



THE THIRD EURECA-PRO CONFERENCE ON

RESPONSIBLE CONSUMPTION AND PRODUCTION

2023

Technical University of Crete, Chania | Crete – GREECE

26 – 29 September 2023



The European University Alliance
on Responsible Consumption
and Production



ΠΟΛΥΤΕΧΝΕΙΟ ΚΡΗΤΗΣ
TECHNICAL UNIVERSITY
OF CRETE

Oral Presentations Programme

Tuesday, 26.09.2023

Centre of Mediterranean Architecture

18:00 - 19:00 *Registration*

Mikis Theodorakis Theatre

19:00 - 19:30 **Opening Ceremony**

Keynote - Prof. Emerita Antonia Trichopoulou

National and Kapodistrian University of Athens

19:30 - 20:30 "From Mediterranean to Planeterranian Diet: Nutritional Diversity, Health and Sustainability"

20:30 - 22:30 **Welcome Reception**

Wednesday, 27.09.2023

Centre of Mediterranean Architecture

09:00 - 09:30 *Registration*

Mikis Theodorakis Theatre

Keynote: Prof. Emeritus Markos Papageorgiou

Technical University of Crete

09:30 - 10:30 "Road Traffic Control: Past, Present and Future"

10:30 - 11:00 *Coffee Break*

Centre of Mediterranean Architecture

Parallel Session I-I Energy and Environment

Session Chair: *Hetmaniok, E.*

11:00 - 11:20 **Iliopoulos, T.; Wortmann, C.** "Responsible Clean Energy Production: Combining Better Regulation and Strategic Litigation"

11:20 - 11:40 **Ruysschaert B.; Kuppens, T.; Crutzen, N.** "Local Governments' Strategies For The Transition Towards The Circular Economy"

11:40 - 12:00 **Van der Auwermeulen, L; Voorter, J.** "With a Little Help from my Friends: Can (cross-border) Interlocal Cooperation be an Alternative Driver for the Pursuit for a More Sustainable Local Policy"

12:00 - 12:20	Asmundo, A.; Bertolini, M.; Lemmi, C.; Tarì, S. "What is an Energy Community? A Taxonomy for Investment Evaluation Applied to Four Pilots"
12:20 - 12:40	Barbarzak, A. "Critical Raw Materials as a Public Policy Challenge: Responsibility, Accountability, Sustainability"
12:40 - 13:00	Perišić, M. "The Role of EU Policy and Legislation towards Phytoremediation as a Nature-based Remediation Technology"
Mikis Theodorakis Room 1	
Parallel Session I-II Smart and Healthy Societies	
Session Chair:	Gorski, M.
11:00 - 11:20	Lilli, A.; Tsekeri, E.; Katsiokalis, M.; Polychronaki, S.; Kolokotsa, D. "Enhancing Nature Based Solutions by Incorporating digital Innovation and Visionary Infrastructure in Chania"
11:20 - 11:40	Fonteyn, P.; Malina, R.; Lizin, S. "Beyond Green Spaces: Relating Specific Types of Urban Green Infrastructure to Neighborhood Satisfaction"
11:40 - 12:00	Marchacz, M.; Nowoświat, A.; Górski, M.; Marchacz, M. "Impact of Road Expansion Devices on Environmental Noise"
12:00 - 12:20	Papadakis, N.; Stavroulakis, G. "Soundscape Perception using ISO/TS 12913-2:2018: Case of Chania, Greece"
12:20 - 12:40	Bouguerra, S.; de jong, R.; et al. "Energy Yield Assessment of Zigzag Noise Barrier in a Moderate Climate Using an Advanced Simulation Tool"
Mikis Theodorakis Room 2	
Parallel Session I-III Low Carbon and Sustainable Materials	
Session Chair:	Schroeyers, W.
11:00 - 11:20	Goldmann, E.; Górski, M.; Klemczak, B. "Water Absorption of Cement Mortars with Carbon Nanotubes at Different Water-to-Cement Ratios"
11:20 - 11:40	Schroeyers, W.; Pollet, I.; Gijbels, K.; Hult, M.; Schreurs, S. "Environmental Impact Assessment for the Recycling of Phosphogypsum in Alternative Cementitious Binders"
11:40 - 12:00	Krammer, A.; Klaus Doschek-Held, K.; Steindl, F.R.; Gatschlhofer, C.; Juhart, J. "Carbothermal Treatment Of Metallurgical Residues For Use As A Supplementary Cementitious Material"
12:00 - 12:20	Nayak, J.; Bochen, J.; Golaszewska, M. "A Comparison of the Effects of Supplementary Cementitious Materials (SCM) on Cement Mortar: Mechanical and Microstructural Evaluation"
12:20 - 12:40	Knapen, E.; de Vries, N.; Pelicaen, E.; Silvertand, J.; Weytjens, L. "Investigating the Application of Earth Blocks in Practice: a Living Lab Approach"
12:40 - 13:00	Bekchanova, M.; Campion, L.; Bruns, S.; et al. "Biochar Effects on the Nutrient Cycle in Sandy-textured Soils: a Systematic Review and Meta-analysis"
13:00 - 14:00	Lunch Break

