

# GAOS MS

## Process mass spectrometry



Mass-spectrometer GAOS MS series

**GAOS MS mass spectrometers provide fast, accurate and comprehensive gas analysis in real time.**

### Operational characteristics:

- Modular configuration, quick replacement of units for maintenance and repair;
- Protective performance according to customer requirements;
- Continuous operation 24 hours for 6 to 12 months without servicing the vacuum system;
- Automatic algorithm of work with functions of diagnostics, adjustment, calibration and operational control of measurement accuracy.

$H_2, D_2, T_2, He, CH_4, H_2O, Ne, N_2, CO, O_2, Ar, CO_2, SO_2, Kr, Xe$

200 ns

$C_2H_6, C_3H_8, C_4H_{10}, C_5H_{12}, C_6H_{14}, C_6H_6, C_7H_8$



Industrial Sample Conditioning Unit

**Depending on analytical applications, GAOS MS process mass spectrometers are equipped with various modifications of the sample preparation system.**

### Sample preparation system specification:

- Continuous sampling of the gas probe under conditions:  
Temperature up to 1200°C;  
Dust content up to 30 g/m<sup>3</sup>;  
Pressure (10<sup>-3</sup>÷3) bar;  
Presence of a condensate, aggressive gases;
- Step-by-step cleaning of the gas probe, removal of dust, condensate, cooling;
- Switching from different sampling points and transporting the gas probe to the mass spectrometer input;
- Automatic control of operating parameters (temperature, pressure, volume flow) and self-diagnosis of the sample conditioning system.

# Analytical Applications

## Metallurgy:

- Basic Oxygen Steel process (converter);
- Blast Furnace Optimization;
- Steel Vacuum Processing (VOD, RH);
- Air separation (analysis of blowing oxygen purity);
- Emissions Monitoring and Pilot Plant Gas Analysis for non-ferrous metallurgy.

## Oil and gas industry:

- LNG production;
- Natural gas processing;
- Hydro-cracking process;
- High-temperature cracking furnace optimization;
- Process of the catalyst regeneration;
- The chemical analysis of technological gases: recycle hydrogen, fuel, inert.

## Investigation:

- Monitoring of the gas phase for thermal, thermogravimetric analysis;
- The elemental analysis (C, N, O), quantity determination of the dissolved gases in metals;
- Pilot plant gas analysis of the metallurgical processes.

## Geology:

- Mud Gas Logging;
- Isotope Analysis;
- Gas Measuring;
- Fluid Inclusions Gas Analysis (geochemistry investigations).

## Alternative energy:

- Plasma gasification of the solid waste with reception of synthesis-gas for power and chemical industry;
- Optimize of hydrogen reformer and catalyst efficiency for fuel cells development and testing.

## High-purity gas production:

He, Ne, Ar, Kr, Xe, H<sub>2</sub>, N<sub>2</sub>, O<sub>2</sub>

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