

Interreg-IPA Cross-border Cooperation Programme Romania-Serbia

Academic Environmental Protection Studies on surface water quality in significant cross-border nature reservations Djerdap / Iron Gate national park and Carska Bara special nature reserve, with population awareness raising workshops

= **RORS-462** =

PA2.OI1 Infrastructure, equipment installed in the field of cross border services for environmental protection

Infrastructure for Faculty of Mechanical Engineering, Timisoara.



www.aeps.upt.ro

5th – 6th February 2021, Timisoara, Romania

8th – 9th February 2021, Bor, Serbia

Development of University Politehnica Timisoara and Technical Faculty in Bor - infrastructure thru state-of-art analytical equipment for environmental analysis, to increase their research capabilities in order to assure our goals for the future: significant contribution to education of next generation of engineers.



Analytik Jena ZEEnit 700P

Graphite Atomic Absorption Spectrometer with Zeeman and Deuterium background correction

Manufacturer: ANALYTIK JENA, Ger

Type: Zeenit 700P

SN: 150Z7P2108

UPT inventory number: 2038962



The ZEEnit 700P from Analytik Jena represents the latest generation of Zeeman AAS. ZEEnit 700 P, is a compact spectrometers equipped with a transverse-heated high-performance graphite furnace, third-generation Zeeman magnetic field control and powerful deuterium and Zeeman background correction and additional fully automatic flame mode. Maximum sensitivity and optimum adaptation to the analytical challenge are guaranteed thanks to the variable magnetic field strength up to 1.0 Tesla and the use of two different correction modes. As a note, the optical components of the instrument are covered by 10 years warranty.



The ZEEnit 700 P represents a new generation of variable compact tandem spectrometers for flame mode, hydride and graphite furnace technology. It is able to analyze liquid and solid samples in one and the same system.

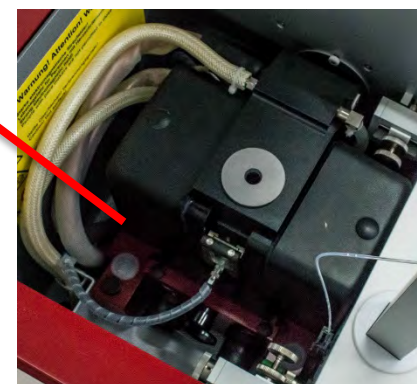
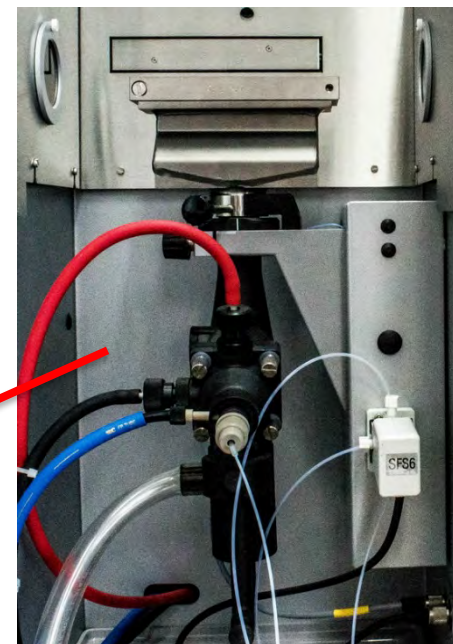
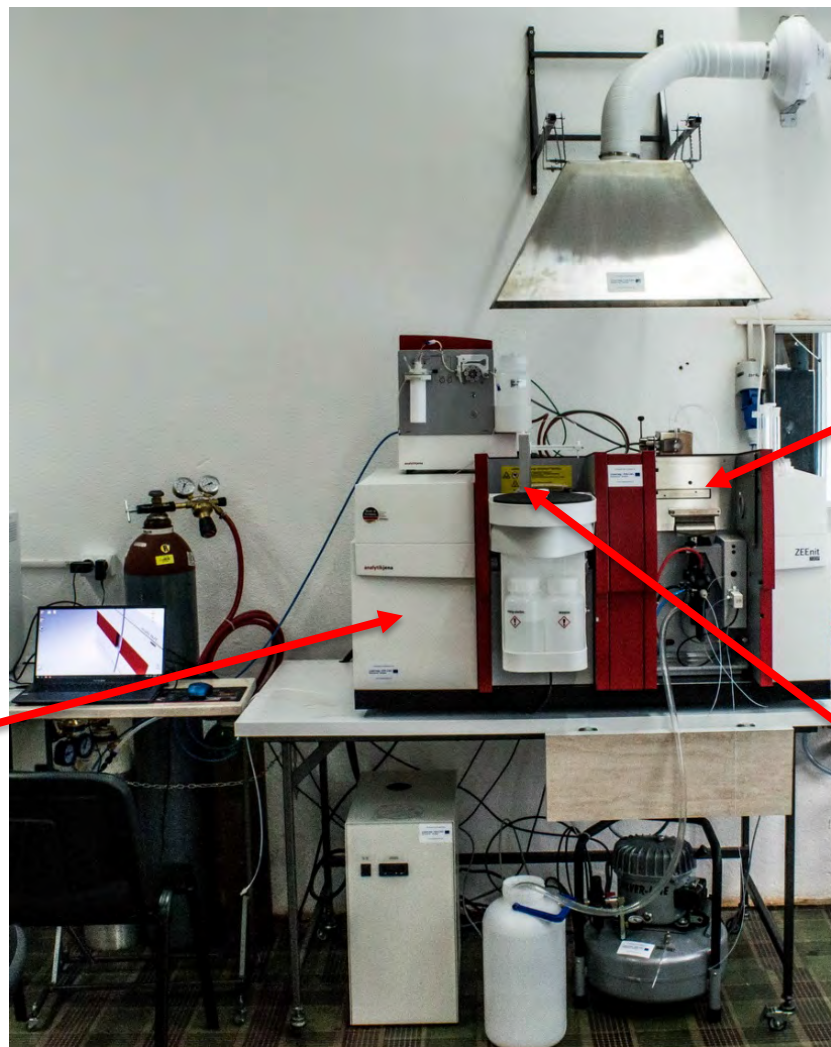
Features:

