

APMS 2025 Conference Program

Conference Agenda

APMS 2025 Conference

Date: Sunday, 31/Aug/2025	
9:00am - 1:30pm	Marco Garetti Doctoral Workshop Location: Rose A-B & Olive A-B
3:00pm - 5:30pm	WG5.7 Annual Meeting Location: Olive A-B For WG members only
6:00pm - 8:00pm	Welcome Reception Location: Shichirigahama 6-7

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Date: Monday, 01/Sept/2025

9:00am - 9:30am	Opening Ceremony Location: Shichirigahama 1-3						
9:30am - 10:30am	Keynote Speech 1: Monozukuri (Manufacturing) and digital transformation (DX) Promotion at an Automotive Component Manufacturer (Mr. Yasuaki Matsunaga) Location: Shichirigahama 1-3 Chair: Toshiya KAIHARA						
10:30am - 11:30am	Keynote Speech 2: Digitalization of manufacturing systems by using Digital Triplet (Prof. Dr. Yasushi Umeda) Location: Shichirigahama 1-3 Chair: Hajime Mizuyama						
11:30am - 12:30pm	Keynote Speech 3: Automation in Manufacturing Sites with Collaborative Robots with Ease of Use even for First-time Robot Users (Mr. Masahiro Morioka) Location: Shichirigahama 1-3 Chair: Hironori Hibino						
12:30pm - 1:30pm	Lunch						
1:30pm - 2:50pm	Transforming Engineer-to-Order Projects, Supply Chains, and Systems - Part 1 Location: Rose A Chair: Martin Rudberg Chair: Jo Wessel Strandhagen 1:30pm - 1:50pm A conceptual assessment of Digital Twin potential through Discrete Event Simulation for Smart Mobile Factories in linear infrastructure construction projects Patrick Dallasega, Ishaan Kaushal, Andrea Revolti, Ananya Tripathi, Jianxiang Ma 1:50pm - 2:10pm Challenges and Opportunities for Digital Twin Modelling		Enhancing the Value Creation Mechanisms of Manufacturing Value Chains through Digital Platforms, Circular Strategies, and Servitization Principles - Part 1 Location: Olive A Chair: Johan Stahre Chair: Federica Acerbi 1:30pm - 1:50pm Enterprise Architecture Model for digitally enabled Reverse Logistics Martin Perau, <u>Antoine Gaillard</u> , Stefanie Berninger, Phil Caspari, Justus Urboneit, Svenja Spindeldreier, Achim Byl, Maximilian Winkler, Dominic Welsh, Tobias Schröder, Wolfgang Boos 1:50pm - 2:10pm	Designing Next Generation Lean Models Supporting Social, Sustainable, and Smart Production Systems - Part 1 Location: Olive B Chair: Matteo Zanchi Chair: David Romero 1:30pm - 1:50pm The Role of Operators' Learning in Enhancing Lean Benefits: Evaluation of Setup-time Reduction with SMED Anne Zouggar Amrani, Olivia McDermott, Kathryn Cormican, Daryl Powell, Matteo Zanchi 1:50pm - 2:10pm Assessing the Impact of Digital Lean Manufacturing Tools on Perceived Cognitive Workload:	Smart Manufacturing Evolution: Integrating AI and the Digital Twin for Human-centric, Circular and Collaborative Production Systems Location: Shichirigahama 2 Chair: Stefan Alexander Wiesner Chair: Thorsten Wuest 1:30pm - 1:50pm Adapting to Technological Change: A Case Study on AI Implications for Shop-Floor Level Worker <u>Viktoria Leutheuser</u> , Julian M. Müller, Kai-Ingo Voigt 1:50pm - 2:10pm Skeletal and Positional Based Individual Identification Method	Human-centred Work Systems for the Operator 4.0/5.0 in Manufacturing, Logistics, and Service Domains - Part 1 Location: Shichirigahama 2 Chair: Tamas Ruppert Chair: Peter Thorvald 1:30pm - 1:50pm Industrial work instructions with DIGA Peter Thorvald, Sandra Mattsson 1:50pm - 2:10pm Robotic Process Automation: A Qualitative Journey through RPA's Impacts on Company Employees Edgar Simões, <u>Ana Correia Simões</u> , José Coelho Rodrigues, Pedro Lourenço	Human-Centered Service Engineering and Digital Transformation for Sustainable Service Industries Location: Shichirigahama 3 Chair: Takeshi Shimmura Chair: Takeshi Takenaka 1:30pm - 1:50pm Comparative Refinement of AR-based Inspection via a VR-based Prototyping Cycle - Towards Accelerated Consensus Building in Pharmaceutical Wholesaling <u>Shigeki Ozawa</u> , Takuya Miura, Ryosuke Ichikari, Takumi Miyoshi, Takeshi Kurata

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	<p>and Optimization in Yard Operations Linda Helen Sperre, Giuseppe Fragapane, Zachari Thiry, Logan Reed Vallandingham, Pål Furu Kamsvåg, Jo Wessel Strandhagen, Sven-Vegard Buer</p> <p>2:10pm - 2:30pm Cross-Industry Insights: Comparing Engineer-to-Order (ETO) Manufacturing and Industrialized Construction Supply Chains Wilhelm Grindestam, Melvin Karlsson, Krishanth Siva Balan, Hampus Thell, Martin Rudberg, Joakim Wikner</p> <p>2:30pm - 2:50pm How Contradictions Impact Practices in Supply Chain Planning in Engineer-to-order-Settings - a Multi Case Study Nils-Erik Ohlson, Jenny Bäckstrand</p>		<p>Manufacturing-As-A-Service: Challenges and Opportunities for Manufacturing Companies Giuditta Pezzotta, Sabrina Muttoni, Roberto Sala</p> <p>2:10pm - 2:30pm Enabling servitisation by balancing activities and capabilities in manufacturing companies Benedicte Ravn Skou, Clarissa Alejandra González Chávez, Michail Beliatas, Björn Johansson, Johan Stahre</p> <p>2:30pm - 2:50pm Manufacturing-as-a-Service: State-of-the-art and the development of a Maturity Model Elena Beducci, Sara Païtoni, Beatrice Bonato, Federica Acerbi, Anna De Carolis, Marco Taisch</p>	<p>The Case of a “Pick-to-Light” Poka-Yoke 4.0 System Matteo Zanchi, Daryl John Powell, Paolo Gaiardelli, Anne Zouggar Amrani, David Romero</p> <p>2:10pm - 2:30pm Lean vs Green: Conflict or Convergence in Modern Manufacturing Beatrice Colombo, Paolo Gaiardelli</p> <p>2:30pm - 2:50pm Human-Centric Smart Factory Transformation: A Roadmap Integrating Lean, Digitalization, and Organizational Learning Matthew Anderson, Peter Dober, Shaun West, Paolo Gaiardelli</p>	<p>in Manufacturing Shop floors Ibuki Inomata, Ryota Kudo, Mitsuyoshi Horikawa</p> <p>2:10pm - 2:30pm Purpose-Driven Digital Twins for Production Systems: Mapping Decisions, KPIs, and Users Adrian Sanchez de Ocana, Jessica Bruch, Ioanna Aslanidou, Imad Berrouyne</p> <p>2:30pm - 2:50pm Federated Learning for Smart Manufacturing: Evaluating Deep Learning Architectures for Time Series Forecasting in a Collaborative Framework Md Irfan Khan, Mahady Rayhan, Mojtaba Farahani, Thorsten Wuest</p>	<p>2:10pm - 2:30pm Human-Centered Augmented Reality in Manufacturing: Enhancing Efficiency, Accuracy, and Operator Adoption Filipa Rente Ramalho, António Lucas Soares, Ana Cristina Simões, António Henrique Almeida, Manuel Oliveira</p> <p>2:30pm - 2:50pm How Industry 4.0 Technologies Are Evolving to Industry 5.0 - A Systematic Literature Review Gonzalo Fernandez, Jéssica de Assis Dornelles, Néstor Fabián Ayala</p>	<p>1:50pm - 2:10pm Modeling Consumer Outing Behavior Using Lifestyle Analysis and Mobility Data Akio Sashima, Takeshi Takenaka, Kentaro Watanabe</p> <p>2:10pm - 2:30pm Exploring System Architecture for Food Transformation (FX): Advancing Recipe Design with Alternative Proteins Tomomi Nonaka, Seiko Shirasaka, Tomomi Honda</p> <p>2:30pm - 2:50pm A transportation scheduling method using integer programming Jun Takanaga, Nobutada Fujii, Takehide Soh, Takashi Tanizaki, Takeshi Shimmura, Yotetsu Kimura</p>
2:50pm - 3:00pm	Break						
3:00pm - 4:20pm	<p>Transforming Engineer-to-Order Projects, Supply Chains, and Systems - Part 2 Location: Rose A Chair: Patrick Dallasega Chair: Martin Rudberg</p>	<p>Shaping Human Capital for Industry 5.0: Skills, Knowledge and Technologies for Human-Centric, Resilient, and Sustainable Manufacturing</p>	<p>Enhancing the Value Creation Mechanisms of Manufacturing Value Chains through Digital Platforms, Circular Strategies, and Servitization Principles -</p>	<p>Designing Next Generation Lean Models Supporting Social, Sustainable, and Smart Production Systems - Part 2</p>	<p>Digital Transformation Approaches in Production and Management - Part 1 Location: Shichirigahama 1</p>	<p>Human-centred Work Systems for the Operator 4.0/5.0 in Manufacturing, Logistics, and Service Domains - Part 2 Location: Shichirigahama</p>	<p>Advancing Eco-efficient and Circular Industrial Practices - Part 1 Location: Shichirigahama 3 Chair: Albachiara Boffelli Chair: Beatrice Colombo</p>

