

**10th International Conference on
"Energy, Sustainability and
Climate Crisis"
ESCC 2023**



Heraklion, Greece, June 5 - 9, 2023

Conference Venue

The conference will take place at Heraklion Chamber of Commerce & Industry, Heraklion, Greece (location 35.34078466831926, 25.133586130911066). The Heraklion Chamber of Commerce & Industry is at the Center of Heraklion city.

For more information please go to: <http://esc.uth.gr/venue/>

Directors of the Conference:

Professor Panos Pardalos, Center for Applied Optimization, University of Florida (USA).

Associate Professor Georgios K.D. Saharidis, www.GreenYourRoute.com, University of Thessaly (Greece).

Professor and Chairman Mohsen A. Jafari, Industrial and Systems Engineering, School of Engineering, University of Rutgers (USA).

Professor and Chairman Soteris Kalogirou, Mechanical Engineering and Materials Science and Engineering, Cyprus University of Technology (Cyprus).

Associate Professor Vítězslav Máša, Faculty of Mechanical Engineering, Brno University of Technology (Czech Republic).

Assistant Professor Maria do Castelo Gouveia, Coimbra Business School | ISCAC (Portugal).

Professor Gülgün Kayakutlu, Faculty of Management, Istanbul Technical University (Turkey).

Associate Professor Joe Naoum-Sawaya, Management Science, Ivey Business School (Canada).

Associate Professor Bissan Ghaddar, Management Science & Sustainability, Ivey Business School (Canada).

Scientific Committee:

Associate Professor Mihalis M. Goliass, University of Memphis (USA).

Lecturer Dimitris Zissis, Operations Management, Norwich Business School (UK).

Sessions

Session 1: Operational Research	(Monday, 5 June, 10:00-12:00)
Session 2: Transportation and Energy Efficiency	(Monday, 5 June, 14:00-15:40)
Session 3: Energy, Sustainability and Climate Change	(Monday, 5 June, 15:40-18:00)
Session 4: Energy	(Tuesday, 6 June, 09:00-12:00)
Session 5: Energy & Environment	(Tuesday, 6 June, 14:00-15:40)
Session 6: Natural Resources & Power Systems	(Wednesday, 7 June, 09:00-10:40)
Session 7: Emissions	(Wednesday, 7 June, 10:40-12:40)



Program Summary

Monday, 5 June 2023

- 09:00-10:00 Registration
- 10:00-12:00 Session 1: Operational Research
- 12:00-12:40 Plenary Talk: Assistant Professor Maria do Castelo Gouveia
Assessing Quality of Life across Europe
- 12:40-13:20 Light Lunch (Take Away)
- 13:20-14:00 Plenary Talk: Professor Dr. Panos Pardalos
Energy Systems
- 14:00-15:40 Session 2: Transportation and Energy Efficiency
- 15:40-18:00 Session 3: Energy, Sustainability and Climate Change

Tuesday, 6 June 2023

- 09:00-12:00 Session 4: Energy
- 12:00-12:40 Plenary Talk: Professor Gülgün Kayakutlu
Sustainable Electricity after Earthquake
- 12:40-13:20 Light Lunch (Take Away)
- 13:20-14:00 Plenary Talk: Professor Dr. Mohsen A. Jafari
Impact and Value Proposition Analysis of Renewable Integration
- 14:00-15:40 Session 5: Energy and Environment
- 15:40-16:30 Plenary Talk: Georgios K.D. Saharidis
Machine learning for Air quality monitoring - Preliminary results (G. Saharidis, K. Ampountolas & K. Papadimitriou)

20:00 ESCC Dinner - Athali, Heraklion
Location: 15, Kidonias and Capetan Charalampi Street Heraklion, Greece
Log/Lat: 35.34009087593312, 25.13224888648291

