

SBFC 2014 - 36th Symposium on Biotechnology for Fuels and Chemicals

Clearwater Beach, FL April 28-May 1 2014

Effect of hydrothermal pretreatment for fermentable sugars production using brown macroalgae as raw material

Héctor A. Ruiz, Center of Biological Engineering/IBB - Institute for Biotechnology and Bioengineering, University of Minho, Braga, Portugal, **J.C. Parajó**, Department of Chemical Engineering, Faculty of Science, University of Vigo, Orense, Spain and **José A. Teixeira**, IBB - Institute for Biotechnology and Bioengineering, Centre of Biological Engineering, University of Minho, Braga, Portugal

Energy high demands and concerns about global climate changes have led to the resurgence of biofuels as bioethanol. The conversion of biomass (macroalgae) into high added-value chemicals (pigments, food supplements, polymers, surfactants and fertilizer) and bioenergy renewable products as bioethanol is essential in order to sustain our present and future. The polysaccharides conversion from macroalgae to fermentable sugars and fuel ethanol production is still to be studied. For that reason, the aim of this work was to evaluate the production of fermentable sugars from brown macroalgae using hydrothermal pretreatment that it is considered an environmentally friendly process. The hydrothermal pretreatment was evaluated in different conditions of time and temperature. The best operating condition for the production of fermentable sugars was at 200 °C for 30 min, obtaining 0.41 g of total sugars/ g of macroalgae, dry basis. The hydrothermal process proved to be a promising pretreatment to produce fermentable sugars.