



About the Company



General information – ATON HT S.A.



Joint stock company ATON-HT has been operating since August 2005.

The company activity is concentrated on developing of own patented solutions for hazardous waste utilisation.

The technologies are based on Microwave Thermal Treatment (MTT) method.

Characteristic for our solutions is the application of microwaves as source of energy.



General information – ATON HT S.A.



As highly hazardous wastes continue to grow in our society, it is the role for the scientific community to present new answers and solutions for their elimination. Solutions which are environmentally friendly, cost effective, and innovative in their approach.

ATON is just such a company, after years of research and development. We have mastered a unique approach of destroying hazardous waste with microwave technology (MTT). Of special interest is our patented system for Asbestos removal, We are also working commercially with contaminated soil (Riga) and hospital waste.

As a result of Polish - U.S. cooperation, ATON is now working to bring their products and technologies to the USA - with help of the EPA, American Universities (Michigan State University), as well as industrial companies as production partners, and of course companies with a hazardous waste problem, who have shown interest in working with ATON.

We look forward to cooperating with all interested parties.



MTT Technology

– applications for waste treatment

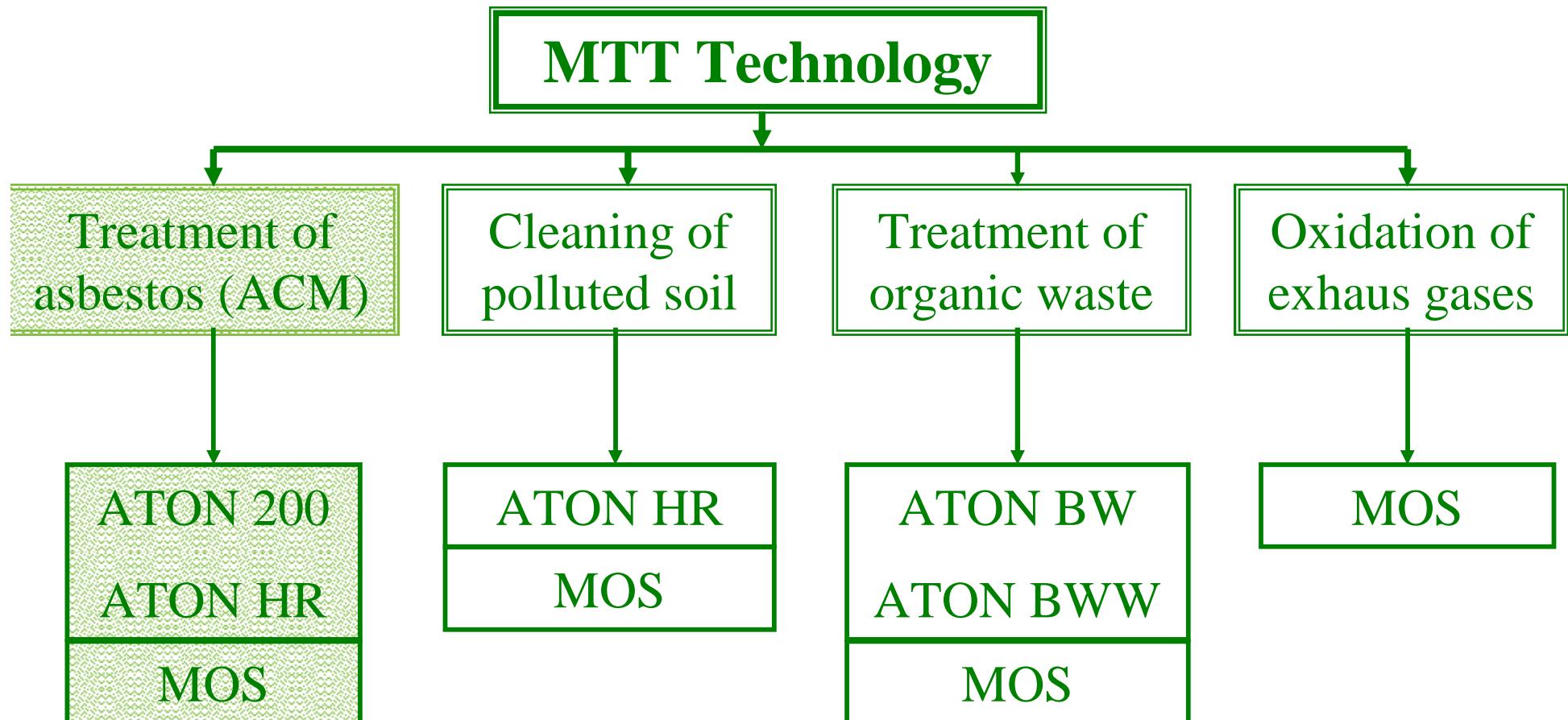


MICROWAVE THERMAL TREATMENT

Innovative and unique
method
concentration of microwave field
in the processes
of thermal treatment of hazardous waste



MTT Technology



(Thermal treatment of ACM – Asbestos Containing Materials)



