

Research Studentships for Master students

Applications are open for 1 Research Studentship for master student, within the framework of project/R&D institution 2023.16184.ICDT, apoiado pela medida “RE-C05-i08.M04 – “Apoiar o lançamento de um programa de projetos de I&D orientado para o desenvolvimento e implementação de sistemas avançados de cibersegurança, inteligência artificial e ciência de dados na administração pública, bem como de um programa de capacitação científica”, do Plano de Recuperação e Resiliência – PRR, enquadrado no contrato de financiamento celebrado entre a Estrutura de Missão Recuperar Portugal (EMRP) e a Fundação para a Ciência e a Tecnologia I.P. (FCT, under the following conditions:

Scientific Area: Plasma Physics and nuclear Fusion

Admission Requirements:

a) *To be enrolled at an integrated master or a master.*

b) Basic knowledge of plasma physics and particle-in-cell codes

Workplan: Plasma-Based Accelerators are studied as a promising source of high-energy electron beams which are either quasi-monoenergetic or have high total charge. Multi-petawatt facilities enable acceleration of hundreds of nC to energies of several GeV. The effects of laser pulse duration will enable different spatial energy distribution which will likely affect the quality of produced charged beams. The student will perform simulations for various plasma densities, and study the interplay between two mechanisms: DLA and LWFA which can accelerate electrons simultaneously. This work aims to demonstrate the importance of laser pulse duration for controlling the acceleration process in modern advanced laser-driven electron sources. The student will participate in all regular scientific and outreach activities of Grupo de Lasers and Plasmas, will

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 GoLP, IPFN of Instituto Superior Técnico, under the scientific supervision of Professor(a)/Doutor(a) Marija Vranic

Duration: The research fellowship(s) will have the duration of 6 months. It's expected to begin in 2026, and may be eventually renewed up to the maximum allowed by the FCT regulation

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 an option of the Fellow by Wire Transfer/Check.

Selection methods: The selection methods will be the following: *Curriculum evaluation*, with the respective weight of 100%.

Composition of the selection Jury: Thomas Grismayer, Jorge Vieira e Marija Vranic

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 December 22, 2025 until January 6, 2026.

It is mandatory to formalize applications with the submission of the following documents: i) B1 Form – Fellowship application (<https://www.fct.pt/fct-atualizou-o-valor-das-bolsas-para-2025/>); 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: claudia.romao@tecnico.ulisboa.pt