

#3578

Public Notice - International Selection Procedure

PhD Scientific Researcher Recruitment (Initial Stage Researcher)

FCiências.ID/2021/DL57/IDL/7

FCiências.ID - Associação para a Investigação e Desenvolvimento de Ciências, through its Chairman of the Board of Directors, hereby announces the opening of an international call for the recruitment of a scientific researcher with a PhD degree, within the scope of the project of **S-LoTTuSS Scalable Low-cost Tandem Tunnel junctions for Silicon Solar, PTDC/CTM-CTM/28962/2017**, funded by the Portuguese Science and Technology Foundation I.P. (FCT), through OE, in the form of an indefinite duration fixed-term employment contract on an exclusive regime, according to the Portuguese Labour Code and Decree-Law No. 57/2016, of August 29th, as amended by Law No. 57/2017, of July 19th.

I - Admission Requirements

Portuguese nationals, foreign and stateless persons may submit applications to this selection procedure, provided they hold a doctoral degree¹ in Physics, Chemistry, Materials Science or Engineering and fully comply with the following requirements:

- Demonstrated expertise in laser or optical processing and growth of crystalline silicon wafers for photovoltaic energy production;
- On the topic of processing and growth of crystalline silicon wafers for photovoltaic energy production, have at least one peer reviewed publication in an international scientific journal (indexed by the Web of ScienceTM).

¹ Please note that Degrees obtained in foreign countries need a Portuguese Recognition issued by a Portuguese high degree Institution, according to the Decree-Law nr. 66/2018, of August 16th and the Ministerial Order nr. 33/2019, of January 25th. The presentation of such Recognition is mandatory for contract signature. More information can be obtained in: <https://www.dges.gov.pt/en/pagina/degree-and-diploma-recognition>.

II. Applicable Law

- Decree-Law No. 57/2016, of August 29th (RCD), in the wording conferred on it by Law No. 57/2017, of July 19th (RCD);
- Portuguese Labour Code, as approved by Law No. 7/2009, of February 12th, in its current version (CT);
- Regulatory Decree No. 11-A/2017, of December 29th;
- Administrative Procedure Code, as published in Decree-Law No. 4/2015, of January 7th, in its current version (CPA).

III. Work Plan

The work plan is included in “Activity 2 - Reactor development and CVD growth of highly doped layers” and “Activity 3 - Structural, optical, and electrical characterization” of project **S-LoTTuSS Scalable Low-cost Tandem Tunnel junctions for Silicon Solar, PTDC/CTM-CTM/28962/2017**.

Formation of tunnel junctions by laser doping of silicon wafers (Project Activity 2.3 - Tunnel junction growth).

The successful completion of this activity will result in the deliverable **Milestone 5 In-situ doping during deposition**. Laser doping of wafers will be performed in a bespoke setup recently developed in our labs. The goal will be to understand what laser doping conditions result in the films with the desired morphological and electrical characteristics.

Structural, morphological, and electrical characterization of laser doped films (Project Activity 3 - Structural, morphological, and electrical characterization).

The successful completion of this activity will result in the deliverable **Milestone 6 Observable tunnel junction characteristics**. The films resultant from laser doping will be characterized in three ways. 1) The crystalline structure and morphology will be determined by glancing angle XRD, standard and high-resolution scanning electron microscopy (SEM), and Atomic Force Microscopy (AFM). 2) The doping characteristics will be analysed by sheet resistance, electrochemical capacitance, and secondary-ion mass spectroscopy (SIMS). 3) The electrical performance will be characterised by measuring the current-voltage tunnelling characteristics.

IV. Composition of the Jury

In accordance to article 13 of the RCD, the members of the jury are:

- President – Killian Lobato;
- 1st Member of the jury – João Serra;
- 2nd Member of the jury – Guilherme Gaspar;
- 1st Alternate Member of the jury – José Almeida Silva;
- 2nd Alternate Member of the jury – Miguel Centeno Brito.

V. Place of work

Work will be undertaken at the facilities of Research Centre Institute Dom Luiz (IDL), based at the Faculty of Sciences of the University of Lisbon, in Campo Grande, Lisbon, Portugal.

VI. Contract Duration

The full-time indefinite duration fixed-term employment contract is expected to start on July 2021, and will last until the Work Plan referred to in section III is completed. It will have an expected duration of 3 months, and will not exceed the limits set out in the RCD.

VII. Monthly Allowance

The gross monthly salary is stipulated in clause 1 a) of article 15 of the RCD, corresponding to level 33 of the Single Remuneratory Table, as approved by Government Order No. 1553-C/2008, of December 31st, updated by the decree-law nr. 10-B/2020, of March 20th, being 2.134,73 Euros, on an exclusive regime, plus holiday and Christmas allowances, as well as food allowance in the amount and conditions set out for workers with a legal employment relationship under the Labour Code.

VIII. Evaluation of applications

1. Failure to comply with the Admission Requirements implies the non-admission of candidates in absolute merit.
2. According to article 5 of the RCD, the selection of the candidates approved in absolute merit will rely on the evaluation of their scientific and curricular achievements in the last five years, counting from the closing date of this call, taking into consideration the quality and relevance of the scientific production, and the professional activity indicated as more relevant by the candidate, for the project.

