Call reference number	(2025-30)
Call name	Postdoctoral position: Laser-based Patterning of Nanomaterial Composites
Application Deadline	2025/10/10

Introduction and main description

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

We offer a full-time position as a postdoctoral researcher within a project supported by the ATRAE program, funded by the Spanish Ministry of Science, Innovation and Universities, until August 31, 2029. The position focuses on developing optical patterning techniques for the deposition of colloidal nanomaterials into alloys and composites on solid substrates.

The work will involve the synthesis and functionalization of nanomaterials, and fabrication of assemblies via the use of a microscope coupled with high power lasers. Fabricated assemblies will be characterized by techniques such as dark field microscopy, electron microscopy, various types of optical spectroscopy, and surface characterization techniques such as AFM and XPS. This project provides the opportunity for combining experimental and computational studies to understand the thermofluidic environment and colloidal interactions at play.

Skills and Requirements

A Ph.D. Degree in Chemistry, Physics, or a related field.
A research background in optics, colloidal chemistry, and/or nanomaterial synthesis.
Experience working with laser-based optical setups is beneficial.
Proficiency in speaking and writing in English.
Self-motivation and ability to work in a team.
Willingness to coordinate research.
A high level of motivation and independent thinking skills.
Ability and eagerness to learn new skills outside their own discipline.
Presentation skills and ability to meet deadlines.

Work Program / Duties / Responsibilities

Main responsibilities include:
- Optical patterning of nanomaterials
- Synthesis, surface modification, and characterization of nanoparticles
- Characterization of patterned substrates
- Developing a theoretical understanding of the mechanisms involved in the printing process using computational methods such as Molecular Dynamics and Multiphysics simulations

Additional responsibilities:
- Writing of manuscripts
- Presenting research at national/international conferences
- Maintaining optical setup and lab equipment
- Working closely with collaborators
- Maintaining a positive and collaborative group atmosphere

Work Program / Duties / Responsibilities
Further details: - The postdoctoral researcher will be incorporated at BCMaterials under the supervision of Eric H. Hill, Ikerbasque Research Associate Professor. - The candidate will be in close contact with several renowned international groups in the fields of colloidal chemistry and nanoscience in Europe and abroad.

Application Procedure
Apply by submitting a motivation letter and a CV (in English) using the "Contact" button at the corresponding offer, at the "Join Us" area on BCMaterials' portal (https://www.bcmaterials.net/join-us). Your name and email address will be required for furher contact too.

Other Relevant Information
Include contact details for 2 referees. Interviews will be conducted soon after the deadline. The preferred starting date to join is January 1, 2026. We provide a highly stimulating and interdisciplinary environment, with state-of-the-art infrastructures and unique professional career development opportunities. We offer and promote a diverse and inclusive environment and welcome applicants regardless of age, disability, gender, nationality, ethnicity, religion, sexual orientation or gender identity.