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# EFFECT OF CORN STRAW PRETREATMENT ON EFFICIENCY OF BIOGAS PRODUCTION PROCESS - COMPUTER SIMULATION

Anja Antanasković<sup>1</sup>, Maja Bulatović<sup>2</sup>, Marica Rakin<sup>2</sup>, Zorica Lopičić<sup>1</sup>, Tatjana Šoštarić<sup>1</sup>, Marko Rakin<sup>2</sup>

<sup>1</sup>Institute for Technology of Nuclear and Other Mineral Raw Materials, Belgrade, Serbia <sup>2</sup>University of Belgrade, Faculty of Technology and Metallurgy, Belgrade, Serbia

**Summary:** Anaerobic digestion is a natural process of organic material degradation by different kinds of microorganisms in the absence of oxygen. This process is used for industrial purpose to manage waste streams or to produce biogas. It gives a major contribution in reduction of harmful effects of organic waste disposal to the environment. The aim of agricultural waste pretreatment in biogas production is to decrease the retention time, improve utilization of raw material and improve the overall productivity and energy efficiency of the production process. In this paper the effects of combined chemical and mechanical pretreatment of corn straw biomass on biogas yield during anaerobic digestion of the feedstock were analyzed. The impact of pretreatment and process parameters in biogas production was analyzed by process simulation using the software SuperPro Designer. Using this tool a decrease of degradation time with an increase in biogas yield was shown.

Keywords: biogas, anaerobic digestion, pretreatment, energy efficiency, SuperPro Designer



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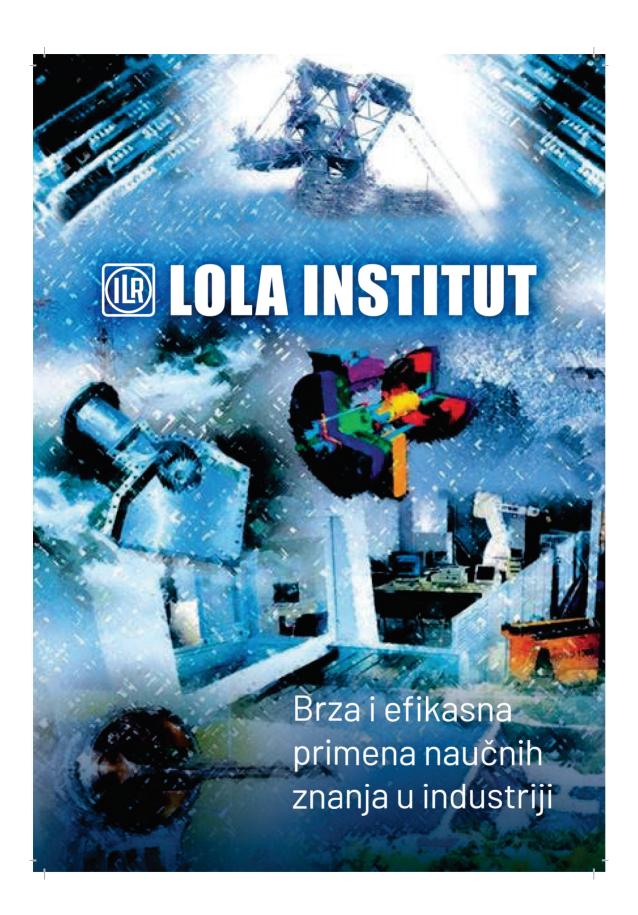
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