Chryzotyl



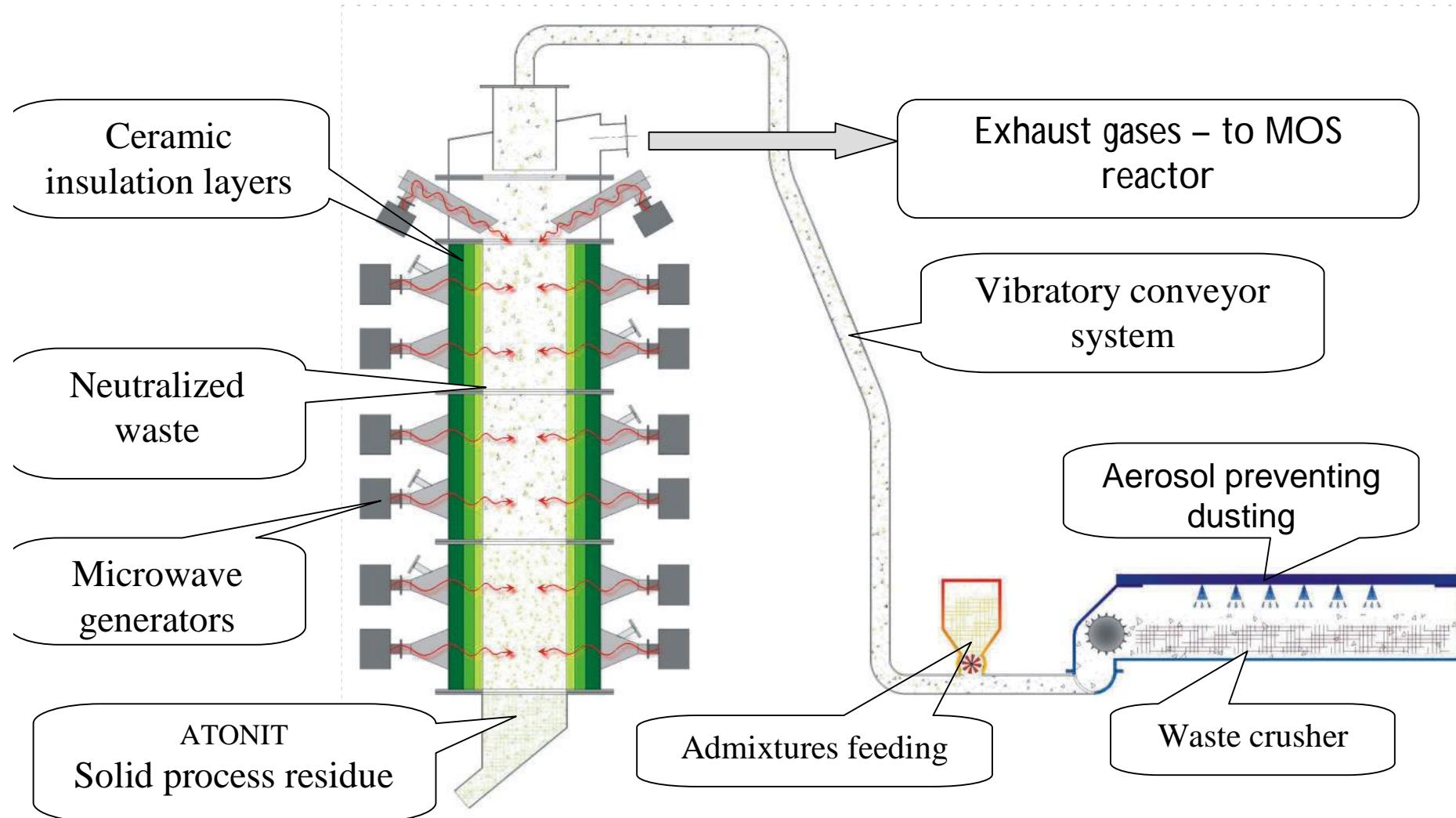
Asbestos fibers
inside of eternit
boards



ATONIT – product of
microwave treatment

MTT method: neutralization of asbestos waste

ATON
high technology



Aton – 200

- device for neutralization of asbestos waste



Microwave reactor



Waste crusher



Aton 200

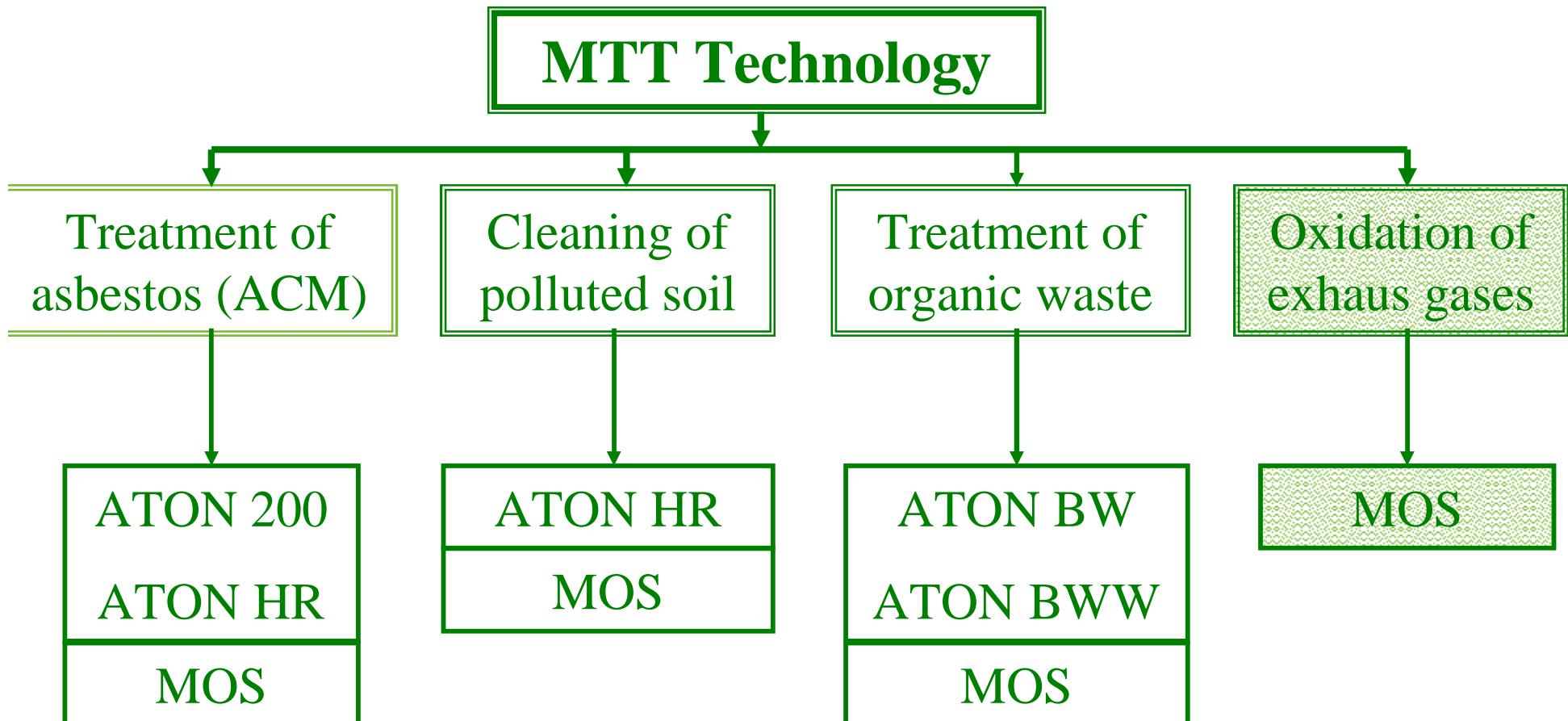
– device for neutralization of asbestos waste



