



EUROPEAN UNION



GOVERNMENT OF ROMANIA



GOVERNMENT OF THE REPUBLIC  
OF SERBIA



Structural Funds  
2007 - 2013



ENVIROBANAT  
Common History, Common Future

# ENVIROBANAT. Common history, common future.

*Francisc Popescu*

## **ENVIROBANAT CONFERENCE**

**28 - 29 May 2014, Timisoara, Romania**

*In the frame of the project*

***Sustainable development of an research center in Banat region and Danube flow area through scientific research and environmental simulation tools to asses and evaluate potential threats***

[www.envirobanat.ro](http://www.envirobanat.ro)

## Project co-financed by the Romania-Republic of Serbia IPA Cross-border Cooperation Programme

Priority axis: Economic and Social Development

Measure: Support increased levels of R&D and innovation in the border region

The project has several lines of interest:

- to develop an R&D cooperation network by developing an research center on environmental monitoring and simulation in Zrenjanin, based on extensive knowledge transfer from Politehnica University Timisoara;
- to support local research and development with a focus on environmental and sustainable development issues;
- to evaluate the quality of environment in Banat region (with focus on air and water resources) by means of in-situ measurements and sophisticated scientific tools such as Computational fluid dynamics (CFD), Navier-Stokes equations and Steady-state Gaussian plume air dispersion;
- ***to strengthen the relations, friendship and collaborations between scientists from both sides of the border, to overcome the perception of the border as a division between, otherwise, people with common cultural heritage and common need for social, economic and scientific development.***

**UPT project team members**

Assoc.prof.dr.eng. **FRANCISC POPESCU**

Assoc.prof.dr.eng. **IOAN LAZA**

Assoc.prof.dr.eng. **DORIN LELEA**

Assist.prof.dr.eng. **ADRIAN-EUGEN CIOABLĂ**

Assist.prof.dr.math. **OLIVIA BUNDAU**

Assist.prof.dr.eng. **GAVRILA TRIF-TORDAI**

eng. **GAVRIL BRĂTEANU**

ec. **MARILENA BĂLUȚ**

**TFMP project team members**

Prof.dr.ing. **MILAN PAVLOVIC**

Prof.dr **BRANKO DAVIDOVIC**

Prof.dr **MILAN NIKOLIC**

Doc.Dr. **BOGDANA VUJIC**

Prof.dr **DEJAN DJORDJEVIC**

MSc. eng. **ALEKSANDAR DJURIC**

MSc.eng **ALEKSANDAR PAVLOVIC**

MSc. eng. **MARKO SIMIC**



## *Project objectives*

Strengthening the cross-border cooperation between Banat Universities for the benefit of the quality of life

Evaluating the environmental quality (air & water) in the Banat and Danube flow area

Protection of regional environment by means of a novel scientific tools consisting of identification of the pollution risk

