- The International Academy for Production Engineering
- College International pour la Recherche en Productique
- Internationale Akademie für Produktionstechnik

DICMAPI
University of Naples
Federico II

CIRP ICME '25 – 19th CIRP International Conference on

INTELLIGENT COMPUTATION IN MANUFACTURING ENGINEERING

Innovative and Cognitive Production Technology and Systems

16 - 18 July 2025, Ischia (Gulf of Naples), Italy

Fraunhofer J_LEAPT Naples

Joint Laboratory of Excellence on Advanced Production Technology
(Fh-IWU Chemnitz & UniNaples Federico II)

	Tuesday, July 15 - Conference Registration and Welcome
18.00 - 19.00	**Conference Registration** at Hotel Continental Ischia, Via M. Mazzella 80, Ischia
19.30	***Welcome Reception and Get Together at 19.30, Hotel Continental Ischia***

DAY 1	***Wednesday, July 16 - Plenary Session: 09.15 - 11.00***			
	CONFERENCE OPENING AND PLENARY SESSION			
08.00-09.00	**Late Registration**			
09.15 - 11.00	**Conference Opening and Greetings** *Roberto Teti, CIRP ICME '25 Conference Chairman, Italy* **Plenary Session Presentations** *Konstatinos Bouzakis (Greece)*, Investigation on the Implementation of Optical Refinements in the Parthenon Frieze Reliefs Using 3D Laser Scanning and Reverse Engineering Techniques *Luigi Nele, Davide Santoro (Italy),* 'NEMESI' R&D&I Project: Current Status and Ongoing Activities *Niels König (Germany),* Trends in Digitalization in Production - How to Join Forces with Industry and Academia			
11.00 - 11.30	***Coffee Break***			
DAY 1	***Wednesday, July 16 - Morning Sessions: 11.30 - 13.30***			
	SESSION A1 **Chair:** **Konstantinos Bouzakis**	**SESSION B1** **Chair:** **Ahmed Damir**	**SESSION C1** **Chair:** **Paulo Aguiar**	**SESSION D1** **Chair:** **Pedro Oliveira**
	Cutting Technologies I	**Additive Manufacturing I**	**Quality, Metrology & Testing I**	**Advanced Materials & Nontraditional Manufacturing**
11.30 - 11.45	Determination of the cutting tool–chip contact length depending on tool coating during orthogonal cutting of stainless steel AISI 316L *Pascal Volke; Carl Christian Dreyer; Gero Polus; Peer Woizeschke; Dirk Biermann (Germany)*	Multi-laser control for DED-LB/M produced Ti-6Al-4V mesostructure *Nicolas Macallister; Sander Grønnerød; Siri Marthe Arbo; Amund Ugelstad; Jesper Silwer; Vegard Brøtan (Norway)*	SHM-based Method using Electret Microphone to Assess Monolayer Part Condition in FDM *C. Soares Junior; P. R. Aguiar; F. I. Ferreira; V. Kennerly; D. D'Addona; T. G. Lopes (Brasil)*	A mean-field method for effective computation of CFRP cutting simulations *Enrico Barth; Andrey Dovgal; Yingjie Zhan; Ismail Caylak; Eckart Uhlmann; Richard Ostwald (Germany)*
11.45 - 12.00	Calculation and determination of induced chatter marks on the borehole surface in BTA deep hole drilling *Lucas Brause; Sebastian Michel; Robert Schmidt; Dirk Biermann (Germany)*	Novel AI-based melt pool monitoring technique for stability assessment of the Laser-DED process *Moritz Jens; Nik Schwichtenberg; Sebastian Hartmann; Peter Mayr; Alexander Mattes; Thore Gericke (Germany)*	Framework for Online Surface Defects Detection Under Uncertainty Based on AI Techniques – Application to Rail Production *Noé Farrugia; Wahb Zouhr; Eric Perruzza; François Cristofari; Jean-Yves Dantan (France)*	Energy-Based Acoustic Emission Signal Processing for Delamination Detection in CFRP Composites *Mohamad Ahmad Barakat; Paulo Monteiro de Carvalho Monson; Dennis Brandão; Alessandro Simeone; Pedro Oliveira Conceição Junior (Brasil)*
12.00 - 12.15	Evaluation of the Adhesion and Vibration Suppression Potential of Body Generated Support Structures in Milling Thin-Walled Components *Simon Jaquet; Timo Platt; Jonas Baumann; Dirk Biermann (Germany)*	Advanced Support Strategies for Powder Bed Fusion of Metals with Laser Beam – a Support-Pathfinding Algorithm *Dominick Holman; Moritz Kolter; Johannes Henrich Schleifenbaum (Germany)*	Improving Supervised Machine Learning Performance in Optical Quality Control via Generative AI for Dataset Expansion *Dennis Sprute; Hanna Senke; Holger Flatt (Germany)*	Development of a New Process Chain for End-of-Life Management and Recycling of Glass Fibre Reinforced Polymers into New Materials *Eckart Uhlmann; Mitchel Polte; Toni Hocke; Robert Jan Neuschäfer (Germany)*

