



## Post-doc position at Institut des Nanosciences de Paris

**Starting date: as soon as possible**

**Project:** The applicant will be working on two on-going research projects. The first one is related to the study of disordered superconducting thin films in link with the superconductor-insulator transition. The second deals with the study of superconductivity combined to Rashba spin-orbit coupling in 2D crystalline monolayers that will be used as a platform to induce 2D topological superconductivity.

**Research environment:** The applicant will work in close collaboration with several 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 two-year position is available (renewable each year, with possible extension to three years). 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:

- *Two-dimensional topological superconductivity in Pb/Co/Si(111)*, G. Ménard et al. arXiv:1607.06353 (2016)
- *Remarkable effects of disorder on superconductivity of single atomic layers of lead on silicon*, C. Brun et al. Nature physics 10, 444 (2014)
- *Confinement of superconducting fluctuations due to emergent electronic inhomogeneities*, C. Carbillet et al. Phys. Rev. B 93, 144509 (2016)

### Contact:

Tristan Cren, [tristan.cren@upmc.fr](mailto:tristan.cren@upmc.fr)

Christophe Brun, [christophe.brun@upmc.fr](mailto:christophe.brun@upmc.fr)