- 8-lamp turret suited for coded lamps
- Transverse heated graphite tube furnace
- Furnace camera to monitor and control sample introduction and combustion in the graphite tube
- Deuterium and Zeeman background correction
- Automatic optimization routines for flame composition and burner height
- Atomization and pyrolysis temperature, magnetic field strength, two-field and three-field correction mode
- Superior aspherical optical system with extraordinary components, such as a quartz coated toric mirror, provides excellent light throughput
- Magnetic field technology, 3-field mode for extension of the linear concentration range
- Two atomizers combined in a single instrument allow switching between flame, hydride and graphite furnace techniques without any mechanical movement

Elemental Coverage in AAS – ZEEnit 700P

| | | | | | | | | | | | | | | | | | | |
|----|------------|-----------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|
| H | Flame Only | | | | | | | | | | | | | | | | He | |
| Li | Be | Flame & Furnace | | | | | | | | | | B | C | N | O | F | Ne | |
| Na | Mg | | | | | | | | | | | Al | Si | P | S | Cl | Ar | |
| K | Ca | Sc | Ti | V | Cr | Mn | Fe | Co | Ni | Cu | Zn | Ga | Ge | As | Se | Br | Kr | |
| Rb | Sr | Y | Zr | Nb | Mo | Tc | Ru | Rh | Pd | Ag | Cd | In | Sn | Sb | Te | I | Xe | |
| Cs | Ba | La | Hf | Ta | W | Re | Os | Ir | Pt | Au | Hg | Tl | Pb | Bi | Po | At | Rn | |
| Fr | Ra | Ac | | | | | | | | | | | | | | | | |
| | | | Ce | Pr | Nd | Pm | Sm | Eu | Gd | Tb | Dy | Ho | Er | Tm | Yb | Lu | | |
| | | | Th | Pa | U | Np | Pu | Am | Cm | Bk | Cf | Es | Fm | Mn | No | Lr | | |

ZEEnit 700P



ZEEnit 700P set-up in N113 (175) laboratory

Analytik Jena MULTI N/C 3100

Working with multi N/C 3100 means measuring parameters like TOC, NPOC, POC, TC, TIC and TN_b quickly, easily, and with no system conversion – and guaranteed for compliance with valid national and international standards.

Manufacturer: ANALYTIK JENA, Germany

Type: MULTI N/C 3100 (CLD)