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<p>3:00pm - 3:20pm</p> <p>Analyzing the factors affecting storage space management at offshore construction yards: Insights from a single case study <u>Jo Wessel Strandhagen</u>, Ottar Bakås, Sven-Vegard Buer</p>	<p>Location: Rose B Chair: Mariantonietta Ferrante Chair: Micaela Vitti</p> <p>3:00pm - 3:20pm</p> <p>Exploring the Influence of Operator Features on the Performance of Maintenance Tasks: Insight from Indus-try Experts <u>Micaela Vitti</u>, Claudio Sassanelli, Raffaello Pio lavagnilio, Giorgio Mossa, Francesco Facchini</p>	<p>Part 2 Location: Olive A Chair: David Romero Chair: Johan Stahre</p> <p>3:00pm - 3:20pm</p> <p>Towards Effective Implementation of Digital Product Passports: Stakeholders Involved and Data Requirements <u>Luca Carminati</u>, Veronica Arioli, Roberto Sala, Fabiana Pirola, Giuditta Pezzotta</p>	<p>Location: Olive B Chair: Federica Costa Chair: Matteo Zanchi</p> <p>3:00pm - 3:20pm</p> <p>Mapping Lean Six Sigma Practices to Environmental Gains: A Case-Based Assessment Model Matteo Ferrazzi, Federica Costa, Matteo Rossini, Alberto Portioli-Staudacher</p>	<p>Chair: Selver Softic Chair: Ioan Turcin</p> <p>3:00pm - 3:20pm</p> <p>Designing a maturity model for data-oriented shopfloor management <u>Patrick Eichenseer</u>, Herwig Winkler</p>	<p>2 Chair: Peter Thorvald Chair: Tamas Ruppert</p> <p>3:00pm - 3:20pm</p> <p>Teaching Method for Industrial Robots That Reduces Positioning Errors Caused by Look-Ahead Control Hiroki Takeda, Daiki Kajita, Takahiro Nakano</p>	<p>3:00pm - 3:20pm</p> <p>Circular engineering asset management – A case study on prolonging the lifetime of inventories and equipment <u>Malin Elvin</u>, Filip Skärin, Heinz Möller</p>
<p>3:20pm - 3:40pm</p> <p>Designing a Digital Twin Architecture for Resource Planning in ETO Shipyards: A Case-Informed Approach from the Norwegian Maritime Sector Anita Romsdal, Markus Aarhaug, <u>Jan Ola Strandhagen</u></p>	<p>3:20pm - 3:40pm</p> <p>Competence development for the twin transition: a socio-technical perspective Daryl Powell, Torbjørn Leirimo, Yashoda Karki, Margarida Vasconcelos, Jose Carlos Sa, Eivind Reke</p>	<p>3:20pm - 3:40pm</p> <p>An Iterative Framework for Circular Business Models: Insights from Mapping and Modelling Hidde Huijssoon, Eugen Rodel, Shaun West, <u>Paolo Gaiardelli</u></p>	<p>3:20pm - 3:40pm</p> <p>Root Cause Analysis in Manufacturing processes: A Bayesian Network based approach Federica Costa, Alessia Serafini, Matthias Thürer, Alberto Portioli Staudacher</p>	<p>3:20pm - 3:40pm</p> <p>Technological convergence of Operational Technology (OT) and Information Technology (IT) in the Digital Industry: Conceptual analysis of OT, highlighting its convergences and differences with IT <u>Marcelo Tsuguio Okano</u>, William Aparecido Celestino Lopes, Chan Kong Fong, João Carlos Lopes Fernandes, Sérgio Miele Ruggero</p>	<p>3:20pm - 3:40pm</p> <p>Organizational barriers to the operator 4.0, operator 5.0 and human-centricity paradigms: A mixed methods study <u>Martina Ortova</u>, <u>Anne Grethe Syversen</u>, Godfrey Mugurusi, Morteza Alaeddini</p>	<p>3:20pm - 3:40pm</p> <p>Enhancing Circular Economy Platform Design with Artificial Intelligence-Based Functionalities Marco Formentini, Janpriy Sharma, Nicola Mezzetti, Alfredo Apicella</p>
<p>3:40pm - 4:00pm</p> <p>A Coordinated Approach to Apply Value Stream Analysis to the One-of-a-kind Shipbuilding Supply Chain <u>Lennard Thielager</u>, Volodymyr Alieksieiev, Tim Jansen, Christopher Mundt, Hermann Lödding</p>	<p>3:40pm - 4:00pm</p> <p>Circular Economy Upskilling: A Course on Digital Transition and Transformation Federica Acerbi, Adriana Hofmann Trevisan, Sergio Terzi, <u>Claudio Sassanelli</u></p>	<p>3:40pm - 4:00pm</p> <p>Mapping Simulation Trends in Supply Chain Management: A Structured Literature Review <u>Giovanni Romagnoli</u>, Francesco Moroni, Nicola Mercogliano, Francesco Zammori</p>	<p>3:40pm - 4:00pm</p> <p>Key Characteristics of Luxury fashion Supply Chain and Impact on Operational Performance: A qualitative Study Alessia Bilancia, Federica Costa, Anne Zouggar Amrani, Alberto Portioli Staudacher</p>	<p>3:40pm - 4:00pm</p> <p>Integrating skills for Twin Transformation in manufacturing: A conceptual Talent Triangle Framework Danijela Ciric Lalic, Milena Savkovic, Dunja Kobiljski, Anja Novakovic, <u>Ugljesa Marianovic</u></p>	<p>3:40pm - 4:00pm</p> <p>From Proactive to Embodied Collaboration: A System-Centric Approach to Advancing HRC Quality <u>Francesco Mancusi</u>, W. Patrick Neumann, Fabrizio Caccavale, Fabio Fruggiero</p>	<p>3:40pm - 4:00pm</p> <p>Advancing circular industrial practices: a comparison of logics in Scotland and the Netherlands <u>Melissa Marques-McEwan</u>, Seemab Farooqi, Ian Robson, Audrey Paterson, William Jackson, Nicki Souter, Luise Elsaesser</p>
<p>4:00pm - 4:20pm</p> <p>Synchronizing the Shipbuilding Supply Chain with Generic</p>	<p>4:00pm - 4:20pm</p> <p>Gap analysis of Industry 5.0-driven</p>	<p>4:00pm - 4:20pm</p> <p>Where to use XR technologies in a</p>	<p>4:00pm - 4:20pm</p> <p>Empirical Analysis of the Influence of the Takt Time of Automotive Assembly</p>	<p>4:00pm - 4:20pm</p>		<p>4:00pm - 4:20pm</p> <p>Investigation of Compression Strength Enhancement in 3D-</p>

