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

MASTER STUDENT

to work on

Exploiting the spin-orbit coupling in spintronic nanodevices

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.

Spin orbitronics is an expanding field in Condensed Matter Physics that aims to utilize different phenomena in magnetism and spintronics caused by the spin-orbit coupling. One of the most studied phenomena is the interconversion between spin currents and charge currents in novel materials and interfaces, which has a strong potential to be harnessed for energy-efficient logic and memory tasks for processing of information. In this project, we aim to explore the spin Hall effect in heavy metals, the Edelstein effect at Rashba interfaces or the spin-momentum locking at topological insulators to help implementing the recent proposal by Intel of a magneto-electric spin-orbit logic. An example can be seen in our recently joint paper: V. T. Pham et al., Nature Electron. 3, 309 (2020) [free pre-print here], Phys. Rev. B 104, 184410 (2021) and Nano Lett. 20, 9, 6815 (2020).

In this **project**, the student will be responsible for the design and the fabrication of nanodevices (thin film deposition, electron beam lithography, etching). (S)he will be also involved in the magneto-transport measurements (high magnetic fields and low temperatures), data analysis, and drafting of results.

We offer an international and competitive environment, state-of-the-art equipment (including a class 100 cleanroom for nanofabrication capabilities), and the possibility of performing research at the highest level.

CIC nanoGUNE's Nanodevices Group is mainly interested in the electronic properties of low-dimensional systems. Our research focuses spintronics, multifunctional devices and advanced nanofabrication.

For more information, see our website at https://www.nanogune.eu/nanodevices

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

a. A complete CV

b. A cover letter

The **deadline** for applications is **13/03/2025**.

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.