Table of Contents

Operations Research 1

Evaluating Erlang C and Erlang A Models for Staff Optimization: A Case Study in an Airline Call Center Kaushik NAG, Magdy HELAL	1
Analyzing the Effectiveness of Lean Manufacturing Practices in Indian Small and Medium Sized Businesses Saumyaranjan SAHOO, Sudhir YADAV	6
Robustness Through Possible Crew Swaps in Airline Operations Ian Frederic ILAGAN, Charlle SY	11
A Mixed Integer Programming Optimization of Bundling and Pricing Strategies for Multiple Product Components with Inventory Allocation Considerations Paul Siegfried BARRIOS, Dennis CRUZ	16
A Tool for Selecting Optimal Emergency Response Unit Locations Using an Integrated AHP-MILP Approach Jayne Lois SAN JUAN, Christine FERNANDEZ, Bryanne LIM, Erika LIM, Richard LI	21
Positive Behaviour Changes Through Learn-Practice-Implement Leadership Behavioural Standards Bin MA, Roland LIM, Ming Hon TOH, Huey Yuen NG	26
Joint Decision Making About Price and Duration of Discount Airfares Yanli FANG, Yan CHEN, Xin LI	31
Operations Research 2	
An Assignment-Based Continuous-Time MILP Model for the Resource-Constrained Project Scheduling Problem Tom RIHM, Norbert TRAUTMANN	35
A Robust Optimisation Approach to the Aircraft Sequencing and Scheduling Problem with Runway Configuration Planning Kam Hung NG, Carman Ka Man LEE, Felix CHAN	40
A Cut-Off Grade Optimization Model in the Open Pit Mining Considering Reclamation and Valuable Waste Materials Benazir IMAM ARIF MUTTAQIN, Cucuk Nur ROSYIDI, Eko PUJIYANTO	45
Comparison of PSO and DE for Truck Scheduling in Multi-Door Cross Docking Terminals Warisa WISITTIPANICH, Piya HENGMEECHAI	50
Worst Case Scenario Lemma for Γ-Robust Combinatorial Optimization Problems Under Max-Min Criterion Jiabao ZHANG, Wei WU, Mutsunori YAGIURA	55
Multi-Skilled Manpower Scheduling with Part-Time Consideration: Case Study Ping Chong CHUA, Hendra Teja WIRAWAN, Tay Jin CHUA	60
Operations Research 3	
Optimal Pricing Considering Customer Categories: Case on Car Rental Industries Nur Aini MASRUROH, Vivian Prislyane TJAKRA, Ririh Rahma RATINGHAYU	65

A Comparison of Integer Programming Formulations and Variable-Fixing Method for the Nurse Scheduling Problem Masaya HASEBE, Takamasa YAMAZAKI, Masakazu RYUMAE, Wei WU, Koji NONOBE, Atsuko IKEGAMI	70
Optimization of Product Bundling Strategy Decisions and Inventory Allocation with the Integration of the Degree of Contingency and Dead Stock Levels in a Multiple Time Period Setting Edward John FRANCO, Mikhaela Carissa SANTOS, Denise Ericka SUYOM, Dennis CRUZ	75
Agent Scheduling of Call Center Using Decomposition Technique Netnawee UM-IN, Wipawee THARMMAPHORNPHILAS	80
A Mathematical Model for Double Layer Precast Production Scheduling Nuntiya IAMSUMANG, Wipawee THARMMAPHORNPHILAS	85
A New Two-Stage Stochastic Model for Reverse Logistics Network Design Under Government Subsidy and Low-Carbon Emission Requirement Hao YU, Wei Deng SOLVANG	90
Supply Chain Network Reconfiguration in New Products Launching Phase Hamed JAHANI, Babak ABBASI, Farzad ALAVIFARD	95
An Optimal Scheduling Policy for Satellite Constellation Deployment Sunil SINDHU, Goutam SEN	100
Engineering Education and Training 1	
Engaging with Industry to Improve Student Learning on Undergraduate Engineering Programmes Margaret MORGAN, Pearse O'GORMAN	105
Analysis of the Stakeholders of Engineering Education System to Improve the Creativity of Engineering Education Rufaidah Y. ALMAIAN	110
Towards the Best Method of Cross Cultural Training for IT Engineering Graduates from Eastern Indonesia Region: Ready to be Global Engineers Agung PRABOWO, Sulistyowati, Ika WINDIARTI	115
Development of Needham Model Based e-Module for Electromagnetic Field & Wave M.F. LEE, N.A. ZAINAL	120
Industrial IoT Business Workshop on Smart Connected Application Development for Operational Technology (OT) System Integrator Satoshi GOTO, Osamu YOSHIE, Shigeru FUJIMURA	125
How to Improve Employee Education - Methodological Approach to Structure Specialist and Interdisciplinary Requirements **Barbara Theresia WULFKEN, Egon MUELLER**	130
Engineering Education and Training 2	
Visualization of the Influence by Conceptual Leadership Promoting High Quality Output Miwa NISHINAKA, Kunio SHIRAHADA, Youji KOHDA	135
Emotional Intelligence and Information Technology Professionals Chang Boon LEE, Wing Han Brenda CHAN, Chi Ming LEE	140
Factors Influencing Research in an Engineering Faculty Nicoline REYNECKE, Annlizé MARNEWICK, Jan-Harm PRETORIUS	145

Vocational Pedagogy Among Technical Vocational Education and Training Teachers Jailani MD. YUNOS, Siti Nur Kamariah RUBANI, Faizal AMIN NUR YUNUS, Maizam ALIAS, Syahril ST, Marina IBRAHIM, Lee MING FOONG, Tee TZE KIONG, Sri SUMARWATI, Dedy Irfan D, Junita SULAIMAN	150
Group Technology Application to Investigate Learning/Teaching Style of Engineering Students Abdelhakim ABDELHADI	155
Entering the Testing and Certification Industry: A Review of Job and Competency Requirements Fanny TANG, Anne O'GRADY, Andrew CLAPHAM	158
Technology and Knowledge Management 1	
A Framework for Lean Knowledge Dissemination: Enhancing Innovation Excellence <i>R.M. Chandima RATNAYAKE, Ville ISOHERRANEN</i>	162
The Effects of Cooperative Activities with Competitors on the Performances of Innovation and Management Yongrae CHO, Choonghyun LEE, Eunji MOK	166
Perceived Distance as a Reflection of an Organizational Culture of Learning from Failure Jun NAKAMURA, Sanetake NAGAYOSHI	171
Relationship Among Knowledge Sharing, Open Innovation and Green Poduction: A Multiple Stakeholders Perspective in Batik Tulis Industries *Augustina Asih RUMANTI, T.M.A. Ari SAMADHI, Iwan Inrawan WIRATMADJA, Indryati SUNARYO*	176
From Potential to Realized Technological Capability: The Case of Indonesian Vessel Component Industry Dian PRIHADYANTI, Budi TRIYONO, Dudi HIDAYAT	181
The Influence of Information Technology Infrastructure and Leadership Style on Knowledge Management Implementation Saide, Rahmat TRIALIH, Azhiah PUTRI, Putri Nadya FAZRI, Winda HAFIZA	186
Research on the Development of General Aviation Industry Chain in Shaanxi Province Based on the Model of GEMD <i>Qinglin BAO, Huaqi CHAI, Kang WU</i>	191
Creating an Ability to Respond to Changing Requirements by Systematic Modelling of Design Assets and Processes Samuel ANDRÉ, Fredrik ELGH	196
Intelligent Systems	
Implementation of Industry 4.0 Technologies in the Mining Industry: A Case Study <i>Michael N. SISHI, Arnesh TELUKDARIE</i>	201
Application of the Agile Energy Model to the Procure to Pay Process Megashnee MUNSAMY, Arnesh TELUKDARIE	206
Usage Frequency of Product Configuration Systems Relative to Integrations and Fields of Application Sara SHAFIEE, Katrin KRISTJANSDOTTIR, Lars HVAM, Loris BATTISTELLO, Enrico SANDRIN	211
Chatbots and Conversational Agents: A Bibliometric Analysis Hio Nam IO, Chang Boon LEE	215
Evaluation of Knowledge Acquisition from Document Clustering Based on Information Retrieval Scales Shu OCHIKUBO, Kano KOMIYA, Fumiaki SAITOH, Syohei ISHIZU	220

Extraction of Customer Satisfaction Topics Regarding Product Delivery Using Non-Negative Matrix Factorization Tokuhiro KUJIRAOKA, Fumiaki SAITOH, Syohei ISHIZU	225
A Framework for Knowledge-Intensive Design Decision Support in Model Based Realization of Complex Engineered Systems Ru WANG, Guoxin WANG, Yan YAN, Shuting CHEN, Janet K. ALLEN, Farrokh MISTREE	230
Human Factors 1	
Knowledge Engineering: Exploring Evacuation Behavior During Volcanic Disaster Bertha Maya SOPHA, Anna Maria Sri ASIH, Dini Graita ILMIA, Hari Agung YUNIARTO	235
Multi-Control and function Design of Ergonomic Electric Wheelchair for Reducing Pressure Ulcer Problem Seng Fat WONG, Bin LIN, Z. C. LUO	240
Ergonomic Assessment and Design Improvement of Shopping Carts for the Satisfaction of Buyers in Grocery Stores and Supermarkets *Rene ESTEMBER, Mara Hiyasmin BERDAN*	245
Research on Low Cost Virtual Assembly Training Platform Based on Somatosensory Technology Shengqian JIANG, Peng LIU, Dawei GAO, Yang XU, Xian MENG, Zhaoyi LIU, Zhuo HUANG, Ruolan XU	250
A Short Review of Mental Models of Operators in Main Control Rooms of Nuclear Power Plants Yingzhi ZHANG, Zhizhong LI	255
An Identification of Dimensions Able to Attract the Potential Workforce for I.T. Industry in India Bhartrihari PANDIYA, Vijayshri TEWARI, Richa SINGH DUBEY	260
Design Thinking and Semiotics to Increase Socio-Cognitive-Affective Engagement: An Inclusive Design Human Factors Case Study <i>Chien-Sing LEE, K. Daniel WONG</i>	264
Human Factors 2	
Injury Analysis of Mine Workers: A Case Study Vivek THIRUMALA, Tarun VERMA, Suprakash GUPTA	269
Reflective Learning in Engineering Education: A Case Study of Shell Eco-Marathon Sune VON SOLMS, Hannelie NEL	274
Implementation of High Performance Work Practices (HPWP) in R&D Organizations: Empirical Evidence from Malaysia <i>Arnifa ASMAWI, Kok-Wai CHEW</i>	279
Workplace Diversity and its Outcomes in the Arctic Area Maryam BARABADI, Abbas BARABADI	284
Integration of a Digital Twin as Human Representation in a Scheduling Procedure of a Cyber- Physical Production System <i>Iris GRAESSLER, Alexander POEHLER</i>	289
Design of an Assistant System for Industrial Maintenance Tasks and Implementation of a Prototype Using Augmented Reality Ruben SCHLAGOWSKI, Claudia MEITINGER, Lukas MERKEL	294

