



# Postdoctoral Position

at [Laboratoire Albert Fert](#), Palaiseau (Paris area), France

We are looking for a postdoctoral researcher (**experimentalist**), who will join the [Superconductivity Group](#) at *Laboratoire Albert Fert* to work on Josephson and proximity devices based on cuprate superconductors and 2D materials.

This position is funded by the European EIC Pathfinder Open project JOSEPHINE (2024-2028), which aims to develop novel superconducting electronics schemes based on high- $T_c$  superconductors. One of the project's facets is to fabricate and study Josephson devices based on d-wave cuprate superconductors and 2D Dirac materials, following earlier developments of the group [1–3].

**Role:** The researcher will be involved in the fabrication of superconducting junctions and devices, their characterization via low-temperature ac/dc electrical transport measurements under different stimuli (electric fields, magnetic field, light). The researcher will work together with graduate and undergraduate students and, to some extent, be in charge of supervising and coordinating their work. The researcher will have to collaborate with other groups in Laboratoire Albert Fert as well as with other members of JOSEPHINE's consortium in Swedish, German, and Spanish institutions.

**Required competencies:** The candidate holds a PhD, and must be an experimentalist with proven experience in various of the following fields:

- Josephson physics, devices and measurements; superconducting proximity.
- Superconducting cuprates;
- Transport in graphene, 2D Dirac materials, and topological insulators.
- ac/dc magnetotransport, differential conductance measurements.
- Lithography, work in clean room environment; exfoliation and transfer of 2D materials.

**Personal & soft skills:** Excellent team player, rigorous and enthusiastic, the candidate has a strong scientific curiosity. Self-driven and motivated, she/he criticizes experiments and faces challenges in a constructive spirit. Fluent in spoken English, she/he writes well-organized papers in English.

For further information and applications, the candidates should send their CV to: Javier E. Villegas (javier.villegas (at) cnrs-thales.fr)

[1] D. Perconte et al., Nat. Phys. **14**, 25 (2018); [2] Phys. Rev. Lett. **125**, 087002 (2020); Ann. Phys. **534**, 2100559 (2022)



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