

## CALL FOR GRANT APPLICATIONS (AE2025-0175)

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 LA/P/0063/2020.

### 1. GRANT DESCRIPTION

**Type of grant:** Research Grant (BI)

**General scientific area:** PHYSICS

**Scientific subarea:** Computational physics

**Area of Work:** Quantum Computing and Operations Research

**Grant duration:** 6 months, starting on 2025-05-26, with the possibility of being renewed until the end of the project.

**Scientific advisor:** António Galvão Ramos

**Workplace:** INESC TEC, Polo UMinho (Campus de Gualtar, Braga); Campus da FEUP, Porto, Portugal

**Maintenance stipend:** € 1040.98, [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:

Main objectives:

- survey the state of the art of quantum optimization, with special emphasis on the maturity of the technology for solving different classes of problems in the context of Operations Research and identification of current use cases in a real environment;
- characterization, at present, of the limitations of the technology (hardware + software), the opportunities and challenges associated with the use of the technology and identification of the types of problems in the context of OR with the most potential to benefit from the technology;
- concrete demonstration of the results of quantum optimization, using a variety of OR problems, using experimentation with the technology and the development of prototypes illustrating the advantages and challenges.

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

Main Tasks:

- 1) survey of the state of the art;
- 2) familiarization with the experimental side of technology;
- 3) experimentation and characterization of problems;
- 4) preparation of a final report specifically addressing each of the proposed objectives.

#### 4. REQUIRED PROFILE:

##### Admission requirements:

Education in Information Physics and/or Quantum Computing.

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

##### Preference factors:

Ability to work in group, high autonomy, and organization.

##### Minimum requirements:

Experience in the following skill(s):

- Programming Python;
- C++ programming experience;
- Experience with a framework for the development and simulation of quantum circuits (Pennylane, Qiskit);
- Advanced knowledge of English (spoken and written).

#### 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, 10%), Experience (EX, 10%) and Motivation Letter (CM, 40%).

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 (60%) and EI (40%).

#### DISABILITY INCENTIVE

Candidates who present a degree of disability equal to or greater than 90% will benefit from an incentive (20) in the score of the CV Assessment.

Candidates who present a degree of disability equal to or greater than 60% and less than 90% will also benefit from an incentive (10) in the score of the CV Assessment.

Said score may, in these cases, exceed 100 points.

Candidates must demonstrate the degree of disability during the application, namely through the submission of the Multi-Purpose Medical Certificate of Disability, issued in accordance with Decree-Law no. 202/96, of October 23 - currently in effect.

Candidates must declare, in the application form, the type of disability used throughout the selection process, in order to proceed with the required adaptations.

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

President of the Jury: António Henrique Almeida

Full member: Luís Paulo Santos

Full member: António Galvão Ramos

Substitute member: Pedro Filipe Rocha

**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 2025-04-17 to 2025-05-05

**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)



Fundação  
para a Ciência  
e a Tecnologia



REPÚBLICA  
PORTUGUESA