

## Research Studentships (for PhD students)

Applications are open for 01 Research Studentship(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 master degree in Biological Sciences, Biotechnology, Microbiology, Marine Biology or related areas;
- b) to be enrolled in a PhD awarding program of an academic institution.

### Workplan:

1. Determine the potential biosynthesis of polyhydroxyalkanoates (PHAs, “bioplastics”) by marine bacteria (associated with corals, algae, sponges and fish) through genome-wide bioprospection techniques;
2. Determine the biosynthesis of PHAs by the genotypically positive strains on culture media using dedicated laboratory bioassays (e.g., Nile red staining and mass spectrometry bioassays);
3. Determine growth parameters and biopolymer production by select bacterial strains on a mixture of commercial sugars that mimics the saccharide composition of hydrolysates of select marine algae;
4. Test the tolerance of select, PHA-producing bacteria towards growth inhibitors possibly present in complex hydrolysates of marine algae, and prepare a narrow group of candidate strains (1 to 5) for PHA biosynthesis assays in bench bioreactors (2L).

**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 Doctor Maria Teresa Ferreira Cesário Smolders.

**Duration:** The research fellowship(s) will have the duration 20 months. It is expected to begin in May 2024 and end in December 2025 (end of the Blue Bioeconomy Pact Project), and may be eventually renewed for additional months in case the Blue Bioeconomy Pact Project is extended, with the limit of 48 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 € 1 259,64, 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 (25%);

2. Familiarity with laboratory techniques and methods in the field of bioengineering, such as the design of experiments with, and informed utilization of, bioreactors (25%);
3. Experience in biochemistry, analytical chemistry or bioprocess techniques, such as metabolite extraction from bacterial and/or algal cultures, retrieval of algal hydrolysates via physical-chemical and/or enzymatic methods, HPLC and LC-MS- Acquaintance with bioassays used to detect polyhydroxyalkanoate production by marine bacteria will be considered an differentiating asset of the candidate (40%);
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., quality of the Master thesis dissertation, participation in scientific meetings and/or publication, participation as grant holder in externally-funded research projects (10%).

**Composition of the selection Jury:** Professor Rodrigo da Silva Costa; Doctor Maria Teresa Ferreira Cesário Smolders; Doctor Tina Keller-Costa

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

**Application deadline and formalization:** The call is open from April 15 until April 26, 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 (PhD); v) motivation letter.

Applications must be submitted to the email: [rodrigoscosta@tecnico.ulisboa.pt](mailto:rodrigoscosta@tecnico.ulisboa.pt); [teresa.cesario@tecnico.ulisboa.pt](mailto:teresa.cesario@tecnico.ulisboa.pt); [mafalda.firmino@tecnico.ulisboa.pt](mailto:mafalda.firmino@tecnico.ulisboa.pt)