A Soft Approach Towards Gaining Employability in IT Professionals Richa SINGH DUBEY, Vijayshri TEWARI, Bhartrihari PANDIYA	299
Systems Modeling and Simulation 1	
Topology Optimization as an Innovative Design Method for Additive Manufacturing Dinh Son NGUYEN, Frédéric VIGNAT	304
Neural Network Analysis of Behavioral Agent-Based Service Channel Data Karthik SANKARANARAYANAN, Ralph LAITE, Nataliya PORTMAN	309
Agent Based Simulation of a Payment System for Resilience Assessments Aron LARSSON, Osama IBRAHIM, Leif OLSSON, Joeri VAN LAERE	314
A Hybrid Regression Technique for House Prices Prediction Sifei LU, Zengxiang LI, Zhen QIN, Xulei YANG, Rick Siow Mong GOH	319
Modeling of Power Profiles of Milling Machines for the Use in Factory Models to Optimize Energy Efficiency Matthias MEISSNER, Andreas WIRTZ, Johanna MYRZIK	324
A System Model to Improve the Productivity of a South African Steel Industry Thomas MUNYAI, Charles MBOHWA, Olasumbo MAKINDE, Boitumelo RAMATSETSE	329
Systems Modeling and Simulation 2	
Developing Advanced Traffic Violation Detection System with RFID Technology for Smart City Seng Fat WONG, H. C. MAK, C. H. KU, Weng Ian HO	334
Path Location Problem for the Marine Container Terminal with Arbitrary Configuration Etsuko NISHIMURA	339
Feasibility Analysis of Renewable Based Hybrid Energy System for the Remote Community in Pakistan Fahad ALI, Yuexiang JIANG, Kashifullah KHAN	344
An Integrated Customer-Manufacturer Optimization Model to Determine the Optimal Product Price and Quality Level Using Theory of Utility Anindya Rachma DWICAHYANI, Cucuk Nur ROSYIDI, Eko PUJIYANTO	349
Modelling and Simulation of Agricultural Production System Based on IoT Cultivated Fields Information	354
Yusaku MATSUMOTO, Hironori HIBINO, Naoki KUBO, Makoto KIMURA, Yousuke MIZUKAMI	
Virtualization Technologies in Product Development: A Cross-Industrial User-Study Sebastian KREMS, Diana REICH, Rainer STARK	359
Reliability Analysis of Cyber-Physical Systems Considering Cyber-Attacks Zhihui FANG, Huadong MO, Yong WANG	364
Supply Chain Management 1	
Integrated Supporting Cooperation Model with Fuzzy Approach for Staff Scheduling Problem in Service Supply Chain Teng-Sheng SU, Su-Chuan LIU	369

Models for Continuous Berth Allocation and Quay Crane Assignment: Computational Comparison Cagatay IRIS, Jasmine Siu Lee LAM	374
Determining Quality Refining Rice Mill Location with Disruption Risks Wichitsawat SUKSAWAT NA AYUDHYA	379
Performance Analysis of Riceberry Rice Supply Chain in Thailand Wassanai WATTANUTCHARIYA, Thammasak KUAITES	384
Framework of Supply Chain Simulation Using SCOR Model in Newspaper Industry Arinda Soraya PUTRI, Wahyudi SUTOPO, Muhammad HISJAM	388
Pricing Policy in Green Supply Chain Management with a Risk-Averse Retailer <i>Bo LI, Yushan JIANG, Xiaolong QU</i>	393
Developing Innovative Supply Chain Using Crowdsourcing: A Conceptual Model <i>Mahmood ALI, Asim MAJEED</i>	398
Supply Chain Management 2	
Examining the Solutions to Overcome the SCKFBs Using Fuzzy AHP and Fuzzy TOPSIS Method <i>Vishal BHOSALE, Ravi KANT</i>	403
Mitigating the Bullwhip Effect in Supply Chains Using Variance Reduction Techniques A. A. EL-TANNIR	408
Factors Influencing Attitude Toward Behavior in Using Mass Transit System in Bangkok: A Case Study in Car Users Panisara VANICHKITPISAN, Chivalai TEMIYASATHIT	412
Determining Medical Aid Distribution Route Using Multi-Objective Optimization Sinta SULISTYO, Rizka RATNASARI	417
Distribution Planning for Single-Manufacturer Single-Distributor Multi-Retailer Supply Chain Pachara CHATAVITHEE, Kullapapruk PIEWTHONGNGAM	422
Towards a Collaborative Supply Chain Balanced Score Card Framework to Analyse Collaborative Value-Added Ridha DERROUICHE, Samia GAMOURA, David DAMAND, Hanene BOUGUESSAS	427
Development of Fuzzy Logic and Genetic Fuzzy Commodity Price Prediction Systems – An Industrial Case Study Joseph C. CHEN, Xiaoyun WANG	432
Supply Chain Management 3	
The Effect of Uncertainty Avoidance on Lean Implementation: A Cross Cultural Empirical Study Involving Toyota Nihal JAYAMAHA, Nigel GRIGG, Nisansala PALLAWALA	436
Inventory Control Model of a 4-Echelon Production-Distribution System Moumita TEWARY, Debabrata DAS, Nirmal Baran HUI	441
Reference Process for the Continuous Design of Production Networks Günther SCHUH, Jan-Philipp PROTE, Stefan DANY	446
Additive Manufacturing Impact for Supply Chain – Two Cases Sobolev IVAN, Yong YIN	450

Coordination in Supply Chain Finance Under CVaR Criteria Nina YAN, Ye LIU, Chongqing LIU, Hongyan DAI	455
Continuous Improvement of Complex Process Flows by Means of Stream as the "Standardized Cross-Enterprise Value Stream Management Method" Christof OBERHAUSEN, Meysam MINOUFEKR, Peter PLAPPER	460
Relationship Between Stringent Customer Environmental Requirements and Environmental Performance in Sustainable Supply Chain Md Rezaul Hasan SHUMON, Shams RAHMAN, Kamrul AHSAN	465
Information Processing and Engineering 1	
Estimating Component Yield for CLT Production Urs BUEHLMANN, R. Edward THOMAS	470
Meshes Optimization in Freeform and 3D Printing for Product Design Chung-Chuan WANG, Chung-Shing WANG, Ching-Hu YANG, Kai-Jai YANG, Teng-Ruey CHANG	475
Analysis and Mode Establishment of Information Integration Activities - A Case Study Perspective Te- King CHIEN, Hung-Lun CHANG, W.L. LAI	480
Adaptation of a Product Maturity Model to Highly Iterative Product Development Günther SCHUH, Jan-Philipp PROTE, Stefan DANY, Marco MOLITOR, Luca PAGANO	485
Validation of an Optical System for Measuring the Absolute Angular Position Tobias SCHNEIDER, B. EILERT, Malte STONIS, Ludger OVERMEYER	490
Integration of an Automated Load Management in a Manufacturing Execution System Cedric SCHULTZ, Christina BAYER, Martin ROESCH, Stefan BRAUNREUTHER, Gunther REINHART	494
A Fuzzy Approach for Fatigue and Creep Analysis in a Fire and Tube Boiler Tawanda MUSHIRI, Alimon Z. SHOKO, Charles MBOHWA	499
Information Processing and Engineering 2	
Research Evolution in Design Engineering Education: A Visual Approach Using Thematic Network S.C. Johnson LIM, Izzat Syahmi GHAZALI	504
A Cloud-Based Dynamic Random Software Testing Strategy Hanyu PEI, Beibei YIN, Min XIE, Kai-Yuan CAI	509
The Effective Route Selection for East-West Economic Corridor in the Greater Mekong Subregion: Machine Vision Approach Woramol Chaowarat WATANABE, Takumi ASADA, Mikiharu ARIMURA	514
Analyzing the Impact of Investor Sentiment in Social Media to Stock Return: Survival Analysis Approach Aldila RIZKIANA, Hasrini SARI, Pamoedji HARDJOMIJOJO, Budhi PRIHARTONO, Titah YUDHISTIRA	519
Business Process Modelling Tool Selection: A Review Chuks MEDOH, Arnesh TELUKDARIE	524
Implementing Industry 4.0 - A Technological Readiness Perspective Premaratne SAMARANAYAKE, Krishamurthy RAMANATHAN, Tritos LAOSIRIHONGTHONG	529

Decision Analysis and Methods 1

Allocation of College Students to Business Majors with the Aid of a Linear Programming Model Ahmed EL-BOURI, Asma AL-ZAIDI	534
Procedures to Accommodate System Fluctuations that Result in Buffer Compromised Systems Governed by the Theory of Constraints Jivashan REDDY, Arnesh TELUKDARIE	539
Optimization of Decision Support System Based on Three-Stage Threat Evaluation and Resource Management Afshan NASEEM, Shoab Ahmed KHAN, Asad Waqar MALIK	544
Objective Measurement for Attractiveness of Sightseeing Spots under Minimization of Maximum Error among Pairwise Comparisons Takashi HASUIKE, Hideki KATAGIRI, Hiroshi TSUDA	549
A Further Improved Support Vector Machine Model Along with Particle Swarm Optimization for Face Orientations Recognition Based on Eigeneyes by Using Hybrid Kernel Yang LIU, Yongkui SHI, Mingwei XU, Liangliang ZHANG, Ning YU, Yonglu DING	554
Fuzzy AHP Method for Prioritizing Logistics Barriers of Exporting Eggs Pornwasin SIRISAWAT, Narat HASACHOO, Phattaraporn KALAYA	559
An Analytical Study on Horizontally Collaborative Transportation Strategies Long ZHENG, K. G. BAE	564
Implementation of a Role-Based Decision Support System in an Integrated Petrochemical Enterprise Eyad BUHULAIGA, Arnesh TELUKDARIE	568
Production Planning and Control 1	
Production Planning and Control 1 Data Analysis on Applying Real Time Tracking in Production Control of Construction Jianyu ZHAO, Hylton OLIVIERI, Olli SEPPÄNEN, Antti PELTOKORPI, Behnam BADIHI, Pontus LUNDSTRÖM	573
Data Analysis on Applying Real Time Tracking in Production Control of Construction Jianyu ZHAO, Hylton OLIVIERI, Olli SEPPÄNEN, Antti PELTOKORPI, Behnam BADIHI, Pontus	573 578
Data Analysis on Applying Real Time Tracking in Production Control of Construction Jianyu ZHAO, Hylton OLIVIERI, Olli SEPPÄNEN, Antti PELTOKORPI, Behnam BADIHI, Pontus LUNDSTRÖM Job Scheduling Integrated with Imperfect Preventive Maintenance Considering Time-Varying Operating Condition	
Data Analysis on Applying Real Time Tracking in Production Control of Construction Jianyu ZHAO, Hylton OLIVIERI, Olli SEPPÄNEN, Antti PELTOKORPI, Behnam BADIHI, Pontus LUNDSTRÖM Job Scheduling Integrated with Imperfect Preventive Maintenance Considering Time-Varying Operating Condition Jiawen HU, Zuhua JIANG A Genetic Algorithm for Unrelated Parallel Machine Scheduling Minimizing Makespan Cost and Electricity Cost Under Time-of-Use (TOU) Tariffs with Job Delay Mechanism	578
Data Analysis on Applying Real Time Tracking in Production Control of Construction Jianyu ZHAO, Hylton OLIVIERI, Olli SEPPÄNEN, Antti PELTOKORPI, Behnam BADIHI, Pontus LUNDSTRÖM Job Scheduling Integrated with Imperfect Preventive Maintenance Considering Time-Varying Operating Condition Jiawen HU, Zuhua JIANG A Genetic Algorithm for Unrelated Parallel Machine Scheduling Minimizing Makespan Cost and Electricity Cost Under Time-of-Use (TOU) Tariffs with Job Delay Mechanism Bobby KURNIAWAN, Alfian Akbar GOZALI, Wei WENG, Shigeru FUJIMURA Group Production Scheduling Model with Due Window and Maintenance	578 583
Data Analysis on Applying Real Time Tracking in Production Control of Construction Jianyu ZHAO, Hylton OLIVIERI, Olli SEPPÄNEN, Antti PELTOKORPI, Behnam BADIHI, Pontus LUNDSTRÖM Job Scheduling Integrated with Imperfect Preventive Maintenance Considering Time-Varying Operating Condition Jiawen HU, Zuhua JIANG A Genetic Algorithm for Unrelated Parallel Machine Scheduling Minimizing Makespan Cost and Electricity Cost Under Time-of-Use (TOU) Tariffs with Job Delay Mechanism Bobby KURNIAWAN, Alfian Akbar GOZALI, Wei WENG, Shigeru FUJIMURA Group Production Scheduling Model with Due Window and Maintenance Wen-Zhu LIAO, Min JIANG, Xiu-Fang ZHANG Product Variety Management Using Data-Mining Methods – Reducing Planning Complexity by Applying Clustering Analysis on Product Portfolios	578 583 588