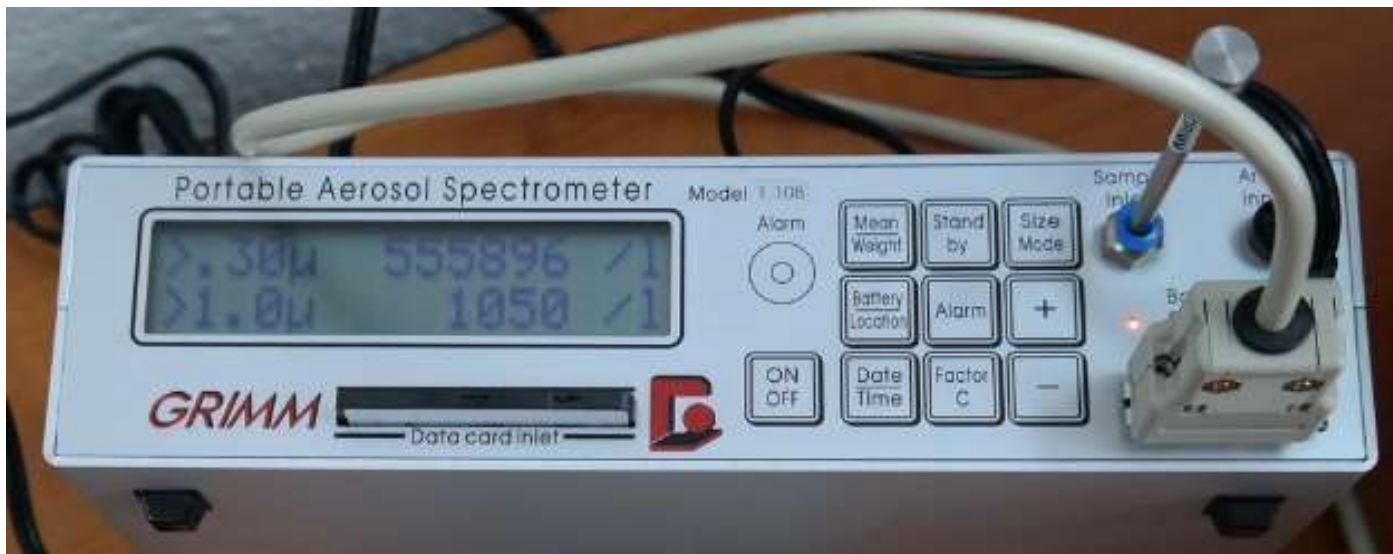
Increasing the importance of R&D in cross-border area by developing an research network for environmental evaluation

Creation of 2D and 3D area pollutants dispersion maps for the BANAT region and identification of the high polluted hot-spots in the Banat region and potential threats on Danube water quality

Dissemination of know-how to specialists, young researchers, population and authorities

# OPTICAL PARTICLE COUNTER

## Advanced Aerosol Spectrometer, Model 11-A (1108)



Size channels: 15 channels 0.3/0.4/0.5/0.65/0.8/1.0/1.6/2/2.5/3/4/5/7.5/10/15/20  $\mu\text{m}$

Particle concentration: 1 to 2,000,000 particles/liter

Particle mass: from 0.1  $\mu\text{g}/\text{m}^3$  to 100  $\text{mg}/\text{m}^3$

Reproducibility:  $\pm 3\%$  over the total measuring range

**Sample collection: 47mm PTFE filter**

Power supply: battery 12V/2.1Ah, continuous operation up to 8 hours

# UV-VIS SPECTROPHOTOMETER

## ANALYTIK JENA SPECORD 250PLUS

Double beam spectrophotometer with variable spectral resolution, double monochromator and Cooled Double Detection



Energy, Absorption, Transmission,  
Reflectance

Wavelength range: 190 – 1100 nm

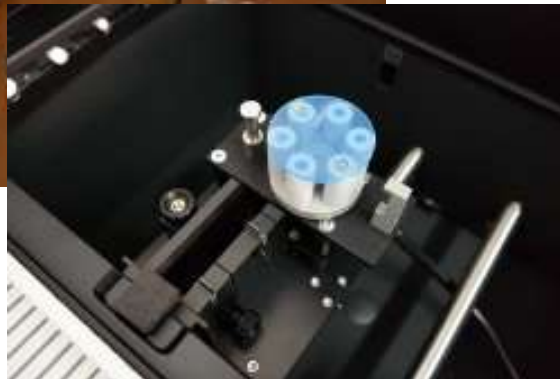
Spectral bandwidth: variable  
0.2/0.5/1/2/4 nm

