



REPORT:

4th CEFSEK training course "Persistent organic pollutants in food and environment: Risk assessment"

Fourth CEFSEK training course was organized on 14th and 15th of November 2011 by the Faculty of Technology, University of Novi Sad, Novi Sad, Serbia.

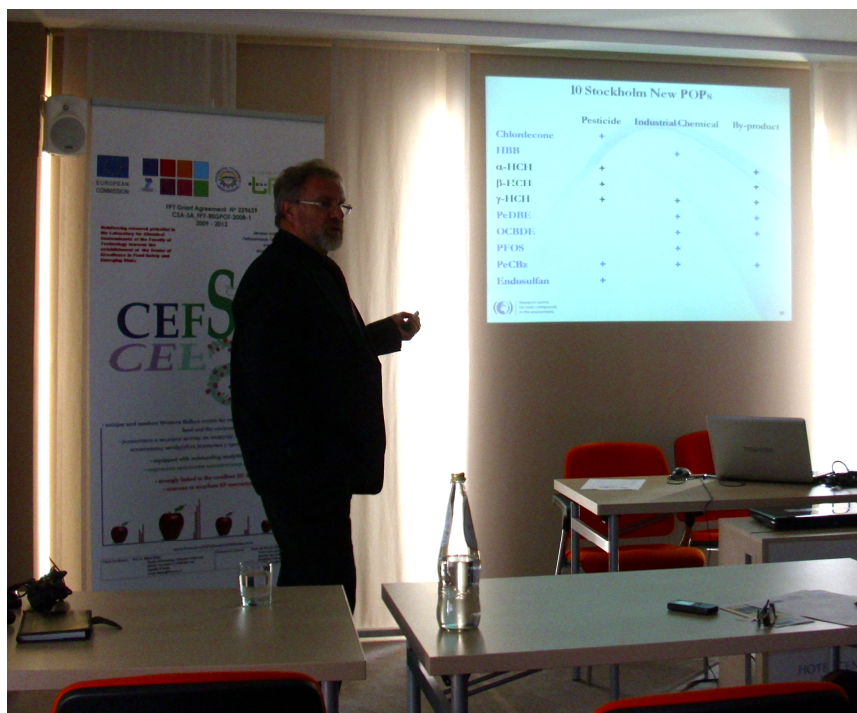
The first day of the course was held at the Hotel Centar in Novi Sad. The program started with the presentation of the CEFSEK project given by Prof. Biljana Škrbić, the project coordinator, presenting the human and material resources at the CEFSEK Lab, the research activities and achievements, collaboration, etc.



Presentation of the CEFSEK achievements by Prof. Dr. Biljana Škrbić

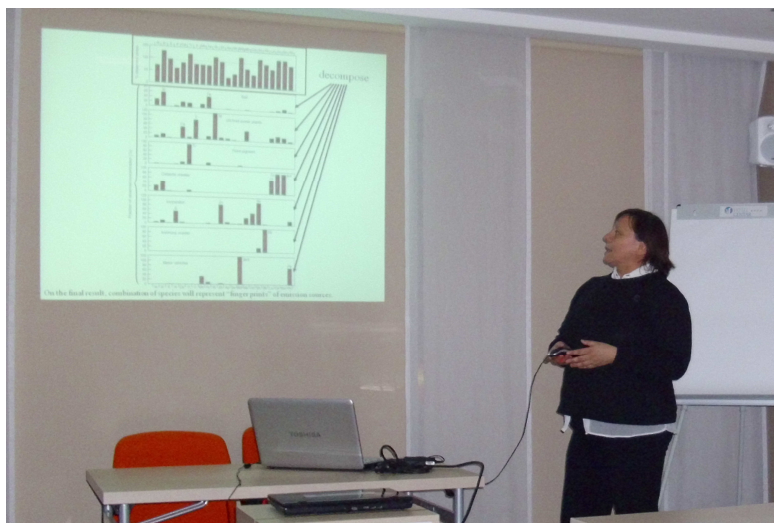
Program continued with lectures on persistent organic pollutants (POPs), their source and occurrence in food, and related risk assessment, given by Prof. Dr. Ivan Holoubek, Director of the RECETOX (Research Centre for Toxic Compounds in the Environment), Masaryk University, Director of the National centre for persistent organic pollutants CR, and Director of the Regional Centre for persistent organic pollutants in the Central and Eastern Europe, Brno, Czech Republic.

After the lunch break, Prof. Biljana Škrbić gave an overview of the results obtained in the CEFSEK lab concerning the POPs analysis in food and environment as well as the chemometric assessment of the POPs data sets.



