Recovery of Heat in the Aerobic Phase of Composting Process of Municipal Waste – Ewa Klejment, Marian Rosiński

Summary

In order to select the most optimum parameters for running heat recuperation process from aerobic composting process, three testing stages were run involving the registration of the value of recuperated heat volume and the observation of cooling impact on composting process parameters. The values of thermal conductivity coefficient were measured as a function of compost temperature, density and age. The values ranged from 0.171 to 0.300 W/mK. The optimum parameters for process running were selected. Basing on them it was estimated how much heat will be possible to recuperate during the composting process on industrial scale using a battery of heat exchangers. For artificially aerated pile with the following dimensions: lower base 8 m, upper base 5 m, height 3.5 m, length 3 m; it will be possible to recuperate approximately 7.4 kW (from 1 m^2 of heat exchanger surface – 774 W).