

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

1 Fellowship in Special Regime

1 Fellowship in **Special Regime (BI-RE)** for Master is open at the **FCiências.ID – Associação para a Investigação e o Desenvolvimento de Ciências**, for the project **“ENSAR2 – European Nuclear Science and Applications Research 2”**, co-financed by the European Commission under the H2020 Program, under the following conditions:

1. **Scientific Area:** *Nuclear Physics*
2. **Requirements for admission:** *Master in Physics or Physics Engineering, with strong focus on Nuclear Physics; demonstrated experience in the modelling and data handling from nuclear reaction experiments; experience in programming in C++.*
3. **Factors preferred:** *Working experience in the field of nuclear physics, English knowledge, experience in the use of simulation tool GEANT4 and the analysis tool ROOT, availability to start working timely.*
4. **Work plan:** The work to be developed will focus on the analysis of data coming from low energy nuclear reactions of type-PIGE (Proton Induced Gamma-ray Emission), including the development of a series of software tools for the automatization of simulation and analysis of the obtained data. The goals to achieve within the present research grant are:
 - Development of advanced tools and maintenance of an application based on Virtual MonteCarlo methods (ENSARRoot) allowing for the analysis and simulation of the experimental equipment and Setup used in this kind of experiments. Especial focus will be given to the simulation of the available equipment at the Nuclear Reaction Analysis line of the Tandem laboratory of the CTN/IST laboratory.
 - Study of experimental data obtained in low-energy proton induced nuclear reactions:
 - PIGE-type reactions, detecting gamma rays emitted by the nuclei excited in the low-energy nuclear reactions.
 - (p, γ)-type reactions, exciting unbound states in the resulting nuclei and studying their high energy gamma decay emission, with special focus to the area around Z=28 (^{56}Fe and ^{60}Ni)
 - Implementation of data analysis and simulations corresponding to this kind of nuclear reactions.
 - Implementation of PIGE analysis tools into the analysis and simulation tool ENSARRoot.
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 (<http://www.fct.pt/apoios/bolsas/docs/RegulamentoBolsasFCT2015.pdf>) and FCIências.ID Fellowship Regulation, as approved on 23rd February 2017.
6. **Place of work:** The work will be developed at the *Physics Department of the Faculty of Sciences of the University of Lisbon* under the scientific guidance of Professor *Daniel Galaviz Redondo*



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7. **Fellowship duration:** This position is initially opened for 6 months and will begin on March 1st, 2018. The fellowship contract may be renewed to more 18 months, or eventually until the end date of the project, in accordance with the provisions of Regulation of Research Fellowships from the Foundation for Science and Technology, I.P.
8. **Monthly allowance:** The fellowship amounts to € 1158,00
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 (55%), evaluation of previous experience (35%) and interview (10%).
10. **Selection Committee:** Prof. Dr. Daniel Galaviz Redondo, FCUL (President); Prof. Dr. Héctor Álvarez Pol, Univ. Santiago de Compostela, Spain (Vogal); Prof. Dr. Luís Filipe dos Santos Garcia Peralta, FCUL (Vogal); Dr. Jorge Miguel Sampaio, LIP (Vogal suplente).
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 – 3rd 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 29-01-2018 to 6-02-2018.
13. **Application:** Applications may be sent via e-mail to galaviz@ciencias.ulisboa.pt, by attaching the following documents: Curriculum vitae, degree certificate, motivation letter.

