

THE EFFECT OF MICROWAVE RADIATION ON WASTE TREATMENT IN A REACTOR WITH A BIOFILM

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Abstract: This paper presents the results of research into the effect of microwave radiation on waste treatment in a reactor with a biofilm. 2.45 GHz microwave radiation was supplied to the reactors placed inside a microwave chamber. The radiation was generated by magnetron and the amount of radiation was controlled by varying the times of alternating phases of radiation and treatment. The study was conducted in three arrangements of alternating phases: 7 s radiation and 10 min treatment; 7 s radiation and 5 min treatment; 25 s radiation and 10 min treatment. The results obtained in the study show that microwave radiation affects the process of biological waste treatment not only through heating but also through its athermal properties. An increase in the effectiveness of the treatment was particularly visible in the microwave action in nitrogen removal.