



Project title:
Summer school The Advances and Trends in Environmental Chemistry and Ecotoxicology of Persistent, Toxic Substances, Brno, CR, 2009

Fulfillment

Centre RECETOX, Masaryk University Brno, Czech Republic, EU DG Research Centre of Excellence for Environmental Chemistry and Ecotoxicology has organized the 5th Summer School of Environmental Chemistry and Ecotoxicology - Approaches to the study of relationships between environmental levels of chemicals and their biological effects with special attention to the persistent, toxic substances.

The special attention of this Summer School was focused on the field experimental methods in environmental chemistry, ecotoxicology, ecological risk assessment, environmental monitoring, the study of exchange processes between environmental compartments, sampling procedures, collection of data for environmental modelling, field study of ecological stressors. The basic goal of this Summer School was application integrated monitoring/modelling approach and conception to the case of POPs.

Global monitoring plan (GMP) of the Stockholm Convention is defined in the Article 16 as a tool for the effectiveness evaluation of this Convention.

The objective of the GMP is to provide a framework for activities aimed to inform the COP on environmental levels and global environmental transport of POPs as is specified in Article 16 of the Convention. Temporal variations should also be explored when possible.

The Conference of Parties has requested that the plan should outline a strategic and cost-effective approach and build on, but not be limited to, existing and scientifically sound human health and environmental monitoring programmes to the extent possible, with the aim of providing appropriate and sufficient comparable data for the effectiveness evaluation of the Convention.

One important issue which was also mentioned during the 1st Meeting of the Technical Working on Effectiveness Evaluation of the SC in Brno, CR, 09-12/11/2006 is developing 'strategic partnerships'. The elements of a strategic partnership include the transfer of knowledge and technology and training and capacity building.

This was a main goal of the second part of the RECETOX/CEEPOPsCTR Summer School 2009 – the training of national expert responsible for the monitoring of POPs in the field of sampling, analysis, data evaluation, preparation of monitoring design with the using of the experiences of the Czech Republic and the Centre RECETOX.

Summer School was held during the week from 06 to 12 July 2009, total duration 6 days and was realized in RECETOX MU, Brno, Czech Republic, and Field observatory Košetice.

Summer School was organized together with the Secretariat of the Stockholm Convention, EMEP MSC East, Czech Hydrometeorological Institute with co-operation with international scientific association such as the SETAC (Society for Environmental Toxicology and Chemistry), the EuChemMS (European Association for Chemical and Molecular Sciences), Division of Environmental Chemistry and the SECOTOX (Society for Ecotoxicology and Environmental Safety). The lectures were held by leading scientists in the field of POPs.

The Summer school was organized in 2009 in two groups:

- A) Laboratory and field studies on environmental chemistry and ecotoxicology of PTS
- B) Sampling, analysis and monitoring of POPs

Basic goal: The study of PTS – integrated approach

Background approach: Integrated monitoring of PTS based on the ongoing programme of Kosetice observatory where this system is realized from 1988.

Based on the Memorandum of Understanding between Masaryk University, Faculty of Science Kotlarska 2, 611 37 Brno, Czech Republic and The United Nations Environment Programme (UNEP) represented by the Secretariat of the Stockholm Convention, Project Account No: SC/4030-06-01 BAC: 2008-SCL-8248-2880-2664-2104 with overall Cost to UNEP: US\$ 43,795, the Summer school was realized with the programme, which is presented in Annex 1.

This year - apart of the lecturers from RECETOX - number outstanding scientists accepted the invitation and gave their lectures at the Summer School. Participating students were introduced to the issues of POPs bioavailability by dr. Kirk Semple (Lancaster University, UK) and to the chemical fate modelling by dr. Martin Scheringer (Swiss Federal Institutes of Technology, ETH, Zurich). Combined chemical and biological approaches in the assessment of aquatic environment were presented by prof. Philippe Garrigues (University of Bordeaux, France) and dr. Elke Fries (University of Osnabruck, Germany), and the problems of sediment contamination addressed prof. Henner Hollert (RWTH Aachen University, Germany). Further lectures of dr. Liisa Jantunen (Environment Canada) and prof. Jochen Mueller (University of Queensland, Australia) addressed new types of toxic organic compounds as well as POPs health risk assessment issues.

