

# Interreg

## Ελλάδα-Κύπρος

Ευρωπαϊκό Ταμείο Περιφερειακής Ανάπτυξης



ΕΥΡΩΠΑΪΚΗ ΕΝΩΣΗ



16<sup>th</sup> -18<sup>th</sup> June 2023

Limassol, Cyprus

hybrid event

[www.anelixi.tuc.gr](http://www.anelixi.tuc.gr)



### ΑΝΕΛΙΞΗ

# Τελικό Συνέδριο Πράξης ΑΝΕΛΙΞΗ

## ANELIXI Final Conference

Πρόγραμμα Συνεργασίας Interreg V-A για αναβάθμιση ΕΕΛ  
Συγχρηματοδοτείται από την Ευρωπαϊκή Ένωση (ΕΤΠΑ) και  
από Εθνικούς Πόρους της Ελλάδας και της Κύπρου

Συντονιστής | Coordinator



ΠΟΛΥΤΕΧΝΕΙΟ ΚΡΗΤΗΣ  
TECHNICAL UNIVERSITY  
OF CRETE

Εταίροι | Partners



Δ.Ε.Υ.Α.Π.

ΣΥΜΒΟΥΛΙΟ  
ΑΠΟΧΕΤΥΣΣΩΝ  
ΚΥΠΡΟΥΝΤΑΣ  
Κυπριακή Δημοκρατία



Design of  
Environmental  
Processes Lab

# PROGRAMME

## 2<sup>nd</sup> International Conference on Sustainable Chemical & Environmental Engineering



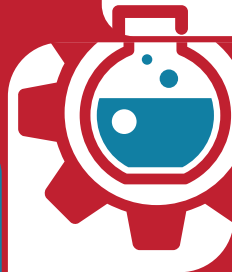
SUST  
ENG  
2023

14<sup>th</sup> -18<sup>th</sup> June 2023

Limassol, Cyprus

hybrid event

[www.susteng2023.tuc.gr](http://www.susteng2023.tuc.gr)



Design of  
Environmental  
Processes Lab



Technical University of Crete  
School of Chemical and  
Environmental Engineering



Cyprus  
University of  
Technology

Dear friends and colleagues,

I am pleased to welcome you to the **Final Conference of the ANELIXI Project “Upgrade of WWTPs for the management of increased demands and the reduction of the operational cost”**, in the frame of **Interreg V-A Greece-Cyprus 2014-2020** between **16<sup>th</sup> to 18<sup>th</sup> June 2023**. Parallel to ANELIXI Final Conference we organize the **2<sup>nd</sup> International Conference on Sustainable Chemical and Environmental Engineering (SUSTENG 2023)**, between **14<sup>th</sup> to 18<sup>th</sup> June 2023**. Both events will be held in Limassol, Cyprus and you may participate in either event with **physical** or **virtual** presence.

The **purpose of the ANELIXI final conference** is to describe and present the outcomes of ANELIXI project, an innovative wastewater treatment process. Additionally, hot issues on water and wastewater management and reuse will also be discussed with water specialists in an **open forum**.

The **main objectives of the ANELIXI project are:**

- Increase the capacity of existing WWTPs
- Low construction and operation cost compared to alternative technologies
- Reduction of energy cost of existing WWTPs by approximately 35%
- Production of biosolids with solids content over 35%

SUSTENG 2023 aims to encourage the exchange of knowledge between academicians, scientists and engineers on hot issues and current developments **in chemical and environmental engineering through sustainable perspective**. The participants will have the opportunity to present their recent research findings on an extended spectrum of conference topics and be informed about new challenges, future trends, and technological innovations on sustainable processes following the principles of circular economy.

The **ANELIXI project** of the Cooperation Program INTERREG V-A Greece - Cyprus 2014-2020 is co-financed by the **European Regional Development Fund (ERDF) and national resources of Greece and Cyprus**.

The SUSTENG 2023 is organized by the "Design of Environmental Processes Laboratory", of the School of Chemical and Environmental Engineering, **Technical University of Crete**, the **Cyprus University of Technology** and the **Company Spirito Group**.

After the completion of the both events all abstracts/full papers will be published in the Final Conference of the ANELIXI | SUSTENG 2023 Conference Proceedings with **ISBN number**.