**Scale model of device for
treatment of ACM**

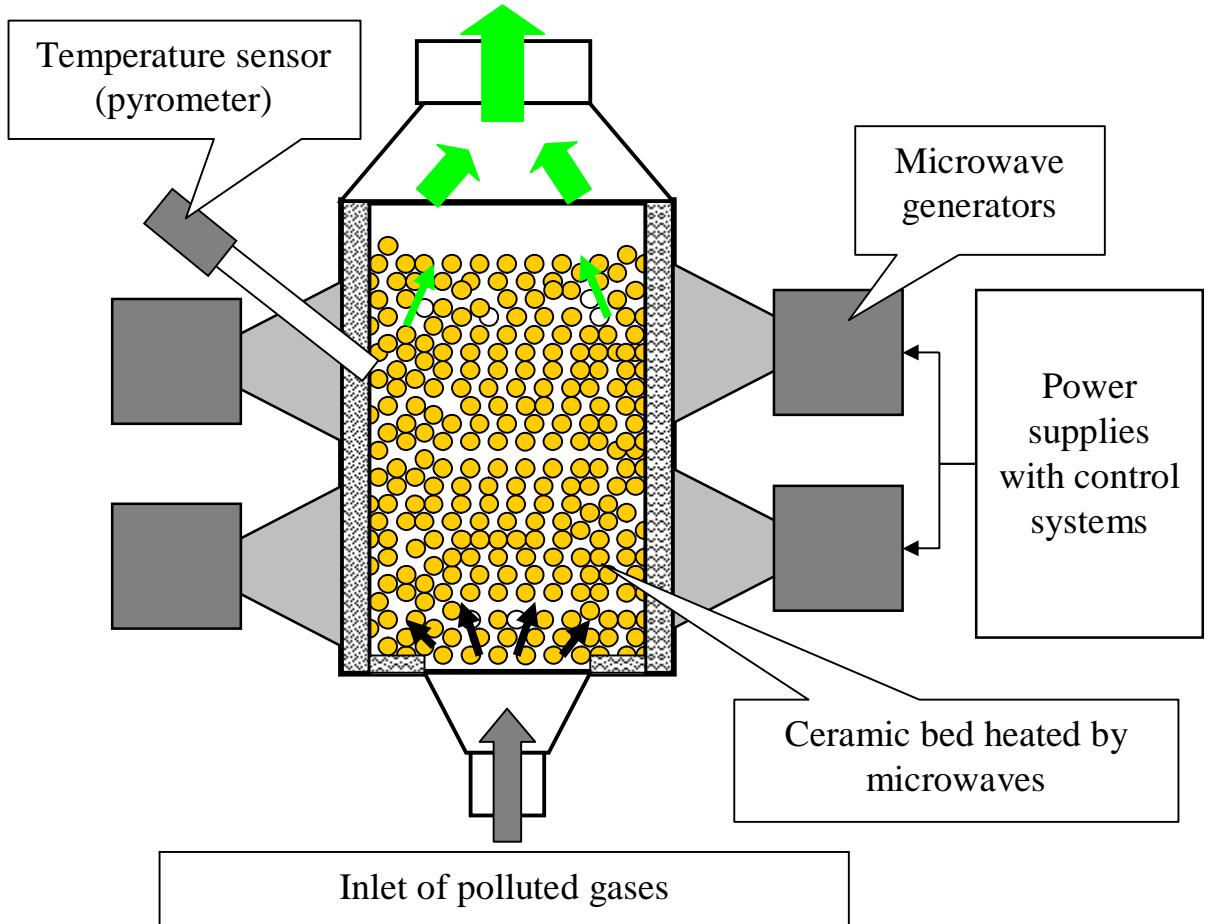


MTT Technology



Oxidation of pollutants in exhaust gases – MOS reactor

- Exhaust gases fly through bed made with ceramic strongly absorbing microwaves.
- Ceramic bed is heated with microwaves to ca. 1200°C increasing gas temperature to a range of 900 - 1100°C.
- As a result of high temperature and sufficient oxygen concentration all organic pollutants are effectively oxydized.



