

Post-Doctoral Research Fellowships

Note: It is mandatory to indicate the reference of FCT or ANI where applicable

Applications are open for 1 (number) Post-Doctoral Research Fellowship, within the framework of project/R&D institution ORIGINS/IST-ID (title of the project/R&D institution's name), 1801P.01282 - ORIGINS_2022.05284.PTDC (reference), financed by national funds through FCT/MCTES (PIDDAC), under the following conditions:

Scientific Area: Chemistry and Chemical Engineering

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;*
- 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: *Development of optical sensors for in-situ detection of molecules in extreme environments*

The goal of this project is to assemble a luminescence-based sensor into the tip of optical fibers to achieve remote sensing of an analyte in fluids of hydrothermal vents. Aldehydes will be the target molecules, which will be detected by in-situ optical sensors to be developed. The reason for this is that carbonyl compounds (such as aldehydes) have been detected in the plumes of the icy moon Enceladus by the Cassini mission [Khawaja et al. 2019]. Chemical sensing often relies on the variation of optical properties of tailored indicator dyes [Baldini et al. 2006], and optical sensors have advantages: contactless and/or long-distance monitoring, absence of electrical interference, and lack of analyte consumption. Plus, the availability of optical fibers enables the use of these sensors in extreme environments [Wang, & Wolfbeis 2016], e.g., in hydrothermal vents.

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 Centro Química Estrutural (CQE) (research unit's name) of IST-ID (host institution's name), under the scientific supervision of Professor Zita Martins.

Duration: The research fellowship(s) will have the duration of 15 months. It's expected to begin in February/2026, and it will not be renewable.

Monthly maintenance allowance: According to the values for Research Fellowships awarded by FCT in Portugal (<https://www.fct.pt/fct-atualizou-o-valor-das-bolsas-para-2025/>), the amount of the monthly maintenance allowance is € 1851, being the payment method of the Fellow by Wire Transfer.



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Selection methods: The selection methods will be distributed in two phases. The first selection phase comprises: curriculum evaluation (65% weight) and motivation letter for the work to be performed (35% weight). At most, the top two candidates, selected in the first phase, will be interviewed (in person or remotely), which will draw up the final ranking list. In this interview, the candidates' knowledge in the research area of Astrobiology, experience of sampling and fieldwork in extreme environments, and experience with the development of chemical sensors for in-situ detection of molecules will be evaluated.

Composition of the selection Jury: Professor Zita Martins (IST); Professor João Canário (IST); Dr. Omer Markovitch (IST-ID)

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 September 3 until 19 December, 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; 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 email: zita.martins@tecnico.ulisboa.pt



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