Centre of Mediterranean Architecture	
14:00 - 15:00	Poster Session I
Mikis Theodorakis Foyer	
14:00 - 15:00	Poster Session II
Centre of Mediterranean Architecture	
Parallel Session II-I	Energy and Environment
<i>Session Chair:</i>	<i>Orlińska, B.</i>
15:00 - 15:20	Rollenitz, J.; Drexler, H.; Lindenthal, L.; Schrenk, F.; Berger, T.; Rameshan, C. "Strategies for Improving the Performance of a rWGS Catalyst"
15:20 - 15:40	Berger, T. A.; Bock, J.; Drexler, H.; Schrenk, F.; Lindenthal, L.; Rameshan, C. "Pathway to a Climate Neutral Future: Methanol Steam Reforming Using Perovskite-Based Oxides"
15:40 - 16:00	Rameshan, R. "Catalysts for CO ₂ Conversion: Tuning Perovskites by Electrochemical Potential / Gas Composition / Gas Pressure"
16:00 - 16:20	Łukowiec, D.; Wasiak, T.; Janas, D.; Gruzeł, G.; Kubacki, J.; Wacławek, S.; Radoń, R. "1D Transition Metal Materials As an Efficient Catalyst Support In Direct Alcohol Fuel Cells"
16:20 - 16:40	Kokka, A.; Ramantani, T.; Yentekakis, I.V.; Panagiotopoulou, P. "Hydrogen Production Via Propane Steam Reforming Reaction Over Alkali Promoted Ru/TiO ₂ Catalyst"
16:40 - 17:00	Brzęczek-Szafran, A.; Gaida, B.; Gwóźdź, M.; Chrobok, A. "Sustainable Functional Materials for Catalysis and Thermal Energy Storage"
Mikis Theodorakis Room 1	
Parallel Session II-II	Farm to Fork: Practicing RCP
<i>Session Chair:</i>	<i>Buntinx, M.</i>
15:00 - 15:20	Fanjul, A.P.; Muñoz-Doyague, M.F.; Herrera, L. "Improving Food Production in Spain: Evaluating the Distribution of a European Program"
15:20 - 15:40	Severijns, R.; Asanov, I.; Moleman, P.; Streukens, S.; Bruns, S.; van Griethuijsen, J.; Brouwer, J.; Lizin, S. "Veggie Challenge: Protocol for a 30-Day App-based Individual versus Teams Randomized Controlled Trial to Reduce Animal Product Consumption"
15:40 - 16:00	Despoudi, S.; Wu, K.; Nedelkou, E. "Consumers' Attitudes towards Circular Food Supply Chain and Sustainable Food Purchase Intention during Covid-19"
16:00 - 16:20	Nedelkou, E.; Despoudi, D. "An Exploration of the Different Precision Farming Technologies used by Dairy Farmers in Greece possibly affect Animals' Welfare, Farm Productivity, Farm Wasteproduct Quality and Profit Levels"

