

# Research Engineer (IR) position in new Piston Cylinder Laboratory

**Starting date: between 1 February and 1 May 2025**

**Duration: 24 months**

**Net salary: at least 33 k€/year (depending on experience)**

A new research group at GET laboratory opens a research engineer position (IR-CNRS) to set up novel experimental methods for studying rates of fluid-melt-mineral reactions to unravel the conditions of first continental crust formation and evolution. Kinetic data became now of crucial importance because at low reaction rates, equilibrium thermodynamic models cannot account of natural processes, whereas at high reaction rates, the existing geochemical models based on igneous rock geochemistry as a proxy of the deep reservoirs are far from real natural conditions. The new methodology lies in the use of kinetic experiments. Time-series experiments and kinetic modelling are now possible due to breakthrough advances in robust experimental tools such as piston cylinder technique used for investigation of reaction rates between mineral-melt and mineral-rock and modelling of the diffusion coefficients of elements and their isotopes in the rock-forming minerals and melts at high temperature.

The successful engineer will be responsible for the calibration, maintenance, and time-series experiments associated with the new piston cylinder (STRECON©) across a wide pressure-temperature range (0.2–6 GPa pressure range, at 900–1500°C). The current position is part of the ERC ADG-funded PLANETAFELSIC project (Work Packages 1 and 2). The work will be carried out in the recently constructed piston-cylinder laboratory at GET in Toulouse, France, in collaboration with other European laboratories. The experimental work requires the data analysis, travels and close collaboration with other work packages, specifically Work Packages 3 and 4.

## Prerequisites

Applicants should hold a recent PhD degree in Geology, Chemistry or Physics. The candidate must have a strong background in either petrology, mineralogy or physical chemistry, as well as a strong skills and enthusiasm for experimental work. We seek for a highly motivated person, with a strong background in experimental petrology and PhD experience in the piston cylinder techniques. Experience in kinetics of melt-rock and melt-mineral reactions and mineral-melt partitioning would be a plus. Preference will be given to young candidates (post-PhD experience <3 years), but exceptional “more experienced” candidates will also be considered. The candidate must be fluent in English. Knowledge of French is desirable and will be a plus.

## Application

Candidates should submit, in a single pdf file by email, a statement of research experience and interests, a detailed CV including the complete list of publications, and the names and contact information of three potential referees to: Dr. HDR Anastassia Borisova, [anastassia.borisova@get.omp.eu](mailto:anastassia.borisova@get.omp.eu), phone: (+33)5 61 33 26 31.

Review of applications will start immediately and will continue until the position is filled. Please contact Dr. Anastassia Borisova for additional information concerning the project. General information about the GET laboratory is available at: [get.omp.eu/Anastassia Borisova](http://get.omp.eu/Anastassia%20Borisova), Tél : 05-61-33-26-31 ; E-mail : [anastassia.borisova@get.omp.eu](mailto:anastassia.borisova@get.omp.eu)

## References:

Borisova A. Y., Zagrtzenov N.R., Toplis M.J., Bohron W.A., Nédélec A., Safonov O.G., Pokrovski G.S., Ceuleneer G., Bindeman I.N., et al. (2021). Hydrated Peridotite – Basaltic Melt Interaction Part I: Planetary Felsic Crust Formation at Shallow Depth, *Frontiers in Earth Science*, 9, DOI: 10.3389/feart.2021.640464.

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- Borisova A.Y., et al. (2020). Zircon survival in shallow asthenosphere and deep lithosphere. *American Mineralogist*, 105 (11): 1662–1671. doi: 10.2138/am-2020-7402.
- Holycross, M. E., Watson, E. B., 2018. Trace element diffusion and kinetic fractionation in wet rhyolitic melt. *Geochimica et Cosmochimica Acta*, v. 232, p. 14-29.