

CALL FOR GRANT APPLICATIONS (AE2021-0260)

INESC TEC is now accepting grant applications to award 1 Research Grant (BI) with the reference MAGPIE funded by CE, project (reference 101036594)

1. GRANT DESCRIPTION

Type of grant: Research Grant (BI)

General scientific area: COMPUTER SCIENCE,ENGINEERING

Scientific subarea: Electrical engineering

Grant duration: 12 months, starting on 2022-02-01, with the possibility of being renewed for a maximum term of four years, in the cases of students enrolled in a PhD.

Scientific advisor: José Villar

Workplace: INESC TEC, Porto, Portugal

Maintenance stipend: € 1104,64, 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:

- Increase the knowledge of the state of the art in the application of modelling techniques for complex power systems associated with electricity grids and port infrastructures.
- Identify cases for the use of innovative solutions in the supply and storage of electrical energy for the flexible supply of vessels in the shore and near-shore areas.
- Develop research capacity in modelling, optimisation and decision support for the management and control of energy supply systems;
- Search for synergies with other energy vectors that allow the reduction of the carbon footprint in port environment.
- Exercise critical thinking in the evaluation of the research process and the results obtained.

3. BRIEF PRESENTATION OF THE WORK PROGRAMME AND TRAINING:

The EU MAGPIE project will develop solutions to accelerate the introduction of green energy carriers (batteries, hydrogen, ammonia, BioLNG e methanol) combined with logistic optimisation in ports through automation and autonomous operations. The project will demonstrate technical, operational, and procedural energy supply and digital solutions in a living lab environment to stimulate green, smart, and integrated multimodal transport and ensure roll out through the European Green Port of the Future Master Plan.

- Develop physical and data-based models of energy systems associated with electricity grids and port infrastructure.
- Description of use cases establishing the innovative services that can be exploited with shore- and near-shore energy supply solutions.
- Creation of energy models, implementation of optimisation algorithms and decision support mechanisms.

- Dissemination of work in international journals

4. REQUIRED PROFILE:

Admission requirements:

MSc degree in electrical engineering, mechanical engineering, computer science 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 with power system modelling - Advanced knowledge of optimisation techniques - Knowledge of decision support techniques - Knowledge of programming

Minimum requirements:

Average grade on the degree and on o MSc of 14 out of 20;
Enrolled in a PhD in a Portuguese institution.

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, 50%), Scientific Publications (PC, 20%), Experience (EX, 20%) 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: José Villar
Full member: Manuel Matos
Full member: David Emanuel Rua
Substitute member: Leonel Magalhães Carvalho

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 dully 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 2021-11-24 to 2022-01-10

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