

Laser elemental analyzer LIOS 500N





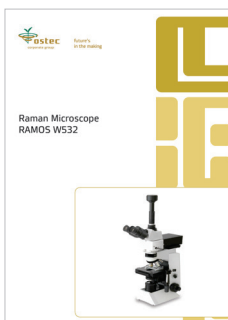
Ostec Instruments produces and offers hi-tech innovative scientific and analytical equipment.

Our mission is to be a company that finds, selects, protects and develops cutting-edge ideas to create new products and technologies and deliver technological progress. That is why the symbol of our company is a growing sprout.

We provide complete solutions for our clients: the best equipment to meet customer's requirements, deep knowledge of customer's applications, qualified and reliable maintenance support.



Our other products:



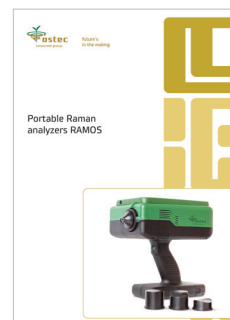
Raman microscope
RAMOS W532



Confocal Raman
microscopes RAMOS



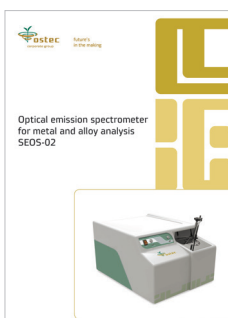
Optical components
OCOS



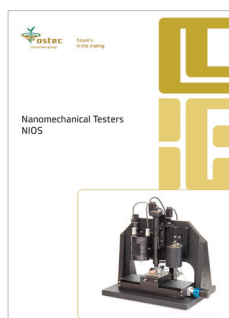
Portable Raman
analyzers RAMOS



Vibration control
solutions AVOS



Optical emission
spectrometer for metal
and alloy analysis SEOS-02



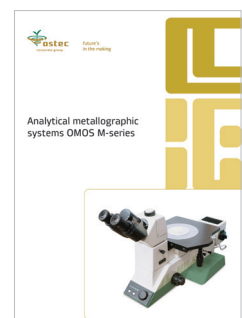
Nanomechanical
testers NIOS



Accessories for Scanning
Probe Microscopes



FTIR spectrometers
and microscopes IROS



Analytical metallographic
systems OMOS M-series

LIOS 500N

All chemical elements of the periodic table for one minute



LIOS 500N is a modern powerful instrument that incorporates innovative technologies in spectroscopy, lasers and software enabling unique measurements of chemical elements in a sample as well as 2D, 3D elemental mapping and in-depth profiling



Universality (no need to restart the instrument while analysing different materials)



Easy and fast analysis (little to no sample preparation)



The highest analytical flexibility (variations in a sample shape and size may be infinite)



High Speed Analysis



Wide range of concentrations (from ppm to tens of percents)



High accuracy measurements and stability



Low cost of a single analysis, minimum consumables

The most convenient and efficient analytical technique of choice for a wide range of applications

- Glass, ceramics and raw material
- Pure metals, alloys and slag
- Minerals, ore, products of processing and enrichment
- Potassium salt and fertilizer
- Traces (impurity) in pure metals
- Plastics and rubber
- Natural materials (clays, sands, dolomite)
- Rich soil
- Processed raw materials
- Chemical reagents
- Medicinal raw materials
- Biological materials
- Archaeological artifacts
- Food
- Forage for animals

LIOS 500N is an ideal instrument for research, creation of new materials and processing technologies





