



# DECENNIAL ACTIVITY REPORT

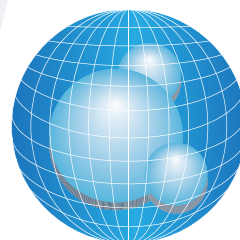
2011 - 2021 MARCH



University  
of Cyprus







**iwrc**

International Water Research Center

# DECENNIAL ACTIVITY REPORT

**2011 - 2021** MARCH



University  
of Cyprus

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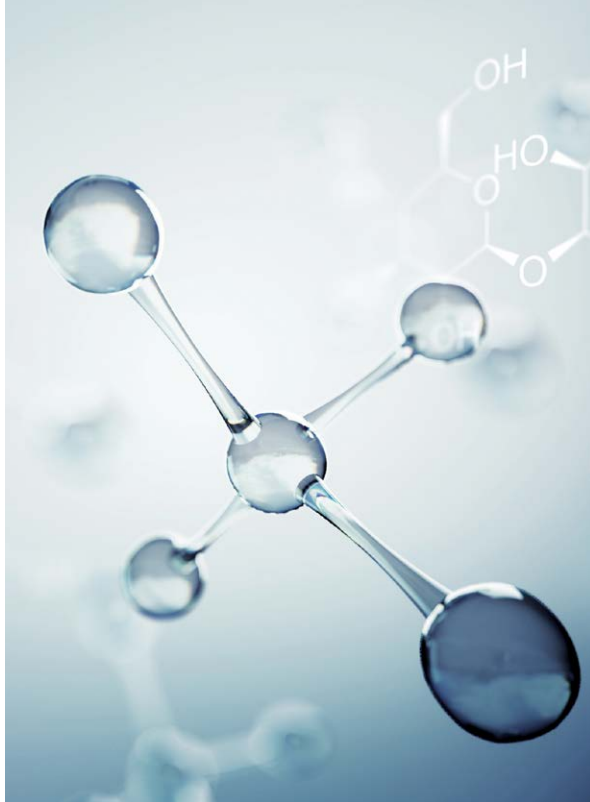
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# Foreword

In March 2021, Nireas International Water Research Center (Nireas-IWRC) completes its first ten years of operation. Ten years of fruitful, scientifically engaging and socially stimulating contributions of the Center's national and international activities. To celebrate this milestone, I have the honor of introducing the **Nireas-IWRC's Decennial Report** summarizing the Center's activities and achievements to date and chronicling our research teams' journey in achieving the Center's scope and objectives.

The activities of Nireas-IWRC were launched on the 31<sup>st</sup> of December 2010, with the Center's official inauguration held on the 22<sup>nd</sup> of March 2011 to coincide with the celebration of the International Water Day. The establishment of the Center was made possible following the successful evaluation of a proposal submitted by our research group to the Cyprus Research Promotion Foundation (recently renamed to Research & Innovation Foundation) under the "Strategic Infrastructure" Research Call for the establishment of research units and for laying the foundations for substantial growth of research in Cyprus. Our research Center was co-financed, between 2011 and 2015, by the European Regional Development Fund and the Republic of Cyprus (through the Research Promotion Foundation) and by the University of Cyprus. Further, in December of 2013, after a decision taken by the Council of the University, the Council of Ministers and the Cyprus Parliament, the Center became one of the official Research Units of the University of Cyprus.

The primary objective of the Center is to conduct research of high international caliber, while at the same time serving the research needs of the Cypriot society, economy and industry.

For Cyprus, water availability has historically been a challenge and through the ages several extended periods of drought have been recorded that decimated the population. In modern times,

Cyprus has responded with the creation of a network of fresh-water reservoirs, and the water supply has, in recent years, been enhanced by a network of desalination plants and wastewater reuse schemes. These large infrastructure projects have made the problem of water scarcity in modern Cyprus less pressing, but at the same time there are a number of other issues that must be faced. Among the most important ones are the presence of xenobiotics in the aquatic environment and in wastewater, water quality, salt-water intrusion in coastal aquifers, water loss to evaporation, infrastructure integrity, etc.

Nireas-IWRC was created with the vision to leverage scientific and engineering expertise in order to tackle these important problems in Cyprus. However, these problems are not unique to Cyprus; they are faced in almost all countries around the world. Thus, while placing emphasis on solving the local water-related problems, Nireas-IWRC has maintained an outward view, evidenced by establishing international collaborations and partnerships. Water is one of the most important issues that humanity will have to deal with in the 21<sup>st</sup> Century, and Nireas-IWRC was from the very beginning created with the vision of reaching out to the wider scientific community for the exchange of know-how and of best practices. At the core of our research collaboration initiatives and knowledge exchange lies our strong belief in mutually beneficial synergies and the value of citizens' engagement in strengthening awareness on water-related issues.

This report provides information on the organizational structure of the Center, its main scientific and research pillars and operations, its network of collaborators and partners and on its main research outputs and achievements during the first decade of the Center's operation.

Nireas-IWRC is an important player in the scientific water arena not only at the national level, but



also at the European and international levels. Its productivity, translated both into scientific outputs and activities that benefit relevant stakeholders and the wider public, are timely, relevant and wide-ranging. Its contribution is nicely reflected in the various publications in the most prominent scientific journals of the Center's core research fields, including *Water Research*, *Science of the Total Environment*, *Journal of Hazardous Materials*, *Chemical Engineering Journal*, *Applied Catalysis B: Environmental*, *Environment International*, *Science*, *Science Advances*, *Nature Reviews Microbiology*, and *Water Resources Management*, and in the development of networks and conferences all around the world.

Water is perhaps the most vital natural resource on the planet. It is necessary for human survival and a critical input into our food, manufacturing and energy systems. It also sustains the ecosystems and climates upon which both our built and natural world rely. Today we are putting more pressure on freshwater resources than ever. Because of the rapidly growing population and the shifting climate, water stress, and therefore water risk, is increasing around the world. The activities of Nireas-IWRC are continuously adapting to the changing challenges trying to tackle emerging issues in the framework of a rapidly changing world, providing a continuously increasing societal impact.

A recent example of the Center's continuous research adaptation is Nireas-IWRC's engagement with the COVID-19 pandemic, through the analysis of the RNA fragments of the SARS-CoV-2 in urban wastewater. COVID-19 is the worst pandemic the world has faced since the Spanish Influenza of 1918, which claimed the lives of millions of people. As we still watch the death toll climb, we dream of the day when the virus will be eradicated, and our lives will go back to normal. Our admiration and respect go to the front-line healthcare workers, nurses, and physicians and to those maintaining the society's infrastructure.

What hasn't changed in this time period, and what is perhaps coming even more to the fore, is the role of science. The wastewater community is to be commented on the huge efforts it made during the current COVID-19 pandemic. As history has shown, necessity is the mother of invention. And in this case, the need is pushing science and research towards important advances in relation to the current state of knowledge as to how resilience can be achieved in relation to the water systems or what, for example, wastewater monitoring can achieve, opening at the same time new directions towards transforming the wastewater infrastructure into a source of obtaining credible information for the benefit of the health sector and our societies.

In closing this foreword, on behalf of the Academic Council, I would like to take this opportunity to warmly thank the Nireas-IWRC researchers, junior and senior, from Cyprus and abroad, for their work, support and commitment, enthusiasm and dedication. Nireas-IWRC has thrived on the shoulders of our researchers and through significant help from our managerial staff, especially Mr Toumazis Toumazi and Ms Eleni Toxqui, who over the last decade showed steady dedication to the Center and its mission. The Center acknowledges their contributions and thanks them. I would also like to thank our University for its continuous support and all the stakeholders involved in our work and efforts to date.

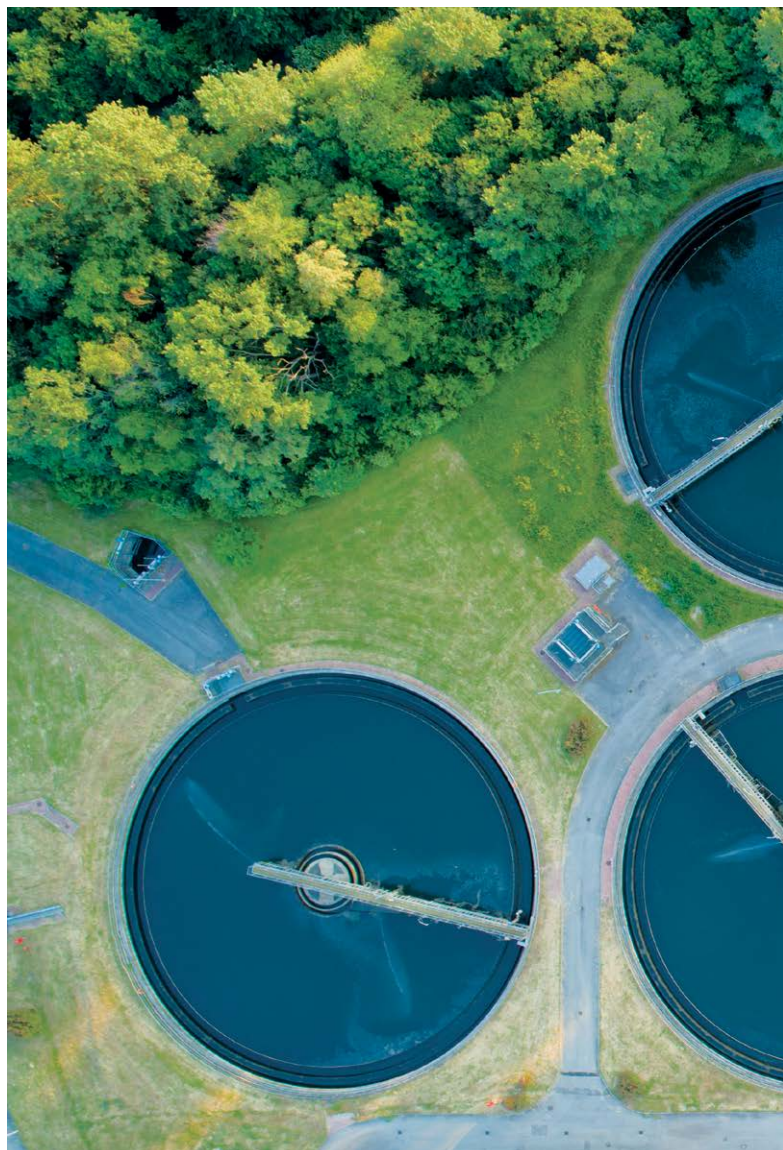
I hope you will find the information presented in this report, useful and interesting.

Despo Fatta-Kassinou

Professor, Department of Civil and Environmental Engineering  
Director of Nireas-IWRC

# Nireas-IWRC at a Glance

In today's environment, society, individuals and organizations are confronted with ever increasing demands for water quantity and quality, with the demands raising profound questions regarding the society's ability to synthesize efficient solutions to these rapidly proliferating problems. Nireas-IWRC helps counter this trend through the creation of a "home" for water-related research, and through the hosting of an internationally-recognized research institute for the advancement of water-related research. Consequently, Nireas-IWRC ultimately offers a platform not just for more effective technologies, but also for an entirely new generation of functionality for sustainable management of water resources, harnessing the synergies of integrated interdisciplinary research on water quality, quantity, and management and economics through a single knowledge repository. Nireas-IWRC generates a responsive environment for technology-enhanced research to motivate, engage and inspire citizens, and one that is embedded directly in the social web.



The activities of the Center aim at dependable, flexible and user-centric shared solutions for sustainable use of water resources and for better management of ecosystems including the mitigation of environmental degradation and associated threats. Nireas-IWRC's research delivers visionary concepts and techniques, and strategic integrated approaches addressing water-related applications that are cost-effective, easy to set up and to operate.

The aforementioned activities include interdisciplinary research aiming at the solution of complex scientific and engineering problems under the unifying theme of water management. The goal is to develop further expertise that will enable an integrated approach to this important issue, coupling chemistry, biology, hydrology,





geohydrology, hydraulics, advanced modeling capabilities and experimental/analytical work, computational mechanics, risk assessment, environmental science and education, economics and of course various specialties of engineering in order to face various emerging problems in this field. The implementation of the various projects at the Center is spearhead research at a pioneering level internationally. The projects of Nireas-IWRC are true inter-sectorial, effectively linked and integrated since the working schedule is structured so that various members are involved in several inter-related projects and activities. Each of the research pillars and tasks described below promotes competence and practical skills in various disciplines within the thematic area of water management. The overarching aim of Nireas-IWRC is to integrate

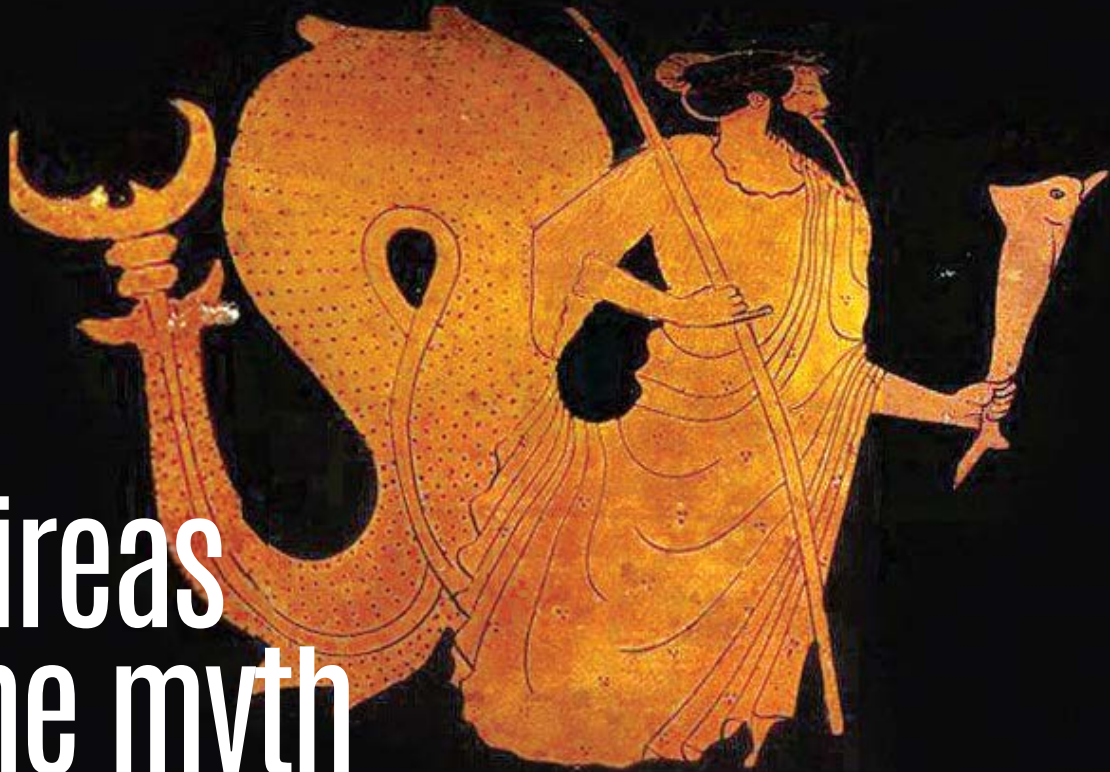
and leverage this interdisciplinary research for the solution of complex scientific and engineering problems. Although distinct, the pillars have commonalities both in the scientific content and the industrial and real-life scale applications.

Nireas-IWRC focuses on 7 research pillars:

- Water/Wastewater quality, monitoring and treatment
- Drinking water supply, distribution and management
- Environmental Biotechnology
- Subsurface processes and engineering
- Hydrologic, hydro-geomorphic and hydro-climatic processes
- Geophysical hydrodynamics
- Socioeconomic analysis of water-related issues.

# Nireas

## The myth



Nireas (Nereus) is one of the most important water deities of Greek mythology, known for his truthfulness and virtue and often referred to as the “old man of the sea”.

<https://www.theoi.com/Pontios/Nereus.html>  
<https://harvardartmuseums.org>

In the Greek language, the name NIREAS connotes flowing water. Nireas (Greek: Νηρεύς) was according to Greek mythology the eldest son of Pontus (the Sea) and Gaia (the Earth). Nireas was a Titan who with Doris fathered 50 daughters (the Nereids), with whom Nireas lived in the Aegean Sea. Nireas and Proteus seem to be two manifestations of the god of the sea who was supplanted by Poseidon when Zeus overthrew Cronus. Nireas, who dwelled in the Aegean Sea, was a god who could turn himself into all kinds of shapes. Nireas was also known for his truthfulness and virtue. Nireas was father to Thetis, one of the Nereids, who in turn was mother to the great Greek hero Achilles, and Amphitrite, who married Poseidon.



# Nireas-IWRC's Mission

The mission of the Nireas-International Water Research Center is:

- to address ambitious research questions
- to develop cutting-edge water technologies
- to contribute to policy development
- to disseminate knowledge concerning water science and engineering in layman form to the wider public

Nireas-IWRC offers a platform not just for more effective technologies but for an entirely new generation of functionality for sustainable management of water resources, harnessing the synergies of integrated multidisciplinary research on water quality, quantity, and management and by linking previously stand-alone content through a single knowledge repository.

Equally important, Nireas-IWRC generates a responsive environment for technology-enhanced research to motivate, engage and inspire citizens, and one that will be embedded directly in the social web. The acquired knowledge and know-how are transmitted internationally by publications, lectures, teaching, and consulting to the private and public sector.



# Nireas-IWRC Establishment

The official inauguration of Nireas-IWRC was on the 22<sup>nd</sup> of March 2011, and was held to coincide with the celebration of the International Water Day.



Πανεπιστήμιο Κύπρου  
University of Cyprus

Πολυτεχνική Σχολή  
Τμήμα Πολιτικών Μηχανικών  
και Μηχανικών Περιβάλλοντος

10 Μαρτίου 2011

## Ίδρυση Διεθνούς Κέντρου Έρευνας σε Θέματα Νερού - ΝΗΡΕΑΣ

Αξιότιμοι Συνάδελφοι και Φίλοι,

Με ιδιαίτερη χαρά σας προσκαλούμε στην τελετή Ίδρυσης του Διεθνούς Κέντρου Έρευνας σε Θέματα Νερού ΝΗΡΕΑΣ στις 22 Μαρτίου 2011 στο Πανεπιστήμιο Κύπρου, (Κτήριο Συμβουλίου-Συγκλήτου 'Αναστάσιος Γ. Λεβέντης', Αίθουσα Β108).

Η δημιουργία του Ερευνητικού Κέντρου χρηματοδοτείται από το Ίδρυμα Προώθησης Έρευνας Κύπρου μέσω της Δέσμης 2008, έργο ΝΕΑ ΥΠΟΔΟΜΗ/ΣΤΡΑΤΗ/0308/09, το οποίο συγχρηματοδοτείται από την Κυπριακή Δημοκρατία και το Ευρωπαϊκό Ταμείο Περιφερειακής Ανάπτυξης της Ε.Ε. και αποτελεί στρατηγικό έργο για την ανάπτυξη νέας ερευνητικής υποδομής στον τόπο μας.

Η έρευνα και οι γενικότερες δραστηριότητες του ερευνητικού κέντρου βασίζονται σε διακριτές θεματικές ενότητες ως ακολούθως:

- 1) προσδιορισμός και έλεγχος της ποιότητας του νερού
- 2) ανάπτυξη και μελέτη προχωρημένων και οικονομικά βιώσιμων τεχνολογιών επεξεργασίας υγρών αποβλήτων και νερού
- 3) διαχείριση αστικών δικτύων παροχής νερού και μη συμβατικών υδατικών πόρων
- 4) κοινωνικο-οικονομική ανάλυση διαφόρων θεμάτων που άπτονται της χρήσης νερού, εκπαίδευση νέου επιστημονικού δυναμικού και κοινωνική επιμόρφωση
- 5) προσέλκυση ταλαντούχου ερευνητικού προσωπικού και ενδυνάμωση του επιστημονικού δυναμικού στην Κύπρο
- 6) διάχυση επιστημονικών αποτελεσμάτων και εργασιών σε εθνικό και διεθνές επίπεδο
- 7) συνεισφορά στην ενημέρωση μαθητών και νέων σε θέματα διαχείρισης νερού.



Πανεπιστήμιο  
Κύπρου

## ΔΕΛΤΙΟ ΤΥΠΟΥ

Επικοινωνία:  
Γραφείο Επικοινωνίας  
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ιστοσελίδα: [www.pr.ucy.ac.cy](http://www.pr.ucy.ac.cy)

ΠΡΟΣ ΔΗΜΟΣΙΕΥΣΗ

Λευκωσία, 05 Απριλίου 2011

### ΣΕ ΛΥΣΕΙΣ ΓΙΑ ΚΑΛΥΠΤΕΡΗ ΔΙΑΧΕΙΡΙΣΗ ΤΟΥ ΝΕΡΟΥ ΣΤΟΧΕΥΕΙ ΤΟ ΔΙΕΘΝΕΣ ΕΡΕΥΝΗΤΙΚΟ ΚΕΝΤΡΟ ΝΕΡΟΥ «ΝΗΡΕΑΣ» ΠΟΥ ΞΕΚΙΝΗΣΕ ΤΗ ΛΕΙΤΟΥΡΓΙΑ ΤΟΥ ΣΤΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΚΥΠΡΟΥ

Την Παγκόσμια ημέρα νερού, Τρίτη 22 Μαρτίου επέλεξε για να ξεκινήσει τις εργασίες του το διεθνές Ερευνητικό Κέντρο Νερού του Πανεπιστημίου Κύπρου ΝΗΡΕΑΣ. Την κήρυξη της έναρξης των εργασιών που έλαβε χώρα στην Πανεπιστημιούπολη τέλεσε ο Πρόεδρος της Επιτροπής Παιδείας της Βουλής και μέλος της Επιτροπής Περιβάλλοντος κ. Νίκος Τορνάρης. Χαιρετισμούς στην τελετή απηύθυναν, ο Πρύτανης του Πανεπιστημίου Κύπρου, Καθηγητής Κωνσταντίνος Χριστοφίδης, ο Κοσμήτορας της Πολυτεχνικής Σχολής, Καθηγητής Πάνος Παπαναστασίου, η Γενική Διευθύντρια του Υπουργείου Γεωργίας, Φυτικών Πόρων και Περιβάλλοντος κ. Αίγλη Παντελάκη και η Επιστημονική Λειτουργός του Ιδρύματος Προώθησης Έρευνας Δρ. Άννα Μαρία Χριστοφόρου. Το Κέντρο που έχει προϋπολογισμό 1,4 εκ. ευρώ για τα πρώτα τέσσερα χρόνια, συγχρηματοδοτείται από την Κυπριακή Δημοκρατία και το Ευρωπαϊκό Ταμείο Περιφερειακής Ανάπτυξης της Ε.Ε. μέσω του Ιδρύματος Προώθησης Έρευνας της Κύπρου.

Αναφερόμενη στο έργο, η διευθύντρια του Δρ. Δέσπω Φάτια-Κάσιου, Επίκουρη Καθηγήτρια του Τμήματος Πολιτικών Μηχανικών και Μηχανικών Περιβάλλοντος, σημείωσε την έντονη κοινωνική διάσταση της έρευνας αφού τα πορίσματά της θα είναι σε θέση να προσφέρουν πρακτικές λύσεις στους δημόσιους αρμόδιους φορείς και να συνεισφέρουν ουσιαστικά σε διάφορα θέματα διαχείρισης του νερού που αποτελεί για την Κύπρο μία σημαντική προτεραιότητα λόγω του προβλήματος περιοδικής λεψυθρίας με αποτέλεσμα τα μειωμένα υδατικά αποθέματα. Τόσο η ποσοτική



# Management Structure



# Academic Council (2020-Present)

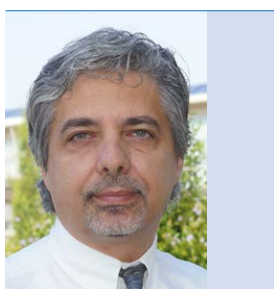
The Academic Council oversees the day-to-day operation of Nireas-IWRC.



**DR. DESPO  
FATTA-KASSINOS**

Professor in the Department of Civil and Environmental Engineering, University of Cyprus

**Director**



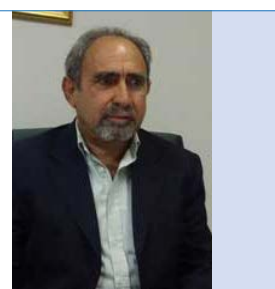
**DR. SYMEON  
CHRISTODOULOU**

Professor in the Department of Civil and Environmental Engineering, University of Cyprus



**DR. STAVROS  
KASSINOS**

Professor in the Department of Mechanical and Manufacturing Engineering, University of Cyprus



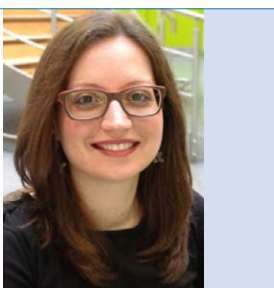
**DR. PANOS  
PAPANASTASIOU**

Professor in the Department of Civil and Environmental Engineering, University of Cyprus



**DR. DIMOKRATIS  
GRIGORIADIS**

Associate Professor in the Department of Mechanical and Manufacturing Engineering, University of Cyprus



**DR. ARGYRO TSIPA**

Lecturer in the Department of Civil and Environmental Engineering, University of Cyprus



**DR. CHRISTOS  
NICOLAIDES**

Lecturer in the Department of Business and Public Administration, University of Cyprus



**DR. LOUKAS  
DIMITRIOU**

Assistant Professor in the Department of Civil and Environmental Engineering, University of Cyprus

Before the creation of the Academic Council in 2020 the Research Center was operating under the supervision of its Board of Directors, presented in page 14.

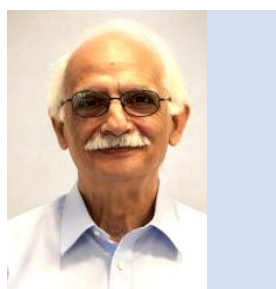
# Research Council (2020-Present)

The role of the Center's Research Council is advisory to the Academic Council, in support of the Center's mission and objectives.



**DR. DESPO  
FATTA-KASSINOS**

Professor in the Department of Civil and Environmental Engineering, University of Cyprus



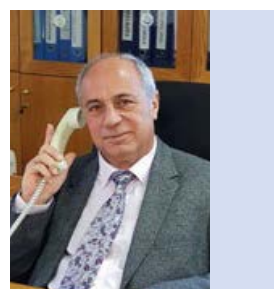
**DR. COSTAS MICHAEL**

Senior Scientist of Nireas-IWRC, UCY, Former Director of the Cyprus State General Laboratory, Cyprus



**MS. VALERIA DULIO**

Executive Secretary of the NORMAN Association INERIS, Direction Milieu et Impact sur le Vivant (MIV), France



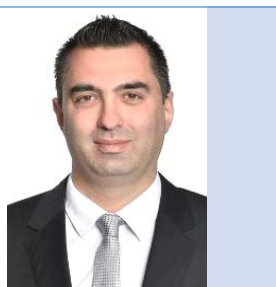
**DR. CHARALAMBOS  
HADJIPAKKOS**

Director of the Water Development Department, Ministry of Agriculture Rural Development and the Environment, Cyprus



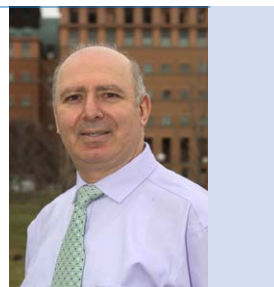
**MR. SAVVAS  
HADJINEOCLEOUS**

Technical Director of the Sewerage Board of Nicosia, Cyprus



**MR. CONSTANTINOS  
PARMAKLIS**

Director of the Water Board of Nicosia, Cyprus



**DR. DIONYSIOS  
D. DIONYSIOU**

Professor of Environmental Engineering, Sustainable Solutions Laboratories (SSLs), Center of Sustainable Urban Engineering, Drinking Water, Water Supply, Quality, and Treatment, and Environmental Nanotechnology Laboratories, Department of Chemical and Environmental Engineering University of Cincinnati, USA



**DR. DAMIA BARCELO**

Director of Catalan Institute for Water Research (ICRA), Research Professor of Institute of Environmental Assessment and Water Research (IDAEA), Consejo Superior de Investigaciones Científicas/Spanish National Research Council (CSIC), Spain

Before the creation of the Research Council in 2020 the Research Center was supported by the Scientific Advisory Board presented in page 15.

# Board of Directors (2011-2019)

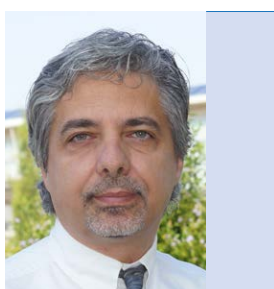
The Board of Directors ensured the efficient implementation of the management plan and the quality control of all Nireas-IWRC activities.



**DR. DESPO  
FATTA-KASSINOS**

Professor in the Department of Civil and Environmental Engineering, University of Cyprus

**Director**



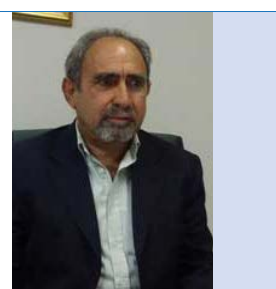
**DR. SYMEON  
CHRISTODOULOU**

Professor in the Department of Civil and Environmental Engineering, University of Cyprus



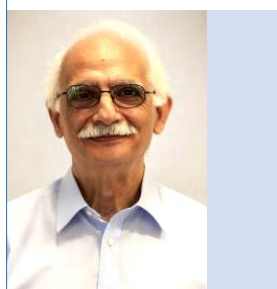
**DR. STAVROS  
KASSINOS**

Professor in the Department of Mechanical and Manufacturing Engineering, University of Cyprus



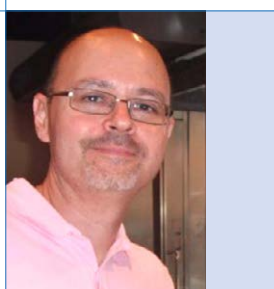
**DR. PANOS  
PAPANASTASIOU**

Professor in the Department of Civil and Environmental Engineering, University of Cyprus



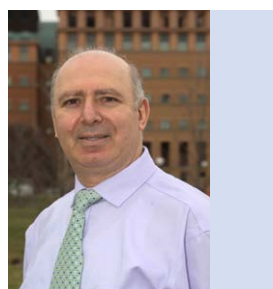
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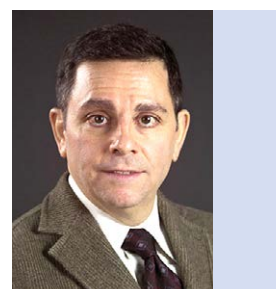
**DR. GEORGE KASSINIS**

Associate Professor in the Department of Business and Public Administration, University of Cyprus



**DR. DIONYSIOS  
D. DIONYSIOU**

Professor of Environmental Engineering, Sustainable Solutions Laboratories (SSLs), Center of Sustainable Urban Engineering, Drinking Water, Water Supply, Quality, and Treatment, and Environmental Nanotechnology Laboratories, Department of Chemical and Environmental Engineering University of Cincinnati, USA



**DR. KONSTANTINOS  
KOSTARELOS**

Associate Professor in the Department of Petroleum Engineering, Cullen College of Engineering, University of Houston, USA Assistant Professor in the Department of Civil and Environmental Engineering, University of Cyprus



# Scientific Advisory Board (SAB) (2011-2019)

The SAB provided input to the Director and BOD of Nireas-IWRC on issues of scientific significance.



## **DR. FRITZ FRIMMEL**

Professor (retired),  
Previous Chairholder and  
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Research Center for Water  
Technology,  
Karlsruhe Institute of  
Technology,  
Karlsruhe, Germany



## **DR. SUSAN RICHARDSON**

Professor in the Department  
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University of South Carolina,  
USA



## **DR. KYRIAKOS KYROU**

Former Director of the  
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Department,  
Ministry of Agriculture  
Rural Development and the  
Environment, Cyprus



## **DR. DAVID WAITE**

Professor in the Department  
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Engineering,  
University of New South  
Wales,  
Executive Director and  
CEO, UNSW Centre  
for Transformational  
Environmental Technologies  
(CTET), Australia



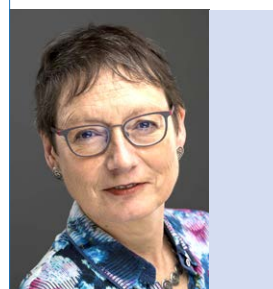
## **DR. GIANLUCA LI PUMA**

Professor in the Department  
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Environmental Engineering,  
Director of Environmental  
Nanocatalysis &  
Photoreaction Engineering,  
University of Loughborough,  
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## **DR. STEVEN GORELICK**

Cyrus F. Tolman Professor  
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System Science,  
Senior Fellow at the  
Woods Institute for the  
Environment,  
Stanford University, CA,  
Head of the Water Resource  
and Hydrogeology Program  
and Global Freshwater  
Initiative, USA



## **DR. JULIANE HOLLENDER**

Head in the Department of  
Environmental Chemistry,  
EAWAG, Swiss Federal  
Institute of Aquatic Science  
and Technology,  
Adjunct Professor  
for Environmental  
Chemistry and Lecturer  
in the Department of  
Environmental Systems  
Science, ETH Zurich,  
Switzerland

# Affiliated Members



**DR. DIONISSIOS  
MANTZAVINOS**

Professor in the Department of Chemical Engineering  
Vice-Rector of Academic & International Affairs  
University of Patras, Greece



**DR. ANDREAS  
ALEXANDROU<sup>†</sup>**

**(2012 - 2018)**  
Professor in the Department of Mechanical and Manufacturing Engineering,  
University of Cyprus



**DR. YANNIS DIALYNAS**

Dialynas S.A. – Environmental Technology,  
Crete, Greece



**DR. ANASTASIS  
CHRISTOU**

Agricultural Research Officer A' in the Agricultural Research Institute of the Ministry of Agriculture, Rural Development and Environment of the Republic of Cyprus



**DR. GEORGIOS  
NIKOLOPOULOS**

Assistant Professor in the Medical School, University of Cyprus



**DR. MICHALIS  
FRAGIADAKIS**

Associate Professor in the School of Civil Engineering, National Technical University of Athens, Greece





# Timeline of Significant Nireas-IWRC Achievements

## 2011



- Creation of Nireas-IWRC, through co-funding by the European Regional Development Fund and the Republic of Cyprus.
- Inauguration ceremony of the Nireas-IWRC (22 March 2011).
- Funding is received for two Nireas-IWRC research projects (*Medolico*, *UCyAMR*).



**nireas**  
International Water Research Center

## 2012



- Prof. Despo Fatta-Kassinos receives the national "2011 Nikos Symeonides Research Award".
- Two Nireas-IWRC journal articles receive top scientific honors for being among the most-cited.
  - "Removal of residual pharmaceuticals from aqueous systems by advanced oxidation processes", *Environment International*.
  - "Pharmaceutical residues in environmental waters and wastewater: current state of knowledge and future research", *Analytical and Bioanalytical Chemistry*.
- Funding is received for two Nireas-IWRC research projects (*I-WEB*, *PhotoGraph*).  **PhotoGraph**
- Prof. Despo Fatta-Kassinos becomes editor of the *Journal Environmental Chemical Engineering*, Elsevier.

- Nireas-IWRC participates in the "Researchers' Night" (27 September 2013, Nicosia, Cyprus); a first of many similar Nireas-IWRC participations over the years.
- The Nireas-IWRC stand is voted by the visiting public as the best scientific stand of the event (among a total of 45 stands).
- Funding is received for four Nireas-IWRC research projects (*SEDITRANS*, *GAPS*, *PRODROMOS*, *ISES*).
- Nireas-IWRC establishes WG5 of the Norman Network (A network of reference laboratories, research centers and related organizations for monitoring of emerging environmental substances) on Wastewater Reuse.



2013

- The MSCA-ITN "Answer" is initiated, with Nireas-IWRC as the Project Coordinator.



- Prof. Symeon Christodoulou receives the "Excellence in Research" Award of the "2015 Transport and Logistics Awards", granted by the Hellenic Association of Transport Engineers, for the advancement of research in the field of 'Safety in Transport' and the contributions made to the field by the "PRODROMOS" research project.
- Funding is received for three Nireas-IWRC research projects (*ANSWEr*, *IRGP 45*, *ECOSI*).
- Prof. Despo Fatta-Kassinos is elected as the Chair of the Scientific and Technological Advisory Board of the European JPI on Water Challenges for a Changing World.

2015

2014

- Nireas-IWRC receives funding for StARE project under the first Water JPI Pilot Call, while Prof. Despo Fatta-Kassinos becomes the Chair of the Cost Action ES1403, and Nireas-IWRC its Grant Holder.

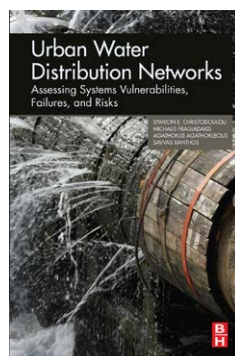


- Funding is received for two Nireas-IWRC research projects (ALICE, ECVET-Lab).
- Two books are published: "Wastewater Reuse and Current Challenges" and "Advanced Treatment Technologies for Urban Wastewater Reuse".



2016

- Funding is received for two Nireas-IWRC research projects (BIOGASMENA, BIOSORB).
- Publication of the book "Urban water distribution networks: Assessing Systems Vulnerabilities, Failures, and Risks".



2017

2018



- Completion of the NEREUS COST ACTION ES1403 and organization by Nireas-IWRC of the XENOWAC II Conference in Limassol, Cyprus.



- Publication of the book and ebook "*The Secret Handbook of the Blue Circle*" in English and Greek language.
- The book was awarded first place in the Public Awards 2019 under the category "Greek Children's Literature" and second place in the Anagnostis Awards under the category "Educational Books".
- Production of a theatrical performance "*A voyage in the blue cycle*", attended by more than 1000 students of Elementary schools.
- Funding is received for seven Nireas-IWRC research projects (PANIWATER, REWATERGY, DSWAP, NANO-CARRIERS, MODFRAC, SuWaNu Europe, SMART-Control).
- Prof. Despo Fatta-Kassinou becomes a member of the core group of the Global Panel on Chemical Pollution of the Environment (GPCPE), which is an initiative of the French National Water Academy.
- Dr. Argyro Tsipa a new Lecturer of the Civil and Environmental Engineering Department joins Nireas-IWRC and establishes EmbIOSysTech Laboratory.
- Nireas-IWRC achieves a major milestone in 2019 of having in its track record over 100 peer-reviewed articles in international scientific journals.

2019

2020

- Funding is received for two Nireas-IWRC research projects (PHOENIX, T4H).
- Dr. Christos Nicolaides and Dr. Dimokratis Grigoriadis join the Academic Council of Nireas-IWRC.



# Nireas-IWRC Research Pillars

Nireas-IWRC's research activities are founded on seven equally important pillars



## Research Pillar 01

### Water/Wastewater quality, monitoring and treatment

- Water/wastewater and contaminants of emerging concern (CECs).
- Identification/quantification of organic compounds, inorganic species, and reaction intermediates in aqueous matrices.
- Water quality assessment by advanced chemical analysis.
- Advanced technologies efficient to meet the current wastewater reuse challenges.
- Effect-based bioassays required for wastewater reuse and contaminants risk assessment.
- Antibiotic resistance spread in the aquatic and terrestrial environment.
- Assessment of the potential uptake of CECs and antibiotic-resistant bacteria and antibiotic resistance genes (ARB&ARGs) by crops.
- Environmental surveillance – Wastewater epidemiology.

### Drinking water supply, distribution and management

- Evaluation of the current water resources capabilities in Cyprus.
- Numerical simulations for groundwater recharge.
- Development of numerical simulation tools for:
  - The prediction of evaporative losses from freshwater reservoirs, and
  - The dynamic behaviour of dams in earthquake conditions, their integrity in hydraulic fracture conditions and the risk of subsoil erosion
- Development of numerical simulation code for the prediction of salt-water intrusion.
- Water Distribution Networks (WDN): Leak detection, Sensor placement optimization, Data mining and Machine Learning, Spatio-temporal analysis and data clustering, Decision-support systems, Automated meter reading (AMR).
- Vulnerability Analysis of WDN: Fragility/Vulnerability analysis of pipes under normal and abnormal operating conditions, Survival analysis, Intermittent water supply and its effects on WDNs, Real-time WDN anomaly detection.
- Intermittent water supply.



## Research Pillar 02



## Research Pillar 03

### Environmental Biotechnology

- Wastewater biotreatment for:
  - Natural antibiotics production, and
  - Production of biodegradable and biobased materials
- Omics approaches to connect gene and proteins expression, and metabolites formation to physiological status of biological systems in aquatic environments.
- Data-driven kinetic modelling in aquatic environments for:
  - Quantitative understanding of gene regulatory networks of interest
  - Prediction of genes' expression and metabolic activities of biological systems
  - Prediction of biodegradable and biobased materials' formation patterns, and
  - Optimization of wastewater bioprocesses
- Systems and synthetic biology approaches to improve and optimize wastewater biotreatment.
- Development of wastewater biotreatment technologies.



## Subsurface processes and engineering

- Groundwater resources.
- Soil and groundwater remediation.
- Water infrastructure projects
- Development of in-situ chemical sensors for geo-environmental applications.
- CO<sub>2</sub> geological storage
- Enhanced geothermal systems

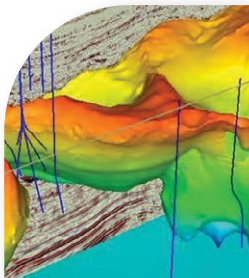


Research Pillar  
**04**

## Hydrologic, hydro-geomorphic and hydro-climatic processes

- High-resolution coupled models of hydrologic and hydro-geomorphic processes that explain observations in the Earth's Critical Zone.
- Characterization of effects of different natural and anthropogenic perturbations (e.g. climate change and land use change) in hydrologic systems and quantification of associated uncertainties at the watershed scale in temperate and tropical forest ecosystems.
- Stochastic modeling of hydrologic and hydro-climatic processes.

Research Pillar  
**05**



Research Pillar  
**06**

## Geophysical hydrodynamics

- Developing efficient numerical methodologies for high-fidelity numerical simulations of:
  - Thermally driven hydrodynamics with strong property variations
  - Sediment transport and bed morphodynamics
  - Extreme wave conditions and wave induced loads.
- Numerical modeling of sediment transport in coastal regions.
- Gravity currents driven by concentration or density gradients.
- Flows over ripples, dunes or vegetation.
- Wave induced loads from solitary and regular waves on structures.
- Wave energy conversion and converters (WECs).

Research Pillar  
**07**



## Socioeconomic analysis of water-related issues

- Virtual water and water pricing.
- Socioeconomic studies.
- Strengthening public awareness.
- Life Cycle Analysis, PESTLE, SWOT analysis, etc.
- Implementation of the principles of green and circular economy.

# Infrastructure and Facilities

NIREAS-IWRC's central office and laboratories are modern facilities that adopt the latest in research and learning technologies and encourage greater innovation and collaboration, whilst also supporting individual scholarship.



They also enhance the vital relationships with industry and various research centers by providing space for joint research activity. Even though Nireas-IWRC's permanent facilities are still in development and eventually be housed at the currently-built School of Engineering buildings of the University of Cyprus, the Center operates fully-equipped laboratories and office spaces in close proximity to the University campus.

Through Nireas-IWRC, several research laboratories and office facilities are integrated, physically and scientifically, into a single Research Center and their research efforts are focused on the achievement of the common and shared vision of Nireas-IWRC. The laboratories and core research groups of Nireas-IWRC include: GAIA, EUPALINOS, UCY-CompSci, EmBIOSysTech, and GREE.





## GAIA - Laboratory of Environmental Engineering

GAIA is a laboratory of water/wastewater treatment processes, to respond to global challenges related to water/wastewater quality, monitoring and treatment, and wastewater reuse. The laboratory's fundamental and applied research focuses on the development and application of (i) advanced analytical methods for the detection and quantification of organic and inorganic chemical compounds as well as bacteria, viruses, DNA, RNA and various genes in several environmental matrices such as water, wastewater, soil and crops, and (ii) biological, chemical, physical and other advanced wastewater treatment technologies including disinfection, to remove contaminants of emerging concern such as antibiotic resistant bacteria, resistance genes and other mobile genetic elements from aqueous matrices, both at bench and pilot scale. GAIA is led by Prof. Despo Fatta-Kassinos.



## EUPALINOS - Construction Engineering and Water Networks Management Laboratory

EUPALINOS is a laboratory of urban water distribution networks (UWDN), focused on scientific and industrial research pertaining to the sustainable management of UWDN. Research areas and expertise include operations analysis of UWDN under normal and intermittent water supply operations, vulnerability analysis, water informatics, and waterloss detection. EUPALINOS is led by Prof. Symeon Christodoulou.



## UCY-CompSci - Computational Sciences Laboratory

UCY-CompSci was established as a Marie Curie Transfer of Knowledge Center (TOK-DEV) aiming at the promotion of excellence in the Computational Science and Engineering at the University of Cyprus. It operates a state-of-the-art High Performance Computer (HPC) system and carries out research related to the application of computational sciences to a range of environmental, engineering and biomedical challenges. UCY-CompSci is led by Prof. Stavros Kassinos.



## EmBIOSysTech - Laboratory of Environmental Biotechnology

The Environmental Biological Systems Laboratory (EmBIOS) combats environmental pollution taking advantage of microorganisms' vast capabilities. Wastewater biotreatment is optimized through in-depth understanding of microorganisms' metabolism using omics technologies, mathematical modelling of gene regulatory networks, resources recovery and added-value compounds biosynthesis. EmBIOSysTech is led by Dr. Argyro Tsipa (Lecturer).



