Pretreatment of lignocellulosic biomass by flow-through reaction for ethanol production



In this study, the pretreatment of lignocellulosic biomass had been performed. The 2-step pretreatment on flow-through process were applied in the interests of increase of sugar production yield on enzymatic saccharification. The delignification by aqueous ammonia and the fractionation of hemicellulose by sulfuric acid solution as pretreatment solution were confirmed for effects of enzymatic saccharification and ethanol fermentation. The lignocellulosic biomass had been investigated for optimum conditions of pretreatment through response surface methodology. The separation saccharification and fermentation by pretreated solid for ethanol production using Celluclast 1.5L, Novozyme-188 enzyme and Sachharomyces cerevisiae ATCC 4175 strain were performed. The pretreatment by aqueous ammonia had an effect on ethanol production for effective process as enzymatic saccharification of fermentable sugar. These results had been able to suggest an efficient pretreatment process for production of second generation bio-ethanol.