



SCIENCE & CREATIVITY TO INVENT A SUSTAINABLE WORLD



Research Engineer in Biotechnology and Microbial Ecology

Institution	IMT Mines Alès (National School of Mines of Alès)
Main assignment	Centre for Research and Teaching in Environment and Risks (CREER) – UPR GARANCe
Administrative residence	Alès (Gard Department – Occitanie Region)
Type of contract	24-month fixed-term contract – Public law contract – Full-time
Start date	02/02/2026

1 Presentation of our institution, CREER and UPR GARANCe

1.1 The Institut Mines-Télécom

The Institut Mines-Télécom (IMT), a major public institution as defined by the French Education Code, is a public scientific, cultural and professional institution (EPSCP) under the primary supervision of the ministers responsible for industry and digital technology. As the leading group of engineering schools in France, it brings together 11 public engineering schools across the country, which train 13,500 engineers and PhDs annually. IMT employs 4,500 people and has an annual budget of €400 million, 40% of which comes from its own resources. IMT has two Carnot institutes and 35 industrial chairs, produces 2,100 A-rank publications and 60 patents annually, and carries out €110 million worth of contract research.

1.2 IMT Mines Alès

Founded 180 years ago, **IMT Mines Alès** currently has 1,400 students (including 250 foreign students) and 380 staff. It has two campuses in Alès and also has sites in Montpellier and Pau. Its students are general engineers, specialist engineers (through apprenticeships), doctoral students and students on master's or specialised master's programmes. The school has three high-level scientific and technological research centres, which cover the fields of materials and civil engineering (C2MA), the environment and risks (CREER), and artificial intelligence and industrial and digital engineering (CERIS). IMT Mines Alès also supports economic development through programmes that assist businesses and local communities.

At IMT Mines Alès, each person is a key player in our Sustainable Development and Social Responsibility (SDSR) approach. We are committed to promoting environmentally friendly practices, fostering diversity and inclusion, and ensuring ethics in our activities. We encourage all our staff to adopt a responsible approach in their daily actions and to propose innovative ideas that reinforce our positive impact on society and the environment.



1.3 Centre for Research and Teaching in Environment and Risk (CREER)

Within the IMT Mines Alès School, CREER conducts teaching, research and development activities in the fields of industrial environment and risk.

It brings together a dedicated research unit, GARANCe (Management of Industrial Activities and Risks to Anticipate Future Changes), and a research team, "Water Resources and Territories" (ERT), whose members are affiliated with the HydroSciences Montpellier Joint Research Unit for their research activities. The CREER Centre also has two teaching departments ("Environment, Energy and Risks" and "Subsurface Engineering and Mineral Resource Exploitation") and four technology platforms (DOREE, PAQMAN, SIMULCRISE and SPARK).

1.4 UPR GARANCe (Management of Industrial Activities and Risks to Anticipate Future Changes)

GARANCe is a UPR created on 1 September 2025 and located within CREER. The unit is composed of members with expertise in engineering sciences, human and social sciences, and life and environmental sciences.

GARANCe aims to develop interdisciplinary research and provide a cross-disciplinary and systemic vision for the study, control and management of risk situations in response to future changes. The research conducted within the unit aims to characterise and model dangerous industrial or natural accidents, improve the management of industrial waste in the environment, and strengthen resilience and the ability to act in crisis situations. GARANCe's scientific trajectory is a continuation of the work carried out during the 2019-2024 period. Since its creation, GARANCe has been built on a solid foundation of multidisciplinary scientific expertise combining scientific excellence, cross-disciplinary approaches and societal and industrial roots. This new strategy aims to strengthen its scientific positioning, develop approaches to co-construction and knowledge transfer with industrial players, national research organisations, local authorities and non-governmental organisations, and consolidate its position within a structured network at the level of the institution, IMT, and at regional, national and international levels. GARANCe is based on technological and scientific platforms: PAQMAN (research in the field of air quality), SIMULCRISE (research and training in crisis management), and SPARK (study of hazardous phenomena).

The EUREQUA research team focuses its research on three main areas: i) Physics of accidental phenomena, ii) Improving waste management, and iii) Resilience, crisis management and anticipation. These combined skills are undeniable assets and key drivers for contributing to the challenges of the National Climate Change Adaptation Plan and European research dynamics.

