

## Waste and Wastewater effluents: chemical and ecotoxicological characterisation

**CHAIRS: Dean Leverett, Mirco Bundschuh**



Monday 12<sup>th</sup> May 2014, 08:10 – 16:00, room: Shanghai 3/4

The vast majority of chemicals discharged to the aquatic environment are delivered in the form of effluents – aqueous mixtures of chemicals derived from industrial processes or the treatment of domestic sewage. Some industrial effluents are still discharged directly to controlled waters (with or without on-site treatment), while others are sent initially to municipal wastewater treatment works for treatment along with the domestic sewage. Municipal wastewater treatment works are designed primarily to treat domestic wastewater and biological treatment processes are therefore employed to facilitate the nitrification of ammonia and nitrite into nitrate (e.g. activated sludge plants), rather than to deal with the broad range of substances likely to be present in industrial and domestic waste water. Additional 'tertiary' treatments are added to some municipal treatment works to deal with specific substances (Urban Wastewater Treatment Directive) and potential ecotoxicological implications in the receiving water body (Water Framework Directive; WFD). More recently, a number of so-called 'advanced' treatments have been trialled and implemented with the aim of reducing concentrations of micropollutants (e.g. endocrine disrupting substances) and accompanying long-term ecological effects. Directly discharged industrial effluents also present a particular problem, especially if they are released without any form of treatment to remove potentially hazardous substances. This session will focus upon the considerable challenges of characterising and treating industrial and wastewater effluents, and the assessment of ecotoxicological effects that may be caused by effluents. This is an issue of global relevance. The session will focus on :

- The ecotoxicological/ecological effects of industrial and wastewater effluents ,
- The efficiency of new or existing treatment technologies at removing specific substances or groups of substances from effluents,
- The suitability of advanced treatment technologies to reduce the ecotoxicological nature of complex wastewater,
- The effects of treatments on other 'non-target' substances and the implications for chemical fate and behaviour in the receiving environment,
- Monitoring schemes for effluents and receiving waters,
- The sources of substances entering wastewater systems.

**SESSION TYPE:** Platform and Poster