Post-doc position at Institut des Nanosciences de Paris

Starting date: as soon as possible

Project: The applicant will be working on one on-going research project. The project deals with the study of superconductivity combined to Rashba spin-orbit coupling in 2D crystalline monolayers [1]. Such ultimately thin superconducting atomic monolayers will be used as a platform to study controlled weak disorder effects on 2D superconductivity or to induce 2D topological superconductivity [2,3].

Research environment: The applicant will work in close collaboration with PhD students, master students, permanent CNRS researchers and engineers. The main experimental investigations will be carried out with a state-of-the-art STM working at 300mK in high-magnetic field under UHV. A combined STM/AFM equipped with a vectorial magnet (2T vertical, 1T horizontal) working at 1.5K under UHV is currently being developed and will be used once completely set-up. A VT-STM coupled to a preparation chamber will be available for growth studies. The group is in close contact with leading theoreticians in the studied fields. The laboratory has very strong technical capabilities (TEM, SEM, cleanroom, cryogenics, electronics, machine shop…).

We are looking for a talented and motivated postdoctoral researcher interested in this experimental condensed matter physics project. A one year position is available, with possible extension. If you are interested please contact us (see email below). The applicant should have a PhD in experimental condensed matter physics and an excellent experimental background either in superconductivity or scanning tunneling spectroscopy at low temperature.

Related publications:

[1] ***Remarkable effects of disorder on superconductivity of single atomic layers of lead on silicon***, C. Brun et al. Nature physics 10, 444 (2014)

[2] ***Two-dimensional topological superconductivity in Pb/Co/Si(111)***, G. Ménard et al. Nature communications 8, 2040 (2017)

[3] ***Isolated pairs of Majorana zero modes in a disordered superconducting lead monolayer***, G. Ménard et al. Nature communications 10, 2587 (2019)

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PROJET FINANCÉ PAR L'ANR - PROJECT FUNDED BY THE ANR