Call reference number	(2026-05)
Call name	Predoctoral position: Optically-driven Synthesis of Nanomaterial Composites
Application Deadline	2026/03/15

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 seek a pre-doctoral researcher in Chemical Physics/Materials Chemistry focusing on laser-based colloidal approaches for fabrication of nanomaterials and nanocomposites in liquids. We offer a full-time position as a pre-doctoral researcher funded by the Spanish Ministry of Science, Innovation and Universities, until August 31, 2028.

The work is focused on the organic synthesis of ligands and colloidal synthesis of nanomaterials, and their deposition and synthesis onto solid substrates. Fabricated materials and devices will be characterized by techniques such as dark field microscopy, electron microscopy, and various types of optical spectroscopy. Detailed studies of the colloidal interactions between nanoparticles, ligands, and solvent will provide the opportunity for combining experimental and computational studies.

Skills and Requirements

A Master's Degree in Chemistry, Physics, or a related field.
A strong research background in nanoparticle synthesis/functionalization/assembly.
Experience with laser-based optical setups and/or optical microscopy 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:
Synthesis, surface modification, and characterization of nanoparticles
Optical patterning of nanomaterials
Characterization of printed assemblies of nanoparticles, including techniques such as:
- Scanning electron microscopy (SEM)
- Back-scattered UV-visible spectroscopy
- Fluorescence Microscopy

Developing a theoretical understanding of the mechanisms involved in the printing process using computational methods including, but not limited to:
- Molecular Dynamics simulations
- Multiphysics and fluid dynamics simulations

Work Program / Duties / Responsibilities
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 Further details: The pre-doctoral researcher will be incorporated at BCMaterials under the supervision of Eric 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 references or contact details for 2 referees. Interviews will be conducted soon after the deadline. The preferred starting date to join is April 15, 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.