## GREE - Geomechanics Research for Energy and the Environment

The Geomechanics Research for Energy and the Environment (GREE) group is working on engineering problems related to energy (hydrocarbon exploitation) and energy transition (CO<sub>2</sub> geological storage and enhanced geothermal systems) and on subsurface environmental problems (groundwater resources and ground pollution). These applications are characterized by coupled physical processes such as time-dependent thermo-hydro-mechanical ones which may include changes in the geometry as well. The research work aims at understanding of the involved processes, to express them in mathematical models and to develop efficient computational techniques for the solution of such problems. GREE is led by Prof. Panos Papanastasiou.



## SRL - Subsurface Research Laboratory

The Subsurface Research Laboratory operated during 2010 and 2013 and was led by Dr. Kostarelos who was an Assistant professor at the Department of Civil and Environmental Engineering. The laboratory focused its research on subsurface remediation technologies for contaminated soil and water (surface and groundwater), soil and groundwater remediation, and soil and groundwater environmental site assessment. Research projects included: use of surfactants to recover coal tar contamination from soil, partitioning interwell tracer testing for NAPL detection and estimation, treatment of dredged sediments, development of in-situ chemical sensor for geo-environmental applications, and in-situ treatment options for hexavalent chromium, environmental assessment of abandoned sulfide mine.



# Indicative Local Partnerships

Nireas-IWRC prides itself for having a strong network of local associates. These associates are not only from academia but also from the industry, public and municipal agencies, and various social stakeholder groups. The network of associates is interdisciplinary, multi-faceted and of different research maturity levels, complimenting each other with their know-how and their proximity to research and the society. An indicative list of our local partners is presented below.



AGRICULTURAL RESEARCH  
INSTITUTE (ARI)



AYIA NAPA SEWERAGE BOARD



CYPRUS NATIONAL ADDICTIONS  
AUTHORITY



CYPRUS UNIVERSITY OF  
TECHNOLOGY



CYPRUS PORTS AUTHORITY



DEPARTMENT OF AGRICULTURE



DEPARTMENT OF ENVIRONMENT



GEOLOGICAL SURVEY DEPARTMENT



LARNACA SEWERAGE AND  
DRAINAGE BOARD



LARNACA WATER BOARD



MINISTRY OF AGRICULTURE, RURAL  
DEVELOPMENT AND ENVIRONMENT



MINISTRY OF THE INTERIOR



MINISTRY OF ENERGY, COMMERCE  
AND INDUSTRY



MINISTRY OF TRANSPORTS  
COMMUNICATIONS AND WORKS,  
DEPARTMENT OF PUBLIC WORKS



NICOSIA MUNICIPALITY



P. NICOLAIDES & ASSOCIATES LTD



RTD TALOS LTD



SEWERAGE BOARD OF LIMASSOL -  
AMATHUS



SEWERAGE BOARD OF NICOSIA



SEWERAGE BOARD OF PAPHOS



SIGNALGENERIX LTD



S.K. EUROMARKET LTD



THE CYPRUS INSTITUTE OF  
NEUROLOGY & GENETICS



TSIAKKAS WINERY



WATER BOARD OF LEMESOS



WATER BOARD OF NICOSIA

# Coordination of, and Participation in, Competitive R&I Funded Projects

Research in water-related issues requires innovative solutions and a multidisciplinary approach in order to efficiently tackle the multifaceted challenges stemming from the rising water demands due to population growth and global climate change, whilst also not compromising water quality and the local ecosystem. A combination of scientific, technological, and management solutions are needed to address these challenges, with the ultimate goal of improving existing methods or developing new ones for treating wastewater and drinking water, while minimizing water supply problems.

These methods should be sustainable, cost-effective and socially acceptable, and Nireas-IWRC combines the knowledge and expertise of a wide spectrum of scientists specializing in multidisciplinary areas focusing on water to bring about such new technologies.

Further to performing scientific and applied research, Nireas-IWRC has early-on recognized the importance of open access to the Center's scientific outputs and of its publications. At first, based on the needs of the MSCA-ITN project "ANSWER", the Center created a space on the Zenodo platform for hosting the publications

of that particular project. Subsequently, and towards the objective of enhancing scientific dissemination, the Center created the Nireas-IWRC Open knowledge Community, which is an online repository that stores and manages all research-related papers produced at the Nireas-IWRC. Zenodo is a general-purpose open-access repository developed under the European OpenAIRE program. It allows researchers to deposit research papers, data sets, research software, reports, and any other research related digital artifacts. For each submission, a persistent digital object identifier (DOI) is minted, which makes the stored items easily citable.





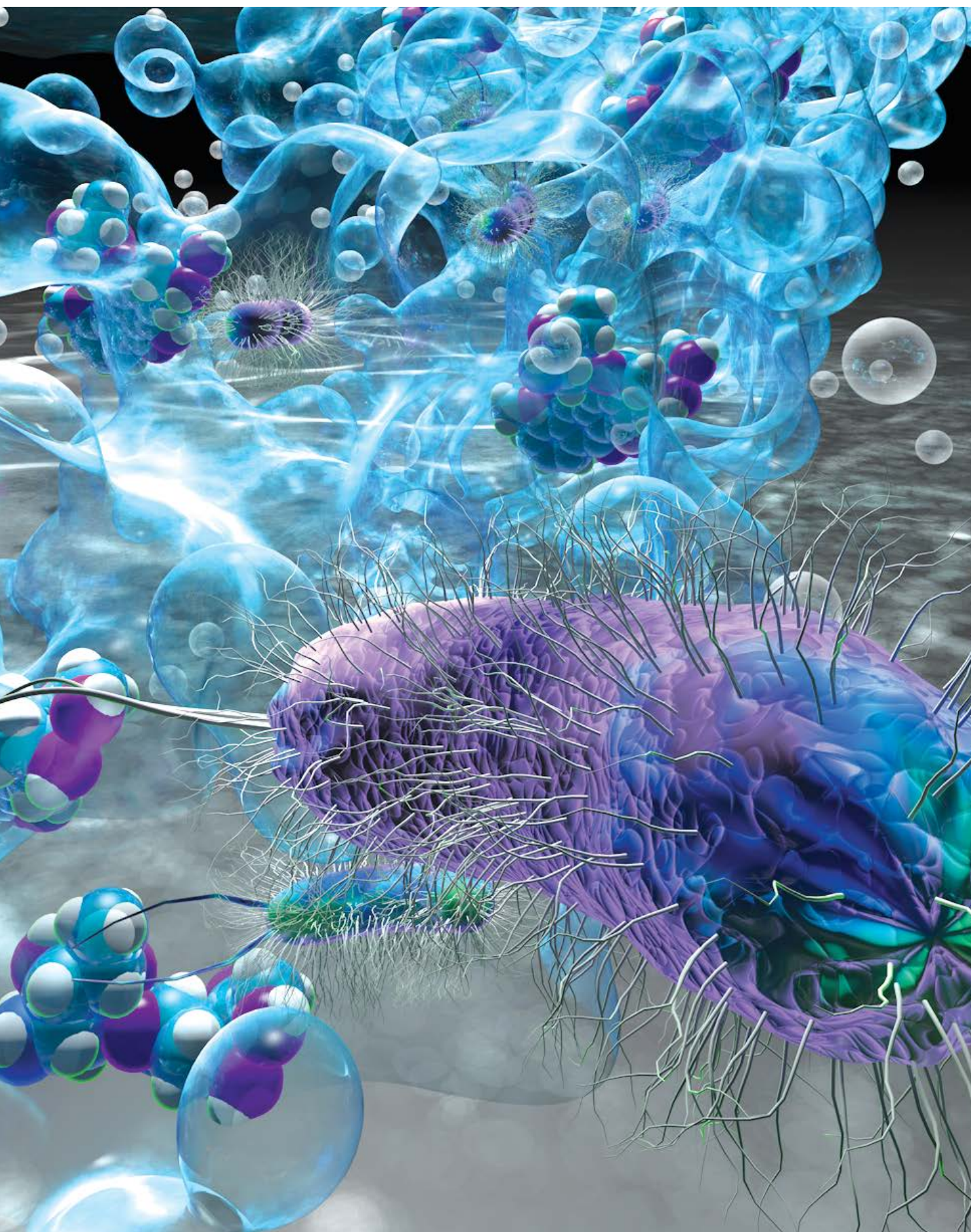


TABLE 01

Nireas-IWRC projects, budgets and funding periods (in alphabetical order).

| Research Project       | Nireas-IWRC as Project Coordinator | Funding Period | Total Budget   | Nireas-IWRC Budget |
|------------------------|------------------------------------|----------------|--|--------------------|
| ALICE                  |                                    | 2016-2020      | 900.000 €  | 36.000 €           |
| ANSWER                 | ✓                                  | 2015-2019      | 3.708.689 €  | 753.925 €          |
| BIOGASMENA             |                                    | 2017-2020      | 1.349.062 €  | 99.973 €           |
| BIOSORB                | ✓                                  | 2017-2019      | 29.700 €   | 29.700 €           |
| DARE <sup>1</sup>      |                                    | 2009-2013      | - €  | - €                |
| DSWAP                  |                                    | 2019-2022      | 2.000.000 €  | 245.000 €          |
| ECOSI <sup>2</sup>     |                                    | 2015-2016      | 3.685 €  | 1.660 €            |
| ECVET-Lab              |                                    | 2016-2018      | 215.043 €  | 32.260 €           |
| GAPS                   | ✓                                  | 2013-2015      | 50.000 €   | 50.000 €           |
| IRGP 45 <sup>3</sup>   |                                    | 2015-2018      | 190.000 €  | - €                |
| ISES                   |                                    | 2013-2015      | 4.410.000 €  | 114.560 €          |
| I-WEB                  |                                    | 2012-2015      | 928.266 €  | 77.951 €           |
| IX-AQUA                | ✓                                  | 2009-2013      | 396.372 €  | 387.172 €          |
| MEDOLICO               | ✓                                  | 2011-2015      | 1.964.499 €  | 294.009 €          |
| MODFRAC                | ✓                                  | 2019-2022      | 209.340 €  | 209.340 €          |
| NANO-CARRIERS          |                                    | 2019-2022      | 864.621 €  | 174.990 €          |
| NEREUS <sup>4</sup>    | ✓                                  | 2014-2018      | 591.028 €  | 190.241 €          |
| NIREAS-IWRC            | ✓                                  | 2010-2015      | 1.398.945 €  | 1.269.330 €        |
| PANIWATER              |                                    | 2019-2023      | 3.576.533 €  | 300.000 €          |
| PHOENIX <sup>1</sup>   |                                    | 2020-2024      | 500.000 €  | - €                |
| PhotoGraph             | ✓                                  | 2012-2014      | 159.964 €  | 88.476 €           |
| PRODROMOS              | ✓                                  | 2013-2015      | 1.950.000 €  | 430.000 €          |
| REPT                   |                                    | 2009-2011      | 878.272 €  | 196.911 €          |
| REWATERGY <sup>5</sup> |                                    | 2019-2023      | 2.174.048 €  | - €                |
| SEDITRANS              |                                    | 2013-2017      | 3.734.062 €  | 397.470 €          |
| SMART-Control          |                                    | 2019-2021      | 1.370.910 €  | 174.960 €          |
| SOLIVAL                | ✓                                  | 2010-2012      | 122.320 €  | 85.312 €           |
| StARE                  |                                    | 2014-2017      | 1.970.093 €  | 99.998 €           |
| SuWaNu Europe          |                                    | 2019-2021      | 1.999.926 €  | 69.384 €           |
| T4H                    |                                    | 2020-2022      | 999.000 €  | 220.750 €          |
| TOMIXX                 | ✓                                  | 2010-2012      | 69.936 €   | 69.936 €           |
| UCyAMR                 | ✓                                  | 2011-2012      | 159.924 €  | 56.800 €           |
| UCyMSAD                | ✓                                  | 2009-2011      | 90.000 €   | 90.000 €           |
| WATERTOP <sup>1</sup>  |                                    | 2019-2023      | - €  | - €                |
| WINEC                  | ✓                                  | 2010-2013      | 1.366.183 €  | 563.742 €          |
| <b>Grand Total</b>     |                                    |                | <div> <div>✓</div> 40.330.421 €<br/> 12.266.900 € </div> | <b>6.809.850 €</b> |

## NOTES:

1. The project is a COST Action, and thus no direct budgets were assigned to Nireas-IWRC.
2. Nireas-IWRC served as the Grant Holder of the project.
3. The project covered consumables of joint work performed by researchers of Nireas-IWRC in Australia and their cost of stay.
4. The project is a COST Action. Nireas-IWRC was the Chair (Despo Fatta-Kassinou) and the Grant holder.
5. This project is a MSCA-ITN in which Nireas-IWRC participates as a partner; No direct budgets were assigned to Nireas-IWRC.



TABLE 02

Annual budgets earned by Nireas-IWRC (2010-2020), or allocated to it for execution (2009), through competitive calls and the corresponding total consortium budgets.

| Year               | Total Nireas-IWRC Budgets Earned | Total Consortium Budgets Earned (*) |
|--------------------|----------------------------------|-------------------------------------|
| 2009               | 674.083 €                        | 1.364.644 €                         |
| 2010               | 1.988.320 €                      | 2.957.384 €                         |
| 2011               | 350.809 €                        | 2.124.423 €                         |
| 2012               | 166.427 €                        | 1.088.230 €                         |
| 2013               | 992.030 €                        | 10.144.062 €                        |
| 2014               | 290.239 €                        | 2.561.121 €                         |
| 2015               | 755.585 €                        | 3.902.374 €                         |
| 2016               | 68.260 €                         | 1.115.043 €                         |
| 2017               | 129.673 €                        | 1.378.762 €                         |
| 2019               | 1.173.674 €                      | 12.195.378 €                        |
| 2020               | 220.750 €                        | 1.499.000 €                         |
| <b>Grand Total</b> | <b>6.809.850 €</b>               | <b>40.330.421 €</b>                 |

\*The budgets presented in this column correspond to projects either coordinated by Nireas-IWRC or other organizations.

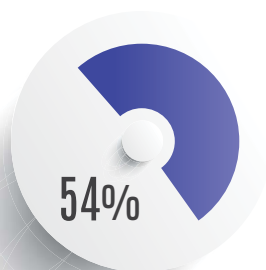
TABLE 03

Nireas-IWRC's and total consortium budgets, by funding source.

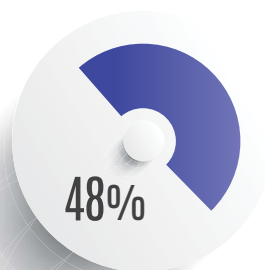
| Funding Source  | Total Nireas-IWRC Budgets | Total Consortium Budgets |
|---|---------------------------|--------------------------|
| <b>European</b>   | <b>3.295.292 €</b>        | <b>29.067.278 €</b>      |
| Cyprus Research Promotion Foundation                                      | 220.750 €                 | 999.000 €                |
| European Commission   | 2.829.542 €               | 26.068.278 €             |
| PRIMA – Partnership for Research and Innovation in the Mediterranean Area | 245.000 €                 | 2.000.000 €              |
| <b>International</b>  | <b>1.660 €</b>            | <b>193.685 €</b>         |
| South Australian Government Premier's Research and Industry Fund          |                           | 190.000 €                |
| UNESCO  | 1.660 €                   | 3.685 €                  |
| <b>National</b>   | <b>3.512.898 €</b>        | <b>11.069.459 €</b>      |
| Cyprus Research and Innovation Foundation                                 | 309.313 €                 | 1.558.402 €              |
| Cyprus Research Promotion Foundation                                      | 2.743.885 €               | 7.531.357 €              |
| INTERREG  | 430.000 €                 | 1.950.000 €              |
| University Of Cyprus  | 29.700 €                  | 29.700 €                 |
| <b>Grand Total</b>  | <b>6.809.850 €</b>        | <b>40.330.421 €</b>      |



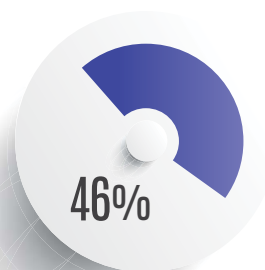
## CHART 01



A. **Number of projects** in Nireas-IWRC's project portfolio which were **funded by European (or international) funding sources**.



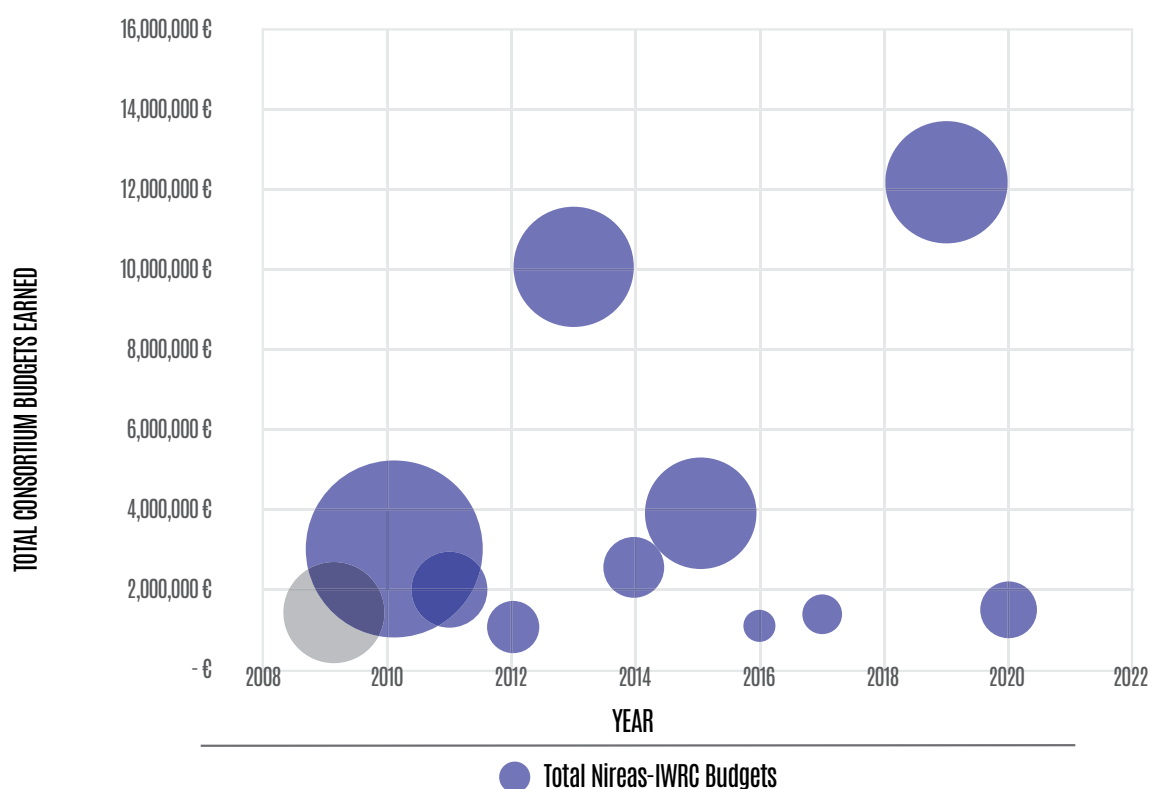
B. Nireas-IWRC's **budgets funded by European (or international) funding sources**.



C. **Number of projects** for which Nireas-IWRC served as **project coordinator**.

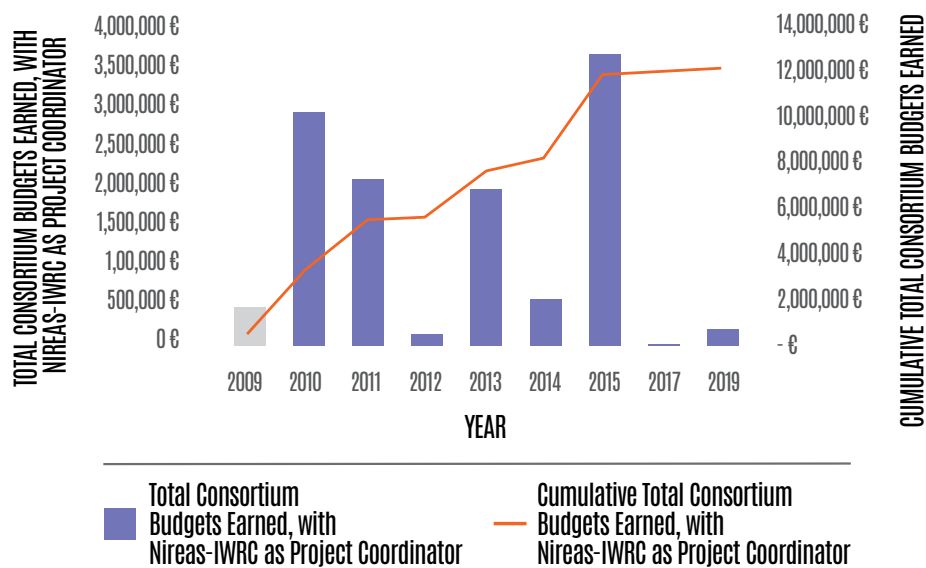
## CHART 02

Annual budgets earned by Nireas-IWRC (2010-2020), or allocated to it for execution (2009), through competitive calls and the corresponding total consortium budgets.



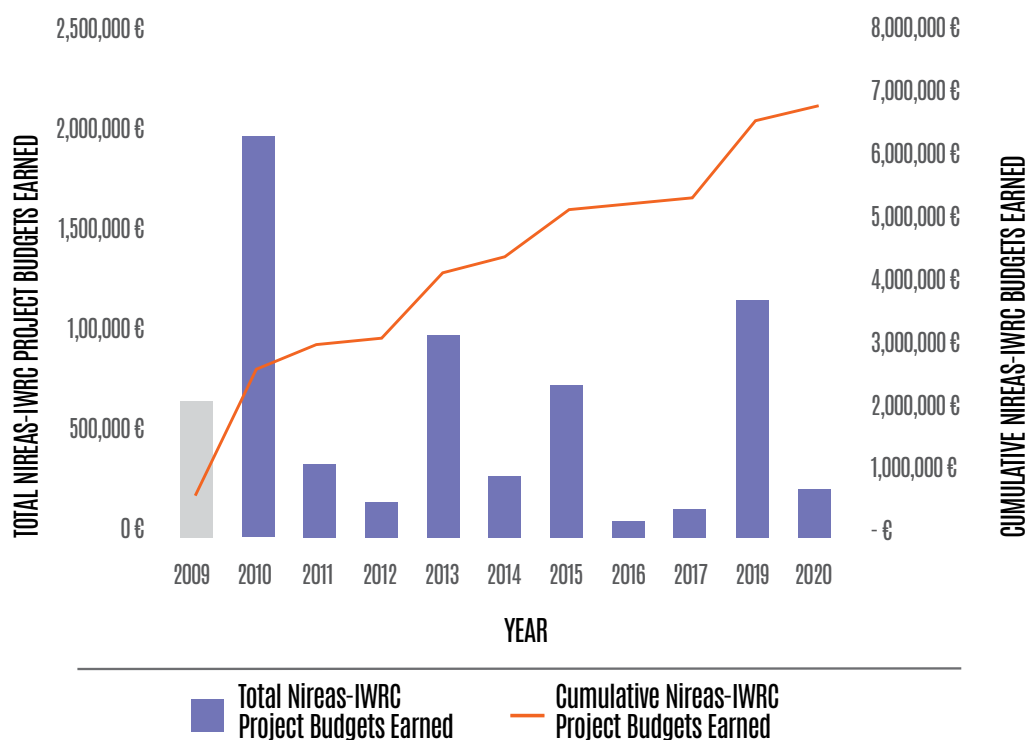
## CHART 03

Total budgets earned by Nireas-IWRC as Project Coordinator (2010-2020), or allocated to it for execution (2009), through competitive calls and the cumulative amount to date.



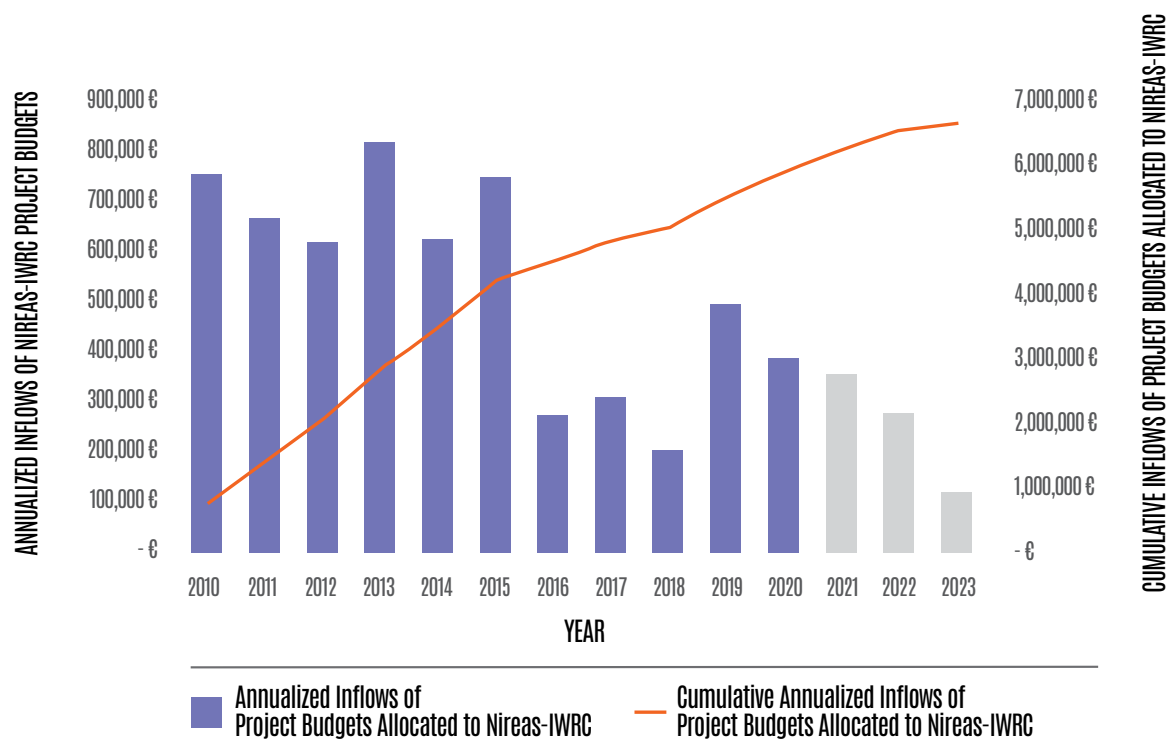
## CHART 04

Total Nireas-IWRC budgets earned by (2010-2020), or allocated to the Center for execution (carried over from 2009/10), through competitive calls and the cumulative amount to date.



## CHART 05

Total annualized (and total cumulative) Nireas-IWRC budget inflows (2010-2020) generated from funded projects, and the forward balance of existing grants (2021-2023).







## T4H

## Hospital Wastewater Treatment for the Improvement of the Efficiency of Urban Wastewater Treatment Plants and the Potential of Wastewater for Use

## PROGRAM AT A GLANCE

|                                    |  |
|------------------------------------|--|
| Funding Agencies                   | Interreg V-A Greece-Cyprus 2014-2020   |
| Program Period                     | 2021-2022  |
| Project Acronym                    | T4H  |
| Project Title                      | Hospital Wastewater Treatment for the Improvement of the Efficiency of Urban Wastewater Treatment Plants and the Potential of Wastewater for Use   |
| Project Coordinator                | Charalambos Papadogiannis, Municipal Water Supply and Sewerage Service of Heraklion (D.E.Y.A.I.), Greece   |
| Partners                           | <ol style="list-style-type: none"> <li>1. Municipal Water Supply and Sewerage Service of Heraklion (D.E.Y.A.I.), Greece</li> <li>2. Larnaca Sewerage and Drainage Board, Cyprus</li> <li>3. Greek Mediterranean University / Special Account of Research Fund, Greece</li> <li><b>4. Nireas-International Water Research Center, University of Cyprus, Cyprus</b></li> <li>5. University of the Aegean- Special Account of research Fund, School of the Environment, Greece</li> </ol> |
| Nireas-IWRC Principal Investigator | Prof. Despo Fatta-Kassinou   |
| Total Budget                       | 999,000 €  |
| Budget for Nireas-IWRC             | 220,750 €  |

## PROJECT SUMMARY

The main objectives of the project include the design and installation of pilot wastewater treatment plants at the hospitals of Heraklion, Greece and Larnaca, Cyprus for the removal of antibiotic resistant bacteria and antibiotic resistance genes. The units will consist of anaerobic MBR, phytoremediation through *Lemna minor*, photocatalysis and microfiltration. The project includes also the economic and environmental evaluation of the operation of the pilot units and the development of guidelines and design models, for full implementation of the total outflow of hospital units, both in the participating hospitals (scale up) and in other hospitals of other areas (transferability and replicability).

# PHOENIX COST ACTION CA 19123

Protection, Resilience, Rehabilitation of Damaged Environment

## PROGRAM AT A GLANCE

|                                    |  |
|------------------------------------|--|
| Funding Agencies                   | European Cooperation in Science and Technology (COST)                              |
| Program Period                     | 2020-2024  |
| Action Acronym                     | PHOENIX  |
| Project Code                       | CA19123  |
| Action Title                       | Protection, Resilience, Rehabilitation of Damaged Environment                      |
| Chair of the Action                | Dr. Andrea Pietrelli, University of Lumière Lyon                                   |
| Vice Chair of the Action           | Prof. Ioannis Ieropoulos, University of the West of England Bristol                |
| Grant Holder Institution           | University Lumière Lyon  |
| Member of the Management Committee | Dr. Argyro Tsipa, Nireas International Water Research Center, University of Cyprus |
| Leader of Working Group 2          | Dr. Argyro Tsipa, Nireas International Water Research Center, University of Cyprus |
| Total Budget                       | Approximately 500.000 €  |

## PROJECT SUMMARY

Humanity faces unprecedented challenges: global warming, overuse of fossil fuel energy and rapidly growing urbanisation. While the development, validation and cost-efficiency improvement of energy-aware and limited complexity solutions are becoming increasingly time-consuming, microorganisms represent one realistic hope. For millennia microbes have tirelessly been shaping the Earth's ecosystems and with the right approach, they can help re-introduce environmental equilibrium. PHOENIX aims to demonstrate the effectiveness of Bio-electrochemical systems (BESs); BESs are low environmental impact systems that exploit the biological activity of live organisms for pollutant

reduction, recycling of useful elements, synthesis of new products and production of electricity, in the case of microbial fuel cells (MFC). Recent advances in the field of low power electronics enable the exploitation of these sustainable and environmentally-friendly technologies. The activities of PHOENIX will be related to the characterization of BESs technologies and their implementation as bio-remediator, bio-sensors, and bio-reactors connected to sustainable urban planning, educational and socio-economic aspects. The integration of bio-technologies in the urban context is a key priority for appropriate rational urban planning and minimum environmental impact.



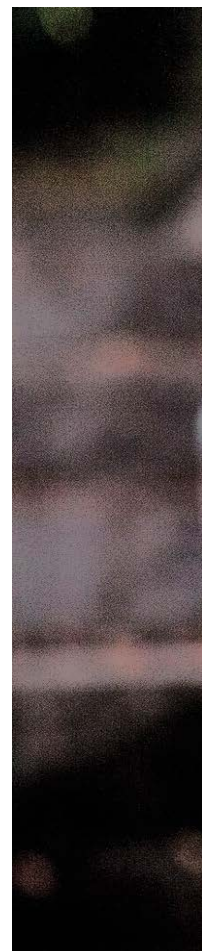
# PANI WATER



Photo-Irradiation and Adsorption Based Novel Innovations for Water-Treatment

## PROGRAM AT A GLANCE

|                                    |  |
|------------------------------------|--|
| Funding Agencies                   | European Commission, Horizon 2020, EU - India Water Co-operation   |
| Program Period                     | 2019-2023  |
| Project Acronym                    | PANIWATER  |
| Project Code                       | H2020-SC5-2018-1/820718  |
| Project Title                      | Photo-Irradiation and Adsorption Based Novel Innovations for Water-Treatment   |
| Project Coordinator                | Prof. Kevin McGuigan, Royal College of Surgeons in Ireland, Ireland  |
| Partners                           | <ol style="list-style-type: none"> <li>1. Royal college of Surgeons in Ireland, Ireland (European Coordinator)</li> <li>2. National Environmental Engineering Research Institute, India (Indian Coordinator)</li> <li>3. Universidad Rey Juan Carlos, Spain</li> <li>4. National University of Ireland Maynooth, Ireland</li> <li>5. Society for Development Alternatives, India</li> <li>6. Innova SRL, Italy</li> <li>7. Kwalify Photonics Private TTD., India</li> <li>8. Centro de investigaciones Energeticas, Medioambientales y Tecnologicas, Spain</li> <li><b>9. Nireas-International Water Research Center, University of Cyprus, Cyprus</b></li> <li>10. University of Ulster, United Kingdom</li> <li>11. Institute of Technology Sligo, Ireland</li> <li>12. AQUASOIL SRL, Italy</li> <li>13. Universita del Salento, Italy</li> <li>14. Buckinghamshire New University, United Kingdom</li> <li>15. Universidad de Santiago de Compostela, Spain</li> <li>16. Society for Technology and Action for Rural Development, India</li> <li>17. Birla Institute of Technology and Science, India</li> <li>18. Auroville Foundation, India</li> </ol> |
| Nireas-IWRC Principal Investigator | Prof. Despo Fatta-Kassinis   |
| Total Budget                       | 3,576,533 €  |
| Budget for Nireas-IWRC             | 300,000 €  |
| Project Website                    | <a href="https://paniwater.eu">https://paniwater.eu</a>  |





## PROJECT SUMMARY

About 2.1 billion people live without access to safe water sources. Contaminants of Emerging Concern (CECs) such as pharmaceuticals, personal care products, pesticides and nanoparticles are increasingly being detected in wastewater and in drinking water around the world in addition to geogenic pollutants, pathogens, antibiotic-resistant bacteria (ARB) and antibiotic resistance genes (ARGs). Water treatment systems that remove common contaminants and CECs from wastewater and drinking water are therefore urgently needed. PANIWATER is developing, with the purpose of

deploying and validating, six prototypes for the removal of contaminants including CECs, pathogens and ARB&ARGs from wastewater and drinking water in real-field conditions, in India. These prototypes will be deployed and validated in peri-urban and rural areas of India. The project consortium will work closely with the communities at the real-field sites and will carry out various water quality analyses, health and social impact assessments and will also advocate for safe reuse of treated wastewater for irrigation purposes and preservation of drinking water sources.

# REWATERGY

Sustainable Reactor Engineering for Applications on the Water-Energy Nexus



## PROGRAM AT A GLANCE

|                                    |  |                 |   |
|------------------------------------|--|-----------------|---|
| Funding Agencies                   | European Commission, Horizon 2020, Marie Skłodowska-Curie: Innovative Training Networks – European Industrial Doctorates (ITN-EID)   |                 |   |
| Program Period                     | 2019-2023  | Project Acronym | REWATERGY   |
| Project Code                       | H2020-MSCA-ITN-EID-2018/812574   |                 |   |
| Project Title                      | Sustainable Reactor Engineering for Applications on the Water-Energy Nexus   |                 |   |
| Project Coordinator                | Prof. Javier Marugán, Universidad Rey Juan Carlos, Spain   |                 |   |
| Beneficiaries                      | <ol style="list-style-type: none"> <li>1. University of Cambridge, United Kingdom</li> <li>2. Ulster University, United Kingdom</li> <li>3. Delft IMP, The Netherlands</li> <li>4. ProPhotonix, Ireland</li> <li>5. FCC Aqualia, Spain</li> </ol>  |                 |   |
| Partners                           | <ol style="list-style-type: none"> <li>1. Waterschap De Dommel, The Netherlands</li> <li>2. Università degli Studi di Salerno, Italy</li> <li>3. National University of Ireland, Maynooth, Ireland</li> <li>4. Open Data Institute, United Kingdom</li> <li>5. <b>Nireas-International Water Research Center, University of Cyprus, Cyprus</b></li> <li>6. Fundación IMDEA Energía, Spain</li> <li>7. Universidade Católica Portuguesa, Portugal</li> <li>8. Institut Català de Recerca de l'Aigua, Spain</li> </ol> |                 |   |
| Nireas-IWRC Principal Investigator | Prof. Despo Fatta-Kassinos   |                 |   |
| Total Budget                       | 2,174,048 €  | Project Website | <a href="http://rewatergy.eu/">http://rewatergy.eu/</a> |

## PROJECT SUMMARY

The overall aim of the REWATERGY Innovative Training Network, aligned to the current initiatives of the European Commission in the water-energy nexus, is to guarantee the competitiveness of the water industrial sector by the development of a tailored integrated Industrial European Doctorate programme for the provision of a generation of highly skilled scientists and engineers co-trained by industry and World-leading research institutions, capable of developing fundamental understanding and technologies in the field and its implementation in the European market. Three research objectives set the foundation of this ambitious program: (i) enhance the energy recovery from wastewater streams inspired by the circular economy concept, (ii) improve the energy efficiency of water disinfection and removal of contaminants of emerging concern, and (iii) increase the resilience of distributed household safe drinking water systems addressing potential health and safety challenges. The program is particularly designed to cultivate an entrepreneurial spirit by the collaborative design, development and manufacturing of new prototypes aligned with the three research objectives. This training concept will have a long-term impact by providing a stream of highly trained innovative scientists and engineers able to communicate ideas and to develop creative solutions for the adoption of novel technologies in the market.





# WATERTOP

Taste and Odor in Early Diagnosis of Source and Drinking Water Problems



## PROGRAM AT A GLANCE

|                                    |   |
|------------------------------------|---|
| Funding Agencies                   | European Commission (COST Organisation)   |
| Program Period                     | 2019-2023   |
| Project Acronym                    | WATERTOP  |
| Project Code                       | CA18225   |
| Project Title                      | Taste and Odor in Early Diagnosis of Source and Drinking Water Problems                       |
| Chair of the Action                | Dr. Triantafyllos Kaloudis, NCSR DEMOKRITOS Institute of Nuclear and Particle Physics, Greece |
| Vice Chair of the Action           | Prof. Reyhan Akcaalan Albay, Istanbul University, Turkey                                      |
| Member of the Management Committee | Prof. Despo Fatta-Kassinos, Nireas International Water Research Center, University of Cyprus  |
| Participation in Working Group 4   | Dr. Popi Karaolia, Nireas International Water Research Center, University of Cyprus           |
| Project Website                    | <a href="https://watertopnet.eu/">https://watertopnet.eu/</a>                                 |

## PROJECT SUMMARY

The main aim of waterTOP is to increase capabilities and capacities in Europe for solving water T&O, by creating the first European network of multi-disciplinary experts, end-users and stakeholders in the field. An “innovation by integration” approach is adopted, incorporating novel cross-sector knowledge transfer from the food sector, new international collaborations, vertical “source to tap” risk assessment strategies and horizontal integration with overlapping sectors, i.e. aquaculture, manufacturers of materials in contact with water, sensors and analytical technologies. WaterTOP will have strong impact in improving protection of public health and water resources, quality of life, use of tap water, consumer’s awareness and involvement in water quality issues and professional development of young researchers in the field. It will largely contribute to the implementation of the new (recast) EU Drinking Water Directive and to the development of European leadership in the science and technology of water quality.

# DSWAP

Decision Support-based Approach for Sustainable Water Reuse Application in Agricultural Production

## PROGRAM AT A GLANCE

|                                    |   |
|------------------------------------|---|
| Funding Agencies                   | PRIMA – Partnership for Research and Innovation in the Mediterranean Area – Section 1 – 2018  |
| Program Period                     | 2019-2022   |
| Project Acronym                    | DSWAP   |
| Project Code                       | PRIMA/1822  |
| Project Title                      | Decision Support-based Approach for Sustainable Water Reuse Application in Agricultural Production  |
| Project Coordinator                | Dr. Eddie Cytryn, Agricultural Research Organization (ARO), Volcani Center, Israel  |
| Partners                           | <ol style="list-style-type: none"> <li>1. Fluence Corp. (FLC), Israel</li> <li>2. Technical University of Dresden (TUD), Germany</li> <li>3. <b>Nireas-International Water Research Center, University of Cyprus, Cyprus</b></li> <li>4. S.K. Euromarket LTD (SKE), Cyprus</li> <li>5. Spanish National Research Council (CSIC), Spain</li> <li>6. Apria Systems (APRIA), Spain</li> <li>7. University of Loraine, CNRS (LCPME), France</li> <li>8. University of Salerno (UNISA), Italy</li> <li>9. Catholic University of Portugal (UCP), Portugal</li> </ol> |
| Nireas-IWRC Principal Investigator | Prof. Despo Fatta-Kassinou  |
| Total Budget                       | 2,000,000 €   |
| Budget for Nireas-IWRC             | 245,000 €   |
| Project Website                    | <a href="https://www.dswap-prima.eu">https://www.dswap-prima.eu</a>   |



## PROJECT SUMMARY

This project adopts a circular economy approach, aiming for safe and sustainable valorization of wastewater for irrigation, with minimized ecological and agronomic impacts. The overall concept is to develop cost-effective modular, de-centralized wastewater treatment/irrigation systems coupled to decision support tools that enables coupling/decoupling of treatment modules for the removal of pathogens, CECs and salinity as a function of the wastewater source and measured quality parameters, to ensure optimal reused water quality for irrigation and long-term sustainability of irrigated soils. Individual modules within these networks (compiled based on specific requirements) will be coupled to alternative energy sources to reduce costs and greenhouse gas emissions.



# NANO-CARRIERS

Micro and Nanoplastics as Carriers for the Spread of Chemicals and Antimicrobial Resistance in the Aquatic Environment



## PROGRAM AT A GLANCE

|                                    |  |
|------------------------------------|--|
| Funding Agencies                   | Water JPI Programme (IC4Water), Cyprus Research Promotion Foundation – Restart 2016-2020   |
| Program Period                     | 2019-2022  |
| Project Acronym                    | NANO-CARRIERS  |
| Project Code                       | P2P/WATER/1017/0004  |
| Project Title                      | Micro and Nanoplastics as Carriers for the Spread of Chemicals and Antimicrobial Resistance in the Aquatic Environment   |
| Project Coordinator                | Dr. Ian Allan, NIVA, Norway  |
| Partners                           | <ol style="list-style-type: none"> <li>1. Norwegian Institute for Water Research (NIVA), Norway</li> <li>2. Durban University of Technology (DUT), South Africa, Africa</li> <li>3. University of Rennes (GR), France</li> <li>4. University of Pau (IPREM), France</li> <li>5. <b>Nireas-International Water Research Center, University of Cyprus, Cyprus</b></li> </ol> |
| Nireas-IWRC Principal Investigator | Prof. Despo Fatta-Kassinos   |
| Total Budget                       | 864,621 €  |
| Budget for Nireas-IWRC             | 174,990 €  |

## PROJECT SUMMARY

Microplastics have been the subject of increasing focus over the last decade since they have been found in virtually all waters and oceans around the globe. While rivers are assumed to be a major contributor of microplastic pollution to the marine environment, urban wastewater treatment plants are expected to be a significant emission source of not only microplastic particles but also of the less studied nano-size plastic to freshwaters. The NANO-CARRIERS project aims through an inter-disciplinary approach at developing new understanding of the risk posed emission of micro- and nanoplastics into aquatic ecosystems in the context of emission and spread of chemical additives, contaminants of emerging concern and antibiotic resistance genes through laboratory experiments, field measurements and focused case studies.

# MODFRAC

## Modified Hydraulic Fracturing for Unconsolidated Reservoirs

### PROGRAM AT A GLANCE

|                        |   |
|------------------------|---|
| Funding Agency         | Restart 2016-2020 (Cyprus Research and Innovation Foundation) - Excellence                            |
| Program Period         | 2019 - 2022   |
| Project Acronym        | MODFRAC   |
| Project Code           | EXCELLENCE/1216/0481  |
| Project Title          | Modified Hydraulic Fracturing for Unconsolidated Reservoirs   |
| Project Coordinator    | Prof. Panos Papanastasiou, Nireas – International Water Research Center, University of Cyprus, Cyprus |
| Total Budget           | 209,340€  |
| Budget for Nireas-IWRC | 209,340€  |

### PROJECT SUMMARY

Hydraulic fracture is a complex multiphysical phenomenon encountered in many man-made and natural processes. The most notable example of its intended application is fracking, a method widely used to enhance the recovery of hydrocarbons from unconventional reservoirs. Unintentionally induced hydraulic fracture can have a detrimental impact on the environment in the areas of CO<sub>2</sub> sequestration or underground waste disposal. All these applications create demand for a proper understanding and

prediction of process through accurate mathematical modeling and numerical simulations. The objective of the projects is the development of the mathematical and computational modeling of the hydraulic fracturing process in weak gas and oil reservoirs. This improved modeling will optimize the design of hydraulic fracture in unconsolidated reservoirs and enhance the interpretation of the mini-frac test that is used for the determination of insitu reservoir parameters.

