CALL FOR GRANT APPLICATIONS
(AE2023-0469)

INESC TEC is now accepting grant applications to award 1 Research Grant (BI) within the scope of the TORIS funded by National Funds through FCT - Portuguese Foundation for Science and Technology, I.P., project reference 2022.09084.PTDC

1. GRANT DESCRIPTION

Type of grant: Research Grant (BI)

General scientific area: ENGINEERING

Scientific subarea: Electrical engineering

Area of Work: Electrical Engineering

Grant duration: 5 months, starting on 2024-01-10, with the possibility of being renewed until the end of the project.

Scientific advisor: Nuno Miguel Paulino

Workplace: INESC TEC, Porto, Portugal

Maintenance stipend: € 1199,64, according to the table of monthly maintenance stipend for FCT grants , 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.

INESC TEC supports costs with registration, enrolment or tuition fees, during the grant duration, under the terms established in the internal document: "Payment of Tuition fees to grant holders".

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

2. OBJECTIVES:

- Improve the state of the art regarding digital control of reconfigurable intelligent surfaces;
- Identification and selection of the most adequate methods to address the proposed work plan:
- Develop the research skills through the application of the selected methods;
- Apply the scientific method on the research process and a critical attitude on the obtained results.

3. BRIEF PRESENTATION OF THE WORK PROGRAMME AND TRAINING:

1. Study the existing array design, and array control code, which supports a 1-bit control;
2. Study the PYNQ Z2 (or similar) development board and its Python ecosystem;
3. Write the RIS control code (by porting and adapting existing code);
4. Interface the board with an existing LED based RIS demonstrator;
5. Based on the LED demonstrator design, develop and test a 20x20 RIS;
6. Add multi-tile control to the code, and test with a multi-tile RIS demonstrator;
7. Prepare the submission of a scientific paper;
8. Write the grand activities report.

4. REQUIRED PROFILE:

Admission requirements:

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

Preference factors:

- Experience in the design of antenna arrays;
- Python experience.

Minimum requirements:

- Experience with software design for embedded systems;
- Experience with the design of schematic of electronic circuits and PCBs.

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, 40%), Scientific Publications (PC, 25%), Experience (EX, 25%) and Motivation Letter (CM, 10%).
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 (70%) and EI (30%).

The Selection Jury is composed of the following members:

President of the Jury: Luís Manuel Pessoa
Full member: Nuno Miguel Paulino
Full member: Vítor Grade Tavares
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;
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 the infringement of the grant holder's duties (article 14, no. 4)
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 2023-12-07 to 2023-12-21

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