

## CALL FOR AWARDING RESEARCH FELLOWSHIPS WITHIN PROJECT GRANTS AND R&D INSTITUTIONS

### 1 Research Fellowship (BI) for a MSc Student

1 Research Fellowship(s) (BI) is(are) open at the **FCiências.ID – Associação para a Investigação e Desenvolvimento de Ciências**, for the project/R&D institution “EXTREME - Evaluation of volatile organic compounds in Mediterranean plants with importance in flammability and fire propagation”, PCIF/GFC/0078/2018, funded by the Fundação para a Ciência e a Tecnologia, I.P./MCTES through national funds (PIDDAC) under the programme All Scientific Domains, under the following conditions:

1. **Scientific Area:** Fire management and extreme fire behaviour.
2. **Requirements for admission:** Candidates with a degree in Chemistry and related areas, with experience in adsorption materials, sampling, sample preparation, chromatographic and hyphenated techniques.
3. **Additional optional skills and qualifications:** Candidates have experience in the laboratory context of Adsorption and Analytical Chemistry.
4. **Contracting requirements:** Presentation of the academic qualifications and/or diplomas. Enrolment in Master's in Chemistry at FCUL.
5. **Work plan:** In order to evaluate the result of the accumulation of flammable gases in the propagation of forest fires, we intend to identify the major volatile organic compounds (VOCs) emitted by Mediterranean plants (eg, *Arbutus unedo* L., *Phillyrea* spp., *Quercus coccifera* L., etc.). In a second phase, the change in the composition of VOCs emitted by leaves of the same species when exposed to different temperatures will be evaluated, through combustion tests. In order to carry out the chemical characterization of the main VOCs emitted by the leaves of the shrubs, leaves will be collected in suitable sampling flasks previously selected. Also, on-site studies will be carried out at the same sampling site using bar adsorptive microextraction (BA $\mu$ E). The identification of the main VOCs emitted by the sheets will be carried out through solid phase microextraction (SPME), using fibers based on PDMS/DVB. The SPME fibers will be positioned in the headspace (HS) of the flasks containing the sampled leaves to perform the extraction and enrichment of VOCs under previously optimized conditions. On the other hand, after on-site passive extraction by BA $\mu$ E, the devices will be subjected to liquid microdesorption for the back-extraction of concentrated VOCs. For both strategies, the analysis will be performed using gas chromatography coupled to mass spectrometry (GC-MS), which will allow the identification and quantification of VOCs using spectral reference libraries and appropriate chemical standards. In addition, preliminary studies will be carried out on the combustion gases resulting from the burning of leaves of the species under study at different temperatures, in order to identify the effect, both of the VOCs emitted and of their degradation products, on the propagation of extreme forest fires. All the results obtained will be subject to discussion and interpretation by the different research groups involved in the research project for the evaluation of possible correlations with tests previously carried out by the different components. The objectives outlined in this work plan are included in the tasks corresponding to “Milestone 5 - Results of temperature and combustion” of this project.
6. **Legislation framework:** Research Fellowship Holder Statute, in accordance with Law 40/2004, of 18 August, in its current version and the FCT Regulation for Research Studentships and Fellowships, in its current version (Reg. 950/2019 published in DR on 16<sup>th</sup> December: <https://dre.pt/application/file/a/127230968>, or at the FCT website:

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<https://www.fct.pt/apoios/bolsas/regulamento.phtml.pt>), and FCIências.ID Fellowship Regulation, as approved on 12<sup>th</sup> May 2020 (available at [Regulamento de Bolsas de Investigação Científica da FCIências.ID](#)).

7. **Place of work:** The work will be developed at the Centro de Química Estrutural/Faculty of Sciences/University of Lisbon under the scientific supervision of Professor José Manuel F. Nogueira.

8. **Fellowship duration:** This position is initially opened for 5 months due to start in July 2022.

9. **Monthly allowance:** The fellowship amounts to € 875,98/monthly income, according to [table values](#) of the fellowships awarded directly by the FCT, IP. The fellowship holder will have a personal accident insurance and can ensure the right to social security through adherence to the voluntary social insurance scheme, if not covered by any other social protection scheme, pursuant to *Código dos Regimes Contributivos do Sistema Previdencial de Segurança Social*.

The fellowship will be paid monthly by bank transfer

10. **Evaluation and selection process:** Candidates will be assessed by the quality of their CV. The selection methods to be used will be the following: curricular evaluation (average degree - 60%; experience in the area - 30%; scientific communications - 10%). The jury may decide to interview the three best ranked candidates for clarifications and improved explanations of curricular elements. If there is an interview, the sum of the classification obtained in the evaluation criteria will correspond to 70% of the final classification and the interview will correspond to 30%.

11. **Selection Committee:** Prof. J.M.F. Nogueira (President); Dr. N.R. Neng (member); Prof. A.P. Paiva (member); Prof. S. Santos (alternate member)

12. **Publication/notification of results:** All the candidates will be notified by e-mail, sent by the call holder, with the selection meeting minutes enclosed.

13. **Deadlines:** This call for applications is open from 13/05/22 to 27/05/2022 .

14. **Application:** Applications should be sent via e-mail to [jmnogueira@fc.ul.pt](mailto:jmnogueira@fc.ul.pt), by attaching the following documents:

- Curriculum vitae - **CV may be provided in PDF or through the [CIÊNCIAVITAE](#) system;**
- Certificate of completion of previous degree;
- and other documents considered relevant

15. **Time limits for the appeal procedure:** In case of negative decision, the candidates have 10 business days, after the date of announcement of the results of the candidates evaluation, to pronounce their disagreement in accordance with the *Código do Procedimento Administrativo*. Appeals against the final decision may be submitted to the Administration Board of FCIências.ID ([fciencias.id@fciencias-id.pt](mailto:fciencias.id@fciencias-id.pt)) within 15 business days after the notification date

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**Note 1:** The documents that prove the entitlement of the academic qualifications and diplomas, or the proof of registration in the academic degree or diploma requested on the call, can be dismissed during the application period and replaced by a declaration on their honour from the applicant. Their delivery is mandatory for the fellowship contractualization.

**Note 2:** Please note that - higher education degrees and diplomas awarded by foreign higher education institutions - need to be recognized by a Portuguese higher education institution, pursuant to the [Decree-Law nr. 66/2018](#) (August 16) and the [Ministerial Order nr. 33/2019](#) (January 25). The presentation of the recognition certificate is mandatory for contract signature. More information can be obtained at: <https://www.dges.gov.pt/en/pagina/degree-and-diploma-recognition>.