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	Cumulative Production Figures <u>Volodymyr Alieksieiev</u> , Lennard Thielager, Tim Jansen, Christopher Mundt, Hermann Lödding	Product Lifecycle Management Ilaria Bucci, Virginia Fani, Romeo Bandinelli, Monica Rossi, <u>Claudio Sassanelli</u>	company? A decision-making approach using the value stream approach Wiesław Urban, <u>Klaudia Tomaszewska</u>	Lines on the Efficiency on These Lines Christoph Roser, Thorsten Ahrens, Jochen Roser	Machine Learning-Based Methodology For Root Cause Analysis Of Extended Throughput Time In Production <u>Kira Welzel</u> , Lucas Wieggrebe, Matthias Schmidt	Printed Hollow Structures Using Granular Backfill Yannick Taschbach, Alexander Keuper, Günther Schuh	
4:20pm - 4:50pm	Coffee Break						
4:50pm - 6:30pm	Transforming Engineer-to-Order Projects, Supply Chains, and Systems - Part 3 Location: Rose A Chair: Jo Wessel Strandhagen Chair: Patrick Dallasega 4:50pm - 5:10pm Configuring the Configurator: Best Practices for Developing Product Configurators in Engineer-to-Order Firms Erlend Alfnes, <u>Omid Maghazei</u> , Bella Belerivana Nujen, Johanne Bjørnsen Skjetne, Ludvig Lilleby Johansson 5:10pm - 5:30pm Leveraging Reverse Blending for mass customization in the cosmetics industry Latifa Benhamou 5:30pm - 5:50pm	Innovative approaches and methods for developing industry 4.0 and industry 5.0 skills Location: Rose B Chair: Fabiana Pirola Chair: Emrah Arica 4:50pm - 5:10pm The Role of Digital Training Platforms in Facilitating the Sustainability Transitions of European SMEs: Insights from the EU-Funded Project “STAGE” Serkan Eren, Chibuikem Nwagwu, <u>Emrah Arica</u> , Eivind Reke 5:10pm - 5:30pm Use of Generative AI for Assessing Experiential Learning in Engineering Education <u>Stefano Marazzini</u> , Rossella Pozzi, Tommaso Rossi, Nicolò Saporiti, Fabiana Pirola,	Supply Network Planning and Optimization Location: Olive A Chair: Jonghun Woo Chair: Hermann Lödding 4:50pm - 5:10pm Modelling of Logistics Objectives at the Sea Side of Container Terminals Florian Möhle, Svenja Koch, Carlos Jahn, <u>Hermann Lödding</u> 5:10pm - 5:30pm RAPID Intermodal Transport System: A New Concept for Joint Transportation of Passengers and Freight Synnøve Sunne Hasslan, Volodymyr Alieksieiev, Rafat Beigpoor Shahrivar, Ann-Kathrin Lange, Per Haavardtun, Kenn Steger-Jensen 5:30pm - 5:50pm	Circular and Green Manufacturing Location: Olive B Chair: Kjeld Nielsen Chair: Konstantinos Kaparis 4:50pm - 5:10pm Optimizing the Reuse of Requalified CFRP in Drone Manufacturing Kyriakos Bitsis, <u>Konstantinos Kaparis</u> , Georgios Zois, Silvio Pappada 5:10pm - 5:30pm Scientific Concept For Analyzing The Potential Of Energy-Oriented Production Planning And Control In SMEs Manuel Rischmann, Markus Weber, Tobias Hiller, Stefan Roth, <u>Tabea Marie Demke</u> , Peter Nyhuis, Matthias Schmidt 5:30pm - 5:50pm Future-proofing production and	Digital Transformation Approaches in Production and Management - Part 2 Location: Shichirigahama 1 Chair: Ugljesa Marjanovic Chair: Vlad I. Bocanet 4:50pm - 5:10pm Concurrent Design Facility Definition for Advancing the Integration of Smart Automation in Human Space Applications Cristian Vizitiu, Ioan Turcin, Kevin Dominey, Adrian Dinculescu, Alexandru Nistorescu, Mihaela Marin, Cosmin Dugan, Sorin Moraru 5:10pm - 5:30pm Methods & Technologies for Modularising Wire Harness Designs in the Automotive Industry <u>Jann Warnecke</u> , Steffen Auchtör, Patrick Bründl, Jörg Franke	Human-centred Work Systems for the Operator 4.0/5.0 in Manufacturing, Logistics, and Service Domains - Part 3 Location: Shichirigahama 2 Chair: Peter Thorvald Chair: Tamas Ruppert 4:50pm - 5:10pm Eye-Guided Human-Robot Collaborative Assembly: A Feasibility Study <u>Raquel Quesada Díaz</u> , Álvaro Ballesteros Martín, Frank Luque Lineros, Erik Billing 5:10pm - 5:30pm The impact of work instruction simplification on operator performance and learning curve efficiency Mónika Gugolya, Vera Varga, Tibor Medvegy, Tamas Ruppert 5:30pm - 5:50pm	Advancing Eco-efficient and Circular Industrial Practices - Part 2 Location: Shichirigahama 3 Chair: Yusuke Kishita Chair: Beatrice Colombo 4:50pm - 5:10pm Bridging Fashion and Agri-Food Sectors: Exploring Industrial Symbiosis for Sustainable Material Innovation <u>Federica Acerbi</u> , Alessandra Aleccia, Francesca Consonni, Beatrice Colombo, Virginia Fani 5:10pm - 5:30pm Culture as Catalyst: Navigating Circular Manufacturing in Multinational Enterprises Benedetta Carrara, Federica Acerbi, <u>Beatrice Colombo</u> , Paolo Gaiardelli, Shaun West

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<p>Reviewing Interoperability in Engineer-to-Order Industry Vésteinn Sigurjónsson, Jessica Bruch, Anna Granlund</p>	<p>Monica Rossi, Sergio Terzi</p>	<p>Inventory Allocation for Leasing and Sales Demands <u>Jiyeon Lee</u>, Ilkyeong Moon</p>	<p>operations management education: An IFIP WG5.7 benchmarking study Daryl Powell, Alessia Napoleone, David Romero, Sabine Waschull, Matteo Zanchi</p>	<p>5:30pm - 5:50pm Digitalisation and Visualisation via Target-Actual Comparison by a Large-Scale Component Example <u>Kay Burow</u>, Patrick Klein, Karl Hribernik, Klaus-Dieter Thoben</p>	<p>Integration of Human Learning and Complexity Effects in Production Ramp-up Cost Ahmadreza Nadaffard, Negar Karimi, <u>Tamas Ruppert</u></p>	<p>5:30pm - 5:50pm Implementing Recycling Circular Economy Business Model in the Aluminum Value Chain with the Aid of Systems Thinking: Challenges and Foresight Reflections <u>Ana Lyvia Tabosa da Silva</u>, Mohammad Javadinia Azari</p>
	<p>5:30pm - 5:50pm The Importance of Skills for Society 5.0 Marco Dautaj, Monica Rossi, Sergio Terzi</p>	<p>5:50pm - 6:10pm RUBI: Relative-Urgency Based Initialization for solving Job Shop Scheduling Problem <u>Jiwon Baek</u>, Hyunjin Oh, Jong Hun Woo</p>	<p>5:50pm - 6:10pm Identifying Key Aspects of Circular Manufacturing Systems: A Structured Literature Review <u>Emma B. Worup</u>, Ann-Louise Andersen, Thomas D. Brunoe, Kjeld Nielsen</p>	<p>5:50pm - 6:10pm Explainable Anomaly Detection for Predictive Maintenance Using Synthetic Benchmarks and Human-in-the-Loop Labeling Daniel Resanovic, <u>Selver Softic</u>, Nicolae Balci</p>	<p>5:50pm - 6:10pm Evaluating User-Centered Visualizations of Traffic Anomalies: A User Study <u>Nadine Yilmaz</u>, Rana El Khoury, Lisa Jantzen, Regina Kempen, Doris Aschenbrenner</p>	<p>5:50pm - 6:10pm Transition to a Circular and Sustainable Leather Supply Chain: a Qualitative Comparative Analysis Martina Cornaro, Juan Maciel, Albachiara Boffelli, Carlo Brondi, Beatrice Colombo, Filippo Visintin, Andrea Zangiacomi</p>
	<p>5:50pm - 6:10pm Designing Practical Learning Activities for Industry 4.0 and 5.0: A Case Study in a Learning Factory <u>Mattia Galimberti</u>, Luca Carminati, Roberto Sala, Fabiana Pirola, Rossella Pozzi, Monica Rossi</p>	<p>6:10pm - 6:30pm Constraint Programming-based Optimization Algorithm for International Voyage Planning Considering Barge Loading Space Allocation <u>Chang-hyeon Song</u>, Ki-young Cho, Hong Lee, Jonghun Woo</p>	<p>6:10pm - 6:30pm A proposal for a closed-loop production planning method to deal with carbon emission reduction Araki Kawamura, Toshiya Kaihara, Daisuke Kokuryo, Houei Mizuhara, Toyohiro Umeda, Hideo Ikeda, Akihisa Horio</p>	<p>6:10pm - 6:30pm Multi-agent framework for AI-supported collaborative Root Cause Analysis in quality assurance <u>Vlad I. Bocanet</u>, Mircea H. Muntean, Cristina Fleseriu</p>	<p>6:10pm - 6:30pm Technocontrol and Technoaugmentation Stress: Expanding the Framework of Technostress in Response to Emerging Workplace Technologies Solveig Beyza Narli Evenstad</p>	<p>6:10pm - 6:30pm Three Archetypes of Circular Manufacturing Practices <u>Mélanie Despeisse</u>, Shozo Takata, Yusuke Kishita, Federica Acerbi</p>
	<p>6:10pm - 6:30pm Guidelines for Designing Engineering Education in the Context of Industry 4.0 and 5.0 <u>Mohammad Hossein Dehbozorgi</u>, Fabiana Pirola, Rossella Pozzi, Daniele Contestabile, Brendan Patrick Sullivan, Monica Rossi, Sergio Terzi</p>					

