(BL170/2026-IST-ID)

Research Studentships (for PhD students)

Applications are open for 1 Research Studentship (PhD student), within the framework of the Strategic Project of the N-PRiME group with the Instituto de Plasmas e Fusão Nuclear (1801P.01462.1.02.02 UID/50010/2025), under the following conditions:

Scientific Area: Plasma Physics

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

Workplan: This work aims to advance the modelling and characterisation of low-temperature plasmas relevant to semiconductor processing. The activities will focus on the development and refinement of plasma modelling tools and the implementation of advanced actinometry techniques in the Lisbon Kinetics (LoKI) code, with particular emphasis on CF_4 plasmas. The main objectives are to improve the description of plasma kinetics, investigate the production and consumption of key reactive species, and assess the potential of actinometry as a diagnostic tool for determining plasma composition and validating kinetic models. These activities will strengthen the connection between numerical modelling and plasma diagnostics, providing relevant insights into the fundamental processes governing CF_4 plasmas and their applications in semiconductor manufacturing. The expected outcomes will contribute to the development of more reliable modelling and diagnostic methodologies for low-temperature plasmas.

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://dre.pt/application/file/a/127230968 .

Workplace: The work will be developed at Institute for Plasmas and Nuclear Fusion under the scientific supervision of Dr. Tiago Silva and Prof. Luís Lemos Alves

Duration: The research fellowship(s) will have the duration of 3 months. It's expected to begin in January of 2027, and may be eventually renewed up to the maximum of 6 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-2026/), the amount of the monthly maintenance allowance is € 1359,64, being the payment method an option of the Fellow by Wire Transfer/Check.

Selection methods: The selection methods will be scored on a scale of 1-5 and will be as follows: Review of curriculum vitae (80% weighting), motivation letter (20%), with emphasis placed on knowledge of Low-Temperature Plasma Physics and the LisbOn KInetics Global Model (LoKI-GM). If the selection committee deems it necessary, an individual interview will be conducted (remote participation is permitted), which will include a scientific presentation. In this case, the weighting of the selection methods will be as follows: academic record (40%), letter of motivation (10%), interview (50%).

Composition of the selection Jury: Prof. Luís Lemos Alves (ist12747), Dr. Tiago Silva (ist158465) and Prof. Susana Freitas (ist14366)

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 November 9 until November 20, 2026.



It is mandatory to formalize applications with the submission of the following documents: i) B1 Form – Fellowship application (https://ist-id.pt/recursos-humanos/bolseiros/#documentos-relacionados); ii) *Curriculum Vitae*; iii) academic degree certificate; iv) proof of enrollment at a PhD course; v) motivation letter.

Applications must be submitted to the email carmo@ipfn.tecnico.ulisboa.pt, with subject **BD_N-PRiME.**