SN: N3-1505/AT

UPT inventory number: 2038961



TOC – total organic carbon

NPOC – non purgeable organic carbon

POC – non purgeable organic carbon

TC – total carbon

TIC – total inorganic carbon

TN_b – total bound Nitrogen

Environment



SHOW APPLICATIONS +

Food & Agriculture



SHOW APPLICATIONS +

Chemicals & Materials



SHOW APPLICATIONS +

Oil & Gas



SHOW APPLICATIONS +

Power & Energy



SHOW APPLICATIONS +

Pharma & Life Sciences



SHOW APPLICATIONS +

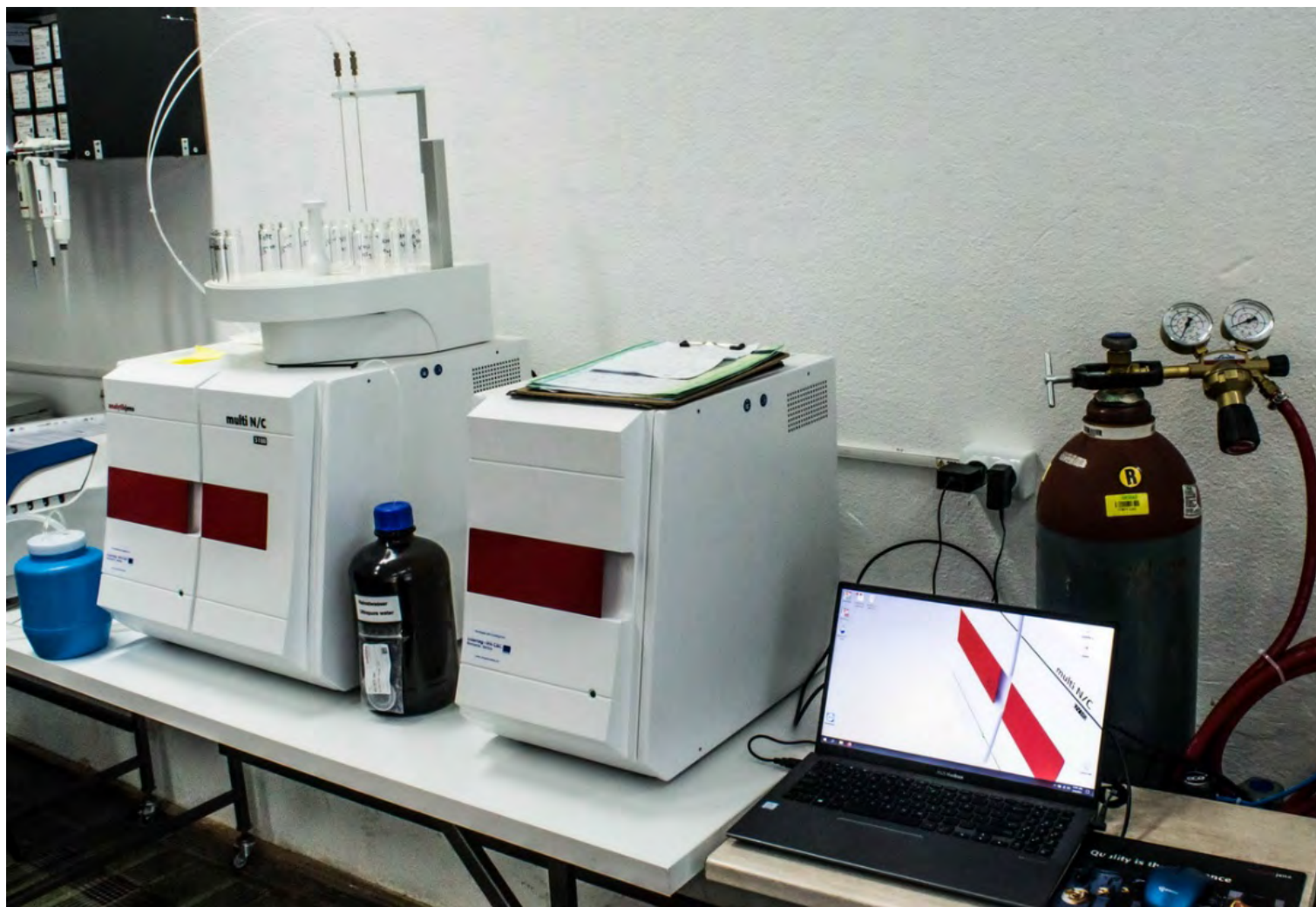
MULTI N/C 3100

CARBON - The core element of the multi N/C series models is the *Focus Radiation NDIR detector* which allows for the most efficient detection and a long service life with 10-year for the Focus Radiation NDIR detector.

NITROGEN - The *chemiluminescence detector (CLD)* or measures all organic and inorganic nitrogen compounds completely and reliably. TN_b is measured at the same time as the TOC determination from the same injection. No catalyst or combustion tube replacement is required, which saves time and operating costs.



Measuring range from 0 to 30,000 mg/L and lowest detection limit of 4 $\mu\text{g/L}$



Multi N/C 3100 set-up in N113 (175) laboratory

Thermoreactor

6-position thermoreactor for Chemical Oxygen Demand (COD) with settable temperature (up to 200 °C) and timer (up to 199 minutes).

Manufacturer: VELP SCIENTIFICA, Italy

Type: ECO6

SN: 532936

UPT inventory number: 2038960

ECO 6 is really **versatile and flexible**, as it can digest samples according to different methods.



Centrifuge



Manufacturer: OHAUS, Switzerland
Type: FRONTIER FC5707
SN: 98B9426050
UPT inventory number: 2038959

Reliable and Compact Multi-Function
Centrifuges Ideal for General Lab
Applications

| | |
|---|---------------------|
| Speed Range | 200 rpm – 6,800 rpm |
| Maximum Relative Centrifuge Force (x g) | 4,445 g |
| Maximum Capacity (Rotor) | 8 x 15 ml |