VOC oxidation – MOS system



MOS reactor with heat exchanger installed into mobile container



Oxidation Temperature: 1100 - 1300°C,

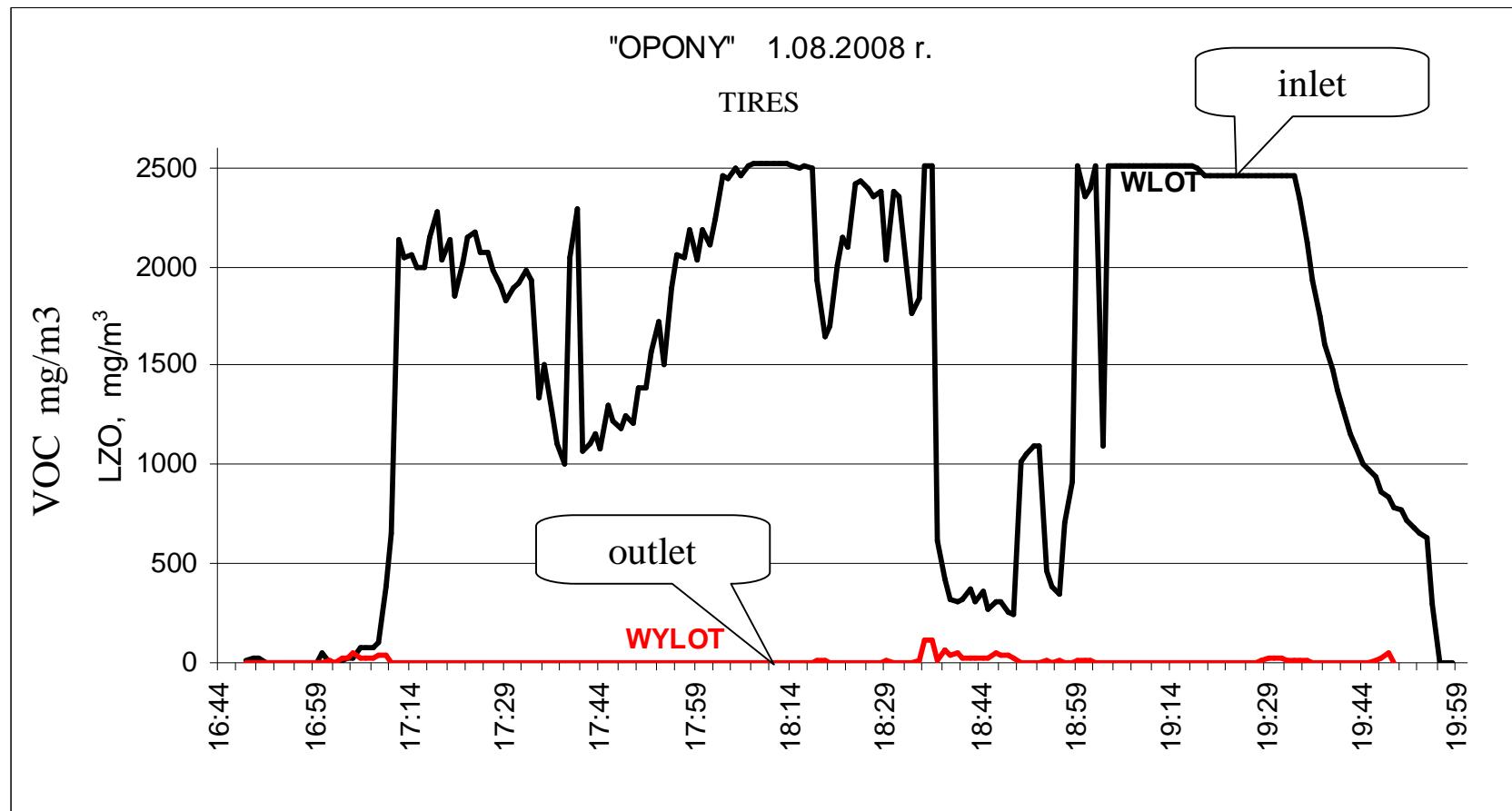
Gas flow: up to 500Nm³/h

Aton MOS – the reactors offered to the customers:

1. The system **ATON 2 MOS** (gas flow rate **500 m³/h.**)
2. The system **ATON 20 MOS** (gas flow rate **1.500 m³/h.**)
3. The system **ATON 20 MOS 3** (gas flow rate **4.500 m³/h.**)
4. Customer designed devices (gas flow rate up to **10.000 m³/h.**)



