

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

1 (one) Research fellowship for MSc Student

Ref.: 500.9 – 1 BI EM AQUAMON

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 AQUAMON – Monitorização Confiável em Ambientes Aquáticos com Redes de Sensores sem fios”, “PTDC/CCI-COM/30142/2017”, financed by Fundação para a Ciência e a Tecnologia, I.P./MCTES under national funds (PIDDAC) and , under the following conditions:

1. **Scientific Area:** Computer Science and Engineering
2. **Requirements for admission:** BSc in Information Technology or Informatics Engineering
3. **Additional optional skills and qualifications:** Enrolled in 2nd year of a Master's degree in Informatics Engineering, working for the master's thesis. Experience with Embedded Systems, Distributed Systems and Security; Knowledge proven by approval in curricular components in the areas of Internet of Things, Distributed Systems and Security.
4. **Contracting requirements:** Presentation of the academic qualifications and/or diplomas. Enrollment in MSc studies in Informatics Engineering
5. **Work plan:** Nowadays, there are more and more simple devices connected to the internet. These devices make life easier for us, improve our comfort whether at home, at work or even in our daily exercise. Due to their broad applicability and easy proliferation in the market, they are easily accepted and used by people in their daily lives. Typically, these devices collect information about the environment, associating it with a user or application. Typically, these devices are constantly connected to the internet and provide the information they collect, making them vulnerable to, for example, intrusion or identity theft. Also, in the AQUAMON project, sensors will be used to measure physical quantities, building the remote monitoring system. To guarantee confidentiality and compliance with the data, security mechanisms are required. In recent years, the research for cryptographic solutions tailored to these devices has gained interest from the community. It is known as lightweight cryptography. Many of the public key cryptographic standards that have been developed recently, after the NIST call in 2018, consider the concerns of use in devices with query limitations in terms of processing, storage, and energy consumption. This scholarship aims to make a broad study of lightweight cryptography, emphasizing its applicability in systems such as AQUAMON, highlighting data confidentiality and integrity. The objectives of this scholarship include: 1) Analyse how various encryption techniques and their requirements; 2) Catalogue devices and encryption techniques according to their restrictions and applications. 3) Design and implement a secure architecture for communications between sensor devices used in the AQUAMON project to ensure confidentiality, authenticity, and integrity of sensor data. 4) Thesis writing.
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 16th December: <https://dre.pt/application/file/a/127230968>, or at the FCT website: <https://www.fct.pt/apoios/bolsas/regulamento.phtml.pt>), and FCIências.ID Fellowship Regulation, as approved on 12th May 2020 (available at [Regulamento de Bolsas de Investigação Científica da FCIências.ID](https://www.fciencias.id/regulamento-de-bolsas-de-investigacao-cientifica-da-fciencias-id)).

FCT Fundação para a Ciência e a Tecnologia

MINISTÉRIO DA CIÊNCIA, TECNOLOGIA E ENSINO SUPERIOR

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7. **Place of work:** The work will be developed at LASIGE, Faculdade de Ciências da Universidade de Lisboa under the scientific supervision of Professor José Cecílio.
8. **Fellowship duration:** This position is initially opened for 6 months and will begin on September 2021. The fellowship contract may be potentially renewed for until the end of the project, in accordance with the provisions of Regulation of Research Fellowships from the Foundation for Science and Technology, I.P.
9. **Monthly allowance:** The fellowship amounts to € 835,98 ,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 55%, BSc Degree average: 30% and Research Experience: 15%.
11. **Selection Committee:** Chair: José Cecílio; Members: António Casimiro Costa and André Souto; Replacement Members: Pedro Ferreira and Nuno Neves
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 17/08/21 to 30/08/2021 .
14. **Application:** Applications should be sent via e-mail to lasige-candidaturas@listas.di.ciencias.ulisboa.pt, with the subject: 500.9 – 1 BI EM AQUAMON, 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) within 15 business days after the notification date

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

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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>.