16:20 - 16:40	Varas Perez, P.; Marchal, W.; Vandamme, D. "Exploring FTIR Microspectroscopy for Evaluation and Monitoring of Pectin Extraction on Carrot Pomace"
Mikis Theodorakis Room 2	
Parallel Session II-III Circular Economy	
<i>Session Chair:</i>	<i>Van Cleempoel, K.</i>
15:00 - 15:20	Bongaerts, J.C. "Potentials and Limits of Recycling for Natural Resources Needs"
15:20 - 15:40	Giannis, A.; Malouchou, I. "Technoeconomic Assessment of a Deposit Refund System for Recycling of Single Use Beverage Packaging in Greece"
15:40 - 16:00	Reich, R.H.; Ahmed, A.; Di Maria, A.; Van Acker, K. "Environmental Impact Assessment of Silicon Wafers Supply Chains in the Semiconductor Industry"
16:00 - 16:20	de Oliveira Chiletto, T.; Passarelli, R.N.; Knapen, E. "Why Should We Discuss Designing for Circularity for Mass Timber Buildings?"
16:20 - 16:40	Van Cleempoel, K. "Adaptive Reuse of the Built Heritage Responsible strategies for the continued use of historical sites"
16:40 - 17:00	Wyciślok, A. "The Reuse Of Ceramic Materials In Architectural Design - Case Studies Of Selected Examples"
17:00 - 17:15	<i>Coffee Break</i>
Centre of Mediterranean Architecture	
Parallel Session III-I Energy and Environment	
<i>Session Chair:</i>	<i>García-Sanz-Calcedo, J.</i>
17:15 - 17:35	Martulli, A.; Gota, F.; Rajagopalan, N.; et al. "Beyond Silicon: Thin-film Tandem as an Opportunity for Photovoltaics Supply Chain Diversification and faster Power System Decarbonization out to 2050"
17:35 - 17:55	Mouti, N.; Terziyska, V.; Kostoglou, N.; Kaidatzis, A.; Eliades, A.; Milidonis, K.; Giannakopoulos, K.; Mitterer, C. "Developing Self-Cleaning Mirrors with TiO ₂ Films for Concentrated Solar Thermal Power Technology"
17:55 - 18:15	García-Sanz-Calcedo, J.; Botejara-Antúnez, M.; Díaz-Parralejo, A.; Macias-García, A. "Multidimensional Hierarchical Analysis of Different Sol-Gel Coatings in a CSP Plant"
18:15 - 18:35	Kyranaki, N.; Colberts, F.; Koetse, M.; et al. "Design Guidelines for Building and Infrastructure Integrated Photovoltaics"
18:35 - 18:55	Çiçekli, S.; Nomine, A.; Rondeau, Gürbüz, T.; Kubler, S. "Battery Selection for Electrical Cars Using Hybrid Multi Criteria Decision Making Methods"
Mikis Theodorakis Room 1	
Parallel Session III-II RCP/Sustainability in Health Promotion	
<i>Session Chair:</i>	<i>Castro Franco, A.</i>