Production Planning and Control 2

Critical Success Factors for Instrumentation and Control Projects Within the Power Industry in South Africa Sheeba MATHEW, Jan-Harm PRETORIUS	608
A Benders Decomposition-Based Heuristic Algorithm Framework for Unrelated Parallel Machine Scheduling Problem with Weighted Maximum Earliness and Tardiness Shijin WANG, Benyan YE	614
Parallel Machines Scheduling Problem with Maintenance Using Greedy Algorithm Wen-Zhu LIAO, Xiaoxia YANG	619
Service Time Effects of Distancing from the Customer, A Case Study from the Swedish Emergency Call Center Klas GUSTAVSSON	624
Package Designs that Enhance Firm Performance in the Japanese Food Industry Tomofumi MIYANOSHITA, Tohru YOSHIOKA-KOBAYASHI, Daisuke KANAMA	629
The Link Between the Use of Advanced Planning and Scheduling (APS) Modules and Factory	634
Context Jesper KRISTENSEN, Jesper ASMUSSEN, Brian Vejrum WÆHRENS	
Manufacturing Systems 1	
Time Dynamic Mission Reliability Modeling of Multi-State Manufacturing Systems Based on Universal Generating Function Kongjun GAO, Changchao GU, Yihai HE	639
Implementation of Lean Principles for Performance Improvement: Use of VSM+WID for Waste Identification Jose DINIS-CARVALHO, R.M. Chandima RATNAYAKE, Luis FERRETE	644
Challenges and Opportunities in Implementing Engineering Systems Thinking in Design, Manufacturing and Process Industries in Zimbabwe Wilson R. NYEMBA, Charles MBOHWA	649
Applying Lessons Learned From Lean Implementation For SMEs – Singapore Context Laura Xiao Xia XU, Feng Yu WANG	654
Two-Stage Assembly Flowshop Scheduling Problem with Distinct Due Windows Feng CHEN, Tsui-Ping CHUNG, Le WANG, Meng QIU	659
Redesign and Control of Backtracking of Process Paths in Manufacturing Plant Layouts for Productivity and Sustainability Wilson R. NYEMBA, Marvin MASWERA, Charles MBOHWA	664
Towards Just-in-Time (JIT) Production System Through Enhancing Part Preparation Process Mohd Norzaimi CHE ANI, Shahrul KAMARUDDIN, Abdul Azid ISHAK	669
Product Design for Mass Individualisation for Industrial Application Ravi K. SIKHWAL, Peter R N. CHILDS	674

Project Management 1

Effective Knowledge Management Strategy and Firm's Size: Evidence from Indonesia Construction Firms Budi HARTONO, Sinta SULISTYO, Kah-Hin CHAI, Nurul INDARTI	681
Context-Oriented Strategy for Modularization of Engineering Design Processes: An Automotive Case Study Christoph HOLLAUER, Gregor PAVLITZEK, Markus MÖRTL, Udo LINDEMANN	686
Applicability of Earned Value Management for Deadline Energy Constrained Applications Shunichiro SUENAGA, Kenji TEI, Shinichi HONIDEN	691
Implementation and Assessment of a Predictive Analytics Model for Development Project Management Günther SCHUH, Michael RIESENER, Christian DÖLLE	696
Challenges of Agile Development Implementation in Mechatronic Development Processes Kristin GOEVERT, Attila GÖKDEMIR, Christoph PEITZ, Udo LINDEMANN	701
Conflict Management in Outsourced Engineering Projects in South Africa Bulali MDONTSANE, Hannelie NEL, Annlizé MARNEWICK	706
Project Management 2	
A Bi-Level Model with Rough Coefficients for Multi-Mode Resource-Constrained Scheduling Problems Zhe ZHANG, Yang WANG	711
An Integrated Approach for Automatic Execution of BIM-based Assemblies Using Light-Framed Constructions Boya JIANG, Lau SSY, Qianning ZHANG	715
Towards an Integrated Controlling Tool Based on a Time-Varying Project Risk Management Concept Zoltan SEBESTYÉN, Tamas TÓTH	720
Agile-Waterfall Hybrid Product Development in the Manufacturing Industry – Introducing Guidelines for Implementation of Parallel Use of the Two Models Günther SCHUH, Eric REBENTISCH, Michael RIESENER, Frederic DIELS, Christian DÖLLE, Steffen EICH	725
Exploring Risks Causing Schedule Overrun in Upstream Natural Gas Projects-A Critical Review and Implications for Future Research Munmun BASAK, William Vaughan COFFEY, Robert PERRONS	730
An Approach for Managing Project-Communicated Content Wen-Lung TSAI, Bo-Wei DU, Ying-Hsi CHEN, Yu-Xun LIN	735
Quality Control and Management 1	
Quantifying Leanness Combining Value Stream Mapping with a Data Envelopment Analysis Based Method - A Case Study at a Swedish Logistics Company Victoria HJALMARSSON, Leif OLSSON	740
An Integration Method of MFCA, Dynamic Programming, and Multiple Criteria Decision Making in Operations Improvement: A Case Study Chompoonoot KASEMSET, Chawis BOONMEE	745

Quality Attributes of Robotic Vehicles and Their Market Potential Bjoern FRANK, Shane J. SCHVANEVELDT	750
Application of Quality Function Deployment for Halal Food Products Iwan VANANY, Ghoffar Albab MAARIF, Adi SOEPRIJANTO, Bilqis AMALIAH	755
Implementation of Shainin's DOE: A Case of Plastic Injection Molding Process Tossapol KIATCHAROENPOL, T. VICHIRAPRASERT	760
Developing a Total Quality Management Model for Healthcare Industry: An Indonesian Hospital Case Study Jonny, Kriswanto	765
State Space Modeling of Multi-Scale Variation Propagation in Machining Process Using Matrix Model	770
Kun WANG, Yaxiang YIN, Shichang DU, Lifeng XI, Tangbin XIA	
Big Data and Analytics 1	
Feature Importance-Guided Multi-Regression Ensemble with Application to Remaining Useful Life	775
Prediction Feng YANG, Ching HUANG, M. Salahuddin HABIBULLAH, Xulei YANG, Yan SHEN, Raymond NEO	
Status Quo and Future Potential of Manufacturing Data Analytics – An Empirical Study Sebastian GROGGERT, Marian WENKING, Robert H. SCHMITT, Thomas FRIEDLI	779
Monitoring of an Aluminum Melting Furnace by Means of a 3D Light-Field Camera Sara MOHAMMADIFARD, Jan LANGNER, Malte STONIS, Hubertus SEMRAU, Sven-Olaf SAUKE, Hossein LARKI HARCHEGANI, Bernd-Arno BEHRENS	784
Large-Scale Clustering Using Mathematical Programming <i>Mario GNÄGI, Philipp BAUMANN</i>	789
Association Rules and Collaborative Filtering on Sparse Data of a Leading Online Retailer <i>Yongzhong WU, Mianmian HUANG, Yuxin LU</i>	794
A Comparison Between MODWT-SVM-DE Hybrid Model and ARIMA Model in Forecasting Primary Energy Consumptions Thoranin SUJJAVIRIYASUP, Komkrit PITIRUEK	799
Big Data and Analytics 2	
Is Big Data for Everyone? The Challenges of Big Data Adoption in SMEs Satya SHAH, Cristina BARDON SORIANO, Alec COUTROUBIS	803
Spatial-Temporal Traffic Speed Bands Data Analysis and Prediction Shen REN, Lin HAN, Zengxiang LI, Bharadwaj VEERAVALLI	808
A New Data-Driven Intelligent Fault Diagnosis by Using Convolutional Neural Network Long WEN, Liang GAO, Xinyu LI, Minzhao XIE, Guomin LI	813
Data Analytics in Product Development: Implications from Expert Interviews Julian WILBERG, Fabian SCHÄFER, Peter KANDLBINDER, Christoph HOLLAUER, Mayada OMER, Udo LINDEMANN	818
Investigate Human Behavior During Ramadan Through Network Structure: Evidence from Twitter Aamna AL-SHEHHI, Wei Lee WOON, Zevar AUNG	823

