

**Thermochemical conversion of sawdust in supercritical ethanol: Effect of physical process parameters**

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Liquefaction of biomass is a promising technology for the substitution of crude oil in the following decades. Many studies have been executed so far on the liquefaction in subcritical water whereas publications on liquefaction in other solvents e.g. supercritical alcohols are very rare. This study investigates the influence of physical process parameters on the liquefaction of lignocelluloses (pine wood) in supercritical ethanol. The investigated parameters include all physical parameters such as reaction temperature, pressure and reaction time as well as biomass to solvent ratio. The impact of the different parameters on the conversion, the chemical composition and energy content has been investigated from the mass balance and several analytical tools. The reaction temperature and residence time appear to have higher impact on the product distribution compared to reaction pressure and biomass to solvent ratio. The evolving gases mainly consist of CO, CO<sub>2</sub>, CH<sub>4</sub>, C<sub>2</sub>H<sub>4</sub> and C<sub>2</sub>H<sub>6</sub> and do not considerably change in different reaction conditions.