Fast multielement qualitative and quantitative analysis

Analysis of extremely hard materials

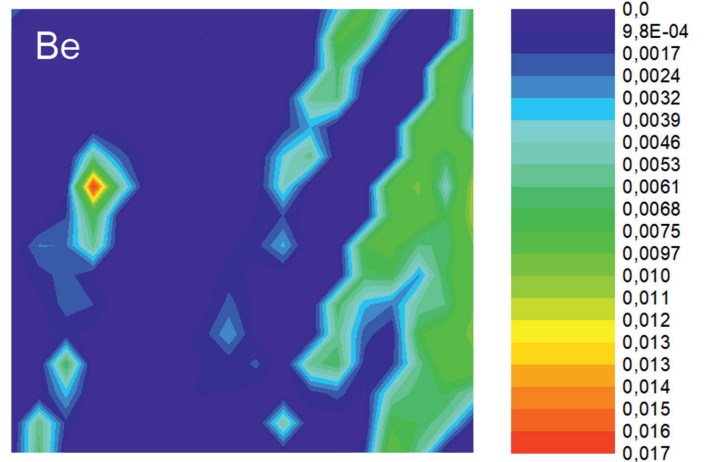
- Analysis of light and heavy elements per one measurement
- High sensitive and accurate measurements in a wide range of concentrations
- Analysis in set points on a sample surface using XYZ motorized positioning and video system
- Minimal spot of analysis is 50 μm
- Analysis of inclusions and defects
- Layer-by-layer analysis
- Analysis of coatings and films
- Analysis of element concentration distribution on a sample surface with 10 μm scanning step
- Analysis of wires and tubes
- Minimal quantity of powder (100 mg) for a tablet preparation
- Change of a sample aggregate state is not required
- Cleaning of a sample surface by preliminary laser pulses

2D mapping

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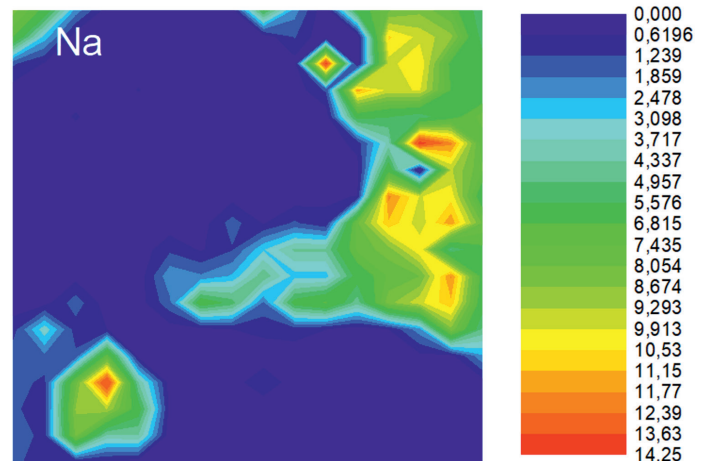
The optical layout offers the ability to make analysis of chemical composition in a small area of inhomogeneous samples, provides elemental mapping and layer-by-layer analysis.

The unique capabilities of LIOS 500N provide the best analytical results for each customer's unique applications: detection of chemical elements in geological materials, analysis of nonuniformity of impurities concentration distribution in metal alloys, detection of chemical composition of inclusions and defects, analysis of element concentration in welded seams, in-depth concentration measurements of harmful chemicals in building construction materials, quality control of stone buildings and glass, analysis of elemental composition of bullets, etc.



Be concentration mapping on granite surface, %

Resolution: 50 μ m, analysis area: 2x2 mm



Na concentration mapping on granite surface, %

Resolution: 50 μ m, analysis area: 2x2 mm

LIOS 500N

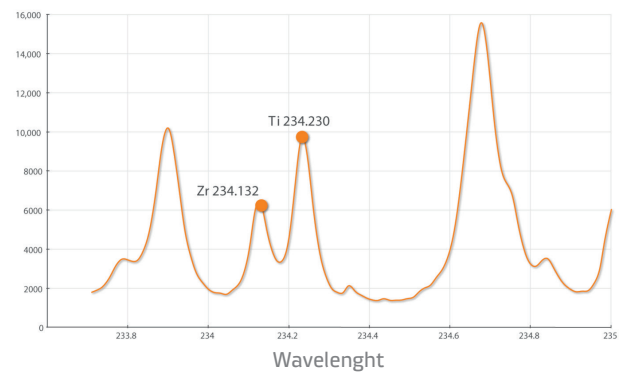
The unique design of LIOS 500N makes it a very attractive instrument with high analytical performance and the lowest limits of detection

