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
El responsable es Felix Casanova

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 **position** is offered in the Nanodevices Group, led by Casanova Fernández, Felix / Hueso Arroyo, Luis (l.hueso@nanogune.eu / f.casanova@nanogune.eu). 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 spin transport.

The candidate will join a **research line** focusing on different research themes: Spintronics, Multifunctional devices and Advanced nanofabrication. We are mostly interested in the electronic properties of systems in reduced dimensions. More information can be found at https://www.nanogune.eu/nanodevices.
The aim of the **project** is to - Project: CIC052011003 - GV_IKERBASQUE_Start Up_CIC05_Hueso

- Introduction: 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) [A free preprint is available here: https://arxiv.org/abs/2002.10581].

- Work Plan: In this project, the Master 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..

The successful **candidate** will have a .
Additionally, the candidate should demonstrate experience in the following skills:
Although not compulsory, the following points will be considered:

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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 is expected to start in 01/10/2021 and for a total length of up to 10 months (01/10/2021 - 31/07/2022) in the Nanodevices Group. The contract will be funded by the .

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

a. A complete CV

b. A cover letter and at least two reference letters grouped in a single PDF file

The **deadline** for applications is **30/06/2021**.

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.