# SuWaNu Europe

Network for Effective Knowledge Transfer on Safe and Economic Wastewater Reuse in Agriculture in Europe-SuWaNu Europe



**SUWANU**  
EUROPE

## PROGRAM AT A GLANCE

|                                    |  |
|------------------------------------|--|
| Funding Agencies                   | European Commission, Horizon 2020  |
| Program Period                     | 2019-2021  |
| Project Acronym                    | SuWaNu Europe  |
| Project Code                       | H2020-RUR-2018-2020/818088   |
| Project Title                      | Sustainable Water Treatment and Agricultural Reuse Options in Europe   |
| Project Coordinator                | Rafael Casielles Restoy, Bioazul S. L., Spain  |
| Partners                           | <ol style="list-style-type: none"> <li>1. Bioazul S. L., Spain</li> <li>2. Federacion Nacional de Comunidades de Regantes</li> <li>3. Asociación Española de Reutilización Sostenible del Agua (ASERSA)</li> <li>4. Universidad de Cordoba</li> <li>5. Verein zur Förderung des Technologietransfers an der Hochschule Bremerhaven e. V</li> <li>6. Abwasserverband Braunschweig</li> <li>7. Development agency of Thessaloniki s.a.</li> <li>8. Aristotelio Panepistimio Thessalonikis</li> <li>9. Agraren Universitet of plovdiv</li> <li>10. Confederazione Generale dell Agricoltura Italiana</li> <li>11. Universita degli Studi di Torino</li> <li>12. Canale Emiliano Romagnolo</li> <li>13. MEKOROT water company limited</li> <li>14. CONSULAI-Consultoria Agro Industrial IDA</li> <li>15. FENAREG-Federacao Nacional de Regantes de Portugal</li> <li><b>16. Nireas-International Water Research Center, University of Cyprus, Cyprus</b></li> <li>17. Agricultural Chamber of Cyprus</li> <li>18. Ecofilae</li> <li>19. Confederación (de ámbito estatal) de Consumidores y Usuarios</li> <li>20. Proefstation voor de Groenteteelt</li> </ol> |
| Nireas-IWRC Principal Investigator | Prof. Despo Fatta-Kassinou   |
| Total Budget                       | 1,999,926 €  |
| Budget for Nireas-IWRC             | 69,384 €   |
| Project Website                    | <a href="https://suwanu-europe.eu">https://suwanu-europe.eu</a>  |





## PROJECT SUMMARY

Based on the results of a previous EU project called “SuWaNu” whose main result was to set research-driven clusters in the field of water reuse in 5 target countries (Malta, Spain, Germany, Greece and Bulgaria), SuWaNu Europe intends to bridge the current innovation gaps and achieve an effective implementation of reuse solutions in agriculture. SuWaNu Europe aims to extend the geographical coverage of its predecessor and summarize, share and present existing and upcoming knowledge and skills in the field of water reuse in agriculture to

the relevant stakeholders such as farmers and farming advisory groups. SuWaNu Europe also aims to create regional working groups for the development of Action Plans. These Action Plans will ultimately set strategies at regional level with the objective of boosting innovation in the agricultural and water sectors, improving best practice development and identifying the most appropriate channels to reach stakeholders. In addition to this, dissemination and training will create the capacity and competencies needed to implement these results.



“ Practical knowledge about use of reclaimed water for agriculture irrigation in Europe

# SMART-Control

Smart Framework for Real-Time Monitoring and Control of Subsurface Processes in Managed Aquifer Recharge Applications



## PROGRAM AT A GLANCE

|                                    |  |
|------------------------------------|--|
| Funding Agency                     | Water JPI Programme (IC4Water), Cyprus Research Promotion Foundation – Restart 2016-2020   |
| Program Period                     | 2019-2021  |
| Project Acronym                    | SMART-Control  |
| Project Code                       | P2P/WATER/1017/0007  |
| Project Title                      | Smart Framework for Real-Time Monitoring and Control of Subsurface Processes in Managed Aquifer Recharge Applications  |
| Project Coordinator                | Dr. Catalin Stefan, Technical University of Dresden, Germany   |
| Partners                           | <ol style="list-style-type: none"> <li>1. Federal University of Paraiba, Brazil</li> <li>2. Federal University of Pernambuco, Brazil</li> <li>3. The French Geological Survey, France</li> <li>4. <b>Nireas-International Water Research Center, University of Cyprus, Cyprus</b></li> <li>5. The Berlin Center of Competence for Water, Germany</li> <li>6. SUEZ, France</li> <li>7. Adelphi, Germany</li> <li>8. UIT, Germany</li> </ol> |
| Nireas-IWRC Principal Investigator | Prof. Panos Papanastasiou  |
| Total Budget                       | 1,370,910 €  |
| Budget for Nireas-IWRC             | 174,960 €  |
| Project Website                    | <a href="https://smart-control.inowas.com/">https://smart-control.inowas.com/</a>  |





## PROJECT SUMMARY

Enhancing groundwater recharge by storing surplus water in the subsurface in times of high availability followed by recovery in times of high demand represents a low cost technology that increases the resilience of water supply infrastructures to extreme hydro-climatic events. This technique, referred to as managed aquifer recharge (MAR), represents a viable adaptation

solution for sustainable water resources management while it reduces the impact of water scarcity by increasing seasonal water availability. MAR can improve food security and reduce harvest failure risks as the resilience against extreme weather events such as droughts is increased.

“MAR can improve food security and reduce harvest failure risks as the resilience against extreme weather events such as droughts is increased.”





## BIOGASMENA

Demonstration of Dry Fermentation and Optimization of Biogas Technology for Rural Communities in the MENA (Middle East & North Africa) Region



BIOGASMENA

## PROGRAM AT A GLANCE

|                                    |   |
|------------------------------------|---|
| Funding Agencies                   | Cyprus Research and Innovation Foundation (ERANETMED)   |
| Program Period                     | 2017-2020   |
| Project Acronym                    | BIOGASMENA  |
| Project Code                       | KOINA/ERANETMED/0316/01   |
| Project Title                      | Demonstration of Dry Fermentation and Optimization of Biogas Technology for Rural Communities in the MENA Region  |
| Project Coordinator                | Dr. Hans Oechsner, University of Hohenheim, Germany   |
| Partners                           | <ol style="list-style-type: none"> <li>1. University of Verona, Italy</li> <li>2. AUA (Agricultural University of Athens), Greece</li> <li>3. EGE University, Turkey</li> <li>4. Université des Sciences et Technologies d'Oran (USTO), Algeria</li> <li>5. <b>Nireas-International Water Research Center, University of Cyprus, Cyprus</b></li> <li>6. LBE (Laboratoire de Biotechnologie de l'Environnement) of INRA, France</li> <li>7. IMDEA (Madrid Institute of Advanced Studies), Spain</li> <li>8. CBS (Centre de Biotechnologie de Sfax), Tunisia</li> <li>9. Nenufar, France</li> <li>10. ERM, France</li> <li>11. FnBB e.V. (Fördergesellschaft für nachhaltige Biogas- und Bioenergienutzung), Germany</li> <li>12. University of Cairo, Egypt</li> <li>13. RTD Talos Ltd, Cyprus</li> <li>14. S.K. Euromarket Ltd, Cyprus</li> </ol> |
| Nireas-IWRC Principal Investigator | Prof. Despo Fatta-Kassinos  |
| Total Budget                       | 1,349,062 €   |
| Budget for Nireas-IWRC             | 99,973 €  |
| Project Website                    | <a href="https://openilias.uni-hohenheim.de/">https://openilias.uni-hohenheim.de/</a>   |

## PROJECT SUMMARY

The project BIOGASMENA followed an innovative, integrated and multi-disciplinary approach for the development of biogas technology and know-how in the ERA and the MENA region, combining technology transfer and laboratory research with academic exchanges, communication and training activities directed to both the general public, especially small farmers from the MENA region, and the academic community, with a particular focus on young researchers. The project included the following tasks: (1) building dry fermentation biogas plant at pilot scale, (2) building a hybrid energy system at pilot scale, combining biogas, solar and wind energies for autonomous electricity supply, (3) equipping biogas laboratories

in Algeria and Tunisia, 4) investigating biogas production in the MENA region, in particular via dry fermentation in lab-scale and bench-scale experiments, (5) including results into an online database for modeling of bioconversion kinetics, (6) optimizing digestate treatment, characterization and utilization, (7) investigating the combination of biogas production with microalgae cultivation, (8) LCA and techno-economic analyzes of designs for biogas production in the MENA region, (9) training young researchers from the MENA region in EU, in particular by following CIHEAM courses, and (10) informing of the research community, farmers, and the general public about biogas technology.



## PROGRAM AT A GLANCE

|                                  |  |
|----------------------------------|--|
| Funding Agency                   | European Commission, Horizon 2020, MARIE Skłodowska-CURIE ACTIONS  |
| Program Period                   | 2016-2020  |
| Project Acronym                  | ALICE  |
| Project Code                     | H2020-MSCA-RISE-2016/734560  |
| Project Title                    | Accelerate Innovation in Urban Wastewater Management for Climate Change  |
| Project Coordinator              | Dr. Caterina Brandoni, University of Ulster, UK  |
| Beneficiaries                    | <ol style="list-style-type: none"> <li>1. Northern Ireland Water Ltd, United Kingdom</li> <li>2. The Queen's University of Belfast, United Kingdom</li> <li>3. Dublin City University, Ireland</li> <li>4. Dionergy Ltd, Ireland</li> <li>5. BC3 Basque Centre for Climate Change – Klima Aldaketa Ikergai, Spain</li> <li>6. Region de Murcia, Spain</li> <li>7. Università degli Studi di Macerata, Italy</li> <li>8. Redinn SRL, Italy</li> <li>9. ASET, Italy</li> <li><b>10. Nireas-International Water Research Center, University of Cyprus, Cyprus</b></li> <li>11. Militios Symvouleutiki A.E., Greece</li> </ol> |
| Nireas-IWRC Project Investigator | Prof. Despo Fatta-Kassinou   |
| Total Budget                     | 900,000 €  |
| Budget for Nireas-IWRC           | 36,000 €   |
| Project Website                  | <a href="http://www.alice-wastewater-project.eu">http://www.alice-wastewater-project.eu</a>  |

ALICE

Accelerate Innovation in Urban Wastewater Management for Climate Change






## PROJECT SUMMARY

The challenges facing society in urban wastewater management cannot be solved by any one sector alone. ALICE (Accelerate Innovation in urban wastewater management for Climate change) accelerated innovation by bringing together and exchanging knowledge between the key players who can, together, address the future techno-economic, governance and societal challenges arising from climate change. It helped boost international and interdisciplinary

skills, as well as careers perspective of Experienced Researchers, Early Stage Researchers, and the workforce of industry, water utilities and public organizations. The results will 1) benefit water utilities, 2) support political and managerial decisions in wastewater, 3) benefit wastewater equipment manufacturers, identifying new market opportunities in the EU, 4) benefit EU citizens from the improved wastewater infrastructure, the environment and job creations.



“ALICE will go beyond the state-of-the-art, suggesting new tools, methodologies and knowledge to boost innovation in the wastewater sector.”

# BIOSORB

Development of Low-cost Sorbents for Environmental Applications

## PROGRAM AT A GLANCE

|                        |   |
|------------------------|---|
| Funding Agencies       | University of Cyprus “ΜΕΤΑΔΙΔΑΚΤΟΡΙΚΟΙ ΕΡΕΥΝΗΤΕΣ 2017 - 2018” Programme   |
| Program Period         | 2017-2019   |
| Project Acronym        | BIOSORB   |
| Project Title          | Development of Low-cost Sorbents for Environmental Applications   |
| Partners               | <ol style="list-style-type: none"> <li>1. Prof. Despo Fatta-Kassinos, Nireas International Water Research Center, University of Cyprus, Cyprus</li> <li>2. Prof. Panos Papanastasiou, Nireas International Water Research Center, University of Cyprus, Cyprus</li> </ol> |
| Consortium             | <ol style="list-style-type: none"> <li>1. Agricultural Research Institute (ARI)</li> <li>2. Department of Chemistry (UCY)</li> </ol>  |
| Total Budget           | 29,700 €  |
| Budget for Nireas-IWRC | 29,700 €  |

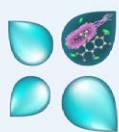
## PROJECT SUMMARY

In recent years it has been recognized that among the so-called contaminants of emerging concern, antibiotics present in treated wastewaters and biosolids are problematic compounds in regard to their disposal. Such substances are not removed completely by conventional methods of purification, moreover, are bioaccumulated and therefore may present a potential risk to human health. The present research utilized the biosolid from the conventional urban wastewater treatment plants to produce biochar through its pyrolysis in order to enhance wastewater reuse in agriculture by adding biochar as a barrier.

## ANSWER

Antibiotics and Mobile Resistance Elements in Wastewater Reuse Applications: Risks and Innovative Solutions

## ANSWER



## PROGRAM AT A GLANCE

|                     |  |                        |           |
|---------------------|--|------------------------|-----------|
| Funding Agencies    | European Commission, Horizon 2020, Marie Skłodowska-Curie Actions: Innovative Training Networks – European training Networks (ITN-ETN)   |                        |           |
| Program Period      | 2015-2019  | Project Acronym        | ANSWER    |
| Project Code        | H2020-MSCA-ITN-2015/675530   |                        |           |
| Project Title       | Antibiotics and Mobile Resistance Elements in Wastewater Reuse Applications: Risks and Innovative Solutions  |                        |           |
| Project Coordinator | Prof. Despo Fatta-Kassinos, Nireas-International Water Research Center, University of Cyprus   |                        |           |
| Beneficiaries       | <ol style="list-style-type: none"> <li>1. Environmental Institute S.R.O, Slovakia</li> <li>2. KWR Watercycle Research Institute, Netherlands</li> <li>3. The Agriculture Research Organisation of Israel – The Volcani Center, Israel</li> <li>4. Agencia Estatal Consejo Superior de Investigaciones Cientificas, Spain</li> <li>5. Adventech – Advanced Environmental Technologies, Lda, Portugal</li> <li>6. Universidade Catolica Portuguesa, Portugal</li> <li>7. Technische Universitaet Dresden, Germany</li> <li>8. Universita Degli Studi di Salerno, Italy</li> <li>9. Technische Universität Wien, Austria</li> </ol> |                        |           |
| Partners            | <ol style="list-style-type: none"> <li>1. Austrian Agency for Health and Food Safety, Austria</li> <li>2. Abwasserverband Braunschweig, Germany</li> <li>3. BioDetection Systems bv, Netherlands</li> <li>4. HighChem, Slovakia</li> <li>5. The Hebrew University of Jerusalem, Israel</li> <li>6. Istituto Superiore di Sanità, Italy</li> <li>7. Karlsruhe Institute of Technology, Germany</li> <li>8. VA TECH WABAG GmbH, Austria</li> </ol>   |                        |           |
| Total Budget        | 3,708,689 €  | Budget for Nireas-IWRC | 753,925 € |
| Project website     | <a href="http://www.answer-itn.eu">http://www.answer-itn.eu</a>  |                        |           |

## PROJECT SUMMARY

The major mission of the ANSWER project was to train fifteen ESRs to address the risks associated with chemical and biological contaminants of emerging concern, i.e. antibiotics, antibiotic-resistant bacteria and antibiotic resistance genes (A&ARB&ARGs) and urban wastewater reuse. To achieve its overall scientific goal, ANSWER was structured on a multidisciplinary consortium (10 Beneficiaries and 8 Partners from 9 countries) involving experienced researchers (academic/non-academic) from diverse disciplines. In addition, scientists with recognised expertise in the field were involved in the project (either as members of the Advisory Board or as Visiting Scientists) contributing to the training of the ESRs and providing expert opinions and experiences on the scientific aspects of the project.

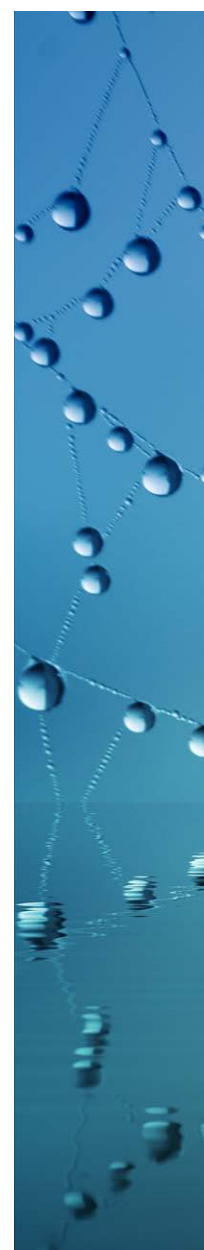


# NORMAN

## NORMAN Association Working Group 5: Wastewater Reuse and Contaminants of Emerging Concern

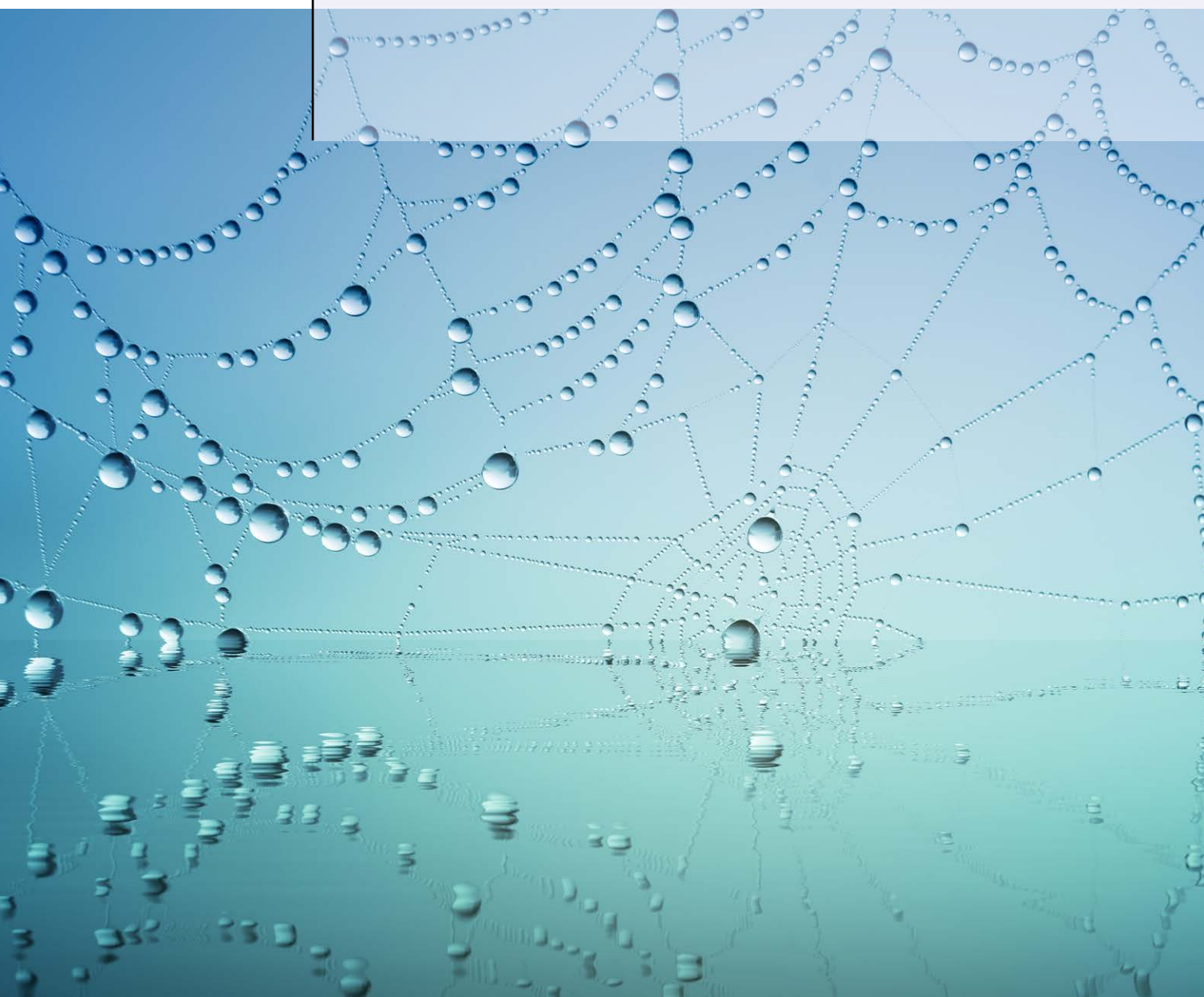
### PROGRAM AT A GLANCE

|   |  |
|---|--|
| Funding Agencies                        | NORMAN Association   |
| Program Period                          | 2013-2019  |
| Project Acronym                         | NORMAN   |
| Project Code                            | N° W604002510  |
| Project Title                           | NORMAN Association Working Group 5: Wastewater Reuse and Contaminants of Emerging Concern  |
| Leader of the Activity and Grant Holder | Prof. Despo Fatta-Kassinos, Nireas-International Water Research Center, University of Cyprus, Cyprus   |
| Participants                            | <ol style="list-style-type: none"> <li>1. Anja Derksen, AD Ecodvice</li> <li>2. Anne Togola, Benjamin Lopez, BRGM</li> <li>3. Alfieri Pollice, Claudio Giovanni Roscioli, Francesca Cappelli, Giuseppe Mascolo, Maria Concetta Tomei, Sara Valsecchi, Stefano Polesello, CNR-IRSA</li> <li>4. Fiona Regan, DCU</li> <li>5. Christa McArdell, Juliane Hollender, Qiuguo Fu, EAWAG</li> <li>6. Jaroslav Slobodnik, Environmental Institute</li> <li>7. Eric Penders, Ruud Steen, Het Waterlaboratorium</li> <li>8. Gago-Ferrero Pablo, ICRA</li> <li>9. Miren Lopez de Alda, Laura Ponce Robles, Sandra Perez Solsona, IDAEA-CSIC</li> <li>10. Valeria Dulio, INERIS</li> <li>11. Andrea Brunner, Luc Hornstra, Milou Dingemans, Stefan Kools, KWR</li> <li>12. Pawel Krzeminski, NIVA</li> <li>13. Prieto Ailette, Plentzia Marine Station</li> <li>14. Joanne de Jonge, RIWA – Rijn</li> <li>15. Foon Yin Lai, Swedish University of Agricultural Sciences</li> <li>16. Katharina Lenz, Umweltbundesamt Austria</li> <li>17. Helene Budzinski, University of Bordeaux</li> <li>18. Giorgio Tomasi, University of Copenhagen</li> <li>19. Sarit Kaserzon, University of Queensland</li> <li>20. Norbert Kreuzinger, Vienna University of Technology</li> <li>21. Griet Jacobs, Jos Bessems, VITO</li> </ol> |
| Total Budget                            | 23,000 €   |
| Project Website                         | <a href="http://www.norman-network.net">http://www.norman-network.net</a>  |



## PROJECT SUMMARY

In response to the escalating problem of water scarcity, treated wastewater and stormwater are increasingly identified as reliable alternative water sources for a range of applications. Although the reuse practice is accompanied by a number of benefits relating to the enhancement of water balance and soil nutrition, a number of questions are still open regarding the release of contaminants of emerging concern. Current open challenges include the spreading of biological contaminants (e.g. SARS-CoV-2) and antibiotic resistance, the uptake by plants/crops, the effects that these contaminants and their degradation products may induce in humans and the environment, the identification of technologies that are able to remove such contaminants from wastewater, and means and solutions to overcome these problems and promote safe reuse practices further.



# ECVET-Lab

Implementation and Validation of Non-Formal Training on Sustainability for Environmental Testing Laboratories works



## PROGRAM AT A GLANCE

|                                  |   |
|----------------------------------|---|
| Funding Agencies                 | European Commission, Erasmus+   |
| Program Period                   | 2016-2018   |
| Project Acronym                  | ECVET-Lab   |
| Project Code                     | 2016-1-ES-KA202-024977  |
| Project Title                    | Implementation and Validation of Non-formal Training on Sustainability for Environmental Testing Laboratories works   |
| Project Coordinator              | Alfonso Cadenas Cañamás, Fundación Equipo Humano  |
| Partners                         | <ol style="list-style-type: none"> <li>1. Fundación Equipo Humano</li> <li>2. NOVOTEC CONSULTORES S.A.</li> <li>3. M.M.C. Management Center Ltd.</li> <li>4. Instytut Technologii Eksploatacji-Panstwowy Instytut Badawczy</li> <li>5. <b>Nireas-International Water Research Center, University of Cyprus, Cyprus</b></li> <li>6. 3S Research Laboratory – Forschungsverein</li> <li>7. EUROLAB</li> </ol> |
| Nireas-IWRC Project Investigator | Prof. Despo Fatta-Kassinis  |
| Total Budget                     | 215,043 €   |
| Budget for Nireas-IWRC           | 32,260 €  |

## PROJECT SUMMARY

ECVET-Lab project's main aim was the promotion of the recognition and validation of competences acquired especially for the laboratory workplace, and through various learning pathways. The project's framework included all persons employed in Laboratories of Environmental Sciences and Engineering that were willing to work for the accomplishment of the project's objectives.



## IRGP 45

Transfer and Control of Antibiotic Resistant Bacteria and their Genes During Wastewater Treatment and Reuse

## PROGRAM AT A GLANCE

|                                  |  |
|----------------------------------|--|
| Funding Agencies                 | South Australian Government Premier's Research and Industry Fund), Australian International Research Grant Program   |
| Program Period                   | 2015-2018  |
| Project Acronym                  | IRGP 45  |
| Project Code                     | DFEEST/14/123963   |
| Project Title                    | Transfer and Control of Antibiotic Resistant Bacteria and their Genes During Wastewater Treatment and Reuse  |
| Project Coordinator              | Prof. Erica Donner, University of South Australia, Australia   |
| Partners                         | <ol style="list-style-type: none"> <li>1. University of South Australia, Centre for Environmental Risk Assessment and Remediation (CERAR), South Australia, Australia</li> <li>2. <b>Nireas-International Water Research Center, University of Cyprus, Cyprus</b></li> <li>3. Agricultural Research Organization, Volcani Center, Institute of Soil, Water and Environmental Sciences, Israel</li> </ol> |
| Nireas-IWRC Project Investigator | Prof. Despo Fatta-Kassinos   |
| Total Budget                     | Approximately 190,000 €  |

## PROJECT SUMMARY

IRGP 45 project's main aim was to investigate the extent of metal/antibiotic resistant bacteria in South Australian wastewater and downstream environments and provide advice on their control to the relevant policymakers.

# NEREUS COST Action ES1403

New and Emerging Challenges and Opportunities in Wastewater Reuse

## PROGRAM AT A GLANCE

|                          |   |
|--------------------------|---|
| Funding Agencies         | European Cooperation in Science and Technology (COST)             |
| Program Period           | 2014-2018   |
| Action Acronym           | NEREUS  |
| Action Code              | OC-2013-2-16816   |
| Action Title             | New and Emerging Challenges and Opportunities in Wastewater Reuse |
| Chair of the Action      | Prof. Despo Fatta-Kassinos  |
| Vice Chair of the Action | Dr. Celia Manaia, Universidade Católica Portuguesa, Portugal      |
| Total Budget             | 591,028 €   |
| Budget for Nireas-IWRC   | 190,241 €   |
| Action Website           | <a href="http://www.nereus-cost.eu">http://www.nereus-cost.eu</a> |



## PROJECT SUMMARY

This COST Action aimed at answering critical questions related to wastewater reuse under the threat of the various current challenges with regard to contaminants of emerging concern including antibiotic resistant bacteria and genes (ARB&G), and in particular to provide consolidated insight on the potential effects of the reuse practice with regard to microcontaminants and ARB&G, data on crops' uptake, establish criteria and specs on technologies and assessment methods, and suggest new effluent quality criteria to overcome current barriers and enhance further the reuse.

StARE

Stopping Antibiotic Resistance Evolution



## PROGRAM AT A GLANCE

|                                    |   |
|------------------------------------|---|
| Funding Agencies                   | Cyprus Research Promotion Foundation (DESMI 2009-2010) – Water JPI Pilot Call   |
| Program Period                     | 2014-2017   |
| Project Acronym                    | StARE   |
| Project Code                       | KOINA/ΠΚΠ-WATER/1113/15   |
| Project Title                      | Stopping Antibiotic Resistance Evolution  |
| Project Coordinator                | Dr. Celia Manaia, Universidade Católica Portuguesa, Portugal  |
| Partners                           | <ol style="list-style-type: none"> <li>1. University of Helsinki (UHel)</li> <li>2. Karlsruhe Institute of Technology</li> <li>3. University of Aveiro (UA)</li> <li>4. National University of Ireland, Maynooth (NUIM)</li> <li>5. Catalan Institute for Water Research (ICRA)</li> <li>6. Aquantec GmbH</li> <li>7. <b>Nireas International Water Research Center, University of Cyprus, Cyprus</b></li> <li>8. Technische Universität Dresden (TUD)</li> <li>9. Norwegian University of Life Sciences (NMBU)</li> <li>10. Universidade Católica Portuguesa (UCP)</li> <li>11. Spanish National Biotechnology Centre (CNB)</li> </ol> |
| Nireas-IWRC Principal Investigator | Prof. Despo Fatta-Kassinos  |
| Total Budget                       | 1,970,093 €   |
| Budget for Nireas-IWRC             | 99,998 €  |
| Project Website                    | <a href="https://stareeurope.wordpress.com">https://stareeurope.wordpress.com</a>   |

## PROJECT SUMMARY

The goal of StARE (Stopping Antibiotic Resistance Evolution) was to protect European citizens' health and the environment via water quality research, aimed at minimizing the impact of discharges from urban wastewater treatment plants (UWTPs) and sustaining safe water cycles. According to WHO, antibiotic resistance is a global human health threat driven by many interconnected factors, where water plays a key role. UWTPs are a major source of antibiotic residues, antibiotic resistant bacteria (ARB) and antibiotic resistance genes (ARGs) released into the environment, thus representing crucial control points for efficient technological interventions. ARB&ARGs are well characterized clinically but the occurrence in aquatic environments, relation to regional antibiotic uses or temporal/geographical variations are poorly understood.



# SEDITRANS

## Sediment Transport in Fluvial, Estuarine and Coastal Environment

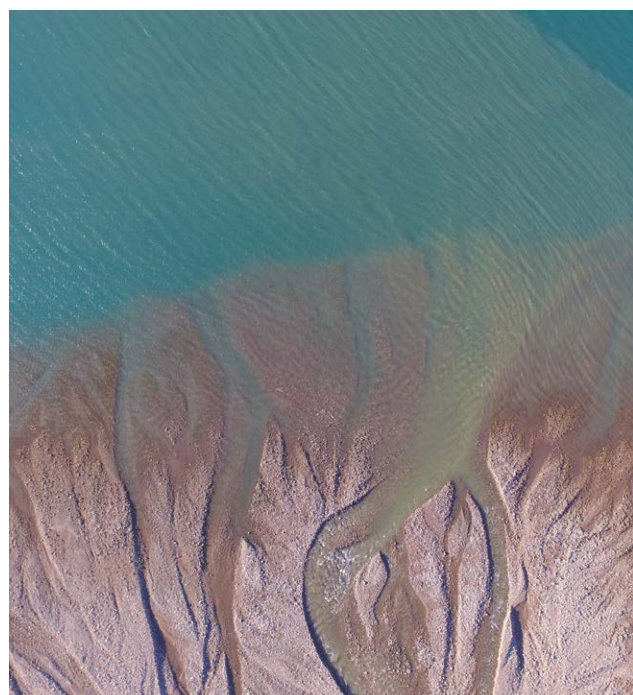


### PROGRAM AT A GLANCE

|                        |   |                               |
|------------------------|---|-------------------------------|
| Funding Agencies       | Research Executive Agency of the European Commission<br>GRANT AGREEMENT No 607394, Marie-Curie Network for Initial Training (ITN)   |                               |
| Program Period         | 2013-2017   |                               |
| Project Acronym        | SEDITRANS   |                               |
| Project Code           | FP7-PEOPLE-2013-ITN-607394  |                               |
| Project Title          | Sediment Transport in Fluvial, Estuarine and Coastal Environment  |                               |
| Project Coordinator    | Prof. Athanassios Dimas,<br>University of Patras (UPAT), Greece   |                               |
| Beneficiaries          | <ol style="list-style-type: none"> <li>1. Department of Mechanical and Manufacturing Engineering, NIREAS – International Water Research Center, University of Cyprus, Cyprus</li> <li>2. Catholic University of Louvain (UCL), Belgium</li> <li>3. Instituto Superior Técnico (IST), Portugal</li> <li>4. University of Trieste (UTR), Switzerland</li> <li>5. National Laboratory for Civil Engineering (LNEC), Portugal</li> <li>6. FUGRO Geoconsulting (FU), Belgium</li> <li>7. Idrostudi (IDR), Italy</li> <li>8. STUCKY (STU), Switzerland</li> </ol> |                               |
| Principal Investigator | Dr. D. Grigoriadis  |                               |
| Total Budget           | 3,734,062€  | Nireas-IWRC Budget   397,470€ |

### PROJECT SUMMARY

Sediment transport in the fluvial, estuarine and coastal environment causes significant morphological changes and results in the amplification of floods, storm surges and other inundation hazards. This increases considerably the risk of failure of structures, disruption of function of networks (water, energy), destruction of ecosystems and natural resources, as well as property and human loss. The impact of sediment transport is expected to be incremented due to climate change. Thus, it is very important to advance knowledge and train future engineers in this field.



## ECOSI

Contaminants of Emerging Concern in Oued Souhil Area, Nabeul, Tunisia: Occurrence in Irrigation Water and Implications

## PROGRAM AT A GLANCE

|                        |  |
|------------------------|--|
| Funding Agencies       | UNESCO Programme and Budget for 2014-2015, Major Programme II, MLA6, International Hydrological Programme  |
| Program Period         | 2015-2016  |
| Project Acronym        | ECOSI  |
| Project Title          | Contaminants of Emerging Concern in Oued Souhil Area, Nabeul, Tunisia: Occurrence in Irrigation Water and Implications   |
| Project Coordinator    | Dr. Olfa Mahjoub, National Research Institute for Rural Engineering, Water, and Forestry, University of Carthage, Tunisia  |
| Partners               | <ol style="list-style-type: none"> <li>1. National Research Institute for Rural Engineering, Water, and Forestry, University of Carthage, Tunisia</li> <li>2. Hydrological Consultant, Montreal, Canada</li> <li>3. <b>Nireas-International Water Research Center, School of Engineering, University of Cyprus, Cyprus</b></li> <li>4. Research Institute for Development, University of Montpellier, France</li> <li>5. Federal Institute for Geosciences and Natural Resources, Germany</li> </ol> |
| Total Budget           | 3,685 €  |
| Budget for Nireas-IWRC | 1,660 €  |

## PROJECT SUMMARY

ECOSI aimed at investigating the occurrence of selected contaminants of emerging concern (CECs) in irrigation water (wastewater and groundwater) and in soil in Oued Souhil area (Tunisia). Specifically, CECs' relevance in these matrices with respect to fate, behaviour, and risks to ecosystem based on available data and literature was investigated.

## GAPS

Closing Gaps of Knowledge with Respect to Advanced Chemical Oxidation Processes for the Removal of Contaminants of Emerging Concern



## PROGRAM AT A GLANCE

|                     |   |
|---------------------|---|
| Funding Agencies    | Cyprus Research Promotion Foundation (DESMI 2009-2010)  |
| Program Period      | 2013-2015   |
| Project Acronym     | GAPS  |
| Project Code        | KOULTOURA/VENS/0412/24  |
| Project Title       | Closing Gaps of Knowledge with Respect to Advanced Chemical Oxidation Processes for the Removal of Contaminants of Emerging Concern |
| Project Coordinator | Prof. Despo Fatta-Kassinos, Nireas – International Water Research Center, University of Cyprus, Cyprus                              |
| Total Budget        | 50,000 €  |
| Nireas-IWRC Budget  | 50,000 €  |

## PROJECT SUMMARY

GAPS was a research project following the “2011 Nikos Symeonides Research Award” to Dr. Despo Fatta-Kassinos, Director of Nireas-IWRC, by the Cyprus Research Promotion Foundation on 3 October 2012, in recognition of her outstanding research achievements and for the project “Development and application of innovative advanced chemical oxidation processes for the removal of xenobiotic compounds from sewage and assessment of their biological potency”. The award, the highest national distinction granted to a researcher in Cyprus, is a point of reference for Nireas-IWRC, its staff and its research work.

GAPS was an innovative project which aimed at providing answers to specific gaps of knowledge with relation to (i) the dissolved organic matter (DOM) present in aqueous matrices, (ii) the capacity of solar Fenton oxidation in removing antibiotics and antibiotic-resistant bacteria, (iii) the efficiency of UV light-activated persulphate oxidation for the removal of pharmaceuticals and personal care products (PPCPs) from aqueous matrices and (iv) the efficiency of ozonation for the removal of PPCPs from aqueous matrices.



# PRODROMOS

Integrated Platform for Security, Information and Accessibility in Intelligent Marine Transport



## PROGRAM AT A GLANCE

|                                    |  |
|------------------------------------|--|
| Funding Agencies                   | Programme of Transnational Cooperation Hellas-Cyprus (INTERREG) 2007-2013  |
| Program Period                     | 2013-2015  |
| Project Acronym                    | PRODROMOS  |
| Project Code                       | INTERREG/2938/08-05-2013   |
| Project Title                      | Integrated Platform for Security, Information and Accessibility in Intelligent Marine Transport  |
| Project Coordinator                | Ministry of Communications and Works-Dept. of Public Works, Cyprus   |
| Partners                           | <ol style="list-style-type: none"> <li>1. Ministry of Communications and Works-Dept. of Public Works, Cyprus</li> <li>2. Cyprus Ports Authority, Cyprus</li> <li>3. Heracleion Port Authority, Greece</li> <li>4. Ministry of Infrastructure, Transport and Networks, Greece</li> <li>5. Foundation for Research and Technology, Greece</li> </ol> |
| Nireas-IWRC Principal Investigator | Prof. Symeon Christodoulou   |
| Total Budget                       | 1,950,000 €  |
| NIREAS/UCY Budget                  | 430,000 €  |
| Project Website                    | <a href="https://sites.google.com/site/itsPRODROMOS/home">https://sites.google.com/site/itsPRODROMOS/home</a>  |

## PROJECT SUMMARY

The project “PRODROMOS” dealt with the creation and implementation of an integrated methodology to complement a “single window” platform, for the security, information and operation of intelligent marine transport. The platform in development aimed at the improvement of the efficiency and security of supply chains and of trafficking through seaports. The project built on previous actions, especially regarding the creation

of a “single window” portal by the Cyprus Ports Authority, and systems studies made by the Department of Public Works of the Ministry of Transport (Cyprus). PRODROMOS focused on the following RTD issues: (1) safety of transport & the exchange of information between ports, (2) identification and monitoring of cargo/containers in and out of port.

ISES

Intelligent Services for Energy-efficient  
Design and Life Cycle Simulation

## PROGRAM AT A GLANCE

|                                    |  |
|------------------------------------|--|
| Funding Agencies                   | EU – 7 <sup>th</sup> Framework Programme Cooperation   |
| Program Period                     | 2013-2015  |
| Project Acronym                    | ISES   |
| Project Code                       | FP7-ICT-2011-7/288819  |
| Project Title                      | Intelligent Services for Energy-Efficient Design and Life Cycle Simulation   |
| Project Coordinator                | Prof. Raimar J. Scherer, TU Dresden, Germany   |
| Partners                           | <ol style="list-style-type: none"> <li>1. Technische Universitat Dresden, Germany</li> <li>2. Granlund Oy, Finland</li> <li>3. University of Ljubljana, Slovenia</li> <li>4. SOFiSTiK Hellas S.A., Greece</li> <li>5. Nyskopunarmidstod Islands, Iceland</li> <li>6. National Observatory of Athens, Greece</li> <li>7. Leonhardt, Andra und Partner, Germany</li> <li>8. Trimio d.d., Slovenia</li> <li>9. Russian Academy of Sciences-Institute for System Programming, Russia</li> <li>10. <b>Nireas – International Water Research Center, University of Cyprus, Cyprus</b></li> </ol> |
| Nireas-IWRC Principal Investigator | Prof. Symeon Christodoulou   |
| Total Budget                       | 4,410,000 €  |
| Budget for Nireas-IWRC/UCY         | 114,560 €  |

## PROJECT SUMMARY

ISES developed ICT building blocks to integrate and complement existing tools for design and operation management into a Virtual Energy Lab capable of evaluating, simulating and optimizing the energy efficiency of products and facilities, in particular components for buildings and facilities, before their realization and taking into account their stochastic life-cycle nature. For the energy-efficient design and operation

of products the semantic contexts of several different roles were integrated. A holistic approach was applied to enable efficient use of today's loosely connected numerical analysis tools, modellers and graphical presentation tools and new stochastic methods were developed to deal with the random nature of energy profiles and consumption through the product life-cycle.





I-WEB

Integrating Water Cycle Management: Building Capability,  
Capacity and Impact in Education and Business

I-WEB

## PROGRAM AT A GLANCE

|                                    |   |
|------------------------------------|---|
| Funding Agencies                   | European Commission (TEMPUS IV)   |
| Program Period                     | 2012-2015   |
| Project Acronym                    | I-WEB   |
| Project Code                       | 530718-TEMPUS-1-2012-1-UK-TEMPUS-JPCR   |
| Project Title                      | Integrating Water Cycle Management: Building Capability, Capacity and Impact in Education and Business  |
| Project Coordinating Beneficiary   | Prof. Lian Lundy, Middlesex University, United Kingdom  |
| Partners                           | <ol style="list-style-type: none"> <li>1. Al-Farabi Kazakh National University</li> <li>2. Ahmed Yasawi International Kazak-Turkish University, Kazakhstan</li> <li>3. Kokshetau State University named after Shokan Ualikhanov, Kazakhstan</li> <li>4. Universität Leipzig, Germany</li> <li>5. Universitat Politècnica de Valencia, Spain</li> <li>6. <b>Nireas – International Water Research Center, University of Cyprus, Cyprus</b></li> <li>7. Institute of Geography of RK, Kazakhstan</li> <li>8. The Regional Environmental Centre for Central Asia, Kazakhstan</li> <li>9. Kazakh Scientific Research Institute of Water Economy, Kazakhstan</li> <li>10. Kazakh Research Institute of Fishery, Kazakhstan</li> <li>11. Institute of Professional Development and Retraining, Kazakhstan</li> <li>12. Ministry of Education and Science Control Committee, Kazakhstan</li> <li>13. National Accreditation Centre; Ministry Education &amp; Science, Kazakhstan</li> <li>14. CORPORATE FUND “FUND “ZHAS OTAN” IN AKMOLA REGION, Kazakhstan</li> </ol> |
| Nireas-IWRC Principal Investigator | Prof. Despo Fatta Kassinos  |
| Total Budget                       | 928,266 €   |
| Budget for CEE* / Nireas-IWRC      | 77,951 €  |

\* CEE: Department of Civil and Environmental Engineering

## PROJECT SUMMARY

I-WEB aimed at supporting KAZNU, IKTU and KokSU to work collaboratively with business, professional bodies and regulatory organisations at a national and international level to develop and deliver Integrated Water Cycle Management (IWCM) Masters and PhD programmes. The main features of I-WEB were the establishment of an International Advisory Board (IAB) consisting of KZ and EU academic partners and representatives of professional scientific and national curricula bodies. Representatives from other sectors were invited to join the IAB as I-WEB progresses, with its role being the scoping of programme content and delivery mechanisms to be met multi-sectorial needs. Key I-WEB activities included a critical evaluation of the current status of training in IWCM, educational practice, CPD and

QA procedures, intensive retraining of KZ staff in IWCM and curricula reform and the development of Bologna compliant MSc and PhD educational frameworks. Internal and external project and programme QA procedures were developed and IWCM laboratories were established. Selected aspects of modules were piloted (free events for students and practitioners) and, CPD courses were developed. I-WEB activities were the development and launch of a communication plan and the establishment of the I-WEB website. Sustainability of I-WEB was demonstrated by adoption of the IAB, institutionalisation of the QA procedures, validation and on-going running of the programmes, the publication of two IWCM textbooks and hosting of an international meeting.

# PhotoGraph

Photocatalytic Removal of Organic Micro-pollutants from the Aqueous Phase Using TiO<sub>2</sub> Coupled with Graphene as a Photocatalyst

## PROGRAM AT A GLANCE

|                        |   |
|------------------------|---|
| Funding Agency         | Co-financed by the European Regional Development Fund and the Republic of Cyprus through the Cyprus Research Promotion Foundation (DESMI 2009-2010) |
| Program Period         | 2012-2014   |
| Project Acronym        | PhotoGraph  |
| Project Code           | ΑΕΙΦΟΡΙΑ/ΦΥΣΗ/0311(BIE)/33  |
| Project Title          | Photocatalytic Removal of Organic Micro-pollutants from the Aqueous Phase using TiO <sub>2</sub> Coupled with Graphene as a Photocatalyst           |
| Project Coordinator    | Prof. Despo Fatta-Kassinos, Nireas – International Water Research Center, University of Cyprus  |
| Partners               | 1. Department of Environmental Engineering, Technical University of Crete<br>2. S.K. Euromarket Ltd.  |
| Total Budget           | 159,964 €   |
| Budget for Nireas-IWRC | 88,476 €  |
| Project Website        | <a href="http://www.PhotoGraphProject.com">www.PhotoGraphProject.com</a>  |



## PROJECT SUMMARY

The aim of the project entitled “Photocatalytic removal of organic micro-pollutants from the aqueous phase using TiO<sub>2</sub> coupled with graphene as a photocatalyst (PhotoGraph)” was to develop simple and efficient methods for synthesizing TiO<sub>2</sub> catalysts coupled with graphene, and to study their photocatalytic performance under solar radiation for the degradation of various contaminants of emerging concern, including pharmaceuticals. Graphene was chosen because it was an interesting material with exceptional properties, isolated for the first time in 2004.



