

Research Studentships (for students of a course that does not award an academic degree, Master or Integrated Master students)

Applications are open for 1 Research Studentship, within the framework of IN+ UIDP/50009/2025 - IST-ID, financed by national funds through FCT, under the following conditions:

Scientific Area: Mechanical Engineering, Energy and Environment and related areas

Admission Requirements:

a) to hold a bachelor or master 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 two years in this type of studentship, continuously or with interruptions.

OR

a) To be enrolled at an integrated master or a master.

b) Preference will be given to candidates with knowledge of Matlab and Python.

Workplan: The research work aims to develop a dynamic electricity demand growth model applicable to rural electrification planning, making use of advanced satellite imagery and including case studies in rural areas in Sub-Saharan Africa. The proposed model should be based on existing Earth Observation data and should integrate additional data about socioeconomic, demographic, and spatial variables in order to simulate a realistic evolution of demand over time in Sub-Saharan African regions. The main expected results are:

- A dynamic electricity demand growth model adaptable to rural settings in low-income countries, developed from advanced satellite imagery integrated with other existing data;
- A quantitative comparison of demand scenarios;
- An assessment of the impact of the different demand assumptions on the choice of optimal technology (grid extension, microgrid, stand-alone), with implications on costs (CAPEX/OPEX), grid extension, number of users served, etc.; and
- A critical reflection on the scalability and replicability of the model, and its possible integration into existing major planning tools.

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 IN+ of Center for Innovation, Technology and Policy Research of IST-ID, under the scientific supervision of Professor Manuel Heitor

Duration: The research fellowship will have the duration of 12 months. It's expected to begin in november 2025, and may be renewable for master student.



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Monthly maintenance allowance: According to the values for Research Fellowships awarded by FCT in Portugal (<https://www.fct.pt/fct-atualizou-o-valor-das-bolsas-para-2025/>), the amount of the monthly maintenance allowance is € 1 040.98, being the payment method an option of the Fellow by Wire Transfer/Check.

Selection methods: The selection methods will be the following: *Curriculum evaluation, with the respective assessment of curricular excellence (40%) and relevant experience for the project (40%). The best-ranked candidates in the curriculum evaluation will be invited (if necessary) to an individual interview, with the respective weight of 20%.*

Composition of the selection Jury: Manuel Heitor (IST/IN+), Joana Mendonça (IST/IN+), Edgar Fernandes (IST /IN+)

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 November 5 until November 18, 2025.

It is mandatory to formalize applications with the submission of the following documents: i) B1 Form – Fellowship application (<https://ist-id.pt/recursos-humanos/bolseiros/#documentos-relacionados>); ii) *Curriculum Vitae*; iii) academic degree certificate, where applicable; iv) proof of enrollment at an academic degree course (Master, Integrated Master) or at a course that does not award an academic degree; v) motivation letter; vi) (for holders of Bachelor or Master degrees who are enrolled at a course that does not award an academic degree) declaration on honour that the applicant does not exceed with this contract an accumulated period of two years in this type of studentship, continuously or with interruptions.

Applications must be submitted to the email: jobs@in3.tecnico.ulisboa.pt



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