

## I. Waste incineration in a pilot scale including complex analysis of flue gases

- Combustion tests, assessments of waste combustibility, complex analysis of processed waste.
- Assessment of emission load in waste incineration, the energy balance of the combustion process.

Equipment	Utilization
<p>Continuously operating pilot-scale waste incinerator with follow-up gas treatment (post-combustion chamber, filtration unit for dry flue gas cleaning) and online and offline analytic equipment. Suitable for solid and liquid fuel (waste), incineration capacity 30 kg/hr (calorific value 17 MJ/kg).</p>	<p>Pilot-scale combustion testing of waste materials with possibility to test a cleaning of waste gases in pilot scale. Unit allows monitoring the waste incineration process in its entirety and, thanks to its performance, enables direct data transfer to plant conditions. The advantage is the possibility of evaluating the energy balance of the combustion process. The device is equipped with a series of measuring sensors that allow evaluating the energy efficiency of the combustion process. Measured values such as the amount of waste incinerated, burner power, furnace and flue gas pressure, flue gas temperatures at several technological points, temperature of plant structure, exhaust gas concentrations, etc. are recorded continuously. The continuously monitored gases are CO<sub>2</sub>, O<sub>2</sub>, CO, NO, NO<sub>2</sub>, N<sub>2</sub>O and SO<sub>2</sub>) moreover there are sampling ports for off-line measurements of particulate matter, PCDD/F and heavy metals. Also possible on- and off-line monitoring for evaluation and optimization of dry flue gas cleaning process (before, within steps and after cleaning).</p>
<p>Discontinuous waste incinerator with follow-up treatment technologies and flue gas emissions monitoring (input 100 kg/hr, suitable for solid waste incineration).</p>	
<ul style="list-style-type: none"> <li>• Thermogravimetric analyser</li> <li>• Semiautomatic calorimeter</li> <li>• Elemental analyser (C, H, N, S, O)</li> <li>• Total organic carbon/carbon phase analyser</li> </ul>	<p>Determination of thermochemical parameters of waste material - moisture, volatile matter, fixed carbon and ash contents, elemental composition, total calorific value; heavy metal content in waste/sludge.</p>



Continuously operating pilot-scale waste incinerator with filtration unit