APMS 2025 Conference Program

Date: Tuesday, 02/Sept/2025

9:00am - 10:00am	Keynote Speech 4: The Future of Lean: Beyond Borders, Beyond Myths, Beyond Human Limits (Prof. Dr. Daryl Powell) Location: Shichirigahama 1-3 Chair: Tomomi Nonaka						
10:00am - 11:00am	Keynote Speech 5: Are the benefits of digitalization, including Industrie 4.0 and AI, really contributing to the realization of a sustainable society? Introducing an international project focusing on the Human-Machine-Interaction (Dr. Youichi Nonaka) Location: Shichirigahama 1-3 Chair: Eiji Morinaga						
11:00am - 12:00pm	Keynote Speech 6: Development and Social implementation of Interverse services - circulating the value between the meta-verse and the universe - (Dr. Masaaki Mochimaru) Location: Shichirigahama 1-3 Chair: Toshiya KAIHARA						
12:00pm - 1:00pm	Lunch						
1:00pm - 2:40pm	Digital Services and Smart Product-Service Systems Location: Rose A Chair: Regina Schrank Chair: Mike Freitag 1:00pm - 1:20pm Digital transformation in mechanical engineering - Digital Twins in Virtual Commissioning. A use case in a German small and medium-size company <u>Mike Freitag</u> , Oliver Hämmerle 1:20pm - 1:40pm Systematic Literature Review of Use Cases for Data-Driven Product Development in Manufacturing Companies <u>Henry Himmelstoss</u> , Thomas Bauernhansl	Methods and Tools for Assessing the Value of Digital, Sustainable and Servitized Offerings of Manufacturing Companies Location: Rose B Chair: Claudio Sassanelli Chair: Giuditta Pezzotta 1:00pm - 1:20pm Total Cost and Total Value of Ownership in PSS: A Model for Economic and Environmental Sustainability <u>Roberto Sala</u> , Marco Ardolino, Federico Adrodegari, Giuditta Pezzotta 1:20pm - 1:40pm Enabling Circular Business Models and Digital Transformation for Sustainable Value Creation in European Manufacturing SMEs	AI-Driven Decision Support and Human-AI Collaboration for Smart and Sustainable Supply Chains - Part 1 Location: Olive A Chair: Giovanni Zenezini Chair: Maria Pereira 1:00pm - 1:20pm Transfer Learning for Transportation Cost Prediction in Modular Construction Eduardo e Oliveira, Maria Pereira, Teresa Pereira, Marisa Pereira 1:20pm - 1:40pm Deep Reinforcement Learning for Multi-stage Inventory Optimization with Agent-based Supply Chain Simulator <u>Atsuki Kiuchi</u> , Hitohiro Eto 1:40pm - 2:00pm	Digital Twins and AI for Dynamic Scheduling and Human-Centric Applications - Part 1 Location: Olive B Chair: Yongkuk Jeong Chair: Magnus Wiktorsson 1:00pm - 1:20pm Multi-objective optimization of worker assignment for manual assembly production lines: A genetic approach <u>Changha Lee</u> , Sang Do Noh 1:20pm - 1:40pm Feasibility study on the interactive AI scheduling with LLM technology for human-centric Industry 5.0 <u>Hyunjin Oh</u> , Jiwon Baek, Kiyoung Cho, Jonghun Woo 1:40pm - 2:00pm	Digital Transformation Approaches in Production and Management - Part 3 Location: Shichirigahama 1 Chair: Selver Softic Chair: Ioan Turcin 1:00pm - 1:20pm Supporting Strategic Decision Making for Data Monetization in the Era of Digital Transformation <u>Martin Loers</u> , Dominik Royé, Ilyas Laihem 1:20pm - 1:40pm AI enhanced quality assurance reporting of surface deviation data in optical 3D inspection <u>Mircea H. Muntean</u> , Vlad I. Bocanet, Domnita Fratila 1:40pm - 2:00pm	Human-centred Work Systems for the Operator 4.0/5.0 in Manufacturing, Logistics, and Service Domains - Part 4 Location: Shichirigahama 2 Chair: Johan Stahre Chair: Vittaldas V. Prabhu 1:00pm - 1:20pm Inside-out: an exploratory study of the emotional profile of industrial operators for human-centric factories and empathic AI assistants Giuseppina Ambrogio, Francesco Longo, Giovanni Mirabelli, <u>Antonio Padovano</u> 1:20pm - 1:40pm Architecture for Dynamic Process Safety Management	APMS Talks - Part 1 Location: Shichirigahama 3 1:00pm - 1:45pm How does distribution and logistics become a circular business? Focus on digital transformation and the green shift <u>Kenn Steger-Jensen</u> 1:45pm - 2:30pm Designing Food System Architectures for a Sustainable Society <u>Tomomi Nonaka</u>

