

Company Description

BCMaterials, Basque Center for Materials, Applications and Nanostructures, is an autonomous research center launched in June 2012 by Ikerbasque, the Basque Foundation for Science and the University of the Basque Country (UPV/EHU) as a research center for Materials, Applications and Nanostructures. The center is included in the BERC's (Basque Excellence Research Centers) network and its mission is to generate knowledge on the new generation of materials, turning this knowledge into (multi)functional solutions and devices for the benefit of society.

BCMaterials is looking for a motivated PhD student to work in the area of Quantum Technologies in the scope of the IKUR strategy. IKUR is the strategic program promoted by the Education Department of the Basque Government to boost Scientific Research in specific strategical areas.

Over the last decade, a novel class of magnetic metamaterials appeared related as artificial analogues to spin-ice materials, rare-earth titanate materials where the frustration between magnetic moments leads to a playground of fundamental physics studies. These novel materials, dubbed artificial spin ices (ASIs), made of interacting elongated nanomagnets, have emerged as a fertile ground for the study and discovery of novel phenomena not present in natural magnetic materials, bound to a

Information

 Deadline: 2023-02-05
 Category: Academia
 Province: Bizkaia

 Country: Basque Country
 City: Leioa

Company

BCMaterials



Main functions, requisites & benefits

Main functions

The research activity that the pre-doctoral researcher will perform consists in the development of quantum lattice gauge theories towards artificial spin ices, including the exploration of frustrated quantum systems, micromagnetic simulations of ASIs and the study of the convergence of the micromagnetic simulations facing theoretical frustrated quantum systems. Special emphasis will be given to study the entanglement properties of these materials and the characteristic signatures to describe them.

Requisites

Master in quantum sciences, materials sciences, physics or related areas.

Bachelor degree obtained later than January 2020 and with an average mark above 6.5/10.

Fluent oral and written English is mandatory.

Experience in quantum many-body theory, devoted to the simulation and analysis of quantum spin liquids, in general, and quantum spin ice in particular is an asset.

