RobustSuperQ – Job offer

3-year post-doc position

In Germanium-based qubits

Job description

The experimental researcher will join an existing team (3 PhDs, 3 staff researchers, 2 engineers) focusing on the development of novel quantum electronics based on Ge/SiGe heterostructures. This emerging material, which embeds a high-mobility two-dimensional hole gas, has been identified as a promising candidate for spin qubits and hybrid superconductor-semiconductor qubits[1]. Along this line, we have already obtained some first encouraging results, such as the demonstration of ballistic hole transport over long distances[2] and the realization of Josephson field-effect transistors and gate tunable SQUIDs[3]. The post-doctoral salary includes social security and it takes into account the educational and professional path of the candidate.

In the LaTEQS Laboratory of CEA in Grenoble https://www.lateqs.fr

The LaTEQS laboratory, located on the Minatec campus of CEA, hosts multiple dilution refrigerators, mostly dry and equipped with vector magnets and high-frequency/low-noise measurement electronics. The proposed research activity is led by Romain Maurand, François Lefloch and Silvano De Franceschi. It is part of a large multi-institutional initiative on silicon-based quantum information which gathers researchers and engineers from CEA, CNRS, and University Grenoble Alpes. We receive support from the grants, including an ERC Synergy Grant, and from the French National Research Agency, notably through the French Quantum Plan. For more information: https://www.quantumsilicon-grenoble.eu.

Starting date: Immediately

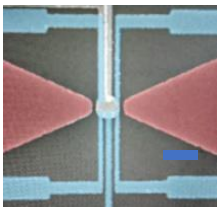
Job requirements

Candidates are expected to have a PhD in experimental physics; experience in one or, hopefully, more of the areas of nano-fabrication, high-frequency measurement techniques , low-temperature electronic transport; the ability and interest in the supervision of graduate and undergraduate students

How to apply

Please send your application to silvano.defranceschi@cea.fr
Required documents: CV, publication list and preferentially two reference letters

1. G. Scappucci, et al., Nature Reviews Materials 6, 926–943 (2021).
2. R Mizokuchi, et al., Nano letters 18, 4861–4865 (2018).
3. F. Vigneau et al.,Nano letters 19, 1023–1027 (2019).



Example of a two-layer gate structure defining a hole quantum dot in a Ge/SiGe heterostructure. This structure was fabricated in our cleanroom. Scale bar: 100nm

PROGRAMME ET EQUIPEMENTS PRIORITAIRES DE RECHERCHE QUANTIQUE

Pheliqs Lateqs Quantum Physics & Engineering

FRANCE QUANTUM BASIC RESEARCH PROGRAMME

https://www.robustsuperq.fr

Position : Post-doc
Duration: 3 years
Location: Grenoble https://www.lateqs.fr
Contact: silvano.defranceschi@cea.fr