Prof. Dr. Ivan Holoubek gave the key lectures on the POPs presence in food and the environment and related risk assessment

At the end of the afternoon session, Dr. Dragana Đorđević from IChTM – Centre of Chemistry, University of Belgrade, Belgrade, Serbia, presented UNMIX model for identification and quantification of the industrial sources of organic pollutants in air.



Dr. Dragana Đorđević gave the presentation on the UNMIX model for identification of the main polluters in the environment

The second day of the course was held at the Blue Hall of the Faculty of Technology. It was dedicated to the application of various chemometric techniques in analysis of data sets consisting of various food and environmental contaminants and in identification of the pollution sources, correlation among the samples and the variables, pattern recognitions, etc. During the morning session, Prof. Karoly Heberger from Chemical Research Center of the Hungarian Academy of Sciences, Budapest, Hungary, presented the basics of the widely used chemometric, multivariate analysis, such as principal component analysis, cluster analysis, and linear discriminant analysis, and the related option in STATISTICA software. During this practical session, Prof. Heberger illustrated the similarities and differences among multivariate techniques introduced in the beginning of the session using the real data sets presented by the participants, advising them how to interpret the data sets. After the lunch break, Prof. Heberger presented

his new method for comparison of models and analytical results, and also its application on the data sets formed at the CEFSER lab.



Prof. Karoly Heberger presented multivariate analysis of large data sets

The course was aimed at researchers, PhD and postdoc students, and all other from Western Balkan Countries (WBCs) who are involved in the issues of the food and environmental pollution and the chemometric risk assessment. In total there were 40 participants attending the 4th CEFSER training course. Three of them were awarded by the CEFSER grant, to whom the accommodation and travel costs were fully reimbursed by the CEFSER project.

Participants were from the following institutions:

- Geological Survey of Slovenia, Ljubljana, Slovenia,
- University of Szeged, Szeged, Hungary,
- University of Osijek, Osijek, Croatia
- Chemical Agency of the Republic of Serbia, Belgrade, Serbia,
- Faculty of Chemistry, University of Belgrade, Belgrade, Serbia
- Institute for Chemistry, Technology and Metallurgy, University of Belgrade, Belgrade, Serbia
- Vinča Institute of Nuclear Sciences, Belgrade
- University Union, Faculty of Ecology and Environmental Protection, Belgrade, Serbia
- Faculty of Technical Sciences, University of Novi Sad, Novi Sad, Serbia
- Faculty of Sciences, University of Novi Sad, Novi Sad, Serbia
- Faculty of Medicine, University of Novi Sad, Novi Sad, Serbia
- Faculty of Technology, University of Novi Sad, Novi Sad, Serbia



Participants of the 4th CEFSER Training Course

FINAL PROGRAM OF THE 4th CEFSEER Training Course

14 November 2011

- 9.30-10.00 Registration
- 10.00-10.15 Welcome speech and overview of the agenda, **Prof. Dr. Biljana Škrbić**, *Faculty of Technology, University of Novi Sad, Serbia*
- 10.15-10.45 Presentation of the CEFSEER project, **Prof. Dr. Biljana Škrbić**, *Faculty of Technology, University of Novi Sad, Serbia*
- 10.45-12.00 Sources of POPs and food contamination, **Prof. Dr. Ivan Holoubek**, *RECETOX, National POPs Centre, Central and Eastern European Regional POPs Centre, Masaryk University, Brno Czech Republic*
- 12.00-12.30 Coffee break
- 12.30-14.00 POPs levels and risks, **Prof. Dr. Ivan Holoubek**, *RECETOX, National POPs Centre, Central and Eastern European Regional POPs Centre, Masaryk University, Brno Czech Republic*
- 14.00-15.30 Lunch
- 15.30-16.00 POPs analysis at the CEFSEER Lab, **Prof. Dr. Biljana Škrbić**, *Faculty of Technology, University of Novi Sad, Serbia*
- 16.00-16.30 Identification and quantification of the industrial sources of organic pollutants in the air using UNMIX model, **Dr. Dragana Đorđević**, *ICHTM – Centre of Chemistry, University of Belgrade, Belgrade, Serbia*
- 18.30-22.00 Dinner

November 15th 2011

- 10.00-10.30 Registration
- 10.30-10.45 Opening and overview of the agenda, **Prof. Biljana Škrbić**, *Faculty of Technology, University of Novi Sad*
- 10.45-13.30 Individual discussion with participants: application of the multivariate analysis to the various data sets
- 13.30-15.00 Lunch
- 15.00-17.00 Ranking of models and (analytical methods): Sum of Ranking Differences
- 17.00-17.30 Coffee and tea break
- 17.30-18.45 Variable selection: Pair-Correlation Method (PCM)
- 18.45-19.00 Award of certificates