

CALL FOR GRANT APPLICATIONS (AE2022-0356)

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

1. GRANT DESCRIPTION

Type of grant: Post Doctoral Research Grant (BIPD)

General scientific area: ENGINEERING

Scientific subarea: Electrical engineering

Grant duration: 12 months, starting on 2022-12-01, with the possibility of being renewed for a maximum term of three years.

Scientific advisor: Zenaida Mourão

Workplace: INESC TEC, Porto, Portugal

Maintenance stipend: € 1686,00, 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.

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:

The MAGPIE project will develop solutions to accelerate the introduction of decarbonized energy carriers (electricity - batteries, hydrogen, ammonia, BioLNG and methanol) combined with the optimization of logistics operations 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 implementation through the European Green Port of the Future Master Plan.

The tasks to be performed involve the development of models to select the best combination of low emission energy carriers for energy demand in ports and transport chains outside ports (hinterland) considering the associated logistics chain.

The main objectives of the Grant are:

- 1) Characterization of current and future energy uses in ports, with special focus on the ports involved in the project.
- 2) Development of decarbonization models for ports, considering new legislation for 2030 and 2050.

3. BRIEF PRESENTATION OF THE WORK PROGRAMME AND TRAINING:

- 1) Identification of current and future energy uses and energy carriers in ports.
- 2) Development of energy optimization models that can be applied at the scale of a port, and that allow decision making in terms of planning of new port infrastructures that allow, for example, local production of electricity and renewable heat, support for local charging of batteries to support electric vehicles and support structures loading/unloading, introduction of hydrogen, installation of OPS to connect vessels in loading/unloading maneuvers, support for decarbonization of road, rail, maritime and inland waterway transport with origin/destination in the port.

- 3) Contribution to the project deliverables.
- 4) Dissemination of the work in international journals and/or conferences.

4. REQUIRED PROFILE:

Admission requirements:

PhD degree in mechanical, electrotechnical or environmental engineering, or similar;
The PhD degree must have been obtained within the three years prior to the date of submission of the application and the research work leading to the award must have been carried out at a host entity other than INESC TEC.

Preference factors:

- Experience with energy system modelling - Knowledge in energy system optimization and data analytics - Knowledge of programming (e.g., Python or similar)

Minimum requirements:

A minimum of two publications in journals or international conferences

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: Zenaida Mourão
Full member: David Emanuel Rua
Full member: José Villar
Substitute member: Ricardo Jorge Bessa

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. 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.

5. 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 2022-11-07 to 2022-11-18

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