

6 months Master – Engineer project Industrial Chair Cellulose Valley

« Process engineering for 3D bio-based recyclable and functional packaging »

Description and expertise of the organization

The "Cellulose Valley" Chair is a special ecosystem that aims to provide alternatives with new cellulosic materials for packaging applications. It is a consortium of several industrial partners.

Cellulose Valley is located in the Laboratory of process engineering for biorefinery, bio-based materials and functional printing (LGP2). LGP2 is a joint research unit (UMR 5518) of the French National Center for Scientific Research (CNRS). Its activities range from wood science to packaging converting and printing. The laboratory's distinctive feature is its multi-disciplinary approach to processes, chemistry and materials. Its close links with the paper and packaging industry lead to numerous research projects and specific tools (from laboratory to pilot scale).

Main tasks

In recent years, regulatory frameworks and standards adopted worldwide have reinforced and implemented the circular economy and bioeconomy, and especially in Europe (PPWR). In this context, cellulose is an excellent candidate for high-performance bio-based materials. It offers advantages in terms of lightweighting, recyclability and circular economy. Companies are increasingly interested in producing them, and still face some challenges, and the existing processes to produce 3D cellulosic material needs to be improved.

The main focus of the 6 months project will be to improve an existing process & the production of a 3D cellulose packaging, and to provide a specific functionalization during production or in post-treatment. The analysis of the recyclability and the mechanical, structural and physico-chemical characterizations will be performed to understand the influence of the process used.

Developing a demonstrator is one of the tasks to be carried out during the internship.

This project will be sponsored by one of our industrial partner, and meetings will be scheduled with its industrial research department, as well as occasional site visits. The Master's project will last 5 to 6 months at the LGP2 laboratory, beginning in February 2027 to June or July 2027.

Candidate requirement

The candidate must be at an engineering school or master's level, with expertise in materials, processes or chemistry will be appreciated. Work on cellulose or packaging would be a plus. Knowledge of biopolymers and life cycle assessment will be considered. The ability to work in a team, autonomy and motivation are important selection parameters. A good level of written and spoken English is required.

Contact persons involved in the project

- Dr Candice REY, research engineer, Cellulose Valley Chair co-holder.
Application via google form : <https://forms.gle/txtSvvXiWhac9K6k8>
Deadline to apply : 31th october 2026.