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Bio-ethanol production from rice husk using simultaneous saccharification and fermentation and optimization of pretreatment methods

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Abstract : This study was done to find out the optimized pretreatment for the production of bioethanol from rice husk and to obtain the maximum yield of ethanol by the process of Simultaneous Saccharification and Fermentation. The rice husk homogenized samples were pretreated with 1%, 1.5% and 2% sulphuric acid and with 1%, 2% and 3% sodium hydroxide solution. The pretreated samples were used for SSF at 28˚C ± 2˚C at 120 rpm. It has been found through analysis of DNSA, FTIR and GC that 2% sulphuric acid pretreated sample and 3% sodium hydroxide pretreated samples resulted into maximum ethanol yield of 6.34% and 5.89% respectively.

Keywords: Pretreatment, lignocellulose, rice husk, Simultaneous Saccharification and Fermentation (SSF), Fourier Transform Infrared (FTIR) , Gas Chromatography (GC), bioethanol.

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