# MEDOLICO

Mediterranean Cooperation in the Treatment and Valorization of Olive Mill Wastewater



## PROGRAM AT A GLANCE

|                        |   |
|------------------------|---|
| Funding Agencies       | ENPI CBCMED, European Union   |
| Program Period         | 2011-2015   |
| Project Acronym        | MEDOLICO  |
| Project Code           | I-B/2.1/090   |
| Project Title          | Mediterranean Cooperation in the Treatment and Valorization of Olive Mill Wastewater  |
| Project Coordinator    | Prof. Despo Fatta Kassinos, NIREAS – International Water Research Center, University of Cyprus  |
| Partners               | <ol style="list-style-type: none"> <li>1. Matimop, Israel Industry for R&amp;D, Israel</li> <li>2. Unioncamere Liguria, Italy</li> <li>3. Unidade de Bioenergia, Laboratorio Nacional de Energia e Geologia, LNEG, Portugal</li> <li>4. Jordan University of Science and Technology, Jordan</li> <li>5. The Ben-Gurion University, Israel</li> <li>6. University of Genoa, Italy</li> </ol> |
| Total Budget           | 1,964,499 €   |
| Budget for Nireas-IWRC | 294,009 €   |
| Project Website        | <a href="http://www.medolico.com">www.medolico.com</a>  |

## PROJECT SUMMARY

MEDOLICO (ENPI CBCMED) was a joint Mediterranean initiative bringing together regions from the East-end (Cyprus, Israel, Jordan) to the West-end (Portugal) and from the North-end (Italy) of the Mediterranean basin that are highly active in olive oil production and all face environmental and economic challenges posed by the management of olive mill wastewater (OMW). The overall goal of the MEDOLICO project was to prevent and reduce the environmental

risk presented by OMW by collaborating on the evaluation of the performance of various advanced treatment technologies at both bench and pilot scale and actively valorizing, in an integrated manner, the phenolic compounds (i.e. by-products) recovered from the OMW in order to provide solutions that significantly reduce the environmental impact of olive mills and sustainably protect the natural heritage of the Mediterranean basin.

## DARE

Detecting Evolutionary Hot Spots of  
Antibiotic Resistances in Europe

## PROGRAM AT A GLANCE

|                          |  |
|--------------------------|--|
| Funding Agencies         | European Science Foundation, European Commission   |
| Program Period           | 2009-2013  |
| Action Acronym           | DARE   |
| Project Code             | COST Action TD0803   |
| Project Title            | Detecting Evolutionary Hot Spots of Antibiotic Resistances in Europe                                   |
| Chair of the Action      | Prof. Thomas Berendonk, TU Dresden, Germany  |
| Vice Chair of the Action | Prof. Despo Fatta Kassinos, Nireas - International Water Research Center, University of Cyprus, Cyprus |
| Project Website          | <a href="http://www.cost-dare.eu">http://www.cost-dare.eu</a>  |

## PROJECT SUMMARY

The main objective of DARE COST Action was to identify and characterize environmental hot spots for antimicrobial resistance (AR) emergence and spreading of antibiotics and antibiotic resistance patterns, aiming at the development of measures to control antibiotic resistance evolution. A network between medical researchers, urban water engineers, chemists, epidemiologists, microbiologists, environmental biologists and evolutionary biologists agreed on the following objectives: (a) assess the potential of wastewater treatment

plants (UWTPs) and animal production as environmental hot spots for antimicrobial resistance emergence and spreading, (b) identify key processes, which foster or stabilize antibiotic resistances in different environments and assess measures to reduce the evolution of new AR, (c) develop an appropriate risk assessment and (d) identify key requirements for a (molecular) screening system of AR. Dr. Despo Fatta-Kassinos was a member of the Management Committee and the Vice Chair of the Action.

## IX-Aqua

Fate, Effect and Removal Potential of  
Xenobiotics Present in Aqueous Matrices

## PROGRAM AT A GLANCE

|                        |   |
|------------------------|---|
| Funding Agencies       | Cyprus Research Promotion Foundation (DESMI 2008), Republic of Cyprus, European Regional Development Fund   |
| Program Period         | 2009-2013   |
| Project Acronym        | IX-AQUA   |
| Project Code           | UPGRADING/DURABLE/0308/07   |
| Project Title          | Fate, Effect and Removal Potential of Xenobiotics Present in Aqueous Matrices   |
| Project Coordinator    | Prof. Despo Fatta Kassinos, Department of Civil and Environmental Engineering, and Nireas – International Water Research Center, University of Cyprus |
| Partners               | Instituto de Diagnóstico Ambiental y Estudios del Agua (IDAEA)  |
| Total Budget           | 396,372 €   |
| Budget for Nireas-IWRC | 387,172 €   |
| Project Website        | <a href="http://www.eng.ucy.ac.cy/ix%2Daqua">www.eng.ucy.ac.cy/ix%2Daqua</a>  |

## PROJECT SUMMARY

The innovation of IX-AQUA research was based on the development and implementation of advanced analytical techniques that spearheaded the investigations on the following three topics: (1) existence of pharmaceuticals and drugs abuse in aqueous matrices down to the ppt level by development of new techniques on UPLC; (2) evaluation of the degradation/removal efficiency during existing and new/advanced treatment methods through investigations in industrial/pilot/bench scale plants using

the techniques that will be developed (use of UPLC) and (3) assessment of the impact of pharmaceuticals/drugs abuse and of their transformation products towards environment and humans (i) use of mechanistic understanding of toxic effects to develop more informative and efficient test systems, (ii) study of the potential disruption on cultured human cells, and (iii) develop a system able to screen substances for effects on human genes.



# UCyAMR

Ad-Hoc Wireless Sensor Networks for Automatic Meter Reading and Vulnerability Assessment of Water Distribution Networks

## PROGRAM AT A GLANCE

|                              |  |
|------------------------------|--|
| Funding Agencies             | Co-Funded by the European Regional Development Fund and the Republic of Cyprus, thru the Cyprus Research Promotion Foundation (DESMI 2008)                   |
| Program Period               | 2011-2012  |
| Project Acronym              | UCyAMR   |
| Project Code                 | AEIFORIA/ASTI/0609(BIE)/07   |
| Project Title                | Ad-Hoc Wireless Sensor Networks for Automatic Meter Reading and Vulnerability Assessment of Water Distribution Networks                                      |
| Project Coordinator          | Prof. Symeon Christodoulou, Department of Civil and Environmental Engineering, and Nireas- International Water Research Center, University of Cyprus, Cyprus |
| Partners                     | 1. SignalGeneriX Ltd<br>2. FWS Ltd   |
| Total Budget                 | 159,924 €  |
| Budget for Nireas-IWRC / UCY | 56,800 €   |
| Project Website              | <a href="https://sites.google.com/site/ucyamr/home">https://sites.google.com/site/ucyamr/home</a>  |

## PROJECT SUMMARY

The UCyAMR research project aimed at: (1) Expanding current research at the Host Organization on water-loss reduction; (2) Performing vulnerability assessment of lifeline systems (e.g. water, natural gas, electricity), with a focus on urban water distribution networks; (3) Developing prediction and evaluation methods for evaluating the social and economic vulnerability with a view to integrating these methods with engineering-based vulnerability or fragility evaluation methods. The aim was to provide indicators of engineering,

social and economic vulnerability based on a number of factors that represent engineering principles, community demographics, socio-economic and risk perception characteristics; (4) Developing a comprehensive hardware and software solution for the monitoring of piping systems with ad-hoc wireless sensors; (5) Developing a comprehensive hardware and software solution for the automatic meter reading of water meters, providing online monitoring of water consumption in the network; and (6) Implementing the developed system at a pilot location.

## WINEC

Advanced Systems for the Enhancement of the Environmental Performance of Wineries in Cyprus

## PROGRAM AT A GLANCE

|                               |   |
|-------------------------------|---|
| Funding Agencies              | European Commission, LIFE+ program  |
| Program Period                | 2010-2013   |
| Project Acronym               | WINEC   |
| Project Code                  | LIFE08 ENV/CY/000455  |
| Project Title                 | Advanced Systems for the Enhancement of the Environmental Performance of Wineries in Cyprus   |
| Project Coordinator           | Prof. Despo Fatta Kassinos, Department of Civil and Environmental Engineering, and Nireas – International Water Research Center, University of Cyprus, Cyprus   |
| Associated Beneficiaries      | <ol style="list-style-type: none"> <li>1. Department of Environmental Engineering, Technical University of Crete</li> <li>2. S.K. Euromarket Ltd</li> <li>3. RTD Talos Ltd</li> <li>4. Department of Environment, Ministry of Agriculture, Natural Resources and Environment</li> <li>5. Tsiakkas Winery</li> </ol> |
| Total Budget                  | 1,366,183 €   |
| Budget for CEE* / Nireas-IWRC | 563,742 €   |
| Project Website               | <a href="http://www.eng.ucy.ac.cy/winec">www.eng.ucy.ac.cy/winec</a>  |



## PROJECT SUMMARY

WINEC project aimed at identifying the major environmental problems specifically associated with the operation of wineries and establishing environmentally friendly and effective solutions in order to effectively deal with those problems. Potential environmental improvements for wineries are evident through the implementation of effective Environmental Management Systems

aiming at the effective treatment of their wastewater, minimization of solid waste disposal and maximization of their reuse potential, reduced electricity, fuel and water consumption, reduced emissions and discharges to the environment, reduced packaging waste production, reduced chemicals use and compliance with the relevant environmental legislation in all sectors.

\* CEE: Department of Civil and Environmental Engineering

## TOMIXX

Development of Novel Methods for the Toxicity Assessment of Multi-component Chemical Mixtures to Humans and the Ecosystem

## PROGRAM AT A GLANCE

|                     |  |
|---------------------|--|
| Funding Agencies    | Cyprus Research Promotion Foundation (DESMI 2009-2010), Republic of Cyprus, European Regional Development Fund   |
| Program Period      | 2010-2012  |
| Project Acronym     | TOMIXX   |
| Project Code        | PENEK/0609/24  |
| Project Title       | Development of Novel Methods for the Toxicity Assessment of Multi-component Chemical Mixtures to Humans and the Ecosystem  |
| Project Coordinator | Prof. Despo Fatta Kassinos, Department of Civil and Environmental Engineering, and Nireas-International Water Research Center, University of Cyprus, Cyprus  |
| Partners            | <ol style="list-style-type: none"> <li>1. Laboratory of Department of Life and Health Sciences, University of Nicosia</li> <li>2. Medical Research Center, Faculty for Clinical Medicine Mannheim, Ruprecht-Karls-University Heidelberg</li> </ol> |
| Total Budget        | 69,936 €   |
| Project Website     | <a href="http://www.eng.ucy.ac.cy/tomixx">http://www.eng.ucy.ac.cy/tomixx</a>  |



## PROJECT SUMMARY

The TOMIXX research project aimed at: (1) leveraging and integrating existing expertise currently distributed among partners, thus leading to an upgraded profile for them in the field of multi-component impact assessment and to new relevant scientific insights in the field of environmental science, (2) transferring specialized knowledge and promoting lasting professional cooperation between the participant organisations, governmental and private sector in the field of xenobiotics' impact assessment and water resources quality protection, (3) promoting excellence in the research field of advanced water management and developing and/or enhance local expertise in the field of xenobiotics in

water and wastewater, (4) evaluating the potential impacts of active pharmaceutical ingredients and their multi-component mixtures to humans and the ecosystem, which is a new field of scientific research attracting intense worldwide interest, (5) contributing to the implementation of the Water Framework Directive since the project would provide new insights for developing emission limit values and environmental quality standards with respect to active pharmaceutical ingredients currently absent from the priority lists circulated; and (6) enhancing the acceptance and practices related to wastewater reuse by determining the most relevant issues relating to reuse and adverse effects.

# SOLIVAL

Sustainable Management of Agro-industrial Wastes: Valorization and Solar-Fenton Post-treatment of Olive Mill Effluents



## PROGRAM AT A GLANCE

|                               |   |
|-------------------------------|---|
| Funding Agencies              | Cyprus Research Promotion Foundation (DESMI 2009-2010)  |
| Program Period                | 2010-2012   |
| Project Acronym               | SOLIVAL   |
| Project Code                  | AEIFORIA/FISI/0609(BE)/12   |
| Project Title                 | Sustainable Management of Agro-industrial Wastes: Valorization and Solar-Fenton Post-treatment of Olive Mill Effluents                                      |
| Project Coordinator           | Prof. Despo Fatta Kassinos, Department of Civil and Environmental Engineering, and Nireas-International Water Research Center, University of Cyprus, Cyprus |
| Partners                      | Department of Environmental Engineering of the Technical University of Crete  |
| Total Budget                  | 122,320 €   |
| Budget for CEE* / Nireas-IWRC | 85,312 €  |

\* CEE: Department of Civil and Environmental Engineering



# UCyMSAD

UWDN Modelling, Simulation and Optimization  
of Leakage Detection via Sensing Technologies

## PROGRAM AT A GLANCE

|                              |   |
|------------------------------|---|
| Funding Agencies             | Cyprus Research Promotion Foundation (DESMI 2008), Republic of Cyprus   |
| Program Period               | 2009-2011   |
| Project Acronym              | UCyMSAD   |
| Project Code                 | PENEK/ENISH/0308/34   |
| Project Title                | UWDN Modelling, Simulation and Optimization of Leakage Detection via Sensing Technologies   |
| Project Coordinator          | Prof. Symeon Christodoulou, Department of Civil and Environmental Engineering, and Nireas – International Water Research Center, University of Cyprus, Cyprus |
| Partners                     | Department of Civil and Environmental Engineering, University of Cyprus, Cyprus   |
| Total Budget                 | 90,000 €  |
| Budget for Nireas-IWRC / UCY | 90,000 €  |
| Project Website              | <a href="https://www.sites.google.com/site/ucymsad/home">https://www.sites.google.com/site/ucymsad/home</a>   |

## PROJECT SUMMARY

The project aimed at: (1) The creation of a mathematical model to study urban water distribution networks (UWDN); (2) The development of “repair-or-replace” pipeline management decisions and prioritization of work in UWDN based on risk-of-failure and financial parameters, through the use of a variety of tools (statistical analysis, survival analysis), artificial neural networks, fuzzy logic,

graph theory, and life cycle costing); (3) The correlation between intermittent water supply and subsequent leakage; (4) The use of an integrated wireless sensor network (WSN) for early leakage detection, through a real-life pilot implementation; (5) The development of related software based on Geographic Information System (GIS) and database management systems.

REPT

Recycling Environmental Policy Tool, Environmental Policy Support  
Tool for Recycling in Islands

## PROGRAM AT A GLANCE

|                                    |   |
|------------------------------------|---|
| Funding Agencies                   | Cyprus Research Promotion Foundation<br>LIFE programme of the European Commission   |
| Program Period                     | 2009-2011   |
| Project Acronym                    | REPT  |
| Project Code                       | LIFE07 ENV/CY/000081  |
| Project Title                      | Recycling Environmental Policy Tool, Environmental<br>Policy Support Tool for Recycling in Islands  |
| Coordinating Beneficiary           | Mr Constantinos Papamichael, Cyprus<br>Ministry of Interior (MOI)   |
| Associated Beneficiaries           | <ol style="list-style-type: none"> <li>1. <b>Department of Civil and Environmental Engineering, and Nireas - International Water Research Center, University of Cyprus, Cyprus</b></li> <li>2. P. Nicolaides &amp; Associates Ltd (N&amp;A)</li> <li>3. Green Dot (Cyprus) Public Co. Ltd</li> <li>4. Hellenic Recovery Recycling Corporation (HERRCo)</li> <li>5. GreenPak Ltd</li> <li>6. Eco-emballages S.A.</li> <li>7. Cyprus Environment Service</li> </ol> |
| Nireas-IWRC Principal Investigator | Prof. Despo Fatta Kassinos  |
| Total Budget                       | 878,272 €   |
| Budget for CEE* / Nireas-IWRC      | 196,911 €   |
| Project Website                    | <a href="http://www.eng.ucy.ac.cy/rept/EN/indexEN_frames.htm">http://www.eng.ucy.ac.cy/rept/EN/indexEN_frames.htm</a>   |

## PROJECT SUMMARY

REPT project brought together the island states of Cyprus and Malta as well as the countries of Greece and France. One of the main aims of the project was the development of a decision support tool that would allow national authorities and other involved stakeholders to calculate the environmental benefit and financial cost of alternative ways of waste management, especially focusing on packaging waste (paper, glass, plastic and metals) and waste from electrical, electronic equipment (cooling equipment, CRT screens and fluorescent lamps). This tool developed is applicable to state islands and countries with many or distant islands in order to assess and determine the optimal economic and environmental solutions.

\* CEE: Department of Civil and Environmental Engineering

# Nireas-IWRC

NIREAS - International Water Research Center

## PROGRAM AT A GLANCE

|                            |  |
|----------------------------|--|
| Funding Agencies           | Co-Funded by the Republic of Cyprus and the European Regional Development Fund of the EU               |
| Program Period             | 2010-2015  |
| Project Acronym            | NIREAS-IWRC  |
| Project Code               | NEA IPODOMI/STRATH/0308/09   |
| Project Title              | NIREAS - International Water Research Center   |
| Project Coordinator        | Prof. Despo Fatta Kassinos, Nireas - International Water Research Center, University of Cyprus, Cyprus |
| Partners                   | University of Cincinnati   |
| Total Budget               | 1,398,945 €  |
| Budget for Nireas-IWRC/UCY | 1,269,330 €  |
| Website                    | <a href="http://www.nireas-iwrc.org">www.nireas-iwrc.org</a>   |



## PROJECT SUMMARY

The activities of NIREAS-International Water Research Center included interdisciplinary research aiming at the solution of complex scientific and engineering problems under the unifying theme of water management. The goal was to develop further expertise that will enable an integrated approach to this important issue, coupling chemistry, biology, hydrology, geohydrology, hydraulics, advanced modeling

capabilities and experimental/analytical work, computational mechanics, risk assessment, environmental science and education, economics and of course various specialties of engineering in order to face various emerging problems in this field. The overarching aim of Nireas-IWRC was to integrate and leverage this interdisciplinary research for the solution of complex scientific and engineering problems.

# Participation in other Projects/Networks

Removal of antibiotic-resistant bacteria and genes from urban wastewater effluents by solar- and UV-C-driven oxidation processes (RESISTANCE), Plataforma Solar de Almeria under SFERA Project "G. Agreement no: P1503040133" funded by the European Commission, September/October 2015, (SFERA Project coordinator: Dr. P. Fernández-Ibáñez / RESISTANCE Project Coordinator: Dr. D. Fatta-Kassinos).

Disinfection of WWTP secondary effluents by solar photo-fenton process in raceway pond reactors. Effect on antibiotic resistance transfer (SOFENDIS), CTQ2016-78255-R, 2016-2019, funded by Spanish National Council, (Project coordinators: Dr. Jose Antonio Sánchez-Pérez and Dr. Ana Agüera).

Sewage analysis CORE group-Europe (SCORE), COST Action ES1307, 2014-2018, (Coordinator and Chair: Dr. Kevin Thomas), [http://www.cost.eu/domains\\_actions/essem/Actions/ES1407](http://www.cost.eu/domains_actions/essem/Actions/ES1407).

Investigation of the potential adverse effects to the soil and the environment caused by wastewater reuse for irrigation and assessment of public health risks in Cyprus. Beneficiary: Agricultural Research Institute, Funded by Cyprus Government (UCY Principal Investigator), 2011-2016, (70,000 €, managed by ARI).

Sustainable Water Management in Greek Households: Greywater Treatment and Reuse, REGREW. General Secretariat for Research and Technology (GSRT) - Ministry of Education, Lifelong Learning and Religious Affairs - Hellenic Republic, 2012-2015, Hellenic Host Organization: Aristotle University and International Host Organization: University of Cyprus. Post-doctoral funding for Dr Th. Velegraki. (Scientific Responsible: I. Poullos and D. Fatta-Kassinos).

Antibiotic resistance removal and disinfection potential of urban wastewater by solar-Fenton at a pilot plant scale- (SOLAR2D), Plataforma Solar de Almeria under SFERA Project "G. Agreement no: 228296 FP7-INFRASTRUCTURES-2008-1" funded by the European Commission, September/October 2012, (SFERA Project coordinator: Dr. Sixto Malato / SOLAR2D Project Coordinator: Dr. D. Fatta-Kassinos).

Treatment of Two Antibiotics at Pilot Plant Scale Project (SOL-TROF), Plataforma Solar de Almeria under SFERA Project "G. Agreement no: 228296 FP7-INFRASTRUCTURES-2008-1" funded by the European Commission, June 2010, (SFERA Project coordinator: Dr. Sixto Malato / SOL-TROF Project Coordinator: Dr. D. Fatta-Kassinos).





## Services Offered (including pro bono)

2020

**Sewerage Board of Limassol-Amathus:**

"Monitoring of SARS-CoV-2 in wastewater influents of the wastewater treatment plant (WWTP) of Limassol".

Scientist in Charge:  
Prof. Despo Fatta-Kassinos

2020

**Water Board of Nicosia:**

"Evaluation of technologies and capabilities of telematics in the network of the Nicosia Water Supply Council".

Scientist in Charge:  
Prof. Symeon Christodoulou

2020

**Water Board of Nicosia:**

"Provision of professional expert services, in the framework of the program WATenERgy, for the appraisal of remote sensing technologies in the water distribution network of Nicosia".

Scientist in Charge:  
Prof. Symeon Christodoulou

2020

**Blue Island Ltd:**

"Developing in-situ biological treatment technologies for efficient management of the company's fish waste stream before reaching the sewage system of Nicosia".

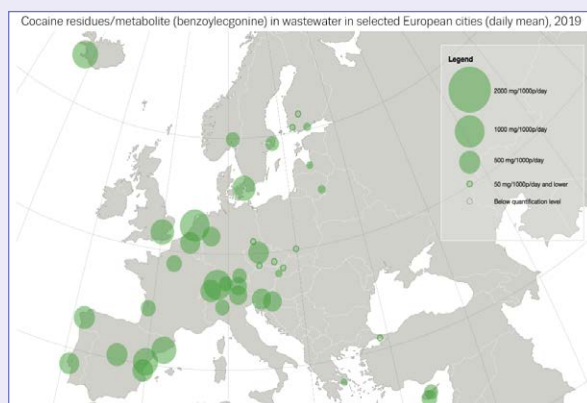
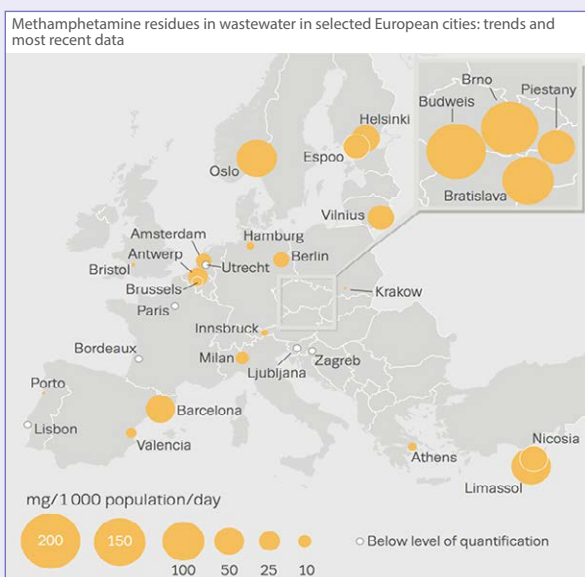
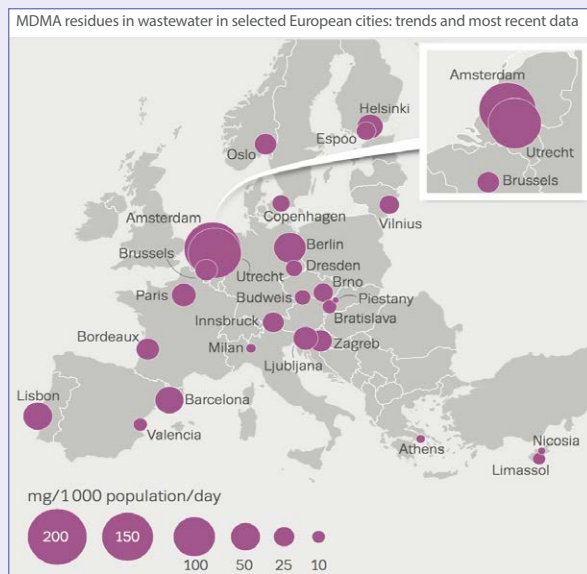
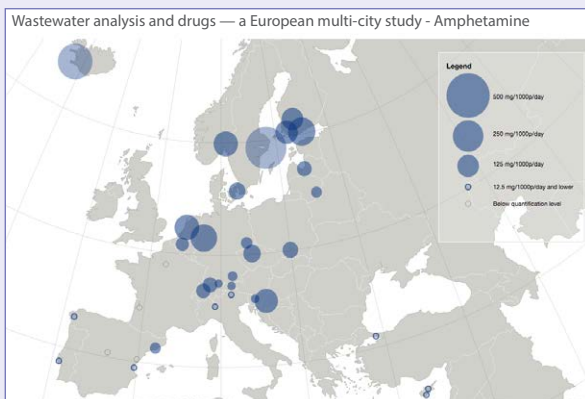
Scientist in Charge:  
Dr Argyro Tsipa, Lecturer

Duration:  
2016 - 2020

**Cyprus National Addictions Authority:**

“Monitoring and wastewater-based epidemiology of illegal drugs in the influents of wastewater treatment plants of Cyprus”.

Scientist in Charge:  
Prof. Despo Fatta-Kassinos



Duration:  
2016 - 2017

**Cyprus Water Development Department:**

“Monitoring of xenobiotic substances in the aquifer CY-9 Akrotiri during its enrichment with recycled water from the wastewater treatment plant in Limassol”.

Scientist in Charge:  
Prof. Despo Fatta-Kassinos

Duration:  
2016 - 2017

**GSI Environmental Inc:**

“Feasibility Study (numerical simulation) for Surfactant assisted recovery of Jet A”.

Scientist in Charge:  
Assist. Prof. Konstantinos Kostarelos,  
Prof. Despo Fatta-Kassinos.



# Examples of Nireas-IWRC Contribution to Policy Development and EU Activities

2020

## SARS-CoV-2 Surveillance employing Sewers, European Union's Umbrella Study



### EU Umbrella Study@ UN World Water Quality Alliance

#### SARS-CoV-2 Monitoring employing Sewers 2<sup>nd</sup> TOWN HALL Meeting

##### Context of the Event

##### The EU Umbrella Study

The European Commission has created a pan-European Umbrella Study to better understand the limitations and challenges of this approach. This includes the development of a roadmap for a systemic rollout of complementing ongoing national and regional surveillances in a unique approach. Upon suggestion from the Dutch Water Research Institute (KWR) and the Rheinisch-Westfälische Technische Hochschule (RWTH) and supported by EurEau and Water Europe, the European Commission's Joint Research Centre and the Directorate-General Environment with involvement of the Directorate-General Health and Food Safety set up a spontaneous research alliance and organised a study engaging directly with some 90 waste water treatment plants in Europe. The umbrella currently spreads out to 20 countries (Austria, Belgium, Bulgaria, Croatia, Cyprus, Estonia, Finland, Germany, Greece, Ireland, Italy, Latvia, Luxembourg, Malta, Poland, Portugal, Romania, Slovakia, Spain and Sweden), which decided to create an overlap with the EU study. Another 7 countries (Czech Republic, Denmark, France, Hungary, Israel, Slovenia and the UK) consider to join the second round of the Umbrella Study, scheduled for August 2020. While first results indicate the viability of the approach, they are currently being critically reviewed to develop a consensus on the use of generated datasets. In an inclusive and open approach critical topics and limitations are reviewed jointly with private and public entities which joined the initiative: CEDEX- Centro de Estudios y Experimentación de Obras Públicas (CEDEX), Eurecat – Technology Centre of Catalonia (Spain), the Helmholtz Centre for Environmental Research, NIREAS – The International Water Research Center, NORMAN Network, SLJZ, University of Thessaly and National Technical University of Athens (Greece) and the University of Exeter (UK) to name, but a few.

2017

## Member of the 5-member Committee for the DG RTD - Directorate-General for Research and Innovation Initiative for P4P (Projects for Policy), European Commission

November  
2017

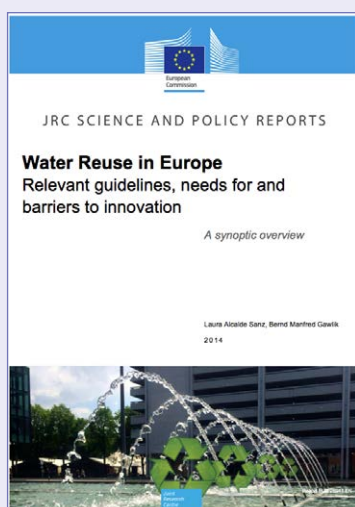
## Participation in the Second Tripartite Meeting of the Presidents of the Cyprus-Greece-Israel Parliaments, House of Representatives, Nicosia, Cyprus

March  
-October  
2014

**Contribution to the preparation of the position paper on “Wastewater reuse and implications for future standardization”, CEN: European Committee for Standardization, SABE: Strategic Advisory Body of Environment, Brussels**

2014

**Water Reuse in Europe, Relevant guidelines, needs for and barriers to innovation, A synoptic overview, by Laura Alcalde Sanz and Bernd Manfred Gawlik**



#### WATER REUSE IN EUROPE

#### Acknowledgements

The authors gratefully acknowledge the useful input on the legal framework as well as comments and suggestions provided by Dagmar Kaljarikova (DG ENV), Thomas Petitguyot (DG ENV), Henriette Faergemann (DG ENV) and the representatives of Italy at the CIS Working Group of Programme of Measures. Special thanks go to Despo Kassinos (University of Cyprus), Mario Carere (Istituto Superiore di Sanità, Rome), Rodrigo Maia (Universidade do Porto) and Andreas Angelakis (N.AG.R.E.F.) for actively assisting us in accessing and evaluating the respective national legal settings and guidelines. Sincerely acknowledge the kind support of Gráinne Mulhern (DG JRC) for the proof-reading and the enhancement of the readability.



# Participation in Editorial Boards of Scientific Journals

**Editorial Board Member:** Case Studies in Chemical and Environmental Engineering, Elsevier, 2021-Present, Prof. Despo Fatta-Kassinos.

**Editorial Board Member:** Flow, Turbulence and Combustion (FTaC), Springer, 2017-Present, Prof. Stavros Kassinos.

**Editorial Board Member:** International Journal of Heat and Fluid Flow, Elsevier, 2015-Present, Prof. Stavros Kassinos.

**Editorial Board Member:** Environmental Science and Pollution Research, Springer, 2012-Present, Dr. Costas Michael.

**Associate Editor:** Water Research, Elsevier, 2020-Present, Prof. Despo Fatta-Kassinos.

**Associate Editor:** Rock Mechanics and Rock Engineering journal, Springer, 2020-Present, Prof. Panos Papanastasiou.

**Editorial Advisor:** International Journal of Geomechanics, ASCE, 1996-Present, Prof. Panos Papanastasiou.

**Editorial Board Member:** Petroleum Science, Springer Open, 2015-Present, Prof. Panos Papanastasiou.

**Editorial Board Member:** Geomechanics for Energy and the Environment journal, Elsevier, 2019-Present, Prof. Panos Papanastasiou.

**Editorial Board Member:** Geo-Energies section, MDPI, 2020-2021 resigned,  
Prof. Panos Papanastasiou.

**Editorial Board Member:** Current Opinion in Environmental Science & Health, Elsevier, 2018-Present,  
Prof. Despo Fatta-Kassinos.

**Editorial Board Member:** Rock Mechanics and Rock Engineering journal, Springer, 2016-2020,  
Prof. Panos Papanastasiou.

**Associate Editor:** European Water, European Water Resources Association, EWRA, 2015-2018,  
Prof. Symeon Christodoulou.

**Editorial Board Member:** Journal of Smart Cities, Whioce Publishing Pte Ltd, Singapore, 2009-2018,  
Prof. Symeon Christodoulou.

**Editor:** Journal of Environmental Chemical Engineering, Elsevier, 2012-Present,  
Prof. Despo Fatta-Kassinos.

**Editor:** Water Science and Technology: Water Supply, IWA, August 2009-January 2013,  
Prof. Despo Fatta-Kassinos.

**Editor:** Water Science and Technology, IWA, August 2009-January 2013,  
Prof. Despo Fatta-Kassinos.

**Editor:** Water Practice and Technology, IWA, August 2009-January 2013,  
Prof. Despo Fatta-Kassinos.

# Honors and Awards

Prof. Despo Fatta-Kassinou, **Scientist/Academic Woman of the Year**, Madame Figaro Women of the Year Awards 2020, presented by Estée Lauder.

Prof. Despo Fatta-Kassinou, **“Highly Cited Researcher, 2020”**, in recognition of the production of multiple highly cited papers that rank in the top 1% by citations for field and year in **Environment and Ecology**; Web of Science, Clarivate Analytics. The 2020 list is based on citations in papers published between 2009 and 2019.

Prof. Despo Fatta-Kassinou, **“Highly Cited Researcher, 2019”**, in recognition of the production of multiple highly cited papers that rank in the top 1% by citations for field and year in **Environment and Ecology**; Web of Science, Clarivate Analytics. The 2019 list is based on citations in papers published between 2008 and 2018.

Prof. Despo Fatta-Kassinou, **“Highly Cited Researcher, 2018”**, in recognition of the production of multiple highly cited papers that rank in the top 1% by citations for field and year in **Cross-field**; Web of Science, Clarivate Analytics. The 2018 list was based on citations in papers published between 2006 and 2016.

Prof. Despo Fatta-Kassinou, Recipient of the honorary award for her long-standing contribution and activity in the research area of Environmental Protection, awarded by the Hellenic Open University, Greece in 2017.



*Prof. S. Christodoulou, Excellence in Research Award 2015*

Prof. Symeon Christodoulou, **“Excellence in Research” Award**, Transport and Logistics Awards 2015, Greece 215. Awarded by the Hellenic Association of Transport Engineers, for the advancement of research in the field of ‘Safety in Transport’ and the contributions made to the field by the PRODRAMOS research project.

Prof. Despo Fatta-Kassinou, 2011 Nikos Symeonides **National Research Award**, awarded by the Cyprus Research Promotion Foundation, 2012 (highest national research recognition).



*Prof. D. Fatta-Kassinou, 2011 Nikos Symeonides National Research Award*



*Prof. S. C. Kassinou, 2010 Nikos Symeonides National Research*

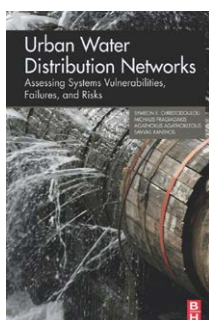
Prof. S. C. Kassinou, 2010 Nikos Symeonides **National Research Award**, awarded by the Cyprus Research Promotion Foundation, 2011 (highest national research recognition).







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S.E. Christodoulou, M. Fragiadakis, A. Agathokleous and S. Xanthos, 2017: "Urban water distribution networks: Assessing systems vulnerabilities, failures, and risks", Butterworth-Heinemann, ISBN: 978-0-12-813652-2.

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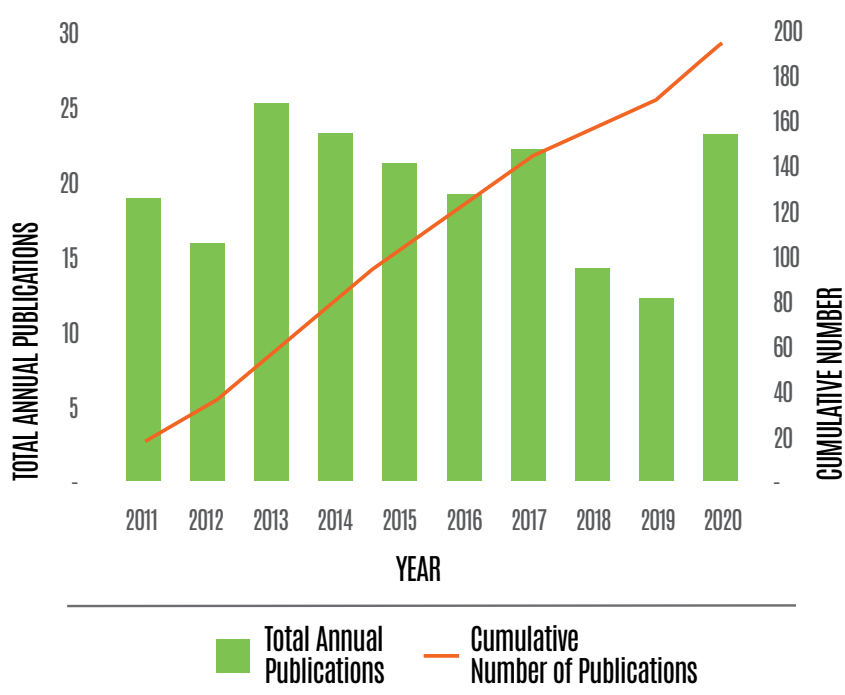
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# Scientific Journal Publications

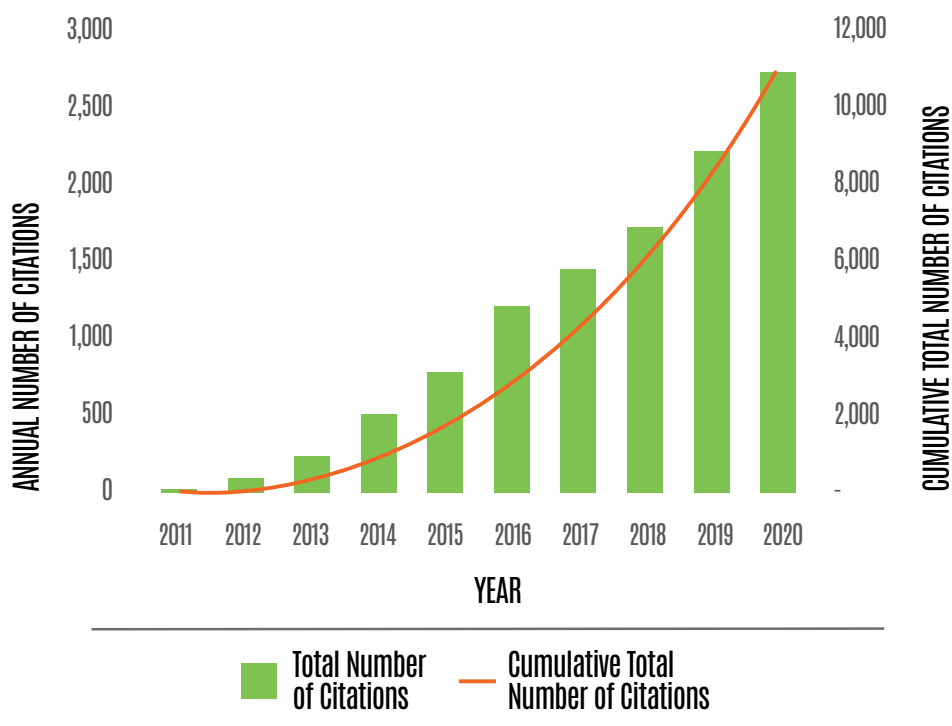
CHART 06

Nireas-IWRC's total and cumulative publication output (journal and conference papers), per annum.



## CHART 07

Nireas-IWRC publications' annual and cumulative number of citations, by year of publication.



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- 52 V. G. Beretsou, I. Michael-Kordatou, N. S. Thomaidis, D. Fatta-Kassinos, "Assessment of sulfamethoxazole UV-C/H<sub>2</sub>O<sub>2</sub> oxidation: Elucidation and stability of transformation products", 15<sup>th</sup> International Conference on Environmental Science and Technology (CEST2017), Rhodes, Greece, 31 August-2 September 2017.
- 51 A. Agathokleous, C. Christodoulou, S. E. Christodoulou, "Robustness and Vulnerability Assessment of Water Networks by Use of Centrality Metrics", Proceedings, 10<sup>th</sup> World Congress on Water Resources and Environment ('Panta Rhei'), (EWRA 2017), Athens, Greece, 5-7 July 2017.

- 50 E. Kourti, S. E. Christodoulou, A. Agathokleous, "Waterloss Detection in Streaming Water Flow Timeseries Using Change-Point Anomaly Detection Methods", Proceedings, 10<sup>th</sup> World Congress on Water Resources and Environment ('Panta Rhei'), (EWRA 2017), Athens, Greece, 5-7 July 2017.
- 49 O. Mahjoub, L. Benyahya, D. Fatta-Kassinos, S. Chiron, E. Fries, D. Rückamp, S. Zandarayaa, "The-state-of-the-art of knowledge, research and data on emerging contaminants in (waste)water used for agricultural irrigation in Oued Souhil, Nabeul, Tunisia", 4<sup>th</sup> Arab Water Week 2017 on "Managing Water Systems within Fragile Environments in the Arab Region", Dead Sea, Jordan, 19-23 March 2017.

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## 2016

- 48 P. Karaolia, E. Hapeshi, I. Michael, C. Drosou, N. Xekoukoulotakis, D. Fatta-Kassinos, "Removal of antibiotics and antibiotic-resistant bacteria in urban MBR wastewater using novel graphene-based composites", 4<sup>th</sup> International Conference on Advanced Oxidation Processes (AOP2016), Goa, India, 17-20 December 2016.
- 47 A. Agathokleous, C. Christodoulou, S. E. Christodoulou, "Topological Robustness and Vulnerability Assessment of Water Distribution Networks", Proceedings, Eleventh European Conference on Product and Process Modeling [ECPPM 2016], Limassol, Cyprus, 6-9 September 2016.
- 46 S. E. Christodoulou, E. Kourti, A. Agathokleous, C. Christodoulou, "Waterloss Detection in Streaming Water Meter Data Using Wavelet Change-Point Anomaly Detection", Proceedings, Eleventh European Conference on Product and Process Modeling (ECPPM 2016), Limassol, Cyprus, 6-9 September 2016.
- 45 A. Agathokleous, S. Christodoulou, "The Impact of Intermittent Water Supply Policies on Urban Water Distribution Networks", Proceedings, 2<sup>nd</sup> EWaS International Conference: Efficient & Sustainable Water Systems Management toward Worth Living Development (EWaS 2016), Chania, Crete, 1-4 June 2016.



- 44 A. Agathokleous, S. Christodoulou, "An Expanded Methodology for Imprinting the Condition of an Urban Water Distribution Network", Proceedings, 2<sup>nd</sup> EWaS International Conference: Efficient & Sustainable Water Systems Management toward Worth Living Development (EWaS 2016), Chania, Crete, 1-4 June 2016.
- 43 A. Agathokleous, S. E. Christodoulou, "Modeling and Analysis of Urban Water Distribution Networks Using Intermittent Water Supply Periods", Proceedings, IEEE's 18<sup>th</sup> Mediterranean Electrotechnical Conference (MELECON 2016), Limassol, Cyprus, 18-20 April 2016.

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## 2015

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- 41 S. Christodoulou, A. Gagatsis, S. Kranioti, C. Kyriakou, E. Toxqui, A. Agathokleous, V. Gkania, "A GIS-based integrated platform for the safe transport of dangerous cargo through seaports and roadways", Proceedings, The Fifteenth International Conference on Civil, Structural and Environmental Engineering Computing (CIVIL-COMP 2015), Prague, Czech Republic, 1-4 September 2015.
- 40 P. Karaolia, J. Alexander, T. Schwartz, D. Fatta-Kassinos, "Exploration of the removal potential of wastewater antibiotic resistance genes by selected photocatalytic and biological treatment technologies", Federation of European Microbiological Societies, 6<sup>th</sup> Congress of Microbiologists, FEMS 2015, Maastricht, Netherlands, 7-11 June 2015.
- 39 A. Gagatsis, S. Kranioti, S. Christodoulou, "Development of a platform for monitoring hazardous cargo to and from ports", Proceedings, Third Cyprus Sustainable Mobility and Intelligent Transport Conference, (Sustainable Mobility Cyprus 2015), Nicosia, Cyprus, 11-12 May 2015.

- 38 M. I. Vasquez, M. Tarapoulouzi, N. Lambrianides, K. Felekis, C. Sticht, M. Saile, N. Gretz, D. Fatta-Kassinos, "Assessing the cytotoxic, estrogenic and mutagenic effects of pharmaceutical residues and their photo-transformation products in water", Session: Developing end-points and effect-based methodologies for characterization of emerging pollutants at relevant exposure concentrations, SETAC Europe 25<sup>th</sup> Annual Meeting, Barcelona, Catalonia, Spain, 3-7 May 2015.
- 37 V. Litskas, A. Parpounas, E. Hapeshi, C. Michael, D. Fatta-Kassinos, "Monitoring of fluoroquinolone antibiotics in piggery wastewater and their mobility in solid materials after the application of the slurry as fertilizer", Session: Soil and water pollutants' assessment, monitoring and remediation, SETAC Europe 25<sup>th</sup> Annual Meeting, Barcelona, Catalonia, Spain, 3-7 May 2015.

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- 35 A. Gagatsis, S. Kranioti, S. Christodoulou, "Development of a platform for monitoring hazardous cargo to and from ports", Proceedings, ITS and Smart Cities 2014, Patra, Greece, 19-22 November 2014.
- 34 M. Fragiadakis, S. Xanthos, A. Gagatsis, S. Christodoulou, "Assessing the overall reliability of water distribution networks under seismic conditions", Proceedings, 2014 Intelligent Distribution for Efficient and Affordable Supplies (Water IDEAS 2014), Bologna, Italy, 22-24 October 2014.
- 33 S. Xanthos, A. Agathokleous, A. Gagatsis, S. Kranioti, S. Christodoulou, "Experimental and numerical investigation of water-loss in water distribution networks", Proceedings, 2014 Intelligent Distribution for Efficient and Affordable Supplies (Water IDEAS 2014), Bologna, Italy, 22-24 October 2014.

