

Research on Aerobic Composting of Municipal Waste with a View to Heat Recuperation – Ewa Klejment, Marian Rosiński

Summary

The objective of the project was to find out whether the composting process of municipal waste may be used as a low temperature heat source. It was determined that during high temperature phase of the process on average 930.5 kJ of heat is produced per kg of compost. The designed and made laboratory model was used for carrying out three stages of testing, boiling down to running the composting process with parallel heat recuperation from the process. Basing on the tests, the parameters having affecting the heat recuperation process effectiveness were determined, viz.: optimum initial temperature of cooling water should be approximately 30°C, the reduction of flow rate of the cooling water has advantageous impact on the increase of process efficiency, whereas the safe temperature lower limit for compost cooling should be higher than 52°C (which safeguards compost sanitary purity). It was also observed that in parallel to compost age heat recuperation process efficiency is declining.