

Final Announcement

“WASTEWATER REUSE APPLICATIONS AND CONTAMINANTS OF EMERGING CONCERN”

13-14 September 2012

Columbia Beach Hotel, Pissouri - Limassol, Cyprus

Hosted by: NIREAS-IWRC

Organized by: NORMAN Network, DARE-EU COST Action TD0803 and NIREAS-IWRC

This workshop on “Wastewater Reuse Applications and Contaminants of Emerging Concern” will discuss the challenges of wastewater reuse practices with regard to contaminants of emerging concern, their transformation while in the environment, their potential uptake by plants and crops, the effects that these contaminants may induce in the environment, the evolution and release of antibiotic resistance, and technologies that are able to remove such contaminants from wastewater. The workshop aims to address the following themes:

- Which are the contaminants of emerging concern that are relevant to wastewater reuse applications? (e.g. antibiotics and other licit and illicit drugs, transformation products, disinfection by-products)
- What are the new concerns related to reuse applications? (direct and/or indirect effects)
- What technologies can enhance the ‘conventional’ treatment by removing such contaminants?

The workshop is held jointly by the NORMAN Network, COST Action TD0803 (DARE) and the NIREAS-International Water Research Center.

NORMAN, a network of reference laboratories, research centres for monitoring emerging environmental pollutants, is an independent and competent platform in the field of emerging pollutants. NORMAN facilitates an exchange of information, debate and research collaborations at a global level with official recognition from institutional agencies of the EU. (www.norman-network.net)

The main objective of DARE, EU COST Action TD0803, is to identify and characterize environmental hotspots for antimicrobial resistance emergence, spread of antibiotics and antibiotic resistance patterns, aiming to develop measures in order to control antibiotic resistance evolution. Great emphasis is given to Wastewater Treatment Plants, which constitute a major source for the release of (newly evolved) antibiotic resistances into the environment. (www.cost-dare.eu)

NIREAS-International Water Research Center is co-financed by the European Regional Development Fund and the Republic of Cyprus through the Cyprus Research Promotion Foundation (DESMI 2008). It was created with the objective of leverage scientific and engineering expertise in order to tackle water-related problems. (<http://www.nireas-iwrc.org>)

WORKING LANGUAGE

The official language of the workshop is English.



Under the auspices of the Cyprus Presidency of the Council of the European Union 2012

Hosted by:



Organized by:



Sponsored by:

Nireas International Water Research Center, Cyprus*
Norman Network
Dare-EU Cost Action TD0803
Cyprus Research Promotion Foundation
Biotronics Ltd
TOMIXX**

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*The Strategic Infrastructure Project NEA ΥΠΟΔΟΜΗ/ΣΤΡΑΤΗΓ/0308/09 is co-financed by the European Regional Development Fund and the Republic of Cyprus through the Research Promotion Foundation

**The TOMIXX project (PENEK/0609/24) "Development of novel methods for the toxicity assessment of multi-component mixtures to humans and the ecosystem" (TOMIXX), which is funded by the Cyprus Research Promotion Foundation through Desmi 2009-2010, which is co-financed by the Republic of Cyprus and the European Regional Development Fund of the European Union supports this event as part of its final dissemination activities.



REGISTRATION

Participation is FREE of charge. However, registration was requested by 15 July, 2012 by filling in the Registration and Accommodation Form.

DARE members will follow the EU COST Action rules for lunches and dinners.

VENUE - ACCOMMODATION

The workshop will be held at the Columbia Beach Hotel in Pissouri, Limassol, (<http://www.columbia-hotels.com/en/beach-hotel-cyprus>). The venue is situated about 80 minutes from Larnaca International Airport and 30 minutes from Paphos Airport.

Please note that 7 days prior to arrival no cancellation charge will apply. For any cancellations later than this, 2 nights cancellation fees will apply.

