Optimization Of Hydrothermally Treated Sawdust Operating Parameters of an High Pressure Autoclave Reactor [SS316 HP] Using Response Surface Methodology.

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Abstract :

The requirement for producing bioethanol along by products is essential with the end goal to repay the vitality requests and expenses of raw materials, and working expenses. The Initial isolation of hemicellulose during fractionation of lignocellulosic biomass is necessary for producing different value added chemicals as a biorefinery approach. So experiments are performed using high pressure Autoclave HP-SS316, to remove hemicellulose from sawdust.

The optimal operating conditions for removal of hemicellulose was achieved using RSM, in a high pressure autoclave reactor, for a temperature range of 150- 190°C, pressure 1-5 bars, and operating time (2-10 minutes).The characterizations of hydrolysate obtained was performed using High Pressure Liquid Chromatogtaphy (HPLC), and retention times of chromatogram demonstrated nearly 90 % of hemicellulose removal.

Keywords: Hydrothermal treatment, SS 316 HP Autoclave, hemicellulose, HPLC.