

Call reference number	2026-17
Call name	Predocloral Position in the Electronic Properties of Two-Dimensional Materials under Controlled Deformation
Application Deadline	2026/09/25

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. Two-dimensional materials provide a unique platform for investigating physical phenomena arising from electronic confinement. Their properties are highly tunable, making it possible not only to tailor existing functionalities but also to engineer new ones. By modifying atomic distances and bond angles within the crystal lattice, strain engineering offers an exceptional means of controlling electronic phases and modulating or triggering emergent quantum phenomena. We are seeking a motivated pre-doctoral researcher with a background in materials science, condensed-matter physics, engineering, or a related discipline to participate in a project focused on the experimental and computational investigation of the physical properties of low-dimensional functional materials under precise mechanical deformation. The selected researcher will study how mechanical strain modifies the electronic, optical, and other functional properties of two-dimensional quantum materials. We offer a pre-doctoral position in the framework of this project "KK-2026/00028 – CICE", funded by the Basque Government, with a finishing date on 31/12/2027. The project will combine advanced experiments on nanoscale materials and devices with complementary finite-element and multiphysics modelling

Skills and Requirements
-Bachelor's or Master Degree in Physics, Engineering, or related areas. The following qualifications and experience will be positively valued but are not mandatory: - Experience in the electrical, optical, or mechanical characterization of materials or nanostructures. - Experience with computational methods, particularly finite-element or multiphysics modelling. - Experience in instrumentation development, experimental automation, or data acquisition. - Experience in scientific data processing and analysis. - Programming skills in Python and/or MATLAB.

Skills and Requirements

- Good scientific writing, communication, and presentation skills.
- Ability to work both independently and collaboratively within a multidisciplinary research environment

Work Program / Duties / Responsibilities

The candidate will contribute to the experimental and computational study of material properties under controlled mechanical conditions. The work will involve sample preparation, device fabrication and advanced electrical/optical measurements for low-dimensional materials characterisation at the nanoscale.

The researcher will also carry out complementary multiphysics material simulations and will analyse and interpret both experimental and simulated data in collaboration with the supervisors and other project partners.

The results will be presented through research meetings, scientific reports, conference contributions, and publications. The precise balance between experimental and computational work will be adapted to the profile of the candidate and the evolving needs of the project.

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 further contact too.

Other Relevant Information

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.