

### Research Studentships (for Master or Integrated Master students)

Applications are open for 01 Research Studentship (Master student), 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:

- a) *To be enrolled at an integrated master or master degree course in Microbiology, Biotechnology, Bioengineering or related areas at Instituto Superior Técnico, University of Lisbon;*
- b) *not to exceed with this contract, including the possible renovations, an accumulated period of one year in this type of studentship, continuously or with interruptions.*

#### Workplan:

1. Perform *in situ* sampling and laboratory processing of algal tissues for microbiological analyses;
2. Isolate and identify, using molecular approaches (e.g., 16S rRNA gene sequencing), bacterial strains associated with the macroalga *Porphyra umbilicalis* grown in aquaculture facilities. Assess the phylogenetic relationships of bacterial symbionts of algae using standard phylogenetic inference;
3. Screen bacterial symbionts of macroalgae (phenotypically and genotypically) for algal growth-promoting bioactivities (e.g., pathogen inhibition, synthesis of algal growth hormones);
4. Contribute to the creation of a bank of growth-promoting bacterial symbionts of macroalgae of interest to the blue biotechnology sector;
5. Assist the research team in tasks pertaining to cultivation-independent, molecular analyses (e.g., 16S/18S rRNA gene sequencing) of the algal microbiome in aquaculture facilities along successive algal growth stages.

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 granting of the Master’s degree to the successful candidate by Instituto Superior Técnico, Universidade de Lisboa, and for the progress 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; FCT Regulation for Research Studentships and Fellowships, available on <https://former.fct.pt/apoios/bolsas/docs/RegulamentoBolsasFCT2019.pdf> and <https://dre.pt/application/file/a/127230968>.

**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 to perform activities under the supervision of Algaplus phycologist Dr. Margarida Martins.

**Duration:** The research fellowship will have the duration of 12 months. It is expected to begin in June 2024. May be renewed up to the maximum of 24 months, including the duration of the initial contract.

**Monthly maintenance allowance:** According to the values for Research Fellowships awarded by FCT in Portugal ([https://www.fct.pt/wp-content/uploads/2024/02/Tabela-de-Valores-SMM\\_atualizacao-2024.pdf](https://www.fct.pt/wp-content/uploads/2024/02/Tabela-de-Valores-SMM_atualizacao-2024.pdf)), the amount of the monthly maintenance allowance is 990,98 €, being the payment method an option of the Fellow by Wire Transfer/Check.

**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 previous expertise in isolating marine bacteria from macroalgae (30%);
2. Familiarity with laboratory techniques and methods in molecular biology, such as e.g., DNA extraction, agarose and polyacrylamide gel electrophoresis and genotyping methods. Experience in sampling and processing algal tissues for total-community ("metagenomic") DNA extraction and in molecular identification of bacterial symbionts of marine algae will be considered positively (30%);
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 bacteria. Previous laboratory experience in the study of algal-microbe interactions will be considered a plus (15%);
4. Academic trajectory. Bachelor's final grade, with special value attributed to indicators of the academic qualifications of the candidate (e.g., frequency of post-graduation courses and other training programmes in microbiology and molecular, quality of monographs, scientific training in the areas of microbiology and molecular biology, participation in internships, workshops, etc.). Interest in pursuing a Ph.D. degree in this or related areas, manifested in a motivation letter (see below) will be considered positively (15%).

**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 Isabel Maria de Sá Correia Leite de Almeida (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 within 15 working days, or an appeal to the Executive Board of IST-ID within 30 working days, both counted from the respective notification

**Application deadline and formalization:** The call is open from May 9 until May 22, 2024.

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 an academic degree course (Master or Integrated Master); v) motivation letter.

Applications must be submitted to the following email addresses: [rodrigoscosta@tecnico.ulisboa.pt](mailto:rodrigoscosta@tecnico.ulisboa.pt); [tinakellercosta@tecnico.ulisboa.pt](mailto:tinakellercosta@tecnico.ulisboa.pt); [isamar@tecnico.ulisboa.pt](mailto:isamar@tecnico.ulisboa.pt)