SOCIAL ACTIVITY

A half-day tour of Limassol will take place on Saturday 15 September. Sites will include the ancient city of Kourion, an impressive and unspoiled Greco-Roman site which includes mosaics and a superb amphitheatre. Driving through the vineyards and citrus plantations of Fasouri our next stop will be the old town of Limassol where you will have the chance to visit the Limassol Mediaeval Fort built in the 14th century on the site of an earlier Byzantine castle. It is here that according to tradition, Richard the Lionheart married Berengaria of Navarre and crowned her Queen of England.

You can register for the tour on Thursday, 13 September at the registration desk at the hotel. Please note that a minimum participation of 15 persons is required and the participation fee is 35 euro per person.

LOCAL WEATHER

The weather in Cyprus during September is sunny and hot. The maximum daytime temperature in September is 29°C on the west coast, with warm evenings (average 19°C). It is unlikely to rain. The water warms up to 26°C and is comfortable enough for swimming.



SPECIAL ISSUES

Registered participants presenting their work at the workshop will have the possibility to publish full papers in Special Issues of the following journals:

Environmental Science and Pollution Research, Springer

Special issue on wastewater reuse applications and contaminants of emerging concern.

Journal of Environmental Engineering, ASCE

Special issue on AOPs for wastewater treatment, including aspects for water reuse.

Papers will be subjected to the regular, strict refereeing procedures of the journals.

ORGANIZING COMMITTEE

Despo Fatta-Kassinou	Nireas-IWRC, University of Cyprus, Cyprus
Valeria Dulio	Executive Secretary of the NORMAN Association, INERIS, France
Thomas Berendonk	Chair of Cost Action TD0803, Technische Universität Dresden, Germany

CONTACT

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Day 1, Thursday 13/9/2012

12:00 Registration and Lunch

**Session 1
Applied practices and Current challenges**

- 14:00 **Welcome by Dr Symeon Christodoulou, Associate Professor**
Head of the Department of Civil and Environmental Engineering
NIREAS–International Water Research Center
University of Cyprus, Cyprus
- 14:10 *Current challenges in the field of wastewater treatment and reuse*
Dr Despo Fatta-Kassinou, Assistant Professor
Director of NIREAS–International Water Research Center
University of Cyprus, Cyprus
- 14:30 *Provision of water in arid environments – Lessons in water use and reuse from Australia*
Scientia Professor T. David Waite
Head of School, Civil and Environmental Engineering
The University of New South Wales, Australia
- 15:00 *The occurrence and chemical fate of pharmaceutical residues in the Israeli aquatic environment*
Dr Dror Avisar
Head of the Hydro-chemistry Laboratory, Tel Aviv University, Israel
- 15:30 *Case study Switzerland: upgrading of wastewater treatment plants with an advanced treatment step to improve surface water quality*
Professor Juliane Hollender
Head of Department, Environmental Chemistry, EAWAG, Switzerland
- 16:00 *Coffee Break*
- 16:20 *Illicit drugs in wastewater*
Dr Kevin Thomas
Ecotoxicology and Risk Assessment, NIVA, Norway
- 16:50 *Speaker to be announced*

17:20 **Panel Discussion** led by Dr Norbert Kreuzinger (*Vienna University of Technology, Austria*) and Dr Luigi Rizzo (*University of Salerno, Italy*)

17:50 End of Day 1

20:00 Dinner kindly supported by Biotronics Ltd

Day 2, Friday 14/9/2012

**Session 2
WWTPs and Antibiotic resistance**

- 09:00 *Detecting evolutionary hotspots of antibiotic resistances in Europe (EU COST Action DARE TD0803)*
Professor Thomas Berendonk
Head of the Institute of Hydrobiology
Technische Universität Dresden, Germany
- 09:30 *Antibiotic resistance in urban wastewater: environmental contamination and risks of water reuse*
Dr Celia Manaia, Assistant Professor
CBQF/Escola Superior de Biotecnologia,
Universidade Católica Portuguesa, Porto, Portugal
- 10:00 *The impact of treated wastewater irrigation on antibiotic resistance in soil bacteria*
Dr Eddie Cytryn
Institute for Soil, Water and Environmental Sciences
ARO, Volcani Agriculture Research Center, Israel
- 10:30 *Coffee Break*
- 10:55 **Panel Discussion** led by Dr Marie-Noëlle Pons (*CNRS-ENSIC, France*) and Professor Hemda Garelick (*Middlesex University, UK*)

