



SCIENCE & CREATIVITY TO INVENT A SUSTAINABLE WORLD

**We are
HIRING**

Postdoctoral Researcher

Bio-inspired biocomposites based on secondary plant cell walls: manufacturing processes and mechanical properties

Institution :	IMT Mines Alès (National School of Mines of Alès)
Research Teams :	C2MA / UPR PCH & UMR DMS-LMGC
Administrative location :	Alès (Gard Department – Occitanie Region)
Contract :	24-month fixed-term contract - Public Law Contract - Full-Time
Starting date :	January 4, 2027

Presentation of the institution and C2MA

Institut Mines-Télécom

Institut Mines-Télécom (IMT) is a public scientific, cultural and professional institution (EPSCP) under the primary supervision of the ministries in charge of industry and digital affairs. As the leading group of engineering schools in France, it brings together 11 public engineering schools across the country, educating 13,500 engineers and PhD graduates. IMT employs 4,500 staff and has an annual budget of €400 million, 40% of which comes from its own resources. IMT includes 2 Carnot Institutes, 35 industrial chairs, produces 2,100 A-rank publications per year, files 60 patents annually and carries out €110 million in contract research.

IMT Mines Alès

The school's mission statement is: "Building on its membership of IMT and its strong regional roots, IMT Mines Alès gives its students the best opportunities for professional fulfilment, enabling them to become responsible contributors to the development of the Nation while preserving the Planet's resources." Our core values are boldness, commitment, sharing and excellence.

Founded over 180 years ago, IMT Mines Alès currently hosts 1,400 students (including 250 international students) and employs 380 staff members. It has two campuses in Alès and additional sites in Montpellier and Pau. Its students include generalist engineers, specialist engineers (apprenticeship-based), PhD candidates, and master's and specialised master's students. The school also welcomes more than 500 trainees in continuing professional education.

The school has three high-level research and teaching centres operating in the fields of materials and civil engineering (C2MA), environment and risk management (CREER), and artificial intelligence, industrial and digital engineering (CERIS). These entities bring together around 85 permanent academic staff (half of whom hold HDR accreditation), 40 research support staff, and 100 PhD students and postdoctoral researchers. Together, they produce over 130 A-rank publications per year and €3 million in research contracts, one third of which are directly with industry. Research staff contribute to six research units, including four joint research units (UMR). IMT Mines Alès is accredited to award doctoral degrees within four doctoral schools.



The school operates 12 technological platforms and collaborates with 1,600 partner companies. Creativity is a defining characteristic that permeates all activities. IMT Mines Alès was the first institution to create a business incubator in 1984 (200 companies created to date, generating 1,000 jobs). The school offers rich and diverse career paths: academic staff may pursue professional mobility within the various IMT schools and may also take on functional management responsibilities (education, research, international affairs, economic development, etc.) on a part-time basis.

At IMT Mines Alès, each individual is a key contributor to our Sustainable Development and Social Responsibility (SD&SR) strategy. We are committed to promoting environmentally responsible practices, fostering diversity and inclusion, and ensuring ethical conduct in all our activities. Staff are encouraged to adopt responsible approaches in their daily actions and to propose innovative ideas that strengthen our positive impact on society and the environment.

The Centre for Materials of Mines Alès (C2MA)

C2MA is a research and teaching centre addressing industrial and societal needs in the field of materials through its three research teams:

- ▶ Durability of Eco-Materials and Structures (DMS), Alès
- ▶ Polymers, Composites and Hybrids (PCH), Alès
- ▶ Research on Materials–Environment Interactions (RIME), Pau

The activities of the UPR PCH (Polymers, Composites and Hybrids) and UMR DMS-LMCG (Durability of Eco-Materials and Structures) research teams aim to provide a comprehensive vision of eco-material development and their interactions with their service environments. The development of these materials combines mechanical strength, thermal stability and durability requirements, whether for civil engineering structures or high-performance industrial composites. Research topics span the entire materials life cycle (bio-based and recycled raw materials, processing and shaping, formulation and control of in-use properties), including end-of-life valorisation stages. A multidisciplinary approach is promoted, supported by a wide range of expertise from engineering sciences (process engineering, materials engineering, mechanical and civil engineering, etc.) to chemistry and physical chemistry (macromolecular and mineral materials, surfaces and interfaces), and by technological platforms equipped with high-performance facilities for processing, shaping and microstructural, thermal and mechanical characterisation of polymer and composite materials.

Job description:

We are seeking a highly motivated postdoctoral researcher for a 24-month position within the French PEPR Bioproductions project WALLMAT (<https://www.pepr-bioproductions.fr/projets-finances/axe-1-caracterisation-de-la-biomasse/wallmat>). The postdoctoral fellow will contribute to the development of nanostructured bio-based materials inspired by the hierarchical architecture of plant secondary cell walls. The main objectives will be to design and optimize sustainable processing routes for the fabrication of nanostructured materials and to establish structure–processing–property relationships. Particular emphasis will be placed on the processing and shaping of nanoscale building blocks into bulk materials using environmentally friendly approaches. The successful candidate will perform an extensive characterization of the resulting materials, with a strong focus on mechanical properties, including tensile, flexural and dynamic mechanical analyses. Advanced microstructural characterization techniques will be employed to correlate the organization of the nanostructure with the macroscopic performances. The work will be carried out in close collaboration with partners of the WALLMAT consortium in a multidisciplinary environment.

Required profile and general evaluation criteria

Your supervisor and the team will support you in developing your skills while valuing your experience and talents.

Minimum required education and/or experience:

- ▶ Candidates should hold a PhD in materials science, polymer engineering, mechanical engineering, or a related field, and have experience in materials processing and mechanical characterization.



Required technical and transversal skills:

- ▶ Expertise in polymer processing technologies including 3D printing
- ▶ Skills in microstructural analysis and mechanical modelling
- ▶ Knowledge in plant biology and/or plant biomechanics

The selected candidate will be fully integrated into a large research project involving assignments with project partners. He/she will be encouraged to produce scientific output (A-rank journal publications, oral presentations at national and international conferences, etc.).

Application



Administrative conditions

The position offered by IMT Mines Alès is a 24-month full-time fixed-term public law contract, governed by the management framework of Institut Mines-Télécom, profession P, Postdoctoral researcher, Category II.

Salary : €35,400 gross per year.



Application procedure

Applications (CV and cover letter) must be submitted **exclusively via:** 

<https://institutminestelem.com/o/postdoctoral-researcher-bio-inspired-biocomposites-based-on-secondary-plant-cell-walls-manufacturing-processes-and-mechanical-properties-24-month-fixed-term-contract-imt-mines-ales>

Applications will be carefully reviewed by the recruitment committee.



Recruitment schedule

A selection panel composed of several members will meet with candidates and ensure optimal conditions for a successful interview.

Application deadline: **October 4, 2026**

Indicative interview period: **October 20, 2026**

Desired starting date: **January 4, 2027**



Contacts

If you require further clarification on any aspects of the application, please do not hesitate to contact the people listed below:

For information regarding the position :

Nicolas LE MOIGNE, Assistant lecturer

 : nicolas.le-moigne@mines-ales.fr

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For administrative matters:

Géraldine BRUNEL, Director of Human Resources

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Onboarding

A smooth onboarding for a successful start

Upon arrival, you will benefit from an onboarding period designed to help you discover your missions and working environment. You will be welcomed by your HR contact, who will guide you through all necessary procedures to ensure a smooth start in your position.