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## OrganoCat: Biomass Fractionation for an Integrated Biorefinery Concept to Fully Valorise Lignocellulosic Biomass

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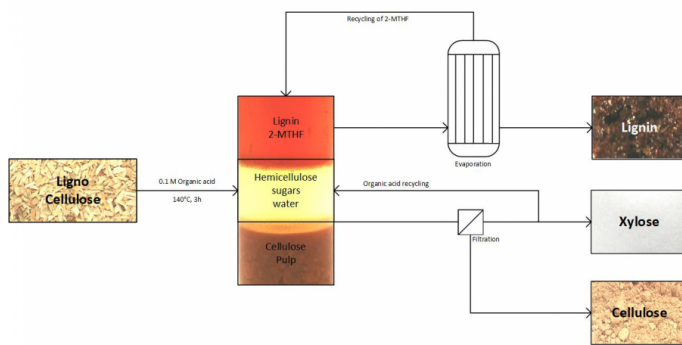
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### PURPOSE OF THE ABSTRACT

To foster a future bio-economy the conversion and full valorization of sustainably grown lignocellulose in holistic bio-refineries is a promising option that still needs further development. Important steps for such biorefinery processes are i) to reduce the ecological footprint by using biogenic materials ? including catalysts and solvents ? ii) to enable efficient (waste)water, solvent and catalyst recycling and iii) to reach economic targets by reducing fertilizer costs and/or utilizing plants from marginal soils that avoid competition with food production. The recently developed OrganoCat technology addresses these challenges. In a biphasic solvent system (2-MTHF and water) with an organic acid as catalyst lignocellulose is partially hydrolyzed and fractionated into its main component streams ? non-cellulosic monosaccharides dissolved in the aqueous phase, lignin in situ extracted into the organic solvent, and cellulose-enriched solid residue. It has been successfully applied to perennial plants relevant as candidates for a sustainable biomass production. Thorough analysis of the lignocellulose ? before and after fractionation ? enables a detailed description of the cellulosic residue, non-cellulosic polysaccharides and lignin before and after the pretreatment to yield optimal processing conditions.

## FIGURES



**FIGURE 1**  
OrganoCat Process

Fractionation of lignocellulose into its three main components.

**FIGURE 2**

## KEYWORDS

biomass conversion | lignocellulose fractionation | biorefinery

## BIBLIOGRAPHY

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