12.15 - 12.30	Investigation of the stationary and non-stationary process behaviour with regard to time-variant process stability and progressive flank wear *Rafael Garcia Carballo; Simon Jaquet; Jonas Baumann; Nils Denkmann; Dirk Biermann; Jörg Debus; Wolfgang Tillmann (Germany)*	Integration of Non-Contact Surface Inspection into Precision Post-Processing of Additively Manufactured Metal Components *Julian Polte; Eckart Uhlmann; Tahmineh Naderi; Stefanie Bode; Altina Myrtaj (Germany)*	Hierarchical Cross-Silo Federated Learning for Vision-Based Quality Control in Manufacturing *Ali Nazeri; Christiane Plociennik; Tatjana Legler; Martin Ruskowski (Germany)*	Parameter Optimization and Material Characteristics for Multi-axis Additive Manufacturing of CF/PEEK Composites *Hanlin Zheng; Changkun Sun; Yi Yao; Nanya Li (China)*
12.30 – 12.45	Open-Source Framework for Automated Milling Experiments: G-Code Adaptation and NC Data Acquisition with Siemens Industrial Edge *Eckart Uhlmann; Mitchel Polte; Martin Heper (Germany)*	Conditional Image-to-Image Translation for Generating Reference Near-Infrared Images from Scan Vector Data in PBF-LB/M *Sven Erb; Sebastian Enk; Daniel Lorrig; Johannes Henrich Schleifenbaum (Germany)*	From Foundations to Pipelines: Data-Centric AI for Visual Quality Assurance *Michael Nieberl; Alexander Zeiser; Holger Timinger (Germany)*	Mini Critical Review on Computational Modeling and Processing of Fiber-Reinforced Thermoplastic Composites for 4D Printing Applications *Sergio Gonzalez-Serrud (Panama)*
12.45 – 13.00	AI-based approach for the prediction of cutting forces by laser-based three-dimensional tool measurement in drilling *Dominik Hasselder; Eckart Uhlmann (Germany)*	Process Development and Optimization in Laser Beam Direct Energy Deposition: A Comprehensive Methodology *Ahmed Damir; Mohamed Abubakr Hassan; Eric Poirier; Ahmad Sadek; Mahmoud Hassan (Canada)*	Data Analysis for Robot-Guided Sanding Processes to Recognize Surface Properties *Adrian Schüttauf; Antje Ahrens; Valentin Richter-Trummer; Toni Rozsahegyi; Steve Pügner (Germany)*	Finite element modelling of single dry-adhesive microstructures with a hyperelastic material model *Marie Kolumbe; Thore Bochert; Dominika Thiede; Andreas Rademacher; Kirsten Tracht (Germany)*
13.00 – 13.15	Thermal Analysis in Drilling Difficult to Cut Materials using Cryogenic Minimum Quantity Lubrication (cMQL) *Martin Sicking; Conrad Breer; Ulf Hensler; Jannis Saelzer; Dirk Biermann (Germany)*	Multi-Material Failure Prediction for Fused Filament Fabrication with Supervised Learning Models *Robrecht Abts; Jie Zhang; Ming Wu; Mathias Verbeke; Eleonora Ferraris (Belgium)*	GDPR-Compliant Person Recognition in Industrial Environments Using MEMS-LiDAR and Hybrid Data *Dennis Basile, Dennis Sprute, Helene Dörksen, Holger Flatt (Germany)*	Evaluation of Boron-Doped Diamond Electrodes for Enhanced Tool Wear Resistance in Die-Sinking EDM *Eckart Uhlmann; Mitchel Polte; Sergio Lezama; Konstantin Bischoff; Mohammad Khalil (Germany)*
13.15 – 13.30	Conditions for assigning the active cutting force during turning to an equivalent developed in slot milling *K.–D. Bouzakis; E. Bouzakis; M.–G. Gökcen; A. Bouzakis; M. Ipekoglu; E. Osmanoglu; A.–U. Batuk (Greece)*		Digital quality passport for optimizing cross-company failure management within value networks *Maurice Meyer, Denis Etemi, Paul-David Tilgner, Roland Jochem (Germany)*	Empirical Model for the Influence of EDM Parameters on Crater Geometry and Molten Material Reattachment in Dry-EDM *Eckart Uhlmann; Mitchel Polte; Sergio Lezama; Mohammad Khalil; Konstantin Bischoff (Germany)*
13.30 – 15.00	***Lunch***			

