

## FINANCIAMENTO FCT

Reference: BI 34.PL696.2025.IDMEC

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

Applications are open for one PhD research fellowship within the framework of *Climate Resilience Indicators for Knowledge-based Innovation and Technological change in agriculture* (CRIKIT) project in IDMEC (2022.01729.PTDC), financed by national funds (OE) through FCT.IP, under the following conditions:

**Scientific Area:** Environmental Engineering, Mechanics, Agronomy, and related fields.

#### **Admission Requirements:**

*a) To be enrolled at a PhD, or declaration of honor in which undertakes to be enrolled until the grant's contract is done.*

#### **Workplan and the objectives to achieve:**

The CRIKIT project aims to develop a dynamic multi-criteria tool to assess the techno-economic, social, and environmental feasibility of climate-resilient agricultural measures based on disruptive and emerging technological innovations. The project focuses on the Central-South region of Portugal and covers key crops such as cereals, wine, and olives.

Project Objectives:

1. Identify disruptive and emerging technologies to accelerate climate action and resilience in agriculture by conducting a systematic assessment based on the downscaling of integrated assessment model (IAM) climate scenarios;
2. Characterise the techno-economic and social performance of selected measures (obj.1) based on technical and financial parameters, and social inputs;
3. Evaluate the GHG (CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O) mitigation potential of on-farm measures (obj.1) and its interactions with other local ecosystem services (including soil sustainability, biodiversity, water scarcity, and water pollution);
4. Develop a dynamic multi criteria decision analysis (MCDA) tool that evaluates the multiple techno-socioeconomic and environmental criteria (objs.2&3) of on-farm disruptive and emerging technologies in agricultural systems;
5. Illustrate a context specific case study in Centre-Southern Portugal of disruptive and emerging technologies applied to cereals (maize, sorghum, rice), wine, and olive crops that evaluates multi-criteria (obj.4) techno-economic, social and environmental indicators and preferences of local farmers and agribusiness stakeholders;

Tasks of the scholarship holder within the Project:

1. Development of a database and multicriteria decision support tool (MCDA) for emerging technologies in sustainable agricultural systems.
2. Collect and organise technical-economic, environmental, and social data on emerging technologies relevant to the project.
3. Develop and parameterise the multicriteria analysis tool (MCDA), integrating the collected data.
4. Test and validate the tool using data from case studies and preferences of local stakeholders.
5. Support the preparation of technical reports and communication materials for partners and stakeholders.

#### Consortium and Team:

The CRIKIT consortium consists of three research groups - IDMEC, IPSantarém, and Imperial College London - with expertise in innovative technologies, agricultural science, and climate assessment. The team includes professors, an international expert, and researchers in the field of environmental engineering and agronomy.

**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://diariodarepublica.pt/dr/detalhe/regulamento/950-2019-127238533>

**Workplace:** The work will developed at IDMEC - Institute of Mechanical Engineering, being both the Host and Contracting Entity, and under the scientific supervision of Prof. Joana Portugal Pereira and Prof. Inês Ribeiro.

**Duration:** The research fellowship(s) will have the duration of six months and may eventually renewed up to the maximum stated by the law or the end of the project. It's expected to begin in December/2025.

**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 €1.309,64 being the payment method by Wire Transfer.

**Selection methods:** The selection methods will be the following: *Curriculum evaluation (60% weight), and individual interview in -person or remotely (40% weight).*

#### Composition of the selection Jury:

Professora Joana Portugal-Pereira (President)

Professora Inês Ribeiro

Professor Marco Leite

Professor Elsa Henriques

Professora Margarida Oliveira

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

After being notified, candidates have 10 working days to submit a formal rebuttal, by email.

A selection reserve list will be drawn up that can be used until 180 days after selection.

**Application deadline and formalization:** The call is open in the period between 29<sup>th</sup> of October and 15 of November, until 18:00, 2025.

### **Research Studentships**

It is mandatory to formalize applications with the submission of the following documents: Curriculum Vitae; academic degree certificate, where applicable; proof of enrollment at an academic degree course (PhD); motivation letter;

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

The contract draft and final report draft are available on <https://www.idmec.tecnico.ulisboa.pt/about/job-openings/>