

SCHOLARSHIPS ANNOUNCEMENT WITHIN THE FRAMEWORK OF R&D PROJECTS AND INSTITUTIONS

Research Studentships for PhD students

Applications are open for 1 Research Studentship, within the framework of FCT project *Material's Research with Radioactive Isotopes and Nuclear Techniques at ISOLDE-CERN (CERN/FIS-TEC/0003/2021 InvMat @ ISOLDE)*, financed by national funds through FCT/MCTES (PIDDAC), under the following conditions:

Scientific Area: Tecnologias Nucleares e Proteção Radiológica (Departamento de Engenharia e Ciências Nucleares)

Admission Requirements:

- a) *To be enrolled at a PhD programme by the time of signature of the scholarship contract.*
- b) Hold a master's degree in physics with an average equal to, or greater than 18/20.

Workplan:

Title: Multiscale studies of ferroelectric and/or multiferroic oxides

Aims: Modelling of ferroelectric and/or multiferroic oxides, with emphasis on studying its electronic and optoelectronic properties. For this purpose, it is required the proficiency in Density Functional Theory, DFT, and be particularly acquainted with the resources of the Quantum Espresso code. The candidate will also perform experimental studies of Electric Field Gradients in the same type of materials, using the radioactive nuclear Perturbed Angular Correlation (PAC) technique. Further characterization of samples will be done with techniques such as X-ray diffraction, neutron diffraction, and Raman spectroscopy. The aim is to study the correlation between macroscopic and atomic scale phenomenology by proper characterization and modelling of these oxides, thus contributing to relevant scientific research within the student's doctoral plan.

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; IST-ID Research Grant Regulation, available at <https://ist-id.pt/concursos/bolsas/> ; 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), Technological and Nuclear Campus, of the Instituto Superior Técnico of the University of Lisbon, and at the Institute of Advanced Materials Physics, Nanotechnology and Photonics (IFIMUP) of the University of Porto, with possible experimental campaigns at ISOLDE-CERN, under the scientific guidance of Doctor João Guilherme Martins Correia (IST) and Doctor Armandina Maria Lima Lopes (UP).

Duration: The research grant will have an initial duration of 6 months. The start is scheduled for October 2023 and can be renewed for a second period of 6 months. Eventually, it may be extended for periods to be defined during the validity of the project, also depending on the availability of funding.

Monthly maintenance allowance: The amount of the scholarship corresponds to € 1199.64, according to the table of scholarship values awarded directly by FCT, I.P. in the country (https://www.fct.pt/wp-content/uploads/2023/02/Tabela-de-Valores-SMM_2023.pdf), OR according to the table of values contained in Annex I of the Regulation of Research Grants of IST-ID (<https://ist-id.pt/contests/grants/>), with the option of payment being Bank Transfer/Cheque.

Selection methods: The selection method will privilege the *Curriculum evaluation*. If the jury finds it necessary, an individual interview will be carried out by electronic means to the 3 candidates with highest classifications (grade equal or greater than 18/20 at the Master course) with the respective valuation of 75% of curricular evaluation and

25% individual interview. Special focus will be given to candidates with experience in the areas of interest, with emphasis on DFT calculations and practical experience with the nuclear radioactive Perturbed Angular Correlations technique.

Composition of the selection Jury: Dr. João Guilherme Martins Correia, Dr. Katharina Lorenz, Dr. Armandina Maria Lima Lopes (external UP)

Announcement/ notification of the results: The final evaluation results will be communicated to all applicants by email.

Deadlines and procedures for prior hearing, complaint, and appeal: After communication of the provisional list of evaluation results, candidates have a period of 10 working days to, if they so wish, comment at a prior hearing of interested parties, pursuant to articles 121 et seq. of the Code of Administrative Procedure. The final decision will be issued after analyzing the pronouncements presented in the prior hearing of interested parties. A complaint may be lodged against the final decision with the Jury of the contest, or an appeal with the President of IST-ID, within 15 working days from the respective notification.

Application deadline and formalization: The call is open from September 13 until September 26, 2023.

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 enrolment at an academic degree course (PhD); v) motivation letter;

Applications must be submitted to the email: jgmcnet@ctn.tecnico.ulisboa.pt