DAY 1	*Wednesday, July 16 - Afternoon Sessions: 15.00 - 17.15*			
	SESSION A2 **Chair:** **Mahmoud Hassan**	**SESSION B2** **Chair:** **Luigi Galantucci**	**SESSION C2** **Chair:** **Vidosav Majstorović**	**SESSION D2** **Chair:** **Luigi Nele**
	Cutting Technologies II	**Additive Manufacturing II**	**Digital & Smart Factory I**	**'NEMESI' Special Session**
15.00 - 15.15	Detection of Chips Entangled with Workpieces Using Transformer-Based Autoencoder *Hayato Kimura; Ryuki Takahashi; Yasuhiro Kakinuma (Japan)*	Part-individual process adaption through layer-based geometry analysis in powder bed fusion *Holger Merschroth; David Zentgraf; Philipp Drossel; Magnus von Elling (Germany)*	Enhancing Deviation Management Using Knowledge Graph based Retrieval-Augmented Generation System *Evrim Cicek; Yuxi Wang; Joachim Metternich (Germany)*	Monitoring Wire Arc Additive Manufacturing of Invar 36 Alloy Using Acoustic Emission Signals and K-Means Clustering Technique *Alfredo Raia; Giulio Mattera; Alessandra Caggiano; Luigi Nele (Italy)*
15.15 - 15.30	Modeling of Broaching Tool Wear for Complex Geometries *Christoph Zachert; Markus Meurer; Thomas Bergs (Germany)*	Optimisation of Density and Surface Roughness in Selective Laser Melting of Ti6Al4V *Mohamed H. Mourad, Mahmoud Ahmed El-Sayed, Eman Elnabawy, Abdulrahman Obaid, Islam Shyha (Egypt)*	Verification of Workflows and Processes for Early Assurance of System Functionality in Critical Action Planning *Iris Graessler; Marcel Ebel (Germany)*	Gesture Based Control in Smart Manufacturing Using Mixed Reality and Virtual Reality *Elena Manoli; Giulio Mattera; Luigi Nele (Italy)*
15.30 – 15.45	A Data-Driven Approach for the Estimation of Turbine Blade Eigenfrequencies During Milling Processes *Alejandro Delgadillo; Stefan Schröder; Pascal Kienast; Valentina König (Germany)*	Comparison of Active Learning Strategies for Process Window Identification Using Classification Techniques in Wire-Arc Additive Manufacturing *Manuel Lopez Cabrera; Wahb Zouhri; Sandra Zimmer-Chevret; Jean-Yves Dantan (France)*	From Feedback to Action: Applying Large Language Models for Thematic Extraction and Summarization in Customer Satisfaction Surveys *Laura Antonini; Vincenzo Manzoni; Claudio Giardini; Mariangela Quarto (Italy)*	Operational Performance and Economic Considerations in Automating Regional Aircraft Fuselage Assembly Enabled by Digital Twin *Rosa Abate; Raffaela Casciello; Guido Guizzi; Ilaria Martino; Fiorenza Meucci; Luigi Nele; Flavio Spagnuolo (Italy)*
15.45 - 16.00	Investigation on the Flow Behaviour of Abrasive Magnetorheological Fluids for the Edge Preparation of Micro-Milling Tools *Eckart Uhlmann; Christian Lahoda; Fabian Sordon; Jürgen Maas (Germany)*	Influence of debinding method on the copper parts characteristics realized through Material Extrusion *Alessandro Pellegrini; Fulvio Lavecchia; Maria Grazia Guerra; Luigi Maria Galantucci (Italy)*	Use Cases in OPC UA Companion Specifications – Analysis and Assessment of Benefits for Industrial Communication *Tonja Heinemann; Andreas Wortmann; Oliver Riedel; Armin Lechler (Germany)*	A Comparative Study of MR-Based Hand Gesture Control and Teach Pendant Programming for Improving Human-Robot Interaction in Manufacturing *Elena Manoli; Giulio Mattera; Luigi Nele; Adelaide Marzano; Alessandra Caggiano (Italy)*
