

POSTDOCTORAL position at ISTERre, Univ. Grenoble Alpes

SECTOR: Higher Education Institution

INSTITUTION: Univ. Grenoble Alpes, University of Innovation

One of the major research-intensive French universities, Univ. Grenoble Alpes enjoys an international reputation in many scientific fields, as confirmed by international rankings. It benefits from the implementation of major European instruments (ESRF, ILL, EMBL, IRAM, EMFL*¹). The dynamic ecosystem, grounded on a close interaction between research, education and companies, has earned Grenoble to be ranked as the 5th most innovative city in the world. Surrounded by mountains, the campus benefits from a natural environment and a high quality of life and work environment. With 7000 foreign students and the annual visit of more than 8000 researchers from all over the world, Univ. Grenoble Alps is an internationally engaged university.

A personalized Welcome Center for international students, PhDs and researchers facilitates your arrival and installation.

In 2016, Univ. Grenoble Alpes was labeled «Initiative of Excellence ». This label aims at the emergence of around ten French world class research universities. By joining Univ. Grenoble Alpes, you have the opportunity to conduct world-class research, and to contribute to the social and economic challenges of the 21st century ("sustainable planet and society", "health, well-being and technology", "understanding and supporting innovation: culture, technology, organizations" "Digital technology").

* ESRF (European Synchrotron Radiation Facility), ILL (Institut Laue-Langevin), IRAM (International Institute for Radio Astronomy), EMBL (European Molecular Biology Laboratory), EMFL (European Magnetic Field Laboratory)

Key figures:

- + 50,000 students including 7,000 international students
- 3,700 PhD students, 45% international
- 5,500 faculty members
- 180 different nationalities
- 1st city in France where it feels good to study and 5th city where it feels good to work
- ISSO: International Students & Scholars Office affiliated to EURAXESS

LOCATION: France, Grenoble

MANDATORY REFERENCES:

CDP TITLE: Origin of Life

JOB PROFILE (Title): Origin of life on Earth and beyond; X-ray analyses of Mars Returned Samples under quarantine

SCIENTIFIC HOSTING DEPARTMENT (LABORATORY'S NAME): ISTERre

SUPPORTER'S NAME: Pr. *Alexandre Simionovici*

CONTACT: *Alexandre.Simionovici@univ-grenoble-alpes.fr*

RESEARCHER PROFILE:

- *Recognized researcher (PhD holder not yet fully independent)*
- *Established researcher (Researchers who have developed a level of independence)*
- *Leading researcher (Researchers leading their research area or field)*

RESEARCH FIELD (keywords on Euraxess Jobs): Origin of life and Planetary Sciences

The cross-disciplinary project « Origin of Life » (funded by Univ. Grenoble Alpes IDEX, <https://origin-life.univ-grenoble-alpes.fr>) brings together the expertise of astrophysicists, astrochemists, planetary scientists, prebiotic chemists, biologists, geologists and paleontologists. It aims to understand the chemical processes that have led to life on Earth, to define habitability conditions for both Solar System planets and exoplanets, and to detect the most favorable exoplanets where to search for a putative existence of life in a near future. The partner laboratories and the

main science topic of “origin of Life” are IBS (extremophile science and metallo-prebiotic chemistry); IPAG (Interstellar medium, star and planet formation, Exoplanets, Solar System); **ISTerre (Earth Sciences, Solar System)**; DCM (prebiotic chemistry); GRESEC (media science); PCV (photosynthetic organisms); and LECA (Evolutionary sciences, Paleogenetics).

The search for traces of life, *in situ* on planetary bodies, in samples brought back to Earth, or in Archean rocks has become a scientific goal displayed by space missions in progress (ExoMars - ESA, Osiris Rex, Mars 2020 and MSR - NASA, Hayabusa II - Jaxa), or by Origin of Life projects. The scientific issues involve:

- reducing the risk of false positives in the analyses
- controlling the possible degradation of the biological traces during the first diagnostics.
- establishing the absolute elemental composition and chemical environment of the biological traces during the first diagnostics.

Imaging primordial fossil microorganisms on host minerals by advanced non-invasive/non-destructive X-ray imaging methods of high spatial resolution and sensitivity opens new capabilities for Sample Return missions. The Cross-

JOB PROFILE (Description):

Université Grenoble Alpes invites applications for a 2-year postdoc position *in Earth and Planetary Sciences, devoted to search of life on Earth at the Archean, as well as preparing X-ray analyses protocols under quarantine for Mars Returned Samples*. The position can start as early as September 2019, and will be hosted at the Institut de Sciences de la Terre (ISTerre).

A doctoral degree in Earth & Planetary sciences, Physics-Chemistry, Paleontology, Materials or Environmental sciences is required. Previous experience and interest in X-ray microscopy/spectroscopy or in organic/microbiological matter would be appreciated but not required. Simple programming skills would be a plus.

The candidate will carry out synchrotron X-ray imaging work on micro-samples of exobiological interest in a team of international experts from ENS Lyon (Dr. L. Lemelle) and the Observatory of Sciences of the Universe of Grenoble, (A. Simionovici) who work in collaboration with several agencies in the context of sample return missions and international research teams. She/He will be trained in conventional and advanced RX techniques on large instruments (Synchrotrons: ESRF, France; SLS, Switzerland; NSLS II, USA). She/He will work in close proximity to microbiologists and Raman imaging experts, in collaboration with geological and paleontological researchers of the Archean and Proterozoic eons from South Africa with whom collaborative projects are already in place.

Before applying, we encourage candidates to contact Alexandre.Simionovici@univ-grenoble-alpes.fr

Application files should include a research project (2-3 pages), a detailed curriculum vitae with a description of past research, the PhD diploma, a list of publications and the names of at least two persons who can be contacted for letters of references. Letters of recommendation are welcome. Short-listed candidates will be interviewed in July (by video-conference if desired).

Annual gross salary is 28500 euros for a candidate without research experience after PhD. The position is accompanied with a financial support to carry out the research project consisting of up to 10000 euros for basic equipment and travel resources. The postdoc will be employed by the Université Grenoble Alpes which is a major player in higher education and research in France (<http://www.univ-grenoble-alpes.fr/en/>). The position is located in Grenoble, a midsize university town located in a beautiful alpine environment.

Required languages: *English*

TYPE of CONTRACT: temporary, 24 months

JOB STATUS (Full time or part time): Full time

HOURS PER WEEK: 35

OFFER STARTING DATE: *September 1st, 2019*

APPLICATION DEADLINE: *June 1st, 2019 at 17h00 (CET).*

APPLICATION SENT TO: *Alexandre.Simionovici@univ-grenoble-alpes.fr*

SELECTION PROCEDURE

Applications will be evaluated through a three-step process:

- Eligibility check of applications on *June 15th, 2019*
- 1st round of selection: the applications will be evaluated by a Review Board. Results will be released on *July 1st, 2019*.
- 2nd round of selection: shortlisted candidates will be invited for an interview session in Grenoble (or by video-conference) before *July 15th, 2019*.