

SESSION PROGRAMME

COS2025 Conference

Venue: Management Campus, Széchenyi István University

Presentation duration: 15 minutes, Q&A: 5 minutes.

AI, Data Science and Technology for Sustainability – Slot session 1, Tuesday 9:40 – 11:20

Chair: Ákos Kovács

Location: MC122

Algorithm for Exhaustive Generation of the Complete Multidimensional Pareto Front for Multi-Objective Process Network Synthesis	Botond Á. Bertók
A Multi-Scale Digital Twin Platform for Integrated Energy Systems	Tim Walmsley
Integration of BIM and parametric modeling for sustainable building design	Álmos Semjén
Managerial Attitudes and the Integration of Artificial Intelligence: Impacts on Supply Chain Flexibility	Andrea Rankl
Comparative Analysis of Discrete-Time and Precedence-Based Formulations and Solutions of Scheduling Problems by P-graph Algorithms	Károly Kalauz

Corporate and Business Sustainability – Slot session 2, Tuesday 9:40 – 11:20

Chair: Judit Petra Koltai

Location: MC227

How to Create Organizational Resilience and Adaptability Through Embedded Plasticity-rigidity Cycles	István Fekete
The role of female careers in corporate business from the perspective of sustainability	Jázmin Lőre
The Role of Corporate Responsibility and Quality Legislation in Achieving the Sustainable Development Goals – Legal and Practical Interconnections	Éva Szabó
Integrating Climate Resilience into the Environmental Pillar of ESG at the Corporate Level	Dániel Erdélyi
Sustaining Intercultural Communication in Diverse Teams: Toward Intercultural Sustainability in SMEs	Flóra Keszei

Environmental Management and Circular Economy – Slot session 3, Tuesday 9:40 – 11:20

Chair: Anikó Zseni

Location: MC228

Case Study on Kitchen Waste Collection Materials: Comparing the Effects of Biobased Bags on Anaerobic Digestion	Veronika Kalauz-Simon
More Sustainable MSW Management: Assessment of University Students' Environmental Consciousness in the Light of the Deposit Refund System Implemented in 2024	Gábor Pék
Temporal and Spatial Effects of COVID-19 Pandemic on Food Waste Generation in the European Union	Anikó Zseni
Consumer Attitudes Towards Food Waste in a Sociodemographic Approach	Petra Platz

General Sustainability Concepts, Education, and Policy – Slot session 4, Tuesday 9:40 – 11:20

Chair: Péter Smuk

Location: MC001

The Sustainability Factor in Artificial Intelligence-Assisted Education	Csaba Hajdu
Green and Sustainable Chemistry in the Work of the United Nations Environment Programme	Dalma Takó
The right to work - a new paradigm of interpretation	Dorottya Biczai
Sustainability and legal protection of wildlife	Bernadett Bana

Health, Well-being and Social Aspects of Sustainability – Slot session 5, Tuesday 9:40 – 11:20

Chair: Ferenc Ihász

Location: MC002

The Role of Persistent Primitive Reflexes and Frontal Release Signs in Sustainable Health	Erzsébet Stephens-Sarlós
Primitive Grasp Reflex Inhibition and Voluntary Cortical Motor Activation: A Pilot Study Using NIRS port2 Technology in the Context of Sustainable Health Strategies	Patrick Stephens
The Emergence of the Cultural Dimension of Sustainability in Migration Spaces	Csaba Horváth

Sustainable Urbanism, Infrastructure and Transport – Slot session 6, Tuesday 9:40 – 11:20

Chair: János Szép

Location: MC123

Assessing Dynamic Soil Behavior and the Influence of Rigid Inclusions Using RC-TOSS Testing System	Samuel Alexandro Silitonga
Longterm Sustainability Assessment of Local Passenger Transport	Anett Gosztola
Urban Sustainability Transitions towards Asbestos-Free Futures by a Systemic Ecosystem Perspective	Gergely Zoltán Macher
The past, present and future of the Győr passenger railway station in the spirit of sustainability	András Veöreös
Recycling Urban Infrastructures	Zsófia Zétényi

