

CALL FOR GRANT APPLICATIONS (AE2021-0078)

INESC TEC is now accepting grant applications to award 1 Research Grant (BI) 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 Grant (BI)

General scientific area: ENGINEERING

Scientific subarea: Electrical engineering

Grant duration: 6 months, starting on 2021-06-01, with the possibility of being renewed until the end of the project.

Scientific advisor: Luís Manuel Pessoa

Workplace: INESC TEC, Porto, Portugal

Maintenance stipend: € 1104,64, 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.

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:

- Enlarge the knowledge of the state of the art regarding patch antenna array design; - Identification and selection of the most adequate optimization methods to address the proposed workplan: - 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. Experimentally characterize a set of existing TRL calibration kits, and develop a calibration procedure suitable for the targeted characterization of antennas.
2. Characterize experimentally patch antenna arrays of 1x4 and 4x4 elements, both in terms of input impedance as well as in terms of radiation pattern.
3. Refine existing HFSS simulation models, taking advantage of the obtained experimental results, and compare experimental results with simulated ones.
4. Design a new version of the patch antenna element, as well as the patch antenna array, while taking into account the previously obtained experimental results.
5. Characterize experimentally the new version of the developed antennas and compare experimental results with simulated ones.
6. Prepare the submission of a journal paper.
7. Write the grant activities report

4. REQUIRED PROFILE:

Admission requirements:

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

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Preference factors:

- Experience with 3D electromagnetic simulation of planar patch antenna arrays above 65 GHz as well as in experimental characterization of antennas/microwave devices above 65 GHz.

Minimum requirements:

- Experience with 3D electromagnetic simulation as well as in experimental characterization of antennas/microwave devices.

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, 15%), Experience (EX, 35%) 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: Henrique Salgado

Full member: Orlando Frazão

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 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 2021-04-20 to 2021-05-04

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



Governo da República
Portuguesa

FCT

Fundação para a Ciência e a Tecnologia
MINISTÉRIO DA EDUCAÇÃO E CIÊNCIA