17:15 - 17:35	Szewczenko, A.; Lach, E.; Chuchnowska, I.; et al. "Urban Health Path: An Innovative Tool for Promoting Active Ageing and Local Identity"
17:35 - 17:55	Castro Franco, A. "Occupational Risk Prevention and Environmental Sustainability in Today's Business Context"
17:55 - 18:15	Maes, A.; Van Laer, K.; Foubert, P. "Reasonable Accommodations to Alleviate Work-related Stress in the Ppublic and Private Sectors"
18:15 - 18:35	Barbiero, C.; Mazzi, A. "How Much Do European Documents On Circularity And Sustainability Deal With Occupational Health And Safety?"
18:35 - 18:55	Jáñez-Martino, F.; Costa-Feito, A.; Álvarez-Sánchez, J.L. "Spotting Persuasive Marketing Strategies in Healthcare and Sports Supplementation Blogs through Artificial Intelligence"
Mikis Theodorakis Room 2	
Parallel Session III-III Educating for a Sustainable Future	
Session Chair:	Verbeeck, G.
17:15 - 17:35	Stanimirescu-Soica, A.; Itu, R.B.; Florea, V.A. "Understanding the Concept Between Reuse and Convert in Primary and Secondary Schools"
17:35 - 17:55	Buchczik, D.; Gaschi-Uciecha, A.; Podgorska, M.; Zdonek, I. "Sustainable Development Issues in Interdisciplinary Project-Based Learning Focused on Industry 4.0 at The Silesian University of Technology"
17:55 - 18:15	Novais Passarelli, R.; Winkels, P.; Knapen, E.; Verbeeck, G. "Combining Teaching and Research on Design for Disassembly and Reuse with Wood Through Design/Build Education"
18:15 - 18:35	Petrakis, G.; Partsinevelos, P.; Papatheodorou, A.; et al. "Enhancing Problem-Based Learning with a Tangible Interactive Sand Platform: Spatial Visualization and Real-World Solutions in Education"
18:35 - 18:55	Verbeeck, G. "Integrating the Concept of Energy Sufficiency in Architectural Education: Learning from and Contributing to Scientific Research"
19:00 - 00:00	Conference Gala Dinner

Thursday, 28.09.2023

Centre of Mediterranean Architecture

09:00 - 09:30

Registration

Mikis Theodorakis Theatre

09:30 - 10:30	Keynote: Prof. Carsten Drebenstedt <i>Technical University Bergakademie Freiberg</i> "From Coal to Climate Neutral Energy Supply – Easy to Do or a Complex Multi Stakeholder Issue?"
10:30 - 11:00	<i>Coffee Break</i>
Centre of Mediterranean Architecture	
Parallel Session IV-I Energy and Environment	
<i>Session Chair:</i>	<i>Dykas, S.</i>
11:00 - 11:20	Feichtinger, G.; Posch, W. "Evaluation of European Critical Raw Material Assessments under Energy Transition Considerations"
11:20 - 11:40	Tampouris, S.; Komnitsas, K.A. "Future Trends in World Nickel Production and Consumption"
11:40 - 12:00	Komnitsas, K.A.; Lazos I. "Geological Analysis and Spatial Distribution of the European Lithium Deposits"
12:00 - 12:20	Dykas, S.; Dosa, I.; Peczkis, G. "Energy Storage Facilities and Decommissioned Coal Mines"
12:20 - 12:40	RahimiLarki, M.; Arefian, A.; Keshavarz, S. "Influence of Thermal Storage System (TES) on the Sustainability of Renewable Technology Power Generation"
Mikis Theodorakis Room 1	
Parallel Session IV-II Circular Economy	
<i>Session Chair:</i>	<i>Galetakis, M.</i>
11:00 - 11:20	Apostu, I.M.; Lazar, M.; Faur, F. "A Review Of Possibilities For Accelerating The Pedogenesis On Mining Waste Dumps"
11:20 - 11:40	Varouchakis, M.; Komnitsas, K.A.; Galetakis, M. "Mapping Sustainable Development Goals in the Mining Industry"
11:40 - 12:00	Hauzinger, E.; Galler, R. "Mining the Future - Exploring a Sustainable Way of Tunnelling via the Reuse of Excavation Material based on the Future Circular Collider at CERN"
12:00 - 12:20	Gatschlhofer, C.; Doschek-Held, K.; Krammer, A.C. "Investigation of the Phosphorous Behavior in Basic Oxygen Furnace Slag by Carbothermal Reduction for Enhanced Slag Valorization"
12:20 - 12:40	Witt, K.; Steinlechner, S. "Recent Recycling Developments for Spent Magnesite Chrome Refractories from Nonferrous Metal Production"
12:40 - 13:00	Doschek-Held, K.; Krammer, A.C.; Steindl, F.R.; Sattler, T.; Juhart, J. "Mineral Wool Waste as Supplementary Cementitious Material - A Novel Thermochemical Treatment Approach"
Mikis Theodorakis Room 2	
Parallel Session IV-III IT/AI for Sustainable Manufacturing	
<i>Session Chair:</i>	<i>Partsinevelos, P.</i>
11:00 - 11:20	Grasser, B.; Colin, T.; Gurtner, E.; Pierronnet, R.; Stich, J.F. "Combining Industrial and Environmental Transitions: the VIVERES Project"