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	1:40pm - 2:00pm Development of Interactive decision support system for part selection in additive manufacturing Jayakrishnan Jayapal, <u>Senthilkumaran Kumaraguru</u> , Sudhir Varadarajan	<u>Stefan Alexander Wiesner</u> , Jannicke Baalsrud Hauge, Klaus-Dieter Thoben 1:40pm - 2:00pm Exploring the pairing of Circular Manufacturing data categories and Rebound Effect factors <u>Mariantonietta Ferrante</u> , Micaela Vitti, Federica Acerbi, Salvatore Digiesi, Claudio Sassanelli	AI-enhanced demand forecasting: a design science approach <u>Giorgio Scarton</u> , Marco Formentini, Nadia Benini 2:00pm - 2:20pm Perceptions and Trust in AI-Driven Decision Support Systems in Supply Chain Management <u>Maja Charlotte Willimowski</u> , Victoria Schneider	Automating Task Monitoring in Industrial Setting using Combined Gesture Recognition and Object Detection Smita Priyadarshani, Kakeru Koizumi, Catherine Kuramitsu, Hiroshi Watanabe, Sooyoung Jeong 2:00pm - 2:20pm Extending ISO 23247: A Production Logistics Information Model for Integrated Digital Twins <u>Seoyoung Jo</u> , Eirk Flores-García, Yongkuk Jeong, Magnus Wiktorsson, Sang Do Noh	Digitalization and De-Digitalization: Investigating the Phenomenon of Declining Industry 4.0 Adoption Rates in German Manufacturing Christian M. Lerch, <u>Dierdj Horvat</u> , Angela Jäger, Daniel Berner, Iztok Palčič 2:00pm - 2:20pm Leveraging AI in Production for Product Innovation: Insights from German Manufacturing <u>Dierdj Horvat</u> , Christian Lerch, Angela Jäger, Heidi Heimberger	using Digital Twin and Machine Learning Ibrahim Saleh Aljahwari, <u>Vittaldas Prabhu</u> 1:40pm - 2:00pm AI Cockpit: A Meaningful Human Control Interface for Mitigating AI Risks for Hybrid Intelligence Systems Doris Aschenbrenner, Anett Hübner, Nektaria Tagalidou, Michael Bui, Mathias Vukelić, Nadine Yilmaz, Markus Zarbock, Natalie Basedow	
	2:00pm - 2:20pm Towards a Framework for Value-based Pricing of Digital Products in the Manufacturing Industry <u>Regina Schrank</u> , Günther Schuh	2:00pm - 2:20pm Use Phase-Oriented Innovation Assessment in Early Development Stages: A Value-in-Use Approach for Thermal Interface Materials <u>Friederike Stefanowski</u> , Timon Steinhoff, Luca Köhnen, Christian Klose, Matthias Schmidt, Hans Jürgen Maier, Peter Nyhuis	2:20pm - 2:40pm Machine learning-based cost estimation approach for furniture manufacturing <u>Maria Teresa Pereira</u> , Eduardo e Oliveira, António Amaral, Marisa G. Pereira	2:20pm - 2:40pm Graph Attention Network based Deep Reinforcement Learning Approach for Dynamic Human Order Picking <u>Kiyoung Cho</u> , Donghoon Kwak, Seungheon Oh, Jonghun Woo	2:20pm - 2:40pm Navigating Digitalization in Traditional Manufacturing: Aligning Digital Ambition with Industrial Context <u>Sven-Vegard Buer</u> , Jo Wessel Strandhagen, Erik Gran	2:00pm - 2:20pm Developing Code Agents for Robot Programming: Technical and Managerial Perspectives <u>Omkar Salunkhe</u> , Clarissa González, Hao Wang, Anna Syberfeldt, David Romero, Johan Stahre	
	2:40pm - 2:50pm Break						
2:50pm - 4:30pm	How Supply Chain Can React to Internal and External Disruptions? - Part 1	Enabling Circularity in Batteries & E-Waste with Digital Technologies: From Production to Recycling -	AI-Driven Decision Support and Human-AI Collaboration for Smart and Sustainable Supply Chains - Part 2	Digital Twins and AI for Dynamic Scheduling and Human-Centric Applications - Part 2	Digital Transformation Approaches in Production and Management - Part 4	Artificial Intelligence / Machine Learning in Manufacturing - Part 1 Location:	APMS Talks - Part 2 Location: Shichirigahama 3

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<p>Location: Rose A Chair: Giulio Mangano Chair: Chandima Ratnayake</p> <p>2:50pm - 3:10pm Mitigating Disruptions in Agri-Food Supply Chains to Enhance Farmer Livelihoods and Food Security Madushan Madhava Jayalath, R.M. Chandima Ratnayake, H. Niles Perera, Amila Thibbotuwawa</p> <p>3:10pm - 3:30pm Quantifying Forecast and E-Kanban Adaptation Fit: A Contingency-Based Resource-Based View and Differentiation System Approach <u>Christian Ricky</u>, Nobuaki Minato, Kuniaki Tanaka, Manabu Sawaguchi</p> <p>3:30pm - 3:50pm A Systematic Literature Review on Disruptions in Construction Supply Chain: Some Stylized rends Gabriel Castelblanco, Giulio Mangano, Mahsa Mahdavisari</p>	<p>Part 1 Location: Rose B Chair: Mélanie Despeisse Chair: Koteshwar Chirumalla</p> <p>2:50pm - 3:10pm Camera-based Methodology for the Automated Real-Time Assessment of Material Thinning in Battery Cell Manufacturing <u>Florens Wurmer</u>, Niklas Kesten, Matthias Burgard, Marcel Daumüller, Florian Maier</p> <p>3:10pm - 3:30pm Challenges in Achieving Circular Battery Production in Sweden Martin Kurdve, <u>Malin Elvin</u>, Magnus Widfeldt, Koteshwar Chirumalla</p> <p>3:30pm - 3:50pm Business model archetypes and deployment strategies for EV battery swapping – Preliminary insights <u>Ignat Kulkov</u>, Koteshwar Chirumalla</p> <p>3:50pm - 4:10pm Enabling Battery Circularity with Blockchain Technology: An Exploratory Study of Key Benefits</p>	<p>Location: Olive A Chair: Eduardo e Oliveira Chair: Alexandra Lagorio</p> <p>2:50pm - 3:10pm Intelligent Conceptual Architecture as a Proposal for Integration of Artificial Intelligence for Accident Prevention with Heavy Equipment Acácio Pereira de Macedo Neto, João Gilberto Mendes dos Reis, <u>Paula Ferreira da Cruz Correia</u>, Gabriel Santos Rodrigues, Joel Porto Alves, Marcio José Padovan de Antônio, Fabricio Henrique do Nascimento da Silva, Jonatas Santos de Souza</p> <p>3:10pm - 3:30pm Evaluating Crowdsourcing Logistics Platforms in São Paulo and Rio de Janeiro, Brazil. Márcio José Padovan de Antônio, João Gilberto Mendes dos Reis, <u>Paula Ferreira da Cruz Correia</u>, Acácio Pereira de Macêdo Neto, Gabriel Santos Rodrigues, Joel Porto Alves</p> <p>3:30pm - 3:50pm Soybean Logistics Corridor in Brazil: A Route Analysis Using AHP/ANP Rodrigo Carlo Toloi, Kennya Vieira Queiroz, Miguel Renon, Daniele dos Santos Ramos Xavier,</p>	<p>Location: Olive B Chair: Jonghun Woo Chair: Erik Flores-García</p> <p>2:50pm - 3:10pm Digital Twin for Intelligent Production Management using AI Computer Vision and Proactive Simulation <u>Hyewon CHO</u>, Hayong Lee, Sang Do Noh, Jang Won Choi, Binglu Li</p> <p>3:10pm - 3:30pm Digital Twins as a vector of convergence between Operational Technology (OT) and Information Technology (IT) William Aparecido Celestino Lopes, Adilson Cunha Rusteiko, Cleiton Rodrigues Mendes, Nicolas Vinicius Cruz Honório, <u>Marcelo Tsuquiu Okano</u></p> <p>3:30pm - 3:50pm Computer Vision-based Environmental Perception for a Collaborative Robot Jonas Rieder, Dennis Kollmann, Rana El Khoury, Doris Aschenbrenner</p> <p>3:50pm - 4:10pm Reinforcement Learning in Production</p>	<p>Location: Shichirigahama 1 Chair: Ugljesa Marjanovic Chair: Selver Softic</p> <p>2:50pm - 3:10pm From Analog to Digital: A Frugal Framework for Digital Transformation in Manufacturing Microenterprises under Resource Constraints <u>Mohammed Omer</u>, Sonja Buxbaum-Conradi, Manuel Moritz, Tobias Redlich</p> <p>3:10pm - 3:30pm Acceleration of Digitalisation in Manufacturing SMEs through Capability Maturity Assessment Guven Gurkan Inan, Luciana Blaha, Tom Pfefferkorn</p> <p>3:30pm - 3:50pm Applying Technical Indicators to Year-Ahead Electricity Futures in Volatile Markets <u>Jelena Popara</u>, Nenad Glavicic, Milena Savkovic, Danijela Ciric Lalic, Bojan Lalic</p> <p>3:50pm - 4:10pm Mapping the Intersection of</p>	<p>Location: Shichirigahama 2 Chair: Boonserm Kulvatunyou Chair: Jürgen Lenz</p> <p>2:50pm - 3:10pm AI estimated Assembly Time Forecasting for Engineering-to-Order Manufacturing - Use Case Study on Production Planning of Machine Tools Nicolas Riedel, <u>Jürgen Lenz</u>, Stefan Braunreuther</p> <p>3:10pm - 3:30pm Automated Footwear Surface Inspection System Based on the Deep Learning Object Detection <u>Jaebong Cho</u>, Jihoon Nam, Hyunbo Cho</p> <p>3:30pm - 3:50pm Exploring Zero-Shot Data Drift Detection with Large Language Models <u>Minjoo Park</u>, Jihoon Nam, Hyunbo Cho</p> <p>3:50pm - 4:10pm Machine Learning Lifecycle Explorer:</p>	<p>2:50pm - 3:35pm Exploring Circular Manufacturing Ingredients in the Textile Industry <u>Federica Acerbi</u></p> <p>3:35pm - 4:20pm Utilizing AI/XAI Technology in Production Management: An approach in Scheduling and Supply Chain Planning <u>Eiji Morinaga</u>, <u>Antonio Padovano</u></p>
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		<p>Moshkan Ebrahimi, Koteshwar Chirumalla, Anas Fattouh</p> <p>4:10pm - 4:30pm</p> <p>Digital Technologies for EV battery Circularity: An explorative study on 10R circular strategies</p> <p>Jing Zhao, Koteshwar Chirumalla, Moris Behnam, Ignate Kulkov</p>	<p>Marcia Macario dos Santos, Izolina Margarida de Souza, Alexandra Camila da Paz Silva, Fabrício Henrique do Nascimento da Silva, Acácio Pereira de Macêdo Neto, Gabriel Santos Rodrigues, Robson Jeremias, João Gilberto Mendes dos Reis</p> <p>3:50pm - 4:10pm</p> <p>A Literature Review on the Integration of System Dynamics and Machine Learning/Artificial Intelligence in Addressing Environmental Matters</p> <p>Mustafa Ozan Nesanır, Giovanni Zenezini, Ozlem Senvar, Filippo Maria Ottaviani</p> <p>4:10pm - 4:30pm</p> <p>Improving Quality Management through AI-Powered 8D-Reports</p> <p>Elena Andrushchenko, Turgut Refik Caglar, Dogan Efe, Roland Jochem</p>	<p>Control: A Deep Dive into Order Release</p> <p>Jonas Schneider, Peter Nyhuis, Matthias Schmidt</p> <p>4:10pm - 4:30pm</p> <p>Integrating Large Language Models and Digital Twins in Manufacturing: Opportunities and Challenges for Production Logistics and Assembly Environments</p> <p>Yongkuk Jeong, Christian Kober, Marc Fette</p>	<p>Product-Service Systems, Industry 5.0, and the Sustainable Development Goals: A Bibliometric Study</p> <p>Slavko Rakic, Dragana Slavic, Selver Softic, Ioan Turcin, Vlad Bocanet, Veronica Arioli, Roberto Sala, Nenad Medic</p> <p>4:10pm - 4:30pm</p> <p>Analyzing Adoption of AI and Human-Centricity in Serbian Manufacturing Firms</p> <p>Jelena Crnobrnja, Djerdj Horvat, David Romero, Tamás Ruppert, Ugljesa Marjanovic</p>	<p>Leverage the lifecycle metadata (onto) logically</p> <p>Perawit Charoenwut, Milos Drobnjakovic, Hakju Oh, Ana Nikolov, Boonserm Kulvatunyou</p> <p>4:10pm - 4:30pm</p> <p>An Ontological Perspective on the Biomanufacturing Process Design</p> <p>Ana Nikolov, Stephen Granite, Milos Drobnjakovic, John Beverley, Boonserm Kulvatunyou</p>	
4:30pm - 5:00pm	Coffee Break						
5:00pm - 6:00pm	<p>How Supply Chain Can React to Internal and External Disruptions? - Part 2</p> <p>Location: Rose A Chair: Giulio Mangano Chair: Albachiara Boffelli</p> <p>5:00pm - 5:20pm</p>	<p>Enabling Circularity in Batteries & E-Waste with Digital Technologies: From Production to Recycling - Part 2</p> <p>Location: Rose B Chair: Koteshwar Chirumalla Chair: Mélanie Despeisse</p> <p>5:00pm - 5:20pm</p>	<p>Sustainable Product Design and Engineering</p> <p>Location: Olive A Chair: Alessia Napoleone Chair: Seyoum Eshetu Birkie</p> <p>5:00pm - 5:20pm</p> <p>Green Design Methodology in</p>	<p>Simulation of Production and Supply Chains</p> <p>Location: Olive B Chair: Hyun Woo Jeon Chair: Daisuke Kokuryo</p> <p>5:00pm - 5:20pm</p> <p>A Dynamic Milling Power Model</p>	<p>Meet the Editors: Design, Manufacturing & Production Management</p> <p>Location: Shichirigahama 1 Chair: David Romero</p> <p>Production Planning and Control: The</p>	<p>Artificial Intelligence / Machine Learning in Manufacturing - Part 2</p> <p>Location: Shichirigahama 2 Chair: Sang Do Noh Chair: Marcelo Tsuguio Okano</p> <p>5:00pm - 5:20pm</p>	