The conference Chair

**Petros Gikas**

Professor

Head of the "Design of Environmental Processes Lab"  
School of Chemical and Environmental Engineering  
Technical University of Crete



# TOPICS

1. Industrial Waste Management
2. Air Emissions/ CO<sub>2</sub> Separation
3. Policies, Regulatory and Social Acceptance
4. Adsorption Processes
5. Solid Waste Management/ Biosolids Management and Valorization
6. Water Resources Management
7. Wastewater Treatment & Bioremediation (part I & part II)
8. Biochemical and Biomedical Engineering & Biotechnology
9. Waste to Energy/Hydrogen Production
10. Nanomaterials
11. Environmental Economics/ Industrial Economics
12. Agricultural Engineering/ Agricultural & Livestock Waste





**Prof. Soteris  
Kalogirou**  
Professor, University of  
Technology, Limassol,  
Cyprus



**Prof. Maria  
Cristina Fragkou**  
Associate professor,  
Universidad de Chile



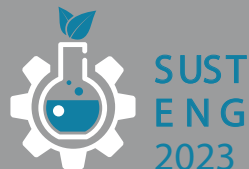
**Prof. Hassan Azaizeh**  
Professor, Tel Hai Academic  
College & Institute of  
Applied Research, Tel Hai,  
Israel



**Prof. Isam Janajreh**  
Professor and the  
associate chair in the  
Mech, Khalifa  
University, Abu Dhabi



**Prof. Ezio Ranieri**  
Professor, University  
of Bari, Italy



## Organizing Committee

### Head of Organizing Committee

**Petros Gikas**, Professor, Director of the Design of Environmental Processes Laboratory, School of Chemical and Environmental Engineering, Technical University of Crete.

### Members of Organizing Committee

**Michalis Koutinas**, Associate Professor, Department of Chemical Engineering, Cyprus University of Technology.

**Ioannis Vyrides**, Assistant Professor, Department of Chemical Engineering, Cyprus University of Technology.

**Konstantinos Tsamoutsoglou**, PhD candidate, Environmental Engineer, Design of Environmental Processes Laboratory, School of Chemical and Environmental Engineering, Technical University of Crete.

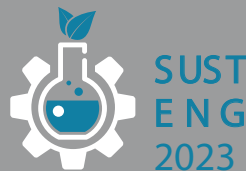
**Xanthi-Evangelia Manaroli**, Architect Engineer M.Sc., School of Chemical and Environmental Engineering, Technical University of Crete.

**Anthoula Manali**, PhD candidate, Chemist M.Sc. Design of Environmental Processes Laboratory, School of Chemical and Environmental Engineering, Technical University of Crete.

## Scientific Committee

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Alexandros Katsaounis, University of Patras, Greece  
Alexandros Stefanakis, Technical University of Crete, Greece  
Anastasios Zouboulis, Aristotle University of Thessaloniki, Greece  
Andreas Andreopoulos, National Technical University of Athens, Greece  
Andrew Livingstone, Queens Mary University, UK  
Anestis Vlysidis, National Technical University of Athens, Greece  
Angela Gorgoglione, Universidad de la República, Uruguay  
Antonios Kokosis, National Technical University of Athens, Greece  
Antonios Papadakis, Region of Crete, Greece  
Apostolos Gianni, Technical University of Crete, Greece  
Apostolos Voulgarakis, Technical University of Crete, Greece  
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Athanasios Stasinakis, University of the Aegean, Greece  
Baoning Zhu, Beijing University of Chemical Technology, China  
Christos Akratos, Democritus University of Trace, Greece  
Constantinos Chrysikopoulos, Technical University of Crete, Greece  
Cristina Trois, University of Kwa Zulu –Natal, South Africa  
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Daniel Mamais, National Technical University of Athens, Greece

Despoina Vamvouka, Technical University of Crete, Greece  
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George Kyzas, International Hellenic University, Greece  
George Papapolymerou, University of Thessaly, Greece  
George Tchobanoglous, University of California Davis, USA  
Georgios Arampatzis, Technical University of Crete, Greece  
Georgios Papadakis, Agricultural University of Athens, Greece  
Gerassimos Lyberatos, National Technical University of Athens, Greece  
Hassan Azaizeh, Tel-Hai College, Israel  
Herve Boileau, University of Savoie Mont-Blanc, France  
Hery Tiana Rakotondramiarana, University of Antananarivo, Madagascar  
Ioannis Kalavrouziotis, Hellenic Open University, Greece  
Ioannis Manariotis, University of Patras, Greece



Ioannis Tsanis, Technical University of Crete, Greece  
Ioannis Vyrides, Cyprus University of Technology  
Ioannis Yentekakis, Technical University of Crete, Greece  
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Jacek Dach, Poznan University of Life Sciences, Poland  
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Shan Yi, University of Auckland, New Zealand  
Simona Di Gregorio, University of Pisa, Italy  
Simos Malamis, National Technical University of Athens, Greece  
Spyridon Ntougias, Democritus University of Trace, Greece  
Stergios Vakalis, University of the Aegean, Greece  
Stratow Pistikopoulos, Texas A&M University, USA

