Table of Contents

Welcome Message, Committees of ISCAME 2025

Chapter 1: Plenary

Z. Saghir	3
"Structural Integrity" – What does it Mean L. Tóth	6
A Brief History of ESIS and ESIS Hungary L. Tóth	7
Chapter 2: Applied Mechanics	
Challenges of Benchmarking Finite Difference Schemes D. Koics, O. Hornyák and E. Kovács	11
Articulated Vehicle Systems with Inerter T. Görögh	12
Connection of Mechanics and Fractional Derivatives P. Béda and G. Béda	13
Comparative Study of Direct Method and Backpropagation for GTN Parameter Identification	
Y. Chahboub and M.H. Alhafadhi Dakhil Note on the Calculation of Hierarchical Rotational Shell Finite Elements	14
I. Páczelt and A. Baksa	15
MATLAB-Based Finite Element Solver for 2D Prismatic Beams: An Educational Approach A. Habib and T. Mankovits	16
P-Version Spatio-Temporal Finite Element Algorithm Based on the Hamiltonian Formulation for Elastodynamic Problems Z. Vadai and B. Toth	17
Chapter 3: Fluid Mechanics	
Theoretical Developments for Solving the Incompressible Navier–Stokes Equations with Pseudo-Transient Methods for Steady-State and Unsteady Fluid Flows	22
L. Konozsy Towards Improved Turbulence Modeling	23
K.A. Kovács and G. Kristóf Characterization of Pressure Drop in Pipe Flow of Shear Thickening Fluids	24
J. Polyak, B. Balog and P. Nagy Gyorgy	25
Evaluation of Spherical Bubble Models D. Nagy and F. Hegedűs	26
Numerical Investigation of the Flow in the Wake of a Rectangular Cylinder with 3:2 Side Ratio	
E. Balla, M. Pricz and M. Balogh	27
Chapter 4: Thermal Engineering	
Experimental Investigation and Effective Numerical Modeling of Heat Transfer in Phase Change Materials	
D. Illés, R. Kovács and M. Szücs	31

Improved Heat Flux Distribution and Thermal Stability in Linear Fresnel Solar Receivers with a New Concave-Wall Absorber S. Brbhan and Z. Szamosi	32
The Possibility of Reducing the Impact of Greenhouse Gases through the Application of Evaporative Cooling Systems in Serbia I. Popović, M. Đorđević and J. Skerlić	33
Selecting Thermal Pipe Insulation via Discrete Optimization M. Szokody and T. Poos	34
Heat Transfer Coefficient Determination in Open-Surface Evaporation T. Poos and H. Abu Zienah	36
Impact of Coolant Type on Heat Transfer Coefficient in Reactor Jacket T. Poós and A. Szigedi	38
Chapter 5: Machine and Product Design	
Comparison of AC Powered Hedge Cutters Based on the Properties of the Eccentric Mechanism	
B. Siktar, G. Hegedus and J. Kakuk	43
Reverse Engineering and Digital Manufacturing Using 3D Scanning and Printing T. Tornai, I. Füstner and L. Gogolák	44
Statistical Modeling of Geometric Accuracy of FDM Printing for Machine Design Applications	
D. Nemes and R. Garay	45
The Actual Influence of Gear Ratio Size on the Service Life of Rolling Bearings in Universal Helical Gear Reducers with External Gearing M. Rackov and S. Kuzmanović	46
Analysis of the Load on Components with Complex Geometry Using 3D Technology A.T. Čikmiš, A. Imamović and M. Čabaravdić	48
Finite Element Investigation of Axisymmetric Rubber Bumper K. Lima Gascoigne and T. Mankovits	51
Finite Element Analysis of the Impact Effect on a Steel–Rubber Automotive Component T.A. Varga, B. Fazekas and T. Mankovits	52
Geometric Design and FEM Analysis of Connecting Spur Gear Pair for Mechanical Wire Bending Machine I. Ennamouss and S. Bodzás	53
Chapter 6: Engineering Optimisation	
Airflow Orchestrated Metaheuristic Tuning O. Ristic, N. Trišović and M. Sedak	57
Sensitivity-Based Structural Optimization for Systems with Repeated Eigenvalues N. Trišović, W. Li, O. Jeremić, N. Mladenović and A. Petrović	58
Optimizing Engine Consumption and Performance L. Straka and J. Hajduk	59
Application of Topological Optimization Methods on an Automatic Tool Changer Mechanism K. Szabó	60
Shape Optimization of an Automotive Rubber Bumper Using a Surrogate Model-Based Parameter Tuning of a Genetic Algorithm O. Al Aqrabawi and D. Huri	61
Development of a Bike Component by Topological Optimization Methods K. Szabó	62
Surrogate Model-Based Parameter Tuning of Particle Swarm Optimization Algorithm for	02
the Shape Optimization of Automotive Rubber Bumpers S. Shukrullo and D. Huri	63
Inverse Material Model Calibration of a Rubber Bumper T.T. Promy and D. Huri	64