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Date: Wednesday, 03/Sept/2025

8:30am - 12:30pm	Workshop: Applications of Artificial Intelligence in Supply Chain Management - Challenges and Opportunities Location: Shichirigahama 2					
9:00am - 10:20am	Maintenance and Asset Lifecycle Management for Sustainable and Human-centered Production - Part 1 Location: Rose A-B Chair: Jon Bokrantz Chair: Adalberto Polenghi 9:00am - 9:20am Addressing Requirements for Maintenance Performance Indicators During the Ramp-up of Battery Production Oscar Larsson, Camila Kin Márquez, Jon Bokrantz 9:20am - 9:40am Incorporating energy efficiency in the definition of maintenance strategy: bibliometric analysis and road mapping Adalberto Polenghi, Zeynab Allahkarami, Anderson Leal, Irene Roda, Anders Skoogh 9:40am - 10:00am Research Avenues for Maintenance Operations in Battery Production Oscar Larsson, Anders Skoogh, Jon Bokrantz 10:00am - 10:20am Extended Quality Control: Suppliers' Tooling Lifecycle Management	Upgrade Circular Economy for the manufacturing industry - Part 1 Location: Olive A Chair: Regina Schrank Chair: Emrah Arica 9:00am - 9:20am Integrating product, process, and organization perspectives for building circular manufacturing systems Emrah Arica, Odd Myklebust 9:20am - 9:40am Design of production structures for circular production Hendrik Eisbein, Günther Schuh, Seth Schmitz, Calvin Kuhn 9:40am - 10:00am Information Requirements for Data-Driven Upgrade Engineering to Enable an Upgrade Circular Economy Florian Alexander Schult, Günther Schuh, Jan-Niklas Abels	Scheduling and Production Planning in Smart Manufacturing - Part 1 Location: Olive B Chair: Takashi Tanizaki Chair: Koji Iwamura 9:00am - 9:20am A Study on Integrated Production Management for Engineer-to-order Production: An Integer Programming Formulation for Flexible Medium-term Production Planning Koji Iwamura, Eiji Morinaga, Kengo Minami, Yoshiyuki Hirahara, Masamitsu Fukuda, Ayumu Niinuma, Hiroto Oshima, Sumire Nishijima, Yasuo Namioka 9:20am - 9:40am Towards a Methodology for ML-based Decision-Making in Production Planning for Machinery and Plant Engineering Laura Goebel, Anna Schauer, Michael F. Zaeh 9:40am - 10:00am Transformer-Based Approach for Fitness Prediction in the Flexible Job Shop Scheduling Problem Shady Salama, Mate Kovacs, Guhan Elangovan	Cloud and Collaborative Technologies Location: Shichirigahama 1 Chair: Marcelo Tsuguio Okano Chair: Georgios Zois 9:00am - 9:20am Enhancing Collaborative Cloud Computing Security: A Privacy by Design Approach with Homomorphic Encryption Samira Nascimento Antunes, Marccelo Tsuguio Okano 9:20am - 9:40am Approaching Quality Management in Production Networks of Micro and Small Enterprises – Implications of Current Literature Julia Christina Markert, Dominik Saubke, Jens P. Wulfsberg 9:40am - 10:00am Optimising a Manufacturing-as-a-Service platform through mathematical modelling Angelos Ioannis Lagos, Ioannis Avgerinos, Georgios Zois, Ioannis Mourtos, Patricia Casla 10:00am - 10:20am		Cyber-Physical System-Based Approaches to Achieve Sustainability Location: Shichirigahama 3 Chair: Wassim BOUAZZA Chair: Yasamin Eslami 9:00am - 9:20am Sustainability through Industry 4.0 Technologies: Discrete Event Simulation for Data-Driven Energy Management Enrique Ruiz Zúñiga, Gary Linnéusson, Martin Birtic, Carlos Alberto Barrera Diaz 9:20am - 9:40am Socially Sustainable Human-Robot Systems in Manufacturing and Logistics: A Content Analysis Thilini Ranasinghe, Eric Grosse 9:40am - 10:00am Forecast-Driven Reconfiguration in Sustainable Production Systems Wassim BOUAZZA, Anirut KANTASA-ARD 10:00am - 10:20am