VOC oxidation – MOS system



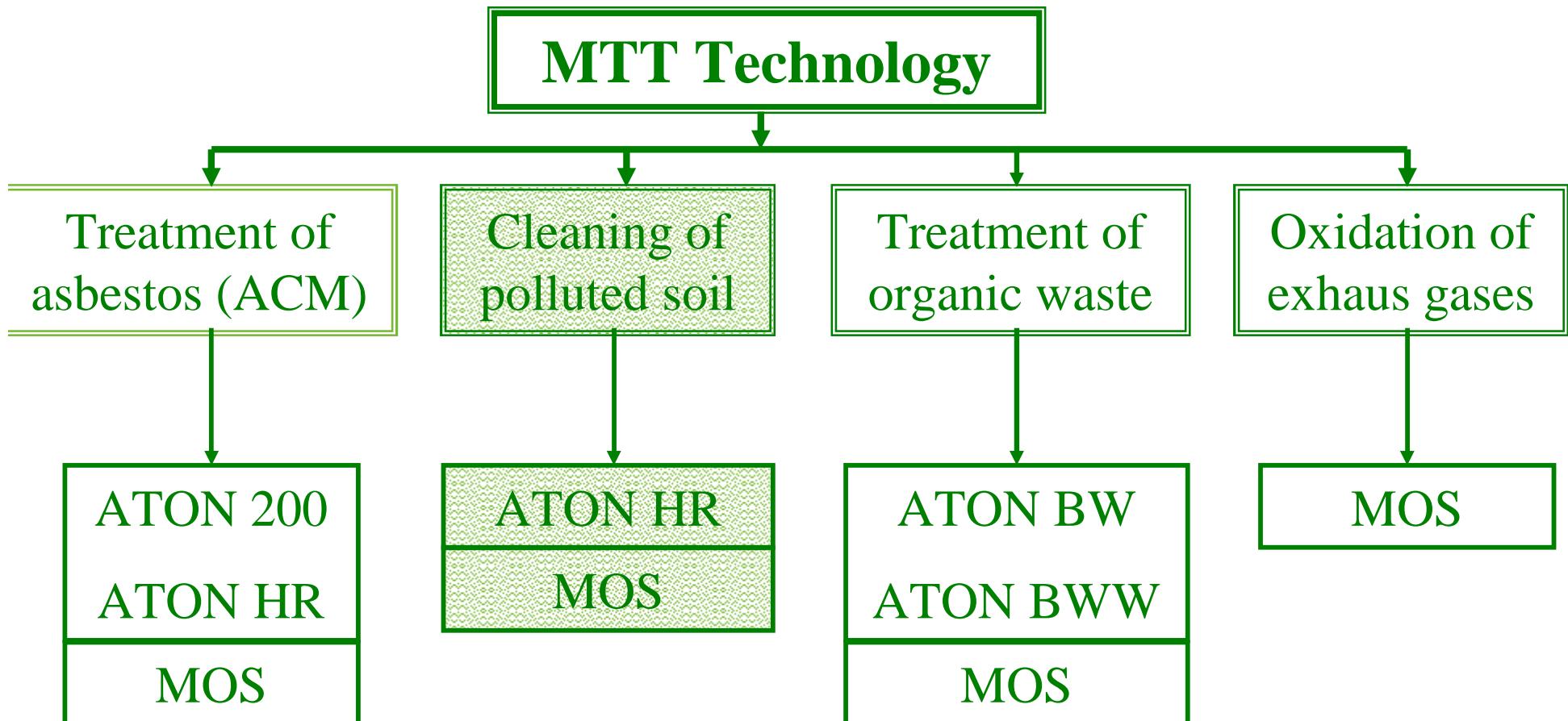
MOS applications

- Neutralization of gases emitted during thermal treatment of ACM;
- Destruction of asbestos fibers emitted during treatment of ACM
- Purification of exhaust gases from incineration plants
- Oxidation of VOC (Volatile Organic Compounds)
- Elimination of odors
- Other applications not yet recognized

Usually MOS is equipped with heat exchanger in order to recover heat energy of hot exhaust gases.



MTT Technology



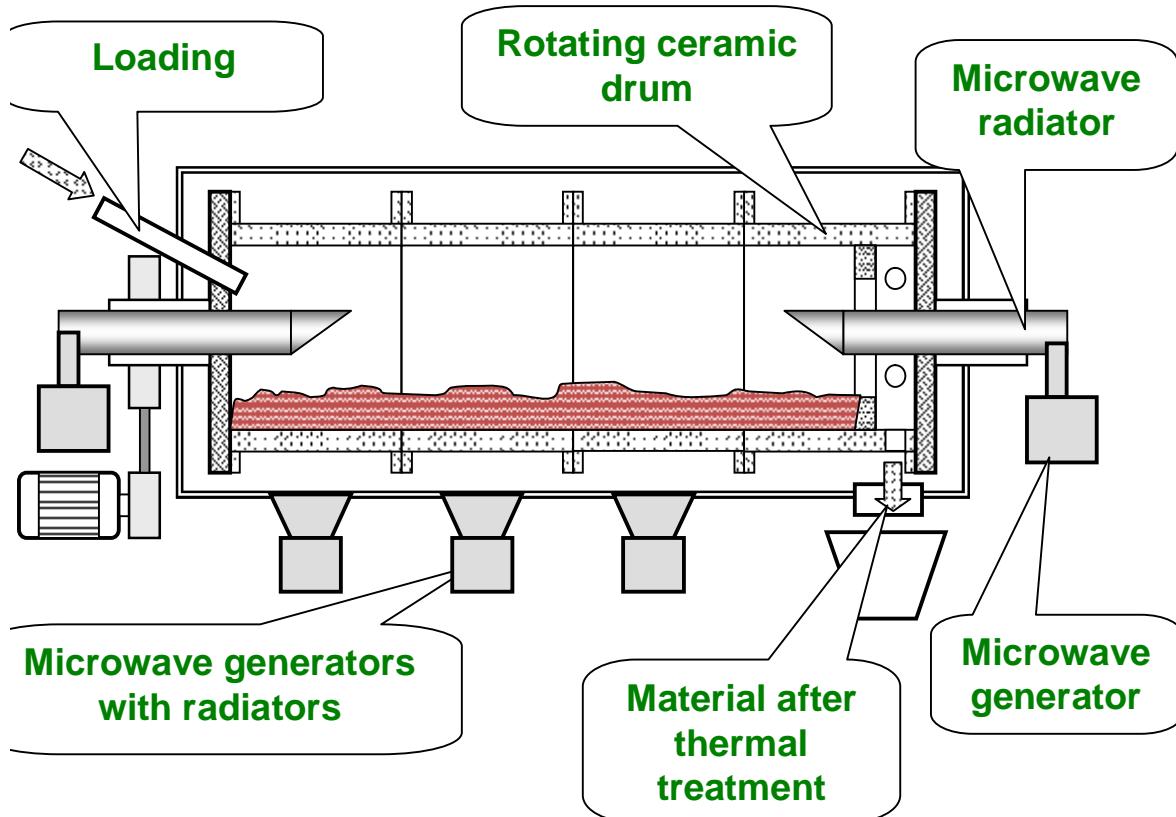
Aton 200 HR



- For some types of waste treatment rotational drum reactor is more effective in compare with fixed chamber reactor ATON 200.
- In rotational drum reactor ATON 200 HR treated waste material is intensively stirred and heated
- This method is necessary in a case of soil and other mineral materials polluted with organic substances, like oils.
- This system may be also applied to asbestos waste polluted with organics (oils, paints etc.)

