

# TOWARDS CONTROLLED FRACTIONATION OF BIOREFINERY HYDROLYSIS LIGNIN

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Excessive use of fossil fuels in materials industry is a substantial contributing factor of the ecological load on the environment and to combat that, researchers have focused their attention to find renewable alternatives [1-2]. From the potential alternatives, lignin, which is a principal component in terrestrial plant biomass, has been so far mainly used for energetic purposes and other low-value applications [3]. Although several types of technical lignins exist on the market, their lack of utilization comes from the complexity of the material – low solubility in traditional solvents, impurities, and heterogeneity [4].

To use technical lignins in a macromolecular form in high value products, the precursor technical lignin needs to be with controlled properties. One of the simplest technologies to use is solvent fractionation where yielded fractionated lignins are dependent on the solvent used. In the presented work we fractionated hydrolysis lignin with mixtures of organic solvents and determined their chemical and physical properties. Moreover, these characteristics were used as an input to perform computer simulations with representing model lignins of soluble lignin fractions in organic solvent mixtures. The goal of the study is to gain deeper understanding of lignin fractionation to set the groundwork for achieving fractionation where characteristics of fractions are steered.

## References

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