

## Company Description

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 27 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 electronics and spintronics. More information can be found [here](#)

## Information

 **Deadline:** 2024-04-21  
 **Category:** Business  
 **Province:** Gipuzkoa

 **Country:** Basque Country  
 **City:** Donostia-San Sebastián

## Company

CIC nanoGUNE



## Main functions, requisites & benefits

### Main functions

The candidate will work on an international collaborative project entitled "FEINMAN 2.0: Super Energy Efficient Devices enabled by Quantum Materials". This project is funded by Intel Corp., the world leading microprocessor company. The research topic encompasses the interconversion between spin currents and charge currents (spin Hall effect, Edelstein effect) in novel materials such as Dirac semimetals. The project also foresees the integration of working spin-to-charge nanodevices with tunnel barriers and with magnetoelectric substrates. The final goal is to help implement the magnetoelectric spin-orbit (MESO) logic technology proposed by Intel [S. Manipatruni et al., Nature 565, 35 (2019)]. The research will require advanced nanofabrication of devices (thin film deposition, electron-beam lithography, etching), together with their magnetotransport measurements (including harmonic Hall measurements).

### Requisites

Candidates must have a: Ph.D. in Physics or a similar field. Proficiency in spoken and written English. Although not Compulsory, the following points will be considered: Experience in any of these experimental techniques: e-beam lithography, materials growth and characterization, etching, electrical transport measurements (including harmonic Hall measurements). Previous knowledge in spintronics, spin-orbit torques, magnetic tunnel junctions. Strong track record in publications at the highest level. Self-motivated and a team player willing to coordinate the research in a particular topic. The position will start as soon as possible after the end of the application period and go on for up to 3 years in the Nanodevices group

### Benefits

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