Aton 200 HR

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Aton HR - Treatment of soil polluted with oil



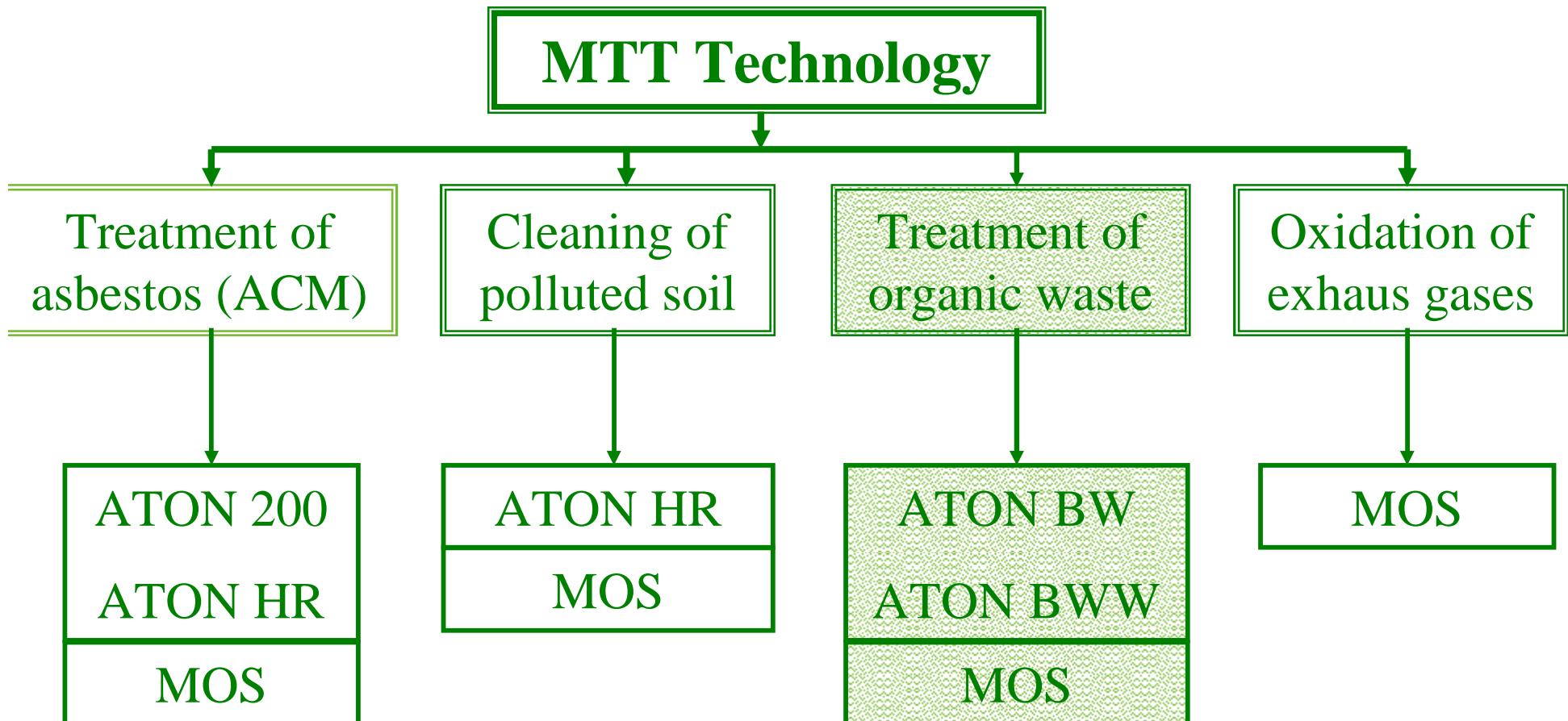
- Tests of reactor ATON HR in seaport (Riga Latvia)