Surrogate Model-Based Parameter Tuning of Tabu Search Algorithm for the Shape Optimization of Automotive Rubber Bumpers K.M.E. Hassan and D. Huri	65
Chapter 7: Failure Analysis	
Failure Analysis of Thin-Walled Aluminum Tube Extrusion A. Baksa and E.B. Varga	69
Finite Element-Assisted Root Cause Failure Analysis of a Broken Equal Channel Angular Pressing (ECAP) Die S.M. Hosseini, A.R. Eivani and H.R. Jafarian	70
A Hybrid Finite Element and Object-Centric Process Mining Framework for Sustainable Design and Operational Conformance: A Case Study on Propeller Shaft Failure in Tanzanian Ferries	
M.M. Matonya and I. Budai Failure Analysis of Gearbox on Bucket Wheel Excavator in Mining Industry I.M. Jovanović, A.B. Marinković, M.I. Sedak and D.S. Živković	71 72
Cavitation Erosion Behavior of 3D-Printed PLA – The Impact of Layer Height T. Lazović, M. Dojčinović, D. Popović and M. Stojanović	74
Cavitation Erosion of Laser-Sintered Maraging Steel T. Lazović, P. Ljubojević, M. Dojčinović, S. Čirić-Kostić and N. Bogojević	75
Oil-Water Separation and Corrosion Resistance Enhancement by Mesh Surfaces Nanocoated M. Khairi and P. Baumli	76
Chapter 8: Tribology and Tribological Wear	
Abrasion between Rotary Shaft/Seal Pairs under Extremes of Lunar Highland Regolith Exposure	
B. Turapov, G. Kalacska and R. Keresztes Physical Simulations of the Tool Degradation in Friction Stir Welding	79
N.E.I. Djimaoui, A. Yoni and V. Mertinger	80
Research on the Wear of Cutting Inserts during the Processing of Waste Construction Glass V. Čačko, I. Čačková, Ľ. Šooš and B. Ferenczi	81
Tribological Application of Unpreloaded Mechanical Seal in Presence of MGS-1 Regolith M. Kiss, G. Kalacska and R. Keresztes	82
Estimation of the Frictional Behavior of Sealing Assembly for Mass Production by Surface Roughness Analysis V. Sári-Barnácz, B. Fazekas and T.J. Goda	83
Evolution of the Friction Coefficient in Incremental Sheet Metal Forming M. Habbachi and A. Baksa	84
Numerical Analysis of a Frictionless Electro-Viscoelastic Contact Problem with Damage M. Chegaar	85
Agrotechnical Space Research Projects at MATE, Institute of Technology J. Dias, K. Muth and B. György	86
Experimental Study of Severe Abrasion "Gouging" Using Structural Steel and Tool Grade	00
Steel M. Vite Torres, I.A.S. Velázquez, E.A.G. Hernández, J.R.L. Camacho and J.L. Amador-González	88
Chapter 9: Structural Metal Materials	
Analysis of the Property Improvements of Casting Aluminum Alloys Achieved by Different Grain Refinement Methods	
G. Gyarmati and L. Hajas	91
Challenges and Prospects in the Development and Recycling of Metallic Materials for Additive Manufacturing of Biomedical and Industrial Components A. Imamović, Š. Žuna, A.T. Čikmiš and M. Čabaradić	92

