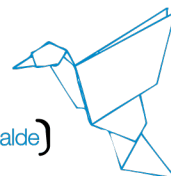


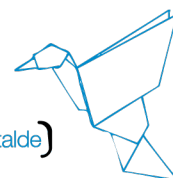
## Research Technician on metaheuristic optimization of solid state materials

| Job Offer              |   |
|------------------------|---|
| Topics:                | Computational Physics, Optimization Methods, Software Development, Materials Science, High Performance Computing.   |
| PI in charge:          | Elena Akhmatskaya and Mauricio Rincón Bonilla   |
| Salary and conditions: | <p><b>The gross annual salary of the Fellowship will be 18.450€-28.000€</b></p> <p>It will then be on your own responsibility to make your yearly income declaration at the Bizkaia Treasury Agency.</p> <p>Additionally, we offer a moving allowance up to 1.000€.</p> <p>Should the researcher have a family at the time of recruitment:</p> <ol style="list-style-type: none"> <li>1. 1.000€ gross in a single payment will be offered (you must be married-official register or with children and the certificate to prove it must be sent).</li> <li>2. 600€ gross per year/per child (up to 2 children) will be offered (the certificate to prove it must be sent).</li> </ol> <p><i>Free access to the Public Health System in Spain is provided to all employees.</i></p> |
| Contract and offer:    | 3 months (with possible extension, subject to performance review)   |
| Deadline:              | <b>September 30<sup>th</sup> 2022 14:00 CET</b>   |
| How to apply:          | <p>Applications must be submitted on-line at: <a href="http://www.bcamath.org/en/research/job">http://www.bcamath.org/en/research/job</a></p> <p>The candidates that do not fulfil the mandatory requirements will not be evaluated with respect to their scientific profile. Additional documents could be requested during the evaluation process so as to check this fulfilment.</p>   |



| Scientific Profile Requested |  |
|------------------------------|--|
| Requirements:                | <ul style="list-style-type: none"> <li>• M.Sc. or B.Sc. degree in Mathematics, Statistics, Computer Science and related disciplines.</li> </ul>  |
| Skills and track-record:     | <ul style="list-style-type: none"> <li>• Good interpersonal skills.</li> <li>• Demonstrated ability to work independently and as part of a collaborative research team.</li> <li>• Ability to effectively communicate and present research ideas to researchers and stakeholders with different backgrounds.</li> <li>• Fluency in spoken and written English.</li> </ul>  |
| Scientific Profile:          | <p>The preferred candidate will have:</p> <ul style="list-style-type: none"> <li>• Solid programming skills in Julia. Candidates without specific knowledge of Julia but excellent skills in structurally similar languages such as Python, MATLAB, C++ or Ruby may be considered.</li> <li>• Background in optimization methods. Specific knowledge in metaheuristic techniques such as simulated annealing or harmonic search is highly desirable.</li> <li>• Experience with molecular dynamics codes (GROMACS, LAMMPS, etc.) is desirable</li> </ul> |

| Application and Selection Process |   |
|-----------------------------------|---|
| Formal Requirements:              | <p>The selected candidate must have applied before the application deadline online at the webpage <a href="http://www.bcamath.org/en/research/job">http://www.bcamath.org/en/research/job</a></p> <p>The candidates that do not fulfil the mandatory requirements will not be evaluated with respect to their scientific profile. Additional documents could be requested during the evaluation process so as to check this fulfilment.</p> |
| Application:                      | <p>Required documents:</p> <ul style="list-style-type: none"> <li>▪ CV</li> <li>▪ Letter of interest, succinctly describing past research experience</li> <li>▪ 2 recommendation letters (desirable)</li> </ul>   |
| Evaluation:                       | <p>Based on the provided application documents of each candidate, the evaluation committee will evaluate qualitatively: the adaption of the previous training and career to the profile offered, the recommendation letters, the main results achieved (papers, proceedings, etc.) and</p>  |



|                                    |  |
|------------------------------------|--|
|                                    | other merits; taking in account the alignment of these items to the topic offered.   |
| <b>Incorporation:</b>              | <b>As soon as possible.</b>  |
| <b>Research topic description:</b> | <p>We have recently developed a novel metaheuristic methodology for optimizing the distribution of atoms and vacancies in solid-state materials. Our approach is currently programmed in the package Julia and has been tested in the solid-state electrolyte LLZO.</p> <p>The researcher will rewrite/reformat the code, as well as write a manual to share it with the wider community. He/she will also investigate the optimal set of parameters to maximize the algorithm's performance, and work on the implementation of additional features.</p> |