Stylianos Rozakis, Technical University of Crete, Greece  
Theocharis Tsoutsos, Technical University of Crete, Greece  
Therese Lee Chan, The University of the West Indies, Trinidad and Tobago  
Timothy Ginn, Washington State University, USA  
Tonni Agustiono Kurniawan, Xiamen University, China  
Vasileios Takavakoglou, Hellenic Agricultural Organization – DEMETER, Greece  
Vassilios Tsihrintzis, National Technical University of Athens, Greece  
Wei-Qin Zhuang, University of Auckland, New Zealand  
Yaoyu Zhou, Hunan Agricultural University, China



# PROGRAMME AT A GLANCE



## Wednesday 14 June Susteng 2023

### Building Tasos Papadopoulos- Hall 1

Registration	14:00 - 16:00
Welcome	16:00 - 16:15
<b>PLENARY LECTURE: Prof. S. Kalogirou</b>	16:15 - 17:00
<b>Welcome Banquette</b>	17:00 - 19:00

## Thursday 15 June Susteng 2023

### Building Tasos Papadopoulos- Hall 1

<b>Greetings   Welcome Speeches</b>	09:30 - 11:00
Break - Posters viewing	11:00 - 11:30
<b>PLENARY LECTURE: Prof. P. Gikas</b>	11:30 - 12:15
SESSION 1: Industrial Waste Management	12:15 - 13:15
Break	13:15 - 14:45
SESSION 2: Air Emissions/ CO <sub>2</sub> Separation	14:45 - 15:30
SESSION 3: Policies, Regulatory and Social Acceptance	15:30 - 16:15
SESSION 4: Adsorption Processes	16:15 - 17:00
Break - Posters viewing	17:00 - 17:30
<b>PLENARY LECTURE: Prof. E. Ranieri</b>	17:30 - 18:15
SESSION 5: Solid Waste Management/ Biosolids Management and Valorization	18:15 - 19:30

## Friday 16 June Anelixa | Susteng 2023

### Building Tasos Papadopoulos- Hall 1

<b>Greetings   Welcome Speeches</b>	09:30 - 11:00
Break - Posters viewing	11:00 - 11:30
<b>PLENARY LECTURE: Prof. I. Janajreh</b>	11:30 - 12:15
SESSION 6: Water Resources Management	12:15 - 13:15
Break	13:15 - 14:45
SESSION 7: Wastewater Treatment & Bioremediation (part I & part II)	14:45 - 17:15
Break - Posters viewing	17:15 - 17:30
<b>Workshop of the LIFE B2E4SustWWTP</b>	17:30 - 19:00
<b>Gala Event</b>	20:00 - 23:00



# PROGRAMME AT A GLANCE



SUST  
ENG  
2023

## Saturday 17 June Anelixa | Susteng 2023

### Building Tasos Papadopoulos- Hall 1

SESSION 8: Biochemical and Biomedical Engineering & Biotechnology	09:30 - 11:15
Break - Posters viewing	11:15 - 11:45
<b>PLENARY LECTURE: Prof. H. Azaizeh</b>	11:45 - 12:30
SESSION 9: Waste to Energy/ Hydrogen production	12:30 - 13:45
Break	13:45 - 15:00
SESSION 10: Nanomaterials	15:00 - 16:00
SESSION 11: Environmental Economics/ Industrial Economics	16:00 - 17:00
Break - Posters viewing	17:00 - 17:30
<b>PLENARY LECTURE: Prof. M. C. Fragkou</b>	17:30 - 18:15
SESSION 12: Agricultural Engineering/ Agricultural & Livestock Waste	18:15 - 19:15
Closing Ceremony	19:15 - 20:00

## Sunday 18 June Anelixa | Susteng 2023

Field visit at Troodos mountain and Kyperounta wastewater treatment plant.	09:30 - 16:00
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You can find the programme



with more information and details

**HERE**



## Wednesday 14 June Susteng 2023

Registration 14:00 - 16:00

Welcome 16:00 - 16:15

**PLENARY LECTURE: Prof. S. Kalogirou** 16:15 - 17:00  
**Renewable Energy Systems: Current status in the World and Prospects**  
**Chair: P. Gikas & M. Koutinas**

Welcome Banquette 17:00 - 19:00

## Thursday 15 June Susteng 2023

Greetings | Welcome Speeches 09:30 - 11:00

**Andreas A. Gregoriou**, Permanent Secretary, Ministry of Agriculture, Rural Development and Environment, Cyprus

**Maria Panayiotou**, Environment Commissioner, Cyprus

**Lia Georgiou**, Acting Director, Water Development Department, Cyprus

**Nikolaos Nikolaidis**, Mayor of Limassol, Cyprus

**Yiannis Tsouloftas**, General Manager, Sewerage Board Limassol Amathus, Cyprus

**Panayiotis Zaphiris**, Rector, Cyprus University of Technology

**Michalis Zervakis**, Rector, Technical University of Crete, Greece

Break - Posters viewing 11:00 - 11:30

**PLENARY LECTURE: Prof. P. Gikas** 11:30 - 12:15  
**Upgrade of overloaded wastewater treatment plants: The ANELIXI project**  
**Chair: M. Koutinas & I. Vyrides**