Effect of Forming Speed on the Strength of Similar En AW5754-H22 Alloy Sheets Joined by	
Clinching A. Shukurea Rahmato and P.Z. Kovács	93
The Effect of Homogenization Treatment on the Microstructure and Mechanical Properties of Mg6Y2.2Nd1.2Gd Alloy P. Parsayan and A.R. Eivani	94
Effect of Rotary Friction Welding Parameters on Dissimilar Stainless Steels E. Raouache, A. Benfredj, A. Mechta and A. Laouissi	95
Fracture Behaviour of a Ferritic-Austenitic Steel Welded Joints M. Aranđelović, A. Petrović, S. Sedmak and B. Đorđević	96
Influence of Fiber and CO Laser Cutting Parameters on the Material Properties of Wear-Resistant Hardox 450 Steel I. Čačková, V. Čačko and B. Ferenczi	97
The Influencing Parameters of the Mechanical Properties Investigated on AlSi9Cu3(Fe) HPDC Alloy G. Konc and G. Gyarmati	98
Manufacturing 3D SLM Parts of 17-4PH Using Direct Scanning Strategy with 0 to 90° Rotation	90
M.Q. Kareem, T. Mikó, M.K. Fadhil and M. Alhafadhi	99
Martensitic Structure Formation during Interdiffusion in Ti-Zr Multilayered Alloy A. Jawabreh and P. Barkóczi	100
Numerical Simulation of the Rolling Process of Niobium-Titanium Sheets J. Marouani	103
Processing and Bonding Characterization of Multilayer Copper Structure Obtained by Friction-Assisted Lateral Extrusion M. Houshyar, B. Sziklai, M. Szűcs and L.S. Tóth	104
Technological Processes Effect on Lath Martensitic Low Carbon Steel Proprieties F.E. Réka	105
Wettability Testing of Stranded Aluminium Conductors M. Mészáros, S. Gyöngyösi and C. Czégéni	106
Chapter 10: Polymers and Composites	
Applying Rapid Tooling to Injection Mould Parts from Recycled Materials S. Krizsma and A. Suplicz	109
Combustion Behaviour of Plastic Waste - PA, PU, PVC, PMMA, PBT, PS and PC S. Singh, H. Kovács and P. Csaba	110
A Comparative Study on the <i>In Vitro</i> Degradation of PLA Processed by FFF and Film Extrusion K.K. Abdullah and K. Molnár	111
Compatibilization in Thermoplastic Elastomers from Devulcanized Ground Tire Rubber Á. Görbe and T. Bárány	112
Crystallinity Transformation in Pulverized Polyphthalamide for Sustainable Polymer Engineering Y. Yekymov and V. Lebedev	113
Development of Chemically Crosslinked Electrospun PVA Nanofibers for Adsorptive Applications in Greywater Treatment M.M.O. Zahid, D.B. Buzetzky and A.K. Üveges	114
Evaluation of Surface Roughness Parameters of Polymer Sliding Bearings Manufactured by SLS, FDM and SLA I. Simonovic, A. Marinkovic and Z. Miskovic	115
Investigation of the Degradation of Long-Chain Polyamide 6.12 under the Influence of Mechanical Recycling A. Polyákné Kovács	116
Modelling and Optimization Possibilities of Stiffening Structures for the Development of Polymer Products	110
M. File, I. Kállai, D. Huri and T. Mankovits	117

Pyrolysis of Waste Tires with Calcium Carbonate-Rich Waste Additives C.E. Tóth and G. Nagy	118
Qualification Testing of Semi-Industrial Trial Production of Different PET Films D. Gere, Z. Lovas and K. Bocz	119
The Situation of High-Performance Engineering Plastics in the Automotive Industry A. Ul Haque and A. Polyákné Kovács	120
Study of the Effect of Cracks on the Creep Resistance of Polymeric Materials M.A. Dookhi, D. Hakeem Dhayef, M. Qasim Alomary and H. Mudhafar	122
Morphological and Chemical Investigation of TPS Biocomposites Using Spectroscopy and Electron Microscopy	100
M.J. Tóth and A. Polyákné Kovács A Comprehensive Review on the Optimization of Composite Sandwich Structures	123
M.A. Sadiq and G. Kovács Application of Timoshenko Beam Theory in Finite Element Simulation of Fiber-Reinforced	124
Composite Material L.J. Mónus and E.R. Fábián	125
Compression and Toughness Behavior of Bronze-Perlite Syntactic Composites G. Batin, A. Petuhov, L. Nikitin and G. Thalmaier	126
Enhance the Compressive Strength of the Hybrid Metal Matrix Composite by Adding Nanoparticles	
S.M. Khazaal Al-Timmimi and S. Szabolcs	127
Characterization of Polymer Composites Reinforced with Metal Particles M. Mátyus, D. Mentes, B. Fiser and T.J. Szabó	128
Chapter 11: Functional and Foam Materials	
Dynamic Polymer Networks as a New Generation of Smart Materials for Space Applications	
A.I. Al Mosawi, S.A. Abdulsasda, F. Alaa Raheem, M. Sameer Salim, T. Mahdi Kadhim, F. Abdulrasool, Z. Laith Nsrallah, M. Jafaar Ali and Q. Abbas	133
Investigating the Enrichment of Rare Earth Elements and Noble Metals in Thermal Treatment Residues of Different Base Materials – Literature Review A.A. Gobosho and H. Kovács	135
Preparing Superconducting Compound (Pb(Bi)BaCaCuZnOδ) and Studying its Electrical, Structural and Magnetic Properties M.A. Dookhi and M. Alhafadhi	136
Correlation of Slag Content, Temperature Regime and Foaming Characteristics in Ceramic Foam Glass Using Heating Stage Microscopy	
A.A. Usman and C. Poliska Comparison between Uniform and Dual Permeability of Porous Medium Metal Foam A. Alrudhan and G. Bognár	137 138
CT-Based Reconstruction of Closed-Cell Aluminum Foams	
V.A. Chang'a and T. Mankovits The Effect of Processing Parameters on the Structural and Mechanical Properties of 3D-	139
Printed Polylactic Acid (PLA) Foams M. Tomin and V. Kunsági	140
Testing the Applicability of RIGID Polyurethane Foam Systems V. Bordás, A. Polyákné Kovács and T. Szabó	142
Chapter 12: Mechatronics	
High-G Ready: Designing the Modern Human Centrifuge for Fighter Pilot Training Z.Z. Dančuo	145
Possibilities for Representing the Shape and Size of Polytopes when Applying the TP Transition	
D. Nemes and S. Hajdu	146