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	Francisca Laranjo, Eusébio Nunes, <u>Sérgio Sousa</u>			From Code to Production: A Quantitative Analysis of SaaS Characteristics for MaaS Development <u>Fernanda Assef</u> , Ann-Louise Andersen, Thomas Brunø, Kjeld Nielsen, Rasmus Andersen, Emma Worup		Integrating Sustainability with Equitable Operator Fatigue Distribution Wassim BOUAZZA, <u>Yasamin ESLAMI</u> , Jose-Fernando JIMENEZ, Catherine DA CUNHA, Philippe CASTAGLIOLA
10:40am - 12:00pm	Maintenance and Asset Lifecycle Management for Sustainable and Human-centered Production - Part 2 Location: Rose A-B Chair: Irene Roda Chair: Adalberto Polenghi	Upgrade Circular Economy for the manufacturing industry - Part 2 Location: Olive A Chair: Regina Schrank Chair: Tomiya Kimura	Scheduling and Production Planning in Smart Manufacturing - Part 2 Location: Olive B Chair: Koji Iwamura Chair: Takashi Tanizaki	Experiential Learning in Engineering Education - Part 1 Location: Shichirigahama 1 Chair: Giovanni Romagnoli Chair: Matthias Kalverkamp		Industrial Data Spaces and Sustainability Location: Shichirigahama 3 Chair: Oliver Antons Chair: Wiesław Urban
	10:40am - 11:00am Anomaly Detection in Wind Turbines Using Variational Autoencoders and Isolation Forest <u>Guillermo Gil de Avalle Bellido</u> , Christos Emmanouilidis	10:40am - 11:00am Paradigm shift eco-effectiveness – toolmaking as the enabler of sustainable production Wolfgang Boos, Bernd Haase, <u>Jonas Kenfenheuer</u> , Thomas Eberius, Noah Amft	10:40am - 11:00am Multi-Objective Production Planning of Block Allocation in Shipyard Blasting Operations <u>Ki-su Kim</u> , Dongha Lee	10:40am - 11:00am Reflections on the usage of a COTS Game in Teaching Logistics <u>Jakob A.H.D Baalsrud Hauge</u> , Jannicke Baalsrud Hauge, Matthias Kalverkamp		10:40am - 11:00am Manufacturing Network Topologies for Sustainable Production <u>Oliver Antons</u> , Julia C. Arlinghaus
	11:00am - 11:20am Lifecycle Extension of industrial assets: A framework for feasibility assessment and strategy selection <u>Sofia Zappa</u> , Irene Roda, Marco Macchi	11:00am - 11:20am Towards End-of-Life Management of Photovoltaic Panels with Life Extension Approaches: Reuse, Recondition and Recycle <u>Bahador Bahramimianrood</u> , Shiva Abdoli, Rong Deng	11:00am - 11:20am Field-Based Assessment of Key Influence Factors for Throughput Time Prediction in Job Shop Manufacturing <u>Jonas Reinhold</u> , Alexander Rokoss, Matthias Schmidt	11:00am - 11:20am The Contribution of Cyber-Security for improving the Resilience of Supply Chains – The Need of Employee Training <u>Jannicke Baalsrud Hauge</u> , Ioana A Stefan		11:00am - 11:20am Experience-integrated Product Family Formation using Clustering Algorithms <u>Tobias Bein</u> , Ulf Bergmann, Oliver Antons, Julia C. Arlinghaus
	11:20am - 11:40am A Comprehensive Methodology for Assessing and Quantifying the Criticality of Component Obsolescence	11:20am - 11:40am The impact of environmental taxes and other factors on the ROI of introducing automated transport systems in factories <u>Tomiya Kimura</u> , Midori Sugihara	11:20am - 11:40am Resilient workforce planning for mixed-model assembly lines with training and learning effects <u>Carlos Miguel</u> , Steven Hoedt, El-Houssaine Aghezzaf, Johannes Cottyn	11:20am - 11:40am Suggestion and Evaluation of Unified Modeling Language Diagram Creation Tool using AR Technology <u>Kaoru Mitsuhashi</u> , Tomoaki Maruyama, Hiroshi Takeshita		11:20am - 11:40am PDCA perspective in energy management system according to ISO 50001 in the healthcare organization <u>Honorata Sierocka</u> , Wiesław Urban
						11:40am - 12:00pm Data Spaces as Enablers of Digital Twin

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	Rémy HUITEL, Yasamin ESLAMI, Catherine DA CUNHA, Olivier REMOND					Ecosystems: Challenges and Requirements Ana Carolina Chaves, Ana Nunes Alonso, António Lucas Soares
12:00pm - 1:00pm	Lunch					
1:00pm - 2:00pm		<p>Mechanism Design for Production, Service and Supply Chain Management - Part 1 Location: Olive A-B Chair: Ryuichiro Ishikawa Chair: Nariaki Nishino</p> <p>1:00pm - 1:20pm Matching Problems in Remanufactured Products for Product Service Systems in the Circular Economy <u>Ayato Kitadai</u>, Sinndy Dayana Rico Lugo, Nariaki Nishino</p> <p>1:20pm - 1:40pm Transformation of Many-to-One to One-to-One Matching Problems Through Replication <u>Sangjic Lee</u>, Ayato Kitadai, Ye Cheng, Nariaki Nishino</p> <p>1:40pm - 2:00pm Concept of manufacturing control for a workstation with sequence-dependent setup times in a make-to-stock production <u>Constantin Steffens</u>, Christopher Mundt, Hermann Lödging</p>		<p>Experiential Learning in Engineering Education - Part 2 Location: Shichirigahama 1 Chair: Jannicke Baalsrud Hauge Chair: Matthias Kalverkamp</p> <p>1:00pm - 1:20pm A Serious-Game Framework for Experiential Learning in Multi-Echelon Supply Chains <u>Shrushti Madrikar</u>, <u>Vittaldas V. Prabhu</u></p> <p>1:20pm - 1:40pm A Systematic Approach to Evaluate Player Experience in Project Management Serious Games <u>Francesco Moroni</u>, Giovanni Romagnoli, Francesco Zammori</p> <p>1:40pm - 2:00pm Gamifying Project Management: Insights from the Titan Mall Serious Game <u>Francesco Moroni</u>, Giovanni Romagnoli, Francesco Zammori</p>	<p>Theoretical and Practical Advances in Human-Centric, Resilient, and Sustainable Supply Chain Management - Part 1 Location: Shichirigahama 2 Chair: Aya Ishigaki Chair: Ziang Liu</p> <p>1:00pm - 1:20pm Local Explanation Method for Ordering Policy in Perishable Inventory Management Problem Using LLM and LIME Kohei Toda, Tatsushi Nishi, Ziang Liu</p> <p>1:20pm - 1:40pm A Multi-Period Multi-Objective Model for Sustainable Supply Chain Optimization using MILP Framework <u>Mst.Sumaya Akter</u>, Tatsushi Nishi, Ziang Liu</p>	<p>Digital Technologies in Manufacturing and Logistics: Exploring Digital Twin, IoT, and Additive Manufacturing - Part 1 Location: Shichirigahama 3 Chair: Eiji Morinaga Chair: Toshitake Tateno</p> <p>1:00pm - 1:20pm Prediction of the Roundness Error of Cylindrical Workpiece from Chucking Force Using Machine Learning <u>Kengo Kawai</u>, Shota Suginochi, Hajime Mizuyama</p> <p>1:20pm - 1:40pm Process Parameter Adjustment in Extrusion-Based Additive Manufacturing with Vertical Articulated Robots <u>Eito Ito</u>, Toshitake Tateno</p> <p>1:40pm - 2:00pm Modeling and Simulation of SBSRS-Based Goods-to-Person System <u>Yuma Kiyono</u>, Shota Suginochi, Hajime Mizuyama</p>