## SESSION 1: Industrial Waste Management

Chair: M. Patsalou & T. Thodosiadis-Thomaidis

12:15 - 13:15

### Artificial Neural Network for the quantification of cobalt recovered from Li-ion batteries

12:15 - 12:30

I.I. Pérez Juárez, B.M. González Contreras, M.A. Munive Rojas, J.A. Guevara-García and E. Bonilla Huerta

### A citrus processing wastewater-based biorefinery approach for production of high-added value commodities

12:30- 12:45

P. Karanicola, M. Patsalou, P. Christou, G. Panagiotou and M. Koutinas

### Molybdenum recovery in a sulphate-reducing bioreactor

12:45 - 13:00

D. A. Strongyli, P. Kousi, A. Hatzikioseyan and E. Remoundaki

### Valorization of olive processing industry waste through biorefinery development for sustainable production of polyphenols, algal biomass, and lipids

13:00- 13:15

A. Nicodemou, M. Kallis and M. Koutinas

Break

13:15 - 14:45

## SESSION 2: Air Emissions/ CO<sub>2</sub> Separation

Chair: A. Agapiou & M.D. Damaceanu

14:45 - 15:30

### Effect of the polymer blend-based membranes composition on CO<sub>2</sub> separation efficiency

14:45 - 15:00

M.D. Damaceanu, I. Butnaru, C.P. Constantin, and A. Wolińska-Grabczyk

### Reliable fugitive emissions measurements at a gas transmission network

15:00 - 15:15

N. Tsochatzidis and N. Katsis

### Monitoring of goat cheese whey wastewater VOCs by extraction techniques

15:15 - 15:30

S. Elia, M. Stylianou and A. Agapiou

## SESSION 3: Policies, Regulatory and Social Acceptance

15:30 - 16:15

Chair: N. Tsochatzidis & F. Dziike

**Evaluation of MULESL technology for wastewater reuse in light of Regulation (EU) 2020/741** 15:30 - 15:45

V.G. Altieri, M. De Sanctis and C. Di Iaconi

**Social acceptance of sustainable bioenergy transition policies for public health** 15:45 - 16:00

E. Lakioti, A. Itziou, I. Vasiliadou, V. Karayannis and C. Tsanaktsidis

**Sustainable siting of offshore wind farms. Application in Crete (SusTainable siting of offshore wind Parks. Application in Crete) Step – Ap** 16:00 - 16:15

P. Gkeka-Serpetsidaki and T. Tsoutsos

## SESSION 4: Adsorption Processes

16:15 - 17:00

Chair: K. Tsamoutsoglou & P. Gkeka-Serpetsidaki

**Studies on rare earth elements recovery on alginate sorbent modified with ion exchanger with phosphonic groups** 16:15 - 16:30

D. Fila, Z. Hubicki and D. Kołodzyńska

16:30 - 16:45

**Hydrotalcite modified biochar as a sorbent to remove cerium ions from water media**

J. Bąk and D. Kołodzyńska

**Column adsorption of polyphenols from olive mill wastewater by activated biochar** 16:45 - 17:00

E. Karefylaki, C. Galanakis, A. Veksha, G. Lisak and A. Giannis

**Break - Posters viewing**

17:00 - 17:30

**PLENARY LECTURE: Prof. E. Ranieri**

**17:30 - 18:15**

**Influence of climate change on wastewater treatment plants performances and energy costs in Apulia, south Italy**

**Chair: P. Gikas & M.C. Fragkou**

**SESSION 5: Solid Waste Management/ Biosolids Management and Valorization**

**18:15 - 19:30**

**Chair: H. Azaizeh & G. Gatidou**

**Decontamination of antibiotics from aqueous solution using citrus fruit waste biochar – silicate composite adsorbents**

**18:15 - 18:30**

M. Gamble and **C. Mangwandi**

**Pretreatment of cotton stalk residues for biogas production**

**18:30 - 18:45**

**A. Makri**, P. Melidis and S. Ntougias

**Usefulness of waste from the cultivation of tobacco for energy production**

**18:45 - 19:00**

M. Pitula, A. Kowalczyk-Juško, P. Pochwatka and **J. Dach**

**Biodegradation of phenolic compounds from grape pomace of *Vitis vinifera* Asyrtiko by *Chlamydomonas reinhardtii***

**19:00 - 19:15**

M. Belenioti, **E. Mathioudaki**, E. Spyridaki, D. Ghanotakis and N. Chaniotakis

**Valorization of spent coffee grounds for removal of chromium from wastewater**

**19:15 – 19:30**

R. Campbell and **C. Mangwandi**

**Challenges with Strategic Planning for Disaster Waste Management in Developing Countries**

**19:30- 19:45**

**M. Massoud** and L. Al Tawil

## Friday 16 June Anelixi | Susteng 2023

### Greetings | Welcome Speeches

09:30 - 11:00

**Petros Gikas**, Professor, School of Chemical and Environmental Engineering, (Scientific leader of the project ANELIXI), Technical University of Crete, Greece

