

The purpose of the project is to determine the energy demand of low temperature pyrolysis of organic waste, including kitchen waste, paper, cardboard, plastics, textiles, wood and its mixtures.

Based on the results of the research, the relation between processed organic waste and their mixtures will be determined through low temperature pyrolysis and the energy demand of the process will be determined by the analysis of the thermal. On this basis, the mathematical model of allothermic low temperature pyrolysis will be determined. In addition, the results of the fuel characteristics of the raw materials and produced carbonates, which will be produced at different temperatures and at different stopping times will be obtained.

Research has been undertaken because pyrolysis is considered to be, apart from incineration, an upcoming way of waste thermal utilization. However, the high heterogeneity of processed materials affects the instability of the process, which may be related to the fact that individual compounds that are a part of municipal waste react independently during their thermal transformation, which is associated with the difficulty of correcting the energy balance of the process. In addition, there is no scientific literature on the behavior of organic waste and their mixtures during the low temperature pyrolysis process.

There is no information in the scientific literature on the carbonization characteristics of low-temperature pyrolysis from organic waste. The properties of the products resulting from the processing of plant and forest biomass are very well described.

Due to the above, it is justified to undertake research on the characterization of the energy demand of organic waste processing and to obtain the results of the fuel characteristics of produced carbonates. Proposed research includes original, experimental, theoretical and interdisciplinary research undertaken to gain new knowledge on low temperature pyrolysis of organic waste.