

INSTITUT TECHNOLOGIQUE

SUMMARY

Research programs are conducted to enhance green chemistry and bio-based technologies to substitute petroleumbased products, to elaborate new materials and products subject to new regulation.

Some of topics of research activities made by Intech'Fibres/FCBA research teams are:

- Fibre/panelboards functionalization

Bio-based materials and Innovation for building construction

Promoting bio-based content of materials by uses of CEN EN 16785-1,2 Standard

Feasibility of the application of EN 16785-2, which aims to evaluate the incoming and outgoing flows of a production process with analysis of bio-based content for each incoming and outgoing material has been demonstrated. 10 panels have been qualified by industry with a declarative bio-based content (application of EN 16785 -2) and was conducted chemical analysis of C14 dating and analysis elemental C, H, O, N to compare with the declarative values.



Source FCBA

- Wood-based thermal insulation materials Eco-conception
 of multifunctional composite materials
- Design of fireproofing bio-based formulations
- Green glue for panelboards
- Durability conferred to wood by injection of extracted and modified lignins
- Bio-based xylan building blocks for chemistry
- Increase in wood floor surface strength made of maritime pine

Normative research for new labeling promoting green bio-based content of construction materials, news bio-based materials made with renewable resources came from wood and others programs are able to reduce the carbon footprint and propose green solutions for materials.

Bio-based Carbon Fiber

Possibility of using lignins derived from pulp and paper industries process, as precursors of raw materials for the production of low cost carbon fibers has been studied by uses of different process. Durability of the bonding wood with conventional carbon pultruded plate of spruce wood was validated on glued laminated wood at lab. scale. Carbon can be useful to reinforce and to repair wood structure.



Source CANOE





Source FCB/

Bio-based Fire Retardant Technology

LIGNOFLAM® is a new fireproofing treatment for lignocellulosic fibers insulation boards from research. It





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is an alternative to borated or polyphosphates derivatives currently in use. This is a more environmentally friendly treatment, recyclable and made by renewable resources. The on-going project can allow to optimize this innovative treatment with a partnership FCBA-AST-IPREM.



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