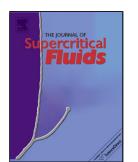
## Accepted Manuscript

Title: Subcritical water hydrolysis of sugarcane bagasse: An approach on solid residues characterization

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## ACCEPTED MANUSCRIPT

1	Subcritical water hydrolysis of sugarcane bagasse: an approach on solid residues
2	characterization
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11	
12	Abstract
13	Reducing sugars obtained from sugarcane bagasse, as a waste biomass energy
14	precursor, can be further transformed into fuel alcohol by fermentation or gaseous fuel
15	by gasification. In this work, subcritical water process was used as an environmentally
16	friendly solvent for the hydrolysis of sugarcane bagasse with the aim of producing
17	reducing sugars using residue bagasse from a sugarcane biorefinery. Hydrolysis in
18	subcritical water performance was studied under semi-continuous unit conditions in a
19	110 mL reactor. Hydrolysis was carried out using different sample loadings (3 and 5 g),
20	flow-rates (9 and 12.5 mL min <sup>-1</sup> ), temperatures (100, 150, 200 and 250 °C) and
21	pressures (5, 10, 15 MPa). The highest reducing sugar yields wereobtained at
22	temperature above 200 °C, with the highest reducing sugar yield reaching 15.5%.

Scanning electron microscopy was used to analyze the sugarcane bagasse undergoing

hydrolysis. Diffuse reflectance infrared spectroscopy was used to characterize the

residual solids, with results consistent with the removal of hemicellulose during

hydrolysis.

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