

“Voltammetry and GEOTRACES“
COST Action ES0801 Workshop
6th - 9th October 2012, Šibenik, Croatia

Aim:

Voltammetric techniques have played an important and vital role in the development and maturation of chemical oceanography as a scientific field. International programs in the past, from GEOSECS to JGOFS, have helped expand the range of marine chemical applications for which voltammetry is applied and have led to a better understanding of the distribution, speciation and biogeochemical cycling of the elements in the ocean. Now in the midst of the international GEOTRACES program it is a perfect opportunity to both look back at the achievements of voltammetric methods and to see into where future applications can contribute.

The workshop will be held in Šibenik, Croatia, in the frame of research activities at the Marine station Martinska, Ruđer Bošković Institute, from October 6th to October 9th 2012.

Overview:

Workshop topics:

- 1) The application and usage of Voltammetry within GEOTRACES: Past, present and future.
- 2) Utilizing the ongoing lessons of GEOTRACES for developing intercalibration studies for voltammetric measurements in seawater.
- 3) Development of Standard Operating Procedures (SOPs) for data treatment and speciation calculations using voltammetry; including sampling and storage of samples; experimental design for speciation/complexation studies.
- 4) Application of new types of sensors (e.g. solid electrodes, micro electrodes) to work in GEOTRACES.
- 5) Tips and tricks in voltammetry – a networking approach: Sharing experiences and ideas on voltammetry through GEOTRACES activities.

Outputs:

Research Front in Environmental Chemistry (collection of papers arising from the workshop around a central theme). Contributions to SCOR WG139.

Accommodation: Accommodation will take place in Hotel Jadran, Šibenik, Croatia while workshop presentation is going to be in Šibenik City Hall. Accommodations expenses on the basis of three days full board are around 163 €.

Travel: The best way to come to Šibenik is via airport in Split or in Zadar. There is one hour drive by car from there to Šibenik. On Saturday, 6th October, for the participants of the Workshop we shall organize transfer from the Split airport to Šibenik town.

If somebody prefers to come to Zagreb, it is about 350 km far from Šibenik and it takes 5 to 6 hours by bus and costs about 150 - 180 Kn (20-25 euros).

The link to Split airport time table:

http://www.split-airport.hr/index.php?option=com_content&view=article&id=150&Itemid=58&lang=en

The link to Zadar airport: <http://www.zadar-airport.hr/en>

The link to Zadar Taxi: <http://taxi-zadar.biz/index.php/en/>

There are several possibilities to arrive on Saturday the 6th and leave on Tuesday the 9th October.

Agenda:

Saturday October 6 **Participants arrive to Šibenik**

20:00 Welcome drink and dinner in hotel Jadran

Sunday October 7

09:00 – 09:15 – *Welcome and general introduction*..... **Irena Ciglencčki**

09:15 – 09:20 – *Welcome from the Mayor of Šibenik*.....**Ante Županović**

09:20 – 09:55 – *Introduction – Voltammetry and GEOTRACES* (p.7)..... **Peter Croot**

09:55 – 12:35 Voltammetry and GEOTRACES Present - Discussion

09:55 – 10:30 – *Investigating the distribution of dissolved copper, zinc, silver and cadmium in the Pacific Ocean:*

Particle impact voltammetry as a tool for investigating metal speciation (p.8)..... **Jay Cullen**

10:30 – 11:05 – *Pt in oceanic and estuarine waters and its determination using voltammetry (data from the GEOTRACES Dutch cruise, West Atlantic)* (p.6)..... **Antonio Cobelo-García**

11:05 – 11:25 Coffee Break – Informal Discussions

11:25 – 12:00 – *The interpretation of organic Fe complexation data* (p.12)..... **Loes Gerringa**

12:00 – 12:35 – *U.S. GEOTRACES North Atlantic Section, Leg 1: Dissolved Fe Speciation* (p.4).....**Kristen Buck**

12:35 – 13:05 Post-doc and student presentations:

12:35 – 12:45 – *A new linear-nonlinear optimization mathematical tool for the evaluation of sources and transport of metal complexing ligands in water masses* (p.5)..... **Gonzalo Carrasco**

12:45 – 12:55 – *Investigation of FeS nanoparticles electrochemical behavior with use of voltammetric and amperometric measurements* (p.24).....**Elvira Bura-Nakić**

12:55 – 13:05 – *Electrochemical and STM studies of FeS nanoparticles in NaCl model solutions* (p.30).....**Marija Marguš**

13:05 – 15:30 Lunch – Informal Discussions

15:30 – 17:45 New Types of Sensors - Discussion

15:30 – 16:05 – *Taking the voltammetric system out of the lab; alternative electrode materials and remote monitoring* (p.15).....

