

SECTION PROGRAMME

COS2024 Conference

Economics – Slot session 1, Thursday 9:00 – 12:00

Section Chair: Sándor Remsei

Location: MC123

Regional Disparities in Artificial Intelligence Awareness in the United Kingdom	Roland Zsolt Szabó
Economic Analysis of Electric Vehicle Manufacturers: a Comparative Study	András Bege
Examination the economic activities and sustainability objectives of fast fashion stores in Hungary	Zsuzsa Stion
How some aspects of the issue of sustainability appear in the operation of higher education institutions? Empirical evidence from Hungary	Gáborné Nagy

Economics – Slot session 2, Thursday 9:00 – 12:00

Section Chair: Gábor Szabó-Szentgróti

Location: MC122

Comparative Analysis of Sustainability and Circularity Indicators: Downstream vs. Upstream Supply Chain Strategies	Marah Almelhem
An empirical study of chemical startups in the Visegrad Countries	Melinda Krankovits
Sustainability Performance of Hungarian universities based on their results in UI GreenMetric World University Rankings	Gabriella Imre
How business simulation can help to promote corporate sustainability	Gábor Kovács

Engineering & IT – Slot session 3, Thursday 9:00 – 12:00

Section Chair: Hajnalka Hargitai

Location: MC002

Battery Testing Abilities as a Major Component of the Sustainable Value	Zoltán Weltsch
Comprehensive Analysis of International Best Practices for Mitigating Vehicle-Related Mortality of the Northern White-breasted Hedgehog (<i>Erinaceus roumanicus</i>)	Éva Veronika Pestiné Rácz
Combination of Sustainable Agriculture and Renewable Energy Systems	Bernadett Rádli-Burján
Analysing the sustainability effects of using energy storage solutions at eco-industrial parks	Géza Köteles

Engineering & IT – Slot session 4, Thursday 9:00 – 12:00

Section Chair: Movahedi Rad Majid

Location: MC228

The effect of lubricant viscosity variation on tooth friction and hence on the energetic behaviour of gear unit	József Polák
The role of complex multi-objective optimization in renewable energy utilization within energy communities	Géza Köteles
The impact of digital services development on sustainability for Last-Mile Delivery	Martin Solt
ChatGPT: a silver bullet for university students? – A model validation process	Eszter Szabó-Szentgróti

Engineering & IT – Slot session 5, Thursday 9:00 – 12:00

Section Chair: András Torma

Location: MC227

Scheduling Manufacturing with Flexible Recipes to Maximize the Utilization of Renewable Energy	Károly Kalauz
Comparison of Hydrogen Related Policies and Achievements between Latin America and Europe	András Torma
The Elimination of Illegal Waste in Hungary: New System of Sanctions and the First Results	András Torma
Analyzing the Environmental Durability and Chrysotile Content of Asbestos Cement Products by FT-IR Spectroscopy	Gergely Zoltán Macher

Food Engineering & Agriculture – Slot session 6, Thursday 13:00 – 18:00

Section Chair: Tamás Tóth

Location: MC228

Harnessing the potential of microalgae for sustainable agricultural production and environmental benefits	Wogene Solomon Kabato
Sustainable Soil Management: Soil as a Supplier of (Agricultural) Production and Receiver of (Xenobiotic) Pollution	Tibor Molnár
The role of the conformation of Holstein cows in the sustainability of milk production	Zsolt Kőrösi
Building diagnostics options for existing buildings – innovative methods	Zsolt Szűrös
Method for Increasing Energy Efficiency of Mixed-Flow Grain Dryers	Ferenc Speiser
Food Waste Generation from Environmental, Social and Governance Perspectives within the Framework of Sustainable Development: A Multidisciplinary Analysis	Anikó Zseni
Behind the Milk: Large-scale Milk Production Through the Lens of Sustainability	Tibor Molnár

