

## **Job Offer: Postdoctoral Position in Geochronology & geochemistry of deep subduction zone rocks**

**Project:** COLDNAOSE: deciphering fluid-rock interaction and deformation above the deep subduction interface

**Hosting laboratory:** Laboratoire de Géologie de Lyon (LGL-TPE), ENS de Lyon, France.

**Duration:** One-year position starting in February 2025, with the possibility of up to two renewals.

**Gross salary:** 2,750 – 3,500 € per month depending on experience. Salaries include Health and Retirement benefits.

### Context:

Exhumed subduction zones relicts are precious witnesses for understanding present-day deformation and fluid-rock interaction processes along active tectonic plates margins. In the ANR-funded COLDNAOSE project, we aim at studying the various fluid-rock interaction events that have occurred along and above ancient subduction interfaces, using exhumed metamorphic and metasomatic samples from varied suture zones. Deciphering the ages of protracted events using various methodological approaches will help in better constraining the feedbacks between fluid-rock interaction, serpentinization and long-term deformation in deep seated regions of subduction zones.

### Objectives:

In order to get accurate ages for the fluid pulses or deformation events and link those with changing fluid sources, we plan to combine different analytical techniques including (i) *in situ* U-Th-Pb SHRIMP dating of zircon (or Ti-rich minerals) crystals and associated oxygen isotopic signature of material collected in various field localities and (ii) *in situ* Rb-Sr dating of the various mica and amphibole generations observed in studied specimens. This latter laser-based technique will be implemented on a NEOMA MS/MS MC-ICP-MS which is a new analytical tool that can yield highly accurate Rb-Sr age dates, almost an order of magnitude better than traditional TQ-ICP-MS. After having tested the methodology on already-dated material, we will obtain new ages (points and potentially age maps) on the set of metamorphic/metasomatic rocks acquired in the frame of the COLDNAOSE research project. Trace elements on zircons and associated minerals will be measured at the LA-ICP-MS. Geochemical investigations will be performed after conventional petrographic investigations (electron probe, SEM and cathodoluminescence imaging).

### Working Environment:

The geochemistry lab at ENS de Lyon is a leading platform in Europe with numerous spectrometers and state-of-the-art analytical facilities. Rb-Sr dating will be performed on a NEOMA instrument that is located at the LGL-TPE, ENS Lyon, France (<https://lgltp.e.fr/acces-et-contacts/>). All zircon works will be performed at Granada University, Spain (Dpt of Mineralogy and Petrology, CIC & IBERSIMS facility, <https://www.ugr.es/~ibersims/ibersims/Welcome.html>). The project will be supervised by Prof. Samuel Angiboust (LGL-TPE – PI, geology), Dr. Aitor Cambeses (Granada University, zirconology) and Dr. Philippe Telouk (LGL-TPE, CNRS, lab. Manager, geochemistry).

Essential qualifications:

- PhD in Geochronology (or geochemistry).
- Proven track record of publications and conferences
- Hands-on Experience with in situ laser dating based on MC-ICPMS and/or SIMS
- Experience with the IOLITE software for data reduction is appreciated
- A knowledge of TIMS analytical techniques could be beneficial for running complementary analyses
- A very good command of written and spoken English is required
- Autonomy, collaborative skills and ability to work within an interdisciplinary team.

Application:

ENS Lyon is committed to promoting diversity and inclusivity. We encourage applications from all qualified individuals, including those from underrepresented groups in Earth sciences. Candidates are welcome to contact Samuel Angiboust ([samuel.angiboust@ens-lyon.fr](mailto:samuel.angiboust@ens-lyon.fr)) for further information. Application forms should be sent **before November 1st, 2024**, and contain a cover letter, a CV with a list of publications, and the names and contact information of 2-3 references.