

Call for Participation

« EXTRAPULP » Combination of lignocellulosic components valorization and chemical pulp fibre production

InTechFibres R&D Project



INSTITUT TECHNOLOGIQUE

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R&D at InTechFibres...

With the mission of supporting the technological development of the pulp, paper and board industry, in its General Research Programme context, two Institutes (CTP and FCBA) have mutualized their efforts in the frame of InTechFibres platform. Thus, it develops projects with the objectives of:

- Advancing scientific and technological knowledge
- Innovating and transferring to industry know-how concerning virgin and recycled raw materials, materials, processes, products and associated services.

To achieve this, CTP has defined 8 Scientific Action Priorities, as keys to creation of sustainable economic value for the industry.

FCBA has defined its research and innovation strategy in 8 domains of Research and Strategic Innovation (DRIS) which cover upstream activities as well as building and furniture.

The **EXTRAPULP** project is part of the Scientific Action Priority « **Lignocelluloses chemistry** ».

InTechFibres – Plant Chemistry projects' objectives are to optimise the processes of lignocellulosic fibres production and to develop the potential of lignocellulosic materials from the fibre to the microfibrils and from the material to the molecule.

Wood is a very abundant, renewable and sustainable source of fibres and molecules to be upgraded for new applications such as substitutes for fossil chemical molecules or for improving fibre-based processes. Three areas are to be explored:

Lignocelluloses fibres, Cellulose Micro-Nano fibrils and Bio-based molecules from raw materials and industrial co-products.

The main objective is to produce fibres, fibrous elements and molecules with properties adapted to different applications of the wood industries and to extend if possible to other industries, and this in minimising the energetic consumption and environmental impact, in trying to understand the involved mechanisms and to increase the industrialists for these biosourced elements.

« EXTRAPULP »

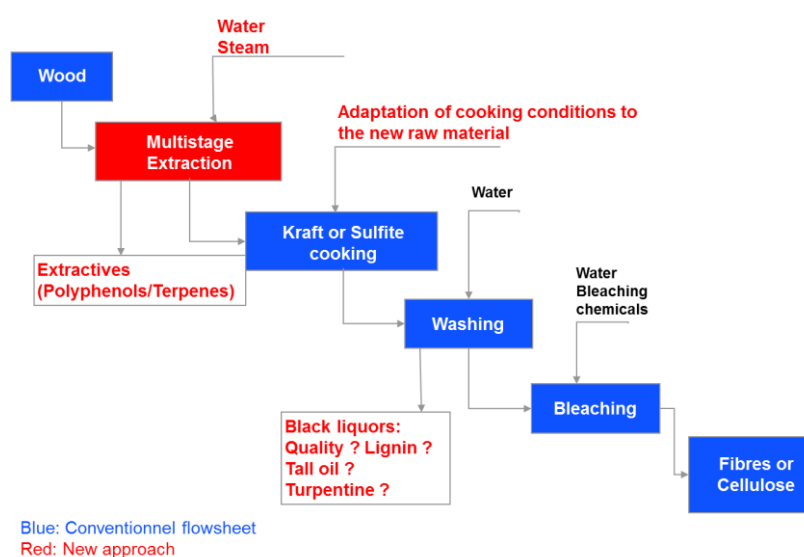
Motivations

Wood is a lignocellulosic raw material, not only mainly valorised for its structure and its fibres, available throughout the year, rich in molecules, of which the logistics are well developed at an industrial scale.

Today the chemical pulp mills valorise mainly cellulose in the form of fibres or of products for chemical industry, in combination with energy and other wood components production

The increasing interest in biorefining and/or green chemistry opens valorisation routes for natural wood components for chemical pulp mills in addition to the production of fibres or cellulose. Extractives (such as terpenes and polyphenols) are the molecules targeted in this project **to increase the chemical pulp mills profitability** by supplying different markets, and in particular the chemical industry.

Some of these wood components can be valorized by extraction before fibre production. Multistage extraction of wood chips before pulping would allow extracting molecules (polyphenols/terpenes) of high added value. The lay-out presents the approach envisaged to combine molecules extraction before pulping and the production of fibres for paper or other specific applications.