Engineering & IT – Slot session 7, Thursday 13:00 – 18:00

Section Chair: Gábor Dogossy

Location: MC002

On Computing Maximum Flows in Sewage Systems via the P-graph Framework	Juan Carlos García Ojeda
Analysis of Biodegradable and Compostable Plastic Products Using FT-IR Spectroscopy	Dalma Bódizs
Investigation of System Stability and the Design of a Controller Based on the Transfer Function of a Quadcopter's BLDC Motor	Barnabás Kiss
Applications of Urban Mining to Recover the Metal Content Potential of Disposed Electrical and Electronic Waste	Dalma Bódizs
Qualitative analysis of sustainability of local attachment in rural areas based on the case studies of two scattered farmstead settlements (Tanya).	Zoltán Bugovics
Embedded System Simulation for Electrical Hardware Test Virtualization	István Szalay
Artificial intelligence in AEC sector	Tóth Olivér
Cyberspace and smart cities: A paradigm shift in urban development	Tóth Olivér
New ways in race sports – be the 21st driver	Balázs Kail

Economics – Slot session 8, Thursday 13:00 – 18:00

Section Chair: Szabolcs Rámháp

Location: MC122

Sustainability in Fintech: A Bibliometric and Thematic Content Analysis	Jewel Kumar Roy
Categorisation of SDG Targets into ESG pillars based on ESRS Taxonomy	Bence Lukács
Development of a Predictive Model for Assessing Parcel Packaging Effectiveness	Boglárka Eisinger Balassa
Comparative Literature Review of Auditing Reforms between the European Union and the MENA Region	Mohammed Ibrahim Ali Hassan
Sustainability in the Bakery Industry: A Simulation-Optimization Approach for Food Waste	Heba Zaher
The Sustainable Development in the EU external relations	Balázs Horváthy László Knapp
Green political thought and Sustainability from the perspective of postmodern theories of State	Katalin Egresi
Comparison study of the eco-conscious consumer behavior of the Baby Boomer generation in Hungary and Slovakia	Iveta Szencziová
CAR's Impacts on the Sustainable Banking Operation- Literature Review	Erleta Halimi

Engineering & IT & Economics – Slot session 9, Thursday 13:00 – 18:00

Section Chair: Sándor Remsei

Location: MC227

Rehabilitation of Levee Regarding Ecological Footprint	Edina Koch
What internal factors influence the capacity expansion decisions of family businesses regarding the recycling of animal waste? - Model testing research from the meat industry	Kinga Nemes
Optimization Model for Small-Scale Solar Energy System Design Based on Consumer Profiles	Botond Bertók
Sustainable thinking - How do mathematical approaches behind everyday life influence our future?	Máté Farkas-Kis
Sustainable Technological Patrol: The Potential Role of AI in Mitigating Online Fraud	Nikolett Gyurián Nagy
Green Taxation and Sustainable Development: An Insight into the Environmental Tax Revenues in the V4 Countries	Norbert Gyurián
Potential of Green Hydrogen Synthesis from Sewage Sludge: Assessing Emission Factors	Dóra Sipos
The Impact of Biodegradable and Compostable Plastic Products on the Occurrence and Contamination of Microplastics in Compost Leachate	Dóra Sipos
Assessing the Dual Impact of Digitalization: Financial Returns and Sustainability Performance in MNCs	Farid Mammadli

Social Sciences – Slot session 10, Thursday, 13:00 – 18:00

Section Chair: Lívia Ablonczyné Mihályka

Location: MC123

Artificial Intelligence in Human Resource Management for Sustainability: Research mapping between 2002-2024	Adrián Horváth
Process Synthesis Approach for Sustainable Curriculum Development in Environmental Engineering	Anikó Zseni
Varying Levels of Trust across Multi-Level Governance: A Sustainability Perspective	Zsuzsanna Pálffy
An empirical study of chemical startups in the Visegrad Countries	Petra Kinga
Sustainability of water security in Burkina Faso – A review	Zoltán Ködmön
Sustainable Food Security in the West African Region	Zoltán Ködmön
Smart cities, sustainability and SDGs	Boglárka Barsi
The sustainability of the dual career support system for athletes. Evidence from Hungary	Csaba Konczos
Emerging technologies in pharmaceutical supply chains: a comprehensive analysis of findings and implications	Ibrahim Alsakhen

Transportation, Built Environment & Architecture – Slot session 11, Thursday, 16:00 – 18:00

Section Chair: Movahedi Rad Majid

Location: MC001

Integrating renewable energy into railway systems: A path to sustainable transportation – A review	Khadiga Waheed Mohammed Anwar Al-Nagar
Hydrogen system design methodology for autonomous houses in central-east Europe	Háber István Ervin
Optimized Eco-Driving with Real-Time Telemetry in a Lightweight Electric Vehicle	Zoltán Pusztai
Impact of VRU on Capacity of Single-lane Roundabout	Othmane Boualam
Appraisal of carbon emissions from logistic processes and prevented by initiatives in the local community	Sós Eszter
Towards a Sustainable Framework for Integrating HBIM in Heritage Preservation	Rnin Salah

