project and will be developed in conjunction with SONAE/Worten.

6.   **Legislation framework**: Research Fellowship Holder Statute, in accordance with Law 40/2004, of 18 August, in its current version and the FCT Regulation for Research Studentships and Fellowships, in its current version (Reg. 950/2019 published in DR on 16th December: https://dre.pt/application/file/a/127230968, or at the FCT website: https://www.fct.pt/apoios/bolsas/regulamento.phtml.pt), and FCiências.ID Fellowship Regulation, as approved on 12th May 2020 (available at Regulamento de Bolsas de Investigação Científica da FCiências.ID).

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7.   **Place of work**: The work will be developed at Instituto Dom Luiz (IDL), in Faculty of Sciences of the University of Lisbon, Campo Grande, Lisbon, Portugal under the scientific supervision of Professor Guilherme Carvalho Canhoto Carrilho da Graça.

8.   **Fellowship duration**: This position is initially opened for 6 months and will begin in November 2021. The fellowship contract may be potentially renewed for 6 months, in accordance with the provisions of Regulation of Research Fellowships from the Foundation for Science and Technology, I.P and FCiências.ID Fellowship Regulation.

9.   **Monthly allowance**: The fellowship amounts to € 850, according to table values of the FCiências.ID Fellowship Regulation. The fellowship holder will have a personal accident insurance and can ensure the right to social security through adherence to the voluntary social insurance scheme, if not covered by any other social protection scheme, pursuant to *Código dos Regimes Contributivos do Sistema Previdencial de Segurança Social.*
The fellowship will be paid monthly by bank transfer

10.   **Evaluation and selection process**: Candidates will be assessed by the quality of their CV and possibly, a selection interview. If the selection interview is not carried out, the final evaluation will be obtained with a weighting of 100% in the curriculum evaluation. If the jury chooses to carry out the selection interview, it will be carried out to the 2 (two) candidates with the best classification in the curriculum evaluation. In the event that the selection interview is carried out, the final evaluation will be obtained taking into account the following considerations: 50% for the curriculum evaluation and 50% for the selection interview.

11.   **Selection Committee**: Professor Guilherme Carvalho Canhoto Carrilho da Graça (President of the jury), Professor Marta João Nunes Oliveira Panão (Effective member), Professor Killian Paulo Kiernan Lobato (Effective member), Professor João Manuel de Almeida Serra (Substitute member) and Professor Miguel Centeno da Costa Ferreira Brito (Substitute member).

12.   **Publication/notification of results**: All the candidates will be notified by e-mail, sent by the call holder, with the selection meeting minutes enclosed.

13.   **Deadlines**: This call for applications is open from 13/10/2021 to 21/10/2021 .

14.   **Application:** Applications should be sent via e-mail to cdrosa@fc.ul.pt, referring in the e-mail subject the ID SATO-BIRE-202111, by attaching the following documents:
   a.   Curriculum vitae – **CV may be provided in PDF or through the CIÊNCIAVITAE system**;
   b.   Certificate of completion of previous degree;
   c.   other documents considered relevant.

15.   **Time limits for the appeal procedure:** In case of negative decision, the candidates have 10 business days, after the date of announcement of the results of the candidates evaluation, to pronounce their disagreement in accordance with the *Código do Procedimento Administrativo*. Appeals against the final decision may be submitted to the Administration Board of FCiências.ID (fciencias.id@fciencias-id.pt) within 15 business days after the notification date

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Note 1: The documents that prove the entitlement of the academic qualifications and diplomas, or the proof of registration in the academic degree or diploma requested on the call, can be dismissed during the application period and replaced by a declaration on their honour from the applicant. Their delivery is mandatory for the fellowship contractualization.

Note 2: Please note that - higher education degrees and diplomas awarded by foreign higher education institutions need to be recognized by a Portuguese higher education institution, pursuant to the Decree-Law nr. 66/2018 (August 16) and the Ministerial Order nr. 33/2019 (January 25). The presentation of the recognition certificate is mandatory for contract signature. More information can be obtained at: https://www.dges.gov.pt/en/pagina/degree-and-diploma-recognition.