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, 2D materials and ferromagnets. This position is funded by the European EIC Pathfinder Open JOSEPHINE project (2024-2028), which aims to develop new superconducting electronics schemes based on high critical temperature (TC) superconductors. One aspect of the project involves manufacturing and studying Josephson devices based on d-wave cuprate superconductors, 2D materials, and ferromagnets, following earlier developments in the consortium [1-2]

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 collaborate with graduate and undergraduate students, and to some extent, will be responsible for 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;
- ac/dc transport characterization of superconductors
- Lithography, work in clean room environment;

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); Phys Rev Lett 125, 087002 (2020) ; Ann Phys 534, (2022).**
[2] D. Sanchez-Manzano et al. **Nat Mater 21, 188 (2022); Supercond Sci Technol 36, 074002 (2023); Appl Phys Lett 124, (2024).**

APPLICATIONS HERE

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