Selection of two step fractionation for tulip tree

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Woody biomass is a kind of renewable energy resources that is superior to other renewable energy resources. Cellulosic ethanol, made from woody biomass, is valuable product and for making it, fractionation of cellulose is necessary. Like this, other chemicals can be used through fractionation. Biomass fractionation makes three components; cellulose-, hemicellulose- and lignin-rich component. Subcritical water- and formosolv-treatment were suggested for these fractionation of tulip tree. After formosolv-treatment, bleaching is required for removal of remained lignin and recovery of formylated cellulose. In this experiment, subcritical water- and formosolv-treatment was carried out by stages, changing the order. Each stage's compositions were analyzed and IR spectrometry data was obtained for analysis. Results were evaluated with two different point; purity of each component and amount of cellulose fiber obtained from fractionation.