16.00 - 16.15	Enhancement of Cutting Force Estimation by Integrating a Disturbance Observer and Neural Network *Reo Saito; Yasuhiro Kakinuma (Japan)*	Model-based prediction of the optimal center distance in multi-bead wire arc additive manufacturing *Ludwig Siebert; Sebastian Landau; Kai-Uwe Beuerlein; Moritz Goeldner; Michael F. Zaeh (Germany)*	How to Improve Maintenance in Smart Mines *Vidosav Majstorović; Vladimir Simeunović; Dragan Stošić; Sonja Dimitrijević; Filip Todorović (Serbia)*	A Life Cycle Analysis-Based Comparison of WAAM, PBF, Machining and Casting Technologies for Aeronautical Alloys *Rosa Abate; Guido Guizzi; Giulio Mattera; Luigi Nele; Francesca Santillo (Italy)*
16.15 - 16.30	Collaborative Training of Tool Condition Monitoring Models Using Federated Learning *Daniel Piendl; Charlotte Winkler; Laura Zinnel; Andy Ludwig; Michael F. Zaeh (Germany)*	Towards a Definition for 7D Printing *Markus Brillinger; Jan Holzweber; Nina Pichler; Florian Lackner; Chiara Zwickl; Michael Bader (Austria)*	A Literature Review and Model Proposal for Digital Change in Industrial Companies *Tobias Eberhardt; Soraya Zenhari; Walter Schaaf; Johannes Kunze von Bischhoffshausen; Alexander Verl (Germany)*	Redesign and Structural Verification of a Bracket for Aeronautical Applications *Matteo Bruno; Enrico Armentani; Luca Esposito; Giulio Mattera; Luigi Nele (Italy)*
16.30 - 16.45	Development of Supervised and Unsupervised Tool Wear Prediction Methods for End Milling *Takahiro Yoshizumi; Hiroshi Murakami; Akio Katsuki; Tomohiro Matsuda (Japan)*	An Open Control Architecture for a Universal Laser Machine *David Hecht; Colin Reiff; Christian Schmittner; Alexander Verl (Germany)*	Identifying Future Competence Demands in Production Companies for Strategic Decision-Making *Iris Graessler; Deniz Oezcan (Germany)*	A Comparative Evaluation of BLE and UWB-Based RTLS for Indoor Asset Tracking in Aerospace Manufacturing Environments *Mario Fiorentino; Pasquale de Rosa; Raffaela Prisco; Salvatore Rampone (Italy)*
16.45 – 17.00	Efficient ML for Industrial Robot Stiffness Prediction: Increased Fidelity in Real-Time Applications *Mahmoud Hassan; Bruno Monsarrat; Julien-Mathieu Audet; Gabriel Côté; Ahmad Sadek (Canada)*	Geometry segmentation for the production of lattice structures using combined WAAM and stud welding *Felix Riegger; Niklas Joerger; Michael F. Zaeh (Germany)*	Tool Cost Management in Digital Manufacturing *Jovan Živković, Vojin Vukadinović, Vidosav Majstorović (Serbia)*	NEMESI Project for Digitalization and Automation in Aerostructures *Danilo Cannoletta; Davide Santoro (Italy)*
20.00	***Gala Dinner at 20.00, Hotel Continental Ischia***			