ATON 200 HR

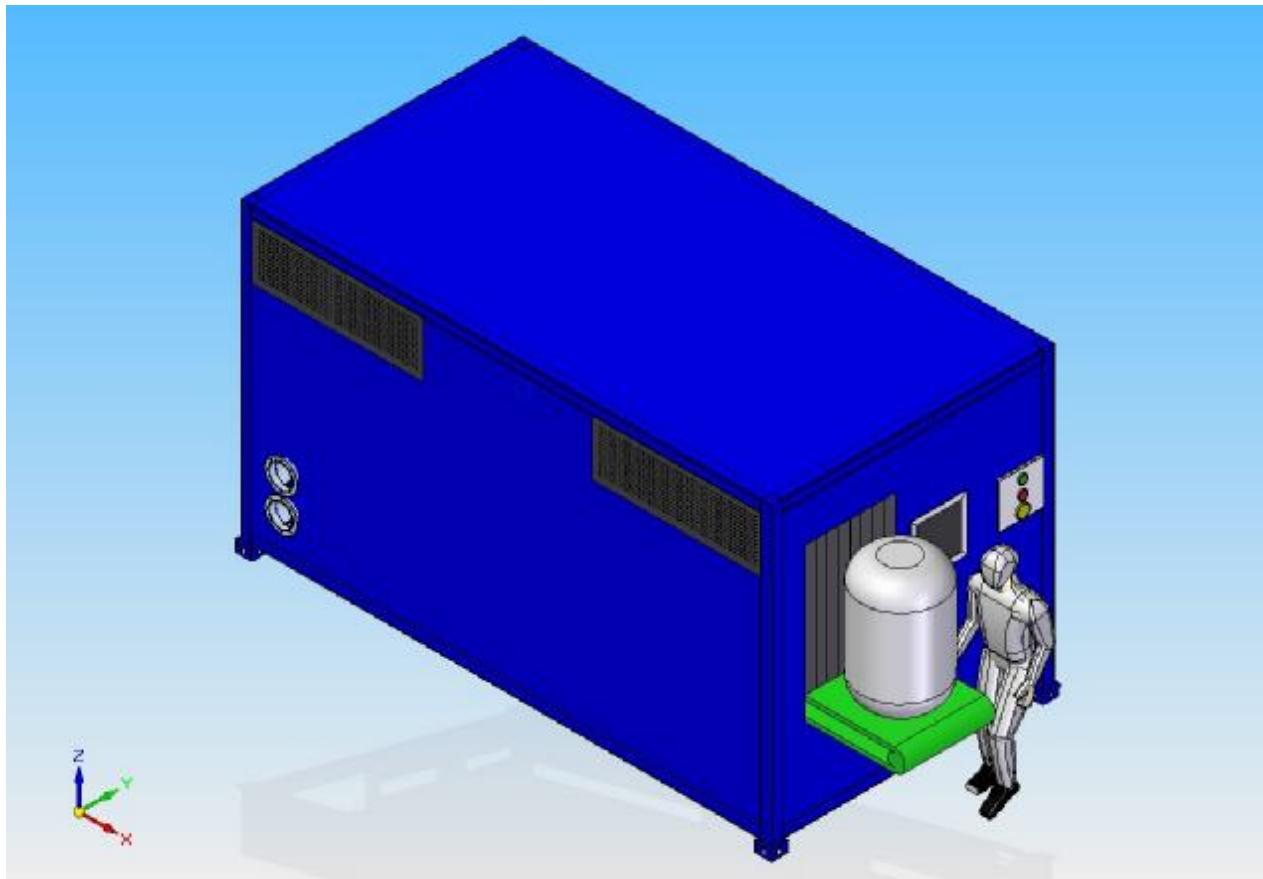


- Mineral material (Al_2O_3) polluted with crude oil before and after treatment

MTT Technology



Aton BWW – for utilization of medical waste



A mobile installation
for the carbonization
of organic
compounds, hospital
wastes, catering
(restaurant waste),
and veterinary wastes.

Aton BWW – for utilization of medical waste



A mobile installation for the carbonization of organic compounds, hospital wastes, catering (restaurant waste), and veterinary wastes.

Inside view of ATON BWW

2. Aton 500 BW i BWW – carbonization of organic waste

- 2.1. Reactor is designed for a complete utilization of organic waste (for instance poultry industry) and sewage sludge, without emission of pollution to environmental.

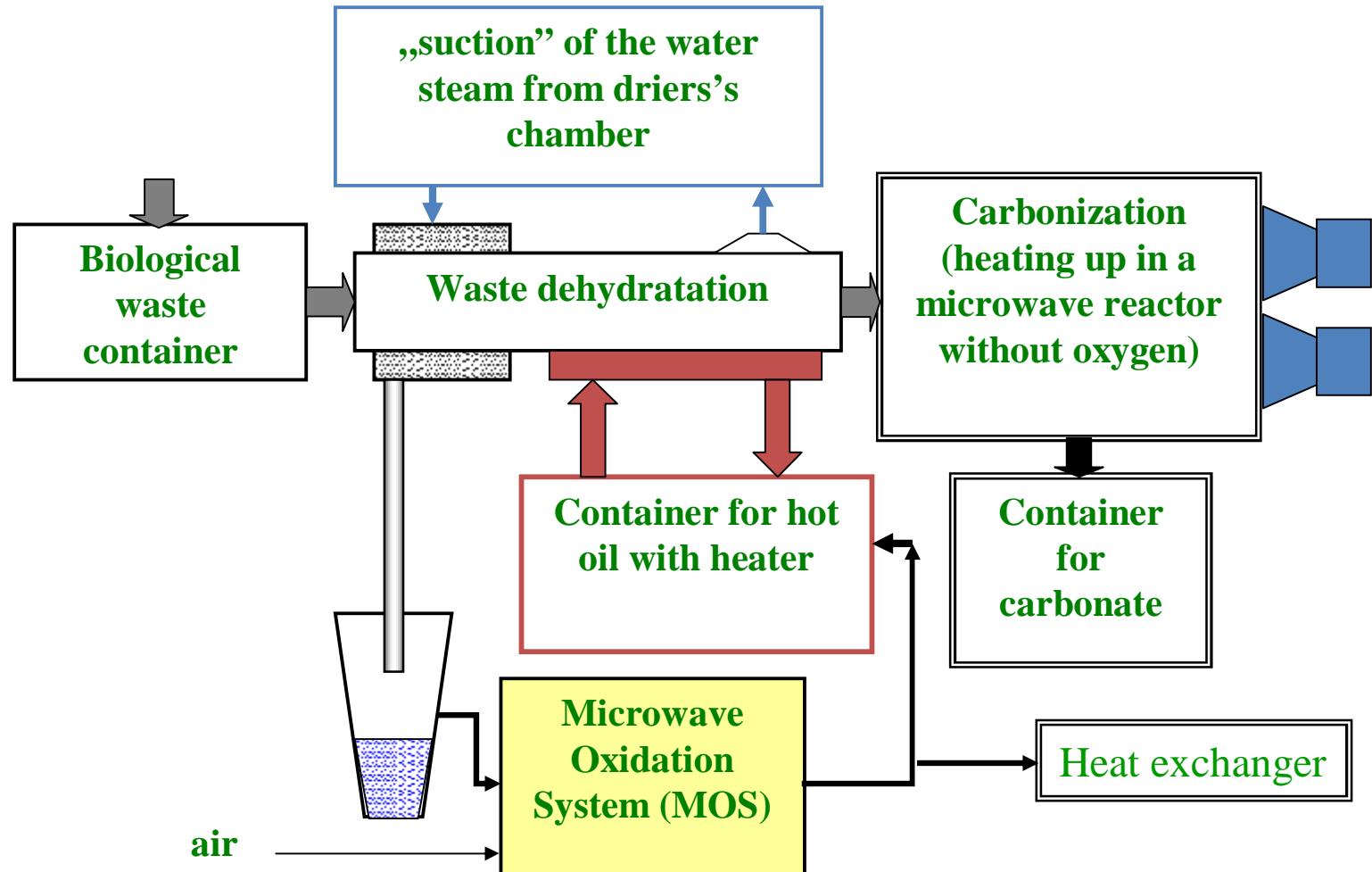
A unique technology of carbonizing biological wastes is used for the purpose of neutralizing such wastes, as veterinary wastes, post-slaughter wastes, meat wastes, provisional wastes, poultry industry wastes, as well as sewage wastes etc. The technology is based on using microwave energy to heat the neutralized substances in their full capacity and in controlled atmosphere (without the access of oxygen)



