

## 1 Research Initiation Grant (M/F)

Call open for applications for a Research Initiation Grant within the framework of project “Otimização da hemodinâmica em torno de microrrobôs nadadores (HEMOSwimmers) - POCI-01-0145-FEDER-030764”, financed by Fundo Europeu de Desenvolvimento Regional (FEDER) and by Orçamento do Estado (OE) through Fundação para a Ciência e a Tecnologia (FCT), under the following conditions:

**Scientific Area:** Mechanical Engineering

**Admission requirements:** Be a student enrolled in a higher technical professional course, in a bachelor's degree, in an integrated master's degree or in a master's degree, in the area of Mechanical Engineering, a requirement to be duly proven at the time of signing the contract.

In accordance with article 5º of the Regulation of Research Grants of Fundação para a Ciência e a Tecnologia, I.P.:

- the scholarship can only be awarded to those who do not exceed, with this scholarship contract, including possible renewals, an accumulated period of one year in that typology of scholarship, followed or interpolated.
- The grant cannot be awarded to anyone who has already benefited from research grants directly or indirectly funded by FCT, awarded under the terms of Research Grant Holder Status

**Activity Outline:** Highly viscoelastic fluids and Boger fluids (human blood analogues) with different degrees of elasticity will be rheologically characterized. The flow of these fluids in microchannels will be analyzed using visualization techniques and micro-PIV (particle image micro-velocimetry). The general objective is to characterize the onset of elastic instabilities at high Weissenberg numbers around different cylinders (microbot prototypes).

**Legislation and regulations:** Law Nº. 40/2004, of 18th August, in its current wording (Statutes of Scientific Research Fellow) and Regulation of Research Grants of Fundação para a Ciência e a Tecnologia, in force (<https://www.fct.pt/apoios/bolsas/regulamento.phtml.pt>) and Regulation of Research Grants of University of Porto.

**Work place:** The work will be developed at the CEFT laboratories, Centro de Estudos de Fenómenos de Transporte of the Faculty of Engineering of the University of Porto (FEUP), under the scientific supervision of Professor Laura Campo Deaño.

**Grant duration:** The grant will remain until the end of the project (25/07/2022), with the predicted starting date in **February 2022**, on an exclusive basis.

**Stipend:** The grant stipend amounts to 446,12€ according to the table of values of the grants awarded directly by FCT, I.P. in the Country (<https://www.fct.pt/apoios/bolsas/valores>).

The payment will be made by bank transfer.

**Selection procedure:**

Curricular evaluation which will focus on the merit of the candidate and the following criteria will be valued:

1. Academic training classification: average equal or higher than 18/20 - 5 points; average between 16/20 and 18/20- 4 points; average between 14/20 and 16/20- 3 points; average between 12/20 and 14/20- 2 points; other - 0 points;
2. Theoretical knowledge of non-Newtonian fluid mechanics, rheology and microfluidics – up to 5 points;
3. The completion of the Master's Thesis on the theme of the work plan of this call will be positively valued – 5 points.

candidates who obtain a score lower than 9 points in the Curriculum evaluation will not be admitted to the interview (5 points). The interviews can be done in person at FEUP, or by video-conference through the Skype application or similar.

During the interview, topics related to the candidate's work plan and experience and CV will be discussed.

If any candidate reach the minimum final classification of 12 points, the grant may not be awarded.

**Selection Jury:**

President: Professor Laura Campo Deaño

Effective member: Dr Francisco J. Galindo Rosales

Effective member: Dr João Mário Rodrigues Miranda

Supplementary member: Professor Fernando Manuel Coutinho Tavares de Pinho

**Advertisement of final decision:** The results of the evaluation will be released to the candidates by email to the email address indicated in the application process.

**Deadline for applications and form of presentation of the applications:**

The call is open from **21-01-2022 to 03-02-2022** (until 23h59m, GMT time).

Applications must be formalized by email to **campo@fe.up.pt** and to [recursoshumanos@fe.up.pt](mailto:recursoshumanos@fe.up.pt), clearly stating the reference **FEUP- Instabilities** and including the following pdf documents: Motivation letter, Copy of certificates evidencing academic degree (referring to the course average - for each cycle or integrated cycle - and grades in the course units ) detailed Curriculum Vitae, Declaration on honor

that the candidate fulfills the requirement contained in article 5 of the Regulation for Research Grants of the Foundation for Science and Technology, I.P. (model below) and other documents considered relevant by the applicant.

Declaration on honour

I, (identification of the scholarship holder), holder of the Citizen Card / Visa / Residence Permit no. valid until \_\_\_\_\_, declare under honour, to be in the conditions of nos. 4 and 5 of article 5<sup>o</sup> of the Research Grants from FCT, IP - Regulation No. 950/2019, of 16 December.

Oporto, \_\_/\_\_/\_\_

Signature

\_\_\_\_\_

(scholarship holder)