End of Session 2



Session 3:
Uptake of contaminants, Treatment technologies

- 11:25 *Extensive analytical evaluation of advanced tertiary treatments for water reuse purposes*
Professor Ana Agüera
Departamento de Hidrogeología y Química Analítica
Universidad de Almería, Spain
- 11:55 *Uptake of organic microcontaminants by vegetables from irrigation waters. In vitro and field evidence*
Dr Josep M. Bayona
Research Professor, IDAEA-CSIC, Environmental Chemistry Department, Spain
- 12:25 *Use of advanced oxidation processes to destroy cyanotoxins, taste and odor compounds, and selected pharmaceuticals in water treatment and reuse applications*
Professor Dionysios (Dion) D. Dionysiou
Center of Sustainable Urban Engineering, Drinking Water, Water Supply, Quality, and Treatment, and Environmental Nanotechnology Laboratories
University of Cincinnati, Ohio, United States
- 13:00 Lunch
- 14:30 *Advanced oxidation of estrogens, antibiotics and other water emerging contaminants and the potential for solar detoxification and water reuse*
Professor Gianluca Li Puma
Photocatalysis and Photoreaction Engineering,
Department of Chemical Engineering
Loughborough University, United Kingdom
- 15:00 *Disinfection of urban wastewater by solar driven and UV lamp –TiO₂ photocatalysis: effect on a multi drug resistant E. coli strain*
Dr. Luigi Rizzo
Assistant Professor in Environmental Engineering Department of Civil Engineering,
University of Salerno University of Salerno, Italy
- 15:30 **Panel Discussion** led by Dr Christa McArdell (EAWAG, Dübendorf, Switzerland) and Professor Dionysios Dionysiou (University of Cincinnati, Ohio, US)

End of Session 3



16:05 *Coffee Break*

16:30 **10-minute Presentations**
General topics on wastewater reuse and emerging contaminants

1. Predicting the fate of emerging contaminants in sewage treatment plants: evolution of the SimpleTreat model, *Dr. Antonio Franco, Unilever, United Kingdom*
2. Monitoring of water quality using photometric technique. Case study: Application of Hungarian developed Robotic Water Analyser, *Dr. Ákos Rédey, University of Pannonia, Hungary*
3. Organics removal and minimization of degradation products during treatment of pharmaceutical wastewater, *Dr. Giuseppe Mascolo, Water Research Institute, Bari, Italy*
4. Required Ozone doses for achieving 90% removal of pharmaceuticals from Swedish WWTP effluents, *Dr. Maria G. Antoniou, Cyprus University of Technology, Cyprus*
5. Ecotoxicity assessment of wastewater containing mixtures of active pharmaceutical ingredients, *Dr. M. I. Vasquez, University of Cyprus, Cyprus*
6. Disinfection of urban wastewater by solar driven and UV lamp –TiO₂ photocatalysis: effect on a multi drug resistant *E. coli* strain, *Dr. Luigi Rizzo, University of Salerno, Italy*
7. Prevalence of Tetracycline Resistance in the wastewater treatment plant, *Dr. Magdalena Popowska, University of Warsaw, Poland*
8. Persistence and dissemination of the multiple-antibiotic-resistance plasmid pB10 in complex environment matrices, *Dr. Christophe Merlin, Université de Lorraine, France*
9. Comparison of photocatalytic degradation for series of dyes, *Dr. Marie-Noelle Pons, Nancy Université, France*

18:00 **Panel Discussion** led by Dr. Jaroslav Slobodnik (*Environmental Institute, Slovak Republic*)

20:30 Dinner kindly supported by the Cyprus Research Promotion Foundation

