Interreg – IPA CBC
Romania - Serbia

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# 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 Technical Faculty in Bor, Bor, Serbia.

AEPS

common history, common future

www.aeps.upt.ro

5th – 6th February 2021, Timisoara, Romania

8th – 9th February 2021, Bor, Serbia

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# AEPS partners:

UNIVERSITY POLITEHNICA TIMISOARA

Universitatea Politehnica Timișoara

UNIVERSITY OF BELGRADE
TECHNICAL FACULTY IN BOR

Project target objective:
- Development of state universities - 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 their goals for the future: significant contribution to education of next generation of experts.

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One of the project objectives, of relevance for this report, was the development of Technical Faculty in Bor infrastructure, by modernization and improvement of research capabilities of one of its laboratories - ***Academic Scientific Research Laboratory MiRT6*** – **thru the acquisition of state-of-art analytical equipment for environmental analysis.**

**In order to achieve this objective and to reach the laboratory maximum research potential, the project experts prepared, implemented and finalized tender acquisitions for several analytical equipment's (including tenders for chemical reactive for maximum use of equipment's)**

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The equipment's installed in Academic Scientific Research Laboratory MiRT6, in full operation are:

***1. Laser Particle Sizer***

**Manufacturer: FRITSCH, Germany**

***Short description:*** The ANALYSETTE 22 can be universally used to determine the particle size distribution of suspensions, emulsions and solids. It is mainly used in research and development and in quality and process control. The ANALYSETTE 22 uses the FRITSCH patent with a measuring cell which can be positioned in the convergent laser beam to determine particle size distribution. Measuring range of 0.01 – 2100 µm is perfectly suited for all measuring tasks and the measuring time is for most measurements less than a minute – including a reliably residue-free cleaning. The complete evaluation of the particle size analysis takes place automatically with clearly organised results visible directly on the screen.

***2. Handheld XRF***

**Manufacturer: BRUKER, Germany**

***Short description:*** Tube-based handheld XRF analyzers S1 TITAN use Bruker's SharpBeamTM technology. The S1 TITAN 800 use a large area CUBE(TM) SDD detector and give incredibly fast analysis. S1 TITAN can be configured with calibrations that are optimized for a variety of sample materials- including a wide range of alloys, various mining and environmental samples, as well as restricted materials. Handheld XRF guns have become the instrument of choice for soils analysis when characterizing, remediating and monitoring contaminated soil sites. 12 Priority Pollutant metals in soil, can be easily detected with field portable XRF (FPXRF) guns, namely Antimony (Sb), Arsenic (As), Cadmium (Cd), Chromium (Cr), Copper (Cu), Lead (Pb), Mercury (Hg), Nickel (Ni), Selenium (Se,) Silver (Ag), Thallium (Tl) and Zinc (Zn).

***3. See System E***

**Manufacturer: VELP SCIENTIFICA, Czech Republic**

***Short description:*** See System E is a portable computer-based instrument for contact angle measurement and surface energy determination. See System for Surface Energy Measurement – for contact angle measurement and caculation of surface free energy of solids on the basis of commonly used models as Owens-Wendt-Rable-Kaeble, Acid-Base, Zisman, Wu, Neumann


***4. Laptop***

**Manufacturer: Dell, USA**

***Short description:*** Laptop with security wich featuring the latest Intel processors, PC / smartphone integration with Dell Mobile Connect and a numeric keypad. Suitable for storing and fast data processing.

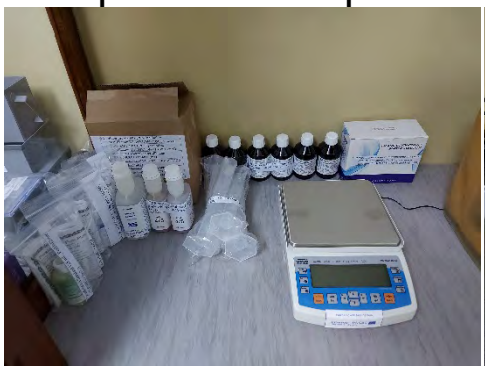
***5. Oxymeter***

**Manufacturer: XS instruments, Italy**

***Short description:*** XS Instruments, globally recognized as a leading brand in the field of electrochemical measurements. Oxymeter is scientific instrumentation for the measurement of the presence of dissolved oxygen in water.

***6. MultiMeter Instrument (pH / Con / TDS / Oxi / Temp)***
**Manufacturer: Lovibond, Germany**
***Short description:*** The SensoDirect 150 combines the applications of several handheld instruments in one instrument. It has been designed as a multi-purpose device for the determination of pH, redox, oxygen, conductivity and TDS.

***7. Other*** Car purchased by the Technical Faculty in Bor for transporting the team to the field for the purpose of sampling water and sediments, as well as a devices for analyzing samples on the spot.



## *Conclusion*

In conclusion, during the implementation of "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." Project, RORS-462, the research infrastructure of Technical Faculty in Bor had a major development thru the modernization and improvement of research capabilities of one of its laboratories – Academic Scientific Research Laboratory MiRT6, by means of state-of-art newly equipment's installed (described above) and an approximatively value of 80000 Euro (for major equipments) and about 16000 Euro (Car Dacia Duster)