Frequency and Random Forest Weili YAN, Jun-Hong ZHOU	828
Service Innovation and Management 1	
Developing Community-Based Engagement in Smart Cities: A Design-Computational Thinking Approach Chien-Sing LEE, K. Daniel WONG	832
Application of Queuing Theory in Service Design Dinh Son NGUYEN	837
Examining the Application of Standards for Information Technology Service Management Practice: An Empirical Study Gregory CHIN, Younes BENSLIMANE, Zijiang YANG	841
Library Facility Layout Design for Digital Native Generation Felecia, Siana HALIM, D. WULANDARI	846
A Study on Entrepreneurial Education Regarding College Students' Creative Tendency, Entrepreneurship Self-Efficacy and Entrepreneurial Motivation Feng-Ming SUI, Jen-Chia CHANG, Hsiao HSI-CHI, Sheng-Chu SU	850
Performance Assessment System Development Based on Performance Prism in Social Services Rui ESTRADA, Sergio D. SOUSA, Isabel LOPES	855
Establishing Suitable Process Improvement Methodologies for Optimizing Servicing Operations in the Banking Industries Olasumbo MAKINDE, Thomas MUNYAI, Boitumelo RAMATSETSE	860
Healthcare Systems and Management 1	
Developing an Error Taxonomy System for Patient Handoff Events Xiuzhu GU, Tsuyoshi SEKI, Kenji ITOH	865
Scheduling Patients in Emergency Department: A Case Study Dorsaf DALDOUL, Issam NOUAOURI, Hanen BOUCHRIHA, Hamid ALLAOUI	870
Simulation Analysis to Improve Outpatient Turnaround Times in Specialty Clinics Sung SHIM, Arun KUMAR, J. JIAO	875
Applying Lean Principles to Health Economics Transactional Flow Process to Improve the Healthcare Delivery *Ibrahim ALRASHED, Parminder Singh KANG*	879
Does Policy of Delayed Retirement Affect Individual Health Yan ZENG, Qifan JIA, Jie ZHOU	884
An Integer Programming Model for Radiographer Scheduling Considering Skills and Training Hisashi YUURA, Toshiyuki MIYAMOTO, Kuniyuki HIDAKA	889
Healthcare Systems and Management 2	
Managing and Evaluating Different Projects in a Hospital Trough the Analytic Hierarchy Process: Methodology and Test Case Carlotta PATRONE, Adriano LAGOSTENA, Roberto REVETRIA	894

Teachers' Mental Health: Perceived Social Justice and Life Satisfaction Yan LI, Qifan JIA, Jie ZHOU	899
Applying Bayesian Network for Noncommunicable Diseases Risk Analysis: Implementing National Health Examination Survey in Thailand Kanogkan LEEROJANAPRAPA, Walailak ATTHIRAWONG, Wichai AEKPLAKORN, Kittiwat SIRIKASEMSUK	904
Exploring the Internet Resource for Senior Citizens in Taiwan Shann-Bin CHANG, K. Y. HUANG, Shu-Min CHANG	909
Transformation of Health Care System Using Internet of Things in Villages A.S. KARTHIKA, Kavyashree PRAKASHAN, R. ANKAYARKANNI, J. BRIGHT JOSE	914
A Deeper Look at the Causes of Hospital Readmissions Zhongyuan YU, William B. ROUSE	919
Reliability and Maintenance Engineering 1	
Modelling Water Distribution Network Failures and Deterioration David VALIS, Kamila HASILOVA, Marie FORBELSKA, Katarzyna PIETRUCHA-URBANIK	924
OEE Improvement of Thermoforming Machines Through Application of TPM at Tibaldi Australasia Vickram CHUNDHOO, Gopinath CHATTOPADHYAY, Indra GUNAWAN, Yousef IBRAHIM	929
Birnbaum Importance Measure of Network Based on C-Spectrum Under Saturated Poisson Distribution Yongjun DU, Shubin SI, Hengyi GAO, Zhiqiang CAI	934
Reliability Analysis of Rectification on Electromagnetic Compatibility Test Dan LI, Wei DANG, Li SUN, Ye TIAN, Jiaqi FENG	939
Design and Estimation of Reliability of an Off Grid Solar Photovoltaic (PV) Power System in South East Queensland Mandeep Singh PAHWA, Anisur RAHMAN	944
Modelling of a Transport Belt Degradation Using State Space Model David VALIS, Dariusz MAZURKIEWICZ, Marie FORBELSKA	949
Ant Colony Optimization for Component Assignment Problems in Circular Consecutive-k-out-of-n Systems	954
Zhiqiang CAI, Wei WANG, Shuai ZHANG, Zhongyu JIANG	
Justification of Maintenance Management: AHP Approach Sachin YADAV, Rajesh Kumar SINGH, Pravin KUMAR	959
Operations Research 4	
Multi-Objective Stable Matching with Ties Nitin PHUKE, Mangesh GHAROTE, Rahul PATIL, Sachin LODHA	964
Key Performance Indicators for Manufacturing Operations Management in the Process Industry Li ZHU, Charlotta JOHNSSON, Jacob MEJVIK, Martina VARISCO, Massimiliano SCHIRALDI	969
Supply Chain Coordination and Revenue-Sharing Contract with Backlogs for a Perishable Product Renfei LUO, Zhaotong LIAN, Chang Boon LEE	974

A Capacitated Location-Routing Problem with Customer Satisfaction Under Facility Disruption Pooya POURREZA, Reza TAVAKKOLI-MOGHADDAM, Soroush AGHAMOHAMADI, Ali BOZORGI-AMIRI, Yaser RAHIMI	979
Time-Varying Hyperparameter Strategies for Radial Basis Function Surrogate-Based Global Optimization Algorithm Peng JIANG, Christine SHOEMAKER, Xiao LIU	984
A New MILP Formulation for Rebalancing Enhanced Index-Tracking Portfolios Oliver STRUB	989
Two-Dimensional Lease Contract Model with Coordination for New and Used Equipment Hennie HUSNIAH, Udjianna S. PASARIBU, Bermawi P. ISKANDAR	994
Operations Research 5	
On the Mathematical Program in Theater Anti-Aircraft Distribution Problem Trang T. NGUYEN, Trung Q. BUI, Bang Q. NGUYEN, Su TRAN LE	999
Travel Time Estimation in Vehicle Routing Problem Gitae KIM	1004
Mixed-Integer Second-Order Cone Programming for Truss Topology Optimization with Self-Weight Load and Limitation on Number of Nodes <i>Yoshihiro KANNO</i>	1009
Development of Integrated Tactical Level Planning in Container Terminal Dina Natalia PRAYOGO, Akhmad HIDAYATNO, Komarudin	1013
Minimizing the Height of Stacked Egg Cartons: A Comparison of Solving 3D Bin Packing Problems and Packers' Experience Narat HASACHOO, Pornwasin SIRISAWAT, Phattaraporn KALAYA	1018
Using Meta-Heuristic Algorithms and Hybrid of Them to Solve Multi Compartment Vehicle Routing Problem Masoud RABBANI, Zahra TAHAEI, Hamed FARROKHI-ASL, Niloofar AKBARIAN SARAVI	1022
Operations Research 6	
Optimal Staff Assignment and Routing in Personalized Home Care *Philipp BAUMANN**	1027
Iterated Exact and Heuristic Algorithms for the Minimum Cost Bipartite Perfect Matching Problem with Conflict Constraints Temel ÖNCAN, I. Kuban ALTINEL	1032
Green Vehicle Routing Problem with Path Flexibility Xinglu LIU, Mingyao QI, Chun CHENG	1037
Heuristic Approach of Exact Bin-Packing Model Amandus JOHANSSON, Manfred AXELSSON, Klas GUSTAVSSON	1042
Towards Extending Algorithmic Strategy Planning in System Dynamics Modeling Maximilian MOLL	1047
Dynamic Lot Sizing with Time-Varying Demand and Return Rates for a Product Life Cycle Hong SUN, Weida CHEN, Zhiliang REN	1052

Green Vehicle Routing and Scheduling Problem with Optimized Travel Speed N. NABIL, Hala FAROUK, Khaled EL-KILANY	1057
Technology and Knowledge Management 2	
Constraints Driven Reverse Logistics Model for Plastic Solid Waste (PSW) Bupe MWANZA, Arnesh TELUKDARIE, Charles MBOHWA	1062
Customer Supplier Relation: Towards a Constraint-Based Model for Bids Delphine GUILLON, Abdourahim SYLLA, Elise VAREILLES, Michel ALDANONDO, Eric VILLENEUVE, Christophe MERLO, Thierry COUDERT, Laurent GENESTE	1067
Knowledge Sharing in Thai SMEs in Manufacturing Sector Chayaruk Thanee TIKAKUL, Avril THOMSON	1072
Lean Execution of Engineering Projects: The Potential Application of Case- Based Reasoning to Facilitate Cross-Project Knowledge Transfer Andika RACHMAN, R.M. Chandima RATNAYAKE	1077
Transformation of Working Environments Through Digitalization: Exploration and Systematization of Complexity Drivers Benedikt Andrew LATOS, Markus HARLACHER, Philipp M. PRZYBYSZ, Susanne MÜTZE-NIEWÖHNER	1084
Extended CAD-Models – State of Practice Within Three Companies <i>Tim HEIKKINEN, Joel JOHANSSON, Fredrik ELGH</i>	1089
Analysing Service Quality Using Customer Expectations and Perceptions in the South African Telecommunication Industry Mfanasibili NGWENYA	1094
Technology and Knowledge Management 3	
The Impact of Digitalization on Product Lifecycle Management: How to Deal with it? Yan XIN, Ville OJANEN	1098
How Knowledge Management Impacts Performance: An Empirical Study in Chinese Knowledge-Intensive Enterprises Yana YUAN, Huaqi CHAI, Liang LIU	1103
Factors Influencing Intention to Use of Smartphone Applications in Thailand Massoud MOSLEHPOUR, Khoirul AMRI, Paoleena PROMPRASORN	1108
Technology Management, R&D Investment, and Small and Medium-Sized Enterprise Growth SooGeun AHN, Jeewhan YOON, YoungJun KIM	1113
Research on Foreign Capital R&D Ecosystem in China Based on Dissipative Structure Theory <i>Qilei LIU, Peng GUO, Yuyan LEI, Yuwen FENG</i>	1118
Collaboration Between SMEs and its Stakeholders: Cross-Tabulation Analysis for Indonesian SMEs Using GEM Data Ceicalia TESAVRITA, Cindy Marika Amalia WIBOWO, Iwan Inrawan WIRATMADJA	1123
Technology and Knowledge Management 4	
Singapore's NEHR: Challenges on the Path to Connected Health Lena Stephanie FELIX	1128

