

Scientific Initiation Studentships

Applications are open for 1 Scientific Initiation Studentships, within the framework of apoio especial Verão com Ciência da UID 4349 - Centro de Ciências e Tecnologias Nucleares, entitled “New multifunctional hybrid materials”, 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: The diversity of applications of multifunctional hybrid compounds has attracted great interest in the scientific community. Applications ranging from optics, microelectronics, transport, health, energy or environment.

The intercalation of small organic molecules between the van der Waals gaps of the inorganic layers of compounds such as Bi₂Te₃, FeSe or SnSe remains to be explored. The aim of this work is to insert, in these inorganic systems, small organic molecules, such as tetrathiofulvalene, pyridine, pyrazine, or other heterocyclic compounds, which will give rise to new multifunctional hybrid materials.

The work proposal presented is based on the following objectives:

- 1- Synthesis of inorganic compounds, high temperatures.
- 2- Organic synthesis of the molecules to be intercalated.
- 3- Synthesis of hybrid materials, intercalation chemistry
- 4- Structural characterization and physical properties (electrical and magnetic).

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 Centro de Ciências e Tecnologias Nucleares (C2TN), Estrada Nacional 10, Bobadela, da Associação do Instituto Superior Técnico para a Investigação e Desenvolvimento (IST-ID), under the scientific supervision of Doctor Sandra Rabaça.

Duration: The research fellowship(s) will have the duration of 1 month and the contract is not 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, individual interview* with the respective weight of 50%:50%.

Composition of the selection Jury: Presidente: Doutor António Pereira Gonçalves, Investigador Coordenador do Instituto Superior Técnico;

Vogais efetivos: Doutora Sandra Marisa Batista Rabaça Rodrigues, Investigadora Doutorada da Associação do Instituto Superior Técnico para a Investigação e Desenvolvimento e Doutora Maria Dulce Pombo Belo, Investigadora Auxiliar do Instituto Superior Técnico.

Vogais suplentes: Doutor Vasco da Gama, Investigadora Principal do Instituto Superior Técnico e Doutora Isabel Cordeiro Santos, Investigadora Auxiliar do Instituto Superior Técnico.

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: sandrar@ctn.tecnico.ulisboa.pt