Agriculture and Food Systems Sustainability – Slot session 7, Tuesday 13:40 – 14:40

Chair: Attila Kiss

Location: MC122

The importance of vegetables and fruits in Hungary: Cultivation, environmental conditions	Tamás Szakál
Patterns of Sustainable Food Consumption in Hungary: A Cluster Analysis	Brigitta Unger-Plasek
Local Food Systems as Drivers of Sustainable Development: Exploring Consumer Attitudes and the Potential of Short Food Supply Chains	Judit Koltai
Reducing Methane Emissions in the Hungarian Dairy Sector: Circular Manure Utilization and Ecological Footprint Reduction	Jenő Balla

Agriculture and Food Systems Sustainability – Slot session 8, Tuesday 13:40 – 14:40

Chair: László Amand Palkovics

Location: MC123

Optimizing Irrigation Decisions: Water Productivity as a Key Tool for Crop Selection	Bálint Süle
Sustainable nitrogen supply - Research on nitrogen-fixing bacteria and the development of products containing nitrogen-fixing organisms in contemporary literature	Attila Fodor
Global research trends on the black soldier fly (<i>Hermetia illucens</i>) by country and topic	Nikolett Hetényi
Hybrid Data-Fusion Model for Solar-Powered Smart Irrigation with Predictive Decision-Making	Ahmed Jamal Ibrahim

Corporate and Business Sustainability – Slot session 9, Tuesday 13:40 – 14:40

Chair: Adrienn Dernóczy-Polyák

Location: MC227

Human Resources Role in Supply Chain Returns Management: A Focus on AMO Framework in State-Owned Electricity Company in Indonesia	Marah Almelhem
The Role of Financial Performance and Sustainability Reporting in the Competitiveness of Hungarian Agricultural Enterprises	Judit Makkos-Káldi
Impact of Digital Business Communication on Expanding Sustainability in B2B Supply Chains	Matthew Boota

Health, Well-being and Social Aspects of Sustainability – Slot session 10, Tuesday 13:40 – 14:40

Chair: Zsolt Katona

Location: MC002

Medical technological innovations for sustainable and profitable healthcare	Attila Kálmán
The Social Sustainability of Scattered Farmsteads in the Case of Smallholders as Compared to Large-scale Producers – the Social Reality, Prospects and Challenges.	Zoltán Bugovics
Obesity and its comorbidities: The role of healthy nutrition in maintaining normal body composition	Dávid Vasas

Sports and Exercise Science for Sustainability– Slot session 11, Tuesday 13:40 – 14:40

Chair: Róbert Járαι

Location: MC001

Analysis of the physiological characteristics of elite male and female junior rowers during extreme exercise	Zoltán Alföldi
Physiological assessment of motorcycle racers for the development of evidence-based training methods	Bence Dániel Máriás
Optimizing Elite Rink Hockey Performance Through position-specific Load: An Applied Physiological and Biomechanical Approach	António Leopoldo Lopes Ferraz

AI, Data Science and Technology for Sustainability– Slot session 12, Tuesday 15:40 – 17:40

Chair: Botond Ákos Bertók

Location: MC122

Analysis of Human-Robot Interactions and Their Acceptance in Service Sectors	Csaba Hajdu
Point Cloud Upsampling for Environmental Protection: Enhancing Airborne LiDAR Data for Sustainable Resource Management	Szeverin Oláh
Smart Cities and Data Enrichment: The Role of LiDAR and Point Cloud Upsampling in Sustainable Urban Management	Szeverin Oláh
Sustainable Intelligence at the Edge: Using Sustainability as a Metric for Cloud-Edge Design	Mustafa Abdulkadhim Al-Abboodi
Criticality Analysis for Integrated Energy Systems using Shapley-Shubik Power Index: A P-graph Approach	Yick Eu Chew

Environmental Management and Circular Economy – Slot session 13, Tuesday 15:40 – 17:40