**Tsiagande Vaya**, Communication Officer & Technical Assistance JS, INTERREG V-A Greece-Cyprus 2014-2020

**Nikolas Karamanes**, Director General, Water Supply and Sewerage of Paros, Greece

**George Panayiotou**, Vice President, Kyperounta Sewerage Board, Cyprus

**Angeliki Larcou Yiannakou**, Coordinator, Division of Wastewater and Reuse, Water Development Department, Cyprus

### Break – Posters viewing

11:00 - 11:30

**PLENARY LECTURE: Prof. I. Janajreh**  
**Low Energy Desalination: Direct Contact Membrane Distillation (DCMD) and Freeze Desalination (FD)**  
Chair: P. Gikas & E. Ranieri

11:30 - 12:15

**SESSION 6: Water Resources Management**  
Chair: N. Tsochatzidis & M. Karim

12:15 - 13:15

**Smart Irrigation recommendation system using Machine Learning**  
**K. Dolaptsis**, X.E. Pantazi, G.Tziotzios, D.Stavridou, A.Morellos, C.Paraskevas, S. Arslan, Y. Tekin and A. Mouazen

12:15 - 12:30

**HRES: The solution to cover water and energy needs in a Greek arid island** 12:30 - 12:45  
**S. Skroufouta**, A. Lemonis and E. Baltas

**Environmental, Health and Safety Challenges of 300MW Floating Solar Plant** 12:45- 13:00  
**M. Karim** and R. Rimsa

**Assessing the value of seasonal forecasts for improved reservoir operations in a water-stressed Mediterranean basin: A case study in the Faneromeni reservoir, Crete** 13:00 - 13:15  
**A. Tsilimigras**, N. Crippa, M. Grillakis, G. Yang, M. Giuliani and A. Koutroulis

**Break** 13:15 - 14:45

**SESSION 7: Wastewater treatment & Bioremediation (part I)** 14:45 – 15:45  
**Chair: J. Dach & M. Vatyliotou**

**Presentation of the Wastewater Treatment Plants of Paros, Greece** 14:45 - 15:00  
**M. Mavri**

**Benzotriazoles and perfluorinated substances removal using thermal pretreatment and biochemical methane potential (BMP) test** 15:00 - 15:15  
**G. Gatidou**, A. Koukoura, E. Gkalipidou, E. Zkeri, M. Fountoulakis and A. Stasinakis

**Sustainable municipal wastewater treatment through novel pilot-scale aerated Vertical Flow Constructed Wetlands** 15:15 - 15:30  
**P. Regkouzas**, I. Asimakoulas, K. Paragioudakis, E. E. Koukouraki and A. Stefanakis

**SESSION 7: Wastewater Treatment &  
Bioremediation (part II)**  
Chair: I. Vyrides & D. Constantinou

15:45 - 17:15

**Removal of chromium from aqueous solution using CeO<sub>2</sub>@starch  
nanocomposite material and olive stone in a continuous system**  
O. Jaiyeola and C. Mangwandi

15:45 - 16:00

**Reclaimed Water Reuse in Cyprus**  
M. Vatyliotou

16:00 - 16:15

**Presentation of Sewage Treatment Plant at Kyperounta**  
Member of Water Development Department of Cyprus

16:15 - 16:30

**Primary Filtration Systems for upgrade of overloaded municipal  
Wastewater Treatment Plants in the Mediterranean Countries**  
K. Tsamoutsoglou, I. Maniaki and P. Gikas

16:45 - 17:00

**The rehabilitation of the main sewer collector of Limassol - An  
innovative approach**  
G. Panayiotou

17:00 - 17:15

**Break - Posters viewing**

17:15 - 17:30

**Workshop of the LIFE B2E4SustWWTP**

17:30 - 19:00

**Gala Event**  
(Filitos, Gerasa)

20:00 - 23:00

**SESSION 8: Biochemical and Biomedical  
Engineering & Biotechnology**  
Chair: M. Koutinas & A. Nicodemou

09:30 - 11:15

**Development of biochar-based biocatalysts for fermentative bioethanol overproduction via whole-cell immobilisation under multiple environmental stresses**

