Bioethanol production from hydrothermally pretreated coconut fibre mature catalyzed with sodium hydroxide

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In search to increase the offer of liquid energy, clean, renewable and sustainable in the world energy matrix, arises the alternative in the use lignocellulosic materials in bioethanol production. The objective of this work was evaluated the bioethanol production using different strategies as simultaneous (SSF) and semi-simultaneous (SSSF) saccharification on hydrothermally pretreated coconut fibre mature as raw material catalyzed with sodium hydroxide. The bioethanol production was performed by S. cerevisiae PE-2, P. stipitis Y7124 and Z. mobilis B14023. The coconut fibre mature after of the hydrothermal pretreatment was characterized by SEM, X-ray and crystallinity index. The semi-simultaneous saccharification at 48 °C for 8 h had a positive effect on the overall ethanol yield, increasing from 84.64, 79.27, 81.71 % to 89.15, 85.04, 85.65 % for S. cerevisiae PE-2, P. stipitis Y7124 and Z. mobilis, respectively. For all the cases S. cerevisiae PE-2, P. stipitis Y7124 and Z. mobilis, SSSF strategy allowed obtained higher ethanol production than SSF.