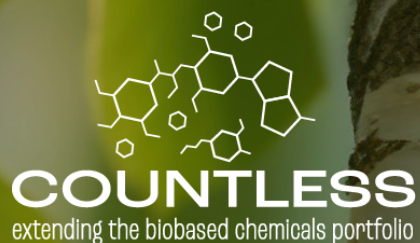


In a nutshell

COUNTLESS will access lignin, an abundant natural resource, to produce platform chemicals and demonstrate their applicability and cost-effectiveness in a variety of end-use cases from bulk to specialty applications.

This will enable the transition from fossil-based to bio-based chemical building blocks – supporting sustainability and climate action goals.



Project objectives

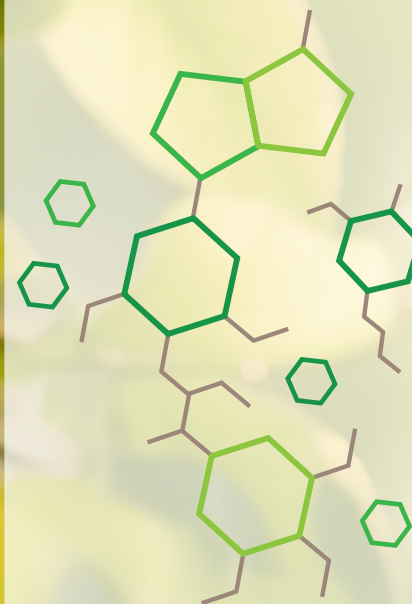
- Demonstrate the continuous conversion of lignin, via catalytic hydrogenolysis, into platform chemicals at industrially relevant conditions (TRL 7).
- Produce and demonstrate a range of construction and cosmetics products using the lignin-based platform chemicals.
- Use digital tools for process monitoring and decision support related to product quality.
- Prove the sustainability of the lignin-based value chain and its improved environmental impact, cost-effectiveness and cost competitiveness compared with fossil-based or other bio-based value chains.
- Maximise exploitation of the **COUNTLESS** technologies.
- Develop strategies to ensure market uptake of the project results.

Project partners



The **COUNTLESS** project is supported by the Circular Bio-based Europe Joint Undertaking and its members. Grant agreement ID: 101112453.

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COUNTLESS

extending the biobased chemicals portfolio

COUNTLESS

Introduction

Project ID Card

Type of project	Innovation Action - Demonstration CBE JU funded project
Project title	Cost-effective production of lignin platform chemicals: Extending the biobased chemicals portfolio
Project start	01.09.2023
Duration	48 months
CBE JU contribution	5 400 014 EUR

Europe's ambitious sustainability and climate goals rely heavily on the transition from fossil-based to bio-based chemical building blocks.

Lignin has substantial potential to become a bio-based feedstock for functionalised aromatic compounds. It is a by-product of the wood pulp and paper industry, with an annual production of 60 - 70 million metric tonnes. Currently, only 1-2 % of this annual lignin production is used in chemical conversion, because the heterogeneous and complex nature of isolated lignins remains a critical hurdle.

To address this challenge, and pave the way to the exploitation of lignin's potential, **COUNTLESS** will demonstrate the first catalytic hydrogenolysis process operated in continuous mode. It will do so at industrially relevant scale for the cost-effective and sustainable production of lignin-based platform chemicals. The project partners will demonstrate the applicability and cost-effectiveness of these intermediates in a variety of end-use cases from bulk to specialty applications.

The 13 project partners cover the entire value chain including feedstock suppliers, technology development experts, well-recognized industry players in several application fields, experts in dissemination, communication

and exploitation, and experts in integrated sustainability, environmental, and techno-economic assessments.

COUNTLESS will produce aromatic bio-based building blocks. These can replace phenolic compounds from fossil origin used in a range of applications today:



Flame retardants & UV stabilizers



Thermoset adhesives



Bitumen binders



PU thermal insulation foams & coatings



Functional additives for personal care products

Find out more

Visit	www.countless-project.eu
Follow	www.linkedin.com/company/countless-project
Mail	contact@countless-project.eu