09:30 - 09:45

M. Kyriakou, M. kyria, A. Ioannou, V. Fotopoulos and M. Koutinas

**Can biodiesel become a determinant Bioeconomy factor towards sustainability: Mixture physicochemical composition and Input-Output (I-O) indicators of biodiesel sector**

09:45 - 10:00

M.E. Kyriklidis, C. Kyriklidis, V. Vasileiadis, E. Loizou and C. Tsanaktsidis

**Cultivation of Clorella sorokiniana in a flat-plate gas-lift photobioreactor and harvesting with the use of Pleurotus ostreatus fungal pellets**

10:00 - 10:15

S. Schiza, A.S. Stasinakis and M.S. Fountoulakis

**Optimization of microalgae bio-products under industrial flue gas exposure**

10:15 - 10:30

G. Makaroglou and P. Gikas

**CO<sub>2</sub> utilization in a system of anaerobic granular sludge and magnesium ribbon for acetic acid production**

10:30 - 10:45

C.G. Samanides and I. Vyrides

**Optimal Biodiesel Mixtures: Cost and Density Evaluation Function Application by Genetic Algorithm**

10:45 - 11:00

V. Vasileiadis, M.E. Kyriklidis, C. Kyriklidis, E. Terzopoulou and C. Tsanaktsidis

**Impact of organic and biodynamic vineyard management on microorganism community, chemical and sensory properties of Cabernet Sauvignon wines in Ningxia, China**

11:00 - 11:15

Y. Sun, F. Zhang, F Y Guo and J. Zhang



Break - Posters viewing

11:15 - 11:45

**PLENARY LECTURE: Prof. H. Azaizeh**

11:45 - 12:30

**Biomass valorization for lactic acid production to produce polylactic acid as a biodegradable plastic**

**Chair: P. Gikas & I. Janajreh**

**SESSION 9: Waste to Energy/ Hydrogen Production**

12:30 - 13:45

**Chair: A. Makri & K. Tsamoutsoglou**

**The impact of a biogas plant on the energetic and economic situation of a dairy farm**

12:30 - 12:45

**J. Dach, P. Pochwatka, A. Kowalczyk-Juško and A. Mazur**

**Spent coffee grounds and orange peel residues based biorefinery development towards biolubricants production and biodiesel properties estimation**

12:45 - 13:00

**E. Stylianou, K. Zygouraki, M. Carmona-Cabello, N. Giannakis, M.P. Dorado and A. Koutinas**

**Hydrogen gas generation by anaerobic oxidation of metallic iron Fe<sup>0</sup> or scrap iron under low-temperature carbonates conditions and the role of citric acid**

13:00 - 13:15

**D. Constantinou and I. Vyrides**

**In situ hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) production in carbonaceous electrodes with different interfacial properties**

13:15 - 13:30

**P. Petsi, K. Plakas, Z. Frontistis and A. Karabelas**

**Biosolids gasification: state-of-the-art and industrial-scale application at the WWTP of Rethymno**

13:30 - 13:45

**K. Pothoulaki, A. Manali and P. Gikas**

Break

13:45 - 15:00

## SESSION 10: Nanomaterials

15:00 - 16:00

Chair: F. Galatopoulos & P. Pochwatka

### **Solution Processed Perovskite Nanocrystal Photovoltaics**

15:00 - 15:15

**F. Galatopoulos**, P. Papagiorgis, A. Ioakeimidis, C. Christodoulou, A. Chrusou, E. Charalambous, A. Manoli, C. Bernasconi, M. I. Bodnarchuk, M. V. Kovalenko, G. Itskos and S.A. Choulis

### **Metal nanoparticles as pesticide alternatives**

15:15 - 15:30

**A. Malandrakis**, N. Kavroulakis, C. Chrysikopoulos

### **High Mechanical Strength Carbon Nanofibers Fabrication: A Comparative Study of Biomass Electrospun Nanofibers and CVD Synthesized Nanofibers Over Nickel Decorated RANR**

15:30- 15:45

**F. Dziike**, T. D. Ntuli, and O.A. Olagunju

### **Fabrication of Ceramic Composite Films for Solid Oxide Electrochemical Cells (SOEC) by Solution Spray Pyrolysis(SSP)**

15:45 - 16:00

**C. Ziazias**, C. Matsouka, C. Tsanaktisidis and N.E. Kiratzis

## SESSION 11: Environmental Economics/ Industrial Economics

16:00 - 17:00

Chair: A. Pournara & E. Stylianou

### **Sustainable blue economy and ecosystem services in transitional water bodies: Case study of a lagoon and a river delta in Northern Greece**

