Offer: Postdoctoral researcher (F/M) in physical metallurgy, focused on embrittlement mechanisms of metallic materials at the atomic scale.

Link: https://emploi.cnrs.fr/Offres/CDD/UMR6634-CHRVUR-067/Default.aspx

Start: 1st of September 2026 at Groupe de Physique des Matériaux (GPM) – CNRS UMR 6634

Duration: 15 months (extension of 1-3 months possible)

The mission: Metals and alloys are known for their high mechanical strength and ductility. However, when they contain impurities, they can become brittle and break without warning. This postdoctoral project seeks to address this challenge by investigating the mechanisms of brittle fracture at the atomic scale. Such an investigation will be done using a unique tool in the world, SATMET, developed at GPM. This instrument combines a transmission electron microscope and an atom probe, enabling the simultaneous analysis of a material's crystallography, chemistry, and fracture mechanisms *in situ*, at the atomic scale.

The activity: _Microstructural characterisation through electron microscopes (scanning and transmission), atom probe tomography
_Instrumental development of mechanical testing at the atomic scale
_Understanding embrittlement phenomena and mechanisms through a novel approach.

Required qualifications: The candidate must be:
A young researcher with a PhD in materials science, condensed matter physics, metallurgical physics or physical chemistry.
Proficient with scanning electron microscopy coupled with focused ion beam and electron backscatter diffraction technique, scanning transmission electron microscopy and atom probe tomography.
Experience in impurity analysis in metallic materials, mechanics, particularly ductile-brittle transitions and interaction between crystal defects and impurities.
Ability to design and implement rigorous experimental protocols, and correlate observations with the theory of brittle/ductile fracture.
Experience with data analysis tools, such as Python or MATLAB is a plus.

Gross monthly salary: Between 3072 and 4259 euros (variation according to candidate's experience)

Supervisors:
Dr. G. Hachet (CNRS researcher)
Prof. W. Lefebvre (Professor)