.....**Øyvind Mikkelsen**

16:05 – 16:40 – *Solid gold electrodes for the speciation of metal and metalloids* (p.19).....**Pascal Salaün**

16:40 – 17:00 Coffee Break – Informal Discussions

17:00 – 17:35 – *New insights and performance enhancement of the determination of total iron in seawater by catalytic cathodic voltammetry of its complexes with dihydroxynaphthalene* (p.14)..... **Luis Laglera**

17:35 - 17:45 – *Adhesion based detection of organic microparticles in aquatic systems* (p.27).....**Nadica Ivošević**

17:45 – 18:35 - Student presentations:

17:45 – 17:55 – *Autonomous Voltammetric Sensor For Monitoring Sulfide Variability In Deep Sea Chemosynthetic Habitats* (p.25).....**Leonardo Contreira Pereira**

17:55 – 18:05 – *Development of a New Electrochemical Cell for Remote Sensing of Low Levels of Heavy Metals* (p.31). **Tomer Noyhouzer**

18:05 – 18:15 – *Developing an in-situ electrochemical method for PAH detection* (p.33).....**Abra Penezić**

18:15 – 18:25 – *Reagentless and silicate interference free electrochemical method for phosphate detection: Application to the Oxygen Minimum Zone* (p.28).....**Justyna Jońca**

18:25 – 18:35 – *Trace metals and natural reduced sulphur species (nrss) detection with a voltammetric automatic monitoring system: calibration and correction issues* (p.36).....**Pierre-Jean Superville**

19:30 Dinner

Monday October 8

09:00 – 18:05 Intercalibration, Speciation and Operating Procedures - Discussion

09:00 – 09:35 – *The place of voltammetry in today's chemical speciation studies* (p.9)..... **Montserrat Filella**

09:35 – 10:10 – *Optimising voltammetric procedures: small volumes, fast analysis and reliable data?* (p.16) .. **Damiano Monticelli**

10:10 – 10:45 – *Incorporating the results of voltammetric measurements into chemical speciation models* (p.20).....**David Turner**

10:45 – 11:05 Coffee Break – Informal Discussions

11:05 – 11:40 – *Advances in the chemical speciation of iron using catalytic cathodic stripping voltammetry* (p.21).....**Stan van den Berg**

11:40 – 12:15 – *Trace metal speciation by ASV: recent analytical and modelling improvements* (p.11).....**Cédric Garnier**

12:15 – 12:50 – *Recent advances for using in situ voltammetry to characterize oxic-anoxic transitions in marine environments* (p.13)

.....**Brian Glazer**

12:50 – 13:00 Post-doc presentation:

12:50 – 13:00 – *The interest of analyzing trace metals at a number of accumulation potentials* (p.26).....**Kristopher Gibbon-Walsh**

13:00 – 15:30 Lunch – Informal Discussions

15:30 – 16:05 – *AGNES as a technique for determining free metal ion concentrations in natural waters* (p.10)..... **Josep Galceran**

16:05 – 16:40 – *Organic matter-metal ions interaction-some highlights* (p.18).....**Marta Plavšić**

16:40 – 17:00 Coffee Break – Informal Discussions

17:00-17:35 – *Stripping chronopotentiometry and several applications in marine systems* (p.22)..... **Matthieu Waeles**

17:35 – 18:05 – *Signal processing and measurement automation in electroanalysis* (p.17).....**Dario Omanović**

18:05 – 18:55 Student Presentations:

18:05 – 18:15 – *Competition between copper and iron for ligands and possible effects on bioavailability of iron* (p.37). **Hannah Whitby**

18:15 – 18:25 – *Speciation and distributions of metals in Krka River estuary* (p.23).....**Ana Marija Blatarić**

18:25 – 18:35 – *Chromium speciation in the oceanic water column* (p.34).....**Sandra Pöhle**

18:35 – 18:45 – *Geo-Bio interactions in shallow water hydrothermal vents and their impact on trace metals* (p.29) .. **Charlotte Kleint**

18:45 – 18:55 – *Usefulness of voltammetric measurements to assess trace metals transfer at the continental/coastal zone interface: example of Marseille agglomeration (SE, France)* (p.32).....**Benjamin Oursel**

19:30 Workshop Dinner

Tuesday October 9

08:30 – 12:00 **Open Discussion - Final Synthesis and Recommendations for Future work**

(Short trip by boat to RBI Marine station Martinska)

12:30 Lunch - Departure of participants