Transportation, Built Environment & Architecture – Slot session 12, Thursday, 16:00 – 18:00

Section Chair: András Lajos Nagy

Location: MC121

The Impact of the Combination of ESG and Lean & Green on the Operational and Sustainability Performance of the Logistics Sector	Besenyey Mónika
Comparative Analysis of Driver Interface Systems in Ultra-Efficient Lightweight Electric Vehicles: A Study on Energy Efficiency and Driver Focus	Viktor Nagy
Autonomous Racing Competitions: A Review of Current Platforms, Software Development, and Sustainability Contributions	Zalán Demeter
Examination of the Tribological Mechanism of Various Ceramic Nanoparticles in an Oil-Based C60 Fullerene Solution	Szabó Ádám István
Implementation of automated control on test vehicle for safe motion in roundabouts	Jekl Bence
Mild hybrid drive train development for motorsport application	Kristóf Bukovác

Engineering & IT – Slot session 13, Friday 9:00 – 12:00

Section Chair: János Szép

Location: MC002

Utilizing Cement Replacement Materials in Concrete to Save CO2 Emissions While Maintaining Strength	Zoltán Major
How Can a Household Reduce its Ecological Footprint? - An Example from Hungary	Zoltán Major
The Role of Eddy Viscosity and Advection in Hydrodynamic Models for Accurate Simulation of Flash Floods in Steep Watersheds	Gergely Ámon
Potential of Producing Green Hydrogen Using Solar Power Plants: The Role of PEM Technology in the Improvement of Photovoltaic Schedule Keeping in Hungary	Pintér Gábor

Economics – Slot session 14, Friday 9:00 – 12:00

Section Chair: Judit Koltai

Location: MC122

Evaluating the Role of Blue-Green Infrastructures in Mitigating Climate Change: A Case Study of the Hungarian 'Green City' Program	Attila Kálmán
Systematic Review of Graph Theory Applications in Corporate Sustainability	Péter Molnár
The Electrification Case for Industrial Decarbonisation - the Role of Long-term Energy Storage Systems	József Szuper
Achieving Sustainability in University Tenders	Nóra Mária Halmai

Multidisciplinary Sciences – Slot session 15, Friday 9:00 – 12:00

Section Chair: Júlia Szőke

Location: MC123

The role and awareness of food rescue NGOs in Hungary: based on the results of an online survey	Veronika Keller
Effect of Maleated Compatibilizer on the Mechanical Properties of PLA/Mustard Waste Biocomposites	László Lendvai
The role of ESG considerations in household investment decisions: sustainable development and social responsibility	Amanda Wolf
Assessing the Urban Climate Resilience of Cities in Hungary Using an Index-based Approach	Judit Pécsinger

Transportation – Slot section 16, Friday 9:00 – 12:00

Section Chair: Ágoston Winkler

Location: MC227

Multiple Roles of Hydrogen in future Mobility	Barna Hanula
Metaheuristics in Logistics: Increasing the Efficiency of Algorithms by Defining Appropriate Parameter Settings	Tamara Juhászné Bíró
Network Science as Tool for Sustainable Transport Networks	Balázs Horváth
Patch loading resistance of stainless steel corrugated web beams	Imre Cserpes

Food engineering and Agriculture – Slot session 17, Friday 9:00 – 12:00

Section Chair: Zoltán Molnár

Location: MC228

Experimental Analysis of a Solar Powered Center Pivot Irrigation Site and Hyperlocal Evapotranspiration Data	Bálint Süle
Sentinels of Sustainability: Practices of Agricultural Farms Clustered in Hungary's Farmers' Markets	Judit Petra Koltai
The Effect of Illumination on HSV Colour Segmentation for Ripe Tomatoes based on Machine Vision	László Moldvai
The Potential for Analyzing the Correlation Between the Compressive Stress Resistance of Red Clover Seeds and the Environmental Conditions during Seed Maturation Using FT-IR Spectroscopy	Eszter Kókai

