

BioCatPolymers PROJECT

BioCatPolymers is a 3-year European project funded by the European Union's Horizon 2020 research and innovation programme under grant agreement No 760802.

The main objective of BioCatPolymers is to demonstrate a cost-effective, sustainable and efficient cascade technological route for the conversion of low-value, low-quality residual biomass to bio-polymers with equal or better performance than their fossil-based counterparts.

The BioCatPolymers consortium comprises 7 legal entities within four EU Member States (Greece, Germany, Sweden, Netherlands) and one Associated Member State (Switzerland). The project is coordinated by the Centre for Research & Technology Hellas (Greece).

BioCatPolymers FACT SHEET

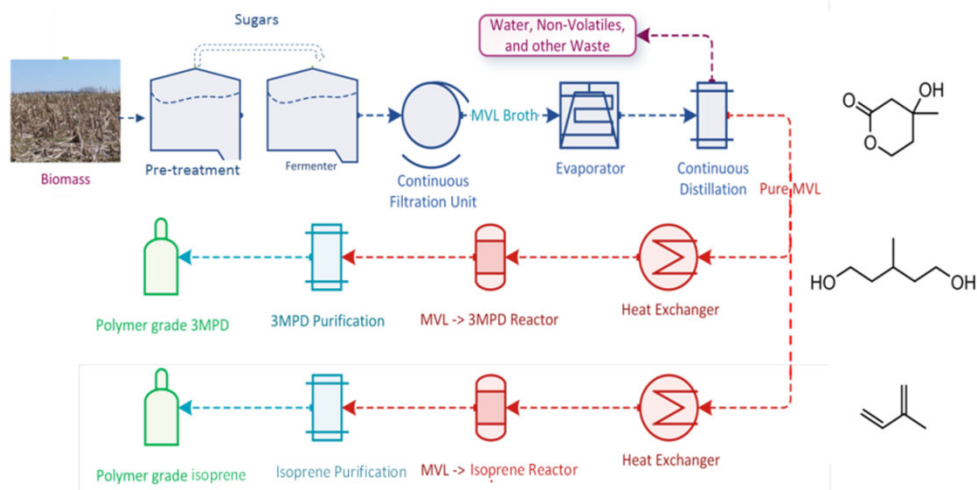
PROJECT ACRONYM	BioCatPolymers
PROJECT TITLE	Sustainable and efficient bio-chemical catalytic cascade conversion of residual biomass to high quality biopolymers
PROJECT REFERENCE	760802
CALL IDENTIFIER	H2020-NMBP-2016-2017
COORDINATOR	CERTH
CONSORTIUM	7 beneficiaries from 5 countries
START	1/1/2018
DURATION	36 Months
BUDGET	5,351,985.08 €
FUNDING	4,362,047.56 €

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BioCatPolymers TECHNOLOGY

Technology: Integrated hybrid biochemical-thermochemical process combining the best features of both

