

## CALL FOR GRANT APPLICATIONS (AE2021-0271)

INESC TEC is now accepting grant applications to award 1 Research Initiation Grant (BII) within the scope of the INESC TEC LA funded by National Funds through FCT - Portuguese Foundation for Science and Technology, I.P., project (reference UIDB/50014/2020)

### 1. GRANT DESCRIPTION

**Type of grant:** Research Initiation Grant (BII)

**General scientific area:** ENGINEERING

**Scientific subarea:** Electrical engineering

**Grant duration:** 12 months, starting on 2022-01-12.

**Scientific advisor:** Marcelo Petry

**Workplace:** INESC TEC, Porto, Portugal

**Maintenance stipend:** € 446,12, according to the table of monthly maintenance stipend for FCT grants (<http://www.fct.pt/apoios/bolsas/valores>), paid via bank transfer. Grant holders may be awarded potential supplements, according to a quarterly evaluation process (Articles 19, 21 and 22 of the Regulations for Grants of INESC TEC and Annex II), up to a maximum limit of 50% of the monthly maintenance stipend.

Costs attributable to INESC TEC may include registration, enrolment or tuition fee stipend, either directly or through reimbursement, during the grant duration.

The grant holder will benefit from health insurance, supported by INESC TEC.

### 2. OBJECTIVES:

Welding is a manufacturing process that uses heat to join metal parts, causing fusion. Welding can be dangerous and unhealthy due to the high temperatures involved, the release of gas and fumes, and the risk of fire and explosion. Therefore, it is extremely important to properly train the people who will perform this type of activity. Furthermore, there is a great demand for qualified welders. According to the 2020 Skills Shortage and Surplus Analysis, a report published by the European Commission, a shortage of welders was reported by thirteen of the thirty countries/regions. This represents fifth place on the list of the twenty-eight occupations with the greatest need.

### 3. BRIEF PRESENTATION OF THE WORK PROGRAMME AND TRAINING:

The candidate will be involved in the INESC TEC team to develop an immersive welding simulator, using virtual reality (VR). The welding instructions will be presented to the learner, who will have to reproduce the task using the VR system. The VR system will follow the user's movement with extreme precision and will monitor the trajectory of the simulated welding gun. The system will also provide feedback to the learner regarding some technical aspects of the welding process such as welding torch angle, welding temperature and energy transfer.

#### 4. REQUIRED PROFILE:

##### Admission requirements:

Registration in a Master's Course in Electrical and Computer Engineering or related areas

The awarding of the fellowship is dependent on the applicants' enrolment in study cycle or non-award courses of Higher Education Institutions.

##### Preference factors:

The candidate should preferably have knowledge of C/C++ programming in ROS environment, as well as knowledge of robotics. Extra-curricular activity will be valued, namely participation in competitions or demonstrations included in the National Robotics Festival or similar events.

##### Minimum requirements:

The candidate must be registered in a Master's course.

#### 5. EVALUATION OF APPLICATIONS AND SELECTION PROCESS:

**Selection criteria and corresponding valuation:** the first phase comprises the Academic Evaluation (AC), based on the criteria referred to in Article 12 of the Regulations for Grants of INESC TEC, while the second phase comprehends the Individual Interview (EI). All factors are evaluated on a scale of 0 to 100, taking into account the applicants' merit, suitability and conformity with the preference factors.

The weight of the AC factors are as follows: Academic Qualifications (FA, 45%), Scientific Publications (PC, 5%), Experience (EX, 45%) and Motivation Letter (CM, 5%).

Candidates who score less than 50 points in the AC average will be considered excluded on absolute merit. The top five candidates approved on absolute merit will be qualified for the individual interview. The Final Grade (CF) is obtained by the weighted average of AC (80%) and EI (20%).

##### The Selection Jury is composed of the following members:

President of the Jury: Marcelo Petry

Full member: Manuel Santos Silva

Full member: Luís Freitas Rocha

Substitute member:

**Release of results and prior hearing:** the results of the selection process, as well as the terms and procedures for prior hearing, will be released to the applicants by email, under the terms referred to in Article 13 of the Regulations for Studentships and Fellowships of INESC TEC.

#### 6. FORMALISATION OF APPLICATIONS:

##### Application Documents:

1. Motivation letter;
2. Curriculum Vitae (must include the list of previous fellowships, their type, beginning and end dates, funding entities and host institutions);
3. Certificate or diploma degree fully recognised in Portugal;
  - Documents proving the awarding of academic degrees and diplomas, or the according recognition - in cases of academic degrees or diplomas granted by a foreign higher education institution - can be dismissed in the application process, and replaced by the applicant's declaration of honour, with the verification of said condition taking place during the grant's hiring stage. The submission of the certificate is mandatory when signing the contract.
  - Academic degrees or diplomas awarded by a foreign higher education institution require an authentication by a Portuguese higher education institution, and the corresponding registration on the DGES platform, in conformity with Decree-Law no. 66/2018, of August 16, and Ordinance no. 33/2019, of January 25. More information available on the website <https://www.dges.gov.pt/pt/pagina/reconhecimento?plid=374>
4. Proof of enrollment in a degree awarding study cycle or in a non degree awarding Higher Education program.
  - The proof of enrollment may be presented just during the grant hiring stage.
5. Signed declaration stating not having benefited from any other research fellowship (Article 5, no. 5)
6. Documental evidence to support the country of residence, residence permit or other legally equivalent document, in cases where the applicant is a foreigner or non-resident in Portugal - valid until the beginning of the grant.
7. Other supporting documents relevant to the final assessment.

Failure to deliver the required documents within the 90-day period after the date of the notice of the conditional awarding of the grant implies its cancellation.

**Application period:** From 2021-12-13 to 2021-12-27

**Submission of applications:** the application will be formalised by submitting the form available in the *Work With Us* section of INESC TEC website.

## 7. BINDING LEGISLATION AND REGULATION

The hiring process shall comply with the current legislation regarding the Research Grant Holder Statute, approved by Law no. 40/2004 of August 18, in its current wording, as well as by the Regulations for Grants of INESC TEC and for [FCT Grants Regulation in force](#).

For more information, please check the Regulations for Grants of INESC TEC and relevant annexes at [www.inesctec.pt/bolsas](http://www.inesctec.pt/bolsas)



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