

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

### 1 Fellowship research

1 Fellowship research for Master is open at the **FCiências.ID – Associação para a Investigação e Desenvolvimento de Ciências**, for the project/R&D institution **SELCON-Selective contacts for high efficiency solar cells, PTDC/CTM-CTM/28860/2017**, financed by national funds by FCT / MCTES (PIDDAC) under the Programme All Scientific Domains, under the following conditions:

1. **Scientific Area:** Physics, Chemistry or Materials Science
2. **Requirements for admission:** Master degree; experimental profile
3. **Factors preferred:** experience in the area of Materials for PV energy production; semiconductor processing and deposition techniques
4. **Work plan:** The work program includes:

#### Activity 1: Selective contact formation

This activity will include all the developments necessary for the successful production of carrier selective junctions (CSJs) based on transparent metal compounds (TMC)

For ultimate transparency and carrier selectivity, it is promising to replace the doped Si layers by carefully selected transparent metal compounds (TMC). Suitable metal-compounds forming a hole-selective interface with silicon or electron-selective junction will be explored. Combinations of evaporated metal oxide layers with respect to their junction properties and optical properties will be evaluated.

#### Activity 2 Materials characterization

The prepared structures will be characterized for the development and improvement of CSJs. Symmetrical structures with the CSJ on both sides and simplified cell test structures will be co-prepared to extract the implied IV curve (QSSPC), pseudo-IV curve (SunsVoc) to evaluate its ability to reach the required Voc levels, among other techniques.

5. **Legislation framework:** Statute of the Scientific Research Fellowship, in accordance with Law 40/2004, of 18 August, as amended and republished by Decree-Law No. 202/2012 of 27 August, and as amended by Decree-Law No. 233/2012 of 29 October and by Law No. 12/2013, of January 29, and Decree-Law No. 89/2013 of 9 July; And also by the FCT, I.P. Fellowships Regulation, in force (<https://www.fct.pt/apoios/bolsas/docs/RegulamentoBolsasFCT.pdf>) and **FCiências.ID** Fellowship Regulation, as approved on 23<sup>rd</sup> February 2017.
6. **Place of work:** The work will be developed at the Instituto Dom Luiz under the scientific guidance of Professor João Serra .
7. **Fellowship duration:** This position is initially opened for 6 months and will begin on June, 2019 . The fellowship contract may be renewed to more 6 months, in accordance with the provisions of Regulation of Research Fellowships from the Foundation for Science and Technology, I.P.

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8. **Monthly allowance:** The fellowship amounts to € 989,70 ,according to table values of the fellowships awarded directly by the FCT, IP. (<http://www.fct.pt/apoios/bolsas/valores>).

The fellowship holder will have a personal accident insurance and, if not covered by any social protection scheme can ensure the right to social security through adherence to the voluntary social insurance scheme, pursuant to Código dos Regimes Contributivos do Sistema Previdencial de Segurança Social.

The fellowship will be paid monthly by bank transfer.

9. **Selection method:** Candidates will be assessed by the quality of their CV 90% an interview(10%) for the top 3 candidates).

10. **Selection Committee:** President: João Serra; members: Killian Lobato e José Silva; member replacement in case of need: Miguel Brito

11. **Publication/notification of results:** The final results of the evaluation will become public, through ordered list *final grade obtained* which will be posted at the entrance hall of the **FCiências.ID**, located at the Faculdade de Ciências da Universidade de Lisboa, C1 bdg – 3<sup>rd</sup> floor, Campo Grande, 1749-016 Lisboa, and the selected candidate will be notified by *e-mail*.

12. **Deadlines:** This call for applications is open from 22<sup>nd</sup> May to 4<sup>th</sup> June 2019.

13. **Application:** Applications may be sent via e-mail to [jmserra@fc.ul.pt](mailto:jmserra@fc.ul.pt), by attaching the following documents: Curriculum vitae, certificate and other documents considered relevant .

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