

Research Studentships (PhD students)

Applications are open for 1 Research Studentship(s), within the framework of project “Next-level Artificial Intelligence for heterogeneous catalysis: exploring causal models for the impact of synthesis on catalyst properties”, 2023.12566.PEX, financed by national funds through FCT/MCTES (PIDDAC), under the following conditions:

Scientific Area: Chemistry and Chemical Engineering

Admission Requirements: *To be enrolled at a PhD.*

Workplan: The objective is to model synthesis-property relationships through the application of second-generation Artificial Intelligence based on causal principles. The first step is to determine an appropriate method for establishing causal graphs for catalysis. The second step is to develop a methodology for the regression of structural equations.

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 [Digital Catalysis group](#) of [Centro de Química Estrutural](#) of Instituto Superior Técnico, under the scientific supervision of Prof. Pedro Mendes.

Working conditions: We offer a multidisciplinary working environment with excellent potential for scientific and personal development integrated in the [Digital Catalysis group](#). At DigiCat, we strive for wellbeing and work-life balance as key feature of an integral scientific venture. The student will be provided with high-performance laptop and all necessary office supplies. Training and conference expenses will be entirely covered by the project. Stays abroad are possible, but not mandatory. Hybrid working mode is possible, but not mandatory.

Duration: The research fellowship(s) will have the duration of 8 months. It's expected to begin in December 2025, and may be eventually renewed up to the maximum of 10 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/fct-atualizou-o-valor-das-bolsas-para-2025/>), the amount of the monthly maintenance allowance is €1309,64, being the payment method of the Fellow by wire transfer.

Selection methods: The selection criteria will be the following:

- 40 % *Overall quality and diversity of experiences in the academic and career path, in the fields of chemical engineering and artificial intelligence*
- 30 % *Specific knowledge on heterogeneous catalysis and causality (preferably, applied to catalysis).*
- 30 % *Soft skills on teamwork, proactiveness, and inclusivity.*

Composition of the selection Jury: Prof. Pedro Mendes, Prof. Catarina Barata, Prof. Carmen Bacariza.

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 August 21th until September 30th.



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It is mandatory to formalize applications with the submission of the following documents: i) B1 Form – Fellowship application (<http://drh.tecnico.ulisboa.pt/bolseiros/formularios/>); 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: digicat@tecnico.ulisboa.pt



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