EUCALIVA PROJECT PARTNERS

PROJECT COORDINATOR

contactica innovation

SMES

BIOSENSOR

enviro hemp
High-Tech green applications

RTDS

stfi
SÄCHSISCHES TEXTIL FORSCHUNGS INSTITUT e.V.

TAMPERE UNIVERSITY OF TECHNOLOGY

EUCALIVA
EUCAlyptus LIgnin VAlorisation for Advanced Materials and Carbon Fibres

EUCALIVA aims to create evidences to be an "Industrial success case" as a novel integral solution to fully valorize bio-resources at local level, to be then replicated at local/national level by other industrial partners interested in the technology and/or the products obtained within this project

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Horizon 2020
European Union Funding for Research & Innovation

BIO-BASED INDUSTRIES
Public-Private Partnership

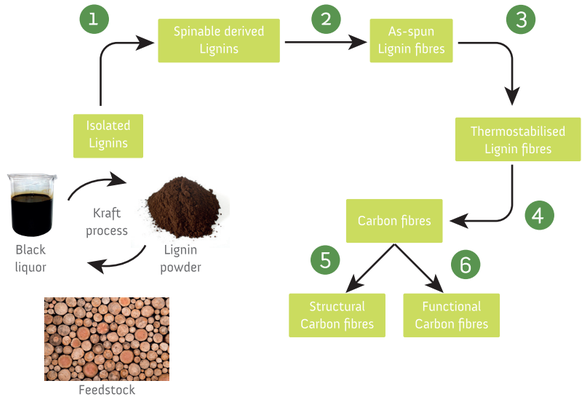
Bio-based Industries Consortium

This project has received funding from the Bio-Based Industries Joint Undertaking un-der the European Union's Horizon 2020 research and innovation programme under grant agreement No 745789

THE CONCEPT

EUCALIVA project proposes a fully-integrated, energetically-efficient, scalable, innovative and flexible processing chain based on the valorization of Lignin for producing Carbon fibres (CF) and other Carbon-based materials, mainly for functional applications.

1. Purification and/or modification (Polyurethane)
2. Spinning
3. Thermostabilisation
4. Carbonisation
5. Graphitization
6. Activation



THE CHALLENGE

LIGNIN POTENTIAL

The intrinsic value of Lignin continues to be largely overlooked. Lignin is the most abundant source of aromatic chemicals outside of crude oil. The potential for Lignin production in the existing pulp and paper industry is more than 50 million tons/year.

WASTE VALORISATION

EUCALIVA helps to valorise current waste, known as black liquors, separating useful components such us Lignin and Polyurethanes.

ADVANCED PRODUCTS

New applications will be reached: multifunctional film-like conductive, piezoresistive and piezoelectric materials (e.g., for biosensors, flexible electrodes, stretchable electronics), smart fabrics and functional fibres, and applications based on fibrous mats, non-woven fabrics and their Carbonized derivatives.

WORK PACKAGES

WP1	Optimisation of Lignin recovery from paper industry's black liquors
WP2	Manufacture of Carbon fibre mats from high-purity Lignin
WP3	Technical validation of the production of bio-based products
WP4	Benchmarking, Prototyping and Standardization of bio-based materials
WP5	Business Plan, Exploitation and market deployment of final bio-based products
WP6	Dissemination and Communication
WP7	Project Management

PROJECT´S RESULTS

1. Production of new bio-based, renewable and economically viable method of formulating Lignin blends from paper industry's waste.
2. Validated pilot scale chain using Kraft Lignin for producing precursor blends.
3. Viable processing of Lignin into Carbon fibre (CF) and CF derived functional materials.
4. Technical validation of the production of bio-based products: stretchable electronic films and activated Carbon from non-woven Lignin felt.
5. Demonstrated operational and energy-costs savings as compared to existing processes and technologies through Life Cycle Analysis (LCA) and Life Cycle Cost (LCC) assessments.
6. Successful introduction of 'Lignin – to – bio-product' concepts at semi-commercial scale.