- 32 M. Fragiadakis, S. Xanthos, D. Eliades, A. Gagatsis, S. Christodoulou, "Graph-based hydraulic vulnerability assessment of water distribution networks", Proceedings, 9<sup>th</sup> International Conference on Critical Information Infrastructures Security (CRITIS 2014), Limassol, Cyprus, 13-15 October 2014.
- 31 P. Karaolia, J. Alexander, T. Schwartz, D. Fatta-Kassinos, "Evaluation of the removal potential of antibiotic resistant bacteria by selected photocatalytic and biological treatment technologies", 3<sup>rd</sup> International Conference on Advanced Oxidation Processes (AOP2014), Munnar, Kerala, India, 25-28 September 2014.
- 30 S. Christodoulou, M. Fragiadakis, "Seismic reliability assessment of water distribution networks Extending the ALA guidelines", Proceedings, 2014 IWA World Water Congress, Lisbon, Portugal, 21-26 September 2014.
- 29 C. Drosou, N. P. Xekoukoulotakis, D. Fatta-Kassinos, "Removal of the antidepressant sertraline from aqueous solution by graphene oxide adsorption", 4<sup>th</sup> International Conference on Industrial and Hazardous Waste Management, CRETE 2014, Chania, Crete, Greece, 2-5 September 2014.
- 28 M. Fragiadakis, S. Christodoulou, "Vulnerability Assessment of Water Distribution Networks Using Survival Analysis", Proceedings, 2<sup>nd</sup> European Conference on Earthquake Engineering and Seismology, Istanbul, Turkey, 25-29 August 2014.
- 27 I. Michael, M. Iacovou, Z. Frontistis, P. Karaolia, E. Hapeshi, D. Dionysiou, D. Fatta-Kassinos, "UV light-activated persulfate oxidation of erythromycin in aqueous matrices: Evaluation of operational parameters and removal of antibiotic resistance", 8<sup>th</sup> European Meeting on Solar Chemistry and Photocatalysis: Environmental Applications (SPEA8), Thessaloniki, Greece, 25-28 June 2014.
- 26 S. Christodoulou, M. Fragiadakis, "Seismic Reliability Assessment of Lifeline Systems". Proceedings, The Fourteenth International Conference on Computing in Civil and Building Engineering (ICCCBE2014), Orlando, Florida, 23-25 June 2014.







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- 24 A. Gagatsis, S. Kranioti, S. Christodoulou, "Towards an integrated platform for security, information and accessibility in intelligent marine transport", Proceedings, Second Cyprus Sustainable Mobility and Intelligent Transport Conference (Sustainable Mobility Cyprus 2014), Nicosia, Cyprus, 3-4 December 2013.
- 23 P. Karaolia, K. Drosou, I. Michael, N. Xekoukoulotakis, D. Fatta-Kassinos, "Photocatalytic removal of licit and illicit drugs from the aqueous phase using TiO<sub>2</sub> coupled with graphene as a photocatalyst", International Symposium on Emerging Pollutants in Irrigation Waters: Origins, Fate, Risks, and Mitigation, Hammamet, Tunisia, 25-28 November 2013.
- 22 L. A. Ioannou, C. Michael, D. Fatta-Kassinos, "Upscaling the solar Fenton treatment - at pilot and industrial scale - for further treatment of a biologically pretreated winery effluent", 3<sup>rd</sup> European Conference on Environmental Applications of Advanced Oxidation Processes (EAAOP3), Almeria, Spain, 28-30 October 2013.
- 21 S. Christodoulou, M. Fragiadakis, "Reliability assessment of urban water distribution networks under seismic load", Proceedings, EWRA's Eighth International Conference, Porto, Portugal, 26-29 June 2013.
- 20 M. Vasquez, M. Tarapoulouzi, E. Hapeshi, D. Lambropoulou, D. Fatta-Kassinos, "Ecotoxic and mutagenic effects of photolytic transformation products of pharmaceuticals: An experimental design for the investigation of mixtures", ICCE2013, 14<sup>th</sup> EuCheMS International Conference on Chemistry and the Environment, Barcelona, Spain, 25-28 June 2013.
- 19 I. Michael, E. Hapeshi, C. Michael, A. R. Varela, C. Manaia, D. Fatta-Kassinos, "Pilot scale evaluation of solar Fenton on the removal of antibiotics and antibiotic resistant enterococci from secondary effluents: Degradation kinetics, ecotoxicity and phytotoxicity assessment", IWA conference, Micropol & Ecohazard Conference, Zurich, Switzerland, 16-20 June 2013.

- 18 M. Fragiadakis, S. Christodoulou, "Reliability assessment of pipe networks under seismic loads", Proceedings, COMPDYN 2013 Forth ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering, Kos Island, Greece, 12-14 June 2013.

## 2012

- 17 A. Gagatsis, S. Kranioti, S. Christodoulou, A. Agathokleous, S. Xanthos, "An integrated software solution for identifying, monitoring and visualizing water leak incidents in Water Distribution Networks", Proceedings, IWA's International Conference on New Developments in IT & Water, Amsterdam, Netherlands, 4-6 November 2012.
- 16 A. Agathokleous, S. Christodoulou, S. Xanthos, A. Gagatsis, S. Kranioti, "Understanding Water Distribution Network Behavior: A case study for the island of Cyprus", Proceedings, IWA's International Conference on New Developments in IT & Water, Amsterdam, Netherlands, 4-6 November 2012.
- 15 C. Drosou, N. P. Xekoukoulotakis, D. Fatta-Kassinos, "Synthesis of TiO<sub>2</sub> reduced graphene oxide composites for the degradation of organic pollutants", 12<sup>th</sup> Panhellenic Catalysis Symposium, Chania, Greece, 25-27 October 2012.
- 14 M. Fragiadakis, D. Vamvatsikos, S. Christodoulou, "Reliability Assessment of Urban Water Networks", Proceedings, The Fifteenth World Conference on Earthquake Engineering, Lisbon, Portugal, 24-28 September 2012.
- 13 S. Christodoulou, A. Gagatsis, A. Agathokleous, S. Xanthos, S. Kranioti, "Urban Water Distribution Network Asset Management Using Spatio-Temporal Analysis of Pipe-Failure Data", Proceedings, The Fourteenth International Conference on Computing in Civil and Building Engineering, Moscow, Russia, 27-29 June 2012.
- 12 S. Christodoulou, "The Effects of Intermittent Water Supply on Urban Water Distribution Networks in Cyprus", Proceedings, IWA's Water Utility Management and Pricing Policy Workshop, Limassol, Cyprus, 3 April 2012.

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- 11 G. Kirkos, K. Makris, M. Vatyliotou, D. Fatta-Kassinos, "Evaluation of the implementation of the PPW and WEEE directives in island member states and member states that include islands", Sardinia 2011, Thirteenth International Waste Management and Landfill Symposium, S. Margherita di Pula, Cagliari, Sardinia, Italy, 3-7 October 2011.
- 10 E. Hapeshi, M. Gros, M. R. Boleda, F. Ventura, M. Petrovic, D. Barcelo, D. Fatta-Kassinos, "Investigating the occurrence and fate of licit and illicit drugs in urban wastewater treatment plants in Cyprus", 12<sup>th</sup> International Conference on Environmental Science and Technology, Rhodes, Greece, 8-10 September 2011.
- 9 M. I. Vasquez, E. Hapeshi, J. Menz, K. Kümmerer, D. Fatta-Kassinos, "Active pharmaceutical ingredients as multi-component matrices: Focus on effects of mixtures and photo transformation products", 15<sup>th</sup> International Symposium on Toxicity Assessment, Hong Kong, 3-8 July 2011.
- 8 A. Agathokleous, S. Christodoulou, "Waterloss Modelling for Urban Water Distribution Networks", Proceedings, European Water Resources Association's Sixth International Symposium, Catania, Italy, 29 June-2 July 2011.
- 7 S. Christodoulou, A. Agathokleous, B. Charalambous, "Urban Water Distribution Network Performance Under Intermittent Water Supply Conditions", Proceedings, European Water Resources Association's Sixth International Symposium, Catania, Italy, 29 June-2 July 2011.
- 6 S. Christodoulou, A. Agathokleous, "Urban Water Distribution Network Performance Under Intermittent Water Supply Conditions", Proceedings, International Water Association's Eighth Symposium on Systems Analysis and Integrated Assessment, San Sebastian, Spain, 20-22 June 2011.

- 5 A. Agathokleous, C. Papadopoulou, S. Christodoulou, "Real-Time Monitoring of Water Distribution Networks", Proceedings, International Water Association's Eighth Symposium on Systems Analysis and Integrated Assessment, San Sebastian, Spain, 20-22 June 2011.
- 4 I. Michael, E. Hapeshi, C. Michael, D. Fatta-Kassinos, "Ofloxacin removal from secondary treated domestic effluents by solar catalytic processes", IWA SSS 4 WATER, Venice, Italy, 18-21 April 2011.
- 3 S. Christodoulou, A. Agathokleous, "A Study on the Effects of Intermittent Water Supply on the Vulnerability of Urban Water Distribution Networks", Proceedings, The 6<sup>th</sup> IWA Specialist Conference on Efficient Use & Management of Water, Dead Sea, Jordan, 29 March-2 April 2011.
- 2 A. Agathokleous, S. Christodoulou, "In-Situ Water Loss Modeling and Detection", Proceedings, The 6<sup>th</sup> IWA Specialist Conference on Efficient Use & Management of Water, Dead Sea, Jordan, 29 March-2 April 2011.
- 1 S. Christodoulou, "Sustainable Strategies for Managing Water Distribution Networks". Keynote Speech, 2011 MEDIWAT Stakeholders Workshop, Limassol, Cyprus, 18 March 2011.



# Organization and Co-Organization of Workshops / Conferences / Sessions - Roundtable and Panel Discussions

This section provides examples of Nireas-IWRC activity with regard to the organization, or co-organization, of workshops, conferences etc. at national and international level.

## 2021

22 February 2021

### Online National Workshop

Production of biogas intended for governmental and industrial end users in Cyprus, organized in the framework of BIOGASMENA project (KOINA/ERANETMED/0316/01).

**CO-ORGANIZATION:** Nireas-IWRC, University of Cyprus, RTD Talos Ltd, S.K. Euromarket Ltd.

## 2020

23 November 2020

### Online Public Workshop

Smart framework for real-time monitoring and control of subsurface processes in managed aquifer recharge applications (SMART Control, P2P/WATER/1017/0007).

**CO-ORGANIZATION:** Nireas-IWRC, University of Cyprus, Technical University of Dresden, Adelphi, Competence Center for Water.

2019

Nicosia, Cyprus, 5-6 June 2019

## Second Project Meeting and First General Meeting

Of the Network of effective knowledge transfer on safe and economic wastewater reuse in agriculture in Europe (SuWaNu Europe, H2020-RUR-2018-2020/818088).

**ORGANIZER:** Nireas-IWRC, University of Cyprus.



1, 2. SuWaNu Meeting in June 2019, Nicosia.

## 2018

Limassol, Cyprus, 10-12 October 2018

## International Conference on Challenges and solutions related to xenobiotics and antimicrobial resistance in the framework of urban wastewater reuse: Towards a blue circle society (XENOWAC II).

Organized in the framework of the NEREUS COST ACTION (ES1403).

**ORGANIZER:** Nireas-IWRC, University of Cyprus.

### ► Panel Discussion: The future of water management



1. Panel discussion on the 12<sup>th</sup> of October 2018, during the XENOWAC II International Conference.

### ► Roundtable Discussion I: Wastewater reuse in the circular economy era.

- **Session 1: From a threatening inevitability to an array of benefits.**

Moderators: David Weinberg, Ministry of Health, Israel

Thomas Berendonk, Technische Universität Dresden, Germany

- **Session 2: How can we apply the “polluter pays” principle in wastewater reuse scenarios?**

Moderators: Lian Lundy, Middlesex University, United Kingdom

Bernd Gawlik, Joint Research Center, European Commission

- **Session 3: How can we enhance the communication between scientists and policy makers?**

Moderators: Norbert Kreuzinger, Vienna University of Technology, Austria

Dominique Darmendrail, Water JPI Coordinator



## ▶ Roundtable Discussion II: Tackling unknowns, risks and barriers for enhancing wastewater reuse.

- **Session 1: The big unknowns concerning a safe and sustainable wastewater reuse**

Moderators: Ed Topp, Agriculture and Agri-Food Canada and University of Western Ontario, Canada  
Ernesto Liebana, European Food Safety Authority, Italy

- **Session 2: Monitoring big or monitoring smart?**

Moderators: Jaroslav Slobodnik, Environmental Institute, Slovakia  
Susan Richardson, University of South Carolina, USA

- **Session 3: Risks associated to human and ecological health.**

Moderators: Célia Manaia, Catholic University of Portugal, Portugal  
Jim Lazorchak, United States Environmental Protection Agency (US EPA), USA



1, 2. Title: The big unknowns concerning a safe and sustainable wastewater reuse, Roundtable Discussion II on the 10<sup>th</sup> of October 2018, during the XENOWAC II International Conference.

3. Title: Monitoring big or monitoring smart?, Roundtable Discussion II on the 10<sup>th</sup> of October 2018, during the XENOWAC II International Conference.

4. Title: Risks associated to human and ecological health, Roundtable Discussion II on the 10<sup>th</sup> of October 2018, during the XENOWAC II International Conference.





### Roundtable Discussion III: Wastewater treatment and reuse cost.

- **Session 1: State of the art of existing technologies with respect to sustainable and safe wastewater reuse.**

Moderators: Luigi Rizzo, University of Salerno, Italy  
Wolfgang Gernjak, Catalan Institute for Water Research & Catalan Institute for Research and Advanced Studies, Spain

- **Session 2: Current, emerging and future cost related to technologies and wastewater reuse.**

Moderators: Heidemarie Schaar, Vienna University of Technology, Austria  
Dionissios Mantzavinos, University of Patras, Greece



1. Title: State of the art of existing technologies with respect to sustainable and safe wastewater reuse, Roundtable Discussion III on the 11<sup>th</sup> of October 2018 during the XENOWAC II International Conference.

2. Title: Current, emerging and future cost related to technologies and wastewater reuse, Roundtable Discussion III on the 11<sup>th</sup> of October 2018 during the XENOWAC II International Conference.



## ▶ Water JPI Event

- Session 1: Knowledge hub on emerging pollutants.
- Session 2: Future research funding: ERA-Net cofund on emerging pollutants.



1, 2. Water JPI Event on the 11 of October 2018, during the XENOWAC II International Conference.

2017

Nicosia, Cyprus, 2 March 2017

## National Workshop

Challenges and perspectives of wastewater reuse in agriculture.

Organized in the framework of the project “Investigation of the potential adverse effects to the soil and the environment caused by wastewater reuse for irrigation and assessment of public health risks in Cyprus” (funded by Cyprus Government) and StARE project (KOINA/ΠΚΠ/0113/15).

**CO-ORGANIZATION:** Nireas-IWRC, University of Cyprus and Agriculture Research Institute.



1. StaRe National Workshop in March 2017, Nicosia.



Nicosia, Cyprus, 19 May 2017

## National Workshop

Implementation and validation of non-formal training on sustainability for environmental testing workers.

Organized in the framework of the project “ECVET-Lab”, Erasmus+, KA2 (2016-1-ES-KA202-024977)

**ORGANIZER:** Nireas-IWRC, University of Cyprus.



1. ECVET-Lab National Workshop in May 2017, Nicosia.



## 2016

Limassol, Cyprus, 6-9 September 2016

## Eleventh European Conference

Product and Process Modeling (ECPPM 2016), European Association of Product and Process Modeling.

**ORGANIZER:** Nireas-IWRC, University of Cyprus.



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1. Eleventh European Conference on Product and Process Modeling in September 2016, Limassol.

2015

Lythrodontas, Cyprus, 7 April 2015**National Workshop**

New technologies for olive mill wastewater treatment and valorization of agro-industrial products.

**ORGANIZER:** Nireas-IWRC, University of Cyprus.







Το Διεθνές Ερευνητικό Κέντρο Νερού ΝΗΡΕΑΣ του Πανεπιστημίου Κύπρου και το Κοινοτικό Συμβούλιο Λυθροδόντας σας προσκαλούν στην

**Παρουσίαση των αποτελεσμάτων του Ευρωπαϊκού έργου MEDOLICO**

Ενημερωθείτε για:

- Χαρακτηριστικά αποβλήτων ελαιολιτριβείων και οινόποιεων
- Φιλικές προς το περιβάλλον τεχνολογίες επεξεργασίας υγρών αποβλήτων
- Αποτελέσματα κοινωνικο-οικονομικής αξιολόγησης διαθέσιμων τεχνολογιών
- Οικονομικά οφέλη από την αξιοποίηση ουσιών υψηλής αξίας που μπορούν να ανακτηθούν από τα απόβλητα





Τρίτη 7 Απριλίου 2015  
3.00 μ.μ. - 5.30 μ.μ.  
Αναπαλαιωμένος Ελιόμυλος και Αλευρόμυλος Λυθροδόντας

Δηλώσεις συμμετοχής  
κ. Τουμαζής Τουμαζή  
email: toumazis@ucy.ac.cy  
Τηλ. 22893514

Για περισσότερες πληροφορίες  
Nireas-IWRC: [www.nireas-iwrc.org](http://www.nireas-iwrc.org)  
MEDOLICO: [www.medolico.com](http://www.medolico.com)

Παρουσίαση νέων τεχνολογιών επεξεργασίας υγρών αποβλήτων ελαιολιτριβείων και άλλων αγροβιομηχανικών υγρών αποβλήτων

Nicosia, Cyprus, 8 June 2015**National Workshop**

Closing gaps of knowledge with respect to advanced chemical oxidation processes for the removal of contaminants of emerging concern (GAPS, KOULTOURA/VENS/0412/24).

**ORGANIZER:** Nireas-IWRC, University of Cyprus.



2014

Nicosia, Cyprus, 16-17 July 2014

## National Workshop

Photocatalytic removal of organic micropollutants from the aqueous phase using graphene as a photocatalyst (PhotoGraph, AEIΦΟΡΙΑ/ΦΥΣΗ/0311(BIE)/33).

**ORGANIZER:** Nireas-IWRC, University of Cyprus.



1. PhotoGraph National Workshop in July 2014, Nicosia.

2013

Cleopatra Hotel, Nicosia, Cyprus, 20 June 2013

## National Workshop

Fate, effect and removal potential of xenobiotics present in aqueous matrices  
(IX-Aqua, UPGRADING/DURABLE/0308/07).

**ORGANIZER:** Nireas-IWRC, University of Cyprus.



1. IX-Aqua National Workshop in June 2013, Nicosia.



## Nicosia, Cyprus, 8-19 July 2013

### International Workshop

Integrating water cycle management: building capability, capacity and impact in education and business (I-Web, 530718-TEMPUS-1-2012-1-UK-TEMPUS-JPCR).

**ORGANIZER:** Nireas-IWRC, University of Cyprus.



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1. I-Web International Workshop in July 2013, Nicosia.

2012

Amathus Beach Hotel, Limassol, Cyprus, 11 June 2012**Workshop**

Advanced systems for the enhancement of the environmental performance of wineries in Cyprus.

Organized in the framework of the project "WINEC", LIFE 08 ENV/CY/000455.

**ORGANIZER:** Nireas-IWRC, University of Cyprus.



1. WINEC Workshop in June 2012, Limassol.



### Columbia Resort, Limassol, Cyprus, 13-14 September 2012

#### International Workshop

Wastewater reuse applications and contaminants of emerging concern.

Organized in the framework of NORMAN network activities, DARE EU COST Action TD0803, and NIREAS-IWRC.

**ORGANIZER:** Nireas-IWRC, University of Cyprus.



1. Norman and Dare International Workshop in September 2012, Limassol.

### Hilton Hotel, Nicosia, Cyprus, 19 October 2012

#### International Workshop

Environmental management of wineries and olive mills - current challenges and opportunities.

**ORGANIZER:** Nireas-IWRC, University of Cyprus.



1. International Workshop in October 2012, Nicosia.

# 2011

## Ayia Napa, Cyprus, 3-4 May 2011

### Scientific Workshop

Detecting evolutionary hot spots of antibiotic resistances in Europe, EU COST Action TD 0803.

**ORGANIZER:** Nireas-IWRC, University of Cyprus.

## Cyprus, 29 June 2011

### Workshop

Environmental assessment of xenobiotics released in the environment.

Organized in the framework of the project "TOMIXX", PENEK/0609/24.

**ORGANIZER:** Nireas-IWRC, University of Cyprus.



1. TOMIXX Workshop in June 2011, Nicosia.



# Organization of Training Schools

This section lists key training schools organized by Nireas-IWRC.

Cyprus, 29-31 May 2018

## Training School

Uptake of microcontaminants by crop plants and ARB&ARGs testing in wastewater and soil and plants samples.

Organized in the framework of Working Group 2 of NEREUS COST Action ES1403.

**CO-ORGANIZATION:** Nireas-IWRC, University of Cyprus, Agricultural Research Institute, Cyprus University of Technology.



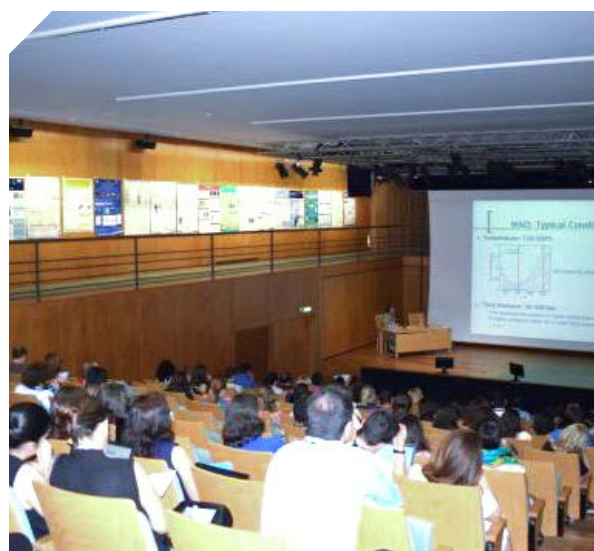
Porto, Portugal, 10-14 July 2017

## Summer School

Advanced treatment technologies and contaminants of emerging concern (NEREUS COST Action ES1403) and 2<sup>nd</sup> Summer School on Environmental applications of advanced oxidation processes (European AOPs PhD School).

Organized in the framework of NEREUS COST Action ES140.

**CO-ORGANIZATION:** Nireas-IWRC, University of Cyprus, European AOPs PhD School.





## Rehovot, Israel, 5-10 March 2017

### Training School

Microcontaminants in the aquatic water cycle - wastewater reuse - the Cypriot/Israeli experience.

Organized in the framework of the project "ANSWER", H2020-MSCA-ITN-2015/675530.

**CO-ORGANIZATION:** Nireas-IWRC, University of Cyprus, Agriculture Research Organization of Israel - The Volcani Center (ARO), Hebrew University of Jerusalem.



Barcelona, Spain, 13-23 June 2016

## Summer School

Antibiotics and mobile resistance elements in wastewater reuse applications: risks and innovative solutions.

Organized in the framework of the project "ANSWER", H2020-MSCA-ITN-2015/675530.

**CO-ORGANIZATION:** Nireas-IWRC, University of Cyprus, Institute of Environmental Sciences and Water Research, Spanish Council for Scientific Research (IDAEA-CSIC).





## Barcelona, Spain, 13-15 June 2016

### Training School

"Cristina Becerra-Castro" on Methods for detecting and quantifying antibiotic-resistant bacteria and antibiotic resistance genes in the environment.

Organized in the framework of the COST Action "Nereus", ES1403.

**CO-ORGANIZATION:** Nireas-IWRC, University of Cyprus, Institute of Environmental Sciences and Water Research, Spanish Council for Scientific Research (IDAEA-CSIC).







# Communication and Outreach Activities

Targeted and successful dissemination is a vital aim of NIREAS-IWRC. To help achieve this, Nireas-IWRC is devising targeted dissemination/training modules for engineers, public agencies, SMEs, other relevant stakeholders and the general public. Additional training elements include: (1) dissemination to proposed users of emerging tools, techniques and technologies arising from the individual engineering projects, (2) provision of comprehensive, timely, accessible, and reliable data to support and promote the developed tools, techniques and technologies, (3) fostering a general understanding within the target user group of developments in engineering-focused technology tools, (4) actively disseminating the findings of quality research evidence and promoting their use in practice and policy.

Much of this activity involves raising awareness of key messages from the research outputs and providing them in easily accessible formats (such as paper and electronic publications), making use of relevant scientific organizations, and promoting the work of the research group through peer-reviewed journal publications, conference proceedings, and presentations at conferences and workshops.

To date, there has been involvement of Nireas-IWRC in many public outreach activities, local and international competitions, training seminars, public lectures, etc., including, but not limited to Stockholm Junior Water Prize, World Water Monitoring Day, Researcher's Night, S-Factor contest, FameLab contest, NIREAS-IWRC "When Ideas Flow" Speaker Series, NIREAS-IWRC Educational Series Seminars, and the Water Development Department Open Day.

The activities and work of Nireas-IWRC have been in the media news (TV, news papers, press releases, news websites, interviews in magazines) numerous times during the last decade, and the Center has a steady presence on facebook (@nireasiwrc) and twitter (@NireasIWRC), while various of the projects coordinated by Nireas operated/operate their own social media accounts. A selection of the published items can be found at: <https://nireas-iwrc.org/category/outreach-activities/news/>

# Outreach Activities

This section provides examples of outreach activities organized by Nireas-IWRC, or of outreach activities the Center participated in.



December 2020

## Virtual Presentation

"The Secret Handbook of the Blue Circle" to the 5<sup>th</sup> Grade of Primary School of the European School of Brussels III.

### CO-ORGANIZATION:

Nireas-IWRC, University of Cyprus, European School of Brussels III.



**YOUNG WATER  
PROFESSIONALS  
CYPRUS**

## 2020

The Cyprus Young Water Professionals (CYWP) was recently established through the Cyprus Water Association (CWA) with the overall aim of advocating and empowering young professionals engaged in the water sector in Cyprus.

Dr. Yannis Dialynas, an affiliated member of the University of Cyprus' NIREAS International Water Research Center is a Member of the CYWP founding Steering Committee.





**September 2019**

## Production of a theatrical performance

*"A voyage in the blue cycle"*

Based on the book developed by Despo Fatta-Kassinou, Antonis Papatheodolou and Iris Samartzi "The Secret Handbook of the Blue Circle".

### **CO-ORGANIZATION:**

Nireas-IWRC, University of Cyprus, Cyprus Foundation for Research and Innovation.









2019

## Publication of the book and ebook

### "The Secret Handbook of the Blue Circle"

in English language by IWA Publishing.

ISBN: 9781789061086 (Paperback)

ISBN: 9781789061093 (eBook)



2018

## Development of an educational book for children:

### "The Secret Handbook of the Blue Circle"

in Greek language by Papadopoulos Publishing S.A.

ISBN: 978-960-569-902-4

The book was awarded first place in the Public Awards 2019 under the category "Greek Children's Literature" and second place in the Anagnostis Awards under the category "Educational Books".





**φilenews**

ΕΙΔΗΣΕΙΣ ΚΟΙΝΩΝΙΑ INSIDER ΑΠΟΦΕΙΣ GOING OUT ΠΟΛΙΤΙΣΜΟΣ ΑΘΛΗΤΙΚΑ ΑΥΤΟ ΚΑΛΗ ΖΩΗ

ΚΥΠΡΟΣ ΚΟΣΜΟΣ ΚΡΙΤΙΚΕΣ ΕΚΔΗΛΩΣΕΙΣ ΠΡΟΣΧΗΤΑ

## Αντ. Παπαθεοδούλου: Αγαπάτε τις ερωτήσεις πιο πολύ από τις απαντήσεις

ΑΡΧΙΚΗ • ΠΟΛΙΤΙΣΜΟΣ • ΠΡΟΣΩΠΑ • Αντ. Παπαθεοδούλου: Αγαπάτε τις ερωτήσεις πιο πολύ από τις...



23 Ιανουαρίου 2019, 10:28 πμ

«Να φτιάξεις ένα καλό βιβλίο για παιδιά ποτέ δεν είναι εύκολο»

• Ποιο ήταν το κίνητρο για το νέο σας βιβλίο, «Το Μυστικό Βιβλίο του Μπλε Κύκλου»; Το κίνητρο συνήθως είναι κάτι που θέλω πολύ να πω στα παιδιά. Σε αυτό το βιβλίο όμως το κίνητρο ήταν λίγο πρωτότυπο καθώς ήταν αυτό που θέλησε η ομάδα επιστημόνων του Διεθνούς Ερευνητικού Κέντρου Νερού Νηρέας του Πανεπιστημίου Κύπρου να πει στα παιδιά. Και χρειάστηκε εμένα και την Ίριδα μόνο για να το... «μεταφράσουμε» λίγο στη γλώσσα τους. Το βιβλίο αυτό για το νερό και την επαναχρησιμοποίησή του το γράψαμε μαζί με τη Δέσπω Φάττα-Κάσινου και την ομάδα της για να κάνουμε και τα παιδιά μέλη, κοινωνούς της «Κοινωνίας του Αέναν Μπλε Κύκλου» μιας ομάδας πραγματικών νέων επιστημόνων, ώστε να μάθουν να προστατεύουν και να φροντίζουν το πιο πολύτιμο αγαθό στη Γη: το νερό.


ΒΙΒΛΙΑ ΠΡΟΣΩΠΑ ΕΙΚΟΝΟΓΡΑΦΗΣΗ ΔΕΣ ΚΙ ΑΥΤΟ! ΔΙΑΒΑΖΟ ΔΥΝΑΤΑ

Αρχική / Πρόσωπα / Συνεντεύξεις / Δέσπω Φάττα – Κάσινου

### Δέσπω Φάττα – Κάσινου

Είναι ιδιαίτερα σημαντικό να καταφέρεις να κεντρίσεις το ενδιαφέρον των μικρών αναγνωστών με στόχο την ενδυνάμωση της ενημέρωσης των ανθρώπων από μικρή ηλικία.

Δέσπω Φάττα – Κάσινου



Χημικός Μηχανικός, αναπληρώτρια καθηγήτρια στο τμήμα Πολυτεχνικών Μηχανικών και Μηχανικών Περιβάλλοντος, διευθύντρια του Διεθνούς Ερευνητικού Κέντρου Νερού Νηρέας του Πανεπιστημίου Κύπρου, εκδότρια διεθνούς επιστημονικού περιοδικού, συντονίστρια ερευνητικών έργων, η κ. Δέσπω Φάττα-Κάσινου από την Κύπρο είναι ο άνθρωπος που εμπνεύστηκε το **Μυστικό βιβλίο του μπλε κύκλου** που κρατάμε στα χέρια μας. Μαζί με την επιστημονική της ομάδα και με τη βοήθεια του συγγραφέα Αντώνη Παπαθεοδούλου και της εικονογράφου Ιριδώς Σαμαρτζή, δημιούργησαν ένα βιβλίο γνώσεων για το πιο σημαντικό στοιχείο πάνω στη Γη, το νερό, τη σημασία του για τη ζωή στον πλανήτη και κυρίως τους τρόπους με τους οποίους το νερό μπορεί να απορροπώνεται και να επαναχρησιμοποιηθεί. Η κ. Φάττα-Κάσινου μιλάει στην Κόκκινη Αλεπού και μας έδωσε όλες τις απορίες σχετικά με τον κύκλο του νερού, την επαναχρησιμοποίηση των επεξεργασμένων αστικών λυμάτων, το πώς ασχολήθηκε με τη δημιουργία αυτού του βιβλίου, αλλά και με ποιον τρόπο μπορούμε όλοι να συμβάλουμε στην προστασία τόσο της ποιότητας όσο και της ποσότητας του νερού.

Ο ΑΝΑΓΝΩΣΤΗΣ

ΑΡΧΙΚΗ ΝΕΑ > ΚΡΙΤΙΚΗ ΒΙΒΛΙΟΥ > ΣΥΝΕΝΤΕΥΞΕΙΣ > ΘΕΜΑΤΑ > ΑΡΘΡΑ > ΕΚΔΗΛΩΣΕΙΣ ΑΝΑΓΝΩΣΤΗ

ΑΡΧΙΚΗ > ΤΑ ΒΡΑΒΕΙΑ > ΒΡΑΒΕΙΑ 2019 > Όλα για την Τελετή Απονομής των Λογοτεχνικών Βραβείων 2019, σήμερα 8μμ Μουσείο Μπενάκη...

## Όλα για την Τελετή Απονομής των Λογοτεχνικών Βραβείων 2019, σήμερα 8μμ Μουσείο Μπενάκη

10442 0



Τα Λογοτεχνικά Βραβεία του Αναγνώστη 2019 θα απονεμηθούν σήμερα Δευτέρα 10 Ιουνίου στις 8μμ στο Μουσείο Μπενάκη, Πειραιώς 138.

**ΑΠΟΤΕΛΕΣΜΑΤΑ ΒΙΒΛΙΟ ΓΝΩΣΕΩΝ**

- Ελένη Γερούλδου, Ένας αρκούδος μια φορά, εικονογράφηση Ίρις Σαμαρτζή, Πατάκης.
- Κατερίνα Λαγού, Χαρίλαος; Τι όνομα είναι αυτό; Εικονογράφηση Πετρούλα Κρίγκου, Ψυχγιός και Αντώνης Παπαθεοδούλου, Το μυστικό βιβλίο του μπλε κύκλου, εικονογράφηση Ίρις Σαμαρτζή, Παπαδόπουλος. (ισοψηφία)
- Ροδούλα Παππά, Όταν μεγαλώσω, εικονογράφηση Φίκος, Νεφέλη.

**IWA PUBLISHING**  
the international water association  
iwapublishing.com

## The Secret Handbook of the Blue Circle


Concept Development and Scientific Editing: Despo Fatta-Kassinou

The book was inspired by the scientific work carried out by the research group of Nireas International Water Research Center (Nireas-IWRC) at the University of Cyprus in the field of wastewater treatment and reuse. The work is led by Dr. Despo Fatta-Kassinou, who is an Associate Professor at the Department of Civil and Environmental Engineering and Director of Nireas-IWRC. The group worked together with Antonis Papatheodoulou, one of the Greece's best children's storytellers, and developed an interesting educational adventure through which children can understand the vital role of water in life.

There is increasing recognition of the power of children's early thinking and learning, as well as a belief that science may be of particular importance in early childhood, contributing not only to the future scientific understanding of children, but also to building important skills and attitudes for learning, establishing high levels of scientific literacy and strengthening scientific inquiry. Educating the young generation and increasing awareness on various aspects of the water cycle and wastewater reuse was the motivation for the development of 'The Secret Handbook of the Blue Circle'.

Six Water Scientists, who are defenders and protectors of the most important substance on the planet (i.e. water), Dr. Tom Atom, Dr. Celia Circle, Dr. Scot Water, Dr. Glow McCrystal, General Claire Clean and Dr. André Antib, are looking for helpers to become new members of their 'Eternal Blue Circle Society'. The eight Secret Chapters of the book, include among others: knowledge on what water is, its chemical structure and properties, its cycle, its uses and its significance, water scarcity, a historical retrospective of a city's water supply from antiquity to date, the typical treatment processes applied for the production of drinking water, the water pollution caused by traditional pollutants and contaminants of emerging concern, the processes applied in wastewater treatment plants, and the presence of such contaminants in the environment.

The mission of the members of the 'Eternal Blue Circle Society' is to carefully study contaminants of



Είπαν για το βιβλίο:

«Είναι πραγματικά ένα πρωτοποριακό βιβλίο γνώσεων για παιδιά, το οποίο μέσα από τον έξυπνο τρόπο προσέγγισης του θέματος και την πλούσια εικονογράφηση, είναι βέβαιος ότι θα συμβάλει ουσιαστικά στην καλλιέργεια υδατικής και περιβαλλοντικής συνείδησης, που τόσο έχουμε ανάγκη.»

Κώστας Καδής, Υπουργός Γεωργίας, Αγροτικής Ανάπτυξης και Περιβάλλοντος της Κυπριακής Δημοκρατίας.

«Είμαι βέβαιος πως η έκδοση "Το μυστικό βιβλίο του μπλε κύκλου" θα συμβάλει καθοριστικά στην περιβαλλοντική ευαισθητοποίηση των παιδιών μας και ιδιαίτερα στην επίτευξη του στόχου για εξοικονόμηση νερού. Πρωτοβουλίες που έχουν στόχο με τεκμηριωμένο και κατανοητό τρόπο να ευαισθητοποιήσουν τα παιδιά μας για θέματα που απασχολούν και επηρεάζουν όλους μας, θεωρούνται πολύ σημαντικές από το Υπουργείο Παιδείας και Πολιτισμού.»

Δρ. Κώστας Χαμπιαούρης, Υπουργός Παιδείας και Πολιτισμού της Κυπριακής Δημοκρατίας





12 February 2019

## Open Day

On Water and Wastewater Treatment.

**ORGANIZER:** Nireas-IWRC,  
University of Cyprus.





June 2019

### Visit

To the Junior and Senior English School of Nicosia to provide general research information about the ANSWER project and the issue of antibiotic resistance the spread in WWTP and the environment.

Invited by the School.







Limassol, Cyprus, 12 October 2018

## “Science Slam” Competition.

Organized in the framework of the XENOWAC II Conference, “Challenges and Solutions related to Xenobiotics and Antimicrobial Resistance in the Framework of Urban Wastewater Reuse: Towards a Blue Circle Society”.

**HOST AND ORGANIZER:** Prof. D. Fatta-Kassinos, Nireas-IWRC, University of Cyprus.




**XENOWAC II**

Challenges and Solutions related to Xenobiotics and Antimicrobial Resistance in the Framework of Urban Wastewater Reuse: Towards a Blue Circle Society

**Towards a Blue Circle Society**

PASSIONATE ABOUT SCIENCE AND WANT TO SHARE IT WITH THE XENOWAC II AUDIENCE IN A FUN AND ENTERTAINING WAY?

**APPLY TO THE XENOWAC II SCIENCE SLAM AND GET THE OPPORTUNITY TO SHOW YOUR CREATIVE SKILLS!**

Forget about introductions, results and discussion, and instead focus on your audience. The XENOWAC II audience will vote to name the **XENOWAC II Science Slammer**.

Luckily for all the passionate professors and career professionals thinking about participating, it is not necessary to be a student to participate!

*So this is your chance to shine.*

**THE SCIENCE SLAM WILL TAKE PLACE ON OCTOBER 12, 2018**

**XENOWAC II SCIENCE SLAM RULES**

**APPLY** Anyone can apply (students, technicians, researchers, postdocs, professors, etc.).

**SUBMIT** Applications through a description (max 1 page) of how you wish to convey your message.

**REMEMBER** Anything can fly (songs, sketches, video) ... as long as you present your own research in 5-6 min.

**COMPETE** The XENOWAC II audience will select the best XENOWAC II Science Slammer based on the 30s: *Charisma, Content and Clarity* after the live competition.

Send your submissions before June 1, 2018 to [synedrio@topkinisis.com](mailto:synedrio@topkinisis.com)

NEED SOME INSPIRATION? HAVE A LOOK AT PREVIOUS SCIENCE SLAM WINNERS ON YOUTUBE: <https://www.youtube.com/user/ScienceSlam>

Organized and Hosted by:               

NEEDS COST ACTION 13470             

H2020-MSCA-1010167030 ANSWER         





2018

### Visit

To the Junior English School of Nicosia to provide general research information about the ANSWER project and the issue of antibiotic resistance the spread in WWTP and the environment.

Invited by the School.



2018

### Visit

To the Elementary School of Archangelou Michael to provide general research information about the water.

Invited by the School.

## 2017

### **Visit**

To the 3<sup>rd</sup> Elementary School Kaimakliou, High school Aradippou “Tasos Mitsopoulos”.

Invited by the School.

## September 2016

### **Researchers from our Center visited schools and delivered lectures.**

Specifically, they visited the 6<sup>th</sup> Elementary School of Aglantzia, the Elementary School of Agiou Vassiliou, the High School of Athiainou, the High School of Aradippou, the High School of Aradippou “Tassos Mitsopoulos”, the Pancyprian High School of Larnaca, the High School of Vergina.

Organized in the framework of the Research and Innovation Week, Cyprus Foundation for Research and Innovation.

Invited by the School.

## March 2016

### **Invited Talk**

Tackling the issue of antibiotic-related microcontaminants under the wastewater reuse framework.

**CO-ORGANIZATION:** Cyprus International Institute for Environmental and Public Health, Cyprus University of Technology, Nireas-IWRC, University of Cyprus.

## December 2015

### **Invited Talk**

Tackling the issue of antibiotic-related microcontaminants under the wastewater reuse framework.

**CO-ORGANIZATION:** Cyprus Institute of Neurology and Genetics (CING) – the CING, Nireas-IWRC, University of Cyprus

Nicosia, Cyprus, 27 March 2015

## World Water Monitoring Challenge Activity.

**ORGANIZER:** Nireas-IWRC, University of Cyprus.

Larnaka, Cyprus, 25 September 2013

## Café Scientifique talk entitled Unknown pollutants in water and our lives.

**ORGANIZED BY** the Research Promotion Foundation in the framework of the “Research and Innovation Week”.







Nicosia, Cyprus, 2011

## World Water Monitoring Day.

**ORGANIZER:** Nireas-IWRC, University of Cyprus.







# “When Ideas Flow” Seminar Series

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## Academic Year 2020 - 2021

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### September 2020

Advanced dose control for chemical disinfection of urban wastewater.

Dr. Kyriakos Manoli.

In collaboration with the Civil and Environmental Engineering Department.

### November 2020

The management of chemical compounds in Europe, the case of Cyprus.

Dr. Tasoula Kyprianidou-Leontidou.

In collaboration with the Civil and Environmental Engineering Department.

## Academic Year 2019 - 2020

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### January 2020

The quo of water quality and water availability in Southern Africa: Strategies and sustainable solutions.

Dr. Titus Msagati.

### February 2020

Application of genomics and metagenomics tools for unfolding the functional capacity of different ecological niches.

Nishant A. Dafale.

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## Academic Year 2017 - 2018

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### September 2017

Measurement of the impact of antibiotic resistance discharge in wastewater and in soil: Ecological aspects.

Mr. Gianuario Fortunato.

### October 2017

Solar photo-Fenton and adsorption on activated carbon for the removal of antibiotics, antibiotic resistance determinants and toxicity from urban wastewater.

Ms. Stella Michael.

### November 2017

A CFD study of wave-flows in coastal and offshore zones.

Mr. Charalambos Frantzis.

### December 2017

Occurrence of antibiotics and transformation products in effluent wastewater from Danub catchment;  
The crucial role of the establishment of databases and data archiving.

Mr. Nikiforos Alygizakis.

### January 2018

Quality of drinking water and technologies used in drinking water treatment in Lithuania.

Dr. Ramune Albrektiene.

### February 2018

Exploring eukaryotic endomembrane systems with computational genomics tools.

Dr. Vasilis Promponas.

### March 2018

Opportunities for participation in Climate-KIC actions (Knowledge and Innovation Community).

Dr. Stelios Yiatros.

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## Academic Year 2016 - 2017

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### October 2016

"Biochemical systems engineering" A systems approach for the production of chemicals, biofuels and biopolymers for the waste and biomass.

Mr. Michalis Koutinas.

### February 2017

Funding opportunities under the territorial cooperation programs.

Ms. Constantia Constantinou.

### March 2017

Competition "Students in Research – I STUDY 2017".

Ms. Ioanna Sergidou Loizou.

### April 2017

Critical thinking and its relationship to the development of intelligence.

Dr. Socrates Ktistis.

### June 2017

Activation of peroxo compounds using metal complexes for oxidative degradation of organic contaminants and inactivation of bacteria in water.

Dr. Halan Prakash.

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# Academic Year 2015 - 2016

## October 2015

Life Cycle Assessment of a membrane bioreactor (MBR) and a solar photocatalytic pilot plant for the treatment of urban wastewater.

Dr. Lida Ioannou.

## January 2016

Physicochemical methods for the treatment of different types of industrial wastewater.

Mr. Iacovos Iacovides.

## February 2016

The center for technical and scientific research in physical-chemical analysis in Algeria (CRAPC).

Ms. Lilya Boudriche.

## March 2016

The importance of strategic design.

Dr. Antonis Zorpas.

## April 2016

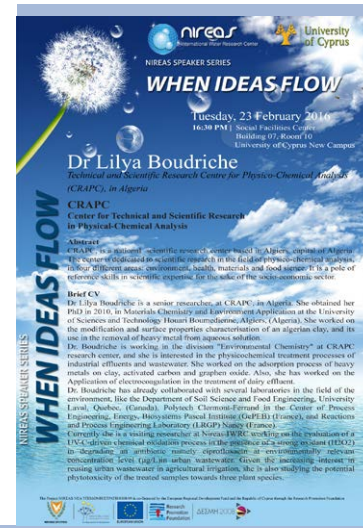
From "Dieselgate" to green tax reform: Regulations or economic incentives for a successful environmental policy?.

Dr. Theodoros Zachariades.

## May 2016

A workflow for the orthogonal identification of biotransformation products of pharmaceuticals formed in activated sludge by LC-QTOF-MS.

Ms. Vasiliki Beretsou.





## Academic Year 2014 - 2015

### September 2014

Why do we educate ourselves?

Mr. Andreas Zaharoudis.

### October 2014

Plant responses to environmental stress factors and possible means of amelioration.

Dr. Vasileios Fotopoulos.

### November 2014

The activities of the Cyprus Center of Environmental Research and Education.

Dr. Andreas Chadjihambis.

### December 2014

Animal Research pros & cons: The contribution of animal research to the medical revolution.

Dr. Myrtani Pieri.

### January 2015

Advance bioassays for evaluating the effect of mixtures of pharmaceuticals.

Ms. Maria Tarapoulouzi.

### February 2015

New electronic product development for better water management.

Dr. Tasos Kounoudes.

### March 2015

Geographic Information System (GIS) Applications in research and businesses.

Mr. Loizos Tofas.

## April 2015

Multifaceted identity and a successful work environment.

Dr. Areti Demosthenous.