Wednesday, 7 June 2023

- 09:00-10:40 Session 6: Natural Resources & Power Systems



- 10:40-12:40 Session 7: Emissions
- 12:40-13:20 Light Lunch (Take Away)
- 13:20-14:00 Plenary Talk: K. Ampountolas
- Data-Driven Predictive Analytics for Emergency Hospital Visits & Admissions - Preliminary Results** (G. Saharidis, K. Ampountolas & K. Papadimitriou)
- 14:00-14:10 **"Panos Pardalos" Best Student Award**

Thursday, 8 June 2023 (Only for Invited Researchers)

- 08:00-09:20 Seminar in Benders Decomposition Methods: Theory (Tutor: A. Fragkogios)
- 09:20-10:40 Seminar in Benders Decomposition Methods: Applications in Energy Networks (Tutor: A. Fragkogios)
- 10:40-12:40 Round table: Energy Systems (Chairman: V. Máša)
- 12:40-13:20 Light Lunch (Take Away)
- 13:20-15:20 Round table: LIFE GreenYourRoute Project: Extended Presentation of the Platform (Chairman: Georgios K.D. Saharidis)

Friday, 9 June 2023 (Only for Invited Researchers)

- 09:00-10:40 Special Issue Organization for ESCC 2024 (Chairman: Georgios K.D. Saharidis)
- 10:40-12:40 Organization of ESCC 2024 (Chairman: Georgios K.D. Saharidis)
- 12:40-13:20 Light Lunch (Take Away)

Sessions - Regular Presentations

Monday, 5 June 2023

Session 1: Operational Research (10:00-12:00)

Chairman: V. Máša

- (1) İr. D. Argun & E. Doğruca "Green Digital Transformation in Manufacturing".
- (2) V. Nevrlý "Complex Case Study on Waste Collection Routing Problem: Barriers, Critical Parameters and Size Reduction Techniques".
- (3) D. Can & Ü. Çolak "Mathematical Model Proposal and Cost Optimization in the Creation of an Emission Reduction Roadmap for the Industrial Enterprise in Turkey".

- (4) C. O. Henriques, Marcenaro-Gutierrez, O. D., Lopez-Agudo, L. A & S. Sousa "Material Living Conditions over Time by Gender Across Europe: A Window Data Envelopment Analysis Perspective".
- (5) J. Pluskal, R. Šomplák & B. Zach "Design and Optimization of Membrane-based Carbon Capture System".

Session 2: Transportation and Energy Efficiency
(14:00-15:40)

Chairman: V. Nevrlý

- (1) D. Poul "Tools and Methodical Approach to Multimodal Waste Transport Modeling".
- (2) El. Manousakis, G. Sideris, R. Baldacci & Em. Zachariadis "The multi-Vehicle Set Orienteering Problem".
- (3) G. Taherkhani, B. Ghaddar & S. A. Alumur "Data-driven Hub Network Design for Shared Mobility".
- (4) A. Ajanovic "The Impact of the Size of Electric Cars Size on its Economic and Environmental Performance".

Session 3: Energy, Sustainability and Climate Change
(15:40-18:00)

Chairman: C. O. Henriques

- (1) R. Haas "Heading Towards Competitive and Sustainable Electricity Markets".
- (2) D. Zachos, G. Bakalis & N. Alamanis "Investigating the Effect of Factorial Variables of a Product's Life Cycle, on its Environmental Performance, based on Simplified Life Cycle Assessment Scenarios".
- (3) G. Kayakutlu, M. F. Baysal, H. Çağdaş Yatkın & Ir. D. Argun "Application of Regional Electricity Tariff and Estimation of Electricity Prices Throughout Turkey".
- (4) C. Şutaşdemir, M. Özgür Kayalica, G. Kayakutlu & Ün. Çolak "The Effect of Possible Carbon Pricing on Renewable Energy Investments and Emission Reduction Practices in Türkiye".
- (5) C. Beatrice, M. V. Prati, C. Fittavolini & M. Susannini "Drop-In Utilization of Hydrotreated Vegetable Oil (HVO) in a Locomotive Diesel Engine".
- (6) G. Saharidis, K. Ampountolas & K. Papadimitriou "Air Quality Monitoring Network Design and Optimisation".

