

Postdoctoral Researcher – Experimentalist on Pneumatic conveying of powders

Type of contract: fixed-term public contract 13 months/ postdoctoral contract 13 months
Category: non-managerial position
Job family: RESEARCHER
Field of activity:
Place of work: Saint-Etienne (42)
Earliest start date: 01/12/2026
Unit: Mines Saint-Etienne/ SPIN Research Center
The position reports hierarchically to: PMMG team leader

Joining Mines Saint-Étienne means committing to an institution where **science and innovation build a more sustainable future**. It is a school of excellence where everyone has the **opportunity to unlock their full potential** and **contribute to tackling the challenges of tomorrow**.

Ranked among the top engineering schools in France and recognized worldwide, our school, a member of the *Institut Mines-Télécom*, educates the talents of tomorrow while actively addressing major industrial, digital, and environmental challenges. By joining us, you become part of a community of 500 members of staff, 2,500 students and take part in an ambitious project: combining academic excellence, cutting-edge research, and positive societal impact.

The *Institut Mines-Télécom* brings together France's leading *Grandes Ecoles* to tackle major industrial, digital, energy, and environmental challenges. With its eight public *Grandes Écoles* and two affiliated Graduate Schools, it is the leading public institute dedicated to engineers and managers. Together, we imagine and build a sustainable future by educating the leaders who will shape tomorrow's transitions.

What we expect from you

As **postdoctoral researcher**, you will be at the heart of our missions in education, research, and innovation, assigned to the SPIN Research Center. Within this centre, you will combine your passion for fundamental science and industrial problematics.

SPIN Research Center is one of the five research center at Mines Saint-Etienne and is dedicated to chemical and process engineering with approximately 80 researchers and professors, postdocs, PhD students and interns, and is supported by administrative and technical staff. The research activities of the SPIN center spread over Natural and Industrial Processes through two CNRS joint-units : Georges Friedel Laboratory (UMR 5307) and the Environment City Society (UMR 5600 "Environnement Ville et Société"). You will develop your research within the team "Granular Matter Handling and Processing" (PMMG = Procédés de Manipulation de la Matière Granulaire) focusing on the experimental and numerical study of granular matter through multidisciplinary approaches such as geometrical and morphological characterization, inorganic chemistry and physics of complex fluids. The research topics addressed emerge from the collaborations with other research groups in Europe and beyond, as well as with industrial partners.

Granular matter is a specific state of the solid matter whose behaviour is partially described by established laws used for liquid or solids. A large fraction of manufactured materials requires solid particles handling (powders, agglomerates, pellets, tablets, etc.). Due to the large numbers of involved

particles the divided solids dynamics is complex . In the particular case of solid particles conveying, the pneumatic transport provides a case with particularly rich interactions between transported particles and confining pipe walls. Beyond the mechanical rebound, solid particles experience erosion or fracturing, changing their morphologies, electrical charges exchange modifying the further transport, local thermodynamics condition changes upon impact affecting cohesivity of the particles. In some cases, these chemo-physical interactions lead to deposit formation along the confining pipes, potentially affecting the conveying efficiency.

The expected work will be to develop an experimental setup able to study the various interactions existing in a model pneumatic conveying system in order to identify the mechanisms responsible for deposit formation. Thanks to the measurements of physical quantities such as flow rate, pressure drop, electrical charges, as well as from image analysis of video captures obtained with various powders and geometrical tubing configurations, the conditions leading to deposit formation will be established. The analysis and interpretation of the responsible mechanisms will be developed based on previous studies available in the literature. The supervision team will consist in researchers from the SPIN center, assisted by research engineers from our partner ORANO.

🔍 What we are looking for

You hold a:

- PhD in Chemical Engineering, Physics, Granular Matter Mechanics, or any other discipline related to the present topic.

And you have:

- Significant experience in scientific publishing and communication
- Advanced experience in experimental research and data treatment
- Strong skills in oral and written English

🌍 Why join Mines Saint-Étienne?

We support each of our employees on the path to excellence, with the conviction that together, **we can have a lasting and significant impact on our world.**

Joining Mines Saint-Etienne is the opportunity to find:

- **A stimulating environment:** Cutting-edge experimental resources, a welcoming working environment and a solid international network (T.I.M.E., EULIST).
- **A real impact:** Contractual research projects worth €11 million/year, mainly with industrial partners, A science culture centre, *La Rotonde*, which has been committed to science outreach for 25 years, welcoming over 50,000 visitors per year.
- **An incomparable quality of life:** 46/49 days of paid leave, partial remote working, 75% reimbursed public transport, financial support for carpooling and cycling and a social barometer where 83% of employees praise the quality of life at work.

Let's build a more sustainable future, through **science, engineering, and projects that make sense.**

 **Apply now!**

Application deadline: 02/10/2026

 Submit your application to our dedicated platform <https://institutminestelem.com/o/post-doctorante-ou-post-doctorant-experimentateur-sur-le-transport-pneumatique-de-poudres-cdd-13-mois>

As part of its Equality, Diversity, and Inclusion policy, the École des Mines de Saint-Étienne is committed to fair treatment of all applicants.

Additional information

- Remuneration set according to the candidate's profile, according to the rules defined by the management framework of the *Institut Mines Télécom*
- The positions offered for recruitment are open to all with, on request, facilities for candidates with disabilities
- Position open to civil servants (category A and B) and/or people on public contracts
- All applications may be subject to an administrative investigation

The selected candidates, after review of their applications, will be invited for interviews on [05/10/2026] in Saint-Etienne

Contacts

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Processing of personal data : <https://www.mines-stetienne.fr/en/candidate-gdpr-notice>