POSTDOCTORAL POSITION FOR MULTISCALE SIMULATION OF MAGNETIC MATERIALS AND

Company Description

BCMaterials, Basque Center on 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. The BCMaterials (Basque Center for Materials, Applications & Nanostructures), opens the call to develop the PhD thesis at our center in collaboration with Professors of the University of the Basque Country (UPV/EHU). We will offer three years PhD grants to develop a research project within the five strategic research areas of the center: 1.- Active and smart materials 2.- Advanced functional materials 3.- Functional surfaces and coatings 4.- Micro and nano-devices 5.- Nanostructured materials Within this frame, the BCMaterials is currently researching an ample diversity of materials, surfaces and devices processing, which fundamental understand and modification allows modifying or combining different physic and chemical properties towards their application in research fields such as Advance Manufacturing, Biomedicine, Energy or Environment

Information

Deadline: 2020-02-21
Category: Business
Province: Bizkaia
Country: Basque Country
City: Leioa

Company

BCMaterials

Main functions, requisites & benefits

Main functions

BCMaterials, Basque Center on Materials, Applications and Nanostructures, is an autonomous research center belonging to Ikerbasque, the Basque Foundation for Science and the University of the Basque Country (UPV/EHU). 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.

In the context of a research project funded by the Spanish Goverment, we offer a Postdoctoral position untril 31st of december 2020 to advance in the development of the guidance, detection and actuation procedures in a magnetotaxis system for the remote control of magnetotactic bacteria as nanorobots for biomedical applications.

The position is focused primarly on multiscale simulation (micromagnetic and finite elements macroscopic behavior) of magnetic materials for sensors to detect the presence and movement of magnetotactic bacteria. Additional tasks will include simulation of magnetic fields and field gradients, and magnetic hyperthermia fields.

Requisites

Extensive experience in simulation software (COMSOL preferable, or similar) and related tools (Matlab). Knowledge of specific micromagnetic codes (OOMMF, muMAX, etc) and experience in magnetism and magnetic materials will be positively valued.
The candidate should be self motivated and a team player willing to coordinate the research in a particular topic.

Candidates should hold a PhD in physics, materials science or engineering. Responsibilitles Development of procedures to simulate the detailed response of magnetic sensors (magnetoresistance, magnetoimpedance, etc.) including magnetization processes. Optimization of coil design for field and gradient generation for guidance of magnetotactic bacteria and hyperthermia application.