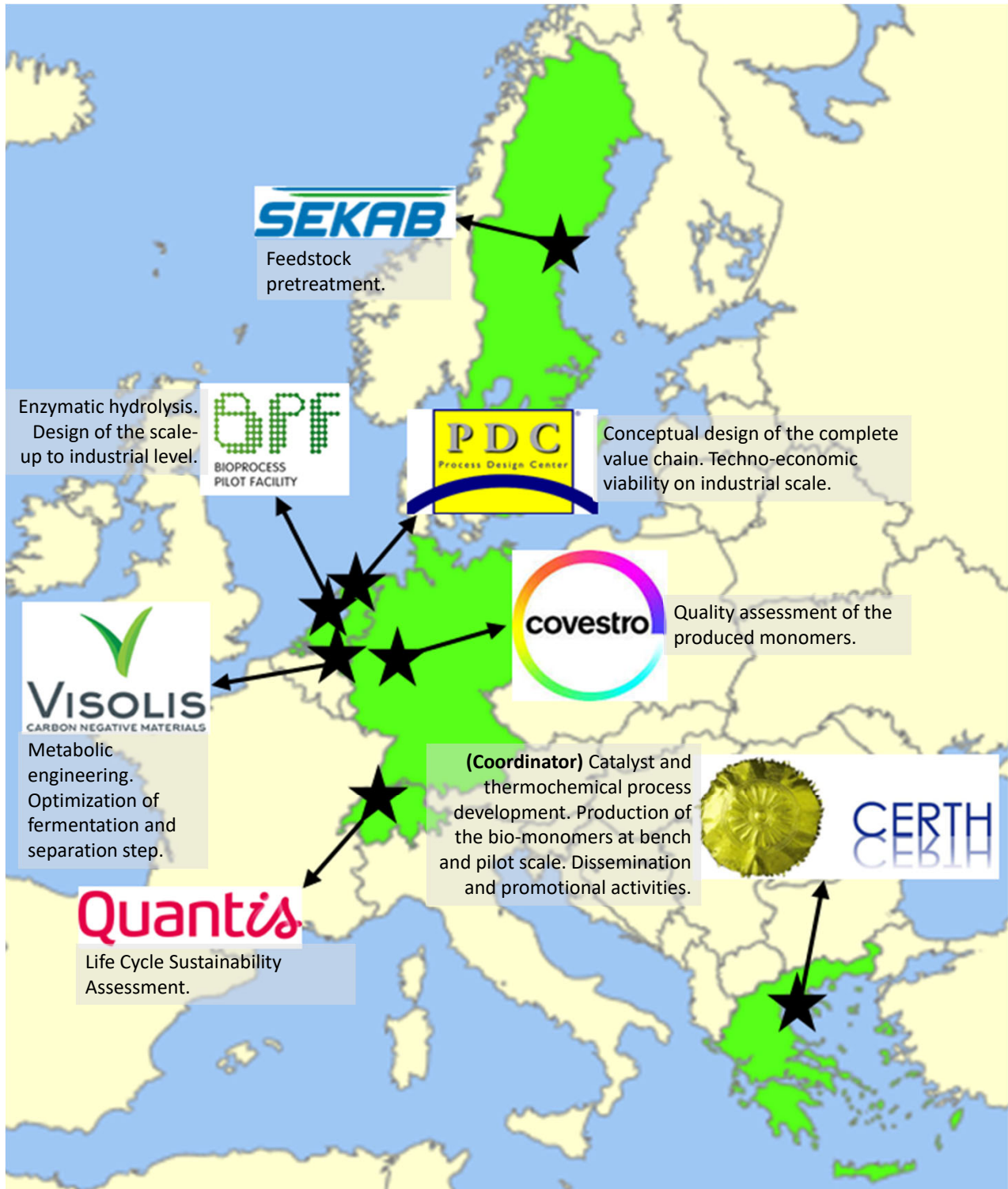


The novel technology proposed in BioCatPolymers surpasses the impediments of traditional solely bio-based approaches by combining efficient hydrolysis of lignocellulosic material to sugars which can be fermented with high yields to mevalonolactone (MVL), with highly efficient and selective thermochemical catalytic processes to isoprene and 3-methyl-1,5-pentanediol (3MPD). These monomers can be further processed in the existing infrastructure for the production of various large commodity products, such as synthetic rubber for the production of car tires, polyurethanes and polyesters that can be used as foams for insulation, in footwear production etc.

BioCatPolymers ACHIEVEMENTS so far...

- ✓ A feedstock evaluation study was performed that led to the selection of **five different low quality residual lignocellulosic biomasses** with high potential for use in the BioCatPolymers technology due to their chemical composition, techno-economical aspects and properties for the downstream processing.
- ✓ SEKAB performed efficient pre-treatment and produced **10 kg of pre-treated material** from three different types of feedstocks: **wheat straw, birch chips** and **spruce sawdust**.
- ✓ CERTH demonstrated on lab-scale the efficient thermochemical conversion of sugars-derived mevalonolactone to **3-methyl-1,5-pentanediol** over inexpensive Cu-based catalysts with **selectivity > 90 %**.
- ✓ PDC has completed a **first design** of the process for the production of 3-methyl 1,5-pentanediol from second generation sugars.
- ✓ **6 Deliverables** submitted so far: one deliverable in WP1, one deliverable in WP6, two deliverables in WP7, two deliverables in WP9.

BioCatPolymers PARTNERS KEY EXPERTISE/ ROLE IN THE PROJECT



BioCatPolymers 2nd EXECUTIVE BOARD MEETING IN THESSALONIKI

The 2nd Executive Board meeting took place in Thessaloniki, Greece, at the facilities of the Centre for Research and Technology-Hellas (CERTH), on the 11th & 12th of June, 2018. The meeting was organized by CERTH and was attended by representatives from all partners of the consortium.

In the meeting, the progress of the different activities was discussed and the partners had the chance to visit the laboratory of CERTH and the experimental facilities that will be used in BioCatPolymers to demonstrate the lab and pilot scale thermochemical conversion of MVL to the two targeted isomers.



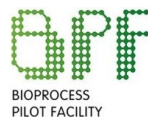
BioCatPolymers PUBLICATIONS/PRESENTATIONS

- E. Pachatouridou, E. Heracleous, A.A. Lappas, “Sustainable and efficient bio-chemical catalytic cascade conversion of residual biomass to high quality biopolymers”, *15th Panhellenic Symposium on Catalysis*, 18-20 October, 2018, Ioannina, Greece
- Eleni Heracleous, “CASE STUDY: The project _2020 BioCatPolymers - Production of Bioplastics from residual biomass”, *Workshop by TÜV AUSTRIA HELLAS: “We protect the environment: Certifications to ensure sustainability”*, 9 October, 2018, Athens, Greece
- Anne Kutz, “Alternative Feedstocks in the Polymer Industry: Status and Perspective”, *International conference on Bio-based Materials*, 15-16 May 2018, Cologne, Germany

BioCatPolymers CONSORTIUM



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CENTRE FOR
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HELLAS



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