Utilization of biological waste (from meat and poultry industry)

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Diagram of system
for waste
neutralization with
appliance of
Carbonization
method (MCS
technology)



Aton 500 BW

– device for utilization of biological waste

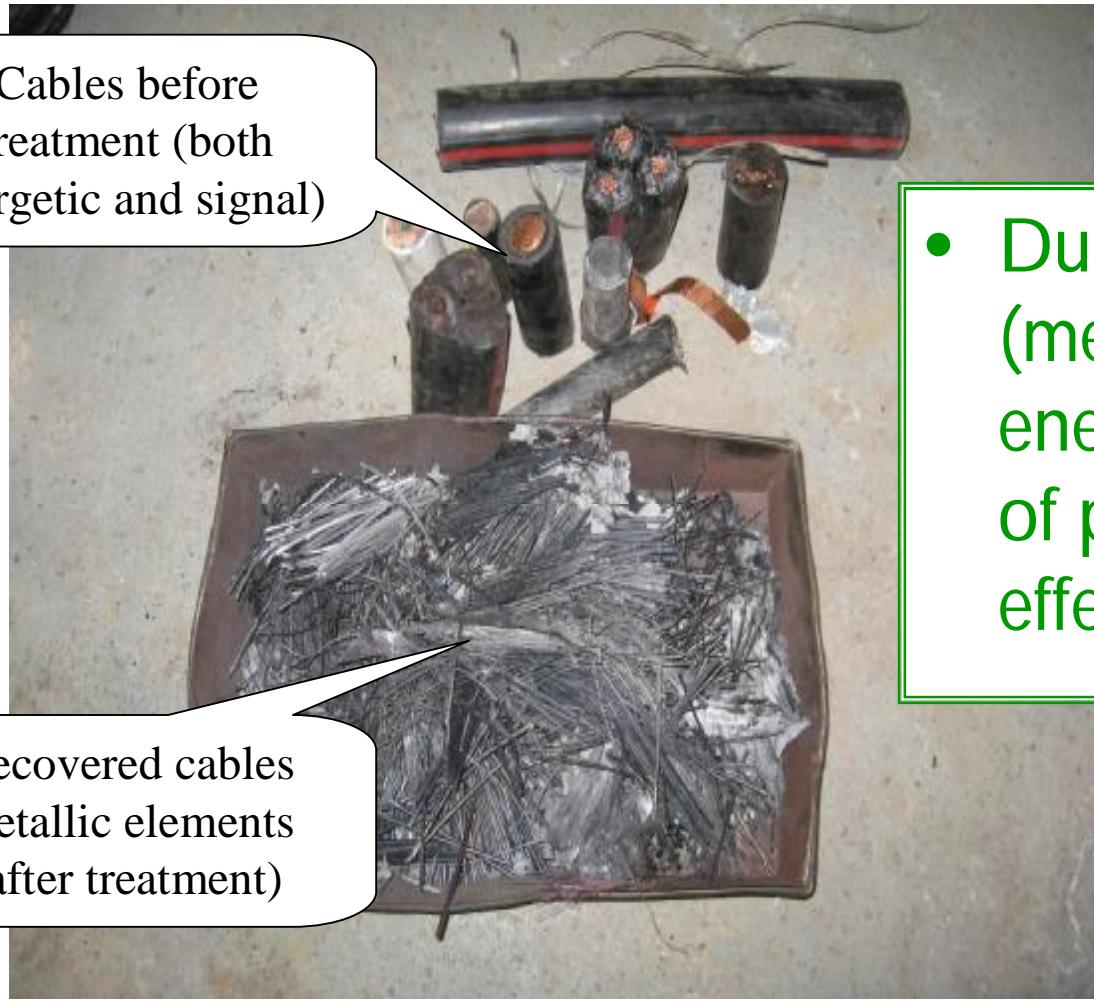


Reactor Aton 500 BW- during the assembly of the device before insertion in the container



Cable waste treatment

Cables before treatment (both energetic and signal)



Recovered cables
metallic elements
(after treatment)

- During treatment of cables (metal and plastics materials) energy coming from pyrolysis of plastic isolation may be effectively recovered

- § The processing of waste containing asbestos fibers.
- § The processing of hazardous medical waste.
- § The processing of laboratory waste - blood samples, dental waste, waste from research laboratories.
- § Treatment of biological waste through their carbonization, incl sewage sludge.
- § Removal of organic pollutants from soil.
- § Purification of gases and removing odors through afterburning
- § Recycling waste such as metallic parts of cables.



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Thank you for your attention

