

Engineer in vacuum technology and noble gas mass spectrometry

Job offer from Institut de physique du globe de Paris | CNRS UMR 7154

Catégorie	A
BAP	B – Chemistry and Material Sciences
Corps	Research Engineer
Emploi – type REFERENS	Research engineer in chemical analysis
Durée	24 months (renewable for at least one year)
Affectation	IPGP - Site Cuvier
Rémunération	2600 et 3100 € gross income depending on previous experience (<=3 years and up to 10 years)
Date de la publication	***
Date d'embauche prévue	01 March 2023
Lieu	IPGP - 1, rue Jussieu - 75238 Paris Cedex

L'institut de physique du globe de Paris

A world-renowned geosciences organization, the IPGP is associated with the CNRS and an integrated institute of the Université Paris Cité. Bringing together more than 500 people, the IPGP studies the Earth and the planets from the core to the most superficial fluid envelopes, through observation, experimentation and modelling.

The research areas are structured through 4 main unifying themes: Interiors of the Earth and Planets, Natural Hazards, Earth System and Origins.

The IPGP is in charge of labelled observation services in volcanology, seismology, magnetism, gravimetry and erosion. And the IPGP's permanent observatories monitor the four active French overseas volcanoes in Guadeloupe, Martinique, Réunion Island and Mayotte.

The IPGP hosts powerful computing resources and state-of-the-art experimental and analytical facilities and benefits from first-class technical support. The IPGP provides its students with geosciences training that combine observation, quantitative analysis and modelling, and that reflects the quality, richness and thematic diversity of the research conducted by the IPGP teams.

This job offer is attached to the European project ATTRACTE (PI: G. Avce) funded by the European Research Council (<https://www.ipgp.fr/en/node/17590>). The goal of the project is to follow Earth's evolution over billions of years by analysing samples containing traces of paleo-atmosphere.



L'équipe et/ou le service

Website page of the CAGE team : <https://www.ipgp.fr/en/geoexp/experimental-geophysics>

Website of the PI : <https://aviceg.wordpress.com/>

The noble gas analytical platform is currently equipped with a Noblesse noble gas mass spectrometer (NuInstruments, multi-collection 1F3M version), a purification line and diverse extraction techniques (crushers, lasers, furnaces). The platform will host a new instrument and a new purification line in March 2023, funded by the ERC.

Missions

> The hired person will take part to most activities of the noble gas analytical platform of IPGP. Priorities concern the development, monitoring and repairs of vacuum equipments, purification lines and mass spectrometers. His mission is also to bring assistance to lab users (students and postdocs).

Activités

> Activities :

- Install, use and maintain vacuum systems
- Install, use and maintain fluids (cold water, compressed air, vacuum) on purification lines and instruments
- Install, test and tune equipments (purification systems, cryocoolers etc.)
- Install automation systems for experiments
- Give technical help to users (students and postdocs)
- Ensure that safety rules are respected.

Expected abilities

> Knowledge :

- General knowledge about metrology
- Professional knowledge about vacuum techniques and static noble gas mass spectrometry
- Knowledge about cryogenics
- Knowledge about development and programming of automation
- Knowledge about sanitary and safety rules

Know How To :

- Tune and use a noble gas mass spectrometer
- Establish a diagnostic in case of failure
- Write technical reports
- Follow technological innovations
- Use programming softwares: LabView, Matlab, Python
- Use office softwares and communication tools
- English : B2 level, daily interactions with english speakers

How to behave :

- Motivation
- Organisation, precision and method
- Team work



- Autonomy

Constraints and risks

> Work on classical opening hours from Mon to Fri

Work in lab environment with risks (electrical, chemical, cryogenics, high temperatures)

No remote work (lab experiments request a 5 over 5 days of presence)

Formation et expérience nécessaires

> Minimum 3 years of previous experience

> Degree : Master, Engineering degree or PhD

Modalité de candidature

> CV, motivation letter and summary of previous experience with noble gases as well as abilities linked to the job offer

> Deadline : 01 February 2023

> Contacts (2 contacts): G. Avice (avice@ipgp.fr) et J. Siebert (siebert@ipgp.fr)