11:20 - 11:40	Marinakis, Y.; Stamadianos, T.; Kyriakakis, N.A.; Marinaki, M. "Promoting Sustainable Transportation in Greece: A Roadmap for Charging Infrastructure Development"
11:40 - 12:00	Bismor, D. "Advanced Signal Processing To Reduce Car Emissions"
12:00 - 12:20	Partsinevelos, P.; Petrakis, G.; Vozinaki, A.; Brempou, C. "Advancing Sustainable Planetary Exploration through Deep Learning Terrain Classification in Autonomous Rovers"
12:20 - 12:40	Ipsakis, D.; Kyriakou, D.G.; Kanellos, F.D. "Optimal Design and Energy Management in RES-based Systems"
12:40 - 13:00	Hetmaniok, E.; Słota, D.; Zielonka, A. "Artificial Intelligence in the Continuous Casting Modeling"
13:00 - 14:00	<i>Lunch Break</i>
Centre of Mediterranean Architecture	
14:00 - 15:00	Poster Session I
Mikis Theodorakis Foyer	
14:00 - 15:00	Poster Session II
Centre of Mediterranean Architecture	
Parallel Session V-I	Energy and Environment
<i>Session Chair:</i>	<i>Pitet, L.</i>
15:00 - 15:20	Orlińska, B; Peckh, K.; Azam, U.S.; Talik, G.; Lisicki, D. "Hybrid Catalytic Systems for Oxidation Processes"
15:20 - 15:40	Thijs, S.; Vandersanden, S; Skirfors, O.; Ahrens, L. "Wild Wild Waste: How to Tackle PFAS Pollution with Hemp"
16:00 - 16:20	Pitet, L.; Kulkarni, A.; Quintens, G.; Karanastasis, A. "Generating Thermoplastic Copolyesters through Chemical Upcycling of Discarded Polyesters"
16:20 - 16:40	Piotrowska, N.; Baranyika, J.B.; Michczyński, A. "Radiocarbon Method for Determination of Bio-based Carbon in Liquids"
16:40 - 17:00	Regkouzas, P.; Diamadopoulos E. "Emerging Contaminant adsorption from water using rice husk biochar nanocomposites"
Mikis Theodorakis Room 1	
Parallel Session V-II	Circular Economy
<i>Session Chair:</i>	<i>Komnitsas, K.A.</i>
15:00 - 15:20	Galetakis, M.; Soutana, A. "Utilization of Quarry Fines for the Production of Lightweight Building Elements"
15:20 - 15:40	Jasniewski, J.; Khanji, A.; Zoghلامي, A.; Desobry, S. "Optimal Valorization of Hemp and Hop: Identification, Extraction and Quantification of High Value-Added Biomolecules Using Deep Eutectic Solvents"
15:40 - 16:00	Komnitsas, K.A.; Kritikaki, A.; Karmali, V.; Vathi, D. "Characterisation of Biochar Produced from Different Feedstocks"
16:00 - 16:20	Stefanakis, A.; Nikolaou, I. "Circular Economy Towards Sustainability: Open Questions and the Need for Interdisciplinarity"