Engineering & IT – Slot session 18, Friday 13:00 – 18:00

Section Chair: László Lendvai

Location: MC227

Inser Extraction System Efficiency Assessment Based on Workplace Airspace and Emissions Measurements	Dorka Kof-Kiss
Assessing the long-term groundwater level dynamics in Szigetköz, Hungary	Máté Chappon
Structural analysis of organoclay-reinforced polyamide 6 nanocomposite liner materials of type IV hydrogen storage vessels	Dávid Kis
Sustainable 3D-printing filaments and their applications	Szabolcs Szalai
Optimal Performance Assessment of Re-Recycled Concrete: Combining Water Absorption, Compressive Strength Using MOORA Technique	Maysam Shmlis
Fake News Classification on Social Media in the Field of Environmental Engineering	Richárd Németh
Concepts and Examples of Carbon-free, Self-sufficient Local Energy Systems	Balázs Vehovszky
Digital Solutions in Banking as a Catalyst for Sustainable Development	Katalin Kiss Vargáné
Investigation of Modern Technologies to Reduce the Carbon Dioxide Emission on the Railway Network	Péter Horváth

Continuous Map-Aware Particle Filter in Off-Road Environment	Tamás Vilmos Michaletzky
Noise Reduction Methods in the Vehicle Industry: Using Vibro-acoustic Simulation for Sustainability	Krisztián Horváth

Food engineering and Agriculture – Slot session 19, Friday 13:00 – 18:00

Section Chair: Zoltán Molnár

Location: MC228

The Impact of Asbestos Cement Pollution in Irrigation Water on Physiological and Germination Characteristics of Trifolium pratense, Medicago sativa, and Solanum lycopersicum Seeds	Gergely Zoltán Macher
Water quality of harvested rainwater from asbestos cement roofs and its suitability for irrigation	Gergely Zoltán Macher
Analysis of Herbicide Efficacy in Determining the Limitations of Traditional Sorghum Weed Control and Exploring Future Opportunities	Balázs Szemerits
Sustainability Analysis of the Financial Situation of Hungarian Food Companies	Judit Makkos-Kádi
Effects of a Probiotic Supplement on the Quantity of Some Bacterial Communities in Fecal Samples of Lactating Sows	Károly Tempfli
Transforming Plastic Waste into Fiberglass Formwork: A Sustainable Alternative to Wood in Construction for Environmental and Economic Benefits	Samuel Alexandro Silitonga
Foliar application of copper-tetramine-sulphate from microelectronic waste to improve yield and quality parameters of winter wheat	Tamás Szakál
Sustainable soil moisture monitoring utilizing IoT sensors and in-field measurements for enhanced agricultural water management	Tarek Alahmad
Sustainable plant nutrition of wheat	Tamás Szakál
Measuring the mechanical effects of egg transport in field and modelled conditions	Tímea Ágnes Torma

Multidisciplinary Sciences – Slot session 20 , Friday 13:00 – 18:00

Section Chair: Petar Varbanov

Location: MC123

Energy of the Future - The Future of (Sustainable) Energy. Lessons from the Past to Create a Better Future	Tibor Molnár
From Electricity Storage through Energy 'Recycling' to Food Production: Synergistic 'Circles' of Sustainable Economy, Powered by Paks Nuclear Power Plant. Strategies for Policymakers	Tibor Molnár
Evaluating the Fermentation Potential of Agricultural Materials and Food-Processing Byproducts	Zoltán Hatvan
Questionnaire-based personality test of trotter horses in Hungary	Katalin Maros
Energy management data center prototype at Zalazone	Attila Balogh
CO2 Emission Optimization through Limited Design of Haunched Reinforced Concrete Beams Enhanced with CFRP	Sarah Khaleel Ibrahim
Improving PTZ Camera Control for Surveillance Using Proximal Policy Optimization	Adonis Dimitriu

Sustainable Topology Optimization with Plastic-Limit Design for Structural Engineering Applications	Muayad Habashneh
Estimation of Daily Evaporation in AL-BASEL Reservoir Station Using Artificial Neural Network Model	Mais Mayassah
Sustainability reporting practices of Hungarian food subsectors from EU Taxonomy perspectives	Nóra Gombkötő

