

Continuously operating pilot-scale waste incinerator

Description/Parameters

Continuously operating rotary kiln with a downstream additional combustion chamber. Both chambers are equipped with gas burners. The rotary kiln enables heat treatment of materials at a temperature of up to 800 °C, while the post-combustion chamber (additional combustion chamber) ensures heating of gaseous products to a maximum temperature of 1150 °C. The device can process up to 20 kg of material per hour. The technology includes a flue gas cooling system and flue gas cleaning system using fabric filter (filter unit for dry flue gas cleaning with the possibility of dosing cleaning reagents). A high-temperature flue gas denitrification system using NH_3 addition is included. The process can be modified by additives that can be dosed to different nodes of the technology. The thermal process is controlled by an automated system and, if necessary, with the possibility of manual adjustment of selected process parameters.

The furnace is equipped with complete monitoring of indicators enabling the processing of the energy balance of the process. The technology also includes monitoring of the composition of raw and treated flue gas. The basic flue gas components are analysed continuously (monitoring of CO_2 , O_2 , CO , NO , NO_2 , N_2O , SO_2 and C_xH_y concentrations), the complexity of the emission analysis is additionally ensured by discontinuous sampling sets (measurement of particulate matter, heavy metals and other components including PAHs, PCBs and PCDD/F). This is complemented by instrumentation that can be used to determine the thermal parameters required to assess the fuel and energy potential of various materials/wastes (thermogravimetric analyser, semi-automatic calorimeter, elemental analyser, etc.).

Utilization/services

Combustion studies of various types of waste or fuels

Study of calcination processes of inorganic materials

