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

POST-DOCTORAL RESEARCHER

to work on

Spin dynamics in graphene nanostructures (SPRING)

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.

We are seeking for candidates to fill a Postdoctoral position in experimental physics, in the fields of molecular physics and condensed matter, to perform research within the framework of the H2020-FET Open project SPRING (Spin Research in Graphene).

Spins are the fundamental property of electrons and atoms on which new technologies for faster and more power efficient components, are being developed. The SPRING project explores the potential of graphene nanostructures to host localized spins, to build up collective spin states, and to detect and manipulate them through electrical methods.

The goal of this post-doctoral **research project** is to study the coherent dynamics of individual electronic spins in graphene by performing Electron Spin Resonance measurements with a low-temperature scanning tunneling microscope set up. The target of this research is to determine the coherence timescale of pi-radical spins in graphene, and study how it depends on lattice site, graphene flake structure, and coupling with environment, with the goal of turning them potential systems for quantum spintronics.

The expected **research activities** are the following:

I. the fabrication of custom-crafted graphene nanoribbons with a targeted spin texture via on-surface synthesis
II. the tunneling spectroscopy identification of their spin-polarized states
III. the development of effective strategies to incorporate spin-hosted graphene nanostructures into our nanoscale microwave set up for their ESR-STM characterization.

For the implementation of this project, the successful candidate will **benefit** from active collaborations with al the partners of the SPRING consortium, combining expertise in theory, organic synthesis, ESR, multiterminal transport, and single-molecule chemistry. More information about the SPRING partnership and our current activities can be found in the project's web site *springfetopen.eu*.

We seek for candidates with strong competencies in experimental nanophysics and seeking for career in science. We **offer** an international and competitive environment, state-of-the-art equipment, and the possibility to perform research at the highest level, which could facilitate career promotion towards leading independent research positions.

The **ideal candidate** should have a Doctorate in experimental Physics or related fields, with a background and some experience in scanning probe methods and solid state phenomena, proficiency in English and communication skills, good hands on experimental work, and cooperative attitude to teamwork.

The **position** can start 1st September, 2021, but starting date can be moved depending on the candidate's situation. The research contract is for one year, and exists the possibility of extension beyond this date. Our group will support candidates seeking for competitive funding in local, Spanish and European funding schemes.

The nanoGUNE hosting group, led by Nacho Pascual, is composed of 15 members, and collaborates actively with groups in our local environment. The group's main research focus is the atomic-scale resolution of fundamental quantum phenomena in atoms/molecules on surfaces, and our experimental toolset is based on low-temperature probe microscopies and spectroscopies. The research will be performed under the supervision of Prof. Nacho Pascual. More information about our research group can be found in www.nanogune.eu/nanoimaging

San Sebastian is a middle size city lying directly at the Atlantic seacoast and surrounded by a sensational environment of hills and mountains full of tradition and nature. The city is close to the French border, showing a dynamical cultural scene and renowned for its Basque cuisine.

For application please fill the form in https://www.nanogune.eu/nanoimaging/join-us and submit:

- an updated CV, including contact information to two reference scientists
- a letter of interest, including research statement

The position will be kept **open until filled**, but candidates review will start on June 1st, 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) A*dditional 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.

CIC nanoGUNE
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