## May 2015

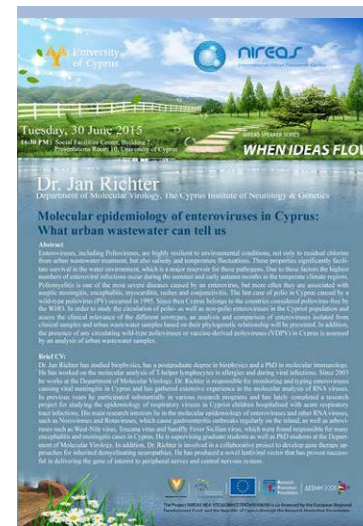
Cancer evolution: A dynamic interplay between living systems and the environment.

Dr. Andreani Odysseos.

## June 2015

Molecular epidemiology of enteroviruses in Cyprus: What urban wastewater can tell us.

Dr. Jan Richter.



# Academic Year 2013 - 2014

## October 2013

Advanced chromatography and mass spectrometry for the analysis of trace contaminants in aqueous matrices.

Dr. Evroula Hapeshi.

## November 2013

Utilization of livestock waste for energy production in Cyprus.

Ms. Anthi Charalampous.

## December 2013

Drugs in the environment, knowledge and management of risks.

Dr. Christos Petrou.

## January 2014

Veterinary medicines in the terrestrial and aquatic environment.

Dr. Vassilis Litskas.

## February 2014

Jet Fuel recovery from shallow aquifers: An application of surfactant enhancement for fast and complete recovery of jet a fuel from sandy soils.

Dr. Konstantinos Kostarelos.

## March 2014

Coping with climate change: Highlighting the role and the impacts of wastewater reuse and plant priming.

Mr. Anastasis Christou.

## April 2014

Smart water networks.

Dr. Dimitris G. Eliades.

## May 2014

Wastewater reuse and environmental protection.

Dr. Ioannis K. Kalavrouziotis

## May 2014

Assessment of the occurrence of sulfonamides and trimethoprim residues in treated wastewater in Tunisia.

Mr. Bilel Moslah.

## June 2014

Flood Barrier Technology for living with the floods.

Dr. Antonis Toumazis.





## Academic Year 2012 - 2013

### October 2012

Cyprus: A geological wonder; An introduction to geology focusing on the formation of the island.

Mr. Toumazis Toumazi.

### November 2012

The use of Chemometrice in food and drinks authenticity certification.

Dr. Rebecca Kokkinofta-Diogenous.

### December 2012

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.

Dr. Luigi Rizzo.

### January 2013

Ozonation as a tool to improve the quality of municipal wastewater effluent.

Dr. Zacharias Frontistis.

### February 2013

Spectrophotometric micro-determination of Iron and Cobalt in plant and animal reference materials using Acod Alizarin Violet-N as a chromogenic reagent.

Mr. Anastasios Palios.

### March 2013

Endocrine disrupting substances in some consumer products in Cyprus-The case of bisphenol A and phthalate esters- low vs. high concentrations.

Dr. Eleni Ioannou Kakouri.

### March 2013

Reliability assesment of urban water distribution networks under seismic loads.

Dr. Michalis Fragiadakis.

### April 2013

Identification of bacterial species present in the biofilm of a Moving Bed Biofilm Reactor (MBBR).

Dr. Evdokia Kastanou Kasini.

### May 2013

The water footprint of crop production and supply utilization of Cyprus.

Mr. Christos Zoumides.

### June 2013

Urban water distribution networks modeling and optimization of leakage detection via wireless sensors.

Mr. Agathoklis Agathokleous.

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## Academic Year 2011 - 2012

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### September 2011

Destruction of cyanotoxins in water using homogeneous and heterogeneous advanced oxidation technologies and nanotechnologies.

Prof. Dionysios Dionysiou.

### October 2011

The importance of protection of marine mammals in America: Present status and future research topics.

Mr. Oswaldo Emiddio Vasquez Ravelo.

### November 2011

Methods for estimating open water evaporation.

Dr. Evgeny Votyakov.

### December 2011

An integrated numerical simulation tool for the monitoring and prediction of saltwater intrusion of coastal aquifers in response to human activity and other parameters.

Dr. Xavier Albets.

### January 2012

Monitoring the water quality by advanced biological assays.

Ms. Marlen Ines Vasquez.

### February 2012

Performance assessment and optimization of secondary settling tasks using CFD modeling.

Dr. Savvas Xanthos.

### March 2012

Applied technologies for small-scale sewage treatment plants in Cyprus.

Mr. Stathis Kyriakou.

### April 2012

Statistical analysis of groundwater and slate samples with special influences on rare earth elements.

Mrs. Anahita Pourjabbar.

### April 2012

Fourteen years operating experience of the Dhekelia Desalination Plant (DDP).

Mrs. Olga Villa Sallangos.

### June 2012

Improving groundwater levels; Bargaining and devolution in the upper Guadiana basin.

Dr. Carmen Marchiori.

### June 2012

Applying the virtual water concept for sustainable water management policies.

Dr. Theodoros Zachariades.

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# Participation in Evaluation Committees of Science Competitions



Limassol, Cyprus, 2011-2020

**Stockholm Junior Water Prize International Competition.**

Organized by the Water Museum Limassol Water Board.

**MEMBERS OF THE NATIONAL EVALUATION COMMITTEE:** Prof. Despo Fatta-Kassinou (2015, 2018), Prof. Symeon Christodoulou (2011-2014, 2017, 2018), Dr. Irene Kordatou (2019), Dr. Agathoklis Agathokleous (2016), Dr. Kyriakos Manoli (2021).





Nicosia, Cyprus, 27 September 2013

## S-Factor 2013

Organized by the Research Promotion Foundation in the framework of the “Researchers’ Night”.

**MEMBER OF THE EVALUATION COMMITTEE:** Prof. Despo Fatta-Kassinou.

Nicosia, Cyprus, 2013

## FAMELAB

**MEMBER OF THE NATIONAL EVALUATION COMMITTEE:** Prof. Despo Fatta-Kassinou.



# Participation in Science Events

## Researchers' Night

The "Researchers' Night" is a creative evening dedicated to science and research, during which audiences of all ages have the opportunity to get in touch with the researchers and to be informed about their work, in a festive and friendly atmosphere. The event is organized by the Cyprus Foundation for Research and Innovation. Researchers present their work and inform the public about the role and importance of research in the modern world, demonstrating the impact of science and its applications in everyday life. At the same time, the public has the opportunity to engage in interactive experiments and games, and young and old can become "researchers" for one night! The event is an initiative of the European Commission and takes place simultaneously in almost all European countries.



## 2019 - Waterologists

A unique presentation of the book "The Secret Book of the Blue Circle" at the "Researchers' Night", September 27, 2019. Theatrical performance "A Journey to the Blue Circle".







## 2017 - Flow along

“Researchers’ Night 2017” held at the Cyprus Expo in Nicosia on September 29, 2017. The Nireas-IWRC team presented two activities: an illustrated interactive story-game explaining the evolution of antibiotic resistance and its spread into the environment and an interactive quiz game with questions related with the water, wastewater reuse, antibiotics, antibiotic resistance etc.







## 2016 - Drops of Life

"Researchers' Night 2016" under the title "Research ∞ Unlimited" held at the Filoxenia Conference Center in Nicosia on September 30, 2016.



## 2014 - Nireas-IWRC, University of Cyprus

"Researchers' Night 2013" held at the Filoxenia Conference Center in Nicosia on November 28, 2014.



## 2013 - Water - Source of Life

On Friday, September 27, 2013, the Nireas-International Water Research Center participated in the "Researchers' Night" that took place in Limassol. At the stand of the Research Center, visitors were informed through various activities about the properties of water, soil erosion, the processes of removal of organic matter from wastewater and the assessment of the toxicity of water samples. They were also informed about the monitoring of cohesive turbulent flow structures created by turbulent ripples on the seabed surface with the help of computational models as well as about models for determining water loss points in underground drinking water transmission systems.

**The stand of the Research Center was ranked first, as the most popular one based on public voting, among a total of 45.**



# Nireas in the News and Social Media

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ΕΛΛΗΝΙΚΗ ΜΟΥΣΙΚΗ - ΕΝΤΕΧΝΗ ΜΟΥΣΙΚΗ - ΞΕΝΗ ΜΟΥΣΙΚΗ - SHOWBIZ - CINEMA - ΘΕΑΤΡΟ - ΤΑΞΙΔΙΑ - MEDIA - RADIO - TV - ΣΥΝΕΤΕΥΞΕΙΣ - FASHION - FITNESS - ΖΩΔΙΑ - ΥΓΕΙΑ

## Νέο πρωτοπόρο επιστημονικό πεδίο για την Κύπρο «ανοίγει» το Διεθνές Ερευνητικό Κέντρο Νερού «Νηρέας» του Πανεπιστημίου Κύπρου για τον προσδιορισμό μικροπλαστικών και νανοπλαστικών σε αστικά λύματα και στο περιβάλλον

By Νίκος Παπαναστασίου - 04/09/2019



Studio shoot of microplastics from water samples taken by manta trawl (mesh size: 300µm) in different German rivers onboard the Beluga II (period: April-June 2016). Mikroplastik in Proben aus verschiedenen Deutschen Flüssen.

Σε πρωτοπόρα έρευνα για την κατανόηση της διασποράς και της κατάληξης των μικροπλαστικών και νανοπλαστικών (MNPs) συμμετέχουν στο περιβάλλον μέσω της απόρριψης των επεξεργασμένων αστικών λυμάτων σε αυτό ή μέσω της επαναστασιασμένης τους για διάφορους σκοπούς (π.χ. άρδευση καλλιεργειών, εμπλουτισμός υδροφορέων) και της πιθανής συσχέτισής τους με πιθανούς περιβαλλοντικούς κινδύνους, συμμετέχει το Διεθνές Ερευνητικό Κέντρο Νερού «Νηρέας» του Πανεπιστημίου Κύπρου (Nireas-IWRC).

Πρόκειται για το ερευνητικό πρόγραμμα με το ακρωνύμιο **NANO-CARRIERS: "Micro- and nanoplastics as carriers for the spread of chemicals and antibiotic resistance in the aquatic environment"**, στο οποίο συμμετέχει ως εταίρος το Ερευνητικό Κέντρο Νερού «Νηρέας» και το οποίο επιλέχθηκε για χρηματοδότηση μέσα από μία άκρως ανταγωνιστική διαδικασία υποβολής προτάσεων στο πλαίσιο του Ευρωπαϊκού Δικτύου IC4WATER της Πρωτοβουλίας Κοινού Προγραμματισμού «Water Challenges for a Changing World», στο οποίο συμμετέχει το Ίδρυμα Έρευνας και Καινοτομίας (IISDK) μαζί με άλλους ευρωπαϊκούς χρηματοδοτικούς οργανισμούς έρευνας. Συνολικά 67 ερευνητικές προτάσεις υποβλήθηκαν στο πρώτο στάδιο εκ των οποίων 37 προχώρησαν στο δεύτερο στάδιο και 8 έργα επιλέχθηκαν για χρηματοδότηση.

Το έργο NANO-CARRIERS στοχεύει στην αξιολόγηση της τύχης μικροπλαστικών και νανοπλαστικών (MNPs) στο περιβάλλον καθώς και ρύπων αναδυόμενου ενδιαφέροντος, συμπεριλαμβανομένου και γενετικού υλικού (DNA, γονίδια) που προσροφώνται σε αυτό, μέσω της εφαρμογής σχεδίου δειγματοληψίας αστικών λυμάτων και νερών σε περιοχές (Νότια Αφρική, Μεσόγειο, Αρκτική) που χαρακτηρίζονται από διαφορετικά χαρακτηριστικά (γεωμορφολογικά, κλιματικά, κοινωνικοοικονομικά) και που εφαρμόζουν διαφορετικές τεχνολογίες στην επεξεργασία αστικών λυμάτων και διαφορετικές πρακτικές επαναστασιασμένης.

ΦΙΛΑΞΕΥΘΕΡΟΣ

ημερομηνία: 23/10/2016, από σελίδα 22

## Διεθνές Ερευνητικό Κέντρο Νερού Νηρέας

«Ανάπτυξη έρευνας και αειφόρος ανάπτυξη υδάτινων πόρων από το Πανεπιστήμιο Κύπρου

**Ο** Νηρέας διεξάγει επιστημονική έρευνα στην οποία τα θέματα που διέπουν την αειφόρο διαχείριση του νερού, έχουν επιδείξει διαρκώς, μεγάλο αριθμό επιστημονικών έργων και εξοπλισμού ανταγωνιστικών κοινών χρηματοδοτήσεων από την ΕΕ, καθώς και ένα διεθνές δίκτυο συνεργασιών στο χώρο της ακαδημαϊκής κοινότητας και της βιομηχανίας. Το Διεθνές Ερευνητικό Κέντρο Νερού Νηρέας του Πανεπιστημίου Κύπρου (Nireas IWRC) ιδρύθηκε το 2011 με γενικό στόχο την ανάπτυξη έρευνας υψηλών προδιαγραφών σε θέματα που αφορούν στην αειφόρο διαχείριση των υδάτινων πόρων (παροχή, έλεγχος ποιότητας, επεξεργασία και επαναχρησιμοποίηση νερού, κ.λπ.). Το Ερευνητικό Κέντρο αποτελείται από ένα από τα περιφερειακά έργα που ανακηρύχθηκαν από το Ευρωπαϊκό Ταμείο Περιφερειακής Ανάπτυξης και την Κυπριακή Δημοκρατία μέσω του Ιδρύματος Προώθησης Έρευνας (IPE) καθώς και το Πανεπιστήμιο Κύπρου, μέσα από ανταγωνιστική διαδικασία υποβολής προτάσεων. Διευθυντής του είναι η Δόξα Φάτμα Κόντου, αναπληρώτρια καθηγήτρια του Τμήματος Πολιτικών Μηχανικών και Μηχανικών Περιβάλλοντος.

Ο Νηρέας είναι το πρώτο Ερευνητικό Κέντρο Νερού που ιδρύθηκε και λειτουργεί στην Κύπρο και δραστηριοποιείται σε ένα ευρύ φάσμα τομέων στην παροχή μικροϋμένων και μικροοργανισμών στα φυσικά νερά και στα αστικά λύματα, στην εφαρμογή προηγμένων μεθόδων επεξεργασίας αστικών λυμάτων, στη διερεύνηση διασποράς νερού στο υπόγειο νερό, στην απόληξη νερού από την εξέλιξη σε χώρους συλλογής νερού και υποδομή, στα αστικά δίκτυα διανομής νερού, στο σχεδιασμό και εγκατάσταση συστημάτων για την ανανέωση επιφανειακού νερού, στην επαναχρησιμοποίηση των επεξεργασμένων αστικών λυμάτων και στις τρέχουσες προκλήσεις που αντιμετωπίζει αυτή την πρακτική, κ.λπ.

Στο Κέντρο διεξάγεται υψηλό επίπεδο βασική και εφαρμοσμένη έρευνα για την παραγωγή νέας γνώσης και τεχνολογίας και αναπτύσσονται σημαντικές εκπαιδευτικές δραστηριότητες για τη μεταφορά τεχνολογίας στην ακαδημαϊκή κοινότητα και οι φυσικοί/δημόσιοι φορείς για την επίλυση κοινωνικών και οικονομικών προβλημάτων σχετικών με τη διαχείριση νερού, υγρών αποβλήτων και αστικών λυμάτων.

Ο Νηρέας αποτελείται από τέσσερο ερευνητικά εργαστήρια:

(α) **ΓΙΑ** - Εργαστήριο Μικροβίων Περιβάλλοντος το οποίο διευθύνεται από τη διευθύντρια του Ερε-

υντηκού Κέντρου Δρα. Δόξα Φάτμα Κόντου  
(β) **ΕΠΙΛΕΞΕ** - Εργαστήριο Κοινωνικών Έργων και Διακρίσεων Υδάτινων Δικτύων το οποίο ηγείται από τον αναπληρωτή καθηγητή του Τμήματος Πολιτικών Μηχανικών και Μηχανικών Περιβάλλοντος του Πανεπιστημίου Κύπρου Δρα. Σπύρο Χριστοδουλάκη.

(γ) **UCY-Campsi** - Εργαστήριο Υπολογιστικής Μικροβιολογίας υπό τη διεύθυνση του αναπληρωτή καθηγητή του Τμήματος Μικροβιολογίας και Κατοικουριστικής του Πανεπιστημίου Κύπρου Δρα. Σπύρου Κόντου, και

(δ) **Subsurface Research Lab (SRL)** - Ερευνητικό Εργαστήριο Υπερδύσας του υπό τη διεύθυνση του καθηγητή του Τμήματος Πολιτικών Μηχανικών και Μηχανικών Περιβάλλοντος του Πανεπιστημίου Κύπρου Δρα. Πάνου Παπαναστασίου. Τα Εργαστήρια του Νηρέα διαθέτουν εξοπλισμό υψηλής τεχνολογίας συμπεριλαμβανομένου αναλυτικού εξοπλισμού για τον προσδιορισμό της ποιότητας νερού, εργατηριακούς/πλοιακούς αντιδραστήρες για την επεξεργασία υγρών αποβλήτων και αστικών λυμάτων, πλοιακό δίκτυο αγωγών παροχής νερού σε αστικό περιβάλλον, συστήματα υπολογιστικών κόμβων (clusters), κ.λπ. Ενδεικτικά, αναφέρεται ότι τα τελευταία πέντε χρόνια, έχουν αποσπασθεί στον Νηρέα 35 ερευνητές και 40 μεταπτυχιακοί και 15 διδακτορικοί διπλωματούχοι σε ειδικότητες ανάμεσα σε άλλα στα: βιολογία, χημεία, φυσική, χημική μηχανική, μηχανική περιβάλλοντος, πολιτική μηχανική και μηχανολογία. Η πολυεθνικότητα των επιστημονικών πεδίων που ανευρίσκονται στο Κέντρο και συνδυάζονται από τα τέσσερα εργαστήρια του είναι μοναδική και οδηγεί σε επιστημονική αριστεία. Με κίνητριά είναι η διερεύνηση του προσωπικού το οποίο διαθέτει υψηλό επίπεδο κατάρτισης, ο Νηρέας συνιστά το πρωτοπόρο ερευνητικό και εκπαιδευτικό έργο για την προώθηση επιστημονικών γνώσεων στο τομέα της αειφόρου διαχείρισης του νερού.

### Συμμετοχή σε προγράμματα

Λόγω της διεθνούς γύρω της Κέντρου Νηρέας αποτελεί η επιτυχία σε ανταγωνιστικά ερευνητικά προγράμματα έρευνας και ανάπτυξης, χρηματοδοτούμενα από την ΕΕ ή/και το ΙΠΕ, στα οποία συμμετέχει είτε ως συντονιστής είτε ως εταίρος, καθώς και ο μεγάλος αριθμός επιστημονικών δημοσιεύσεων σε υψηλής απόδοσης διεθνή επιστημονικά περιοδικά και συνέδρια. Ο Νηρέας έχει προσελκύσει μέχρι στιγμής ερευνητικά προγράμματα με συνολικό προϋπολογισμό που ανέρχεται περίπου στα 12 εκατομμύρια Ευρώ. Μέσα από τα ερευνητικά έργα ο Νηρέας έχει

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News/Local/Παλ. Κύπρου Έρευνα για αντιβιοτικά στα αστικά λύματα

## Παν. Κύπρου: Έρευνα για αντιβιοτικά στα αστικά λύματα

12.11.2014 11:11 **Kypros**

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Σε πρωτοπόρο έρευνα για τον προσδιορισμό αντιβιοτικών και βακτηρίων/γονιδίων ανθεκτικών σε αντιβιοτικά, σε αστικά λύματα στην Ευρώπη, συμμετέχει το Διεθνές Ερευνητικό Κέντρο Νερού - «Νηρέας» του Πανεπιστημίου Κύπρου.

Όπως αναφέρεται σε σχετική ανακοίνωση, πρόκειται για το έργο με τίτλο «StARE - Stopping antibiotic Resistance Evolution», το οποίο έχει ως στόχο να δώσει τεκμηριωμένες απαντήσεις αναφορικά με την παρουσία αντιβιοτικών και ανθεκτικών βακτηρίων/γονιδίων στα επεξεργασμένα αστικά λύματα διαφόρων ευρωπαϊκών χωρών και την εφαρμογή αποδοτικών και οικονομικά βιώσιμων προηγμένων τεχνολογιών για την απομάκρυνσή τους έτσι ώστε να είναι δυνατή η ασφαλής διάθεσή τους στο περιβάλλον.

## Κύπρος, Κυβέρνηση, Κυβερνητικός Εκπρόσωπος

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ΕΠΙΣΤΗΜΗ

Τριμερής Συνάντηση Προέδρων των Κοινοβουλίων Κύπρου – Ελλάδας – Ισραήλ



Τριμερής Συνάντηση Προέδρων των Κοινοβουλίων Κύπρου – Ελλάδας – Ισραήλ

Πραγματοποιείται μεθυσία Πέμπτη, 2 Νοεμβρίου 2017, η 2η Τριμερής Συνάντηση των Προέδρων των Κοινοβουλίων Κύπρου, Ελλάδας, Ισραήλ, την οποία θα φιλοξενήσει η Βουλή των Αντιπροσώπων. Στη Συνάντηση συμμετέχουν ο Πρόεδρος της Βουλής των Αντιπροσώπων κ. Δημήτρης Συλλαούρας, ο Πρόεδρος της Βουλής των Ελλήνων κ. Νικόλαος Βούτσικος και ο Πρόεδρος της Κnesset κ. Yuvi Yosi Eshelstein, συνοδευόμενοι από το νέο Πρόεδρο της Ομάδας Φίλων Ισραήλ-Κύπρου στην Κnesset κ. Yaron Margi. Από κυπριακή πλευρά, θα παραστούν οι Βουλευτές κ.κ. Ανδρέας Κανελακός, Άγγελος Βώσιος, Νίκος Νουφής, Δημήτρης Δημητρίου, Μάκης Γιωργιάλλας και Χαράλαμπος Φιλίππου, μέλη των Ομάδων Εργασίας που συνδέθηκαν στο πλαίσιο αυτή. Παρόντες επίσης θα είναι ο Πρόεδρος της Ελλάδας κ. Κίλις Φωτόπουλος και ο Επίτιμος Πρόεδρος της Ισραήλ κ. Sami Abu Janeb.

Τις εργασίες της 2ης Τριμερής Συνάντησης θα απασχολήσουν γενικότερα θέματα συνεργασίας μεταξύ των Κοινοβουλίων των τριών χωρών, καθώς και θέματα που αφορούν ιδιαίτερα στους υδάτινους πόρους και στην επιχειρηματικότητα, έρευνα, καινοτομία και εκπαίδευση.

Στο πλαίσιο αύξησης των συγκαταρκτών θεμάτων, προσκλήθηκαν να συμμετάσχουν με σχετικές παρουσιάσεις τους εμπειρογνώμονες, επίσης μέλη των Ομάδων Εργασίας: Στην ενότητα για τους υδάτινους πόρους, θα γίνει εισήγηση από τη Δρα Δέσπω Φάττα Κόσσιου, Αναπληρώτρια Καθηγήτρια, Τμήμα Πολιτικών Μηχανικών και Μηχανικών Περιβάλλοντος, Διευθύντρια του Διεθνούς Ερευνητικού Κέντρου Νερού «Νηρέας», Πανεπιστήμιο Κύπρου, με θέμα «Εναρμόνιση πολιτικής αστικής λυμάτων στη γεωργία και τράχυνος προκλήσεις σε σχέση με τους πόρους αναδύμενου ενδιαφέροντος». Θα παρουσιαστεί επίσης εισήγηση από τη Δρα Στέλλα Γεωργίου, Επίκουρη Καθηγήτρια Τεχνολογικού Πανεπιστημίου Κύπρου, Σχολή Μηχανικής και Τεχνολογίας, Υπερθεωρία Εκπαίδευσης EIT RIS Climate-KIC στην Κύπρο, με θέμα «Οδικός Κόσμος για τη δημιουργία κόμβου κλιματικής καινοτομίας στην Κύπρο».

Στην ενότητα για την επιχειρηματικότητα, έρευνα, καινοτομία και εκπαίδευση, η Δρα Ιωάννα Κλεάνθους, Διευθύντρια Προγραμματισμού, Διεύθυνση Έρευνας, Καινοτομίας και Δια Βίου Μάθησης, Γενική Διεύθυνση Ευρωπαϊκών Προγραμμάτων, Συντονισμός και Ανάπτυξη, θα παρουσιάσει εισήγηση της με θέμα «Ευκαιρίες Τριμερής Συνεργασίας Κύπρου, Ελλάδας, Ισραήλ σε θέματα εκπαίδευσης, έρευνας και καινοτομίας». Ο Δρ Μάριος Δ. Δικαίος, Καθηγητής Πληροφορικής, Διευθυντής του Κέντρου Επεξεργασίας, Πανεπιστήμιο Κύπρου, θα αναπτύξει το θέμα «Η τριμερής συνεργασία Κύπρου, Ελλάδας, Ισραήλ σε θέματα έρευνας, καινοτομίας και επιχειρηματικότητας υπό το πρίσμα των διεθνών καλών πρακτικών».

Την έναρξη των εργασιών της Συνάντησης θα κηρύξει ο Πρόεδρος της Βουλής των Αντιπροσώπων κ. Δημήτρης Συλλαούρας, στις 9.00 π.μ. Οι εργασίες θα ολοκληρωθούν

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## Ερευνήτρια του Κέντρου Νερού Νηρέας σε Πανεπιστήμιο της Αυστραλίας για διεξαγωγή έρευνας

Στο πλαίσιο υλοποίησης ερευνητικού έργου για την ανθεκτικότητα των βακτηρίων στα ανθρωπίνια, στο οποίο συμμετέχει το Διεθνές Ερευνητικό Κέντρο Νερού Νηρέας του Πανεπιστημίου Κύπρου

Το Ινστιτούτο Μέλλοντος Βιομηχανιών (Future Industries Institute) του Πανεπιστημίου της Νότιας Αυστραλίας, στην Αδελαΐδα, φιλοξενεί την κ. Στέλλα Μισαήλ ως ερευνήτρια για την καλοκαιρινή περίοδο Ιουλίου-Αυγούστου 2018. Η κ. Μισαήλ είναι υποψήφια διδάκτορας του Τμήματος Πολιτικών Μηχανικών και Μηχανικών Περιβάλλοντος και ερευνήτρια του Διεθνούς Ερευνητικού Κέντρου Νερού Νηρέας του Πανεπιστημίου Κύπρου. Στόχος είναι η διεξαγωγή έρευνας για τις ανάγκες του ερευνητικού έργου με τίτλο «Transfer and control of antibiotic-resistant bacteria and their genes during wastewater treatment and reuse» (IRGP 45), το οποίο χρηματοδοτείται από την κυβέρνηση της Αυστραλίας μέσω του South Australian Premier's Research and Innovation Fund.

Το έργο αφορά στην ύπαρξη μικροβιακής αντοχής στα αστικά λύματα καθώς και στη μεταφορά της στο περιβάλλον μέσω βακτηρίων και γονιδίων κατά την τελική διάθεση ή επαναχρησιμοποίηση των αστικών λυμάτων. Το γενικό συντονισμό του ερευνητικού έργου έχει η Αναπληρώτρια Καθηγήτρια του Πανεπιστημίου της Νότιας Αυστραλίας, Δρ. Erica Donner, ενώ η συντονίστρια από πλευράς Κύπρου είναι η Αναπληρώτρια Καθηγήτρια του Τμήματος Πολιτικών Μηχανικών και Μηχανικών Περιβάλλοντος του Πανεπιστημίου Κύπρου και Διευθύντρια του Διεθνούς Ερευνητικού Κέντρου Νηρέας του Πανεπιστημίου Κύπρου, Δρ. Δέσπω Φάττα-Κάσσιου.

Η κ. Μισαήλ εκπαιδεύεται σε τεχνικές μοριακής βιολογίας και στη χρήση εξοπλισμού προηγμένης τεχνολογίας για τον προσδιορισμό της συγγενικότητας διαφόρων γονιδίων σε δείγματα επεξεργασμένων αστικών λυμάτων. Η έρευνα εστιάζει στην απομείωση ρύπων αναδύμενου ενδιαφέροντος, όπως υπολείμματα αντιβιοτικών, βακτήρια ανθεκτικά σε κάποια αντιβιοτικά και γονίδια που φέρουν ανθεκτικότητα, από τα δευτεροβάθμια επεξεργασμένα αστικά λύματα με τη χρήση προηγμένων διαγραμμάτων χημικής αερίωσης και συστημάτων μίξινγκ. Επιπλέον, γίνεται προσπάθεια για αναγνώριση των πλέον διαδεδομένων ή/και επικίνδυνων παθογόνων μικροοργανισμών, ανθεκτικών βακτηρίων και γονιδίων που έχουν την ικανότητα να επιβιώνουν της επεξεργασίας, να «επιμένουν» δηλαδή και να πολλαπλασιάζονται στο περιβάλλον. Η ανάπτυξη και η μεταβίβαση νέων συνδυασμών γονιδίων ανθεκτικότητας είναι ιδιαίτερα πιθανό να εμφανιστεί σε τέτοια περιβάλλοντα, καθώς τα περιβαλλοντικά βακτήρια και τα βακτήρια που προέρχονται από τον άνθρωπο βρίσκονται σε στενή επαφή και συνυπάρχουν με μικρές συγκεντρώσεις αντιβιοτικών.

Για να επιτευχθούν οι στόχοι της ερευνητικής εργασίας, πραγματοποιήθηκαν περάσματα χημικής οξείδωσης, χρησιμοποιώντας δευτεροβάθμια επεξεργασμένα αστικά λύματα, σε πυλινικές μονάδες που βρίσκονται στις εγκαταστάσεις του Πανεπιστημίου Κύπρου. Ακολούθως, τα γονιδιωμικά DNA των δειγμάτων που συλλεχθήκαν κατά τη διάρκεια των επεξεργασιών μεταφέρθηκαν στο Πανεπιστήμιο της Νότιας Αυστραλίας για τον προσδιορισμό γονιδίων που φέρουν ανθεκτικότητα σε ορισμένα αντιβιοτικά (π.χ. 16S rRNA, sul1, qnrS, tetM, blaTEM, blaSHV, κ.λ.π.) και παθογόνων μικροοργανισμών (π.χ. Pseudomonas aeruginosa, Enterococcus faecalis, Legionella spp., κ.λ.π.) χρησιμοποιώντας ποσοτικές μεθόδους αλυσικής αντίδρασης πολυμεράσης (PCR) πραγματικού χρόνου (LightCycler 480 Instrument II, Roche) και QX200 Droplet Digital PCR™ (BIO-RAD). Στόχος είναι να διαφανεί εάν τα συγκεκριμένα γονίδια είναι περισσότερο ή λιγότερο διαδεδομένα στα παθογόνα βακτήρια που περιέχονται στα επεξεργασμένα αστικά λύματα.

## Football news:

Oleg Ivanov is on Krasnozhan came in Akhmat a Fan of red. After working with the weights, we could barely move on the field. Pochettino after 4-1 at Camp Nou: Don't be too cocky. PSG are waiting for the second leg. Moise Keane on 4-1 at Camp Nou: I will remember this match for a long time. Italian journalist on Miranchuk: More of a flash player than a leader. Gasperini needs stability. Director of Wings: The situation with the field in Khimki alarming, but to carry the game now where. Frankie de Jong on the chances of passing PSG: It will be hard, but we will try. Marcel Sabitzer: Of Leipzig there is an opportunity to Liverpool. We have a great team.

SOURCE <http://www.paidiaia-news.com/index.php?id=109&id=31437&url=%25CE%2595...>

**CyprusNews.eu**  
Όλες οι Κυπριακές εφημερίδες και οι τελευταίες ειδήσεις

Κύπρος, Ελλάδα, Ευρώπη, Κόσμος, Οικονομία, Αθλητισμός, Επιστήμη, Υγεία

Abates, CyprusViews, Αρθρογράφος, Voices&Echoes, Δελτία Τύπου, Ραδιόφωνο, Τηλεόραση

προσφέρει προνομιακά επιτόκια ...

ΚΥΠΡΙΑΚΗ ΤΡΑΠΕΖΑ ΑΝΑΠΤΥΞΕΩΣ cdbbank

ΤΗΛΕΦΩΝΟ 8000 79 79

παιδεία news

Νηρέας ΙΚ: Έναρξη εργασιών έργου Marie Skłodowska-Curie- ITN με προϋπολογισμό 3,7 εκατομ. ευρώ

Δευτέρα, 11 Ιανουαρίου 2018

Twitter, Facebook, LinkedIn, Share

ΚΥΠΡΙΑΚΗ ΤΡΑΠΕΖΑ ΑΝΑΠΤΥΞΕΩΣ cdbbank

Με συντονίστρια την Δέσπω Φάττα-Κάσσιου του Πανεπιστημίου Κύπρου, Μεγάλη Δέσφα υποστηρίζει η Έκτακτη για χρηματοδότηση, από την Ευρωπαϊκή Επιτροπή, της ερευνητικής πρότασης που υπέβαλε η Διεύθυνση του Διεθνούς...

Διαβάστε Περισσότερα...

## Nireas International Water Research Center

December 12, 2020 ·

Έναρξη συνεργασίας του Συμβουλίου Αποχετεύσεων Λεμεσού-Αμαθούνας (ΣΑΛΑ) με το Διεθνές Ερευνητικό Κέντρο Νερού Νηρέας του Πανεπιστημίου Κύπρου για τον εντοπισμό του γενετικού υλικού του κορωνοϊού SARS-CoV-2 στα αστικά λύματα και την ανάπτυξη εργαλείου για την έγκαιρη πρόβλεψη της εξάπλωσης του.

Πανεπιστήμιο Κύπρου | University Of Cyprus

Για περισσότερες πληροφορίες

<https://www.youtube.com/watch?v=DQWrx5njmX0>

Launch of cooperation between Limassol-Amathounta Sewerage Council (SALA) with the International Nereas Water Research Center of the University of Cyprus to identify the genetic material of the SARS-CoV-2 in urban waste water and the development of a tool for early forecasting of its spread. @j353960964687861:274:Πανεπιστήμιο Κύπρου | University Of Cyprus) For more information <https://www.youtube.com/watch?v=DQWrx5njmX0>

Translated

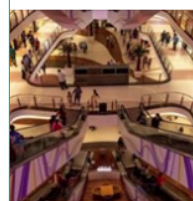


YOUTUBE.COM

Συνεργασία ΣΑΛΑ - Πανεπιστημίου Κύπρου: Covid στα λύματα  
ΕΝΑΡΞΗ ΣΥΝΕΡΓΑΣΙΑΣ ΣΑΛΑ – ΠΑΝΕΠΙΣΤΗΜΙΟΥ ΚΥΠΡΟΥ ΠΑ...

## Nireas International Water Research Center

December 15, 2020 ·



M.KATHIMERINI.COM.CY

Έναρξη Συνεργασίας ΣΑΛΑ - Πανεπιστημίου Κύπρου για εντοπισμό γενετικού υλικού κορωνοϊού στα λύματα  
Το Συμβούλιο Αποχετεύσεων Λεμεσού – Αμαθούνας (ΣΑΛΑ) και το Διεθνές Ερευνητικό...



Εκπαιδευτικό σεμινάριο στη Σλοβακία  
για το ερευνητικό έργο ANSWER που συντονίζει  
το Διεθνές Ερευνητικό Κέντρο Νερού Νηρέας

της Βασιλέως Μητροπόλεως, Υπομήφτος Διδάκτωρ, Δ.  
Εμπειρογνώμης Κέντρου Αθηνών Αθηνών

[illegible]

Το γράφο αποτελείται από δύο σύνολα: ένα σύνολο  $V$  από κόμβους και ένα σύνολο  $E$  από ακμές. Οι κόμβοι είναι σημεία και οι ακμές είναι ευθύγραμμα τμήματα που συνδέουν τους κόμβους. Το γράφο ορίζεται ως  $G = (V, E)$ . Οι κόμβοι είναι σημεία και οι ακμές είναι ευθύγραμμα τμήματα που συνδέουν τους κόμβους. Το γράφο ορίζεται ως  $G = (V, E)$ . Οι κόμβοι είναι σημεία και οι ακμές είναι ευθύγραμμα τμήματα που συνδέουν τους κόμβους. Το γράφο ορίζεται ως  $G = (V, E)$ .

[illegible]

να επιβιώσουν οι γυναικες τους στις τεχνικές εργο-  
κατασκευές καταβύθιστων δομημάτων και της υπέρθε-  
σης χωματωσώσεων, συζητώντας με φυσιοματζίκο μέ-  
λος.

«... η επιβάρυνση των τριών κρήνηφρων και κτηνοτρόφων με-  
ντινός, κοφίως και υπολογιστικά ερμηνεία για την τόνωση/οίηση  
των αναβλασκίων και των ηρωϊστών μεσοσημειογράφου τους  
... η επιβάρυνση των τριών κρήνηφρων και κτηνοτρόφων με-  
ντινός, κοφίως και υπολογιστικά ερμηνεία για την τόνωση/οίηση  
των αναβλασκίων και των ηρωϊστών μεσοσημειογράφου τους

[illegible][illegible]

**ΚΩΝΣΤΑΝΤΟΣ** Ευρωπαϊκό Ινστιτούτο Κοινωνικών, Περιφερειακών και Γενετικών Επιστημών, Τμήμα Ε.Σ.Τ., Μέγαρα 2018

3

ΦΙΛΕΛΕΥΘΕΡΟΣ, 18.03.2011, Page 23, Size 680 cm<sup>2</sup>

# Μεγάλο άλμα στην έρευνα

Το Πανεπιστήμιο Κύπρου ανέλαβε τέσσερα στρατηγικά προγράμματα ύψους €5.000.000

ΤΗΣ ΕΥΑΓΓΕΛΙΑΣ ΣΙΖΟΠΟΥΛΟΥ

Η λήψη τεσσάρων σημαντικών ερευνητικών προγραμμάτων από το Μάρτιο Προέβλεψε Ερευνητικό (ΠΕ), ανακοινώθηκε επίσημα το Υπουργείο Κύπρου, επιβεβαιώνοντας ότι η συλλογή των χαρακτηριστικών και στις νέες θέσεις εργασίας, που θα είναι επίσης στις νέες επιπτώσεις και διδασκαλίας φοιτητές. Εξέφρασε με τον τρόπο τον το Πανεπιστήμιο Κύπρου Κανονιστική Κανονιστική, ο συνολικός προϋπολογισμός των τεσσάρων ερευνητικών προγραμμάτων επιπλέον των νέων τεσσάρων ευρώ και πρόσφατα για έργα που ενδέχεται να συλλέγονται στο ακόλουθο κείμενο:

➤ **Μελέτη Ερευνητικό Κύπρου Νευρο-απεικόνιση**

➤ **Ερευνητικό Κύπρου Τεχνολογία Ερευνητικό Σύστημα Κέντρο «ΚΟΙΟ»**

➤ **Μελέτη Ερευνητικό Μοριακή τεχνική**

➤ **Κέντρο Εφαρμοσμένης Νευροεπιστήμης και Νευροεπιστήμης Ερευνητικό**

Το εν λόγω ερευνητικό πρόγραμμα έχει ως αναλυτική από το Πανεπιστήμιο με μια άλλη σύσταση σημαντική φάση του οποίου αποτελεί ο Πρίσταν, καθώς το πρόγραμμα βρίσκεται σε μια ανώτερη ερευνητική φάση από τα οποία διακρίνεται το ερευνητικό πρόγραμμα στο Υπουργείο Κύπρου €5.500.000, και εργοδότης γίνεται

Ταυτάχρονα, ο κ. Χριστοφίδης ανέφερε πως η Σύγκλητος του Πανεπιστημίου αποφάσισε όπως προηβήθει στο Συμβούλιο του ιδρύματος την πρόταση της για δημιουργία Ινστιτούτου Έρευνας και Καινοτομίας.

«ΝΗΡΕΑΣ»

[illegible]

Συζήτηση για  
το Ίνστιτούτο  
Έρευνας και  
Καινοτομίας



ΠΟΛΙΤΗΣ, 18.3.2011

Ξεπερνά τα 5 εκατ. ευρώ ο προϋπολογισμός τους - Χρηματοδοτούνται από το Ίδρυμα Προώθησης Έρευνας

Στο Παν. Κύπρου άλλα 4 ερευνητικά προγράμματα

[illegible]

**Ερευνητική δραστηριότητα**

[illegible]

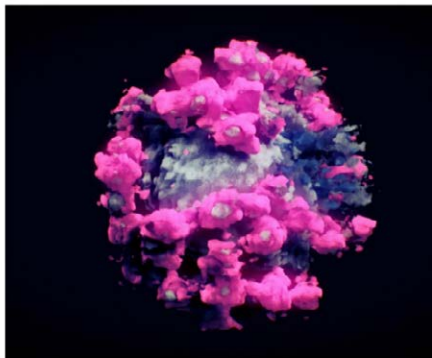
## Τα προγράμματα

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**in-cyprus**

**News :** Local : Significant increase in concentration of coronavirus genetic fragments in Ilıcaklı's waste water

### Significant increase in concentration of coronavirus genetic fragments in Limassol's waste water



Concentration of genetic fragments of the coronavirus SARS-CoV-2 records a statistically significant increase in Limassol's urban waste water in the last few months, according to the results of a scientific study carried out with the cooperation of the Sewerage Board of Limassol – Amathus (SALA) and the Nireas-International Water Research Center of the University of Cyprus.

The cooperation, announced last December, aims at studying SARS-CoV-2 genetic presence in Limassol's waste water and at developing a tool for a credible and timely prediction of the spread of COVID-19.

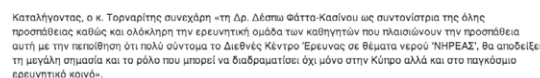
A SALA announcement, issued on Tuesday, says that results of this scientific work showed that fragments of two genomes of the virus were detected in urban waste water, in the broader Limassol area, during the months of January and February 2021. There is a statistically significant increase of the virus' genetic fragment concentration, which reaches a high point in the last day of the month, on February 28. It is added.

These results are corroborated by the extend of the virus' spread in this particular period, the announcement notes.

Cooperation between SALA and the Research Center aims at developing an observatory/ epidemiological surveillance system in the area, that may respond to various health emergencies, apart from the SARS-CoV-2 virus, the announcement concludes.



Η πρώτη φορά που η ανάλυση του γενετικού υλικού του ιού έδωσε θετική ένδειξη, ήταν μέσα στο πρώτο δεκαήμερο του Οκτωβρίου, αναφέρει η ανακοίνωση και σημειώνει πως «τα τελευταία δείγματα που αναλύθηκαν από το Πανεπιστήμιο Κύπρου ήταν στα μέσα



ΥΠΕΡΠΑΙΔΕΙΑΣ ▾ ΔΗΜΟΤΙΚΗ ▾ ΜΕΣΗ ▾ ΑΝΩΤΕΡΗ ▾ ΑΝΩΤΑΤΗ ▾ ΕΕΥ ▾ ΕΙΔΗΣΕΙΣ ▾ ΑΡΘΡΑ ▾ ΒΟΥΛΗ ▾ ΦΟΙΤΗΤΕΣ ▾ ΘΕΣΜΟΙ ▾

ΑΝΩΤΑΤΗ / Πανεπιστήμιο Κύπρου

/ 19 Mar 2019 - 09:35



Τα στοιχεία δείχνουν επίσης ότι στις περισσότερες Ευρωπαϊκές πόλεις υπάρχει αύξηση της αμπελαίνης ενώ τα επίπεδα της παρουσιάζουν σημαντικές διαφορές από πόλη σε πόλη. Οι υψηλότερες συγκεντρώσεις παρουσιάστηκαν σε πόλεις της Βόρειας και Ανατολικής Ευρώπης όπως είναι η Γερμανία, η Ισπανία και η Νορβηγία ενώ στις πόλεις της Νότιας Ευρώπης παρατηρήθηκαν χαμηλότερα επίπεδα.







## ΑΝΑΚΟΙΝΩΣΗ ΤΥΠΟΥ

Επικοινωνία:  
Γραφείο Επικοινωνίας  
Τομέας Προώθησης και Προβολής, Πανεπιστήμιο Κύπρου  
Τηλ. 22894304  
ηλ. διεύθυνση: [prinfo@ucy.ac.cy](mailto:prinfo@ucy.ac.cy)  
ιστοσελίδα: [www.ucy.ac.cy/pr](http://www.ucy.ac.cy/pr)

Λευκωσία, 28 Ιουλίου 2016

## ΕΠΙΤΥΧΗΜΕΝΗ ΔΙΟΡΓΑΝΣΗ ΘΕΡΙΝΟΥ ΣΧΟΛΕΙΟΥ ΑΠΟ ΤΟ ΔΙΕΘΝΕΣ ΕΡΕΥΝΗΤΙΚΟ ΚΕΝΤΡΟ ΝΗΡΕΑΣ ΣΤΟ ΠΛΑΙΣΙΟ ΤΟΥ ΕΡΕΥΝΗΤΙΚΟΥ ΕΡΓΟΥ ANSWER



Το Διεθνές Ερευνητικό Κέντρο Νερού Νηρέας, του Πανεπιστημίου Κύπρου, διοργάνωσε δεκάημερο θερινό σχολείο (Summer School) σχετικά με την επεξεργασία και επαναχρησιμοποίηση αστικών λυμάτων στο πλαίσιο του ερευνητικού έργου "Marie Skłodowska-Curie: Innovative Training Networks (ITN)" που εντάσσεται στο πρόγραμμα Ορίζοντας 2020, με τίτλο "Antibiotics

and mobile resistance elements in wastewater reuse applications: risks and innovative solutions (ANSWER)", (H2020-MSCA-ITN-2015/675530). Συντονίστρια του ερευνητικού έργου ANSWER είναι η διευθύντρια του Κέντρου, Δρ. Δέσπω Φάττα-Κάσινου, Αναπληρώτρια Καθηγήτρια του Τμήματος Πολιτικών Μηχανικών και Μηχανικών Περιβάλλοντος του Πανεπιστημίου Κύπρου.