Chair: Petar Sabev Varbanov

Location: MC228

A Novelty in the Labelling of Redeemable Waste	Gábor Élő
Investigating the Operational Efficiency for the Small Asian Retailer Stores under the Deposit Refund System: Hungary Case Study	Marah Almelhem
Can It Still Be Used? Compression Strength Recovery of Corrugated Boxes After Moisture Exposure	Péter Csavajda
Soil Moisture and Recharge Modeling in Sandy Soils in Nyírség, Hungary for Sustainable Management	Asma Gharbi

Sports and Exercise Science for Sustainability– Slot session 14, Tuesday 15:40 – 17:40

Chair: Zoltán Alföldi

Location: MC001

The role of sustainability in exercise-induced lactate kinetic differences in adolescent and young adult footballers	Ferenc Ihász
The Impact of Equine Welfare on the Pillars of Sustainability: Insights from Equestrian Sport	Erzsébet Hegyi
Examining the Motivation of Participants in Adult Swimming Instruction Programs	Zsolt Katona
Tracking Devices and Physical Performance Analysis in Team Sports: A Comprehensive Framework for Research. Trends and Future Directions	António Leopoldo Lopes Ferraz

Sustainable Urbanism, Infrastructure and Transport – Slot session 15, Tuesday 15:40 – 17:40

Chair: Movahedi Rad Majid

Location: MC123

Autonomous Vehicle Inspired Urbanism	Xu Zhang
A railway network management framework based on allometric growth for sustainable development	Juhyeon Kwak
Presentation of test experiences of cast lightweight thermal insulation, made from recycled polystyrene	Gábor Lekics
Construction of a mathematical model of a synchronous belt drive for energy optimization purposes	József Polák
The Protection and Security of Christian Holy Sites: A Criminological Approach with an Emphasis on Environmental Factors	József Krenner
Investigation of the thermal performance of Visegrad's Socialist-Era Precast Buildings by integrating BIM and parametric design	Kitti Ajtayné Károlyfi

AI, Data Science and Technology for Sustainability – Slot session 16, Wednesday 9:40 – 11:20

Chair: Szilvia Nagy

Location: MC122

Estimating Acoustic Parameters of Poroelastic Foam Using Image Processing and Machine Learning	Krisztián Horváth
Towards Sustainable Mobile Networks: Evaluating Propagation Models for Energy-Efficient 5G and Beyond	Tamás Unger
Evaluation of Indirect Storage Location Systems by Fuzzy Signature	Miklós Szabó
Sustainability in manufacturing: MILP models of a production line optimization problem	Tamás Hajba
Real-Time HTTP Flood Attack Mitigation Using FPGA-Based Architecture	Ahmed Jamal Ibrahim

Corporate and Business Sustainability – Slot session 17, Wednesday 9:40 – 11:20

Chair: Adrienn Dernóczy-Polyák

Location: MC227

The Green Shift: The Effects of Renewable Energy Transition on Employment Trends	Hajer Jomaa
The emergence of ESG frameworks in various national regulations and their impact on competitiveness	Dorottya Sebestyén
How Sustainable Is a Sip? A Sustainability-Based and Consumer Neurobehavioural Framework of Hungarian Wine Marketing	Mónika Marosi
The Role of ESG Advisors in Shaping Corporate Sustainability Awareness	Mónika Besenyei
Green Public Procurement: An Overview of Implementation, Measurement and Reporting Systems	Kinga Szabó

Environmental Management and Circular Economy – Slot session 18, Wednesday 9:40 – 11:20

Chair: Anikó Zseni

Location: MC228

Challenges and Opportunities in the Circular Bioeconomy Transition: A Literature-Based Perspective	Grazia Errichello
Ecophysiological Consequences of Bryophyte Colonization on Asbestos Cement Roofing Materials	Gergely Zoltán Macher
Anthropogenic waste pollution of the Danube shoreline between Komárom and Neszmély, with special emphasis on meso-plastics	Boglárka Liszkai
Sustainable Winery Wastewater Treatment and Carbon Footprint Reduction	Attila Kálmán

General Sustainability Concepts, Education and Policy – Slot session 19, Wednesday 9:40 – 11:20