DAY 2	*Thursday, July 17 - Morning Sessions: 09.00 - 13.30*			
	SESSION A3 **Chair:** **Sharifu Ura**	**SESSION B3** **Chair:** **Maria Ortega**	**SESSION C3** **Chair:** **Pedro Oliveira**	**Session D3** **Chair:** **Igor Balaz**
	Cutting Technologies III	**Additive Manufacturing III & Sustainability in Manufacturing I**	**Quality, Metrology & Testing II**	**'BioMeld' Special Session & Biological Transformation in Manufacturing**
09.00 – 09.15	Analysing the tool life potential of cutting tools in comparison of expert judgements and wear measurements using machine learning *Björn Papenberg; Dariusch Melyooni; Kirsten Tracht (Germany)*	Challenges and opportunities in digital twin–driven additive manufacturing *Maria De Los Angeles Ortega Del Rosario; Antonio Alberto Jaén Ortega (Panama)*	Adapting Vision–Language Models for Human–Readable XAI in Industrial Object Detection *Sarvenaz Sardari; Freddy Fernandes; S. Yelvande; Jose Moises Araya-Martinez; Alina Roitberg (Germany)*	A Human-in-the-Loop Framework for Intelligent Manufacturing of Complex Multi-Material Systems *Igor Balaz (Serbia)*
09.15 – 09.30	A fast and scalable approach to creating labelled data for optical, deep learning-based tool wear measurement *Ivan Robuschi; Sebastian Lang; Markus Maier; Ruben Zwicker; Konrad Wegener; Markus Bambach (Switzerland)*	Key parameters in numerical modeling for extrusion-based additive manufacturing: A review and case study *Maria De Los Angeles Ortega Del Rosario; Edgar Mauricio Vásquez-Ocaña; Rafael Castillo Watts; Antonio Alberto Jaén Ortega (Panama)*	An FPGA Based Optimization for Real-Time Processing of Ultrasonic Object Triangulation Data *K. Blümel, F. Hölzel, M. Kuhl (Germany)*	Approaches for the Processing of Bifunctional Assemblies as Coating Materials for Surface Functionalization – A Literature Review *Fan Yang; Lars Stauder; Stephan Hillmann; Gonsalves Grünert; Philipp Niemietz; Thomas Bergs; Ulrich Schwaneberg (Germany)*
09.30 - 09.45	Ion-Implanted Boron-Doped Diamonds as Temperature Sensor for Thermal Effects during Machining of PMMA in Ultra-Precision Turning *Eckart Uhlmann; Julian Polte; Kai Thißen; Julius Tschöpel; Toni Hocke (Germany)*	Biomaterials for Additive Manufacturing: Large-Scale Sustainable Applications *Melany Nicole Medina Pérez; Maria De Los Angeles Ortega Del Rosario; Antonio Alberto Jaén Ortega; Miguel Chen Austin (Panama)*	Automated Measurement System for Angle & Length Detection of Bent Sheet Metal Parts using a Laser Light Scanner *C. Jandl; B. Girsule; P. Kramml; T. Moser (Germany)*	Biologicalisation in Forming: A Systematic Review and Potential Analysis for Bio-Inspired, Bio-Integrated, and Bio-Intelligent Technologies *Sebastian Heidrich; Mohaned Alaluss; Robin Kurth; Steffen Ihlenfeldt (Germany)*
09.45 - 10.00	Monitoring the Wear of Cutting Tools in Milling Applications *Hatim Laalej; Panpan Xu (UK)*	Ultra Low Power Out of Band Communication for Industrial Internet of Things Devices *Sean Nagel; Gernod Heilmann; Holger Flatt (Germany)*	Optimizing Injection Molding Quality with Reinforcement Learning: A Comparative Study of Algorithms *Pia Wistuba; Lennard Cremer; Reinhard Schiffers (Germany)*	Releasing Kinematics for Energy Efficient Grippers Based on Dry-Adhesive Microstructures *Thore Bochert; Robert Nowotny; Kirsten Tracht (Germany)*
10.00 - 10.15	Nanopolycrystalline Diamond Cutting Tools: Comprehensive Wear Analysis in Machining Binderless Cemented Carbide *Eckart Uhlmann; Mitchel Polte; Toni Hocke; Casey Polte (Germany)*	Energy-efficient cooling time reduction in injection moulding process through turbulent flow in cooling channels *Felix Mehrens; Stefan Kerkenberg; H.-J. Endres; Berend Denkena; Christian Wege (Germany)*	Zero-Shot Multi-Criteria Visual Quality Inspection for Semi-Continuous Production Environments via Real Time 3D Digital Twin Simulation *Jose Moises Araya-Martinez; Gautham Mohan; Kenichi Hayakawa Bolandieta; Sarvenaz Sardari; Jens Lambrecht; Jörg Krüger (Germany)*	Bio-Integrated Product Manufacturing – Part I: Fabrication Processes *Roberto Teti; Alessandra Caggiano (Italy)*
10.15 - 10.30	Development of a signal processing method for manufacturing processes using generative artificial intelligence and human expertise *Haruka Sasaki; Angkush Kumar Ghosh; Sharifu Ura (Japan)*	An Empirical Comparison of Machine Learning Methods for Thermal Load Forecasting in Industrial Production Systems *Robin Zink; Tobias Lademann; Matthias Weigold (Germany)*	Sinthetic Similarity Search in Automotive Production *Christoph Huber; Ludwig Schleeh; Dino Knoll; Michael Guthe (Germany)*	Bio-Integrated Product Manufacturing – Part II: Production Planning *Alessandra Caggiano; Roberto Teti (Italy)*
10.30 - 10.45	Fundamental Analysis of Process Performance in Conventional and Ultrasonic Machining of Graphite Material Using Single Crystal Diamond Tools *Eckart Uhlmann; Mitchel Polte; Toni Hocke; Fabian Felder (Germany)*	Approach for determining feasible demand flexibilities for external provision in production *Lukas Wittmann; Johannes Schilp (Germany)*	Bridging the Gap Between Quality and Security: TQM as the Basis for Cyber Resilience in Smart, Manufacturing SMEs *Lena von Damaros; Roland Jochem; Lea Maria Pollacek (Germany)*	
10.45 – 11.00	Evaluation of a Vacuum Clamping System for Machining of Deformation-Sensitive Polymers *Timo Platt; Justin Figge; Simon Jaquet; Jonas Baumann; Dirk Biermann (Germany)*	Transfer Learning–based Planning and Control for Manufacturing Plant Retrofitting *Holger Flatt; Daniel Toth; Gernod Heilmann; Jonas Huber; Fazel Ansari (Austria)*	Synthetic Industrial Object Detection: GenAI vs. Feature-Based Methods *Jose Moises Araya-Martinez; Adrián Sanchis Reig; Gautham Mohan; Sarvenz Sardari; Jens Lambrecht; Jörg Krüger (Germany)*	
11.00 – 11.30	***Coffee Break***			