3. Based on the assessment of the candidates' scientific and curricular background in the last 5 years, each member of the jury presents a justified proposal for admission (final classification equal to or greater than 75%) or exclusion (final classification below 75%) for each candidate, according to the evaluation criteria referred to in paragraph 5.
4. The final classification of candidates is given on a scale of 0 to 100%.
5. Evaluation of the relative merit of candidates will rely on the following criteria:
 - a) Participation in relevant scientific projects in the area - 30%;
 - b) Scientific publications (dissertation, peer reviewed and conference participations) in the area – 30%;
 - c) Overall appreciation of CV, quality of scientific publication outside the area, supervision of MSc and PhD students, and outreach activities – 20%
 - d) Assessment of the references provided by the candidate –20%;
 - e) Interview, if deemed necessary by the jury - 10%.
6. The jury may decide to interview the three best ranked candidates [in criteria a) to d) of paragraph 4)], for clarifications and improved explanations of curricular elements. If there is an interview, the sum of the classification obtained in the evaluation criteria a) to d) will correspond to 90% of the final classification and the interview will correspond to 10%.
7. The jury shall deliberate by means of a roll-call vote based on the evaluation criteria.
8. Minutes of the jury meetings are drawn up, summarizing all relevant elements considered by jury members, as well as their individual votes and justifications.
9. After completion of the evaluation process, the jury will draw up a ranking of successful candidates with their classifications.
10. Hiring will be decided by the Chairman of the Board of Directors of FCIências.ID, based on the final jury recommendation.
11. The evaluation results will be published on the website of the FCIências.ID ("Concursos" tab). The candidates will be individually notified of the evaluation results by e-mail sent to the address indicated in the "Personal Data" section of the submitted form.
12. With the notification referred to in paragraph 10, the hearing phase of interested parties referred to in Article 121 *et seq.* of the CPA will begin, and last for ten working days.
13. The possible pronouncement of the candidate in a prior hearing must be addressed to the President of the jury and submitted in writing to concursos@fciencias-id.pt. The President of the jury will convene a jury's meeting to produce the final decision, within thirty working days.
14. Within five working days of the final jury decision, the Chairman of the Board of Directors of FCIências.ID will approve it and the candidates will be notified.
15. The communication between FCIências.ID (concursos@fciencias-id.pt) and the candidates will be electronic and will comply with the following rules:
 - a) At the time of electronic submission of any document - namely in the case of paragraph no 11 - the candidates must generate proof of "sent message".
 - b) FCIências.ID will send an email message acknowledging documents received to the email address used by the candidates, within two working days.
 - c) In case of absence of a confirmation receipt by FCIências.ID – showing the possibility of technical problems that should neither be the responsibility of the candidate nor FCIências.ID - the candidates should contact FCIências.ID, with the

proof referred to in point (a), to ensure delivery and proper receipt of the documents concerned.

IX. Compliance with public policies

1. FCIências.ID actively promotes a policy of non-discrimination and equal access, so that no candidate can be privileged, benefited, disadvantaged or deprived of any right or exempt from any duty due to, inter alia, ancestry, age, sex, sexual orientation, marital status, family status, economic situation, education, social origin or condition, genetic heritage, reduced working capacity, disability, chronic illness, nationality, ethnic origin or race, territory of origin, language, religion, political or ideological beliefs and trade union membership.
2. Under the terms of D.L. No. 29/2001, of February 3, a disabled candidate has a preference in equal classification, which prevails over any other legal preference. Candidates must declare their respective degree of disability, the type of disability and the means of communication / expression to be used in the selection process, under the terms of the above-mentioned diploma.

X. Submission of Applications

1. The present call will be open from 24th May to 7th June 2021.
2. The application and all the required documents may be submitted in Portuguese or English.
3. Applications will be submitted online, through the electronic platform of FCIências.ID (<http://concursos.fciencias-id.pt>).
4. On the electronic platform, applicants will complete a *mandatory* section on Personal Data [name, address, date of birth, contact email, nationality and scientific identifiers] and upload files with the documents listed below:
 - i. Detailed *curriculum vitae* - *mandatory*;
 - ii. A motivation letter clearly demonstrating that the candidate has an adequate profile for the position and fully complies with the Admission Requirements - *mandatory*;
 - iii. Up to five publications (peer reviewed publications in international journals, or international conference oral or poster communications) relevant for the objectives of the Work Plan - *mandatory*;
 - iv. Digital copies of documents proving formal academic degrees (PhD) and/or other scientific and professional qualifications - original documents must be provided in case of actual recruitment- *mandatory*;
 - v. Two reference letters with at least one from a recent (within 1 year of closing date of this call) PhD or Postdoc supervisor, line manager, or other superior with direct knowledge of the candidate's activities – *mandatory*;
 - vi. Other documents that candidates consider relevant for the assessment of their scientific merit, or to declare the personal situation in the cases covered in section IX-2 of this Notice – *optional*.
5. By decision of the Chairman of the Board of Directors of FCIências.ID, candidates who do not submit the documents identified in paragraph 4 will not be admitted to the call. In case of doubts, the Chairman may also invite candidates to substantiate specific data or statements with official supporting documents, before accepting the candidates' submission.