

(BL80/2025-IST-ID)

### Scientific Initiation Studentships

Applications are open for 2 Scientific Initiation Studentships, within the framework of project NGS – New Generation Storage/IN+, 1801P.01313, financed by Plano de Recuperação e Resiliência (PRR)-IAP, under the following conditions:

**Scientific Area:** Chemical Engineering

**Admission Requirements:**

- a) be enrolled in the chemical engineering master's programme.
- b) be enrolled in the dissertation course unit of the chemical engineering master's programme;
- c) have no UCs in arrears and have a 2nd cycle average of 15 or above.

**Workplan-1:** The work to be carried out as part of the Chemical Engineering Master thesis involves testing eutectic solvents for the direct recovery of valuable metals from Li-ion battery electrode materials. The aim is to study the use of these solvents as an alternative to the conventional leaching agents normally used for the selective extraction of Li and other critical metals such as Co, Ni and Mn from black masses obtained from the dismantling of NMC (Nickel, Manganese and Cobalt) batteries.

**Workplan-2:** The work to be carried out as part of the MEQ thesis involves studying the scale-up of the small-scale (50 ml) optimisation of the sulphuric leaching of NMC black masses (Lithium, Nickel, Manganese and Cobalt cathodes) and optimising the leaching conditions and recovery of Li from commercial LFP-type black masses (LiFePO<sub>4</sub> cathodes). Next, the selective or non-selective recovery of metals from leachates will be studied.

**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 Regulation for Research Studentships and Fellowships, available on <https://ist-id.pt/recursos-humanos/bolseiros/#documentos-relacionados>.

**Workplace:** The work will be developed at CQE and CERENA of Instituto Superior Técnico, under the scientific supervision of Professors Isabel Marrucho, M. Joana Neiva Correia, M. Rosinda Ismael, M. Tereza Reis and Dr Carlos Noigueira (LNEG).

**Duration:** The research fellowship(s) will have the duration of 6 months. It's expected to begin in April 2025, and will not be renewed.

**Monthly maintenance allowance:** the amount of the monthly maintenance allowance is € 651.12, being the payment method of the Fellow by wire transfer.

**Selection methods:** The selection methods will be the following: *Curriculum evaluation – 60% , individual interview- 40%*

**Composition of the selection Jury:** Isabel Marrucho, Maria Joana Neiva Correia, Maria Rosinda Ismael

**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, or an appeal to the Executive Board of IST-ID, within 15 working days counted from the respective notification.

**Application deadline and formalization:** The call is open from March 27 until April 9, 2025.

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) motivation letter.

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