16:20 - 16:40	Lerchbammer, R.; Gerold, E.; Antrekowitsch, H. "Potential of Gluconic Acid Leaching in Developing a Sustainable Recycling Method for NMC Black Mass"
16:40 - 17:00	Khanji, A.; Gheribi, R.; Desobry, S. "Development of Chitosan Green Composites reinforced with Hemp Fibers: Study of Mechanical and Barrier Properties for Packaging Application"
Mikis Theodorakis Room 2	
Parallel Session V-III Low Carbon and Sustainable Materials	
<i>Session Chair:</i>	Maravelaki, N.
15:00 - 15:20	Maravelaki, P.N.; Kapetanaki, K. "Marl Limestone and Calcined Clays as Supplementary Cement Substitution Materials"
15:20 - 15:40	Avgerou, N.; Hesselbarth, D.; Weinkauff, A.; et al. "Restoring Cementitious Monuments: Mine Tailings in Repairing Mortars"
15:40 - 16:00	Kampragkou, P.; Stefanidou, M. "The Role Of Different Bio-additives in the Properties of Cement Mortars"
16:00 - 16:20	Silva, D.N.; Wehrmeyer, W.; Murphy, R.J. "A New Framework for Corporate Sustainability Measurement and Materials Management"
16:20 - 16:40	Buntinx, M.; Vanheusden, C.; Hermans, D.; et al. "Processing and Optimizing Polyhydroxyalkanoates: Circular Materials of the Future for use as Innovative Food Packaging Material"
16:40 - 17:00	Spijker, C.; Berger, G.; Raupenstrauch, H. "New ways of Producing Glass Melts via an Entrained-flow Reactor"
17:00 - 17:15	<i>Coffee Break</i>
Centre of Mediterranean Architecture	
Parallel Session VI-I Energy and Environment	
<i>Session Chair:</i>	Varouchakis, E.A.
17:15 - 17:35	Biniaris, D.; Xiroudakis, G.; Saratsis, G.; Varouchakis E.A. "Minimisation of CO2 Emissions in Opencast Mines/ Quarries by using Stochastic Truck Circuit"
17:35 - 17:55	Rus, C.; Leba, M.; Ionică, A.; Negru, N. "Sustainable Integration of Solar Panels and Small Electric Vehicles for Mining Heritage Exploration in the Jiul Valley"
17:55 - 18:15	Starzyk, J.; Wojacek, M. "Optimization of Costs and Required Energy on the Basis of Short-term Coal Mine Methane Forecasts"
18:15 - 18:35	Bauer, J.F.; Amro, M. "Thermal Hydrogen Production from Depleted Oil Reservoirs: Simulative Research On Process Parameters"
18:35 - 18:55	Zarafshani, H.; Watjanatepin, P.; Van Acker, K. "Comparing the Sustainability of Biorefinery and Petroleum-based Refinery Processes for Energy Production using the Social Footprint Methodology 2021"
Mikis Theodorakis Room 1	
Parallel Session VI-II Smart and Healthy Societies	
<i>Session Chair:</i>	Kudlek, E.

17:15 - 17:35	Kollnig, S. "Responsible Consumption: A Critical Realist Perspective"
17:35 - 17:55	Kabendela, G.; Huybrechts, L.; Magina, F. "Plot Boundary Conflict Resolution in Informal Settlements: The Role of Community Leaders"
17:55 - 18:15	Tufail, A.; Pirdavani, A.; Janssens, D.; Wets, G. "Developing a Methodology for Evaluating Urban Bicycle Friendliness"
18:15 - 18:35	Charalambidi, B.; Bovolou, D.; Koutsianitis, P.; Stavroulakis, G. "Digital Twins Analysis Applied to Hydraulic Infrastructures"
18:35 - 18:55	Kudlek, E.; Lempart-Rapacewicz, A.; Rapacewicz, R.; Lempart, K. "Technological Solutions for Rational Water Management in Swimming Pools"
Mikis Theodorakis Room 2	
Parallel Session VI-III Educating for a Sustainable Future	
Session Chair:	Suess, G.
17:15 - 17:35	Suess, G. "The Power of Big Data and Rogue Algorithms: Critical Digital and Cultural Education in the 21st Century"
17:35 - 17:55	Janssens, L.; Kuppens, T.; Andersson, P.; Struyven, K. "Transformative Learning to Integrate Sustainability in Business Economics Education: a Quasi-experiment in Belgium"
17:55 - 18:15	Baş Keškić, K. "Conceptualization of Climate Change in Times of the Coronavirus Pandemic"
18:15 - 18:35	McKay, A. "The Value of Integrating Sustainable Production & Consumption into English for Academic Purposes"
19:00 - 19:30	Closing Ceremony

Friday, 29.09.2023

09:00 - 14:00 [*Technical & Cultural Tours*](#)