16:00 - 16:15

**A. Pournara** and F. Sakellariadou

### **The role of standards for the transition to a Sustainable Blue Economy**

16:15 - 16:30

**A. Pournara**

### **Techno-economic learning in biorefinery research – a meta-level perspective on three exemplary cases**

16:30 - 16:45

**P. Krassnitzer**

**Cost-benefit analyses for agricultural soils health: a literature review** 16:45 - 17:00  
**S. Rozakis** and E. Androulidaki

**Break - Posters viewing** 17:00 - 17:30

**PLENARY LECTURE: Prof. M. C. Fragkou** 17:30 - 18:15  
**An interdisciplinary approach towards seawater desalination for human consumption in the Atacama desert, Chile**  
**Chair: P. Gikas & J. Dach**

**SESSION 12: Agricultural Engineering/  
Agricultural & Livestock Waste** 18:15 - 19:15  
**Chair: P. Pochwatka & K. Tsamoutsoglou**

**Machine Learning based Prediction of Fusarium Head Blight spatial distribution in wheat fields** 18:15 - 18:30  
**A. Morellos**, X.E. Pantazi, C. Tsitsopoulos, K. Dolaptsis, G. Tziotzios, D. Stavridou, C. Paraskevas, O.E. Apolo-Apolo, M.B. Almoujahed, R. Whetton, Z. Kriauciuniene, M. Kazlauskas, E. Šarauskas and A. Mouazen

**Valorisation of agricultural waste towards enhanced biopolymer via cathodic electrofermentation** 18:30 - 18:45  
**O. Vittou**, M. Sarafidou, O. Psaki, C. Pateraki and A. Koutinas

**Modeling of methane production with the application of artificial intelligence techniques** 18:45 - 19:00  
**P. Pochwatka**, A. Kowalczyk-Juško, A. Mazur and J. Dach

**Treatment and technology of rural domestic wastewater in China** 19:00 - 19:15  
**J. Zhang**, S. Lu, Yungeng Jiang and H. Zhang

**Closing Ceremony** 19:15 - 20:00  
**Chair: P. Gikas, E. Ranieri, H. Azaizeh, I. Janajreh, M. C. Fragkou, I. Vyrides, M. Koutinas**

Field visit at Troodos mountain and Kyperounta wastewater treatment plant

09:30 - 16:00

## Posters

**Biogas upgrading with membrane gas separation; Construction and operation of a pilot-scale polyimide membrane system**

P. Gkotsis, C. Koutsiantzi, T. Deligiannis, A. Zouboulis, M. Mitrakas and E. Kikkinides

**Digestate from agriculture biogas plants as a potential source of tetracycline antimicrobials and antibiotic resistance genes**

E. Korzeniewska, I. Wolak, M. Harnisz, Magdalena Męcik, K. Stando and S. Bajkacz

**Variations of Organic Characteristics for Influent and Effluent of BAC Filter in AOC Bioassay Using SFS with Integrated Areas**

S.C. Chen, W.L. Lai and T.Y. Hong

**The energetic potential of surgical masks: a possible approach as solid recovered fuels**

S. Pinho

**A nanopore long-read sequencing points out a modification of hospital wastewater microbiome after chlorine disinfection**

D. Rolbiecki, Ł. Paukzto, K. Krawczyk, E. Korzeniewska, J. Sawicki, and M. Harnisz

**Experimental and Mathematical study on CO<sub>2</sub> separation performance of biogas using commercial polyimide hollow membrane in a 2-stage process.**

C. Koutsiantzi, P. Gkotsis, A. Zouboulis, M. Mitrakas and E. Kikkinides

**Analysis of the Impact of Renewable Energy Promotion Policy on Taiwan's Electricity Mix**

S.K. Ning and J.S. Huang

**Screen-printing interdigitated microelectrodes for dielectrophoretic alignment MWCNT-based flexible gas sensors**

I. Turcan, T.A. Filip and M.A. Olariu

**Valorization of citrus processing industry waste for production of essential oils, pectin and bacterial cellulose**

**P. Karanicola**, M. Patsalou, A. Nicodemou, N. Evripidou, P. Christou, G. Panagiotou, C. Damianou and M. Koutinas

**Enhancement of glucose yield from potato starch through hydrolysis via immobilization of *Aspergillus awamori* and *Aspergillus niger* on carbonaceous materials**

**M. Patsalou** and M. Koutinas

**Evaluating the environmental benefits of utilizing hydrolyzed municipal biowaste for agricultural and biochemical value-added products**

