

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

PRE DOCTORAL RESEARCHER

to work on

Molecular Magnetism on Superconducting Materials

We offer a **PhD position in Molecular Quantum Physics**, oriented to the nanoscale investigation of quantum states of molecules using low-temperature scanning tunnelling microscopy. The PhD project will study the interaction of magnetic molecules with superconducting platforms, aiming to coherently manipulate their spin states. The expected research will combine electronic quantum transport with microwave spectroscopy, using a scanning tunnelling microscope at low temperatures. This approach holds great promise for controlling quantum states at the level of individual electron spins.

The PhD student will grow graphene-based magnetic molecular architectures on novel superconducting platforms and study their spin dynamics, with the goal of uncovering new concepts, methods, and strategies for quantum state manipulation.

The **successful candidate** is expected to hold a Master's degree (or equivalent) in Physics, Materials Science, Nanotechnology, or a related field; to have demonstrated background in experimental condensed matter physics, nanoscience, or a closely related discipline, and programming skills and experience with scientific software packages (e.g., MATLAB, Python) for data analysis and simulation. Previous experience with scanning tunneling microscopy (STM), low-temperature experimental setups, or single-molecule spectroscopy will be advantageous. Additionally, the candidate should demonstrate excellent written and verbal communication skills in English, including the ability to present research findings effectively.

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** on **01/06/2025** in the [Quantum Probe Microscopy Group](#), led by Prof. Nacho Pascual. The contract will be **funded by the European Research Council grant CONSPIRA (ERC-AdG 101097693)**.

Candidates should **apply** by completing the **form below** and attaching the following documents grouped in a single PDF file:

- A complete CV
- A cover letter, stating research interests, and at least two reference letters

The **deadline** for applications is **28/02/2025**.

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.