

Call reference number	(2026-21)
Call name	Postdoctoral position in strain engineered 2D-materials for sensing
Application Deadline	2026/11/15

Introduction and main description
BCMaterials, Basque Center for Materials, Applications and Nanostructures, is an autonomous research centre located in Leioa (Spain) and established in June 2012 by Ikerbasque, the Basque Foundation for Science and the University of the Basque Country (UPV/EHU). The centre is included in the BERC's (Basque Excellence Research Centers) network, and its mission is to generate knowledge on the new generation of advanced materials, turning this knowledge into (multi)functional solutions and devices for the benefit of society. We are seeking a postdoctoral researcher to take strain-engineered 2D materials from fundamental results towards sensing technologies. The researcher will review the available materials and concepts, identify the most promising ones for sensing applications and, in close collaboration with the technology centre Tekniker, bring them to a proof-of-concept sensing prototype. The position therefore sits at the interface between fundamental science and technology transfer. The work will be carried out at BCMaterials, under the supervision of Prof. Reyes Calvo. This postdoctoral position is to work on the Ibilbideak-Itsasargiak 2026 2D-QUEST project, funded by the Basque Government. The project ends 31/12/2028. Candidates will be encourage to apply for postdoctoral grants in the topic.

Skills and Requirements
The candidate must have a PhD in Physics, Materials Science, Engineering or a related area. The following qualifications and experience will be positively valued: - Experience in benchmarking of devices, i.e. comparing their performance against relevant metrics and state-of-the-art alternatives. - Experience of, or clear interest in, working with technology centres and industrial environments, including understanding end-user needs, technology readiness levels and the path from laboratory results to applications. - Experience with 2D materials: sample preparation, device fabrication and characterization. - Knowledge of strain engineering. - Experience in the electrical, optical or mechanical characterization of materials or devices. - Experience in sensor development or device prototyping. - Experience in instrumentation development, experimental automation and data acquisition, and in scientific data processing and analysis (e.g. Python, LabView, MATLAB). - Good scientific writing, communication and presentation skills, and proficiency in English. - Ability to work both independently and collaboratively within a multidisciplinary and international research environment, including the supervision of students. - Creativity in problem solving, and ability and eagerness to learn new skills outside one's own discipline.

Work Program / Duties / Responsibilities

Two-dimensional materials provide a unique platform for investigating quantum phenomena. Their properties are highly tunable, making it possible not only to tailor existing functionalities but also to engineer new ones. Strain engineering offers an exceptional means of controlling electronic phases and modulating or triggering emergent quantum phenomena.

The research will be carried out in the framework of a project funded by the Ibil4 Ibilbideak – Faros de Innovación programme of the Basque Government (GV), which builds on a fundamental project on strain engineering of 2D materials and aims to explore its technological potential, with a focus on sensing.

The researcher will be responsible for:

- Reviewing available 2D materials, strain-engineering approaches and results, and identifying the most promising concepts for applications.
- Designing, fabricating and characterizing proof-of-concept devices, and benchmarking their performance.
- Working in close collaboration with Tekniker (a nearby technology centre) and the project partners to reach a convincing sensing proof of concept.
- Exploring potential industrial end users and partners.
- Supervising students and contributing to the research of the group.
- Presenting the results through research meetings, conference contributions, publications and potential patent drafting.

The precise balance between these tasks will be adapted to the profile of the candidate and the evolving needs of the project.

Application Procedure

Apply by submitting a CV, a motivation letter and reference letters (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 further contact too.

Other Relevant Information

The position is open to start on 1 January 2027 and runs until the end of the project, on 31 December 2028.

What we offer:

- Hands-on experience in technology transfer, working in close collaboration with a technology centre.
- The opportunity to develop your own autonomous research at the interface between fundamental science and technological development at low TRLs.
- Learning from the expertise of an international consortium.
- Experience in supervising students.
- A research environment with in-house strain-engineering and device-characterization capabilities, and the opportunity to build a professional career and network.

We provide a highly stimulating environment with state-of-the-art infrastructures, and unique professional career development opportunities. We offer and promote a diverse and inclusive environment and welcomes applicants regardless of age, disability, gender, nationality, ethnicity, religion, sexual orientation or gender identity.