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## MICROWAVES EFFECT OVER BIOMASS HYDROLYSIS

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### Abstract

Changing fuel consumption to a more ecological environmentally alternative is replacing fossil fuels with fuels generated from renewable resources. Ethanol, a renewable fuel, can be produced mainly from crops, lignocellulosic biomass and different other environmental wastes. Although ethanol has been produced mainly from crops, there is a great interest in using cheaper lignocellulosic materials as a feedstock for ethanol production.

The aim of this paper is study of dilute acid hydrolysis of different types of biomass using the microwaves radiation. Acid hydrolysis of biomass will be accomplished in a speedwave TMMVS-2 system, at 130-170°C, for 35 minutes, at high pressure. Dilute-acid hydrolysis is a cheap and fast process to obtain sugar from lignocelluloses materials.

The suggested method offers multiple advantages: an important decrease of energy consumption, reducing of reaction time and reaction temperature optimization by the microwave generator.

The resulting compounds were analysed by HPLC chromatography and UV-VIS spectroscopy.

*Key words:* dilute-acid hydrolysis, ethanol, lignocellulosic biomass, microwave, renewable fuel

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