



The MINOS LabEx (MInatec NOvel devices Scaling Laboratory of Excellence), is an alliance of Grenoble based academic laboratories from CNRS, University Grenoble Alpes, Grenoble Institute of Technology and CEA/Leti. MINOS Lab enables transfer of know-how and expertise generated in its laboratories with micro and nanoelectronics industrial partners.

Research area: Nanocharacterization, Material science, Nanotechnology

Post-doctoral position: **Advanced characterization of ultrathin inorganic materials with X-ray fluorescence**

Context: The post-doctoral position is part of MINOS labex research project and it will be carried out between CEA-LETI (<https://www.leti-cea.com/cea-tech/leti/>) and LMGP (<https://lmgp.grenoble-inp.fr/en>) laboratories.

Objectives: To develop and share X-ray fluorescence quantitative elemental analysis methodologies of ultra-thin inorganic materials to accelerate the development of advanced material processes. The following contributions will be extensively investigated: *instrumental* (from TXRF and GIXRF to XRF, using EDXRF and WDXRF detection and state of the art tools with multiple anodes), *modeling* (spectra-based FP-EDXRF) and *calibration strategies*. XRF methodologies will be specifically dedicated to :

- i/ ultrathin mono-element La and Al layers integrated in 10 nm CMOS gate stack
- ii/ the thin layers (5-50 nm) of perovskite structure oxides (lanthanum nickelate, La_2NiO_4) and fluorite (zirconia stabilized with yttrium oxide and cerium oxide doped with gadolinium) developed by the LMGP for memory applications (OxRAM)
- iii/ ultra-thin layers of lamellar sulphides synthesized and studied at LMGP (Ga_xS , Ti_xS) and at Leti (2D materials).

Requirements:

- PhD degree in materials science, physics, chemistry or related field.
- A very good knowledge of English language, both spoken and written.
- Good writing skills, ability to publish and promote your research
- Excellent communication, organizational skills and managerial ability for the project
- Proactive, creative, independent and highly-motivated candidate
- Interpersonal skills, problem-solving, initiative, rigor and teamwork abilities

How to apply

Please send motivation letter, CV, list of publications and contact details of two referees to

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