

## NOTICE FOR THE AWARD OF GRANTS IN THE SCOPE OF R&D PROJECTS AND INSTITUTIONS

Research Grant (PhD student)

A call is open for the award of a Research Grant, within the scope of the CANMILK project – Carbon Neutral Milk (<https://canmilk.eu>) – financed by European funds, within the scope of Horizon Europe, under the following conditions: Scientific Area: Plasma Physics and Nuclear Fusion (FIS-PLA).

Admission requirements: to be enrolled in a PhD program (at the date of signing the grant contract).

Work plan: The CANMILK project aims to develop a new and innovative technology based on non-thermal plasma and catalysis to achieve more environmentally friendly milk production. Its ambitious goal is to reduce greenhouse gas emissions in agriculture with simple, efficient and economical equipment for reducing methane on dairy and beef farms. Methane will be converted into CO<sub>2</sub>, which is a much less harmful compound, with a global warming potential 28 times lower than that of methane. The PhD student will work within a multidisciplinary team involving the N-PRiME team from IPFN and the CATHPRO experimental and MET theoretical teams from CQE (Centro de Química Estrutural) at IST-UL, as well as collaborating with the CANMILK consortium formed by 8 partners from 6 European countries. The focus of the PhD student will be the development of numerical models that simulate the interaction of reactive species/products from plasma with different catalytic surfaces and the evaluation of the fundamental aspects of the synergies between plasmas and surfaces to promote methane oxidation. This work may involve different numerical modeling techniques: Fluid, Monte Carlo, Molecular Dynamics and Density Functional Theory. Understanding the transfer of radical species from plasmas to catalysts will considerably improve the design of the CANMILK technology. We are looking for candidates with a master's degree in physics, chemistry, engineering, applied mathematics, scientific computing or a similar discipline.

Applicable legislation and regulations: Law no. 40/2004, of August 18 (Statute of the Scientific Research Fellow), in its current wording; IST-ID Research Fellowship Regulation: [https://ist-id.pt/files/sites/43/regulamento-de-bolsas-da-ist\\_id-2.pdf](https://ist-id.pt/files/sites/43/regulamento-de-bolsas-da-ist_id-2.pdf).

Workplace: The work will be carried out at the Institute of Plasmas and Nuclear Fusion (IPFN) of the Instituto Superior Técnico (IST-UL), under the scientific supervision of Professor Vasco Guerra.

Duration of the fellowship: The fellowship will have a duration of 12 months, with the start scheduled for December 2024. The fellowship contract may be renewed for up to a maximum of 48 months, including the initial duration of the contract.

Monthly maintenance allowance: The amount of the grant corresponds to €1259.64, with the scholarship holder's option to pay by bank transfer/cheque.

Selection methods: The selection methods to be used will be the following: curriculum evaluation, motivation letter and recommendation letters, graded from 1 to 5, with the respective value of 40%, 30% and 30%. From this evaluation, an intermediate classification will be established and a shortlist of candidates to be interviewed will be drawn up, from which the selected candidate will be chosen. The interviews will be held via zoom in English, and will be graded from 1 to 5. The final grade will be obtained by the weighted average of the intermediate grade and the interview, with the respective value of 60% and 40%. Experience in modelling low-temperature plasmas and studying plasma-surface interactions will be valued.

Composition of the Selection Jury: Pedro Viegas, Carmen Bacariza and Vasco Guerra.

Publication/notification of results: All candidates will be notified of the Final Assessment Result by email.

Deadlines and procedures: The call is open from October 2 to 22, 2024.

Applications must be submitted by sending the following documents: i) Form B1 – Application for a Research Grant (<https://ist-id.pt/concursos/bolsas/>), ii) Curriculum Vitae; iii) certificate of qualifications; iv) proof of enrollment in a study cycle leading to an academic degree (PhD); v) motivation letter.

These documents must be sent by email to: [carla.reis@tecnico.ulisboa.pt](mailto:carla.reis@tecnico.ulisboa.pt)