**M. Christodoulou**, M. Koutinas, M. Kallis, P. Photiou, E. Montoneri, I. Vyrides and N. Tzortzakis

**Augmented Regression of Municipal Solid Waste Generation Rate Based on Economic and Social Data**

M.Gavrilescu and **D.Gavrilescu**

**The Sustainability of the Household Food Waste Management System in Romania**

**D. Gavrilescu**, D. Oprisor and C. Teodosiu

**Microplastic aging in freshwater and marine ecosystems**

**S.D. Martinho**, V. Cruz Fernandes, S.A. Figueiredo, R. Vilarinho, J.A. Moreira and C.D. Matos

**Coastline Protection & Management at Kythera Kapsali Bay through Summer School Project, the case of Island Kythera**

**E. Loupas** and M. Kalogeraki

**Circular bioeconomy strategy in Greek livestock sector: The integration of bakery meal to pig diets**

**L. Melas**, M. Batsioula, S. Skoutida, A. Malamakis, C. Karkanias, D. Geroliolios, S.Patsios and G. Banias

**A Systematic Investigation of Pb<sup>2+</sup> Removal from High-Salinity Wastewater by Electrocoagulation – Flocculation Process [ECF]**

V. Chatzis, V. Korovesi, **P. Petsi** and K. Plakas

**Removal of benzotriazoles during municipal wastewater treatment in suspended-growth and attached-growth systems containing *Chlorella sorokiniana* and activated sludge**

A. Koukoura, E. Gkalipidou, E. Zkeri, **G. Gatidou**, M. Fountoulakis and A. Stasinakis

**Experience of using IoT technologies and decision-support systems for smart-farming with real-time irrigation management and assessment of its impact on tree crops' economy in Greece.**

T. Theodosiadis-Thomaidis and G. Panagopoulou

**Fabrication, characterization, and application of ternary magnetic recyclable Bi<sub>2</sub>WO<sub>6</sub>/BiOI@Fe<sub>3</sub>O<sub>4</sub> composite for photodegradation of tetracycline in aqueous solutions**

T.A. Kurniawan

Application of the advanced primary filtration process at activated sludge wastewater treatment plants

K. Tsamoutsoglou and P. Gikas

**Improving prediction of bioethanol production through construction of a gene regulatory model in *Saccharomyces cerevisiae***

M. Christodoulou, M. Kyriakou, P.S. Stephanou and M. Koutinas

**Seasonal response of soil microbiomes to conservation practices.**

M. Frantzeskou, N. Paranychianakis and S. Tul

**Recovery of phosphate from wastewater using by-pass dust (BPD) from cement industry**

P. Photiou, P. Christou and I. Vyrides

**Treatment of municipal wastewater primary effluent by trickling filters**

E. Gika, E. Kyriotakis, I. Chourdakis and P. Gikas

**Soil enzymes activity in conservation and conventional agroecosystems**

M. Frantzeskou, N. Paranychianakis and S. Tul

**A generalized differential constitutive equation for polymer melts**

P. C. Konstantinou, and P. S. Stephanou

**Cultivation of immobilized microalgae in a pilot-scale photo-bioreactor for CO<sub>2</sub> sequestration**

D. Mitrogiannis, G. Makaroglou and P. Gikas

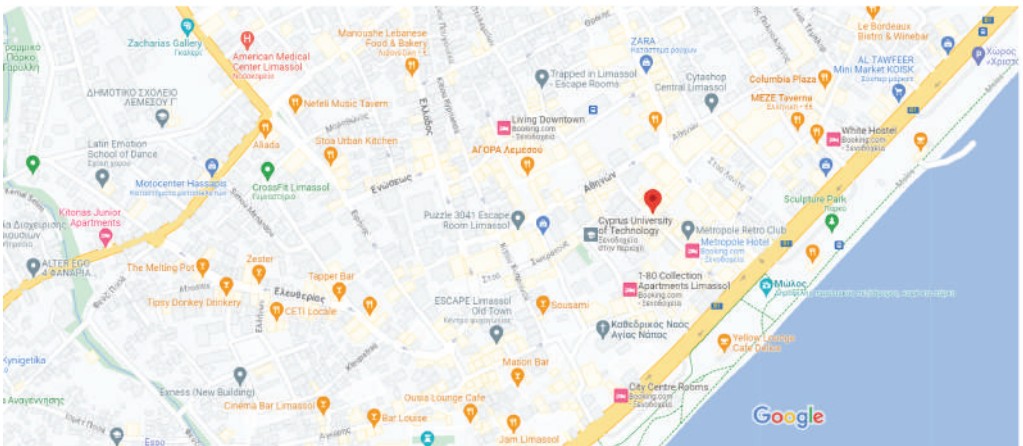
# MAP

## Building Tasos Papadopoulos Hall 1

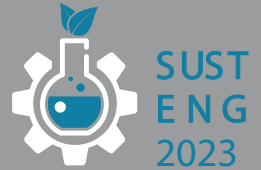
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The Interreg V-A “Greece – Cyprus 2014-2020” Cooperation Program is co-funded by the European Union and by the National Funds of Greece and Cyprus.



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