Το θερινό σχολείο έλαβε χώρα στις 13-23 Ιουνίου, στις εγκαταστάσεις του Spanish National Research Council, στην Ισπανία (Βαρκελώνη). Στο πλαίσιο του σχολείου, μεταπτυχιακοί φοιτητές στον τομέα της Μηχανικής Περιβάλλοντος, Χημικής Μηχανικής, Χημείας και Μικροβιολογίας είχαν την ευκαιρία να παρακολουθήσουν ένα εντατικό και διαδραστικό πρόγραμμα διαλέξεων με θέματα σχετικά με την επαναχρησιμοποίηση των αστικών λυμάτων, τις τρέχουσες προκλήσεις και ευκαιρίες. Το θερινό σχολείο έφερε κοντά επιστήμονες και επαγγελματίες από τον ακαδημαϊκό και μη ακαδημαϊκό τομέα, από διάφορες χώρες του κόσμου, όπως Ευρώπη, Ηνωμένες Πολιτείες, Νότια Κορέα, Σγκαπούρη, κ.α., με αναγνωρισμένη εμπειρία στο συγκεκριμένο τομέα. Συγκεκριμένα, οι προσκεκλημένοι ομιλητές που έδωσαν διαλέξεις στο θερινό σχολείο ήταν από τα πιο κάτω πανεπιστήμια, ινστιτούτα και κυβερνητικούς φορείς: (1) Διεθνές Ερευνητικό Κέντρο

ΠΟΛΙΤΗΣ, 19.6.2011

## «Έλεγχος και Προστασία των υδάτινων πόρων από μικρούς μαθητές»

Στις 18 Ιουνίου 2011 πραγματοποιήθηκε από την ομάδα του Διεθνούς Ερευνητικού Κέντρου "NIREAS" και το Εργαστήριο Μηχανικής Περιβάλλοντος ΤΑΙΑ του Πανεπιστημίου Κύπρου βιολογική καθήλωση. Δρ. Δέσπω Φάττα-Κάσινου επιβλέποντας με θέμα "Έλεγχος και Προστασία των υδάτινων πόρων από μικρούς μαθητές".

Η διαδικασία πραγματοποιήθηκε στο πλαίσιο του διεθνούς εκπαιδευτικού προγράμματος World Water Monitoring Day, από την πύλη του οργανισμού Water Environment Federation και του International Water Association (IWA).

Πρόκειται για ένα διεθνές εκπαιδευτικό και ενημερωτικό πρόγραμμα με θέμα την προστασία των υδάτινων πόρων, που έχει ως στόχο την ενεργή συμμετοχή νηπίων ερευνητών στην παρακολούθηση της ποιότητας των υδάτινων σωμάτων. Στο πρόγραμμα συμμετέχουν γύρω στις 85 χώρες, παναφρικές, και είναι η δεύτερη συνεχόμενη χρονιά που λαμβάνει μέρος η Κύπρος.

Στη δραστηριότητα συμμετείχαν 30 παιδιά, ηλικίας 5-12 χρονών. Παρακολουθήσαν παρουσίαση και συζήτηση σχετικά με τη σημασία του νερού για τον άνθρωπο και τους βιώσιμους οικονομικούς και κοινωνικούς στόχους, η οποία ήταν αλληλεπιδραστική με τη συμμετοχή των παιδιών. Οι μικροί ερευνητές ενημερώθηκαν για τις διάφορες παραμέτρους ποιότητας νερού που θα τους ζητούνταν να μετρήσουν στη συνέχεια.

Το δεύτερο μέρος της εκδήλωσης περιλάμβανε μετάβαση των παιδιών στο Πάρκο "Άγιος Γεώργιος" της Αλάσκας, όπου πραγματοποιήθηκε δεξαμενή υδάτινου νερού από τη λίμνη. Τα παιδιά αρχικά μετρήσαν οπτικά την ποσότητα



της θολότητας του νερού της λίμνης, η οποία ήταν αλληλεπιδραστική με τη συμμετοχή των παιδιών. Τα παιδιά μετρήσαν την θολότητα, το διαλυμένο οξυγόνο και το pH του νερού, και παρατήρησαν ότι το ποσοστό του διαλυμένου οξυγόνου που υπάρχει στη λίμνη είναι μειωμένο, ενώ το pH είναι στην οδό της οξέωσης και το θρεπτικό σε φασματολογία για την εποχή επέμβα. Πριν την απόβαση του νερού φέρθηκαν από το χώρο του πάρκου, οι ομάδες εκπαιδευτικών εκπαιδευτικών, τους οποίους με τη καθοδήγηση της λίμνης και την ύπαρξη ζώων και φώτων

μέσω σε αυτή. Κατά το τέλος και τελευταίο μέρος της εκδήλωσης, τα παιδιά αποσκέπασαν τα εργαστήρια, όπου τους υπολογίστηκαν οι μέσες ορές των παρατηρήσεων που μετρήθηκαν και από τις 7 ομάδες των παιδιών, ενώ παρακολούθησαν με διαιρέτη ενδείκνουν τους υδροβιολογικούς μικροοργανισμούς που παρατηρήσαν μέσα στο νερό της λίμνης, με τη βοήθεια μικροσκοπίου υψηλής ευκρίνειας. Παράλληλα απαντήθηκαν στα παιδιά ποσοτικά συμπεράσματα στο συγκεκριμένο πρόγραμμα, καθώς και αναγνωρίστηκαν διακρίσεις. Το τελικό συμπέρασμα της εκδήλωσης αυτής, που ήταν και ο κύριος στόχος της, ήταν ότι επιδείχθηκε πως τα παιδιά μπορούν να συμμετάσχουν με ενεργό τρόπο σε τέτοιου είδους ερευνητικές δραστηριότητες, καθιστώντας για την προστασία του περιβάλλοντος. Το ενδιαφέρον τους και η ευαλωτότητα τους για να στην οδό της οξέωσης και το θρεπτικό σε φασματολογία για την εποχή επέμβα. Πριν την απόβαση του νερού φέρθηκαν από το χώρο του πάρκου, οι ομάδες εκπαιδευτικών εκπαιδευτικών, τους οποίους με τη καθοδήγηση της λίμνης και την ύπαρξη ζώων και φώτων μετρήσαν στο πρόγραμμα αυτό.



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ΥΠΕΛΕΓΧΕΣ - ΔΗΜΟΤΙΚΗ - ΜΕΣΗ - ΑΝΩΤΕΡΗ - ΑΝΩΤΑΤΗ - ΕΕΥ - ΕΙΔΗΣΕΙΣ - ΑΡΘΡΑ - ΒΟΥΛΗ - ΦΟΙΤΗΤΕΣ - ΘΕΣΜΟΙ -

ΑΝΩΤΑΤΗ / Πανεπιστήμιο Κύπρου

/ 11 Ιαν 2016 - 15:17



## Νηρέας ΠΚ: Έναρξη εργασιών έργου Marie Skłodowska-Curie- ITN με προϋπολογισμό 3,7 εκατομ. ευρώ

Με συντονίστρια την Δέσπω Φάττα-Κάσινου του Πανεπιστημίου Κύπρου

Μεγάλη διάκριση αποτελεί η έγκριση για χρηματοδότηση, από την Ευρωπαϊκή Επιτροπή, της ερευνητικής πρότασης που υπέβαλε η Διευθύντρια του Διεθνούς Ερευνητικού Κέντρου Νερού Νηρέας του Πανεπιστημίου Κύπρου, Δρ. Δέσπω Φάττα-Κάσινου, στο πλαίσιο της δράσης "Marie Skłodowska-Curie: Innovative Training Networks (ITN)" που εντάσσεται στο πρόγραμμα Ορίζοντας 2020 (H2020-MSCA-ITN-2015). Οι εργασίες του ερευνητικού έργου που έχει τίτλο "Antibiotics and mobile resistance elements in wastewater reuse applications: risks and innovative solutions (ANSWER)" ξεκίνησαν πρόσφατα μετά την έναρξη της συνάντησης των εταίρων του έργου στη Βιέννη (Technische Universität Wien) 28-29 Νοεμβρίου 2015 και ο συνολικός προϋπολογισμός του ανέρχεται στα €3,708,689.76. Είναι ένα από τα μεγαλύτερα έργα που έχει αναλάβει ποτέ η Κύπρος.

Η πρόταση "ANSWER" απέσπασε πολύ υψηλή βαθμολογία (94%) βάσει συγκεκριμένων κριτηρίων, μεταξύ αυτών η επιστημονική αριστεία, η μεθοδολογία/παραγωγή και στρατηγική των εκπαιδευτικών προγραμμάτων, τα προσόντα και η εμπειρία των ερευνητικών ομάδων και η επάρκεια της υφιστάμενης και της προτεινόμενης υποδομής, καθώς και η προστιθέμενη αξία του έργου για την Ευρώπη.

Με την έγκριση και χρηματοδότηση του έργου αυτού αναγνωρίζεται σε διεθνές επίπεδο το σημαντικό έργο που διεξάγει το Διεθνές Ερευνητικό Κέντρο Νερού Νηρέας και γίνεται η μοναδική ευκαιρία να ηγηθεί η Κύπρος των προσπαθειών στον τομέα της ενίσχυσης και ενδυνάμυνσης της ασφαλούς επαναχρησιμοποίησης επεξεργασμένων αστικών λυμάτων σε σχέση με την μικροβιακή ανθεκτικότητα στο περιβάλλον.

Η πρακτική της επαναχρησιμοποίησης των επεξεργασμένων αστικών λυμάτων βρίσκει ευρεία εφαρμογή στις μέρες μας τόσο στη γεωργία όσο και στον εμπλουτισμό υδροφόρων, ωστόσο υπόκειται σε πιθανούς περιβαλλοντικούς περιορισμούς αναφορικά με την παρουσία αντιβιοτικών και ανθεκτικών στα αντιβιοτικά βακτηρίων και γονιδίων (τα απομαρτυζόμενα A&B&B&B) στα επεξεργασμένα αστικά λύματα.

Το έργο "ANSWER" περιλαμβάνει δράσεις αναφορικά με: (1) τη μελέτη των μηχανισμών που σχετίζονται με τη διάδοση των A&B&B&B σε διάφορα περιβαλλοντικά μέσα (αστικά λύματα, επιφανειακά νερά, έδαφος, φυτά, καρπούς κ.α.), (2) την ανάπτυξη, εφαρμογή και αξιολόγηση εξειδικευμένων βιοδοκιμών (π.χ. μεταλλαζονομότητα, οξυγονοπικνότητα, εμβραιοτοξικότητα, θυροειδής δραστηριότητα, κ.α.) και μαθηματικών μοντέλων που απαιτούνται για τον προσδιορισμό των επιπτώσεων των A&B&B&B καθώς και των προϊόντων μετασχηματισμού των αντιβιοτικών που παράγονται κατά την επεξεργασία των αστικών λυμάτων, (3) τον προσδιορισμό των πιο αποδοτικών και οικονομικά βιώσιμων προηγμένων τεχνολογιών για την απομάκρυνση αυτών των μικροβίων και τέλος (4) την προώθηση στρατηγικής πρόληψης και περιορισμού του προβλήματος μέσω της δημιουργίας σχετικών οδηγιών. Ο σχεδιασμός, η ανάπτυξη και η εφαρμογή προηγμένων τεχνολογιών επεξεργασίας σε πιλοτική κλίμακα, όπως ο οξζονισμός, η φθοροποίηση σε ενεργό άνθρακα, η συνδυασμένη χρήση βιοαποδομητών μεμβρανών και χημικής οξειδωσίας παρουσία ηλεκτρικού πεδίου ή φωτοδίοδων (LED) και η χρήση φωτοκαταλυτικών αντιδραστήρων φωτοδίοδων LED και μεμβρανών υπερδιήθησης για την απαλάγηση των αστικών λυμάτων από τα A&B&B&B, αντανακλά τόσο τον καινοτόμο τεχνολογικό χαρακτήρα του έργου όσο και την επιστημονική του πρωτοτυπία.

Το δίκτυο συνεργασίας περιλαμβάνει τους εξής φορείς: Environmental Institute s.r.o (Σλοβακία),

ΠΟΛΙΤΗΣ, 21.8.2017



## Κέντρο Νερού Νηρέας Εξοπλισμός υψηλής τεχνολογίας

Το Διεθνές Ερευνητικό Κέντρο Νερού Νηρέας, με επικεφαλής την αναπληρώτρια καθηγήτρια Δέσπω Φάττα-Κάσινου, ιδρύθηκε το 2011 με γενικό στόχο την έρευνα σε θέματα που αφορούν την αειφόρο διαχείριση των υδάτινων πόρων. Το κέντρο δραστηριοποιείται σε ένα ευρύ φάσμα τομέων: στην παρουσία μικροβίων και μικροοργανισμών σε υδατικά συστήματα / περιβάλλον, το σχεδιασμό προηγμένων τεχνολογιών επεξεργασίας αστικών λυμάτων, αστικά δίκτυα διανομής νερού, σχεδιασμό και εγκατάσταση αισθητήρων για την ανίχνευση απώλειας νερού, κ.α. Το Κέντρο Νηρέας έχει προσελκύσει μέχρι στιγμής ερευνητικά έργα περίπου 12 εκατ. ευρώ και διαθέτει εξοπλισμό υψηλής τεχνολογίας αξίας 1,5 εκατ. ευρώ, περιλαμβανομένου αναλυτικού εξοπλισμού, πιλοτικών αντιδραστήρων και πιλοτικού δι-

κτύου αγωγών παροχής νερού, συστημάτων υπολογιστικών κόμβων κ.λπ. Ενδεικτικές επινοήσεις που δύνανται να αξιοποιηθούν σε εμπορεύσιμα προϊόντα είναι οι εξής: (1) ενοποιημένη πλατφόρμα ΠΡΟΔΡΟΜΟΣ που περιέχει συστήματα ασφαλείας, πληροφόρησης και προβολής ποιότητας για θαλάσσιες μεταφορές (π.χ. παρακολούθηση επικινδύνων φορτίων από λιμάνι σε λιμάνι, και από λιμάνι στην ενδοχώρα) και (2) πλατφόρμα AMR για τη διαχείριση δικτύων υδατοπρομήθειας και για τον εντοπισμό διαρροών σε αυτά, δραστηριότητες που συντονίζονται από τον καθηγητή Συμεών Χριστοδούλου. Η έρευνα που διεξάγεται σχετικά με την επαναχρησιμοποίηση αστικών λυμάτων έχει σημαντικές κοινωνικές διαστάσεις, αφού είναι επωφελής για την αντιμετώπιση της λειψυδρίας.





Nireas International Water Research Center

December 14, 2020

Συνεργασία με τον ΣΑΛΑ για την ανίχνευση και ποσοτικοποίηση των θραυσμάτων του κορωνοϊού στα λύματα της Λεμεσού. Πώς η έρευνα μπορεί να έχει άμεσο όφελος για την κοινωνία.

Cooperation with SALA to detect and quantify the fragments of the coronas in Limassol sewage. How research can have immediate benefit to society.

Translated



PHILENEWS.COM

Ανίχνευση κορωνοϊού σε λύματα

Ανίχνευση κορωνοϊού σε λύματα



## ΔΕΛΤΙΟΥΤΥΠΟΥ

## Επικοινωνία:

Γραφείο Επικοινωνίας  
Τομέας Προώθησης και Προβολής, Πανεπιστήμιο Κύπρου  
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Ιστοσελίδα: www.prc.ucy.ac.cy

## ΠΡΟΣ ΔΗΜΟΣΙΕΥΣΗ

Λευκωσία, 16 Σεπτεμβρίου 2011



Programme funded by the



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ΣΤΗΝ ΑΕΙΦΟΡΟ ΑΝΑΠΤΥΞΗ ΚΑΙ ΠΡΟΣΤΑΣΙΑ ΤΟΥ ΠΕΡΙΒΑΛΛΟΝΤΟΣ ΤΗΣ ΜΕΣΟΓΕΙΟΥ  
ΣΤΟΧΕΥΕΙ ΜΕΓΑΛΟ ΕΡΕΥΝΗΤΙΚΟ ΠΡΟΓΡΑΜΜΑ ΠΟΥ ΣΥΝΤΟΝΙΖΕΙ  
ΤΟ ΔΙΕΘΝΕΣ ΕΡΕΥΝΗΤΙΚΟ ΚΕΝΤΡΟ ΝΕΡΟΥ 'ΝΗΡΕΑΣ'



Το συντονισμό ενός μεγάλου και εξαιρετικά ενδιαφέροντος για την περιοχή της Μεσογείου ερευνητικού προγράμματος ανέλαβε το Διεθνές Ερευνητικό Κέντρο Νερού του Πανεπιστημίου Κύπρου ΝΗΡΕΑΣ. Το ερευνητικό πρόγραμμα ΜΕΔΟΛΙΟ με προϋπολογισμό δύο εκατομμυρίων ευρώ, ξεκίνησε τις εργασίες του στις 15 Νοεμβρίου 2011 και έχει ως στόχο την ορθή επεξεργασία υγρών αποβλήτων από

ελαστροβεία και τη μείωση των περιβαλλοντικών επιπτώσεων από τη λειτουργία τους στη λεκάνη της Μεσογείου. Στο πλαίσιο του προγράμματος θα δημιουργηθούν πέντε θέσεις εργασίας για νέους ερευνητές.

Η περιοχή της Μεσογείου παράγει το 97% της παγκόσμιας παραγωγής λαδιού. Περίπου 11 εκατομμύρια τόνοι ελιές παράγονται κάθε χρόνο, από τις οποίες εξαγονται κατά προσέγγιση 2 εκατομμύρια τόνοι λαδιού. Υπολογίζεται ότι ετησίως, από τη διαδικασία παραγωγής λαδιού, δημιουργούνται περίπου 9 εκατομμύρια τόνοι υγρά απόβλητα τα οποία αν δεν τύχουν ορθής επεξεργασίας αποτελούν ένα σημαντικό περιβαλλοντικό κίνδυνο. Το ΜΕΔΟΛΙΟ στοχεύει κυρίως στην ορθή επεξεργασία της υγρής ροής που αποβάλλεται από τα ελαστροβεία και είναι εξαιρετικά δύσκολο να βιοδιασπαστεί. Είναι η πρώτη φορά που ερευνητικό πρόγραμμα

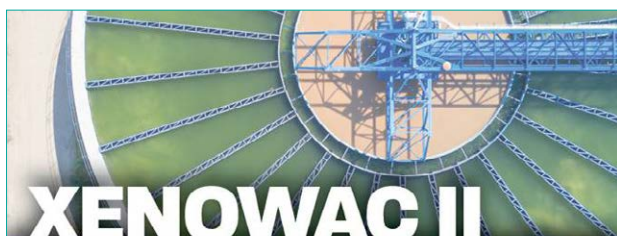


ΦΙΛΕΛΕΥΘΕΡΟΣ, 20.11.2011

ΣΥΝΕΡΓΑΣΙΑ ΤΟΥ ΠΑΝΕΠΙΣΤΗΜΙΟΥ ΚΥΠΡΟΥ ΜΕ ΕΞΙ ΠΑΝΕΠΙΣΤΗΜΙΑ ΚΑΙ ΕΡΕΥΝΗΤΙΚΑ ΕΡΓΑ  
Μεγάλο ερευνητικό έργο ανέλαβε ο «Νηρέας»

ΤΟ ΣΥΝΤΟΝΙΣΜΟ ενός μεγάλου και εξαιρετικά ενδιαφέροντος για την περιοχή της Μεσογείου ερευνητικού προγράμματος ανέλαβε το Διεθνές Ερευνητικό Κέντρο Νερού του Πανεπιστημίου Κύπρου «Νηρέας». Το ερευνητικό πρόγραμμα «ΜΕΔΟΛΙΟ», με προϋπολογισμό δύο εκατομμυρίων ευρώ, ξεκίνησε τις εργασίες του στις 15 Νοεμβρίου και έχει ως στόχο την ορθή επεξεργασία υγρών αποβλήτων από ελαστροβεία και τη μείωση των περιβαλλοντικών επιπτώσεων από τη λειτουργία τους στη λεκάνη της Μεσογείου. Στο πλαίσιο του προγράμματος θα δημιουργηθούν πέντε θέσεις εργασίας για νέους ερευνητές. Σύμφωνα με τα στοιχεία ανακοίνωσε το Πανεπιστήμιο Κύπρου, η περιοχή της Μεσογείου παράγει το 97% της παγκόσμιας παραγωγής λαδιού. Περίπου 11 εκατομμύρια τόνοι ελιές παράγονται κάθε χρόνο, από τις οποίες εξαγονται κατά προσέγγιση δύο εκατομμύρια τόνοι λαδιού. Υπολογίζεται ότι ετησίως, από τη διαδικασία παραγωγής λαδιού, δημιουργούνται περίπου 9 εκατομμύρια τόνοι υγρά απόβλητα τα οποία αν δεν τύχουν ορθής επεξεργασίας αποτελούν ένα σημαντικό περιβαλλοντικό κίνδυνο. Το «ΜΕΔΟΛΙΟ» στοχεύει κυρίως στην

ορθή επεξεργασία της υγρής ροής που αποβάλλεται από τα ελαστροβεία και είναι εξαιρετικά δύσκολο να βιοδιασπαστεί. Είναι η πρώτη φορά που ερευνητικό πρόγραμμα ανέλαβε ο «Νηρέας» στην περιοχή της Μεσογείου. Το ερευνητικό πρόγραμμα «ΜΕΔΟΛΙΟ», με προϋπολογισμό δύο εκατομμυρίων ευρώ, ξεκίνησε τις εργασίες του στις 15 Νοεμβρίου και έχει ως στόχο την ορθή επεξεργασία υγρών αποβλήτων από ελαστροβεία και τη μείωση των περιβαλλοντικών επιπτώσεων από τη λειτουργία τους στη λεκάνη της Μεσογείου. Στο πλαίσιο του προγράμματος θα δημιουργηθούν πέντε θέσεις εργασίας για νέους ερευνητές. Σύμφωνα με τα στοιχεία ανακοίνωσε το Πανεπιστήμιο Κύπρου, η περιοχή της Μεσογείου παράγει το 97% της παγκόσμιας παραγωγής λαδιού. Περίπου 11 εκατομμύρια τόνοι ελιές παράγονται κάθε χρόνο, από τις οποίες εξαγονται κατά προσέγγιση δύο εκατομμύρια τόνοι λαδιού. Υπολογίζεται ότι ετησίως, από τη διαδικασία παραγωγής λαδιού, δημιουργούνται περίπου 9 εκατομμύρια τόνοι υγρά απόβλητα τα οποία αν δεν τύχουν ορθής επεξεργασίας αποτελούν ένα σημαντικό περιβαλλοντικό κίνδυνο. Το «ΜΕΔΟΛΙΟ» στοχεύει κυρίως στην ορθή επεξεργασία της υγρής ροής που αποβάλλεται από τα ελαστροβεία και είναι εξαιρετικά δύσκολο να βιοδιασπαστεί. Είναι η πρώτη φορά που ερευνητικό πρόγραμμα



Challenges and Solutions related to Xenobiotics and Antimicrobial Resistance in the Framework of Urban Wastewater Reuse: Towards a blue circle society

ROUND TABLE DISCUSSION  
WASTEWATER REUSE IN THE CIRCULAR ECONOMY ERA

Wednesday, 10<sup>th</sup> October 2018

From a threatening inevitability to an array of benefits

Discussion facilitators:  
David Weinberg, Ministry of Health, Israel  
Jean McLain, University of Arizona, USA

How can we apply the "polluter pays" principle in wastewater reuse scenarios?

Discussion facilitators:  
Lian Lundy, Middlesex University  
Bernad Gwili, Joint Research Center, European Commission

How can we enhance the communication between scientists and policy makers?

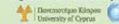
Discussion facilitators:  
Norbert Kreuzinger, Vienna University of Technology, Austria  
Dominique Darmendrail, Water JPI Coordinator

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**Ο ΝΗΡΕΑΣ συντονιστής έργου με προϋπολογισμό €3.7 εκατ.**

Με στόχο την ασφαλή επαναχρησιμοποίηση επεξεργασμένων αστικών λυμάτων

Απόσπασμα από τη συμμετοχή του Ερευνητικού Κέντρου Νηρέας του Πανεπιστημίου Κύπρου στην εκπομπή του CyBC Σπίτι στη Φύση. Μεταδιδακτορικοί και διδακτορικοί φοιτητές και ερευνητές δείχνουν τους φωτοκαταλυτικούς αντιδραστήρες που εφαρμόζονται στην επεξεργασία νερού και αστικών λυμάτων. Ο συνάδελφος Δρ. Συμεών Χριστοδούλου μιλά για την έρευνά μας.



**Nireas International Water Research Center**

Jan 19, 2016 · 🌐

Απόσπασμα από τη συμμετοχή του [Nireas International Water Research Center](#) στην εκπομπή του [CyBC Σπίτι στη Φύση](#)



Environmental Forensics performed by our research group !

Προσδιορισμός συγκεντρώσεων ναρκωτικών ουσιών σε αστικά λύματα. Η έρευνά μας παρουσιάστηκε χθες βράδυ στο κεντρικό δελτίο ειδήσεων του ALPHA [Evroula Hapeshi Vasiliki Beretsou Jack Iacovides Popi Karaolia](#)



**Nireas International Water Research Center**

Posted by Despo Fatta-Kassinou

Jan 19, 2017 · 🌐

Προσδιορισμός συγκεντρώσεων ναρκωτικών ουσιών σε αστικά λύματα. Η έρευνά μας παρουσιάστηκε χθες βράδυ στο κεντρικό δελτίο ειδήσεων του ALPHA









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## Έρευνα σε αστικά λύματα για ανίχνευση κορωνοϊού

14/12/2020 11:41

**Αίθρη για γενετικό υλικό του κορωνοϊού καταγράφει ανάλυση αστικών λυμάτων του ΣΑΛΑ, στα πλαίσια συνεργασίας με το Διεθνές Ερευνητικό Κέντρο Νερού «NHP&E» του Πανεπιστημίου Κίρπου, που σχετίζεται στην ανάπτυξη ενός αξιόπιστου συστήματος έγκαιρης προειδοποίησης αναφορικά με το βαθμό εξάπλωσης της νόσου COVID-19.**

Ανακοινώντας επίσημα τη συνεργασία με το Πανεπιστήμιο Κίρπου, το Συμβούλιο Αποχετεύσεων Λεωσίου – Αρραβωτών αναφέρει πως η ερευνητική ομάδα του «NHP&E» υπό την επίβλεψη της καθηγήτριας Δρ. Δέσποινας Φάτμα – Κόκκου και με κύριο ερευνητή την Δρ. Πόλη Καρασάη, ανέπτυξε τη μεθοδολογία ανίχνευσης και ποσοτικοποίησης βροματενίων του γενετικού υλικού του ιού στα αστικά λύματα.

Παράλληλα, προστίθεται, έχουν σταλεί από το Πανεπιστήμιο Κίρπου, τα Συμβούλια Αποχετεύσεων Λεωσίου – Αρραβωτών, αναφέρει η ανακοίνωση, τα σημαντικά πως «τα τελευταία δείγματα που αναλύθηκαν από το Πανεπιστήμιο Κίρπου ήταν στα μέσα Νοεμβρίου, για έλκυστα ύψους και έδειξαν αύξηση σε σχέση με τα δείγματα που λήφθηκαν τον Οκτώβριο».

Η πρώτη φορά που η ανάλυση του γενετικού υλικού του ιού έδωσε θετική ένδειξη ήταν μέσα στο πρώτο δεκαήμερο του Οκτωβρίου, αναφέρει η ανακοίνωση, τα σημαντικά πως «τα τελευταία δείγματα που αναλύθηκαν από το Πανεπιστήμιο Κίρπου ήταν στα μέσα Νοεμβρίου, για έλκυστα ύψους και έδειξαν αύξηση σε σχέση με τα δείγματα που λήφθηκαν τον Οκτώβριο».

Η συνεργασία μεταξύ ΣΑΛΑ και Πανεπιστημίου Κίρπου προβλέπει τη συστηματική ανάλυση και παρακολούθηση του γενετικού υλικού του ιού μέσα στα λύματα της Λεωσίου, που τους επόμενους τέσσερις μήνες, μέσα από παραμύρηση από το ΣΑΛΑ χρηματοδότησης και άλλων δωρεολύσεων από Ερευνητικό Κέντρο του Πανεπιστημίου.

Απαλλάσσοντας, προστίθεται, η ανάλυση ενός αξιόπιστου συστήματος έγκαιρης προειδοποίησης αναφορικά με το βαθμό εξάπλωσης της νόσου COVID-19, ενός «εργαλείου ανίχνευσης της αστικής ροδολογίας του ιού», τόσο από συμπτωματικούς όσο και από ασυμπτωματικούς φορείς, αφού έχει ήδη αναδειχθεί ότι θραύσματα του ιού εκκρίνονται από τον ανθρώπινο οργανισμό που έχει μολυνθεί με τον ιό».

Συγκεκριμένα, η ανίχνευση του SARS-CoV-2 σε αστικά λύματα πραγματοποιείται μέσω της συγκέντρωσης του βιολογικού της απομύκνωσης του γενετικού υλικού RNA και της μέτρησης της ποσότητας του γενετικού υλικού του ιού μέσω της μεθόδου real time RT-PCR.

Η συμμετοχή του Συμβουλίου στα ερευνητικά πρόγραμμα εντάσσεται στο πλαίσιο της επαφής και κοινωνικής του ευθύνης και της πολιτικής του να στηρίξει τη έρευνα και καινοτομία και να προσφέρει στην τοπική κοινωνία, αναφέρει ο ΣΑΛΑ και προτείνει άλλους κρατικούς και δημοτικούς φορείς όπως στηρίξουν αυτή τη σημαντική πρόκληση του Πανεπιστημίου Κίρπου.





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ΑΝΩΤΑΤΗ / Πανεπιστήμιο Κύπρου

/ 18 Οκτ 2016 - 14:33



Πανεπιστήμιο Κύπρου  
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## Συμμετοχή του Διεθνούς Ερευνητικού Κέντρου Νερού στην «Εβδομάδα Έρευνας και Καινοτομίας 2016»

ΤΗΣ ΒΑΣΙΛΙΚΗΣ ΜΠΕΡΕΤΣΙΟΥ\*

Το Διεθνές Ερευνητικό Κέντρο Νερού Νηρέας του Πανεπιστημίου Κύπρου συμμετείχε για ακόμα μια χρονιά στις δραστηριότητες της «Εβδομάδας Έρευνας και Καινοτομίας» που διοργάνωσε το Ίδρυμα Προώθησης Έρευνας (ΠΕ) κατά την εβδομάδα 26-30 Σεπτεμβρίου 2016. Στόχος των δραστηριοτήτων ήταν η προώθηση της έρευνας και της καινοτομίας που πραγματοποιείται στη χώρα μας και η εξοικείωση του ευρύτερου κοινού με αυτά.

Κατά τη διάρκεια της εβδομάδας, ερευνητές του Ερευνητικού Κέντρου επισκέφθηκαν δημοτικά σχολεία, γυμνάσια και λύκεια σε Λευκωσία και Λάρνακα, όπου παρουσίασαν και συζητήσαν με τους μαθητές ποικίλα θέματα όπως είναι η παρουσία των ρύπων αναδυόμενου ενδιαφέροντος στα αστικά λύματα και στα περιβάλλον, η ανάπτυξη ανθεκτικότητας των βακτηρίων στα αντιβιοτικά, η επαναχρησιμοποίηση των επεξεργασμένων αστικών λυμάτων, η γεωλογία της Κύπρου, κ.ά.

Κορύφωση των εκδηλώσεων αποτέλεσε η «Βραδιά του Ερευνητή 2016» υπό τον τίτλο "Research Unlimited" που πραγματοποιήθηκε στο Συνεδριακό Κέντρο Φιλοξενία στη Λευκωσία στις 30 Σεπτεμβρίου 2016 (10.00-13.00 και 17.00-00.00). Η «Βραδιά του Ερευνητή» είναι μια δημιουργική βραδιά αφιερωμένη στην επιστήμη και στην έρευνα, κατά την οποία κοινό κάθε ηλικίας έχει την ευκαιρία να έρθει σε επαφή με τους ερευνητές της χώρας και να ενημερωθεί για το έργο τους, σε μια εστιαστική και φιλική ατμόσφαιρα. Οι ερευνητές παρουσιάζουν τις εργασίες τους και ενημερώνουν το κοινό για το ρόλο και τη σημασία της έρευνας στο σύγχρονο κόσμο, επιδεικνύοντας τον αντίκτυπο της επιστήμης και τις εφαρμογές της στην καθημερινή ζωή. Ταυτόχρονα, το κοινό έχει την ευκαιρία να εμπλακεί σε διαδραστικά πειράματα και παιχνίδια και μικροί και μεγάλοι μπορούν να γίνουν για μια βραδιά «ερευνητές». Η εκδήλωση αποτελεί πρωτοβουλία της Ευρωπαϊκής Επιτροπής και πραγματοποιείται ταυτόχρονα σε όλες σχεδόν τις χώρες της Ευρώπης. Στην Κύπρο, η εκδήλωση είχε επετειακό χαρακτήρα αφού συμπληρώθηκαν δέκα χρόνια από την πρώτη διοργάνωση της «Βραδιάς του Ερευνητή» η οποία έλαβε χώρα το 2006.

Τις πρωινές ώρες πραγματοποιήθηκαν οργανωμένες επισκέψεις σχολείων στο χώρο της εκδήλωσης, ενώ από το απόγευμα και μετά, η είσοδος ήταν ανοιχτή για το ευρύ κοινό. Αξιοσημείωτη ήταν η φετινή συμμετοχή σχολείων στην εκδήλωση, αποδεικνύοντας πόσο καλή ήταν η οργάνωση και η ενημέρωση που υπήρχε από το ΠΕ. Μικροί και μεγάλοι επισκέφθηκαν το περιπτερό του Ερευνητικού Κέντρου Νηρέας, «Στ-αγώνες Ζωής», όπου είχαν την ευκαιρία μέσα από διαδραστικά πειράματα να μάθουν για το νερό και τις ιδιότητές του, να γνωρίσουν τις προχωρημένες χημικές διεργασίες οξείδωσης των αστικών λυμάτων, όπως είναι η ετερογενής φωτοκατάλυση, που χρησιμοποιούνται για την απομάκρυνση των ρύπων αναδυόμενου ενδιαφέροντος και να γνωρίσουν τον οργανισμό *Daphnia magna*, ο οποίος χρησιμοποιείται ως «οργανισμός δείκτης», για τον έλεγχο της τοξικότητας δειγμάτων νερού.



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ΑΝΩΤΑΤΗ / Πανεπιστήμιο Κύπρου

/ 27 Μαϊ 2015 - 13:55



## Το συντονισμό του Marie Skłodowska-Curie αναλαμβάνει το διεθνές ερευνητικό κέντρο νερού Νηρέας Π.Κ.

Μεγάλη διάκριση αποτελεί η έγκριση για χρηματοδότηση, από την Ευρωπαϊκή Επιτροπή, της ερευνητικής πρότασης που υπέβαλε η Διευθύντρια του Διεθνούς Ερευνητικού Κέντρου Νερού Νηρέας του Πανεπιστημίου Κύπρου, Δρ. Δέσπω Φάττα-Κάινου, στο πλαίσιο της δράσης "Marie Skłodowska-Curie: Innovative Training Networks (ITN)" που εντάσσεται στο πρόγραμμα Ορίζοντα 2020 (H2020-MSCA-ITN-2015). Η ερευνητική πρόταση που εγκρίθηκε για χρηματοδότηση έχει τίτλο "Antibiotics and mobile resistance elements in wastewater reuse applications: risks and innovative solutions (ANSWER)" και ο συνολικός προϋπολογισμός αυτής ανέρχεται στα €3,708,689.76, εκ των οποίων περί τις €800,000 αφορούν στις δραστηριότητες του Ερευνητικού Κέντρου Νηρέας.

Η πρόταση "ANSWER" απέσπασε πολύ υψηλή βαθμολογία (94%) βάσει συγκεκριμένων κριτηρίων, μεταξύ αυτών η επιστημονική αριστεία, η μεθοδολογία/πρόσγγιση και στρατηγική των εκπαιδευτικών προγραμμάτων, τα προσόντα και η εμπειρία των ερευνητικών ομάδων και η επάρκεια της υφιστάμενης και της προτεινόμενης υποδομής, καθώς και η προστιθέμενη αξία του έργου για την Ευρώπη.

Με την έγκριση και χρηματοδότηση της πρότασης αυτής αναγνωρίζεται σε διεθνές και ευρωπαϊκό επίπεδο το πόσο σημαντικό έργο διεξάγει το Διεθνές Ερευνητικό Κέντρο Νερού Νηρέας και γίνεται η μοναδική ευκαιρία να ηγηθεί η Κύπρος, μέσω του Νηρέα, των προσπαθειών στον τομέα της ενίσχυσης και ενδυνάμωσης της ασφαλούς επαναχρησιμοποίησης

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## Ανίχνευση κορωνοϊού σε λύματα

ΑΡΧΙΚΗ • ΚΟΙΝΩΝΙΑ • ΚΟΙΝΩΝΙΑ • Ανίχνευση κορωνοϊού σε λύματα



15 Δεκεμβρίου 2020, 7:55 πμ

Αύξηση του γενετικού υλικού του κορωνοϊού καταγράφει ανάλυση αστικών λυμάτων του ΣΑΛΑ, στο πλαίσιο συνεργασίας με το Διεθνές Ερευνητικό Κέντρο Νερού «ΝΗΡΕΑΣ» του Πανεπιστημίου Κύπρου, που στοχεύει στην ανάπτυξη ενός αξιόπιστου συστήματος έγκαιρης προειδοποίησης αναφορικά με το βαθμό εξάπλωσης της νόσου COVID-19.

Ανακοινώνοντας επίσημα τη συνεργασία του με το Πανεπιστήμιο Κύπρου, το Συμβούλιο Αποκετεύσεων Λεμεσού – Αρμαθούνας αναφέρει πως η ερευνητική ομάδα του «ΝΗΡΕΑΣ» υπό την επίβλεψη της καθηγήτριας δρος Δέσπας Φάττα – Κάινου και με κύρια ερευνητριά τη δρ Πόπη Καραολιά, ανέπτυξαν τη μεθοδολογία ανίχνευσης και ποσοτικοποίησης θραυσμάτων του γενετικού υλικού του ιού στα αστικά λύματα.

Παράλληλα, προστίθεται, έχουν σταλεί από το ΣΑΛΑ δείγματα στο εξωτερικό, από το Εργαστήριο Επεξεργασίας Λυμάτων στη Μονή, στα πλαίσια έρευνας που διεξάγει η Ευρωπαϊκή Επιτροπή, την οποία για την Κύπρο συντονίζει το Διεθνές Ερευνητικό Κέντρο Νερού ΝΗΡΕΑΣ.



CYPRUS PRESIDENCY OF THE COUNCIL OF THE EUROPEAN UNION

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**Ημερίδα με θέμα «Εφαρμογές Επαναχρησιμοποίησης Λυμάτων και Ρύποι Αναδυόμενου Ενδιαφέροντος»**  
13.09.2012 - 14.09.2012

Τοποθεσία: Σαντοκάιο Columbia, Πασόυρι, Λεμεσός

Η Ημερίδα θα συζητήσει τις προκλήσεις των πρακτικών επαναχρησιμοποίησης των λυμάτων, υπό το πρίσμα των ρύπων αναδυόμενου ενδιαφέροντος, τη δημιουργία παραδοσιακών κτιρίων ή και βιολογικές αδιάφορες αυτών στο περιβάλλον, τις δυνατότητες πρόληψης και ασφαλισμού τους από τα φυτά και τις καλλιέργειες κ.ά.

Διοργανωτής: Νηρέας Διεθνές Ερευνητικό Κέντρο Νερού, Πανεπιστήμιο Κύπρου

Όπου επικοινωνήστε: Δρ. Δέσπω Φάττα - Κάινου, τηλ: 22893515, email: dffatta@ucy.ac.cy

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## Ειδηση

## Έναρξη συνεργασίας ΣΑΛΑ – Πανεπιστημίου ΚΥΠΡΟΥ για εντοπισμό του γενετικού υλικού κορωνοϊού στα λύματα και ανάπτυξη εργαλείου για έγκαιρη πρόβλεψη της εξάπλωσης του

**Το Συμβούλιο Αποχετεύσεων Λεμεσού – Αμαθουσίων (ΣΑΛΑ) και το Διεθνές Ερευνητικό Κέντρο Νερού – ΝΗΡΕΑΣ του Πανεπιστημίου Κύπρου, έχουν προχωρήσει σε συνεργασία για τη μελέτη της παρουσίας του γενετικού υλικού του ιού SARS-CoV-2 (COVID-19) στα λύματα που φτάνουν στο Εργαστήριο Επιτεξεργασίας Λυμάτων του ΣΑΛΑ στη Μονή.**

Η ερευνητική ομάδα του ΝΗΡΕΑ υπό την επίβλεψη του καθηγητή δρ. Δημήτρη ΦΑΪΤΑ – Κανόνη και με κύρια ερευνήτρια την δρ. Ρίτσα Καρααλή, αντίθετα τη μεθοδολογία ανάλυσης και παρακολούθησης θραυσμάτων του γενετικού υλικού από τα αποτικά λύματα. Παράλληλα έχουν στείλει από τα ΣΑΛΑ δείγματα από τα Εργαστήρια Λυμάτων στα Μονή στο εξωτερικό να ηλίσκονται κανόνες που διεξέρχεται η Εισαγωγή Έπαρσης, την οποία για την Κύπρο συντονίζει το Διεθνές Ερευνητικό Κέντρο Νερό ΝΗΡΕΑ.

Η πρώτη φορά που η ανάλυση των γενετικού υλικού του ιού έδειξε θετική ένδειξη ήταν μέσα στο πρώτο δεκαήμερο του Οκτωβρίου. Τα τελευταία δείγματα που αναλύθηκαν από το Πανεπιστήμιο Κύπρου ήταν στα μέσα Νοεμβρίου για τέσσερις συνεχείς ημέρες και έδειξαν αύξηση σε σχέση με δείγματα που ληφθήκαν τον Οκτώβριο.

Η συνεργασία μεταξύ ΣΑΛΑ και Πανεπιστημίου Κύπρου προβλέπει, τη συστηματική ανάλυση και παρακολούθηση του γενετικού υλικού του ιού μέσα στα λύματα της Λεμεσού, για τους επόμενους τέσσερις μήνες, μέσα από παρουσίαση από τα ΣΑΛΑ χρηματοδότησης και άλλων διευκολύνσεων στο Ερευνητικό Κέντρο Νερό του Πανεπιστημίου Κύπρου.

Η ανίχνευση των SARS-CoV-2 σε αποτικά λύματα πραγματοποιείται μέσω:

- της συγκέντρωσης του δείγματος
- της απομόνωσης του γενετικού υλικού RNA και
- της μέτρησης των θραυσμάτων του γενετικού υλικού του ιού μέσω της μεθόδου real time RT-PCR (reverse transcription polymerase chain reaction in real time).

