

Microwave- assisted pretreatment of cellulose in ionic liquid for accelerated enzymatic hydrolysis

마이란, 하성호¹, 구윤모^{2,*}

인하대학교; ¹인하대학교 초정밀생물분리기술연구센터;

²인하대학교 생명화학공학과

(ymkoo@inha.ac.kr*)

Pretreatment of cellulosic material is key factors for enhance enzymatic saccharification and fermentation of biomass for biofuel and bio-based chemical industry. ILs have been used as alternative solvent for cellulose pretreatment. The ILs-pretreated celluloses become less crystalline and in somewhat condition have lower degree of polymerization (DP) than that of the nature. In this study, the effect of microwave heating on the pretreatment of cellulose in ILs was investigated. Microwave heating could cause a significant decrease in DP of cellulose dissolved in ILs which led to a great improvement on cellulose hydrolysis catalyzed by cellulase from *Trichoderma reesei*. The relationship between DP of cellulose and saccharification rate was established.