

BI 05.Verão com Ciência_AEROG

RESEARCH FELLOWSHIP ANNOUNCEMENT

In the scope of the project **Neural Control of 4D Navigation Trajectories (Neuro4D)**

A call is open for the allocation of two BII Initiation Research Fellowship, within the Research Project titled **Neural Control of 4D Navigation Trajectories (Neuro4D)**, funded by the Foundation for Science and Technology (FCT), IP/MCTES, through national funds (PIDDAC) and the scope of “Verão com Ciência” special support, taking place at the R&D unit 50022, Laboratório Associado em Energia, Transportes e Aeronáutica (LAETA) of the University of Beira Interior (www.aerog.pt), under the following conditions:

1. Research Field: Aeronautical Engineering

2. Objectives: To extend neural control concepts to optimal feedback control of 4D trajectories subject to flight model uncertainties and actuator constraints.

3. Requirements for admission and hiring:

To be enrolled in an integrated master study cycle leading to a Master's degree in Aeronautical Engineering; the proof of enrolment in the integrated master study cycle must be submitted by the time the scholarship is contracted.

4. Work plan: Sub-tasks to be covered per scholarship:

- Student 1 - Flight trajectory modeling and simulation in the framework of 4D navigation under dynamic uncertainties.
- Student 2 - Neural network design for optimal 4D trajectory control based on stochastic flight system dynamics.

5. Applicable legislation and regulations:

Research Fellowship Holder Statute, approved by Law No. 40/2004, of 18 August, in its current wording (amended by Decree-Law No. 123/2019, of 28 August); Regulation for

AEROG - Aeronautics and Astronautics Research Center of
LAETA – Associate Laboratory of Energy, Transports and Aeronautics

Research Studentships and Fellowships of the Foundation for Science and Technology (Regulation No. 950/2019) published in the Diário da República, 2nd series, No. 241, 16 December 2019; Regulation for Research Fellowships of the University of Beira Interior - RBIUBI (Regulation No. 100/2020) published in the Diário da República, 2nd series, n.º 27 February 2020.

6. Work location: The work will be carried out in the Aeronautics and Astronautics Research Center laboratories assigned to R&D Unit 50022, Laboratório Associado em Energia, Transportes e Aeronáutica (LAETA) under the scientific supervision of Kouamana Bousson.

7. Fellowship duration and conditions – The fellowship is opened for **1** month, starting on **30th August 2021**. The activity is in regime of exclusive dedication in accordance with the RBIUBI.

8. Benefits – A monthly maintenance allowance will be granted in accordance with the Annex I of the RBIUBI, with the amount of **446,12 €** according to the updated values that can be consulted at <https://www.fct.pt/apoios/bolsas/valores>. The fellowship holder will have a personal accident insurance and can choose to be covered by the voluntary social insurance. These values will be added to the amount of monthly maintenance allowance.

9. Eligibility criteria: Curriculum evaluation - CF (60%); Motivation letter - ML (20%); Other documents considered relevant to the objectives of the activity - EL (20%), according to the following calculation formula for the final classification - CS:

$$CS = CF \times 0.60 + ML \times 0.20 + EL \times 0.20$$

10. Selection Committee: Applications will be assessed by a panel as follows:

President: **André Resende Rodrigues da Silva**

Vogal: **Jorge Manuel Martins Barata**

Kouamana Bousson

11. Documents for application:

The candidates should present:

- Detailed *Curriculum Vitae*;
- Motivation letter;
- Other documents considered relevant to the objectives of the activity.
- Declaration of honour from the candidate stating, for each type of scholarship, BI, BII or BIPD, that he/she meets the conditions for being award the scholarship according to Articles 5, 6 and 7 of the RBIUBI, respectively.

12. Deadline and receipt of applications: The call is open from **9th August 2021** until 18:00 on **13th August 2021**. Applications should be addressed to Dr **Kouamana Bousson**, Project Responsible Investigator, to e-mail **bousson@ubi.pt**.

13. Publication/notification of results: The final results of the evaluation process will be published in a sorted list, by the final classification obtained, and posted in a visible and public place of the Faculty of Engineering of the University of Beira Interior. The candidate(s) will be notified of the decision by e-mail.

14. Complaint and Appeal Procedures: After communication of the provisional lists of the results in the different phases of the selection process (Admission and Exclusion, Curricular Evaluation and Interview), the candidates have 10 working days to pronounce their disagreement, under the terms of article 121 and the *Código do Procedimento Administrativo*. If any allegations are presented, the final decision will be issued after the analysis of the statements presented during the prior hearing of interested parties. After the statutory deadline of 10 working days, the proposal for the final classification and ranking of the candidates becomes definitive.