



# Sustainable Production of Lignin-Derived End-Products via Depolymerisation Reactions



Bio-based Industries  
Consortium



Co-funded by  
the European Union

THE PROJECT IS SUPPORTED BY THE CIRCULAR BIO-BASED EUROPE JOINT UNDERTAKING AND ITS MEMBERS.

# Welcome to SPLENDOR



SPLENDOR unlocks the full potential of lignin contained in black liquor, a byproduct from the pulp and paper industry. By using cutting-edge hydrothermal depolymerisation technology, we convert lignin into high-value bio-aromatic chemicals like vanillin and syringol without any pre-treatment or added chemicals.

## Objectives

- Scale and integrate Nova's one-step process that converts lignin-rich black liquor into sustainable bio-aromatic products directly into a pulp mill, enabling a circular and resource-efficient production strategy for the bio-based industry.
- Produce and validate several industrial uses of fine chemicals, waterproof coatings, tire plasticizers, and renewable fuel components.
- Prove environmental and social sustainability through Life-Cycle Assessments (LCA), Techno-Economic Analyses (TEA), and Safe-and-Sustainable-by-Design (SSbD) evaluations.
- Contribute to the goals of Europe's Green Deal by reducing dependence on fossil resources and supporting a circular, competitive, and carbon-neutral bioeconomy.

## From Nature to Innovation



01

Raw Lignin



02

Depolymerisation



03

Purification



04

Applications



At SPLENDOR, we stand where innovation meets sustainability, turning scientific excellence into tangible benefits for people, industry, and the planet.

## Environmental Impact

### Key Figures



#### Duration

**36 Months**

From september 2025 to August 2028



#### Budget

**€ 7.3 Millions**



The SPLENDOR project brings together **10 partners** and **2 affiliated** entities from **7** European countries:

#### 3 Academic Partners

- **Ghent University** (Belgium)
- **University of Nottingham** (UK)
- **Maastricht University** (Netherlands)

#### 3 Research Centres

##### **Research Institutes of Sweden**

Affiliated Entities:

- **Research Institutes of Sweden - LignoDemo**
- **Research Institutes of Sweden - Processum**

#### 6 Industries & SMEs

- **Nova Biochem** (UK)
- **UPM** (Finland)
- **Strane Innovation** (France)
- **Syensqo** (France)
- **Soprema** (France)
- **Hansen & Rosenthal** (Germany)

Helping drive Europe's green transition by turning industrial side streams into valuable bio-based resources. Our catalyst-free process lowers emissions and maximizes efficiency, while staying aligned with Safe-and-Sustainable-by-Design principles and the EU Green Deal. Every step of the project is monitored through life cycle and techno-economic assessments to ensure that what we do is both effective and responsible.

## Societal Impact

Believing sustainability starts with trust between science, industry, and society. SPLENDOR promotes open communication and stakeholder engagement through workshops, and social Life Cycle Assessment activities. The project also aims to create new green-job opportunities and improve the safety standards for workers and local communities.

## Economic Impact

Embedding our technology directly into pulp mills, we create new revenue streams and strengthen Europe's industrial leadership. The process adds value to existing infrastructure, accelerates market uptake of bio-based coatings, chemicals, and fuels, and helps build a more resilient, circular economy for the future.