Load Bearing Capacity of YLO Linear Actuators and Drawing Conclusions Z. Tiba, D. Fekete-Szücs and K. Vida	147
Design and Development of a Modular Automated Pallet Changing System for CNC Machining Centres	
B. Ferenczi, I. Čačková and V. Čačko Vehicle Traction Battery Modeling	148
T. Khounmanyketh and J. Menyhárt	149
Measurement of Vehicle Parameters for Vehicle Dynamics Model Validation I.L. Csajbók and D. Nemes	150
Variable Diameter Transmission (VDT): A Novel Approach to Dynamic Gear Ratio Control for Automotive Efficiency P.M.S. Aziz	151
SWOT Analysis of Vehicle-to-Grid Integration: Opportunities and Challenges in Hungary and the European Union J. Menyhart	153
Development of a Time-Synchronized Micro-PMU System for Low-Voltage Grid Fault Prediction J. Bencsik and H.Z. Conka	154
J. Bellesik allu 11.2. Colika	134
Chapter 13: Applications of Artificial Intelligence in Machinery	
AI-Enhanced Predictive Reanalysis for Structural Dynamics: Bridging Finite Element Models and Machine Learning N. Trišović and T. Mankovits	159
Feature Extraction from CMM Gear Inspection Reports for MI-Based NVH Studies K. Horvath and A. Zelei	160
Machine Hearing Application in SCARA Robot Packaging Cell: Acoustic Anomaly Detection and OEE Optimization with Machine Learning A. Attila and V.A. Károly	161
Supervised Frame-Level Conventional Neural Networks for Anomaly Detection in Surveillance Videos M.I. Almurumudhe and O. Hornyák	163
Tool Life Estimation and Optimization Using a Stacking Regressor and Whale Optimization Algorithm (WOA) in Micromilling I.E. Ogutu and M. Takács	166
Sustainable Structural Optimization through Hybrid AI-FEM Approaches in Dynamic Analysis N. Trisovic	168
Evaluation of Statistical Learning Methods for FFF 3D Printing Problems	108
A. Debreceni and S. Bodzás Machine Learning-Based Investigation of the Compressive Behavior of Ti6Al4V Lattice	169
Structures M.B. Hasan, N. Trisovic and T. Mankovits	170
Chapter 14: Maintenance and Condition Monitoring	
Monitoring the Technical Condition of Tram Overhead Lines as a Tool for Predictive Maintenance	
J. Rybář, P. Onderčo, J. Leja, K. Kollár and R. Vajgel Reference Tramway Track as a Framework for Infrastructure Metrology, Quality	173
Assurance, Maintenance and Safety J. Rybář, P. Onderčo, J. Leja and S. Ďuriš	175
Possibilities for Improving the Structural Integrity Evaluation of Steam Generator Heat	
Exchange Tubes F.A. Kaso and P.T. Zwierczyk	177
Multi-Class Anomaly Detection in an Industrial Robot Arm D. Bodnár and K. Jármai	178

