

Abstract Submitted
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Study of structural modification of sugarcane bagasse employing hydrothermal treatment followed by atmospheric pressure plasmas treatment JAYR AMORIM, MARIA TERESA PIMENTA, Centro de Ciencia e Tecnologia do Bioetanol, LEANDRO GURGEL, IQSC, Universidade de Sao Paulo, FABIO SQUINA, JORGE SOUZA-CORREA, Centro de Ciencia e Tecnologia do Bioetanol, ANTONIO CURVELO, IQSC, Universidade de Sao Paulo, CTBE TEAM, USP SC COLLABORATION — Nowadays, the cellulosic ethanol is an important alternative way to many liquid biofuels using renewable biomass rich in polysaccharides. To be used as feedstock for ethanol production, the bagasse needs to be pretreated in order to expose its main constitutive. The present work proposes the use of different pretreatment processes to better expose the cellulose for hydrolysis and fermentation. In the present paper the sugarcane bagasse was submitted to a hydrothermal pretreatment followed by atmospheric pressure plasmas (APPs). An RF microplasma torch was employed as APPs in Ar and Ar/O₂ mixing. The bagasse was treated in discharge and post-discharge regions. The position and time of treatment was varied as well as the gas mixture. The quantity of polysaccharides was determined by using high performance liquid chromatography. It was observed the release of a fraction of the hemicelluloses in the sugarcane bagasse. Modifications in the surface of the sugarcane fibers were monitored by employing scanning electron microscopy.

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