Tuesday, 6 June 2023

Session 4: Energy
(09:00-12:00)

Chairman: B. Ghaddar

- (1) M. Procházková, M. Vondra, M. Touš & V. Máša "Efficient Reuse of Wastewater from Industrial Laundries".
- (2) St. Tsoka, K. Tsikaloudaki, K. Velikou & Th. Theodosiou "Impacts of Climate Change on the Energy Performance of Prefabricated and Conventional Buildings".
- (3) L. Migliari, M. Petrollese, G. Cau & D. Cocco "Preliminary Design of an Innovative PV-PTES System to Enhance the Energy Efficiency in the Tertiary Sector: A Case Study".
- (4) St. Theodoraki, D. Plakias & K. Atsonios "Implementation of Chemical Looping Combustion Technology with Waste-Derived Fuels: Process Analysis and Techno-Economic Evaluation".
- (5) L. Aresti, C. Michailides, T. Onoufriou & P. Christodoulides "Ocean Thermal Energy Conversion (OTEC) Systems in the Mediterranean Sea: Availability and Cold Water Pipe Effect".
- (6) L. Aresti, Ch. Makarounas, G. Florides & Paul Christodoulides "Implementation of Energy Geo-Structures for Micro-Scale District Heating and Cooling in Mediterranean Environment".
- (7) Oğ. Durmuşoğlu, M.Özgür Kayalica, G. Kayakutlu & D. Güven "Do Financial Performances of Turkish Energy Companies reflect their Sustainability Performances?".

Session 5: Energy and Environment
(14:00-15:40)

Chairman: L. Aresti

- (1) Aik. Gkika, F. Gakis, Ef. Zacharis & Il. Manolis "Improving the Power Distribution Grid Resilience through the Integration of Distributed Energy Resources: Case Studies in Greece".
- (2) On. Němček & St. Honus "Reducing CO₂ Production and Emissions through CO₂ Capture, Torefaction, Additivation and Catalysts".
- (3) N. Alamanis, Th. Chrysanidis, D. Zachos, N. Xafoulis, Gr. Papageorgiou & Sp. Kotsopoulos "Environmental Disasters from the Occurrence of Dynamic Phenomena".
- (4) An. Dumitru, An. M. Tanase, S. Iftimie & Ir. Lascu "Anode Modification with Polypyrrole-Derived Carbon Nanostructures for the Improvement of Microbial Fuel Cells Performance".

Wednesday, 7 June 2023

Session 6: Natural Resources & Power Systems
(09:00-10:40)

Chairman: M. Procházková

- (1) Y. N. Kontos, N. G. Xafoulis, Th. P. Karachaliou & K. L. Katsifarakis "Optimal Design of Small Solid Dams' Systems in Mountainous River Basins, using GIS and Genetic Algorithms".
- (2) G. Kayakutlu, Em. Uz, M. Ozgir Kayalica, Ir. D. Argun "Power Production by using the Hydroelectric Power Plants and Cost Effect on Electricity Market in Turkey".
- (3) J. Naoum-Sawaya "Optimization Models for Water Pump Scheduling".

Session 7: Emissions
(10:40-12:40)

Chairman: Ir. D. Argun

- (1) D. Horňák & M. Touš "Wastewater Recycling in Dairy Industry Using Membrane Processes".
- (2) F. Murena & D. Toscano "Identification of High Emitting Sources of Airborne Pollutants in Historical Centers".
- (3) Th. Chrysanidis, N. Alamanis, Gr. Papageorgiou & M. Andreadou "Does the Area Seismic Zone Affect the Cost of Construction of a R/C 10-Storey Building with Spring Supports and the Resulting Emissions?".
- (4) M. M. Badami, R. Tohidi, V. J. Farahani & C. Sioutas "Investigating the Sources of Water-Soluble and Water-Insoluble Metals and Trace Elements of Ambient Coarse and Fine PM in Los Angeles".

Emergency Telephone Numbers

Police	100
Medical Emergency Department	166
Dr. Georgios K.D. Saharidis	(+30)6977404429
Fire Department	199