



invitation

Thursday
7 April 2016
13:00-14:00

Limassol Water Treatment Plant
(take Fasoula Exit of Mesa Geitonia Roundabout
and follow the signs)

The Water Treatment Laboratory AQUA
of the Department of Environmental Science
and Technology of the Cyprus University
of Technology invites you to a lecture on:

Algal toxins: Monitoring and Management

Speaker:

Dr. Christine Edwards,
CyanoSol Research Group
School of Pharmacy & Life Sciences, Robert Gordon University
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AQUA

Abstract:

Algae are an essential component of global ecosystems using light and carbon dioxide to produce organic carbon and oxygen. Consequently they are found in diverse habitats including terrestrial and aquatic habitats, hot springs to Antarctic mats. The ecological diversity has resulted in chemical diversity and they increasingly investigated as sources of new chemical entities in drug discovery programs, in particular anti-cancer. Despite their natural occurrence, many form massive growths following anthropogenic activity, most commonly nutrient overload, nitrate and phosphate. Many of these organisms produce highly potent toxins which have been responsible for human and animal fatalities. There is clear evidence to demonstrate increased frequency of harmful algal blooms as a consequence of climate change posing a threat to limited water supplies (Figure 1). CyanoSol have developed many essential methods for extracting and monitoring toxins, which underpins robust scientific research and stakeholder management strategies. A key focus of CyanoSol is removal of toxins during drinking water treatment, in particular simple, low cost solutions such as photo-catalysis and bioremediation. In summary, the presentation will provide a brief background on algae and their diverse toxins, monitoring, in-lake and water treatment solutions for provision of safe drinking water.

CV:

Academic Background

BSc Hons Microbiology, University College London (1984)

PhD University College London (1993)

Research Interests / Professional Background

Great interest in bioactive natural products in particular, toxins produced by cyanobacteria (blue-green algae), instigated during postdoctoral fellowship at University of Dundee. This work focused on the development and validation of methods for extraction and analysis of microcystins, a group of peptide toxins, produced frequently by bloom forming cyanobacteria. Work also investigated the efficiency of traditional and novel water treatment processes for the removal of these toxins. In 1994, joined Biotage, as a technical support specialist for purification products from R & D to production scale. Collaboration with customers such as GSK, on method development and optimisation resulted in several publications. Joined RGU in 2005 to resume an active role in research, with emphasis on cyanobacterial toxins, occurrence and fate in the environment. In addition, involvement in growing biotechnology sector has led to funding for projects on exploitation of algae, grown on whisky waste for production of next generation bio-plastic. Wide network of national and international collaborators including Dr Maria Antoniou of CUT.