Objectives

The objectives of the project are:

- Extraction of terpenes and polyphenols by multistage processing of wood chips before pulping
- Adaptation of the pulping process to the pre-treated chips
- Identification of the best fibre applications

Value created for the industry

- Increase in **profit of chemical pulp mills** with the production of new molecules of interest.
- Diversification towards new markets.
- Increased valorisation of wood molecules (unsulfonated and undegraded).
- Production of **reactive fibres** or cellulose presenting different functions.
- Increase in **production capacity** by the way of an optimised process combined with molecules extraction, for various usages.
- **Stabilization of production** by extracting molecules which have no impact on pulp quality.

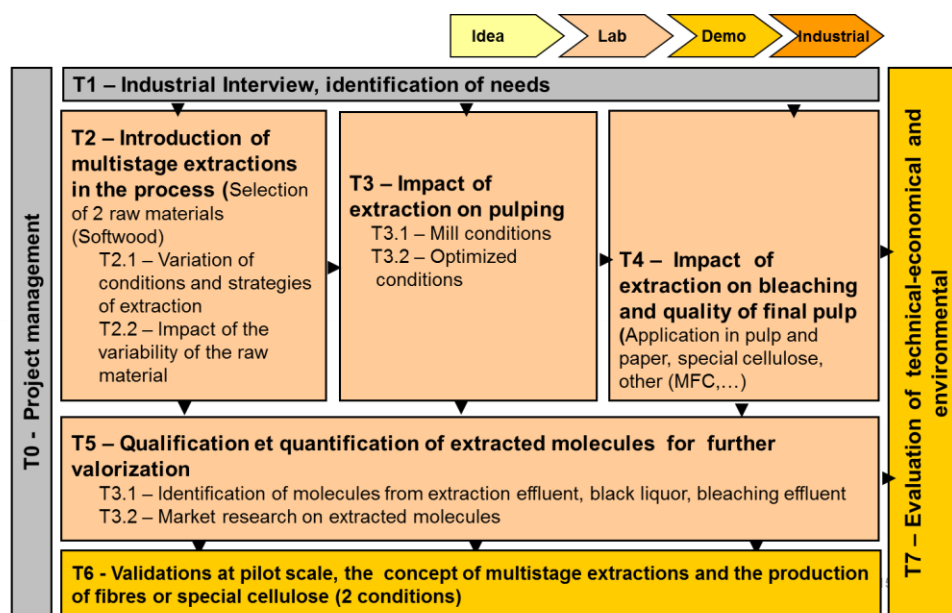
Criteria of success

More profitability thanks to a well controlled extraction process with current wood resources will be the key for a successful project. This requires extracted products to be of higher value thanks to the good purity and sufficient volume throughout the year, taking into account species, aging and harvesting periods.

Consequences on pulping process will be evaluated and should be minimal, keeping fibre quality high.

Research programme

Draft Research Programme, to be refined during the Scope Definition Meeting



How to participate?

Within the General Research Programme (GRP) the CTP leads projects open to external participation: the **OpenProject** system.

These projects are partially financed by the CTP and FCBA and the partners in the project.

Joining this project gives you the possibility to attend:

- the **Scope Definition Meeting** to refine the technical programme presented by CTP & FCBA experts.
- the **Steering Committee Meeting** in April during which will be discussed the obtained results and the next steps. To ensure a better technology transfer, no Webex access will be provided during the Steering Committee Meeting.
- the **Results Transfer Implementation Meeting** in autumn, which is a Peer to Peer private exchange with the Project Leader focusing on the applied result transfer.

Financial participation:

- This project will be conducted on a cost and result shared basis. A portion of the budget will be paid by CTP and FCBA and a portion will be required from partners. The participation fees will be spread over the duration of the project.

Pre-project participation:

- Please indicate your interest by return mail.
- Participation in the project is to be confirmed after the Scope Definition Meeting.

Wednesday, November 23rd from 13h30 to 15h30 at CTP