Title

MODELLING THE FATE OF MICROPOLLUTANTS IN WASTEWATER AND ENVIRONMENTAL SYSTEMS: CHALLENGES AND OPPORTUNITIES

Abstract
As a result of ubiquitous human presence, organic trace chemicals (pharmaceuticals, biocides and illicit drugs) are continuously released to sewer systems and eventually reach wastewater treatment plants. Due to design limitations, these chemicals undergo incomplete removal during wastewater treatment and are released to environmental recipients, where they can be hazardous to living organism at rather low concentrations. Recovery of wastewater-related resources in agriculture (e.g., sludge application or wastewater reuse for irrigation) can further lead to their accumulation in food crops.
Due to the high number of marketed chemicals and to the uncertainties associated to measuring procedures, understanding the fate of trace chemicals before, during and beyond wastewater treatment still remains a challenge, which can be overcome by fate models. This seminar will present newly emerged fate modelling approaches and their practical application, from fate predictions during full-scale wastewater treatment and agricultural resource reuse (pharmaceuticals and biocides) to the field of wastewater-based epidemiology (illicit drugs).

Date
07/12/2016, Aula TA07 ore 15.00 via Terracini

Biography
Fabio Polesel (fabp@env.dtu.dk) is a Postdoctoral fellow at the Department of Environmental Engineering at the Technical University of Denmark (DTU, Kongens Lyngby, Denmark), after earning a PhD degree at the same institution in January 2016 (PhD thesis: “Modelling the fate of xenobiotic trace chemicals via wastewater treatment and agricultural resource reuse”). Dr. Polesel had previously received BSc (2009) and MSc (2012) in Environmental Engineering at Universitá degli Studi di Padova, Italy. His research has been focusing on understanding the fate of organic trace chemicals (pharmaceuticals, biocides, drugs) in wastewater treatment (activated sludge and biofilm systems) and environmental systems both experimentally and through modelling tools. He is currently engaged in assessing the occurrence and the fate of engineered nanomaterials, widely present in consumer products, in wastewater treatment systems.
Dr. Polesel has authored or co-authored a number of publications in international scientific journals (Environmental Science & Technology, Water Research, Chemosphere) and has received awards at international conferences (IWA Micropol & Ecohazard 2013, 2015).