

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. We are pleased to offer a Postdoctoral position in the field of Cryogenic electronics for Quantum Computing at nanoGUNE. The project is part of a collaborative effort between academic and industrial partners to develop low-noise, low-power cryogenic amplifiers for solid-state qubits. The selected candidate will join a multidisciplinary collaboration between IC designers and Quantum Scientist and Engineers. The candidate will be responsible for agreeing the specifications of the low-noise amplifier (LNA), contributing to the design, test it in isolation at room and deep cryogenic temperatures and demonstrate its operation alongside qubit devices.

Information

 Deadline: 2025-05-31
 Category: Business
 Province: Gipuzkoa

 Country: Spain
 City: Donostia-San Sebastián

Company

CIC nanoGUNE



Main functions, requisites & benefits

Main functions

Establish the LNA specifications for best performance with semiconductor spin qubits. Build cryogenic test set ups to test the LNAs in isolation and alongside qubit devices. Perform S-parameter and noise characterisation of the LNAs (0.1-2 GHz). Perform electrical characterization of silicon devices at millikelvin temperatures and high magnetic fields. Perform dynamical operations on spin qubits using high frequency electronic equipment. Collaborate with interdisciplinary teams, quantum scientist and engineers and IC designers. Analyse and interpret experimental data, contributing to scientific publications, patents, and presentations. Engage with the wider international research community by participating in conferences, workshops, and collaborative projects.

Requisites

PhD in Physics, Electrical Engineering, or a related field from a top tier university/research centre. Background in solid-state physics, semiconductor devices, quantum information, and/or analogue circuits is desirable. Experience in data analysis and programming, particularly in the use of Python, Git, and Gitlab. Excellent communication skills in English, both written and verbal. Ability to work independently and as part of a collaborative research team.

Benefits

A postdoctoral salary for (1.5 years) with possibility to extend the contract. Access to state-of-the-art cryogenic laboratory facilities including Bluefors Gen2 dilution refrigerators, high end electronics and computational resources. Opportunities for research stays at partner academic and industrial institutions, participation in conferences, and involvement at international collaborations.