Achieving Strategic Growth in Microenterprises through Information Technology: UK Micro Enterprise Case Study Satya SHAH, Matthew LONG, Elmira NAGHI GANJI	1133
Mechanisms for Effective Tacit Knowledge Transfer in University Laboratory: An Agent-Based Approach Fadillah RAMADHAN, Rayinda Pramudtya SOESANTO, Afrin Fauzya RIZANA, Amelia KURNIAWATI, Iwan Inrawan WIRATMADJA	1138
Research on the Key Factors of Tacit Knowledge Diffusion in Customized Titanium Processing Enterprises Based on ISM Model <i>Qinglin BAO, Huaqi CHAI, Kang WU</i>	1143
Design and Development of a Training Module for Data-Driven Product-Service Design Anies Faziehan ZAKARIA, S.C. Johnson LIM	1149
Servitization and the Wider Services Communities: A Bibliometric Study Alan PILKINGTON, Jawwad RAJA, Juliana HSUAN, Thomas FRANDSEN	1154
Human Factors 3	
The Extended Framework of Kansei Engineering, Kano and TRIZ Applied to Logistics Services Markus HARTONO, Amelia SANTOSO, Dina Natalia PRAYOGO, Ivon	1159
A Low-Cost Portable 3D Human Motion Analysis System: An Application of Gait Analysis Nantakrit YODPIJIT, Manutchanok JONGPRASITHPORN, Kengkaj PONGMIT, Teppakorn SITTIWANCHAI	1164
Information Security in Communication Network of Memory Channel Considering Information Importance Takaaki KAWANAKA, Shuichi ROKUGAWA, Hiroshi YAMASHITA	1169
The Importance of Compliance with the Expectations of the Value of Stakeholder in Order to Achieve Success in the Implementation of Lean Projects M.A. GÓMEZ GAVITO, Pablo NUÑO DE LA PARRA, Cesar DE LA LUZ DE JESÚS	1174
Applying the Purdue Pegboard to Evaluate Precision Assembly Performance Yu-Cheng TSENG, Kai-Yin CHANG, Pin-Ling LIU, Chien-Chi CHANG	1179
Effects of Search Strategies on Fault Diagnosis Performance Qiuran LUO, Xuansheng DING, Weiwei QIU, Zhizhong LI	1184
Application-Specific Design of Assistance Systems for Manual Work in Production Lukas MERKEL, Christoph BERGER, Cedric SCHULTZ, Stefan BRAUNREUTHER, Gunther REINHART	1189
Safety, Security and Risk Management 1	
Risk Reduction Using Grievance Handling Mechanism in Handloom Industry Lovelin Auguskani P, Sree Devi V, Darwin Jose Raju A, Jerlin Priya J.M, Marsaline Beno M	1194
Analysis of Risk Sources in New Product Development Process Using Fuzzy Failure Mode Analysis Avanish Singh CHAUHAN, Om Prakash YADAV, Ajay Pal Singh RATHORE, Gunjan SONI	1198
New Product Development Project Risks in Saudi Firms - Preliminary Findings Abdullah ALRABGHI, Muhammad AKRAM, Abdulaziz ALHARBI, Owais NAGRO, Abdullah BUKHARI	1203
The Uncertainty Importance Analysis for the Fault Tree and its Probability Density Evolution Algorithm Guijie LL Chaoyan XIE, Fayuan WEL, Bin LIAO	1208

Apply HFACS to Accident Investigation System Interface Design Ting-Yi LIN, Kang-Hung LIU, Chien-Chi CHANG	1213
Petri-Net Based Safety Analysis of Process Systems Jianfeng ZHOU	1217
Safety, Security and Risk Management 2	
Environmental Analysis of Biomass Power Plants for Sustainability in Thailand Manutchanok JONGPRASITHPORN, Adisak MARTSRI, Supapat PHUANGKAEW, Wannapong YEAMMA, Nantakrit YODPIJIT	1222
High School Students' Knowledge and Seismic Risk Perception: The Case of Mexico City Jaime SANTOS-REYES, Tatiana GOUZEVA	1227
Quantitative Risk Analysis of Components Under High Stress Yonas Zewdu AYELE, Abbas BARABADI	1232
Awareness of Information Security and its Implications to Legal and Ethical Issues in Our Daily Life Daniel TSE, Zehan XIE, Zhaolin SONG	1236
Injury Prediction Based on Safety Climate Questionnaire Score Using Artificial Neural Networks Yu Cheng CHANG, Szu Yu LEE, Pin-Ling LIU, Chien-Chi CHANG	1241
Systems Modeling and Simulation 3	
Improving the Material Flow of a Manufacturing Company via Lean, Simulation and Optimization Ainhoa GOIENETXEA URIARTE, Amos H.C. NG, Enrique ZÜÑIGA, M. URENDA MORIS	1245
A Multi-Commodity Flow Model for Guide Path Layout Design of AGV Systems Shuhei AKIYAMA, Tatsushi NISHI, Toshimitsu HIGASHI, Kenji KUMAGAI, Michi HASHIZUME	1251
Simulation Study on Evolvement Mechanism of Group Events in Large Projects Ling LI, Xue ZHAO, Shiruo ZHANG	1256
A Modelling Approach for Maintenance Resource-Provisioning Policies in a Wind Farm Maintenance System Winda Nur CAHYO	1261
A Review of Modelling Approaches for Conceptual Design of Complex Engineering Systems (CESs) Shiva ABDOLI, Sami KARA	1266
Crowdsourced Delivery for Last-Mile Distribution: An Agent-Based Modelling and Simulation Approach Ping CHEN, Stanislav CHANKOV	1271
Predicting Atmospheric Corrosion Rates of Copper in Taiwan Industrial Zones Using Artificial Neural Network Chien Ming LO, Ya-Ping CHIU, Min-Der LIN	1276
Systems Modeling and Simulation 4	
Network-Based Process Control and Improvements with Fuzzy Time Delay Modulator Abdul-Wahid SAIF, Muneeb A. AKRAM	1281

Modeling and Simulation of Cascading Failure on R&D Network Based on Different Node States Under Attack Strategies Yue SONG, Naiding YANG, Yanlu ZHANG, Jingbei WANG	1286
A System Dynamics Case Study of Resilient Response to IP Theft from a Cyber-Attack Daniel SEPULVEDA, Omera KHAN	1291
Throughput Analysis of Random Storage Systems Operated Under the Closest Eligible Location Rule Anja HESSLER, Christoph SCHWINDT	1296
An Optimization Model for Quality Improvement Investment Decisions Considering Learning and Forgetting Curve Mega Aria PRATAMA, Cucuk Nur ROSYIDI, Eko PUJIYANTO	1301
A Graphical Method for Multi-Signal Flow Graph Modeling and Testability Analysis Based on Visio Control Component Jinsong YU, Yidong ZHENG, Diyin TANG, Y. YANG	1306
Systems Modeling and Simulation 5	
Lean, Simulation and Optimization: A Maturity Model Ainhoa GOIENETXEA URIARTE, Amos H.C. NG, M. URENDA MORIS, Mats JÄGSTAM	1310
Analysis of Human Arm Motions at Assembly Work as a Basic of Designing Dual Robot Arm System Bernadus KRISTYANTO, Brilianta NUGRAHA, Anugrah PAMOSOAJI, Kristanto NUGROHO	1316
Integrated Vendor-Buyer Inventory Model Considering Imperfect Quality and Inspection Errors with Controllable Lead Time Amanda SOFIANA, Cucuk Nur ROSYIDI	1321
Concurrent Scheduling of a Job Shop and Microgrid to Minimize Energy Costs Under Due Date Constraints Ashley THORNTON, Cedric SCHULTZ, Sami KARA, Gunther REINHART	1326
Using Gradient Boosting Regressor to Predict Stress Intensity Factor of a Crack Propagating in Small Bore Piping Arvind KEPRATE, R.M. Chandima RATNAYAKE	1331
Mitigation Strategy Against Cascading Failures of the R&D Network Jingbei WANG, Naiding YANG, Yanlu ZHANG, Yue SONG	1337
Design of an Agent-Based Model to Simulate Governance in Inter-Organizational Project Networks Jaakko KUJALA, Tapio VUORINEN	1342
Supply Chain Management 4	
Application of Interpretive Structural Modelling for Analyzing the Factors of IoT Adoption on Supply Chains in the Chinese Agricultural Industry <i>Danping LIN, Carman Ka Man LEE, W.C. TAI</i>	1347
An Integrated Process and Digitalization Perspective on the Shipping Supply Chain – A Literature Review Diana FEIBERT, Mette Sanne HANSEN, Peter JACOBSEN	1352
Blockchain Application in Food Supply Information Security Daniel TSE, Bowen ZHANG, Haoran MU, Shenli CHENG, Yuchen YANG	1357

A Design Methodology for Biomass Energy Supply Chains Based on Weighted K-Means Algorithm Hongyan DAI, Yali LIU, Yining CHANG, Songlin CHEN	1362
Supply Chain Collaboration – A Case Study of Textile and Apparel Industry Thi Phuong Dung HO, Arun KUMAR, Nirajan SHIWAKOTI	1367
A Simulation-Based Modeling Approach to Assess the Multi-Echelon Supply Chain Network Design Inoka MUNASINGHE , Thashika RUPASINGHE, Ruwan WICKRAMARACHCHI	1372
Toward Sustainable Reverse Logistics Implementation: A Conceptual Framework of the Quattro Bottom Line Approach Hesti MAHESWARI, Gatot YUDOKO, Akbar ADHIUTAMA	1377
Vendor Managed Inventory on Two Echelon Inventory System with Optimum Accelerated Lead Time and Component Commonality Yosi Agustina HIDAYAT, Tota SIMATUPANG, Sebrina, Nashir ARIANSYAH, Wibisana SEMBADA	1382
Supply Chain Management 5	
Performance Measurement of the Relationship Between Farmers-Cooperatives-Industrial Processing Milk in a Dairy Supply Chain: A Balanced Supply Chain Management Scorecard Approach Aries SUSANTY, Arfan BAKHTIAR, Ratna PURWANINGSIH, Dina Firma DEWANTI	1387
Optimal Replenishment Policy for Inventory Systems with an Unreliable Supplier <i>Allen H. TAI</i>	1392
Distribution Center Capacity Analysis in Stochastic Environment: An Application of Value Stream Analysis and Monte Carlo Simulation Ammar M. AAMER	1396
A Comprehensive Model for Supply Chain Performance Measurement: Application in the Coal Beneficiation Plant of Steel Manufacturing Company Md. Asif EQUBAL, Azhar EQUBAL, Archana KUMARI, Rajkumar OHDAR	1401
Model Development of Rescue Assignment and Scheduling Problem Using Grasp Metaheuristic Amelia SANTOSO, Dina Natalia PRAYOGO, Joniarto PARUNG, Hazrul ISWADI, D.A. RIZQI	1407
Last Mile Distribution in Humanitarian Logistics Under Stochastic and Dynamic Consideration Meilinda Fitriani Nur MAGHFIROH, Shinya HANAOKA	1411
Multi-Objective Optimization of the Competitive Supply Chain Network Design Based on a Huff Model	1416
Niloofar AKBARIAN SARAVI, Reza TAVAKKOLI-MOGHADDAM, Zahra TAHAEI	
Supply Chain Management 6	
The Coexistence of Printed Book and Electronic Book in a Book Supply Chain <i>Yanping CHENG, Ciwei DONG, Renjun LIU</i>	1421
The Choice of Buy-Back Contract in Logistics Service Supply Chain with Demand Updating and Mass Customization Service Weihua LIU	1426
Heterogeneous Vehicle Routing Delivery on Collaborative Distribution Using Genetic Algorithm – The Case of Yogyakarta City Anna Maria Sri ASIH, Bertha Maya SOPHA, Yusnia KHAIRUNNISA, Hendra Edi GUNAWAN, Yuni KARUNIAWATI	1432

