

(BL119/2024-IST-ID)

Post-Doctoral Research Fellowships

Applications are open for 01 Post-Doctoral Research Fellowship(s), 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 hold a PhD degree obtained in the 3 years previously to the submission of the fellowship application;*
- b) *to have carried out the research work that led to the PhD degree in a different entity from the host institution of the fellowship (in this case, IST-ID);*
- c) *Not to exceed, with this fellowship contract, including the possible renovations, an accumulated period of 3 years in this type of fellowship, continuously or with interruptions;*
- d) *Not to have previously held a post-doctoral fellowship from IST-ID.*

Workplan and objectives:

1. Conduct advanced scientific research, blending experimental biology with genomics and metagenomics approaches, on the diversity and roles played by microbial symbionts in macroalgal health and growth in aquaculture facilities;
2. Use bioinformatics tools to process and analyze genomics/metagenomics data (amplicon and shotgun sequencing data) to determine the structure and function of microbiomes across the life-cycle of economically relevant macroalgae (e.g., *Porphyra dioica* and *Porphyra umbilicalis*) reared in aquaculture;
3. Perform functional and comparative genomics of bacterial symbionts of macroalgae reared in aquaculture using both genomes from cultivated bacteria and metagenome-assembled genomes (MAGs) from uncultivated bacteria obtained from macroalgal tissues;
4. Prepare scientific articles and dissemination essays based on the acquired data; co-supervise master and Ph.D. students active on the project (particularly regarding bioinformatics approaches to analyze metagenomics data); and help coordinate science dissemination events (e.g., workshops, colloquia) in the framework of the abovementioned project.

The activities will be carried out in the framework of work package 5 (“WP5 – Algae”) of the “Blue Bioeconomy Pact”, and foster advanced research on the biotechnological potential of algal-bacterial symbioses for the development of safer and viable cultivation of macroalgae in a circular bioeconomy context. The adequate conduction of the workplan is pivotal for the career development of the successful candidate and for the adequate progress of the Blue Bioeconomy Pact project at IST-ID.

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://www.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 Professor Rodrigo da Silva Costa and Dr. Tina Keller-Costa. The workplan requires close collaboration with partners from the aquaculture sector in work package 5 (“Algae”) of the agenda “Blue Bioeconomy Pact”.

Duration: The research fellowship(s) will have a duration of 12 months. It is expected to begin in July 2024, and can be renewed up to the maximum of 36 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), the amount of the monthly maintenance allowance is €1 801,00, 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. Expertise in bioinformatics and/or analysis of next-generation DNA sequencing data applied to the study of microorganisms and/or microbial communities. Previous experience with analyses of 16S/18S rRNA gene and/or ITS sequencing data for the taxonomic characterization of microbial communities and of shotgun sequencing data from microbial genomes/metagenomes will be considered positively (30%);
2. Familiarity with laboratory techniques and methods in basic microbiology and molecular biology, such as e.g., bacterial/fungal cultivation, DNA extraction, agarose and polyacrylamide gel electrophoresis, genotyping methods, and notions of molecular taxonomy of microorganisms (20%);
3. Notions of *in vitro* and “omics” approaches to assess the biotechnological potential of microorganisms, particularly regarding the biosynthesis of bioactive secondary metabolites and added-value products of interest in biotechnology. Previous experience in genome-wide bioprospection for biotechnologically-relevant genes from microorganisms and acquaintance with R and python programming languages will be considered a plus (30%);
4. Academic and professional trajectory. Indicators of scientific production in experimental biology, molecular microbiology, genomics, metagenomics, bioinformatics, (blue) biotechnology and related areas. Participation in externally-funded research projects, publications in international scientific journals, participation in national and international scientific conferences (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); Professor Isabel Sá-Correia (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 6 until June 28, 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, or declaration by the granting institution that the degree has been granted to the candidate; iv) motivation letter; v) declaration on honour that the applicant does not exceed with this contract an accumulated period of three years

in this type of fellowship, continuously or with interruptions, within the technological and scientific system, and that the research work that led to the PhD degree was carried out in a different entity from the host institution of the fellowship.

Applications must be submitted to the to the following e-mail addresses: rodrigocosta@tecnico.ulisboa.pt; tinakellercosta@tecnico.ulisboa.pt; isamar@tecnico.ulisboa.pt