Η καινή προσέγγιση ΣΑΛΑ και Πανεπιστημίου Κύπρου έχει ως στόχο την ανάπτυξη ενός αξιόπιστου



# People/Nireas-IWRC

| Name                            | Role   | Period                     | Supervisor(s)        | Title of Thesis / Lab Associated  |
|---------------------------------|--|----------------------------|----------------------|---|
| Agapiou Christina               | M.Eng. student   | 2018                       | Papanastasiou Panos  | <ul style="list-style-type: none"> <li>• M.Eng. (2018): Petroleum industry waste management</li> <li>• Geomechanics Research for Energy and the Environment</li> </ul>  |
| Agathokleous Agathoklis         | Ph.D. student / Researcher<br>Postdoctoral researcher  | 2011 - 2015<br>2015 - 2017 | Christodoulou Symeon | <ul style="list-style-type: none"> <li>• Ph.D. (2015): Sensor-based sustainable management of urban water distribution networks utilizing survival analysis modeling</li> <li>• Eupalinos - Construction Engineering and Water Distribution Networks Management Laboratory</li> </ul> |
| Alaamri Dhiba                   | Visiting researcher<br>International Maritime College, Oman  | 2018                       | Fatta-Kassinou Despo | GAIA - Laboratory of Environmental Engineering  |
| Albets Xavier                   | Postdoctoral researcher  | 2011 - 2013                | Kassinou Stavros     | UCY-CompSci - Computational Sciences Laboratory   |
| Albrektienė Ramunė              | Visiting researcher<br>Vilnius Gediminas Technical University, Lithuania   | 2018                       | Fatta-Kassinou Despo | GAIA - Laboratory of Environmental Engineering  |
| Alexandrou Andreas <sup>†</sup> | Affiliated Member<br>Professor in the Department of Mechanical and Manufacturing Engineering, University of Cyprus, Cyprus | 2012 - 2018                |                      |   |
| Alygizakis Nikiforos            | Visiting researcher<br>Environmental Institute, Slovakia   | 2018                       | Fatta-Kassinou Despo | GAIA - Laboratory of Environmental Engineering  |
| Aljaradin Mohammad              | Visiting researcher<br>Tafila Technical University, Jordan   | 2015                       | Fatta-Kassinou Despo | GAIA - Laboratory of Environmental Engineering  |
| Allen Catherine                 | Visiting researcher<br>Dublin City University, Ireland   | 2018                       | Fatta-Kassinou Despo | GAIA - Laboratory of Environmental Engineering  |
| Anastasiadou Constantia         | M.Sc. student  | 2014                       | Fatta-Kassinou Despo | <ul style="list-style-type: none"> <li>• M.Sc. (2014): Optimizing the solar photocatalytic treatment of parabens in municipal wastewater effluents: Evaluation of operational and kinetic parameters</li> <li>• GAIA - Laboratory of Environmental Engineering</li> </ul>             |

| Name                 | Role  | Period                | Supervisor(s)                            | Title of Thesis / Lab Associated   |
|----------------------|---|-----------------------|--|--|
| Andreou Anastasia    | M.Eng. student  | 2019 - 2020           | Papanastasiou Panos                      | <ul style="list-style-type: none"> <li>• M.Eng. (2020): Literature survey on the impact that biochars have on soil properties</li> <li>• Geomechanics Research for Energy and the Environment</li> </ul>   |
| Andreou Emily        | M.Sc. student   | 2019 - 2020           | Papanastasiou Panos                      | <ul style="list-style-type: none"> <li>• M.Sc. (2020): Experimental assessment of the impact that biochar addition has on the hydraulic properties of loamy sand soil</li> <li>• Geomechanics Research for Energy and the Environment</li> </ul> |
| Andreou Rafaella     | M.Sc. student / Project assistant   | 2013 - 2015           | Fatta-Kassinos Despo                     | <ul style="list-style-type: none"> <li>• M.Sc. (2015): Abatement of parabens in secondary treated wastewater by ozonation and UV-activated persulfate oxidation</li> <li>• GAIA - Laboratory of Environmental Engineering</li> </ul>             |
| Athanasίου Thomas    | Researcher  | 2020 -                | Christodoulou Symeon<br>Dimitriou Loukas | Eupalinos - Construction Engineering and Water Distribution Networks Management Laboratory   |
| Balachandran Sanjana | Visiting researcher<br>Technical University of Dresden, Germany   | 2020                  | Fatta-Kassinos Despo                     | GAIA - Laboratory of Environmental Engineering   |
| Ballis Theodoris     | Researcher**<br>Postdoctoral researcher   | 2019 - 2020<br>2020 - | Christodoulou Symeon<br>Dimitriou Loukas | Eupalinos - Construction Engineering and Water Distribution Networks Management Laboratory   |
| Barceló Damià        | Research Council<br>Director of Catalan Institute for Water Research (ICRA),<br>Research Professor of Institute of Environmental Assessment and Water Research (IDAEA), Consejo Superior de Investigaciones Científicas/Spanish National Research Council (CSIC), Spain | 2020 -                |  |  |
| Benouis Khedidja     | Visiting researcher<br>Scientific and Technical Research Center in Physico-chemical Analyses, Algeria   | 2016                  | Fatta-Kassinos Despo                     | GAIA - Laboratory of Environmental Engineering   |

\* Ph.D. student was admitted in the M.Sc. or Ph.D. Program prior to the establishment of Nireas-IWRC.

\*\* The research carried out by the student while at the Center was unrelated to their M.Eng./M.Sc./Ph.D. thesis.

| Name                          | Role   | Period      | Supervisor(s)        | Title of Thesis / Lab Associated   |
|-------------------------------|--|-------------|----------------------|--|
| Beretsou Vasiliki             | Ph.D. student / Researcher   | 2016 -      | Fatta-Kassinou Despo | <ul style="list-style-type: none"> <li>Advanced chemical, microbiological and toxicological analysis for the understanding of the presence, fate and effects of antibiotics in natural and technical aqueous systems</li> <li>GAIA - Laboratory of Environmental Engineering</li> </ul>  |
| Biljsma Lubertus              | Visiting researcher<br>Universitat Jaume I, Spain  | 2013        | Fatta-Kassinou Despo | GAIA - Laboratory of Environmental Engineering   |
| Boudriche Lilya               | Visiting researcher<br>Scientific and Technical Research Center in Physico-chemical Analyses, Algeria  | 2016        | Fatta-Kassinou Despo | GAIA - Laboratory of Environmental Engineering   |
| Brunetti Gianluca             | Visiting researcher<br>Researcher at University of South Australia, Australia                          | 2016        | Fatta-Kassinou Despo | GAIA - Laboratory of Environmental Engineering   |
| Carlini Charamba Livia Vieira | Visiting researcher<br>Technical University of Dresden, Germany  | 2020        | Fatta-Kassinou Despo | GAIA - Laboratory of Environmental Engineering   |
| Cerqueira Francisco           | Visiting researcher<br>Agencia Estatal Consejo Superior De Investigaciones Cientificas, Spain          | 2018        | Fatta-Kassinou Despo | GAIA - Laboratory of Environmental Engineering   |
| Chari Andreas                 | M.Sc. student / Researcher   | 2015        | Christodoulou Symeon | <ul style="list-style-type: none"> <li>M.Sc. (2015): Stochastic assessment and energy predictive tools Mr. Chari, with the aforementioned research thesis, was subsequently the winner of Cyprus's national competition of the Institution of Engineering and Technology (IET) Young Professionals Global Challenge (March 2015), representing Cyprus at the Regional Finals</li> <li>Eupalinos - Construction Engineering and Water Distribution</li> </ul> |
| Chatziathanasiou Thanasis     | Researcher   | 2016 - 2019 | Kassinou Stavros     | UCY-CompSci - Computational Sciences Laboratory  |
| Chmingui Walid                | Visiting researcher<br>National Research Institute for Rural Engineering, Water, and Forestry, Tunisia | 2017        | Fatta-Kassinou Despo | GAIA - Laboratory of Environmental Engineering   |
| Christodoulou Christina       | Researcher   | 2015 - 2017 | Christodoulou Symeon | Eupalinos - Construction Engineering and Water Distribution Networks Management Laboratory   |



| Name                       | Role   | Period | Supervisor(s)        | Title of Thesis / Lab Associated   |
|----------------------------|--|--------|----------------------|--|
| Christodoulou Chrystalleni | Researcher   | 2016   | Christodoulou Symeon | Eupalinos - Construction Engineering and Water Distribution Networks Management Laboratory   |
| Christodoulou Kyriakos     | M.Eng. student   | 2019   | Papanastasiou Panos  | <ul style="list-style-type: none"> <li>• M.Eng. (2019): Environmental impacts of tourism</li> <li>• Geomechanics Research for Energy and the Environment</li> </ul>  |
| Christodoulou Nicolas      | M.Eng. student   | 2018   | Christodoulou Symeon | <ul style="list-style-type: none"> <li>• M.Eng. (2018): A decision support system for the efficient allocation of water resources in the Paphos District</li> <li>• Eupalinos - Construction Engineering and Water Distribution Networks Management Laboratory</li> </ul>    |
| Christodoulou Stella       | M.Eng. student   | 2014   | Fatta-Kassinou Despo | <ul style="list-style-type: none"> <li>• M.Eng. (2014): A comparative study of the effects of chloride, sulfate and carbonate ions on the rates of decomposition of ethyl paraben by solar photo-Fenton</li> <li>• GAIA - Laboratory of Environmental Engineering</li> </ul> |
| Christodoulou Symeon       | Academic Council / Board of Directors<br>Professor in the Department of Civil and Environmental Engineering, University of Cyprus  | 2011 - |                      |  |
| Christou Anastasis         | Affiliated Member<br>Agricultural Research Officer A' in the Agricultural Research Institute of the Ministry of Agriculture, Rural Development and Environment of the Republic of Cyprus, in The Department of Natural Resources and Environment, Cyprus | 2020 - |                      |  |
| Christou Simoni            | Researcher   | 2016 - | Kassinou Stavros     | UCY-CompSci - Computational Sciences Laboratory  |
| Chrysanthou Eleni          | Researcher   | 2020   | Fatta-Kassinou Despo | GAIA - Laboratory of Environmental Engineering   |
| Constantinou Eleni         | M.Eng. student   | 2014   | Fatta-Kassinou Despo | <ul style="list-style-type: none"> <li>• M.Eng. (2014): Assessing the biological potency of urban wastewater</li> <li>• GAIA - Laboratory of Environmental Engineering</li> </ul>  |

| Name                | Role  | Period      | Supervisor(s)          | Title of Thesis / Lab Associated   |
|---------------------|---|-------------|------------------------|--|
| Dafale Nishant      | Visiting researcher<br>Environmental Biotechnology & Genomics Division, CSIR-NEERI, India   | 2019        | Fatta-Kassinou Despo   | GAIA - Laboratory of Environmental Engineering   |
| Demou Andreas       | Ph.D. student   | 2015 - 2019 | Dimokratis Grigoriadis | Ph.D. (2019): Numerical study of thermally-driven flows with variable properties   |
| Dialynas Yannis     | Affiliated Member<br>Dialynas S.A. – Environmental Technology, Crete, Greece  | 2020 -      |                        |  |
| Dimitriou Loukas    | Academic Council<br>Assistant Professor in the Department Civil and Environmental Engineering, University of Cyprus   | 2020 -      |                        |  |
| Dionysiou Dionysios | Research Council/Board of Directors<br>Professor of Environmental Engineering,<br>Sustainable Solutions Laboratories (SSLs),<br>Center of Sustainable Urban Engineering, Drinking Water, Water Supply, Quality, and Treatment, and Environmental Nanotechnology Laboratories,<br>Department of Chemical and Environmental Engineering University of Cincinnati, USA | 2011 - 2019 |                        |  |
| Dionysiou Maria     | M.Sc. student / Researcher  | 2018 - 2020 | Fatta-Kassinou Despo   | <ul style="list-style-type: none"> <li>M.Sc. (2020): Identification and quantification of illicit drugs in urban wastewater in Cyprus</li> <li>GAIA - Laboratory of Environmental Engineering</li> </ul> |
| Donner Erica        | Visiting researcher<br>Professor and Research Leader at Future Industries at University of South Australia, Australia   | 2016        | Fatta-Kassinou Despo   | GAIA - Laboratory of Environmental Engineering   |
| Dulio Valeria       | Research Council<br>Executive Secretary of the NORMAN Association<br>INERIS, Direction Milieu et Impact sur le Vivant (MIV), France   | 2020 -      |                        |  |

| Name                 | Role  | Period                    | Supervisor(s)                                       | Title of Thesis / Lab Associated   |
|----------------------|---|---------------------------|---|--|
| Eliadou Elena        | M.Sc. student   | 2013                      | Fatta-Kassinou Despo                                | <ul style="list-style-type: none"> <li>M.Sc. (2013): Heavy metals uptake by soil and crops in areas of intense wastewater reuse irrigation</li> <li>GAIA - Laboratory of Environmental Engineering</li> </ul>  |
| Evagorou Andria      | M.Eng. student  | 2018                      | Fatta-Kassinou Despo                                | <ul style="list-style-type: none"> <li>M.Eng. (2018): Microplastics in the marine environment: major sources and already identified effects</li> <li>GAIA - Laboratory of Environmental Engineering</li> </ul> |
| Evangelou Maria      | Researcher  | 2016                      | Fatta-Kassinou Despo                                | GAIA - Laboratory of Environmental Engineering   |
| Fatta-Kassinou Despo | Director of Nireas-IWRC<br>Professor in the Department of Civil and Environmental Engineering, University of Cyprus                                     | 2011 -                    |   |  |
| Fortunato Gianuario  | Visiting researcher<br>Universidade Catolica Portuguesa, Portugal   | 2017                      | Fatta-Kassinou Despo                                | GAIA - Laboratory of Environmental Engineering   |
| Foteinis Spyros      | Researcher  | 2015<br>2019              | Fatta-Kassinou Despo                                | GAIA - Laboratory of Environmental Engineering   |
| Fotiou Ioulia        | M.Sc. student   | 2013                      | Fatta-Kassinou Despo                                | <ul style="list-style-type: none"> <li>M.Sc. (2013): Sonolysis and sonophotocatalysis for the treatment of wastewater laden with pharmaceutical compounds</li> <li>GAIA - Laboratory</li> </ul>                |
| Fragiadakis Michalis | Affiliated Member<br>Associate Professor in the School of Civil Engineering, National Technical University of Athens, Greece<br>Postdoctoral researcher | 2021 -<br><br>2013 - 2015 | <br><br>Christodoulou Symeon<br>Papanastasiou Panos | <ul style="list-style-type: none"> <li>Eupalinos - Construction Engineering and Water Distribution Networks Management Laboratory</li> <li>Geomechanics Research for Energy and the Environment</li> </ul>     |
| Frantzis Charalambos | Ph.D. student<br>Postdoctoral researcher  | 2014 – 2020<br>2020       | Dimokratis Grigoriadis                              | <ul style="list-style-type: none"> <li>Ph.D. (2020): Accelerating CFD simulations of two-fluid flows: Application in numerical wave tanks</li> <li>UCY-CompSci – Computational Sciences Laboratory</li> </ul>  |



| Name                 | Role  | Period      | Supervisor(s)                         | Title of Thesis / Lab Associated  |
|----------------------|---|-------------|---------------------------------------|---|
| Frimmel Fritz        | Scientific Advisory Board<br>Professor (retired),<br>Previous Chairholder and director of the DVGW - Research Center for Water Technology,<br>Karlsruhe Institute of Technology,<br>Karlsruhe, Germany  | 2011 - 2019 |                                       |   |
| Frixou Foidia        | M.Sc. student   | 2019 - 2020 | Papanastasiou Panos                   | <ul style="list-style-type: none"> <li>• M.Sc. (2020): Experimental and numerical evaluation of the biochar amendment on loamy sand soil</li> <li>• Geomechanics Research for Energy and the Environment</li> </ul> |
| Frontistis Zacharias | Postdoctoral researcher   | 2012 - 2013 | Fatta-Kassinou Despo                  | GAIA - Laboratory of Environmental Engineering  |
| Gagatsis Anastasis   | Researcher  | 2013 - 2015 | Christodoulou Symeon                  | Eupalinos - Construction Engineering and Water Distribution Networks Management Laboratory  |
| Gavriel Gavriel      | M.Sc. student / Researcher  | 2014        | Kostarelos Konstantinos               | <ul style="list-style-type: none"> <li>• M.Sc. (2014): Optimized horizontal well configuration for secondary and tertiary oil recovery</li> <li>• SRL - Subsurface Research Laboratory</li> </ul>                   |
| Georgiou Charalambos | Postdoctoral researcher   | 2013        | Christodoulou Symeon                  | Eupalinos - Construction Engineering and Water Distribution Networks Management Laboratory  |
| Gkania Vana          | Researcher**  | 2015 - 2018 | Dimitriou Loukas Christodoulou Symeon | Eupalinos - Construction Engineering and Water Distribution Networks Management Laboratory  |
| Gorelick Steven      | Scientific Advisory Board<br>Cyrus F. Tolman Professor in the Department of Earth System Science,<br>Senior Fellow at the Woods Institute for the Environment,<br>Stanford University, CA,<br>Head of the Water Resource and Hydrogeology Program and Global Freshwater Initiative, USA | 2011 - 2019 |                                       |   |
| Gravanis Elias       | Postdoctoral researcher   | 2014 - 2015 | Papanastasiou Panos                   | Geomechanics Research for Energy and the Environment  |

\* Ph.D. student was admitted in the M.Sc. or Ph.D. Program prior to the establishment of Nireas-IWRC.

\*\* The research carried out by the student while at the Center was unrelated to their M.Eng./M.Sc./Ph.D. thesis.

| Name                    | Role   | Period                    | Supervisor(s)           | Title of Thesis / Lab Associated  |
|-------------------------|--|---------------------------|-------------------------|---|
| Grigoriadis Dimokratis  | Academic Council<br>Associate Professor in the Department of Mechanical and Manufacturing Engineering, University of Cyprus  | 2020 -                    |                         |   |
| Hadjicosta Marina       | M.Eng. student   | 2018                      | Papanastasiou Panos     | <ul style="list-style-type: none"> <li>• M.Eng. (2018): Economic analysis of the Larnaca desalination unit</li> <li>• Geomechanics Research for Energy and the Environment</li> </ul>   |
| Hadjidemetriou Georgios | Researcher**<br><br>Postdoctoral researcher  | 2015 - 2018<br><br>2019 - | Christodoulou Symeon    | Eupalinos - Construction Engineering and Water Distribution Networks Management Laboratory  |
| Hadjineocleous Savvas   | Research Council<br>Technical Director of the Sewerage Board of Nicosia, Cyprus  | 2020 -                    |                         |   |
| Hadjipakkos Charalambos | Research Council<br>Director of the Water Development Department, Ministry of Agriculture Rural Development and the Environment, Cyprus  | 2020 -                    |                         |   |
| Hadjirokopioi Stephanie | M.Eng. student   | 2017                      | Fatta-Kassinou Despo    | <ul style="list-style-type: none"> <li>• M.Eng. (2017): Guidelines on the minimization of the environmental impacts caused by the operation of environmental science and technology laboratories</li> <li>• GAIA - Laboratory of Environmental Engineering</li> </ul> |
| Hapeshi Evroula         | Postdoctoral researcher  | 2011 - 2019               | Fatta-Kassinou Despo    | GAIA - Laboratory of Environmental Engineering  |
| Herzberg Jan            | Visiting researcher<br>Umwelt-Campus Birkenfeld, Germany   | 2013                      | Kostarelos Konstantinos | SRL - Subsurface Research Laboratory  |
| Hollender Juliane       | Scientific Advisory Board<br>Head in the Department of Environmental Chemistry, EAWAG, Swiss Federal Institute of Aquatic Science and Technology,<br><br>Adjunct Professor for Environmental Chemistry and Lecturer in the Department of Environmental Systems Science,<br><br>ETH Zurich, Switzerland | 2011 - 2019               |                         |   |

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| Name                          | Role                           | Period      | Supervisor(s)        | Title of Thesis / Lab Associated  |
|-------------------------------|--------------------------------|-------------|----------------------|---|
| Iacovou Maria                 | M.Eng. student                 | 2015        | Fatta-Kassinou Despo | <ul style="list-style-type: none"> <li>• M.Eng. (2015): Removal of clarythromycin from sewage and investigation of the parameters affecting the formation of bromate ions during ozonation</li> <li>• GAIA - Laboratory of Environmental Engineering</li> </ul>   |
| Iakovides Iakovos             | Ph.D. student / Researcher     | 2016 -      | Fatta-Kassinou Despo | <ul style="list-style-type: none"> <li>• Fate of antibiotics, antibiotic-resistant bacteria and resistance genes during conventional and advanced wastewater treatment and irrigation in agriculture</li> <li>• GAIA - Laboratory of Environmental Engineering</li> </ul>                                     |
| Ines Vasquez Hadjilyra Marlen | Ph.D. student*                 | 2011 - 2012 | Fatta-Kassinou Despo | <ul style="list-style-type: none"> <li>• Ph.D. (2012): Active pharmaceutical ingredients in aqueous matrices: An integrated approach for assessing effects</li> <li>• GAIA - Laboratory of Environmental Engineering</li> </ul>   |
|                               | Postdoctoral researcher        | 2012 - 2013 |                      |   |
| Ioannou Antonia               | Researcher                     | 2016        | Fatta-Kassinou Despo | GAIA - Laboratory of Environmental Engineering  |
| Ioannou Lida                  | Ph.D. student / Researcher*    | 2011 - 2013 | Fatta-Kassinou Despo | <ul style="list-style-type: none"> <li>• Ph.D. (2013): Advanced systems for the enhancement of the environmental performance of wineries - wastewater purification combining biological, advanced chemical and reverse osmosis treatment</li> <li>• GAIA - Laboratory of Environmental Engineering</li> </ul> |
|                               | Postdoctoral researcher        | 2013 - 2020 |                      |   |
| Irodou Elena                  | Researcher / Project assistant | 2020 -      | Fatta-Kassinou Despo | Nireas - IWRC   |
| Kanaris Nicolas               | Ph.D. student                  | 2011 - 2012 | Kassinou Stavros     | <ul style="list-style-type: none"> <li>• Ph.D. (2012): Three-dimensional direct numerical simulations of hydrodynamic and magnetohydrodynamic flows over an obstacle in a confined geometry</li> <li>• UCY-CompSci - Computational Sciences Laboratory</li> </ul>   |
|                               | Researcher                     | 2016        |                      |   |
| Kannaouridou Elena            | Researcher                     | 2015 - 2016 | Fatta-Kassinou Despo | GAIA - Laboratory of Environmental Engineering  |

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| Name                    | Role  | Period                    | Supervisor(s)        | Title of Thesis / Lab Associated   |
|-------------------------|---|---------------------------|----------------------|--|
| Karaolia Popi           | Ph.D. student / Researcher<br><br>Postdoctoral researcher   | 2012 - 2019<br><br>2019 - | Fatta-Kassinou Despo | <ul style="list-style-type: none"> <li>Ph.D. (2019): Evaluation of the efficiency of the combination of a membrane bioreactor with selected advanced oxidation processes for the removal of antibiotic-related microcontaminant</li> <li>GAIA - Laboratory of Environmental Engineering</li> </ul> |
| Kassinis George         | Board of Directors<br><br>Associate Professor in the Department of Business and Public Administration, University of Cyprus   | 2011 - 2019               |                      |  |
| Kassinou Stavros        | Academic Council / Board of Directors<br><br>Professor in the Department of Mechanical and Manufacturing Engineering, University of Cyprus  | 2011 -                    |                      |  |
| Kitrou Panayiotis       | M.Eng. student  | 2014                      | Fatta-Kassinou Despo | <ul style="list-style-type: none"> <li>M.Eng. (2014): Occurrence and fate of antibiotics in the terrestrial environment</li> <li>GAIA - Laboratory of Environmental Engineering</li> </ul>   |
| Kodjiamani Morpho       | M.Sc. student   | 2016                      | Fatta-Kassinou Despo | <ul style="list-style-type: none"> <li>M.Sc. (2016): Removal of humic and fulvic acids during the application of light-driven oxidation processes</li> <li>GAIA - Laboratory of Environmental Engineering</li> </ul>   |
| Korelidou Anna          | Researcher  | 2018 - 2020               | Fatta-Kassinou Despo | GAIA - Laboratory of Environmental Engineering   |
| Kostarelou Konstantinos | Board of Directors<br><br>Assistant Professor in the Department of Civil and Environmental Engineering, University of Cyprus<br><br>Associate Professor in the Department of Petroleum Engineering, Cullen College of Engineering, University of Houston, USA | 2011 - 2019               |                      |  |
| Koullapis Pantelis      | Researcher**<br><br>Postdoctoral researcher   | 2013 - 2018<br><br>2018 - | Kassinou Stavros     | UCY-CompSci Computational Sciences Laboratory  |
| Kouloumi Michalis       | M.Eng. student  | 2018                      | Papanastasiou Panos  | <ul style="list-style-type: none"> <li>M.Eng. (2018): Remediation of an underground aquifer, contaminated with hydrocarbons</li> <li>Geomechanics Research for Energy and the Environment</li> </ul>   |

\* Ph.D. student was admitted in the M.Sc. or Ph.D. Program prior to the establishment of Nireas-IWRC.

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| Name                 | Role  | Period      | Supervisor(s)        | Title of Thesis / Lab Associated   |
|----------------------|---|-------------|----------------------|--|
| Kountoudi Theologia  | Visiting researcher<br>University of Ioannina, Greece   | 2019        | Fatta-Kassinou Despo | GAIA - Laboratory of Environmental Engineering   |
| Kourti Elena         | M.Sc. student / Researcher  | 2015 - 2018 | Christodoulou Symeon | <ul style="list-style-type: none"> <li>• M.Sc. (2018): Waterloss detection in streaming water meter data using change-point anomaly detection</li> <li>• Eupalinos - Construction Engineering and Water Distribution Networks Management Laboratory</li> </ul> |
| Koutsoftas Petros    | M.Sc. student / Researcher  | 2012 - 2013 | Fatta-Kassinou Despo | <ul style="list-style-type: none"> <li>• M.Sc. (2013): Removal of x-ray contrast media by moving bed bio-reactor</li> <li>• GAIA - Laboratory of Environmental Engineering</li> </ul>  |
| Kranioti Sofia       | Researcher  | 2013 - 2015 | Christodoulou Symeon | Eupalinos - Construction Engineering and Water Distribution Networks Management Laboratory   |
| Krayer Patricia      | Visiting researcher<br>Institute of Natural Resources Science Zurich<br>University of Applied Sciences, Switzerland   | 2017        | Fatta-Kassinou Despo | GAIA - Laboratory of Environmental Engineering   |
| Kyriakou Charalambos | Researcher**  | 2014 - 2018 | Christodoulou Symeon | Eupalinos - Construction Engineering and Water Distribution Networks Management Laboratory   |
|                      | Postdoctoral researcher   | 2018 -      |                      |  |
| Kyrou Kyriakos       | Scientific Advisory Board<br>Former Director of the Cyprus Water Development Department,<br>Ministry of Agriculture Rural Development and the Environment, Cyprus | 2011 - 2019 |                      |  |
| Lada Vasiliki        | M.Eng. student  | 2019        | Papanastasiou Panos  | <ul style="list-style-type: none"> <li>• M.Eng. (2019): Waste management from breweries</li> <li>• Geomechanics Research for Energy and the Environment</li> </ul>   |
| Lambrianides Nancy   | Postdoctoral researcher   | 2012 - 2013 | Fatta-Kassinou Despo | GAIA - Laboratory of Environmental Engineering   |

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| Name                   | Role  | Period                         | Supervisor(s)           | Title of Thesis / Lab Associated  |
|------------------------|---|--------------------------------|-------------------------|---|
| Li Puma Gianluca       | Scientific Advisory Board<br>Professor in the Department of Chemical and Environmental Engineering,<br>Director of Environmental Nanocatalysis & Photoreaction Engineering,<br>University of Loughborough, UK | 2011 - 2019                    |                         |   |
| Litskas Vassilis       | Postdoctoral researcher   | 2014 - 2015                    | Fatta-Kassinos Despo    | GAIA - Laboratory of Environmental Engineering  |
| Lombi Enzo             | Visiting researcher<br>Professor at University of South Australia, Australia  | 2016                           | Fatta-Kassinos Despo    | GAIA - Laboratory of Environmental Engineering  |
| Luck Timo              | Visiting researcher<br>Umwelt-Campus Birkenfeld, Germany  | 2014                           | Kostarelos Konstantinos | SRL - Subsurface Research Laboratory  |
| Maas Susanne           | Visiting researcher<br>University of Malta, Malta   | 2019, 2020                     | Dimitriou Loukas        | Eupalinos - Construction Engineering and Water Distribution Networks Management Laboratory  |
| Manoli Kyriakos        | Postdoctoral researcher   | 2020 -                         | Fatta-Kassinos Despo    | GAIA - Laboratory of Environmental Engineering  |
| Mantzavinos Dionissios | Affiliated Member<br>Professor in the Department of Chemical Engineering,<br>Vice-Rector of Academic & International Affairs,<br>University of Patras, Greece   | 2011 -                         |                         |   |
| Marčiulaitienė Eglė    | Visiting researcher<br>Vilnius Gediminas Technical University, Lithuania  | 2018                           | Fatta-Kassinos Despo    | GAIA - Laboratory of Environmental Engineering  |
| Michael Costas         | Research Council / Board of Directors<br>Senior Scientist of Nireas-IWRC, UCY,<br>Former Director of the Cyprus State General Laboratory, Cyprus  | 2011 -                         |                         |   |
| Michael Irene          | Ph.D. student / Researcher*<br><br>Postdoctoral researcher  | 2011 - 2012<br><br>2012 - 2020 | Fatta-Kassinos Despo    | <ul style="list-style-type: none"> <li>• Ph.D. (2012): Investigating the solar-driven advanced chemical oxidation of ofloxacin and trimethoprim in sewage and other aqueous matrices</li> <li>• GAIA - Laboratory of Environmental Engineering</li> </ul> |

\* Ph.D. student was admitted in the M.Sc. or Ph.D. Program prior to the establishment of Nireas-IWRC.

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| Name                  | Role   | Period      | Supervisor(s)        | Title of Thesis / Lab Associated   |
|-----------------------|--|-------------|----------------------|--|
| Michael Michaela      | M.Eng. student   | 2013        | Fatta-Kassinou Despo | <ul style="list-style-type: none"> <li>M.Eng. (2013): Development of public communication material using as examples winery wastewater management and the assessment of effects of pharmaceutical residues in the environment</li> <li>GAIA - Laboratory of Environmental Engineering</li> </ul> |
| Michael Stella        | Researcher   | 2017 - 2020 | Fatta-Kassinou Despo | <ul style="list-style-type: none"> <li>Tackling antibiotics, antimicrobial resistance determinants, pathogenic microbes and toxicity in urban wastewater: A multibarrier technological approach</li> <li>GAIA - Laboratory of Environmental Engineering</li> </ul>                               |
|                       | Ph.D. student  | 2015 -      |                      |  |
| Mina Konstantina      | M.Eng. student   | 2018        | Papanastasiou Panos  | <ul style="list-style-type: none"> <li>M.Eng. (2018): Best practices for management of livestock waste</li> <li>Geomechanics Research for Energy and the Environment</li> </ul>  |
| Mina Theoni           | Researcher   | 2020 -      | Fatta-Kassinou Despo | GAIA - Laboratory of Environmental Engineering   |
| Moslah Bilel          | Visiting researcher<br>Tunis International Center for Environmental Technologies, Tunisia                  | 2014, 2015  | Fatta-Kassinou Despo | GAIA - Laboratory of Environmental Engineering   |
| Msagati Titus         | Visiting researcher<br>Professor at University of South Africa, South Africa                               | 2020        | Fatta-Kassinou Despo | GAIA - Laboratory of Environmental Engineering   |
| Navani Akash          | Visiting researcher<br>BITS-Pilani, K.K. Birla Goa Campus, India   | 2017        | Fatta-Kassinou Despo | GAIA - Laboratory of Environmental Engineering   |
| Nicolaides Christos   | Academic Council<br>Lecturer in the Department of Business and Public Administration, University of Cyprus | 2020 -      |                      |  |
| Nikolaou Eleftheria   | M.Eng. student   | 2019        | Fatta-Kassinou Despo | <ul style="list-style-type: none"> <li>M.Eng. (2019): Determination and monitoring of the minimum inhibitory concentration (MIC) of cefotaxime in E. coli in an MBR-treated wastewater effluent</li> <li>GAIA - Laboratory of Environmental Engineering</li> </ul>                               |
| Nikolopoulos Georgios | Affiliated Member<br>Assistant Professor in the Medical School, University of Cyprus                       | 2021 -      |                      |  |

| Name                    | Role  | Period      | Supervisor(s)        | Title of Thesis / Lab Associated   |
|-------------------------|---|-------------|----------------------|--|
| Orthodoxou Yiannos      | Diploma Thesis  | 2012        | Kassinos Stavros     | <ul style="list-style-type: none"> <li>• Estimation of evaporation losses from Kouris and Asprokremmos</li> <li>• UCY-CompSci Computational Sciences Laboratory</li> </ul>   |
| Paisi Niki              | Researcher / Project assistant  | 2018 - 2019 | Fatta-Kassinos Despo | Nireas - IWRC  |
| Palios Anastasios       | Erasmus exchange student<br>University of Ioannina, Greece  | 2013        | Fatta-Kassinos Despo | GAIA - Laboratory of Environmental Engineering   |
| Panagiotou Constantinos | Ph.D. student / Researcher*   | 2011 - 2016 | Kassinos Stavros     | <ul style="list-style-type: none"> <li>• Ph.D. (2016): Structure-based turbulence models: inclusion of additional physics and development of improved engineering closures</li> <li>• UCY-CompSci – Computational Sciences Laboratory</li> <li>• Geomechanics Research for Energy and the Environment</li> </ul> |
|                         | Postdoctoral researcher   | 2019 -      | Papanastasiou Panos  |  |
| Panayi Angeliki         | M.Sc. student   | 2014        | Fatta-Kassinos Despo | <ul style="list-style-type: none"> <li>• M.Sc. (2014): Purification of olive mill wastewater by coagulation and solar Fenton oxidation at a pilot-scale</li> <li>• GAIA - Laboratory of Environmental Engineering</li> </ul>   |
| Panayiotou Erato        | Researcher  | 2015        | Christodoulou Symeon | Eupalinos - Construction Engineering and Water Distribution Networks Management Laboratory   |
| Panayiotou Panayiotis   | M.Eng. student  | 2015        | Fatta-Kassinos Despo | <ul style="list-style-type: none"> <li>• M.Eng. (2015): Adsorption behavior of fluoroquinolone antibiotics in soils</li> <li>• GAIA - Laboratory of Environmental Engineering</li> </ul>   |
| Papalli Maria           | Researcher  | 2020 -      | Tsipa Argyro         | EmBIOSysTech - Laboratory of Environmental Biotechnology   |
| Papamarkou Rafail       | M.Sc. student / Researcher  | 2017 - 2019 | Fatta-Kassinos Despo | <ul style="list-style-type: none"> <li>• M.Sc. (2019): Monitoring of cefotaxime-resistant bacteria in urban wastewater</li> <li>• GAIA - Laboratory of Environmental Engineering</li> </ul>  |
| Papanastasiou Panos     | Academic Council / Board of Directors<br>Professor in the Department of Civil and Environmental Engineering, University of Cyprus | 2011 -      |                      |  |
| Papapetrou Spyros       | Erasmus exchange student<br>University of Ioannina, Greece  | 2014        | Fatta-Kassinos Despo | GAIA - Laboratory of Environmental Engineering   |

\* Ph.D. student was admitted in the M.Sc. or Ph.D. Program prior to the establishment of Nireas-IWRC.

\*\* The research carried out by the student while at the Center was unrelated to their M.Eng./M.Sc./Ph.D. thesis.

| Name                   | Role   | Period       | Supervisor(s)                                | Title of Thesis / Lab Associated   |
|------------------------|--|--------------|--|--|
| Papaphilippou Petri    | Postdoctoral researcher  | 2011 - 2013  | Fatta-Kassinou Despo                         | GAIA - Laboratory of Environmental Engineering   |
| Parmaklis Constantinos | Research Council<br>Director of the Water Board of Nicosia, Cyprus                       | 2020 -       |  |  |
| Parpi Maria            | M.Eng. student   | 2014         | Fatta-Kassinou Despo                         | <ul style="list-style-type: none"> <li>• M.Eng. (2014): An environmental and socioeconomic approach of olive mill wastewater management - Current status in some Mediterranean countries</li> <li>• GAIA - Laboratory of Environmental Engineering</li> </ul>  |
| Parpounas Andreas      | M.Sc. student  | 2015         | Fatta-Kassinou Despo                         | <ul style="list-style-type: none"> <li>• M.Sc. (2015): Development of an analytical method for the assessment of the presence of veterinary antibiotics in environmental matrices</li> <li>• GAIA - Laboratory of Environmental Engineering</li> </ul>         |
| Pavlou Pavlos          | Visiting researcher<br>Technical University of Denmark, Denmark                          | 2017<br>2018 | Fatta-Kassinou Despo<br>Christodoulou Symeon | <ul style="list-style-type: none"> <li>• GAIA - Laboratory of Environmental Engineering</li> <li>• Eupalinos - Construction Engineering and Water Distribution Networks Management Laboratory</li> </ul>   |
| Phaidonos Cleopatra    | Researcher   | 2020 -       | Christodoulou Symeon<br>Dimitriou Loukas     | Eupalinos - Construction Engineering and Water Distribution Networks Management Laboratory   |
| Proteinis Spyros       | Researcher   | 2015, 2019   | Fatta-Kassinou Despo                         | GAIA - Laboratory of Environmental Engineering   |
| Photiou George         | Lab assistant  | 2014 - 2015  | Fatta-Kassinou Despo                         | GAIA - Laboratory of Environmental Engineering   |
| Photiou Panayiota      | M.Eng. student / Researcher  | 2016 - 2017  | Fatta-Kassinou Despo                         | <ul style="list-style-type: none"> <li>• M.Eng. (2016): Insights into solid phase extraction methods for optimum recovery of pharmaceutical compounds from complex environmental matrices</li> <li>• GAIA - Laboratory of Environmental Engineering</li> </ul> |
| Pothin Laurie          | Visiting researcher<br>Département Hydraulique et Mécanique des Fluides, France, Visitor | 2015         | Christodoulou Symeon                         | Eupalinos - Construction Engineering and Water Distribution Networks Management Laboratory   |
| Pourjabbar Anahita     | Postdoctoral researcher  | 2012 - 2014  | Kostarelos Konstantinos                      | SRL - Subsurface Research Laboratory   |



| Name                      | Role  | Period                | Supervisor(s)        | Title of Thesis / Lab Associated   |
|---------------------------|---|-----------------------|----------------------|--|
| Prakash Halan             | Visiting researcher<br>Associate Professor in the Department of Chemistry, BITS-Pilani, K.K. Birla Goa Campus, India      | 2017                  | Fatta-Kassinou Despo | GAIA - Laboratory of Environmental Engineering   |
| Psychoudaki Magda         | Postdoctoral researcher   | 2019 -                | Fatta-Kassinou Despo | GAIA - Laboratory of Environmental Engineering   |
| Radu Elena                | Visiting researcher<br>Technische Universität Wien, Austria   | 2018                  | Fatta-Kassinou Despo | GAIA - Laboratory of Environmental Engineering   |
| Raj Saurav                | Visiting researcher<br>BITS-Pilani, K.K. Birla Goa Campus, India  | 2017                  | Fatta-Kassinou Despo | GAIA - Laboratory of Environmental Engineering   |
| Richardson Susan          | Scientific Advisory Board<br>Professor in the Department of Chemistry and Biochemistry, University of South Carolina, USA | 2011 - 2019           |                      |  |
| Rosa Patrycja             | Visiting researcher<br>Silesian University of Technology, Poland  | 2019                  | Fatta-Kassinou Despo | GAIA - Laboratory of Environmental Engineering   |
| Sarris Ernestos           | Postdoctoral researcher   | 2011 - 2015           | Papanastasiou Panos  | Geomechanics Research for Energy and the Environment   |
| Seifelnasr Moustafa Amira | Visiting researcher<br>University of Cairo, Egypt   | 2019                  | Fatta-Kassinou Despo | GAIA - Laboratory of Environmental Engineering   |
| Ślipko Katarzyna          | Visiting researcher<br>Technische Universität Wien, Austria   | 2018                  | Fatta-Kassinou Despo | GAIA - Laboratory of Environmental Engineering   |
| Sophokleous Varvara       | M.Eng. student  | 2011                  | Fatta-Kassinou Despo | <ul style="list-style-type: none"> <li>M.Eng. (2011): Evaluation of the potential biological effects of mixtures of pharmaceuticals in aqueous matrices</li> <li>GAIA - Laboratory of Environmental Engineering</li> </ul> |
| Stavrou Ioannis           | Postdoctoral researcher   | 2016                  | Fatta-Kassinou Despo | GAIA - Laboratory of Environmental Engineering   |
| Stylianou Fotos           | Researcher**<br>Postdoctoral researcher   | 2011 - 2016<br>2016 - | Kassinou Stavros     | UCY-CompSci Computational Sciences Laboratory  |
| Stylianou Katerina        | Researcher**  | 2015 - 2018           | Symeon Christodoulou | Eupalinos - Construction Engineering and Water Distribution Networks Management Laboratory   |
| Stylianou Konstantina     | Researcher  | 2020                  | Tsipa Argyro         | EmBIOSysTech - Laboratory of Environmental Biotechnology   |

\* Ph.D. student was admitted in the M.Sc. or Ph.D. Program prior to the establishment of Nireas-IWRC.

\*\* The research carried out by the student while at the Center was unrelated to their M.Eng./M.Sc./Ph.D. thesis.

| Name                        | Role  | Period      | Supervisor(s)  | Title of Thesis / Lab Associated   |
|-----------------------------|---|-------------|--|--|
| Stylianou Marinos           | Postdoctoral researcher   | 2011 -      | Kostarelos Konstantinos<br>Fatta-Kassinou Despo<br>Papanastasiou Panos | <ul style="list-style-type: none"> <li>SRL - Subsurface Research Laboratory</li> <li>GAIA - Laboratory of Environmental Engineering</li> <li>Geomechanics Research for Energy and the Environment</li> </ul>     |
| Stylianou Stylianos         | Diploma Thesis  | 2014        | Kassinou Stavros   | <ul style="list-style-type: none"> <li>Estimation of evaporation losses from the Kouris Dam and methods to reduce evaporation</li> <li>UCY-CompSci Computational Sciences Laboratory</li> </ul>                  |
| Tadić Đorđe                 | Visiting researcher<br>Agencia Estatal Consejo Superior De Investigaciones Cientificas, Spain               | 2018        | Fatta-Kassinou Despo   | GAIA - Laboratory of Environmental Engineering   |
| Tarapoulouzi Maria          | M.Sc. student / Researcher  | 2013 - 2014 | Fatta-Kassinou Despo   | <ul style="list-style-type: none"> <li>M.Sc. (2014): Advanced bioassays for evaluating the effects of pharmaceuticals to organisms and humans</li> <li>GAIA - Laboratory of Environmental Engineering</li> </ul> |
| Theophanous Andeas          | M.Eng. student  | 2017        | Fatta-Kassinou Despo   | <ul style="list-style-type: none"> <li>M.Eng. (2017): Water and wastewater management - A glossary</li> <li>GAIA - Laboratory of Environmental Engineering</li> </ul>  |
| Torrens Osorio Victoria     | Visiting researcher<br>IDAEA-CSIC, Spain  | 2011        | Fatta-Kassinou Despo   | GAIA - Laboratory of Environmental Engineering   |
| Toumazi Toumazis            | Researcher / Project manager  | 2012 - 2018 | Fatta-Kassinou Despo   | Nireas - IWRC  |
| Toxqui Eleni                | Researcher / Project manager  | 2012 -      | Fatta-Kassinou Despo   | Nireas - IWRC  |
| Trapali Andrianna           | Researcher  | 2020        | Fatta-Kassinou Despo   | GAIA - Laboratory of Environmental Engineering   |
| Tsangaris Michael           | Researcher  | 2018 - 2019 | Christodoulou Symeon   | Eupalinos - Construction Engineering and Water Distribution Networks Management Laboratory   |
| Tsionara Evangelia          | Researcher / Project assistant  | 2019        | Fatta-Kassinou Despo   | Nireas - IWRC  |
| Tsipi Argyro                | Academic Council<br>Lecturer in the Department of Civil and Environmental Engineering, University of Cyprus | 2020 -      |  |  |
| Varela della Giustina Saulo | Visiting researcher<br>Catalan Institute for Water Research, Spain  | 2016        | Fatta-Kassinou Despo   | GAIA - Laboratory of Environmental Engineering   |
| Vasileiadis Sotirios        | Visiting researcher<br>University of Thessaly, Greece   | 2018        | Fatta-Kassinou Despo   | GAIA - Laboratory of Environmental Engineering   |

| Name                   | Role  | Period      | Supervisor(s)           | Title of Thesis / Lab Associated  |
|------------------------|---|-------------|-------------------------|---|
| Vatylotou Margarita    | Researcher / Project manager  | 2011 - 2012 | Fatta-Kassinou Despo    | GAIA - Laboratory of Environmental Engineering  |
| Velegraki Theodora     | Visiting researcher<br>Technical University of Crete, Greece  | 2012 - 2014 | Fatta-Kassinou Despo    | GAIA - Laboratory of Environmental Engineering  |
| Vorka Flora            | M.Eng. student  | 2018        | Papanastasiou Panos     | <ul style="list-style-type: none"> <li>• M.Eng. (2018): Cyprus National Action Plan for 2020</li> <li>• Geomechanics Research for Energy and the Environment</li> </ul>   |
| Voskaridou Theano      | M.Eng. student  | 2014        | Kostarelos Konstantinos | <ul style="list-style-type: none"> <li>• M.Eng (2014): Anionic surfactant remediation of soil columns contaminated by Jet Fuel</li> <li>• SRL - Subsurface Research Laboratory</li> </ul>                                     |
| Votyakov Evgeny        | Postdoctoral researcher   | 2011 - 2015 | Kassinou Stavros        | UCY-CompSci - Computational Sciences Laboratory   |
| Voukkali Irene         | M.Eng. student  | 2014        | Kostarelos Konstantinos | <ul style="list-style-type: none"> <li>• M.Eng. (2014): Coal tar recovery using surfactant enhanced treatment</li> <li>• SRL - Soil Remediation Laboratory</li> </ul>   |
| Waite David            | Scientific Advisory Board<br>Professor in the Department of Civil and Environmental Engineering,<br>University of New South Wales,<br>Executive Director and CEO, UNSW Centre for Transformational Environmental Technologies (CTET), Australia | 2011 - 2019 |                         |   |
| Wrobel Michal          | Postdoctoral researcher   | 2019 -      | Papanastasiou Panos     | Geomechanics Research for Energy and the Environment  |
| Xanthos Savvas         | Postdoctoral researcher   | 2012 - 2015 | Christodoulou Symeon    | Eupalinos - Construction Engineering and Water Distribution Networks Management Laboratory  |
| Xekoukoulotakis Nikos  | Visiting researcher<br>Technical University of Crete, Greece  | 2011        | Fatta-Kassinou Despo    | GAIA - Laboratory of Environmental Engineering  |
| Yiangou Irene          | M.Eng. student  | 2017        | Papanastasiou Panos     | <ul style="list-style-type: none"> <li>• M.Eng. (2017): Environmental impact assessment of Aglantzia industrial area</li> <li>• Geomechanics Research for Energy and the Environment</li> </ul>                               |
| Yiannapas Constantinos | M.Sc. student   | 2012 - 2013 | Fatta-Kassinou Despo    | <ul style="list-style-type: none"> <li>• M.Eng. (2013): Optimising olive oil wastewater treatment by coagulation-flocculation and solar Fenton oxidation</li> <li>• GAIA - Laboratory of Environmental Engineering</li> </ul> |





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