- Double-beam optical layout
- Thermostabilized construction
- Spectral range 175-800 nm
- High throughput aberration-free system with 500 mm focal length
- Dispersion 0.5 nm/mm (for 3600 l/mm grating) to 1.0 nm/mm (for 1800 l/mm grating)
- Operation in atmosphere of buffer gases (175-193 nm)

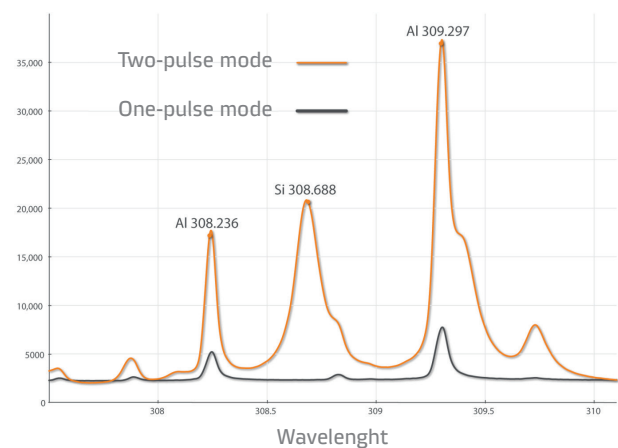
Detection limits up to 0.1 ppm and high reproducibility are provided by:

- Double-pulse nanosecond laser as a source of spectra excitation with 20 Hz p.r.r. of double pulse
- High energy and spatial stability
- Automated control of energy and spatial parameters in a wide range

The newly designed instrument allows to register the most part of detectable elements per one laser pulse



Spectrum of titanium alloy, high resolution of spectral lines



Specially designed laser source for spectra excitation

Reliable design. Innovative technologies for maximum accuracy and stability. Compliance to the highest quality standards.

Unique design of sample chamber optional set of changeable devices



- Selection of analysis area with 100x magnification video camera
- Air exhaust system to 1 mm Hg
- System for analysis in buffer atmosphere
- Motorized multi-positional (12 positions) sample holder
- Simultaneous load of all kinds of samples with automatic switching between samples
- 2D elemental mapping

Complete analytical software package for calibration, evaluation and reporting

- Fully automated measurements
- The whole set of samples for analysis is launched with a simple click
- Automatic focusing on a sample surface in the process of analysis
- Sample surface observation, selection of any point or area for analysis
- Layer-by-layer elemental analysis
- 3D profiling of chemical elements distribution
- Control of pressure inside a sample chamber
- Development of new measuring procedures
- Data print out of the obtained data or transfer to PC
- Report generation tool
- Database of spectral lines

Minimal costs of operation. Substantial savings by maintenance. Safe in operation, protection of personnel against influence of harmful factors.

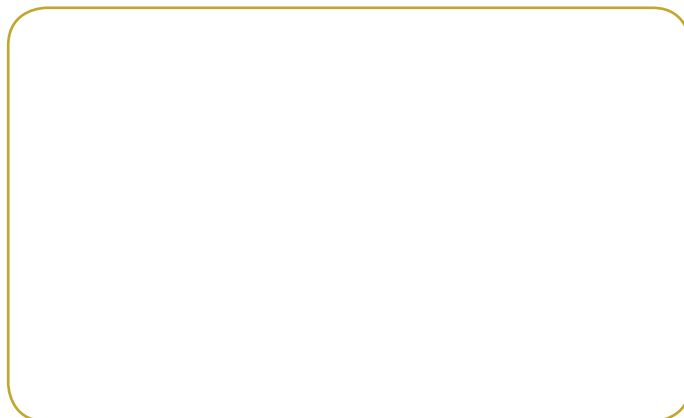




future's
in the making

Laser elemental analyzer LIOS 500N

Official dealer in your country



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