The Joint Decisions of Modularity Level Design and Refund Price in a Two-Tier Supply Chain Qingying LI, Weijian ZHOU	1437
Capacity Investments in Logistics Outsourcing Tarun JAIN, Jishnu HAZRA	1441
Towards an Approach to Assess Supply Chain Quality Management Maturity Ana FERNANDES, Rui OLIVEIRA, Catarina CUBO, Paulo SAMPAIO, Maria do Sameiro CARVALHO, Paulo AFONSO, J. ROQUE, Marcio REBELO, Joao BRANDÃO	1445
Evaluation of Market Entry Strategies of Late Entrant in the Sustainable SCM <i>Tasuya INABA</i>	1450
Decision Analysis and Methods 2	
Multi-Criteria Selection Problem of Part Orientation in 3D Fused Deposition Modeling Based on Analytic Hierarchy Process Model: A Case Study Kasin RANSIKARBUM, Namhun KIM	1455
The Determinants of Asset Mothballing in the Offshore Supply Market Roar ADLAND, Oda SVÆREN	1460
An Extended TODIM Method Under Probabilistic Dual Hesitant Fuzzy Information and its Application on Enterprise Strategic Assessment <i>Zhiliang REN, Zeshui XU, Hai WANG</i>	1464
Dual Probabilistic Linguistic Term Set and its Application on Multi-Criteria Group Decision Making Problems Wanying XIE, Zeshui XU, Zhiliang REN	1469
Modelling the Emergence of Modularity and its Limits, Markov Decision Process and Agent Based Modelling Approach Imane BOUAMAMA, Tomoatsu SHIBATA	1475
Towards a Data-Driven Enterprise: Effects on Information, Governance, Infrastructures and Security Alberto POLZONETTI, Matteo SAGRATELLA	1480
An Artificial Intelligence Based Model for Implementation in the Petroleum Storage Industry to Optimize Maintenance Tawanda MUSHIRI, Robin HUNGWE, Charles MBOHWA	1485
Decision Analysis and Methods 3	
Assessing Performance of Aging Air-Cooled Heat Exchangers Using Inspection and Performance Data Ainul Akmar MOKHTAR, Masdi B. MUHAMMAD, Hilmi HUSSIN, Mohd Amin ABDUL MAJID	1490
Energy Balance of Waste Management Systems: A Case Study Alberto BELLINI, Alessandra BONOLI	1495
Effect of Socioeconomic Status on Lung Cancer Survival: A Mediation Analysis Based on Bayesian Network Approach Kartika Nur ANISA, Shi-Woei LIN	1500
Development of Intelligent Building Management System Evaluation and Selection for Smart Factory: An Integrated MCDM Approach Chih-Hao YANG	1505

OPBI: An Open Pipeline for Biomarker Identification Sugandima VIDANAGAMACHCHI, Mahesan NIRANJAN	1510
Decision Analysis and Methods 4	
Weighted Point Matrix Based Supplier Evaluation Method for the Oil and Gas Industry Qamarul FADHLI BIN KHAIRIZAN, Wee Li LEE, Xue-Ming YUAN	1515
Challenges in Implementing Cleaner Production: Barriers and Strategies in the Indonesian Seafood Processing Industry *Pregiwati PUSPORINI, Iwan VANANY*	1520
Project Change Request: A Proposal for Managing Change in Industrialization Projects Deborah PERROTTA, João FARIA, Madalena ARAÚJO, Anabela TERESO, Gabriela FERNANDES	1525
A New Method for Aggregating Experts' Probability Judgments Min YANG, Wenyu GUO, Fengtian WANG	1530
An Integrated Decision Making Model for Sustainable Supplier Selection Under Uncertain Environment Xiongyong ZHOU, Zhiduan XU	1536
The Prison Construction Decision Analysis for Reducing Capacity Overloads with the Social Cost of Crime Concept *Hsiao-Ling CHANG, Tyrone T. LIN**	1541
Predicting World Energy Consumption: Comparison of ANN and Regression Analysis Oludolapo OLANREWAJU, Charles MBOHWA	1546
Manufacturing Systems 2	
Proposing an Assignment Mathematical Model in Assembly Line Manufacturing System with Considering Human Factors' Role in Product Quality Erfan ASGARI, Lazhar HOMRI, Ali SIADAT, Zeynab SAZVAR, Ali BOZORGI-AMIRI	1551
Rapid Tooling Road to Rapid Manufacturing Niranjan Kumar SINGH, Sivadasan MAMBETA	1556
Enhancing Smart Maintenance Management Using Fog Computing Technology Mohammad ASHJAEI, Marcus BENGTSSON	1561
Reflective and Formative Constructs in the Implementation of Sustainable Manufacturing with 'SMEET' Framework *Keshav G. VALASE, D.N. RAUT	1566
Development of a Projection-Based Assistance System for Maintaining Injection Molding Tools Sven HINRICHSEN, Daniel RIEDIGER, Alexander UNRAU	1571
Towards Capability-Based Worker Modelling in a Smart Factory Susanne VERNIM, Hendrik WALZEL, Alois KNOLL, Gunther REINHART	1576
On a New Modelling Approach for Circular Layouts and its Practical Advantages Philipp HUNGERLAENDER, Kerstin MAIER, Joerg POECHER, Christian TRUDEN	1581
Automated Generation of Orienting Devices for Vibratory Bowl Feeders	1586

Manufacturing Systems 3

Interpretive Ranking Process-based Lean Manufacturing Barrier Evaluation Linda ZHANG, Balkrishna Eknath NARKHEDE, Anup CHAPLE	1591
Transiting Toward the Factory of the Future: Optimal Buffer Sizes and Robot Cell Design in Car Body Production *Alain PATCHONG, Kerbache LAOUCINE*	1596
A Random Forest Method for Obsolescence Forecasting Yosra GRICHI, Yvan BEAUREGARD, Thien-My DAO	1602
Use of Additive Manufacturing for Polymer Tooling: Case Study from Reaction Injection Molding <i>Audun L. STORSANDEN, Marcus VÅLE, R.M. Chandima RATNAYAKE</i>	1607
A Hybrid Backtracking Search Algorithm for Permutation Flow-Shop Scheduling Problem Minimizing Makespan and Energy Consumption Peng CHEN, Long WEN, Ran LI, Xinyu LI	1611
Hybrid Simulation Method by Cooperating Between Manufacturing System Simulation and Computational Fluid Dynamics Simulation First Report: Optimization for Energy Consumption per Unit of Production Throughput Considering Compressed Air Feed Hitoshi NAGASAWA, Hironori HIBINO, Motonobu HASHIMOTO, Norifumi KASE	1616
Engineering Economy and Cost Analysis	
Feasibility of Implementing Energy Management System in Ports Jasmine Siu Lee LAM, Ming Jun KO, Jing Rong SIM, Yang TEE	1621
Financial Risk Measurement in Colombian System of Mining Royalties Angelica BUSTOS-GONZÁLEZ, Luis Felipe RAMÍREZ- DOMÍNGUEZ, Stephania MOSQUERA-LOPEZ, Diego MANOTAS-DUQUE	1626
Sustainable Building Policy Management in Kolkata, India Rohan Singh WILKHO, Himadri GUHA	1631
Decisive Economies and Opportunity Cost of Modular Product Structure Alternatives: An Empirical Case Study Marc WINDHEIM, Erik GREVE, Dieter KRAUSE	1636
Some Thoughts on the Kelly Criterion Associated with a Real Investment Perspective <i>Gyutai KIM</i>	1641
Performance Evaluation of Logistics listed Companies Based on Grey Ideal Correlation Entropy Fumin DENG, Canmian LIU, Xuedong LIANG, Jing XU	1646
Product Portfolio Optimization Based on Substitution Anna MYRODIA, Alexandria Lee MOSELEY, Lars HVAM	1651
Quality Control and Management 2	
Application of Safety Assessment Model to Dog Products Shu Lun MAK, H. K. LAU	1656
A Critical Review of Product Safety in Industry 4.0 Applications <i>Chi Ho LI, H. K. LAU</i>	1661

The Application of 6S Methodology as a Lean Improvement Tool in an Ink Manufacturing Company <i>Nita SUKDEO</i>	1666
A Six Sigma Approach Applied to the Analysis of Variability of an Industrial Process in the Field of the Food Industry Fátima CARNEIRO, Americo AZEVEDO	1672
The Impact and Effectiveness of Participating In External Quality Assurance Programmes in Quality Management and Improvement at a Local Institute Medical Laboratory, South Africa Sambil Charles MUKWAKUNGU, Charles MBOHWA	1680
The Influence of Traceability System Practice to Product Recall Capability in Bulk Food Industry: Observation and Interview Ivan GUNAWAN, Iwan VANANY, Erwin WIDODO	1688
Factors Affecting a South African Construction Company's Suppliers' Performance Sambil Charles MUKWAKUNGU, Kabelo NKOAGATSE, Charles MBOHWA	1693
Quality Control and Management 3	
Robust Inference Traceability Technology for Product Quality Enhancement <i>Qi XIU, Keiro MURO</i>	1699
An Application of Fractional Factorial Method to Obtain Robust Solutions at a Glove Manufacturing Environment in Sri Lanka *Achinthya PERERA, Pramila GAMAGE*	1704
Spectral Network Approach for Multi-Channel Profile Data Analysis with Applications in Advanced Manufacturing <i>Chen ZHANG, Linmiao ZHANG, Nan CHEN</i>	1709
Quality, Excellence and Culture in the Pursuit of Organizational Agility Andre CARVALHO, Paulo SAMPAIO, Eric REBENTISCH, Pedro SARAIVA	1714
An Optimization Design of the Exponentially Weighted Moving Average Control Chart Mona AGHNIAEI, Mohammad SHAMSUZZAMAN, Sadeque HAMDAN	1719
Optimization of Green Sand Casting Parameters Using Taguchi Method to Improve the Surface Quality of White Cast Iron Grinding Plates – A Case Study Lakshman SAMARAWEERA, Shiron THALAGALA, Pramila GAMAGE, Manjula NANAYAKKARA	1723
Project Management 3	
Post Formation Dynamics and Their Determinants Xiao-li CHEN, Ralph RIEDEL, Egon MUELLER	1728
Outcome Prediction of Software Projects for Information Technology Vendors Tomoyuki KAWAMURA, Tetsuya TOMA, Kenichi TAKANO	1733
An Empirical Study on Value Creation of Multi-Product Small-Volume Production Through Industry-Academia Collaboration Sadayo HIRATA	1738
Risk Evaluation in Project Management Implementation: The Case of Infrastructural Development Projects Jan-Harm PRETORIUS, Nokuthula DLUDHLU, Jurie VAN WYNGAARD	1743

