



Deliverable 1.8

## Report on Recovery and Purification at RWTH

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

*The project leading to this application has received funding from the Bio Based Industries Joint Undertaking under the European Union's Horizon 2020 research and innovation programme under grant agreement No 720695*



## About GreenSolRes

The need to establish economic and sustainable large-scale operations for the conversion of renewable resources to chemical building blocks is becoming increasingly urgent in the context of climate change and depleting fossil fuel reservoirs. Pathways for manufacturing of bio-based fuels and chemicals have been developed but often rely on sugar and starch crops for feedstock. The European Demonstration project - GreenSolRes aims at a sustainable and competitive industrial production of the platform chemical levulinic acid (LVA) from non-food lignocellulosic biomass. Further, the conversion of LVA and LVA esters into industry relevant building blocks  $\gamma$ -valerolactone (GVL), 1-methyl-1,4-butanediol (MeBDO) and 2-methyltetrahydrofuran (2-MTHF) will take place by new catalytic methods developed during the course of this project. Finally, these chemicals will be upgraded to solvents and resin monomers to produce high added value adhesives and consumer products.

### Project Coordinator



### Project Office



### Consortium



## About this document

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## Publishable Summary

A separation strategy to purify levulinic acid (LVA) produced from lignocellulosic biomass was developed and successfully transferred to demo-plant scale. The strategy consists of an extraction step with the organic solvent methyl isobutyl ketone (MIBK), followed by a back-extraction step with fresh water and evaporation to obtain the purified LVA. The additional back-extraction step proved to be necessary, to reduce the content of hydrophobic impurities and thus to enable the further hydrogenation of the LVA in WP2.