

September 30th

Middlesex University, College Building C115

5:30 – 6:30pm followed by wine reception

Welcome speech by Prof. Sean Wellington, Principal Vice
Chancellor, Executive Dean of Science & Technology

Treatment of Contaminants of Emerging Concern in Water Using Advanced Oxidation Processes

Dr. Dionysios Dionysiou is a *Professor of Environmental Engineering and Science at the University of Cincinnati*. He teaches courses and performs research in the areas of water quality, treatment, and monitoring. He is the author or co-author of over 440 refereed journal publications and his work received over 34,000 citations with an H factor of 96



Abstract:

Advanced oxidation processes are becoming important processes for the treatment and purification of water and wastewater. Applications include treatment of surface water, groundwater, municipal water, and industrial water. More recently, applications extended to water reuse for various purposes (i.e., direct and indirect potable reuse). Professor Dionysiou will present examples of his work on the treatment of contaminants of emerging concern for applications related to drinking water treatment and water reuse applications. He will present details on the mechanism of degradation of cyanotoxins, pharmaceuticals, pesticides, sunscreen ingredients and other contaminants of concern using heterogeneous (i.e., semiconductor photocatalysis, photo-Fenton-like, dark-based catalytic) and homogeneous (UV/H₂O₂, UV/persulfate, UV/chlorine) advanced oxidation processes. Examples will be provided on the synthesis of novel photocatalytic materials as well as the mechanism of degradation by reactive oxygen species. Aspects on modeling and structure-activity relationships will be presented. The role of water quality parameters and process integration will be discussed.



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