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Original Research Article

Optimization the Adhesive Production from Sugar Cane Bagasse

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ABSTRACT

The production of adhesive from sugar cane bagasse was performed in this study. The goal of this investigation was optimization of wallpaper adhesive production from sugar cane bagasse cellulose by experiments which were designed by full factorial method and carried out in a lab scale reactor with variations in reaction condition such as temperature, catalyst and feed concentration. The analysis of the results showed that the amount and quality of produced wallpaper adhesive is related to reaction condition. The investigation results showed that the optimum condition for removal of lignin from sugar cane bagasse is occurred at ammonia solution concentration of 30 percent and temperature of 150 centigrade. Production of water soluble carbohydrate was carried out by hydrolysis of deligninificated sugarcane in sulfuric acid solution at concentrations of 72 up to 68 percent and controlled temperatures from 20 to 25 centigrade. The results of quality investigations showed that the optimum glue formulation is occurred at carbohydrate concentration of 3 percent and borax concentration of 0.2 percent.

Keywords: Sugar cane bagasse, Adhesive, Bond strength, Drying time