

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.

Information

 Deadline: 2025-02-28
 Category: Academia
 Province: Gipuzkoa

 Country: Basque Country
 City: Donostia-San Sebastián

Company

CIC nanoGUNE



Main functions, requisites & benefits

Main functions

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.

Requisites

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.

Benefits

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. More information can be found at: <https://www.nanogune.eu/en/research/groups/quantum-probe-microscopy> The contract will be funded by the European Research Council Grant CONSPIRA (ERC-AdG 101097693).