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2:00pm - 2:10pm	Break					
2:10pm - 3:30pm	Digital Track 1 Location: Rose A-B Chair: Eiji Morinaga Chair: Hironori Hibino 2:10pm - 2:30pm A Human Digital Twin Approach to Physical Hazard Management in the Manufacturing Environment: An Extensive Literature Review with a Conceptual Framework Rojanat Vongchaisaree, Shiva Abdoli	Mechanism Design for Production, Service and Supply Chain Management - Part 2 Location: Olive A-B Chair: Shota Suginochi Chair: Ryuichiro Ishikawa 2:10pm - 2:30pm Capacity-Driven Decision Model for Impact Assessment of Product Variants in Factory Systems Mehmet Demir, Tobias Kleinewächter, Matthias Schmidt		Enhancing Value Chain Resilience through Digital Technologies Location: Shichirigahama 1 Chair: Thomas Brunø Chair: Kjeld Nielsen 2:10pm - 2:30pm Serious Game to Promote Manufacturing as a Service Effect in Resilience of Supply Chain Borzoo Pourabdollahian, Margherita Emma Paolo Pero, Yasamin Eslami, Catherine Da Cunha	Theoretical and Practical Advances in Human-Centric, Resilient, and Sustainable Supply Chain Management - Part 2 Location: Shichirigahama 2 Chair: Ziang Liu Chair: Aya Ishigaki 2:10pm - 2:30pm Inventory Control Using a Lévy Process for Evaluating Total Costs under Intermittent Demand Ryoya Koide, Yurika Ono, Aya Ishigaki	Digital Technologies in Manufacturing and Logistics: Exploring Digital Twin, IoT, and Additive Manufacturing - Part 2 Location: Shichirigahama 3 Chair: Tatsuhiko Sakaguchi Chair: Nestor Fabian Ayala 2:10pm - 2:30pm Virtual Factories, Real-World Impact: Applying the Industrial Metaverse into the Manufacturing Process Viktoria Leutheuser, Julian M. Müller, Kai-Ingo Voigt
	2:30pm - 2:50pm Digital Twin For Building Asset Management: Challenges And Opportunities Xiaolu Wang, Shiva Abdoli	2:30pm - 2:50pm Optimal Strategy of Spot Sale and Presale in Dual Channel Food Supply Chain with Freshness and Carbon Emissions Satoshi Tazaki, Etsuko Kusukawa		2:30pm - 2:50pm Value Chain Resilience in Production Networks of Micro and Small Enterprises Julia Christina Markert, Aamir Waris, Stephanie von Riegen, Archit Sharma, Pascal Krenz, Lothar Hotz, Jens P. Wulfsberg	2:30pm - 2:50pm Predicting Mental Stress Induced by Interaction in Collaborative Order Picking Using Dynamic Bayesian Networks and Personality Traits of Workers Yurika Ono, Yuma Namiki, Seiko Taki, Aya Saito, Aya Ishigaki	2:30pm - 2:50pm Digital Twin, Digital Shadow or Digital Model? A Systematic Literature Review Pablo Gino Brarda, Gonzalo Fernandez, Nestor Fabian Ayala
	2:50pm - 3:10pm Investigating Cloud-Edge-Fog Computing Configuration for Robotics Application in SMEs in Industry 4.0 Bhuvan Tulani, Shiva Abdoli	2:50pm - 3:10pm Optimal Collection Strategy in a Dual-Channel Green Closed-Loop Supply Chain with Social Responsibility and Consumer Preferences under Government Intervention Ren Koike, Etsuko Kusukawa		2:50pm - 3:10pm Capability-Based Classification of Resilience KPIs and Research Directions Fernanda Assef, Rasmus Andersen, Ann-Louise Andersen, Thomas Brunø, Kjeld Nielsen	2:50pm - 3:10pm Efficiency Classification of Picking Methods in Warehouses Using Dynamic Programming Considering Temporary Storage and Picker Capacity Constraints Fumikazu Hoyano, Aya Ishigaki	2:50pm - 3:10pm A new method for high-resolution frequency analysis in periodic burst noise environments Shugo Terasawa, Yukihiro Kamiya
	3:10pm - 3:30pm Measuring Agility and Resilience in Engineer-to-Order Contexts Kunruthai Meechang, Khaled Medini, Margherita Pero	3:10pm - 3:30pm				3:10pm - 3:30pm Role of Additive Manufacturing and Data Space in Sustainable and

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		Impact of Transshipment Prices on Food Waste in a Two-Location Restaurant Inventory System <u>Takanori Ishimaru</u> , Shota Suginouchi, Hajime Mizuyama			3:10pm - 3:30pm Designing Sustainable Blood Distribution Networks: A Simulation Approach from the Bergamo Province Case Study <u>Alexandra Lagorio</u> , Claudia Piffari	Resilient Manufacturing Supply Chain <u>Yoshihiro Norikane</u> , Hidekazu Nishimura
3:30pm - 4:00pm	Coffee Break					
4:00pm - 5:00pm	Digital Track 2 Location: Rose A-B Chair: Eiji Morinaga Chair: Tomomi Nonaka 4:00pm - 4:20pm Ranking Big Data Analytics Micro-Foundations for the Resilience of Agri-Food Retailers: A Multi-criteria Decision-Analysis Study <u>Alireza Asgari</u> , Morteza Alaeddini, Paul Reaidy 4:20pm - 4:40pm Distribution-Focused Clustering for Revealing Patterns in Container Logistics <u>André Lima</u> , Eugénio Rocha, Mara Madaleno, Pedro Macedo 4:40pm - 5:00pm Attaining Environmental Sustainability through Product-Service Systems Practices: A Global Study	Mechanism Design for Production, Service and Supply Chain Management - Part 3 Location: Olive A-B Chair: Nariaki Nishino Chair: Ryuichiro Ishikawa 4:00pm - 4:20pm Enhancements and Evaluation of Meta-Heuristic Scheduling Auction Using Genetic Algorithm <u>Genshin Okuni</u> , Shota Suginouchi, Hajime Mizuyama 4:20pm - 4:40pm Modeling and Comparison of U.S. and Japanese Lettuce Supply Chain System Architecture Emmanuel Gonzalez, Paul Grogan, Deniz Karakoc, Hajime Mizuyama, Mizuho Sato, Shota Suginouchi, Mobin Zarreh			Theoretical and Practical Advances in Human-Centric, Resilient, and Sustainable Supply Chain Management - Part 3 Location: Shichirigahama 2 Chair: Aya Ishigaki Chair: Ziang Liu 4:00pm - 4:20pm Shorter and more agile supply chains in Industry 5.0: Case studies provide insights into manufacturing management theory. Atle M Christiansen., Kenn Steger-Jensen, <u>Kenneth Vidskjold</u> 4:20pm - 4:40pm Industry 5.0 – How to measure? <u>Biørnar Henriksen</u> , Maria Kollberg Thomassen, Carl Christian Røstad	Digital Technologies in Manufacturing and Logistics: Exploring Digital Twin, IoT, and Additive Manufacturing - Part 3 Location: Shichirigahama 3 Chair: Tatsuhiko Sakaguchi Chair: Marvin Carl May 4:00pm - 4:20pm AI-Driven Multisensor Quality Inspection: A Focus on Robotic Wire Harness Assembly <u>Annalena Hartmann</u> , Zetong Liu, Simon Lamprecht, Patrick Bründl, Jörg Franke 4:20pm - 4:40pm Optimization of Truck Loading and Delivery Routes Using an Environment-Adaptive Genetic Algorithm <u>Tatsuhiko Sakauchi</u> , Yuki Nakadan 4:40pm - 5:00pm Large Language Models for heuristics to solve

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	<div>Dragana Slavic, Giuditta Pezzotta, Selver Softic, Ugljesa Marjanovic, David Romero, Nenad Simeunovic, Slavko Rakic</div>					<div>Aggregate Production Planning</div> <div><u>Marvin Carl May</u>, Toshiya Kaihara</div>
5:30pm - 6:00pm	<div>Closing Ceremony</div> <div>Location: Shichirigahama 1-2</div>					

Date: Thursday, 04/Sept/2025	
	Industrial Tour