Social Sciences – Slot section 21, Friday 13:00 – 18:00

Section Chair: Julianna Fejes-Nádai

Location: MC122

The Relationship between Networking and Digitalization with Sustainability in Destination Management in the Case of a Cross-Border Tourist Area	Edit Somlyódyné Pfeil
Emerging technologies in pharmaceutical supply chains: a comprehensive analysis of findings and implications	László Buics
Sustainability in Fine Arts and Spatial Design - Land Art, Nature Art and Ecological Architecture	Imre Tolnay
Corporate Social Responsibility from the Aspect of Sustainability – The Practice of a Hungarian Leading HR Services Company	Dóra Lakosy
How does immigration shape green infrastructure on the outskirts of urban regions?	Tamás Hardi
Sentinels of Sustainability: Practices of Agricultural Farms Clustered in Hungary's Farmers' Markets	Tamás Vlnkóczy
Green gaps: Examining disparities in green space availability around educational and health facilities in Győr, Hungary	Eszter Szemerédi
Towards a more Sustainable Future: Fifteen years of collaborative innovation in EIT Climate-KIC	Roland Zsolt Szabó
Pet Food industry: Focusing on Sustainability Issues	Balázs Répási
The potential for various forms of microalgae in sustainable agricultural production	Asish Samuel

Built Environment & Architecture – Slot session 22, Friday, 13:00 – 18:00

Section Chair: János Szép

Location: MC002

Advanced Numerical Simulation and Modeling of Multi-Pass Welding Processes: Detailed Analysis of Temperature Distribution in Structural Elements	Dániel Gosztola
Estimation of Groundwater Recharge in the Szigetköz Island Area Using Hydrus Unsaturated Modeling	Asma Gharbi
Innovative Thermal Insulations from Cornstalk and Cereal Straw for Sustainable Architecture	David Bozsaky
Usability of recycled polystyrene foams in building insulation	David Bozsaky
Modernization of Windows and Doors in Protected Buildings: Possibilities and Their Environmental Impacts	Rita Rebeka Ördög
Improving the Stormwater Drainage Network Response in the Érd Watershed Using Blue-Green Infrastructures	Attila Kálmán
Seismic Performance and Sustainability of Reinforced Concrete Buildings: A Comprehensive Assessment	Samuel Alexandro Silitonga
Cyber resilience metrics	Sintija Deruma
Performance calculation methods for solar PV systems	Dániel Hegedűs
Emerging importance of supply chain attitudes	Rankl Andrea

Law & Political Science & Economics – Slot session 23, Friday, 15:20 – 18:00

Section Chair: Péter Smuk

Location: MC121

Green innovation and sustainable performance of sports organizations - The Hungarian case	György Korsós
To regulate or not to regulate? The issue of implementing Building Information Modelling for sustainability	Kinga Szabó
The holy trinity of patents, biotechnology and sustainability. The patentability of life in the scope of US patent case law.	Keserű Barna Arnold
The Impact of Changing Energy Prices, Interest Rates, and Inflation on the Return on Investment for Alternative Energy Projects	Czipf Csongor
Integrating Sustainability into Financial Supervision: A Pathway to Resilient Economies	János Kálmán
How to Develop a Sustainable Innovation Ecosystem? Example of ZalaZONE	Virág Mészáros
Ensuring Sustainability of Critical Infrastructures: The Hungarian Legal Environment	Ferenc Dávid
Sustainability issues in the Product Liability Directive - A legal economic analysis of development risk	Máté Frank

Transportation – Slot section 24, Friday, 15:20 – 18:00

Section Chair: Balázs Horváth

Location: MC001

Investigation of the Modern Technologies to Reduce the Carbon Dioxide Emission on the Railway Network	Edina Koch
Mapping the potential of e-micromobility vehicles for sustainable urban development – The case of Győr, Hungary	Petra Szakonyi
Analysis of the Aerodynamic Parameters of Road Vehicles Affected by Weather Conditions	Péter Brúnó
How safe are level road-railway crossings for the most sustainable transportation modes: pedestrians and cyclists?	Marcell Ladich
Learning-aided observer design for improving autonomous vehicle safety	András Mihály
Application of ChatGPT in Automotive Innovation: A case study from Vehicle Industry Research Center	Réka Koteczki
Assigning Metaheuristics to a Logistics Problem: A Novel Classification System for Algorithms and Problems	Tamara Juhászné Bíró
Multidimensional Comparison of Life Cycle Footprint of Hydrogen Production Technologies	Péter Németh