

Algae toxins: Methods and challenges (ACS-Envr)

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Harmful algal blooms (HABs) occur in fresh, marine or brackish water, where toxic compounds can be produced by various microorganisms such as cyanobacteria and dinoflagellates that grow rapidly and massively. These toxins are of very different chemical nature and present diverse severe effects on humans and other organisms exposed to them. Nowadays, national legislations, regulations and guidelines consider algal toxins as serious health risks associated to drinking water, recreational waters and the food web.

With this workshop we aim to open the field of HABs to the scientific community implicated on Chemistry and the Environment. Many recent cases of algal toxin contamination have triggered very active scientific research. While significant progress has been achieved, there are many challenges both on the scientific and technology aspects. The complex nature of the problem requires effective interdisciplinary, multidisciplinary and trans-disciplinary collaboration between the scientific community, national agencies, industry and other stakeholders.

In this symposium we will discuss emerging issues and the latest information available on the following four specific topics of the field of cyanobacteria and cyanotoxins in aquatic environments:

- i) Occurrence, ecology and effects of HABs
- ii) Methods and tools for detection and monitoring
- iii) Prevention and control of HABs in aquatic ecosystems and in water treatment plants
- iv) Regulations, management practices and education

**Satellite Event “Algae Toxins: Methods and Challenges”
Program (draft)**

Time	Presenter	Title
10:00	George Cobb	Welcome from ACSenvr and introduction to the satellite event
10:15	Bryan Brooks	Are Harmful Algal Blooms Becoming the Greatest Inland Water Quality Threat?
10:30	Zorica Svircev	Cyanobacterial blooms in Serbia – Epidemiological studies and health risk assessment.
10:45	Reyhan Akcaalan	The occurrence of toxic cyanobacteria blooms in Turkish freshwaters with the emphasis of emerging toxins
11:00	Mikolaj Kokocinski	Toxicity of alien cyanobacterium <i>Cylindrospermopsis raciborskii</i> in temperate zone
11:15	Olivier Ploux	Anatoxin-a and analogs: occurrence, biosynthesis and detection
11:30-11:45	Questions and coffee break	
11:45	Ludek Blaha	Newly recognized (eco)toxicity mechanisms of cyanoHAB metabolites - effects and implications
12:00	Rainer Kurmayer	Toward an Understanding of Secondary Metabolic Diversity Among Algal Bloom-forming Cyanobacteria
12:15	Bojana Zegura	Genotoxic potential of cyanobacterial toxins
12:30	Meric Albay	Long term differences of cyanobacterial toxins in response to environmental constraints in Sapanca Lake (Turkey)
12:45	Ekaterina Chernova	Neurotoxins producers in some Russian freshwaters
13:00-13:30	Questions and Lunch Break	
13:30	Jussi Meriluoto	Recent progress in cyanotoxin analyses achieved through the CYANOCOST Action and challenges for future work
13:45	Anastasia Hiskia	Determination of Cyanotoxins: The Need of Multi-Class Validated Methods
14:00	Ingunn Anita Samdal	Immunoassay for the detection of microcystins and nodularins based on a multihapten approach
14:15	Morten Sandvik	Microcystin conjugates of thiols: formation, stability, reactivity and implications for analysis and toxicology
14:30	Els Faassen	Current understandings and challenges on the presence and analysis of the neurotoxin BMAA.
14:45-15:00	Questions and coffee break	
15:00	Dion Dionysiou	UV-assisted Advanced Oxidation Processes for the Treatment of Cyanotoxins
15:15	Dariusz Dziga	Combined treatment of toxic cyanobacteria <i>Microcystis aeruginosa</i> with hydrogen peroxide and microcystin biodegradation agents
15:30	Maria Antoniou	Emerging in-lake treatment processes for the mitigation of cyanobacterial harmful algal blooms (cyano-HABs).
15:45	Triantafyllos Kaloudis	Knowledge and information resources for the management of toxic cyanobacteria
16:00-16:15	Questions and Closing of Event	