In total, 31 students from 19 countries registered and participated in the 2009 summer school at the busy scholarly programme running daily from 8am to 6pm. Activities were further supported by social events, which included trip to the South Moravian wine cellars with wine tasting and dinner or guided tour in the historical centre of Brno city. Nevertheless, the 5th summer school was an excellent opportunity to learn about Environmental Chemistry and Ecotoxicology of organic contaminants and it provided wonderful opportunity for networking between young students as well as experienced scientists from Europe (Albania, Armenia (8), Azerbaijan, Croatia, Czech Republic, Finland, Italy (2), Russian Federation (2), Serbia, Ukraine (2), United Kingdom), Africa (Congo, Mali) America (Brazil, Canada, Ecuador) and also Australia, Solomon Islands and Fiji.

Programme of the RECETOX Summer School, 2009:

GROUP A – Environmental Chemistry and Ecotoxicology of PTS		
Sunday, 05/07/2009		
	Arrivals of participants	
Monday, 06/07/2009		
08.00 - 08.30	Ivan Holoubek	Summer school opening and organizing remarks Introduction of lecturers and participants
08.30 – 10.30	Ivan Holoubek	Environmental fate of PTS I
10.30 – 11.00	Coffee break	
11.00 – 13.00	Liisa Jantunen	New and emerging compounds – overview, case studies
13.00 – 14.00	Lunch break	
14.00 – 16.00	Jochen Mueller	Why do we see different age related trends for different chemicals ?
16.00 – 16.30	Coffee break	
16.30 – 17.30	Ivan Holoubek	Monitoring of PTS
17.30 – 18.30	Jana Klanová	Environmental analysis of PTS
Tuesday, 07/07/2009		
08.00 – 10.00	Kirk Semple	Bioavailability of PTS
10.00 – 10.30	Coffee break	
10.30 - 12.30	Martin Scheringer	Modelling of environmental distribution of PTS
12.30 – 13.30	Lunch break	
13.30 – 15.30	Philippe Garrigues	Combined approach in environmental chemistry and toxicology of organic compounds
15.30 – 16.00	Coffee break	
16.00 – 18.00	Luděk Bláha	Ecotoxicological research: linking fundamental science with environmental risk assessment and management
19.00	Evening event	Guided tour of down town Brno
Wednesday, 08/07/2009		
08.00 - 09.30	Klára	Ecotoxicological effects of PTS

	Hilscherová	
09.30 – 09.45	Coffee break	
09.45 – 11.15	Jakub Hofman	Soil ecotoxicology of PTS
11.15 – 11.30	Coffee break	
11.30 – 12.30	Blahoš Maršálek	Cyanotoxins – fate, occurrence, risks, determination, management
12.30 – 13.30	Lunch break	
13.30 – 18.30	Jana Klánová, Jiří Kohoutek, Martina Kobličková, Ph.D. students	Practical course in environmental analytical chemistry
	Luděk Bláha, Klára Hilscherová, Blahoš Maršálek, Pavel Čupr, Jakub Hofman	Practical training in ecotoxicological methods
18:30	Evening event	Travel to South Moravia wine testing
Thursday, 09/07/2009		
08.00 – 10.00	Elke Fries	Monitoring and exposure modelling of emerging contaminants in river water
10.00 – 10.30	Coffee break	
10.30 – 12.30	Henner Hollert	Bioanalytical and integrated methods for monitoring and evaluating sediments
12.30 – 13.30	Lunch break	
13.30 – 18.00	Jana Klánová, Jiří Kohoutek, Martina Kobličková, Ph.D. students	Practical course in environmental analytical chemistry
	Luděk Bláha, Klára Hilscherová, Blahoš Maršálek, Pavel Čupr, Jakub Hofman	Practical training in ecotoxicological methods

