(BL109/2025-IST-ID)

Research Studentships (for Master or Integrated Master students)

Applications are open for 3 Research Studentship, within the framework of LA/P/0083/2020 and UIDP/50009/2025 - IST-ID, financed by national funds through FCT, under the following conditions:

Scientific Area: Mechanical Engineering and Engineering Systems – Energy and Environment

Admission Requirements: *To be enrolled at an integrated master or a master.*

Workplan A: experimental study addressing the use of microstructured surfaces to be integrated in microchannel based heat sinks for the dissipation of high heat loads. The work addresses the detailed characterization of temperature and pressure fields to determine the solution in terms of the microstructured patterns to be tested maximizing the heat transfer without significant pressure drops combining specific patterns (based from previous studies) with alternative geometries. As the candidates are developing their studies to complete their thesis, they can work on a thesis developed under this topic and use relevant engineering concepts in the area of energy and environment.

Workplan B: experimental study addressing the use of alternative geometries, e.g. divergent geometries to be integrated in microchannel based heat sinks for the dissipation of high heat loads. The work addresses the detailed characterization of temperature and pressure fields and perform an optimization exercise for the divergent geometries leading to the best cooling performance while minimizing pressure drop. As the candidates are developing their studies to complete their thesis, they can work on a thesis developed under this topic and use relevant engineering concepts in the area of energy and environment.

Workplan C: experimental study addressing the optimization of custom-made surface microstructures (based on results obtained in previous studies) to be integrated in a thermosyphon like electronics cooling system. Main emphasis is given to transient regime conditions. As the candidates are developing their studies to complete their thesis, they can work on a thesis developed under this topic and use relevant engineering concepts in the area of energy and environment.

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 IN+ Center for Innovation, Technology and Policy Research of LARSyS/IST-ID, under the scientific supervision of Prof Ana Sofia Oliveira Henriques Moita.

Duration: The research fellowship(s) will have the duration of 8 months. It's expected to begin in june/2025 and may be eventually renewed up to the maximum of 24 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: *Curriculum evaluation 80%, individual interview 20% (for the candidates with the highest scores in the curriculum evaluation*). The curriculum evaluation addresses the respective weight of 40% for curricular experience and 40% for experience relevant for the project.

Composition of the selection Jury: Professor António Luís Nobre Moreira, Professor Edgar Caetano Fernandes, e Professora Ana Sofia Oliveira Henriques Moita.

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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 May 19, 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); v) motivation letter;

Applications must be submitted to the email*: jobs@in3.tecnico.ulisboa.pt*