Wavelength accuracy:  $\pm 0.1$  nm

Wavelength reproducibility:  $\pm 0.02$  nm

Photometric range: -4 A to 4 A

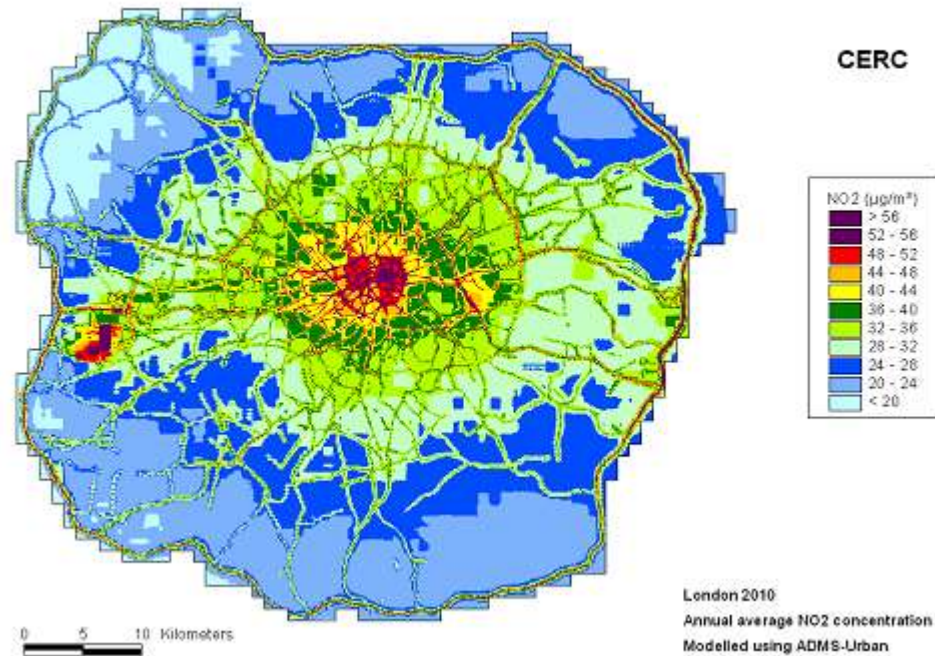
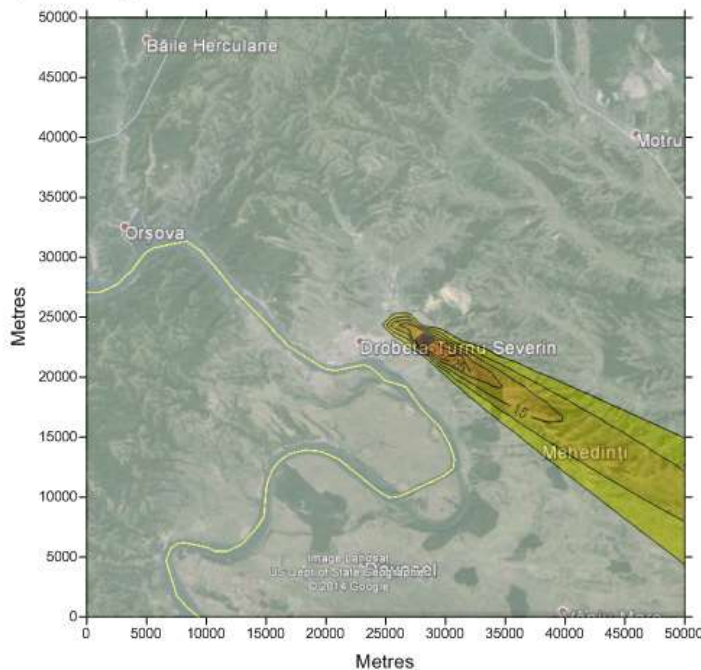
Photometric accuracy: VIS  $\pm 0.003$  A  
UV  $\pm 0.01$  A





ADMS, new generation Gaussian plume air dispersion model, which means that the atmospheric boundary layer properties are characterized by two parameters: the boundary layer depth and the Monin-Obukhov length

f:\Lucru\Proiecte\In derulare\ENVIROBANAT\baza date\ADMS5\halanga 50x50km.levels.c...  
Conc ug/m3 SO2 <All sour Z=233.3m- 1hr  
96 1 0



**All collected and measured data (emissions, air & water quality) pollutants dispersion studies, scientific reports, pictures are available on [envirobanat.ro/Database.php](http://envirobanat.ro/Database.php)**



**ENVIROBANAT**  
Common History, Common Future