

ANNUAL REPORT ON GEOTRACES ACTIVITIES IN CROATIA
JUNE 2013 – JUNE 2014

The Croatian GEOTRACES activities in the last year were mainly related to: 1) improvement of electrochemical methods which, in combination with ICPMS, are used for trace metals speciation (including interaction with organic matter and sulfur species), determination and quantification (mostly Zn, Cd, Pb, Cu, Fe, Ni, Co); 2) development of an automated system for determination of trace metals in natural waters (Voltammetric AutoAnalyser - Volt-AA); 3) research on development of electroanalytical methods for chalcogenide and other metal containing nanoparticles determination in natural waters.

Field works

- Participation in the field work at Rogoznica Lake in Croatia where we used electrochemical and ICPMS methods for sulfur and trace metals speciation in oxic and anoxic water column.

Projects

- A multilateral project in the frame of the French MERMEX program called “Metal contaminants in Mediterranean Coastal Environment“ (COMECOM/MERMEX) started in January 2014. Partners from France, Italy, Croatia, Lebanon and Algeria will focus their research to target locations such as river inputs, large coastal cities and ports. Behavior of trace metals in relation to their distribution and speciation influenced by variable local environmental conditions (e.g. salinity), as well as by global problem of ocean acidification will be of particular concern.
- Chinese - Croatian bilateral project: "Determination of trace metal speciation in coastal waters: towards developing new criteria for water quality control and risk assessment" (project leaders Rujun Yang and Ivanka Pizeta, members of SCOR WG139). Croatian scientists visited Ocean University of China in Qingdao (10. to 18. April 2014.)
- Germany – Croatian bilateral project “Arsenic speciation on the phase boundaries: salt/fresh water and oxic/anoxic (project leaders E. Bura-Nakić, Britta Planer-Friedrich, Bayreuth University, Bayreuth, Germany).

One PhD student completed Short Term Scientific Missions (STSM) (February-April 2014) in the frame of COST action ES1205 within the project “*Characterization of chalcogenide nanoparticles by electrochemical methods and comparison with sizing techniques (Dynamic Light, Scattering, Fluorescence Correlation Spectroscopy and Nanoparticle Tracking Analysis) in environmentally relevant conditions*”.

Participation at international conferences

- I. Pizeta, S.G. Sander, Intercomparison of estimating metal binding ligand parameters from simulated titration data using different fitting approaches (Abstract ID:13696), Ocean Sciences Meeting 23.-28. February 2014 in Honolulu, Hawaii.
- I. Ciglencečki, E. Bura-Nakić, M. Marguš, M. Čanković, M. Carić, C. Viličić, Z. Ljubešić, F. Kršinić, M. Batistić, I. Janeković, F. Plavčić, Rogoznica Lake (Croatia), a unique anoxic seawater system on the Adriatic coast under the anthropogenic pressures // Geophysical Research Abstracts Vol. 16, EGU2014-7925, EGU meeting, Vienna 2014.

Publications

- CONTREIRA-PEREIRA, Leonardo; YÜCEL, Mustafa; OMANOVIĆ, Dario; BRULPORT, Jean-Pierre; Le BRIS, Nadine. Compact autonomous voltammetric sensor for sulfide monitoring in deep sea vent habitats. // *Deep-sea research. Part 1. Oceanographic research papers.* 80 (2013); 47-57.
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