

Research Studentships (for students of a course that does not award an academic degree)

Applications are open for 01 Research Studentship (Grant holder with Master degree), within the framework of the project “Pacto da Bioeconomia Azul” (“Blue Bioeconomy Pact”) at “Associação do Instituto Superior Técnico para a Investigação e Desenvolvimento” (IST-ID) (reference C632741873-00467082, investment n.º 16), financed by the European Union and national funds through the “Instituto de Apoio às Pequenas e Médias Empresas e à Inovação” (IAPMEI) and the Recovery and Resilience Plan, under the following conditions:

Scientific Area: Biological Sciences

Admission Requirements: To hold a master’s degree in microbiology, Biotechnology, Bioengineering or related areas; and be enrolled at a course that does not award an academic degree and it is integrated in the educational project of a higher education institution, performed in association or cooperation with one or several R&D units;

Workplan:

1. Determine likely beneficial traits (e.g., pathogen inhibition, synthesis of algal growth hormones, vitamin B12 biosynthesis) of bacterial symbionts of the red macroalga *Porphyra* (Atlantic Nori) using phenotypic bioassays;
2. Develop and validate novel, miniaturized experimental designs to address growth-promoting abilities of bacterial symbionts of *Porphyra* at early developmental stages of the host organism;
3. Select up to five “most-promising” beneficial bacteria, according to the experiments above, to examine their suitability as bacterial probiotics promoting algal growth at early developmental stages, using a controlled experimental design (microcosms);
4. Contribute to the creation of a bank of growth-promoting bacterial symbionts of macroalgae of interest to the blue biotechnology sector;
5. contribute to the preparation of scientific articles and dissemination material in coordination with the working team.

The objectives will be achieved within the framework of Work package 5 (“WP5 – Algae”) of the “Blue Bioeconomy Pact” project, in close collaboration with the partner company AlgaPlus (<https://www.algaplus.pt/en/>). The adequate conduction of the workplan is pivotal for the completion of the tasks planned to be performed at IST-ID, Instituto Superior Técnico, Universidade de Lisboa, in the framework of the “Blue Bioeconomy Pact” Project.

Legislation and Regulations: Statute of Scientific Research Fellow, approved by Law nr. 40/2004, of August 18, as worded by Decree-Law nr. 123/2019, of August 28; IST-ID Regulation for Research Studentships and Fellowships, available on <https://ist-id.pt/recursos-humanos/bolseiros/#documentos-relacionados>.

Workplace: The work will be developed at the Institute for Bioengineering and Biosciences (iBB) of Instituto Superior Técnico, Universidade de Lisboa, under the scientific supervision of Prof. Rodrigo da Silva Costa and Dr. Tina Keller-Costa. The workplan requires availability of the candidate to regularly visit the dependencies of partner company AlgaPlus, and eventually take short-term internships, to perform microcosm experiments under the joint supervision of IST-ID and AlgaPlus Scientists.

Duration: The research fellowship will have the duration of 07 months. It is expected to begin in June 2025 and may be eventually renewed up to the maximum of 12 months in case the project is extended beyond December 2025, including the duration of the initial contract.

Monthly maintenance allowance: the amount of the monthly maintenance allowance is 1 309,64 €, being the payment method of the Fellow by wire transfer.

Selection methods: The selection methods will be the following: *Curriculum* evaluation, with eventual individual interview if necessary. The criteria used to evaluate the candidates' curricula will be as follows:

1. Familiarity with laboratory techniques and methods in basic microbiology, such as microbial cultivation and preparation of culture media and chemical solutions, with emphasis on cultivation and maintenance of alga-associated bacteria (20%);
2. Familiarity with phenotypic bioassays used to assess possible host beneficial traits of bacterial symbionts of algae, such as auxin and vitamin B12 biosynthesis assays and in vitro pathogen antagonism bioassays (20%);
3. Acquaintance with bioinformatics tools used in the analysis of nucleic acid sequences, notions of molecular taxonomy and phylogeny, preferentially when applied to the study of bacterial symbionts of macroalgae. Previous laboratory experience in the study of algal-microbe interactions will be considered a plus (20%);
4. Academic trajectory. Bachelor's and Master's final grades, with special value attributed to indicators of the academic qualifications of the candidate (e.g., e.g., quality of the Master thesis dissertation, scientific initiation in the areas mentioned above, participation in scientific conferences). The quality of the motivation letter (see below) will be considered positively (20%);
5. Demonstrated capacity to conduct the research plan described above (20%).

Composition of the selection Jury:

Professor Rodrigo da Silva Costa (Department of Bioengineering, Instituto Superior Técnico)

Doctor Tina Keller-Costa (Department of Bioengineering, Instituto Superior Técnico)

Doctor Maria Teresa Ferreira Cesário Smolders (Department of Bioengineering, Instituto Superior Técnico)

Announcement/ notification of the results: The final evaluation results will be communicated to all applicants by email.

Deadlines and procedures of complaint and appeal. A complaint may be lodged from the final decision, or an appeal to the Executive Board of IST-ID, within 15 working days counted from the respective notification.

Application deadline and formalization: The call is open from May 21 until June 3, 2025.

It is mandatory to formalize applications with the submission of the following documents: i) B1 Form – Fellowship application (<https://ist-id.pt/concursos/bolsas/>); ii) *Curriculum Vitae*; iii) academic degree certificate, where applicable; iv) proof of enrollment at a course that does not award an academic degree; v) motivation letter (interest in progressing to a PhD scholarship will be considered positively); vi) declaration on honour that the applicant does not exceed with this contract an accumulated period of two years in this type of studentship, continuously or with interruptions.

Applications must be submitted to the following email addresses: rodrigoscosta@tecnico.ulisboa.pt; mafalda.firmino@tecnico.ulisboa.pt