A Dual-Scheme Cointegration Framework for Condition Monitoring and Fault Detection Using Non-Joint and Mixed-Order Time Series N.H.R. Syed, D.A. Teklemariyem, W.J. Staszewski and P.B. Dao	179
Health Monitoring of Three-Phase Induction Motors to Support Predictive Maintenance and Efficiency	177
I. Bendiák and S. Semperger	180
Examination of Different Acoustic Measurement Setups for Disc-Type Castings A. Kiri and Z. Weltsch	181
Vibration-Based Condition Monitoring of Induction Motors in Industrial Applications of Uzbekistan	
D. Akbarov, I. Bendiák and S. Semperger	182
Chapter 15: Biomedical Engineering	
Finite Element Analysis of Stress Shielding in the Adjacent Vertebral Bones Following Lumbar Total Disc Arthroplasty K. Ebrahem and S. Száva	185
In Silico Evaluation of Balloon-Expandable Stent Deployment inside a Stenotic Artery R. Milad, A.R. Eivani and S.H. Seyedein	186
Investigation of the Rheological and Tribological Characteristics of Human Synovial Fluid	100
from Knee Surgery Patients T. Váradi, M. Piljević, R.M. Nothnagel, M. Varga, Z. Kürti, T. Mankovits and S. Manó	187
The Influence of Mechanical and Biological Characteristics on the Use of Metal Alloys in Orthopedic Implants	
K. Čolić, N. Trišović and T. Mankovits	188
Electrochemical Deposition of Hydroxyapatite Coatings on Additively Manufactured Ti-6Al-4V Substrates B. Balázs, R. Gorejová, L. Csámer, T. Mankovits, S. Manó and A. Kemény	189
Exploring Gelation Processes for Pharmaceutical Formulation Production A. Szoboszlai and I. Budai	190
Chapter 16: Materials and Technologies in Construction	
Chapter 100 Practicus and 100morogres in Construction	
Developing an EnergyPlus-Based Simulation Model for Energy and Comfort Analysis of an Office Building in Debrecen E. Sarvajcz-Bánóczy and I. Kocsis	193
Development of a Method for Selecting the Optimal Location of Urban Consolidation	1,0
Centers L. Vass and T. Bányai	194
In Situ and Laboratory Dissipation Tests in Estuarine and Deep-Seated Saline Soils E. Imre, A. Akate and J. Kopják	195
Towards Sustainable Architecture: Evaluation of Building Envelopes with Integrated Vegetation Modules	
J. Škerlic, B. Stojanovic, B. Sudimac, M. Matejic, B. Oqba and I. Popovic	196
An Efficient Numerical Methods for Transient Heat Transfer in Multilayer Building Walls Using Natural Materials: A Case Study in Bengkalis, Riau, Indonesia A. Zain, E. Yuliora and F. Ananda	198
Influence of Diatomaceous Earth Addition on the Plasticity of Clay Bodies A. Hamza and I. Kocserha	199
Project Planning and Concept Development for Swing Roof Structures M.P. Molekwa and S. Bodzás	200
Chapter 17: Equipment and Technologies of Chemical Production	
Comparison of Semi-Batch Dividing-Wall Columns K. Bendegúz, P.T. Láng and L. Hégely	203

