



WOOD ZYMES

WOOD TRANSFORMING ENZYMES

Kick-off meeting of the WoodZymes project, a Research & Innovation Action of the H2020 “Bio-Based Industries” Joint Undertaking coordinated by CIB, CSIC

The Biological Research Center (CIB) from the Spanish National Research Council (CSIC) will host on June 14th (in Madrid, Spain), the kick-off meeting of the WoodZymes European Project on “Extremozymes for wood-based building blocks: from pulp mill to board and insulation products”. This is a H2020 Research & Innovation Action funded with € 3.25 million by the “Bio-Based Industries” Joint Undertaking (www.bbi-europe.eu) and coordinated by Dr. Susana Camarero from the CIB [Group of Biotechnology for Lignocellulosic Biomass](#).

The project goal is to develop tailor-made enzymes able to work under the extreme operation conditions of pH and temperature required by the wood-processing industries to remove or modify hemicelluloses and recalcitrant lignin protecting cellulose in the plant cell wall. This will enable selective valorisation of currently underutilised biomass fractions to provide high-value bio-equivalents of petroleum-derived chemical building blocks.

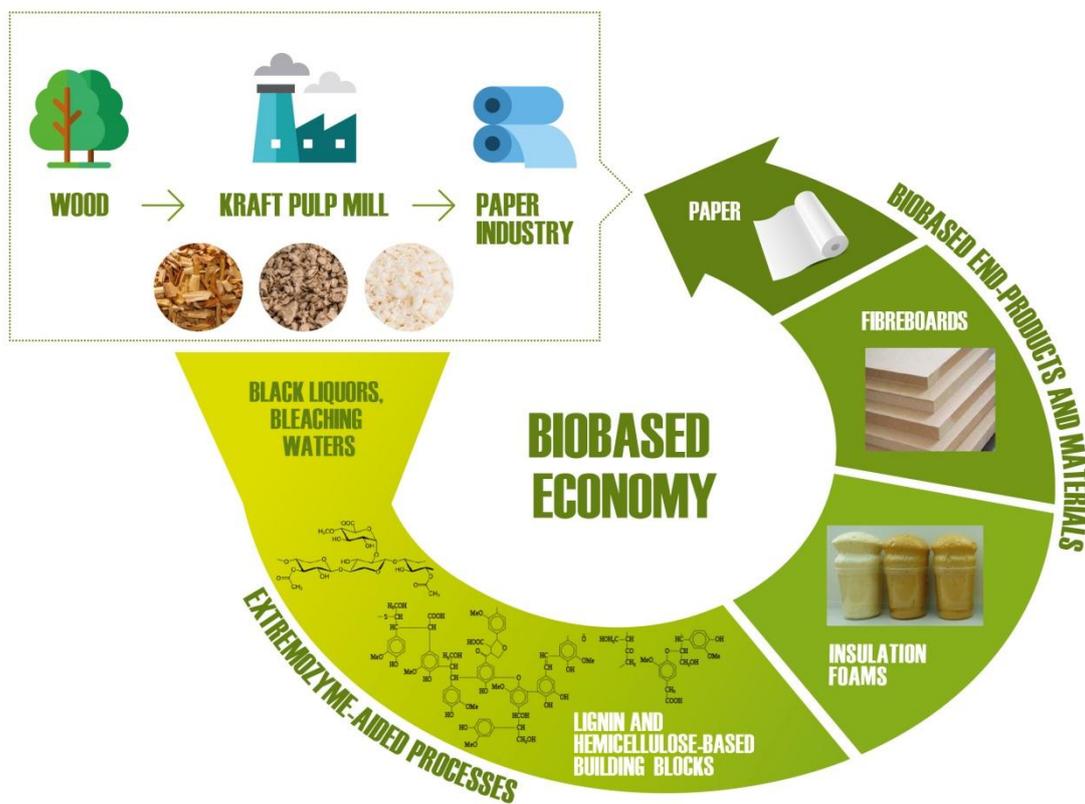
Enzyme application will include the recovery of phenolic compounds from enzymatic breakdown of technical lignin, and the extraction of lignin and hemicellulose compounds from enzymatic delignification and bleaching of kraft pulp. Extremophilic enzymes will also be used to valorise these compounds as bio-based precursors for adhesives in the manufacture of medium-density fibreboards, and as components of insulation polyurethane foams, as well as for obtaining renewable sugar-based papermaking additives. As shown in the figure below, WoodZymes illustrates the potential of extremozymes in the global bio-based economy, contributing to the sustainability and competitiveness of cellulose, fibreboard and polyurethane manufacture, and establishing a direct link between pulp and wood industrial sectors.

The feasibility of this ambitious project is based on a strong European consortium from Portugal, France, Finland and Spain, formed by world-leading companies of the sectors of pulp & paper ([The Navigator Company](#) and [Fibre Excellence](#)), fibreboard manufacture ([FINSA France](#)) and insulation materials ([Soprema](#)), a biotech SME commercializing extremophilic enzymes ([MetGen](#)) and several research institutes ([CIB](#), [IRNAS](#) and [IATA](#) from [CSIC](#)) and technology centres ([RAIZ](#), [CTP](#) and [FCBA](#)) of the wood, cellulose, lignin and enzyme sectors.

More information: www.woodzymes.eu

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This project has received funding from the Bio Based Industries Joint Undertaking (JU) under grant agreement No 792070. The JU receives support from the EU’s Horizon 2020 research and innovation programme and the Bio Based Industries Consortium.



Contributing to the Bio-based Economy: The WoodZymes project covers the entire value chain from forest biomass (hardwood and softwood) to phenolic and sugar-derived equivalents of fossil-derived chemicals for the manufacture of medium-density fibreboard, polyurethane insulation foam and bleached paper, through the transformation of underutilised lignin and hemicellulose fractions extracted from pulp mills with tailor-made extremophilic enzymes.

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