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STUDY CONNECTED WITH WOOD RESIDUES BEHAVIOUR DURING ANAEROBIC FERMENTATION PROCESS

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Abstract

In Europe, biomass represents an important renewable source, sharing the highest percentage (61.4 %), followed by hydro power with 31.9 %. Other energy resources, namely wind, geothermal and solar, taken together, stand for only 6.7%. Romania has a high biomass energy potential, estimated at some 7.594 million tons/year (318 PJ/year = 318 • 10⁵ J/year), representing almost 19 % of the total consumption of primary resources, by 2000. Potential reserves are wood waste, agricultural waste (animal and vegetable) household waste and energy crops. Taking this national and international context, the actuality of the paper, focusing on an experimental research concerning the utilization of waste biomass resources, is most important. It mainly highlights technical possibilities to generate biogas, based and assuming specific parameters for two varieties of woody biomass residues, both in terms of determining main physicochemical characteristics and behavior along the anaerobic fermentation process, resulting in bio-energy generation. The two tested varieties are the linden and lime beech sawdust. The main parameters of the process: temperature, pH and the pressure values, correlated with the parameters obtained previously during measurements conducted on a pilot plant, are discussed.

Key words: anaerobic fermentation, biogas, biomass residues, renewable energy resource

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