

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

1 (one) Post-doctoral Fellowship (BIPD)

1 Post-Doctoral Research Fellowship(s) (BIPD) is(are) open at the **FCiências.ID – Associação para a Investigação e Desenvolvimento de Ciências**, for the project/R&D institution Active skyrmions in liquid crystal-colloid composite media/Center for Theoretical and Computational Physics, PTDC/FIS-MAC/5689/2020, financed by national funds by FCT / MCTES (PIDDAC) under the programme SR&TD Project Grants All Scientific Domains - 2020, under the following conditions:

1. **Scientific Area:** Soft Condensed Matter Physics
2. **Requirements for admission:** Portuguese nationals, foreign and stateless persons may submit applications to this selection procedure, provided they hold a doctoral degree in Physics or similar areas, for less than two years at the starting date of the fellowship, with demonstrated scientific experience in theoretical and/or computational Soft Condensed Matter Physics.
3. **Additional optional skills and qualifications:** Experience with numerical methods such as Monte Carlo and/or molecular dynamics simulations, finite elements methods, etc. will be a plus.
4. **Contracting requirements:** Presentation of the academic qualifications and/or diplomas.
5. **Work plan:** A successful candidate will contribute to the development of theoretical and numerical approaches in line with the research task of the FCT-funded project ref.: PTDC/FIS-MAC/5689/2020. The main objectives of this project are to understand how liquid crystal (LC) skyrmions deform and move in response to oscillating external electric fields as well as how they interact with each other and with nanoparticles which are dispersed in the LC.
As a part of this project, a candidate will combine Finite Elements Method (FEM) with a machine learning approach. In the first step, FEM will be used to generate sets of LC configurations depending on the strength of static/dynamic electric fields, the cholesteric pitch, the boundary conditions at the confining surfaces, etc. Next, the generated configurations will be used as input parameters to train artificial neural networks. Properly trained networks will then be used to generate static and dynamic force fields for coarse-grained molecular dynamics simulations.
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)).
7. **Place of work:** The work will be developed at the Center for Theoretical and Computational Physics (CFTC), at the Faculty of Science, University of Lisbon, Campo Grande, Lisbon, Portugal under the scientific supervision of Professor Mykola Tasinchevich and Cristóvão Dias.
8. **Fellowship duration:** This position is initially opened for 6 months and will begin in January 2022. The fellowship contract may be potentially renewed for additional 18 months, in accordance with the provisions of Regulation of Research Fellowships from the Foundation for Science and Technology, I.P.

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9. **Monthly allowance:** The fellowship amounts to € 1646,00, 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 50% and motivation letter including the description of the candidate past research experiences 20%, a recommendation letter 10%, interview 20%.
11. **Selection Committee:** the President of the committee – Mykola Tasinkevych; 1st Member of the committee – Cristovão Dias; 2nd Member of the committee – Margarida Telo da Gama; 1st Alternate Member of the committee - Nuno Miguel Azevedo Machado de Araújo.
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 03/09/21 to 04/10/2021 .
14. **Application:** Applications should be sent via e-mail to mtasinkevych@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;
 - A motivation letter which includes the candidates past research experience and its relevance to the research topic of the Skymion project;
 - Two recommendation letters.
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 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>.