Why CPM is Not Good Enough for Scheduling Projects Tapan P BAGCHI, Kaushik SAHU, Bimal K JENA	1748
Transmission of Software-Related Agile Mechanisms of Action Towards Product Development Processes for Technical Products Günther SCHUH, Michael RIESENER, Jan KANTELBERG, Niklas STEIREIF	1753
Using Fuzzy Front End Theory on the New Product Development and Innovation <i>Yueen LI, Na LIU, Haiyan ZHANG, Jintao YU, Shen SUN</i>	1758
Service Innovation and Management 2	
Design of Mass Customized Paratransit Services Daniel MO, Yue WANG, Tommy CHEUNG	1762
Categorization of Business Model Patterns and Mapping of Their Relations with Business Model Building Blocks <i>Huey Yuen NG</i>	1767
Modelling the Core Areas of Municipal Performance Towards an 'Ideal' Municipality Bingwen YAN, Ogochukwu Iruoma NZEWI	1772
Improving Project Management Practice: An Engineering and Construction Case Study Sofia CARVALHO, Anabela TERESO, Gabriela FERNANDES	1777
Evaluation of the Influencing Factors on General Aviation Tourism Industry of Xi'an Based on AHP and Fuzzy Comprehensive Evaluation Method <i>Hongru YAN, Huaqi CHAI</i>	1782
Creativity in Organization: A Literature Review Retno INDRIARTININGTIAS, Subagyo, Budi HARTONO	1787
Service Innovation and Management 3	
An Overview of Sustainable Practices in Food Processing Supply Chain Environments Olumide OJO, Satya SHAH, Alec COUTROUBIS	1792
How Do Employees Inspire Innovative Work Behavior? Transformational Leadership and Work Motivation Perspectives Jen-Chia CHANG, Chia-Ying LEE, Pai-Yen WEI, Wei-Cheng HUANG	1797
Design of an Evaluation Methodology for the Service Design and Development Process from Concurrent Engineering: The Case of the Advertising Sector Dayni REYES, Rita PEÑABAENA-NIEBLES	1802
Sustainable Supply and Demand Chain Integration within Global Manufacturing Industries Elmira NAGHI GANJI, Satya SHAH, Alec COUTROUBIS	1807
Product-Service System for Indonesian Industrial Estate Firms: A Conceptual Framework Christina WIRAWAN, Gatot YUDOKO, Yuliani Dwi LESTARI	1812
Unlocking the Economic Value and Potential of Design for Manufacture and Assembly in a Developing Country for Sustainability Wilson R. NYEMBA, Rodney MUZOROZA, Tauyanashe CHIKUKU, Charles MBOHWA	1817
The Delivery of Service Quality to Increase Customer Repurchase Behaviour and Customer Satisfaction at Fast Food Outlets in Central Johannesburg, South Africa Save AKILIMALISSIGA, Nita SUKDEO, Andre VERMEULEN	1822

E-Business and E-Commerce

How Do Flexible Options Affect Customer Decision Making in an Online Configurator System? Yue WANG, Guohua TANG, Daniel MO	1828
ETO Bid Solutions Definition and Selection Using Configuration Models and a Multi-Criteria Approach Abdourahim SYLLA, Elise VAREILLES, Thierry COUDERT, Michel ALDANONDO, Laurent GENESTE, Yvan BEAUREGARD	1833
Assessing the Profitable Conditions of Online Grocery Using Simulation Ahmed ALZUBAIRI, Abdullah ALRABGHI	1838
Application of Revenue Management in Supply Chain of Postal Services Ahmad TEYMOURI, Amir KHATAIE, Pavel ANDREEV, Craig KUZIEMSKY	1843
The Study of Critical Success Factors of Cross-Border E-Commerce Freight Forwarder from China to Thailand Ting SUN, Woramol Chaowarat WATANABE	1848
A User Experience Evaluation for Wendy's Online Delivery Website Geared Towards Improving Customer Experience Wendy SIA, Rendell TIU, Jazmin TANGSOC	1853
Reliability and Maintenance Engineering 2	
Intelligent Fault Diagnostic Model for Rotating Machinery Masdi B. MUHAMMAD, Umair SARWAR, Mohammadreza TAHAN, Zainal Ambri A KARIM	1858
Reliability Analysis for Gap Null Gate by Bivariate T-Distribution Houbao XU, Mei LI	1863
Performance-Oriented Preventive Maintenance Policy for Deteriorating Single-Machine Manufacturing Systems Biao LU, Xiaojun ZHOU	1868
Cost Sustainability of TFR Electric Locomotives Operating on the Natal Corridor Bheki MAKHANYA, Renju MATHEW, Hannelie NEL, Jan-Harm PRETORIUS	1873
Nonparametric EWMA Chart for Simultaneous Monitoring of Event Frequency and Magnitude Shuo HUANG, Jun YANG, Amitava MUKHERJEE	1878
The Characteristic of Cold Metal Transfer (CMT) and its Application for Cladding Nelson Edoh IMOUDU, Yonas Zewdu AYELE, Abbas BARABADI	1883
Study on Fault Diagnosis of SVM for Mechanical and Electrical Product Based on Improved Conjugate Transformation Hui ZHENG, Jun-xia ZHANG	1888
Reliability and Maintenance Engineering 3	
A Jointly Integrated Maintenance and Emission Optimization for a Manufacturing and Remanufacturing System Zied HAJEJ, Nidhal REZG, Salim BOUSLIKHANE	1893
A Simple Algorithm to Verify Cycles in MSNs for a Given Demand Level Shin-Guang CHEN	1898

Cause Analysis of Representative Troubles at Distillation Tower Using Discriminant Analysis Jun OKITSU, Toshiaki MATSUO, Hiroki YAMAMOTO, Haslinda Bt ZABIRI, Lemma Dendena TUFA, Marappagounder RAMASAMY	1901
Reliability Modeling of Incomplete Common Cause Failure Systems Subject to Two Common Causes <i>Jin QIN, Ruoxing GU, Guijie LI</i>	1906
Bi-Level Optimization for Maintenance Service Contracts Involving Three Parties Using Genetic Algorithm Nur F. SA'IDAH, Andi CAKRAVASTIA, Udjianna S. PASARIBU, Bermawi P. ISKANDAR	1911
Joint Optimization of Preventive Maintenance and Economic Production Quantity with Considering Demand Adjustment Xuejuan LIU, Rui PENG, Qunxia LI, Xiaoyang MA	1916
Reliability and Maintenance Engineering 4	
Jointly Optimal Design of Perfect Maintenance Policy and CUSUM Control Chart <i>Yaping LI, Long CHEN, Ershun PAN, Zhen CHEN</i>	1920
Development of a Low-Cost Tool for Semi-Automatic Classification and Counting of Particles in	1925
Industrial Oils Bruno Cesar CAIXETA LEME, Luis Fernando DE ALMEIDA, Jose Walter PARQUET BIZARRIA, Francisco Carlos PARQUET BIZARRIA, Alvaro Manoel SOUZA SOARES, Marcos Alessandro CRUZ RAMOS	
Intelligent Fault Diagnosis of Rotating Machinery Using Locally Connected Restricted Boltzmann Machine in Big Data Era Saibo XING, Yaguo LEI, Feng JIA, Jing LIN	1930
Memetic Algorithm to Optimize Level of Repair and Spare Part Decisions for Fleet System Ayush JAIN, Ganesh K. RAO, Manish RAWAT, Bhupesh Kumar LAD	1935
Optimal Scheduling of Imperfect and Perfect Inspections for Systems Subject to Continuous Degradation Jingyuan SHEN, Lirong CUI	1940
Reliability Assessment of NAND SSD Based on Acceleration Degradation Test Peng LI, Kai LIU, Wei DANG, Tianji ZOU	1945
Reliability Analysis for Single-Unit System of Warship Equipment with One Repairman Having Vacations Based on Phase-Type Distribution Tong CHEN, Bingqing WANG, Dongliang YIN	1950
Poster	
roster	
On Economizing Local Foods Networks in Developing Countries Per ENGELSETH, Yuanita HANDAYATI, Maria WIDYARINI	1955
Tax Policy and Sourcing Strategy – A Social Welfare Perspective Huafan MA, Ziping WANG	1960
On the Circular Supply Chain's Impact on Revenue Growth for Manufacturers of Assembled Industrial Products – A Conceptual Development Approach Samuel B. LARSEN, Torben KNUDBY, Jacques VAN WONTERGHEM, Peter JACOBSEN	1965
Pricing Decisions of Seller and Speculative Strategic Customers M. LI, J. J. LU, Yongquan LAN, Z. W. MIAO	1970

Strategic Organizing of Piping Supplies for Ship Construction Per ENGELSETH, Bich LE	1975
A Multi-Channel Sale System Under Financially Constraint Xin LI, Yan CHEN	1980
Optimal Multi-Period Multi-Product Supplier Selection and Order Allocation: Balancing Supplier Development and Supplier Switching Lixin CUI, Lu BAI, Zhipeng CUI	1985
Multi-Objective Optimization of Costs and Pollutants in Order to Manage the sustainable Supply Chain of Bio-Fuels Elaheh JAFARNEJAD, Jamal ALIABADI	1990
Excess Inventories Redeployment Strategy for Spare Parts Service Logistics Management Daniel MO, Danny HO, Nicole CHAN	1995
Status and Future of Manufacturing Execution Systems Emrah ARICA, Daryl John POWELL	2000
A GA-Based Method for Sales Order Allocation in a MTS/ MTO Supply Chain Chin Sheng TAN, Zhong Jin NG, Chi XU	2005
Using DEA Model Without Input and with Negative Input to Develop Composite Indicators William CHUNG	2010
Feasibility Analysis of Grid Tied PV System Based on Net-Metering Incentive for a Developing Country: A Case Study of Pakistan Ayesha ZAHIR, Shoab Ahmed KHAN, Afshan NASEEM	2014
Assessing the Possible Potential in the Global Energy Consumption: Integrated Artificial Neural Network and Data Envelopment Analysis Oludolapo OLANREWAJU, Charles MBOHWA	2019
The Selection of Enterprise Technology Innovation Mode (TIM) Based on Grey-AHP Method Hongjie ZHANG, Yuming ZHU, Xiaoyu SONG	2024
Nested Bilevel Genetic Algorithms for Game-Theoretic Optimization of Product Line Design Considering Competition Xiaojie LIU, Gang DU, Roger J. JIAO, Yi XIA	2029
A Two-Staged Task Assignment Algorithm for Worker Recommendation in a Crowdsourcing Environment Rong CHEN, Shifei CHEN, Xiaoyao ZHANG	2034
Simulation-Driven Manufacturing Planning for Product-Production Variety Coordination Xuejian GONG, Jonas LANDAHL, Hans JOHANNESSON, Roger J. JIAO	2039
Statistical Analysis of Oil Insulation Breakdown Voltage Himanshu GUPTA, Supriyo DAS	2044
Robust Model Predictive Control for Energy Management of Isolated Microgrids Mengyan ZHAI, Yajie LIU, Tao ZHANG, Yan ZHANG	2049
Resource Recovery from Municipal Waste and Bio Solids (Digestate) Through Vermicomposting: A Waste Management Initiative Mercy MANYUCHI, Charles MBOHWA, Edison MUZENDA	2054
Industry 4.0 Interface for Dynamic Reconfiguration of an Open Lab Size Automated Production System to Allow Remote Community Experiments Safa BOUGOUFFA, Kilian MESSMER, Suhyun CHA, Emanuel TRUNZER, Birgit VOGEL-HEUSER	2058

