

The Nanoscience Cooperative Research Center, CIC nanoGUNE, located in Donostia - San Sebastian, Basque Country (Spain), is currently looking for

## **2 POST- DOCTORAL RESEARCHERS**

on

### **Electronic nanoscale devices with transition-metal dihalides & Non-reciprocal transport in low symmetry heterostructures**

NanoGUNE is a research center devoted to conducting world-class nanoscience research for a competitive growth of the Basque Country. NanoGUNE is a member of the Basque Research and Technology Alliance (BRTA) and is recognized by the Spanish Research Agency as a María de Maeztu Unit of Excellence.

The [Nanodevices group](#), co-led by [Prof. Luis E. Hueso](#) and [Prof. Fèlix Casanova](#), is currently composed of 25 members including senior and junior researchers. The group counts with extensive research facilities for fabrication and characterization of devices and several active research lines spanning from nanofabrication to 2D (optp-)electronics and spin transport. More information can be found at <http://nanodevices.nanogune.eu>

#### **Position 1) Electronic nanoscale devices with transition-metal dihalides**

In collaboration with an experimental group specialized in materials growth and surface science at the nearby Materials Physics Center, we will explore the electronic properties of the recently discovered transition-metal dihalides. Devices combining these materials with magnetic and superconductive transition-metal dichalcogenides will as well be under investigation.

#### **Position 2) Non-reciprocal transport in low symmetry heterostructures**

In collaboration with theory groups at the nearby Donostia International Physics Center and the Materials Physics Center, we will study non-reciprocal transport in crystalline materials and heterostructures without inversion symmetry.

The **research** in both cases will include the preparation of samples, their patterning using advanced techniques such as e-beam lithography, and their electrical characterization at low temperatures and high magnetic fields. The results will be discussed in regular with our collaborators in these projects, and we expect the successful candidate to prepare manuscripts for publication in high-impact journals.

The successful **candidate** will have a PhD in Physics or a similar field and should have experience in some or all of the following topics:

- Preparation and characterization of 2D materials
- Nanofabrication. Lithography
- Electrical transport
- Raman and IR spectroscopy
- Atomic Force microscopy

Although not compulsory, the following points will be considered:

- Previous track record in publications at the highest level.
- Self-motivated and a team player willing to coordinate the research in a particular topic.

We offer an international and competitive environment, state-of-the-art equipment, and the possibility to perform research at the highest level. We **promote** teamwork in a diverse and inclusive environment and welcome all kinds of applicants regardless of age, disability, gender, nationality, race, religion, or sexual orientation.

The **position** should start no later than July 1, 2023 and go on for up to 24 months (with a possible extension) in the [Nanodevices group](#).

Candidates should **apply** by completing the form below and attaching the following documents:

- A complete CV, including the name and contact details of at least three possible reviewers
- A cover letter
- <https://www.nanogune.eu/en/nanogune/join-us/open-position/341-post-doctoral-researchers-electronic-nanoscale-devices-transition-metal-dihalides-non-reciprocal>

The **deadline** for application is **February 28, 2023**.

*NOTES:*

*(i) All applicants will receive an answer after the end of the selection process; but please note that due to the large number of submissions that are expected, we cannot provide individual feedback.*

*(ii) Additional information about nanoGUNE's commitment towards [HR excellence in Research and Gender Equality](#) are available on our website.*

*(iii) We encourage you to subscribe to our [HR mailing list](#) to receive information related to nanoGUNE's open positions and open calls for different training and talent attraction programs.*