The proposed position is part of the work carried out within the area of Improving waste management. The position focuses on the following research topics:

- ▶ Biological decontamination of gaseous and aqueous effluents, with a particular focus on issues related to methane
- ▶ Action of microbial communities on materials

Particular attention will be paid to:

- ▶ Detailed characterisation of microbial communities within natural and anthropised systems in different compartments (water, air, soil)
- ▶ Research into the relationships between microbial communities (biomass) and the service provided by the system (structure-function link, biotic/abiotic interactions).
- ▶ Understanding the mechanism of biofilm formation and growth

The CREER research centre has a P1 area for sample preparation, level 1 bacterial culture, molecular biology analyses, and activity measurements (gas chromatography), and a P2 area for the culture and experimentation of level 2 bacteria, fungi and viruses. The EUREQUA team has a test hall containing various pilot units. Inter-research centre research work is currently underway. The successful candidate will need to adapt to the interdisciplinary approaches used in the topics covered.



2 Job description

2.1 Tasks related to experimental testing

The successful candidate will focus on implementing technical and experimental solutions for research projects in the field of biotechnology using microbial ecology tools and concepts. More specifically, their main activities will consist of:

- ▶ Defining, developing, testing and formalising experimental protocols.
- ▶ Developing, fine-tuning and operating experimental devices, analysing metrological constraints and designing or upgrading experimental devices.
- ▶ Drafting technical, safety and design specifications for experimental devices.
- ▶ Contributing to the performance of tests and the implementation of associated metrological resources.
- ▶ Perform and validate data analysis, processing, and interpretation, processing and interpretation, and validate the results.
- ▶ Manage the financial resources associated with outsourced analyses.

2.2 Support tasks

The successful candidate will be required to provide support to the biology laboratory:

- ▶ Manage scientific equipment (maintenance, calibration) and consumables.
- ▶ Organise the layout of spaces and equipment.
- ▶ Manage biological waste.
- ▶ Provide training on biological risks.

2.3 Research tasks

The successful candidate will be able to get involved in research projects or thesis work by contributing scientifically to these activities. They will participate in various research topics in order to advance expertise in research areas, including writing publications and participating in national and international conferences.

2.4 Teaching duties

The successful candidate will also have the opportunity to participate in teaching assignments within the IMT.

In terms of supervisory activities, the successful candidate will be able to participate in research and the supervision of field assignments as part of the action-based teaching approach developed by the school, as well as tutoring students and employees (apprentices).

The successful candidate will have the opportunity to participate in other teaching assignments within the I2ER department, such as "Research and Development" assignments, monitoring 2A and PFE (End-of-Study Projects) internships, and participating in various student assessment panels.

Finally, the successful candidate will be able to participate, within their field of scientific and technical expertise, in initiatives designed to support companies or the school's incubator in order to promote the creation of spin-offs and the development of technology companies.

Required profile and general evaluation criteria

Required skills, knowledge and experience:

- ▶ Skills in microbiology, molecular biology, biochemistry, biotechnology and microbial ecology
- ▶ Proficiency in written and spoken English



Skills, knowledge and experience appreciated:

- ▶ Knowledge in the following areas: agro-materials, plant biology and environmental chemistry
- ▶ Knowledge of data acquisition (Labview, etc.)
- ▶ One or more experiences abroad and/or in a company would be a positive differentiating factor

Behavioural and interpersonal skills

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| ▶ Dynamism | ▶ Rigour |
| ▶ Autonomy | ▶ Initiative |
| ▶ Commitment | ▶ Adaptability |
| ▶ Intellectual curiosity | ▶ Organisational skills |
| ▶ Teamwork | ▶ Strong interest in experimental work |
| ▶ Ability to lead training sessions, research or collaborative projects | ▶ Interest in interdisciplinary subjects |

Minimum level of education and/or experience required:

- ▶ Doctorate degree with 8 years of higher education and solid experience

Application



Administrative conditions for application

The position offered by IMT Mines Alès is a 24-month fixed-term, full-time contract under public law, governed by the provisions of the Institut Mines-Télécom management framework, profession R, Research and Development Engineer, category II.

Salary: to be determined based on profile and experience.



Application procedure

Applications (CV and cover letter) should be sent exclusively to:

<https://institutminestelecom.recruitee.com/o/ingenieure-de-recherche-dans-la-specialite-biotechnologie-ecologie-microbienne-cdd-24-mois-imt-mines-ales>



Recruitment schedule

Application deadline:	30/11/2025
Provisional date for the selection panel:	12/12/2025
Desired start date:	2 February 2026



Contact persons

► Regarding the job description:

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