

GreenSolRes



Demonstration of solvent and resin production from lignocellulosic biomass via the platform chemical levulinic acid

<http://www.greensolres.eu>

Summary

Levulinic acid has long been identified as a versatile 'green' chemical precursor for many applications. It is widely recognised as a platform substance for chemical synthesis and is seen as a key element in moving Europe towards bio-based manufacturing.

Type of Action:
Innovation Action -
Demonstration

Value Chain: VC1 –
lignocellulose

Start date: 01 September
2016

End date: 31 August 2021

BBI JU contribution: €
7,451,945.63

However, to make that a reality, there has to be adequate production to meet demand at a realistic price. GreenSolRes will demonstrate the commercial viability of converting lignocellulosic biomass to levulinic acid for the manufacturing of solvents and adhesive resins with added-value and/or functionalities.

The successful completion of the GreenSolRes will pave the way to the first commercial plant for sustainable production of levulinic acid (at 50 kta), and its derivatives, leading to a rapid gain in spectrum and production volume of bio-based consumer products.

Objectives

- To demonstrate the competitiveness of the levulinic acid (LA) value chain in terms of costs, environmental impact and technical performance.
- To convert the platform chemical levulinic acid into 2-methyltetrahydrofuran (MTHF), gamma-valerolactone (GVL) and methyl butanediol (MeBDO) with development of novel catalyst.
- To develop bio-based derivatives for industrial and consumer adhesives
- To have an optimized process design of all process components at 50 kta scale.

Expected impacts

- Optimised and competitive value chain for bio-based LA and down-stream products.
- Increased usage of lignocellulosic residues for high value-added products.
- Exploiting the sustainability potential of bio-based products from a renewable non-food feedstock.
- Use the functionalities of the C5-intermediates for novel high value added products.

- GFB Europe BV (The Netherlands)
- Henkel AG & Co. KGaA (Germany)
- Rheinisch-Westfälische Technische

Email office@style-project

- Forschungszentrum (Germany)
- Leibniz-Institut für Katalyse e.V.
Rostock (Germany)
- SYNCOM Forschungs- und
Entwicklungsberatung GmbH (Germany)
- Hybrid Catalysis B.V. (The Netherlands)
- Flemish Institute for Technological
Research (VITO) (Belgium)

Former members

- GFBiochemicals (Italy)

Project coordination

Name: Aris de Rijke

Organisation name: GFB Europe BV (The Netherlands)