Integrated Value Stream Mapping and Simulation for Cash-to-Cash Cycle Time Improvement of a Machining Facility Weidong LIN, Engsuan CHAN, Lifeng KWAN	2063
Manufacturing Industry in Cloud Computing Era: Case Study <i>Yuqiuge HAO, Petri HELO</i>	2068
Modeling Ambulatory Care to Obtain a Balance Between Quantity and Quality Provided Ana Cecilia LYRA FIALHO BREDA, Lays Marina FERREIRA MARQUES, Laryssa HOLANDA	2073
The Advantage of the Arduino Sensing System on Parking Guidance Information Systems <i>K. Y. HUANG, Shann-Bin CHANG, P. R. TSAI</i>	2078
An Intelligent Optimization Approach for Waste Collection with Dynamic Disposal Trips <i>Qu WEI, Qi LIU, Zhaoxia GUO</i>	2083
A Sequential Multi-Objective Robust Optimization Approach Under Interval Uncertainty Based on Support Vector Machines Tingli XIE, Qi ZHOU, Jiexiang HU, Leshi SHU, Ping JIANG	2088
Reliability-Oriented Quality Risk Modeling and Monitoring Approach in Manufacturing Process Jiaming CUI, Yihai HE, Chunling ZHU, Fengdi LIU	2093
Test Stand for the Investigation of Driven Rollers Benjamin KÜSTER, Malte STONIS, Ludger OVERMEYER	2098
Multi-Criteria Classification for Prioritization of Preventive Maintenance Tasks to Support Maintenance Scheduling Isabel LOPES, P. SENRA, Bruna NETO, R. COSTA, Miguel SOUSA, Tiago CABO, J.A. OLIVEIRA	2102
A Method for Function Modules Clustering Based on the Function Analysis and the Law of System Completeness Yujuan DU, Ping JIANG, Shenghui SUN, Runhua TAN	2107
Analysis of Multi-State Warm Standby System Reliability Model with Repair Priority Tao HU, Dongliang YIN, Tong CHEN	2112
Reliability Model Analysis on Parallel System Having Multiple Vacations of One Repairman Wei WANG, Dongliang YIN, Bingqing WANG	2119
The Reliability Analysis of Multi-State Cold Standby System Based on Phase-Type Distribution Fang LI, Tong CHEN, Peng DI	2124
A Maintenance Evaluation Method for Complex Systems with Standby Structure Based on Goal Oriented Method Xiaojian YI, Lei CHEN, Jian SHI, Peng HOU, Yuehua LAI	2130
A Mean Life Evaluation Method for Complex Multi-Function Systems Based on GO Method: Case Study of Vehicle Transmission System Ke BAO, Xiaojian YI, Yuefeng CHEN, Zhong ZHANG	2135
Criticality Analysis from Maintainability Point of View Javad BARABADY, Xueli GAO, Tore MARKESET	2140
Research on Basic Maintenance Unit Model Under Two-Level Maintenance Di ZHOU, Zhiyu JIA, Chenhui ZENG	2144
Tool Condition Monitoring in Deep Hole Gun Drilling: A Data-Driven Approach Jihoon HONG, Jun-Hong ZHOU, Hian Leng CHAN, Chong ZHANG, Huan XU, Geok Soon HONG	2148

Modelling Electricity Spot Prices with a Three-Regime Markov Model Yajna MAHARAJ, Venkata Seshachala Sarma YADAVALLI	2153
Self-Organizing Network Control with a TD Learning Algorithm Zhicong ZHANG, Shuai LI, Xiaohui YAN, Liangwei ZHANG	2159
A Fitness Approximation and On-Line Variable-Fidelity Metamodel Based Multi-Objective Genetic Algorithm Leshi SHU, Qi ZHOU, Jiexiang HU, Xiangzheng MENG, Ping JIANG	2164
A Global Support Vector Regression Based on Sorted K-Fold Method Xiangzheng MENG, Qi ZHOU, Jiexiang HU, Leshi SHU, Ping JIANG	2169
Normal Forms of Homoclinic Bifurcation for a Rotor-Active Magnetic Bearings System Fenghong YANG	2174
Analysis on Factors Affecting the Configuration of Maintenance Support System Xinhao YUAN, Tao HU, Chun-Hui YANG	2178
Research of Silicone Oil Uniformity for Butyl Rubber Stopper and Simulation Verification Yanyan ZHU, Caiyun CHEN, Pengcheng DONG, Jiping LU, Shiqi JIANG	2184
The Effect of Tightness-Looseness on Well-Being : Residential Mobility as a Moderator Bing HUANG, Xiaopeng REN	2189
The Effect of Calling Orientations on Work Engagement of Employees in Securities Company: An Intermediary Model of Mediation Jie ZHU, Yong WANG, Li-qi YI	2194
The Impact of Performance Feedback on Work Engagement The Mediating Effect of Psychological Empowerment Jie XIAO, Tong LIU, Yi-Wen CHEN	2199
Research on the Influence of Employees' Career Adaptability on Occupational Success Hong XU, Tong LIU, Yi-Wen CHEN	2204
The Effect of Servant Leadership on Work-Related Well-Being: The Mediating Role of Work Flow and Work Engagement Li-Na JIN, Tong LIU, Yi-Wen CHEN	2210
Relationships Among Personality, Calling, Career Engagement, and Self-Defeating Job Search Behavior in Chinese Undergraduate Students: The Mediating Effects of Career Adaptability <i>Yong QI, Tong LIU, Yi-Wen CHEN</i>	2215
Predictive Modeling of Potential Customers Based on the Customers Clickstream Data: A Field Study <i>Tian SUN, Mengjie WANG, Zhe LIANG</i>	2221
Service Strategy Under Online B2C Dual-Channel Competition L. L. SHANGGUAN, Y. F. HE, Yongquan LAN, Z. W. MIAO	2226
The Effects of Relationship Norms on On-Line New Product Development Value Co-Creation Engagement Huan-Yu ZHANG, Tong LIU, Yi-Wen CHEN	2231
Effect of Service Recovery on Recovery Satisfaction and Behavior Intention: An Empirical Study on Clothing Product Online Shopping Yun LI, Tong LIU, Yi-Wen CHEN	2236
Keyword Extraction from Online Product Reviews Based on Bi-Directional LSTM Recurrent Neural Network Yue WANG, Jian ZHANG	2241

Empirical Study of the Relationship Between Flow Experience, Perceived Transaction Value and Impulse Buying Behavior Wen-Ji WEI, Zi-Ji MA, Yi-Wen CHEN	2246
Solution to Excess Capacity in View of Stakeholders Xiaoting LI, Jingling BAO, Jianguang SUN, Jinjin ZHAI	2251
Understanding the Service Desk: Applied Forecasting and Analytics Approach <i>Jun Jie NG</i>	2256
Multimode Resource-Constrained Multi-Project Scheduling with Ad Hoc Activity Splitting Byung Jun JOO, Ping Chong CHUA	2261
Resource-Constrained Project Scheduling in Hazardous Environment Shuai LI, Zhicong ZHANG, Kaishun HU, Shaoyong ZHAO, Xiaohui YAN	2266
Wiki as a Research Support System – A Trial in Information Systems Research Cheuk Hang AU	2271
Outsourcing in Business and Management Studies: A Co-Citation Analysis Keng-Chieh YANG, Conna YANG, Chia-Hui HUANG, Tai-Ch LEE	2276
Applicability of Lean Product Development to a Company in the Marine Sector Elisabeth SYNNES, Torgeir WELO	2281
The Effect of Service Quality Among Customer Satisfaction, Brand Loyalty and Brand Image Kai-Fu YANG, Hao-Wei YANG, Wen-Yu CHANG, Hsuan-Kuang CHIEN	2286
Exploring the Role of Professional Development Motivation Between Work Values and Job Satisfaction Jen-Chia CHANG, Kuei-Miao LIN	2291
A Game-Based Learning System to Disseminate Kanban Concept in Engineering Context: A Case Study from Risk-Based Inspection Project Andika RACHMAN, R.M. Chandima RATNAYAKE	2296
Analysis of the A3 Report Template and Suggestions for Improvement Susiwati TA, Laura Xiao Xia XU	2302
Influence of Parental Rearing Patterns on Academic Burnout: The Mediating Role of Psychological Capital and Self-Control Yu-Mei HE, Tong LIU, Yi-Wen CHEN	2307
Safety, Sustainability, and Consumers' Perceived Value in Affecting Purchase Intentions Toward Organic Food Shu-Yen HSU, Chiao-Chen CHANG, Tyrone T. LIN	2312
Appraisal of Mask Manufacture Information Security Based on ISO27001 and Common Criteria Cynthia WANG, Eric GUO, Sammy CHEN, Sherry ZHU, Jason WU	2317
Study on Hazard Identification Method for Life Cycle of Patch Board Xia LIU, Bisong LIU, Wanjin TANG, Wu QIAN, Pei FEI	2321
An Improved Aircraft Landing Distance Prediction Model Based on Particle Swarm Optimization - Extreme Learning Machine Method Silin QIAN, Shenghan ZHOU, Wenbing CHANG, Fajie WEI	2326
Light SIEM for Semiconductor Industry Wu QINGRONG, Sherry ZHI, Eric GUO, Max LU	2331

An Efficient Intranet Architecture Scheme Based on Regional Function and Security Requirement in Semiconductor Manufacturing Enterprises Fan SHUAIJIE, Sherry ZHU, Eric GUO, Max LU, Wu QINGRONG	2336
Big Data Analytics to Improve Photomask Manufacturing Productivity Xiaoming FAN, Xuan ZHU, Kuei Chi KUO, Cong LU, Jason WU	2341
Failure Mode Classification for Control Valves for Supporting Data-Driven Fault Detection Emanuel TRUNZER, Iris WEISS, Jens FOLMER, Carolin SCHRUEFER, Birgit VOGEL-HEUSER, Stefan ERBEN, Stefan UNLAND, Christian VERMUM	2346
Development of an Entropy-Based Feature Selection Method and Analysis of Online Reviews on Real Estate Hiroki HORINO, Hirofumi NONAKA, Elisa Claire ALEMÁN CARREÓN, Toru HIRAOKA	2351
Abnormal Data Analysis in Process Industries Using Deep-Learning Method Wen SONG, Wei WENG, Shigeru FUJIMURA	2356
Implementing the Balanced Scorecard in Excel for Small and Medium Enterprises Antonio VIEIRA, Nuno SOARES, Sergio D. SOUSA	2361
Determining Golden Process Routes in Semiconductor Manufacturing Process for Yield Management Chang-Ho LEE, Dong-Hee LEE, Young-Mok BAE, Kwang-Jae KIM	2366
Nonparametric Variance Control Charts Based on Siegel-Tukey Test Suyi LI	2371
Optimization of Machining Parameters for Ultrasonic Assisted Vibration-Grinding (UAVG) of Ultra- Low Expansion (ULE) Optical Glass Using Taguchi Method Kabwe MULENGA, Bing GUO, Xingyu FU, Qingliang ZHAO	2375
The Panel Data Predictive Model for Recurrence of Cerebral Infarction with Health Care Data Analysis Xiaohan LI, Wenbing CHANG, Shenghan ZHOU, Fajie WEI	2380
Design and Implementation of a Dynamic Healthcare System for Weight Management and Health Promotion	2386
Chin-Yuan HUANG, Ming-Chin YANG, Chin-Yu HUANG, Po-Sen CHIU, Zai-Sheng LIU, Ray-I CHANG	
Combined Forecasting of Patient Arrivals and Doctor Rostering Simulation Modelling for Hospital Emergency Department Weidong LIN, Leslie CHIA	2391
Author Index	2396