

NIREAS SPEAKER SERIES

# WHEN IDEAS FLOW

Thursday, 6 December 2012

16:30 PM | Faculty of Economics and Management,  
Building 2 (XΛ02)  
Room 16  
University of Cyprus

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### **The effect of chlorination and UV radiation in controlling antibiotic resistant bacteria spread compared to solar driven and UV lamp – TiO<sub>2</sub> photocatalysis**

#### **Abstract**

Urban wastewater treatment plants (UWWTPs) effluents are among the possible sources of antibiotic resistant bacteria (ARB) spread into the environment. Therefore the disinfection process has a fundamental role in controlling the release of ARB into UWWTPs effluents. In this seminar, the effect of conventional wastewater disinfection systems (chlorination and UV radiation) in controlling ARB spread compared to new disinfection process, solar driven and UV lamp – TiO<sub>2</sub> photocatalysis, will be discussed. Antibiotic resistant *Escherichia coli* and *Enterococcus* strains selected from UWWTP effluent were subsequently inoculated to biologically treated urban wastewater to evaluate the effects of these processes in terms of inactivation and resistance of survived colonies.

#### **Brief CV**

Luigi Rizzo is presently Assistant Professor at Department of Civil Engineering at University of Salerno (Italy). In 1999 he received his degree in Civil Engineering (hydraulics) at the University of Salerno. From 1999 to 2000 he was research assistant in the Department of Civil Engineering. In 2004 he received his Ph.D. degree in Environmental Engineering. In 2004 and 2005 he was a visiting scientist in the Water Chemistry Laboratory at the University of Wisconsin, Madison (USA). From September 2008 to February 2009 he was visiting scientist at Plataforma Solar de Almería (Spain).

He has been supervisor for 33 Master students and 3 Ph.D. students. His expertise includes water disinfection and disinfection byproducts control, urban and industrial wastewater advanced treatment (advanced oxidation processes (AOPs), solar driven AOPs, coagulation, adsorption) for emerging contaminants removal and detoxification. He has been investigator and principal investigator in national (5) and international projects (5). He is Italian COST Action expert in the Domain ESSEM (Earth System Science and Environmental Management Members). Moreover, he acts as an expert for the Italian Ministry for University and Research (MIUR), and 4 foreign organizations/institutes. He published 70 papers in peer review journals (31) (395 citations, 12 h-index, "SCOPUS" source), proceedings of international (22) and national (5) conferences, and books chapters (12). He is co-editor and co-author of 3 books. He is Associate Editor for Water Science & Technology (IWA publishing) journal and referee for 53 Journals.