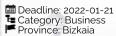# POSTDOCTORAL RESEARCHER FOR THE SIMULATION OF ENERGY STORAGE MATERIALS

Company Description

BCAM is the Research Center on Applied Mathematics created with the support of the Basque Government and the University of the Basque Country, which aims to strengthen the Basque science and technology system, by performing interdisciplinary research in the frontiers of mathematics, talented scientists' training and attraction, so the excellence of our results are recognized by the Society

Information

Deadline: 2022-01-21
Category: Business
Province: Bizkaia

Country: Basque Country
City: Bilbao

Company

BCAM

Main functions, requisites & benefits

Main functions

BCAM - Basque Center for Applied Mathematics is a world-class interdisciplinary research center located in Bilbao, Basque Country (Spain). Here, mathematicians, physicists, engineers, and computer scientists develop and apply state-of-the-art numerical techniques to tackle some of society's most pressing problems. The Modelling and Simulation in Life and Materials Science group (MSLMS) of Prof. Elena Akhmatskaya combines advanced statistical methods and numerical algorithms with parallel computation to investigate complex systems in biology, materials science, and nanotechnology. The postdoctoral applicant will join the MSLMS to work on problems related to the simulation of energy storage materials (batteries, supercapacitors, mixed matrix membranes) from a multiscale perspective: from the atomistic characterization of the structure/performance relationship in battery and adsorptive energy storage materials, to the microscopic study of charge transfer using continuous and particulate simulation methods. The researcher will also be involved in the development and implementation of machine learning schemes that automate the selection of material chemistries maximizing predefined performance criteria, as well as in developing surrogate models to reduce the need for expensive atomistic and microscopic calculations

Requisites

Applicants must have a PhD in Computational Physics, Computational Chemistry, Applied Mathematics, Computer Science, or related fields Skills: Good interpersonal skills. A proven track record in quality research, as evidenced by research publications in top scientific journals and conferences. Demonstrated ability to work independently and as part of a collaborative research team. Ability to present and publish research outcomes in spoken (talks) and written (papers) form. Ability to effectively communicate and present research ideas to researchers and stakeholders with different backgrounds. Fluency in spoken and written English The preferred candidate will have: Strong background in atomistic simulation methods such as Molecular Dynamics and/or kinetic Monte Carlo applied to solid state materials. Working knowledge on microscopic simulation methods such as finite element analysis or smooth particle dynamics. Expertise in multiscale modelling. Experience in machine learning methods applied to material science problems. Programming skills in either Python, C++ or Fortran. Experience in High Performance Computing Working knowledge of Density Functional Theory (desirable). Interest and disposition to work in interdisciplinary groups

Benefits

The gross salary of the post will be 28.000 - 32.000€. It will then be on your own responsibility to make your yearly income declaration at the Bizkaia Treasury Agency. There is a moving allowance for those researchers that come from a research institution outside the Basque Country up to EUR 2.000 gross. Free access to the Public Health System in Spain is provided to all employees.