

Research Studentships Master or Integrated Master students

Applications are open for 1 Research Studentship, within the framework of project “Biomufacturing of DNA-origami nanostructures for image-guided drug delivery”, 2023.11117.PEX, financed by national funds through FCT/MCTES (PIDDAC), under the following conditions:

Scientific Area: Biological Engineering

Admission Requirements: To be enrolled in the master degree of biological engineering.

Workplan: The interest in DON for several applications has been widely increasing over the last years. The development of drug delivery systems and bio-imaging applications based on this innovative technology requires the use of large amounts of well-folded and impurity-free DNA nanostructures.

The goals of this project are to establish a scalable and cost-effective process for the biomufacturing of ssDNA scaffolds that us compliant with Good Manufacturing Practices (GMP) and delivers a consistent and high-quality product, that can then be used to assemble DON suitable for therapeutic applications. Moreover, the ability for these types of structures modified with molecules involved in prostate cancer cells to successfully target and induce programmed cell death will also be evaluated.

Specifically, we seek:

AIM 1: To develop a scalable method for the downstream processing of DNA-origami scaffolds based on M13mp18 genome;

AIM 2: To scale-up the production and purification biomufacturing process of DNA-origami scaffolds based on M13mp18 genome;

AIM 3: To use the produced scaffolds to fold and functionalize the target DNA-origami nanostructure;

AIM 4: To characterize *in vitro* the folded structure in terms of toxicity, effectiveness, and specificity.

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 Institute for Bioengineering and Biosciences of Instituto Superior Técnico, under the scientific supervision of Doctor Ana Rita da Silva Santos.

Duration: The research fellowship(s) will have the duration of 6 months. It's expected to begin in September 2025, and may be eventually renewed up to the maximum of 12 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 € 1040.98, being the payment method of the Fellow by wire transfer.

Selection methods: The selection methods will be the following: (A) curriculum evaluation, (B) laboratorial experience in the field, (C) motivation letter, with the respective weight of (A) 50 % + (B) 40 % + (C) 10 %.



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Composition of the selection Jury: Doctor Ana Rita da Silva Santos, Professor Duarte Miguel de França Teixeira dos Prazeres, Professor Ana Margarida Nunes da Mata Pires de Azevedo

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 June 16 until June 30, 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, where applicable; iv) proof of enrollment at an academic degree course (Master, Integrated Master or PhD) or at a course that does not award an academic degree; v) motivation letter.

Applications must be submitted to the email: ana.rita.santos@tecnico.ulisboa.pt; mafalda.firmino@tecnico.ulisboa.pt



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