


IMT Mines Alès
École Mines-Télécom


LA SCIENCE & LA CRÉATIVITÉ POUR INVENTER UN MONDE DURABLE

NOUS RECRUTONS

# Post-doctoral position

## Development of high value-added hemp textile fibers : impact of retting and functionalizations

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| Etablissement : | IMT Mines Alès ((National School of Mines of Alès) |
| Affectation principale : | Materials Research Center (C2MA) – PCH Research |
| Résidence administrative : | Alès (Département du Gard – Région Occitanie) |
| Type de contrat : | 11-month fixed-term contract – Public law contract – Full-time |
| Date de prise de poste : | **June 1, 2026** |

## Presentation of our institution and research and teaching center C2MA

### Mines-Télécom Institute

The Mines-Télécom Institute (IMT), a large establishment within the meaning of the education code, is a public scientific, cultural and professional establishment (EPSCP) placed under the main supervision of the ministers of industry and digital technology. Leading group of engineering schools in France, it gathers 11 public engineering schools spread across the national territory, which train 13,500 engineers and doctors. IMT employs 4,500 people and has an annual budget of €400 million, 40% of which is its own resources. The IMT has 2 Carnot institutes, 35 industrial chairs, produces 2,100 A-rank publications annually, 60 patents and carries out €110 million in contractual research.

### IMT Mines Alès

Created in 1843, IMT Mines Alès currently has 1,400 students (including 250 foreigners) and 380 staff. The school has 3 research and teaching centers of high scientific and technological level, which work in the fields of materials and civil engineering (C2MA), environment and risks (CREER), artificial intelligence and industrial and digital engineering (CERIS). It has 12 technological platforms and has 1,600 partner companies.

The school has three high-level scientific and technological research and teaching centers working in the fields of materials and civil engineering (C2MA), environment and risks (CREER), and artificial intelligence and industrial and digital engineering (CERIS). These entities comprise approximately 85 permanent faculty members (half of whom hold a habilitation), 40 research support staff, and 100 doctoral and postdoctoral students, who produce over 130 top-tier publications and €3 million in research contracts each year, a third of which are direct contracts with companies. These research staff contribute to six research units, including four joint research units (UMR). IMT Mines Alès is accredited to award doctoral degrees in four doctoral schools.

It boasts 12 technology platforms and 1,600 partner companies. Creativity is a core characteristic that permeates all its activities. The school was the first to create an incubator in 1984 (200 companies created to date, 1,000 jobs). The school offers rich and varied career paths: faculty members have opportunities for professional mobility within the different schools of IMT and can also, if they wish, take on responsibilities within the school's functional departments (academic affairs, research, international relations, economic development, etc.) for part of their time.




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

## Materials Research Center (C2MA)

C2MA is a research and teaching center that focuses on the needs of industry and society in the field of materials through its three research teams:

- Durabiliy of ecomaterials and structures at Alès
- Polymers, Composites and Hybrids at Alès
- Research of the Interactions between materials and their environment at Pau

## Presentation of the UPR PCH

The research activities of the PCH Research Unit focus on the **development and characterization of eco-materials primarily derived from renewable resources or recycled materials**. This work employs an approach that seeks to link material structure, transformation processes, performance properties (mechanical, thermal, fire resistance, absorption, etc.), and their evolution throughout the product lifecycle. The applications of the materials studied are numerous: building construction, transportation, energy, health, environment, fashion, and more.

The PCH Research Unit is organized around four research areas:

- Biomass and bio-based materials
- Surface and interface engineering
- Durability and recycling of polymers and composites
- Fire behaviour and thermal degradation of polymers

In order to carry out its research and development, the C2MA and therefore the UPR PCH have many state-of-the-art equipment for the implementation/shaping and characterization of thermoplastic and thermosetting polymer and composite materials.

## Job description :

This work is part of the ANR **TAFFTA** project, "Towards high value-added hemp fibers produced in southern France for textile applications - Understanding and optimizing crucial processing steps."

The **TAFFTA** project, which began in January 2024 and will run for 42 months, aims to bring together key French academic players in the field of plant fibers and to promote a technical hemp-based textile sector in southern France, for applications ranging from clothing to materials.

The main objective of the **TAFFTA** project is to study all stages of hemp processing, from field cultivation to spinning, with a particular focus on upstream stages such as retting (a post-harvest operation that involves leaving the stalks on the ground for 3 to 6 weeks) and fiber extraction from the stalks after retting. These stages determine the fiber quality for the downstream stages of spinning, weaving, and finishing. In this context, the **TAFFTA** project addresses the impact of the harvest location (Drôme, Lot, and Normandy in this case) on optimizing the various processing stages.

**The research planned for this postdoctoral study focuses on two stages of processing**. **The first stage is retting**, where the candidate will study the physicochemical properties (evolution of the primary and secondary cell walls of the stems, the biochemical composition during retting, etc.) and the mechanical properties (tensile strength) of hemp fibers during retting and according to the harvest location. **The second stage is finishing**, where the candidate will focus on developing surface treatments for hemp rovings produced by spinning to provide them with various functionalities, such as hydrophobicity, fire resistance, and antibacterial resistance. These treatments will be



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applied either chemically and/or physically (plasma treatment) and either at the roving level (impregnation line) or at the fabric level (scarfing).

## Desired profile and general evaluation criteria

Your manager and the team in place will support you in developing your skills, while promoting your experience and talents:

**Minimum education and/or experience required:**

- **PhD in materials science, with a focus on textiles**, and will have significant experience in the **microstructural, physicochemical, and mechanical characterization of fibers**
- Autonomous in carrying out the project and producing deliverables (report writing, oral presentations, publications, etc.) with close interaction with the various project partners.

**Required skills, knowledge, and experience:**

- Knowledge and experience in fiber or fabric processing and characterization will be a highly valued asset

**Required behavioral and interpersonal skills :**

- Dynamism
- Autonomy
- Commitment
- Teamwork
- Organizational skills
- Rigorous and methodical
- Initiative
- Adaptability
- Intellectual curiosity
- Creativity and innovation

## Application for the position

### Administrative application requirements

The position offered by IMT Mines Alès is a 11-month, full-time, fixed-term contract under public law, governed by the provisions of the Institut Mines-Télécom management framework, profession P, Postdoctoral Researcher, category II.

**Salary :** €35,400 gross per annum

### Application

Applications (CV and cover letter) should be sent **exclusively to** : ⚠
https://institutminestelecom.recruitee.com/o/post-doctorante-developpement-de-fibres-textiles-de-chanvre-a-haute-valeur-ajoutee-impact-du-rouissage-et-fonctionnalisations-cdd-11-mois-imt-mines-ales

### Recruitment process

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| **Application deadline :** | **March 26, 2026** |
| **Provisional date for the selection panel :** | **April 8, 2026** |
| **Desired start date :** | **June 1, 2026** |




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## People to contact

If you require further information regarding your application, please do not hesitate to contact the following individuals :

**Job description :**

**Anne BERGERET,** Professor
: anne.bergeret@mines-ales.fr
Tel : +33 (0)4 66 78 53 44

**Regarding administrative aspects :**

**Géraldine BRUNEL**, Director of Human Resources
: geraldine.brunel@mines-ales.fr
Tel : +33 (0)4 66 78 50 66

## Onboarding

A smooth integration for a successful start

Upon arrival, you will benefit from an integration period to help you discover your duties and your work environment. You will be welcomed by your HR representative, who will guide you through all the steps necessary for a smooth transition into your new role.