Evening event		Free evening
Friday, 10/07/2009		
08.00 – 18.00	Ivan Holoubek et al.	Trip to the Košetice field observatory
Saturday, 11/07/2009		
08.00 – 12.00	Ivan Holoubek, Ladislav Dušek, Jiří Hřebíček; Jiří Jarkovský, Pavel Čupr	Ecological Risk Assessment I
12.30 – 14.00	Lunch break	
14.00 – 16.00	Ladislav Dušek, Jiří Jarkovský, Pavel Čupr	Ecological Risk Assessment II
16.00	Ivan Holoubek	End of the Summer School
Sunday, 12/07/2009		
	Departures of participants	

GROUP B – Sampling, Analysis and Monitoring of POPs		
Sunday, 05/07/2009		
	Arrivals of participants	
Monday, 06/07/2009		
08.00 - 08.30	Ivan Holoubek	Summer school opening and organizing remarks Introduction of lecturers and participants
08.30 – 10.30	Ivan Holoubek	Environmental fate of PTS I
10.30 – 11.00	Coffee break	
11.00 – 13.00	Liisa Jantunen	New and emerging compounds – overview, case studies
13.00 – 14.00	Lunch break	
14.00 – 16.00	Jochen Mueller	Why do we see different age related trends for different chemicals ?
16.00 – 16.30	Coffee break	
16.30 – 17.30	Ivan Holoubek	Monitoring of PTS
17.30 – 18.30	Jana Klanová	Environmental analysis of PTS
Tuesday, 07/07/2009		

08.00 – 10.00	Kirk Semple	Bioavailability of PTS
10.00 – 10.30	Coffee break	
10.30 - 12.30	Martin Scheringer	Modelling of environmental distribution of PTS
12.30 – 13.30	Lunch break	
13.30 – 14.30	Katarina Magulová	Objectives of the Stockholm Convention and the Global POPs monitoring programme
14.30 – 15.30	Ivan Holoubek	Design of the global monitoring
15.30 – 16.00	Coffee break	
16.00 – 17.00	Jana Klánová	Monitoring of POPs in the ambient air
17.00 – 18.00	Jana Klánová	Monitoring of POPs in human milk and blood
19.00	Evening event	Guided tour of down town Brno
Wednesday, 08/07/2009		
08.00 - 12.30	Jana Klánová, Jiří Kohoutek, Martina Koblížková, Ph.D. students	High volume and passive air sampling Air sample preparation GC methods
12.30 – 13.30	Lunch break	
13.30 – 16.30	Jana Klánová	Qualitative and quantitative analysis of GC data
16.30 – 18.30	Jiří Jarkovský	Statistical evaluation of data
18:15	Evening event	Travel to South Moravia wine testing
Thursday, 09/07/2009		
08.00 – 12.30	Jana Klánová, Jiří Kohoutek, Martina Koblížková, Ph.D. students	Milk sample preparation GC-MS methods QA/QC
12.30 – 13.30	Lunch break	
13.30 – 16.00	Jana Klánová	Qualitative and quantitative analysis of GC-MS data, data handling
16.00 – 18.00	Pavel Čupr	Data interpretation and visualization
Evening		Free evening
Friday, 10/07/2009		
08.00 – 18.00	Ivan Holoubek et al.	Trip to the field observatory Košetice

Saturday, 11/07/2009		
08.00 – 12.00	Ivan Holoubek, Ladislav Dušek, Jiří Hřebíček; Jiří Jarkovský, Pavel Čupr	Ecological Risk Assessment I
12.30 – 14.00	Lunch break	
14.00 – 16.00	Ladislav Dušek, Jiří Jarkovský, Pavel Čupr	Ecological Risk Assessment II
16.00	Ivan Holoubek	End of the Summer School
Sunday, 12/07/2009		
	Departures of participants	