Chair: Livia Ablonczyné-Mihályka

Location: MC001

Iconic Aesthetic Perspectives in Contemporary Creative Industry	Nóra Horváth
Cultural Diplomacy as a Tool for Peace and Partnership: Exploring the SDG 16 and 17	Júlia Hajszán
The Possible Role of Gamification in Sustainability	Márk Gaál
Tasks and Responsibilities of Teacher Training in Sustainable Development	Judit Emma Boda-Ujlaky
The design profession as a means to achieve sustainability: the special case of India	Katalin Máthé

Health, Well-being and Social Aspects of Sustainability – Slot session 20, Wednesday 9:40 – 11:20

Chair: António Leopoldo Lopes Ferraz

Location: MC002

Sustainable Time Management	Judit Emma Boda-Ujlaky
Consciously Supporting Employees' Mental Health – Initial Experiences from a Workplace Health Promotion Pilot Program	Andrea Mátyus

Sustainable Energy and Climate Resilience – Slot session 21, Wednesday 9:40 – 11:20

Chair: Petar Sabev Varbanov

Location: MC123

Life Cycle-Based Environmental Assessment of Hydrogen Production Mixes Projected in the Hungarian Hydrogen Strategy Using the Environmental Footprint Methodology	Artúr Szilágyi
Illuminating Inequality: Public Lighting Energy Consumption and Light Pollution in Urban vs. Rural Contexts	Dalma Bódizs
How could the government support the spread of alternative energy projects?	Csongor Czipf
Risk-Informed Optimization of Plastic Waste-to-Hydrogen Supply Chain: A Case Study in West Malaysia	Selena Kian Yii Song
Transition Analysis of an Electrified Plastic Waste-to-X System through Strategically Different N-best Pathway Optimisation	Adeline Shu Ting Tan

AI, Data Science and Technology for Sustainability – Slot session 22, Wednesday 13:40 – 14:40

Chair: Áron Ballagi

Location: MC122

MODFLOW-Based Simulation of Groundwater Response to Rainfall in the Coastal Plain of Al-Hsain Coastal Basin, Syria	Mamhoud Ahmad
Automated Classification of Building Damage in Earthquake-Prone Areas Using AI-Driven Image and Data Analysis	Abdulrahman Bazbouz
Comparative Assessment of Carbon Capture Processes from the Perspective of Selection Criteria	Géza Köteles

Environmental Management and Circular Economy – Slot session 23, Wednesday 13:40 – 14:40

Chair: Katalin Kozma

Location: MC228

Assessing Levee Stability Under Climate Change: A Case Study of Szigetköz, Ásványráró	Emmanuel Saah Tambah
Ex-situ conservation of rare plant species with the involvement of students for the sustainability of biodiversity	János György Nagy
Numerical and Experimental Analysis of Radiosonde Impacts on Pumpkins	Norbert Hegyi

Sports and Exercise Science for Sustainability – Slot session 24, Wednesday 13:40 – 14:40

Chair: Ferenc Ihász

Location: MC001

Balancing Performance and Recovery in Preseason: Integrated Monitoring of Two Academy Football Teams from a Sustainability Perspective	Lili Kósa
Sustainable Sport Psychology	Judit Emma Boda-Ujlaky
Sustainability Through Physical Activity	Judit Emma Boda-Ujlaky

Sustainable Urbanism, Infrastructure and Transport – Slot session 25, Wednesday 13:40 – 14:40

Chair: Attila Borsos

Location: MC227

Scheduling of tram drivers with process networks	Móric Váradí
Autonomous Vehicles in Europe: A Review on Actions, Initiatives and Practices	Melinda Smahó
More Sustainable Transportation with Electro-micromobility	Gábor Pék

Sustainable Energy and Climate Resilience – Slot session 26, Wednesday 13:40 – 14:40

Chair: Petar Sabev Varbanov

Location: MC123

Sustainable energy management - the impact of pumped hydropower on the carbon footprint	Attila Kálmán
Optimising Resource Trade-offs for an Integrated Decarbonisation Strategy Across the Food-Energy-Water-Waste Nexus	Xin Hui Cheng
Exploring Near-Best Heat Recovery Networks With Integrated Sensible Heat Storage Facilities for Energy Intensive Industries	Tiffany Jia Ning Ang