

### Scientific Initiation Studentships

Applications are open for one Scientific Initiation Studentships, within the framework of project Verão com Ciência of UID 4349 - Centro de Ciências e Tecnologias Nucleares, entitled “Evaluation of the oxidative potential of aerosols from different sources”, financed by national funds through FCT/MCTES (PIDDAC), under the following conditions:

**Scientific Area:** Chemical Sciences

**Admission Requirements:**

- a) *To be enrolled at a professional higher technical course, at a bachelor degree, at an integrated master or master degree, or to have a bachelor degree and be enrolled at a course that does not award an academic degree and it is integrated in the educational project of a higher education institution, performed in association or cooperation with one or several R&D units;*
- b) *not to exceed with this contract, including the possible renovations, an accumulated period of one year in this type of studentship, continuously or with interruptions;*
- c) *not to have held any other fellowship directly or indirectly funded by FCT.*

**Workplan:** Aerosols have a negative impact on human health, the climate and the environment. These effects are dependent on their composition, sources and consequent atmospheric processes. Several studies have identified the fine fraction of particulate matter (PM), namely PM<sub>2.5</sub> (PM aerodynamic diameter less than 2.5 μm), as a critical parameter for adverse health effects. However, many questions remain about the factors underlying PM toxicity. PM-induced oxidative stress is proposed as the main mechanism responsible for these adverse health effects, and the oxidative potential (OP) of PM<sub>2.5</sub> is considered as an emerging health indicator that represents the ability of aerosols to induce oxidative stress and have a negative impact on human health.

This work proposal is framed in the thematic line “Earth systems, radioactivity and cultural heritage” of C2TN and its main objective is to evaluate the oxidative potential of PM<sub>2.5</sub> filters characteristic of different sources of pollution (both indoors and outdoors). The work plan is:

Week 1 – Step-by-step training in the technique of evaluating the OP of aerosols, by the Dithiothreitol (DTT) method, using test filters. Preparation of solutions.

Weeks 2-3 – Extraction of PM<sub>2.5</sub> quartz filters and analysis (including sampled and blank filters).

Week 4 - Data analysis and processing and categorization of PM<sub>2.5</sub> and its sources based on their oxidative potential (normalized to sampled volume and collected mass).

**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 carried out at the Center for Nuclear Sciences and Technologies (C2TN), Campus Tecnológico e Nuclear, Estrada Nacional 10, Bobadela, of the Associação do Instituto Superior Técnico para a Investigação e Desenvolvimento (IST-ID), under the scientific supervision of Dr. Nuno Canha.

**Duration:** The research fellowship will have the duration of one months. It’s expected to begin in 22 August 2022. The fellowship contract will not be renewable.

**Monthly maintenance allowance:** According to the values for Research Fellowships awarded by FCT in Portugal (<http://www.fct.pt/apoios/bolsas/valores>), the amount of the monthly maintenance allowance is € 486.12€, being the payment method an option of the Fellow by Wire Transfer/Check.

**Selection methods:** The selection methods will be the following: *Curriculum evaluation and individual interview*, with the respective weight of 50%:50%.

**Composition of the selection Jury:** President: Dr. Nuno Henrique Varela Canha, Auxiliary Researcher of Associação do Instituto Superior Técnico para a Investigação e Desenvolvimento.

Effective members: Dr. Carla Alexandra Gamas Albuquerque Pinto Reis, Coordinator Professor of Instituto Politécnico de Setúbal, and Dr. Susana Marta Lopes Almeida, Principal Researcher of do Instituto Superior Técnico.

Substitute members: Dr. Joana Múrias Gomes Lage, PhD Researcher of Associação do Instituto Superior Técnico para a Investigação e Desenvolvimento, and Dr. Vânia Isabel Ferreira Martins, PhD Researcher of Associação do Instituto Superior Técnico para a Investigação e Desenvolvimento.

**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 July 28 until August 3, 2022.

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 or at a course that does not award an academic degree; v) motivation letter; vi) declaration on honour that the applicant does not exceed with this contract, including the possible renovations, an accumulated period of one year in this type of studentship, continuously or with interruptions, and has not held any other fellowship directly or indirectly funded by FCT.

Applications must be submitted to the email: [nunocanha@ctn.tecnico.ulisboa.pt](mailto:nunocanha@ctn.tecnico.ulisboa.pt)