Development of a Non-Destructive Repair Technique for Enamelled Reactors Using 3D Printed Tantalum Patch	
Z.G. Kaszás, G. Varga and T. Poós	204
Analyzing Temperature Dependence during Pyrolysis in Pelletized Biomass E. Sztahura, C.E. Tóth and H. Kovács	206
Reducing the Energy Demand of Semi-Batch Distillation by Constant Distillate Composition Policy	
A. Anwar, P.T. Láng and L. Hégely	207
Determination of the LTA Zeolite's Fluidization Curves and Porosity at Different Moisture Contents	
T. Poós and C. Győri	208
Multi-Objective Optimisation of a Batch Distillation Process Ö.F. Karaman, P.T. Láng and L. Hégely	210
Chapter 18: Agricultural Engineering and Food Processes Engineering	
Modeling the Breakage of Agricultural Particulate Materials: Review J. Huang	213
Static Analysis of the Hydraulically Actuated Reversing Mechanism of a Reversible Agricultural Plough	21.1
D. Late, P. Tripon, E. Marin, D. Manea and L.C. Vlăduoiu	214
Heat Loss Determination and Thermodynamic Analysis of a Cimbria-Type Grain Dryer T. Antal and Z. Kovács	215
Energy-Efficient Fruit Drying Using Microwave Heating with Subcooled Air Recirculation Z. Trisović, T. Trišović, C.B. Birtok and A.V. Socalici	217
Prevention of Surface Hardening in Fruit Drying through Hybrid Microwave – Air Recirculation Systems	
Z. Trisovic, A.V. Socalici, N. Karličić, T. Mankovits and C.B. Birtok	218
Structural and Thermal Design of a Combined Microwave Dryer with Subcooling and Moist Air Recirculation	
Z. Trisovic, N. Karličić and T. Mankovits	219
Chapter 19: Hydrogen Transition	
Comparative Study of Microstructural Characteristics of P355NH Transporting Pipelines Exposed to Hydrogen	
N. Bencs Nagy and J. Lukacs	223
Testing and Standardization Practices in Hydrogen Embrittlement Studies: A Brief Review J. Fajger and R.P.S. Sisodia	224
Digital Twin Technology for Safety Enhancement of Hydrogen Refueling Stations G. Hasulyo and M. Vadászi	225
Energy Demand Comparison of Sonochemical Hydrogen Production under Single and Dual-Frequency Ultrasound	
A. Al-Awamleh, Á. Kozák and F. Hegedűs	226
Chapter 20: Manufacturing Engineering	
Analytical, Constructional and Computational Approach of a Flat Form Tool and Its Clamping Device Design	
T.K. Arwa and S. Bodzás	229
Comparative Analysis of Manufacturing Technologies for Cycloidal Drive Production: FDM 3D Printing vs CNC Laser-Cut Aluminum	
A. Sarajlić, M. Čabaravdić, T. Mankovits and S. Manó	230
Cylindricity Error by Least Square and Minimum Zone Fitting V. Ráczi and B. Mikó	231

The Influence of the Machined Surface Quality on the Energy Consumption in the Electrical Discharge Process L. Straka and A. Zalyvchyi	232
Manufacturing Working Analysis of a Mechanical Wire Bending Machine I.M. Mokaya and S. Bodzás	233
Non-Traditional Manufacturing Methods as a Tool for Sustainability: An Analytical Review of Opportunities and Challenges M.Z. Akkad and O. Cakir	234
Theoretical Foundations of Mechanical Design for Improving Machine Productivity During the Cutting Process M. Alsigar, M. Alsigar, M. Alhafadhi, A. Lafta and O. Mayoof	235
Numerical Simulation of Temperature Distribution and Residual Stress in Pipe Welding of Stainless-Steel Multi-Pass Butt Joints M. Alhafadhi, A. Masar, Z.A. Oudah, B. Katalin and Y. Chahboub	239
Gear Dimension Optimization Using the IM8000 Measurement System G.R. Zawedde, S. Bodzas and P. Nikodem	240
VSR Application in Some Cases for the Industry Needs F. Hadžikadunić, N. Vukojević and M. Pavić	241
Chapter 21: Engineering Management	
Presentation of the WATCH+ Career Orientation Program and Opportunities for Further Development K. Kulcsár and K. Sarvajcz	245
The Value of Manufacturing Platforms G. Haidegger	246
Scrap Management and Space Optimization in the Context of Developing a PCBA Tester Cell K. Birkás and M. Alhafadhi	247
Assessing Hydrodynamic and Operational Efficiency of a Solar-Driven Pumped Hydropower System under Changing Weather Conditions: A Case Study in Lake Velence Catchment, Hungary	217
A. Kalman and K. Bene	248
Process Simulation Using Parametrized Models G. Ruzicska, L. Czégé and T. Mankovits	249
Advancing E-Commerce Logistics Network Design: Insights from a Systematic Literature Review J. Juhász	250
Hungarian Materials Industry Technology Platform N. Babcsán	251
The Municipal Environmental Protection Program of the Municipality of Dunaújváros I. Angerer Petrovickijne	252
Supporting NIS 2 Audits in Eu Member States through Impact Determination I. Denes and S. Semperger	254
Chapter 22: Applications of Artificial Intelligence in Engineering Management	
Quantitative Evaluation of Process Discovery Enhancement Using Clustering-Based Techniques	
E.B. Varga and A. Baksa	257
Applying AI to Predict High-Cost Property Prices: A Comparative Modelling Approach M.A. Parvez and S. Dadvandipour	258
When Ecosystems Meet Industry: Ai-Driven Portfolio Management through Predator-Prey Dynamics A.S. Goga and M. Bocoianu	259

AI Powered KPI Optimization: Bridging the Gap between Industry Data and Operational Excellence P. Madarasi and J. Menyhárt

260