

Enhancement of enzymatic hydrolysis of cellulosic biomass by Organosolv pretreatment

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Until today, many pretreatment technologies have problems such as generating toxic by-product and spending a lot of waters. The organosolv process is a delignification process, with varying simultaneous hemicellulose solubilization. In this process, it is used to break the internal lignin and hemicellulose bonds. For economic reasons, the use of low-molecular-weight alcohols such as ethanol and methanol has been favored. Among them, ethanol is suitable as solvent. Because it is inexpensive and the used solvents should be recovered and recycled to reduce the operation costs. For these reasons, we used ethanol as a solvent. In this study, it was determined characteristics according to 40~60 % of concentration of ethanol, 30~60 minutes of reaction time at 150~190 °C through the batch reaction and percolation. The pretreated biomass is performed enzymatic hydrolysis at 50 °C up to 72 hours for comparison of efficiency of pretreatment on various conditions.