DAY 2	SESSION A4 *Chair:* Adelaide Marzano	SESSION B4 Chair: Islam Shyha	SESSION C4 Chair: Thomas Ackermann	SESSION D4 Chair: Nariaki Nishino
	Production Systems & Networks I	**Sustainability in Manufacturing II**	**Battery Production**	**'IWES' Symposium**
11.30 - 11.45	Development of an analytical approach for planning uncertainty in medium-term capacity planning *Florian Girkes; Stefan Koch; Johannes Block; Ralf-Peter Kroschel; Jean Pierre Bergmann (Germany)*	Utilization of Inherent Potentials for Carbon Footprint Reduction through Influence and Interdependency Identification and Modelling *Vincent Kalchschmid; Anja Munzke; Rüdiger Daub (Germany)*	Modelling the Energy Demand for Dry Rooms in Lithium-Ion Battery Production *Justus Benteler; Maximilian Lechner; Marcel Berling (Germany)*	Introduction to Emergent Synthesis *Nariaki Nishino (Japan)*
11.45 - 12.00	A multi-agent intelligent assistant for production system planning in virtual environments *Tobias Delago; Felix Theurer; Daniel Wagner; Anja Munzke; Rüdiger Daub (Germany)*	Optimize Process Parameters in Hybrid Manufacturing for Carbon Footprint Reduction *Vasiliki C. Panagiotopoulou; Evangelia Xydea; Panagiotis Stavropoulos (Greece)*	Production of lithium-ion batteries with fabric-based current collectors *Benedict Ingendoh, Pia Christian, Sebastian Wolf, Henrik Born, Heiner Heimes, Achim Kampker, Manfred Danziger (Germany)*	Data-Driven Control System with Kalman Filter for the Food Manufacturing Process *Takashi Tanizaki; Rei Akamatsu (Japan)*
12.00 - 12.15	Adaptive Reinforcement Learning for Dynamic Production Control *Thomas Kern; Patrick Stöckermann; Alessandro Immordino; Christina Reuter (Germany)*	Energy Optimization of a Redundant (7 DoF) Industrial Robot *Marco Schneider; Attique Bashir; Rainer Müller (Germany)*	Methods and Models for Improved Detection of Surface Defects in the Coating Process of Lithium-Ion Batteries *Johannes Lindenblatt; Noah Streidel; Johannes Bauer; Matthias Leeb; Rüdiger Daub (Germany)*	Dynamically Coordinating Electric Vehicles: Impacts on Mobility-Service and Electricity Markets *Nobuhito Kon; Morimitsu Kurino; Yuki Minomo; Kyoko Nawa; Isamu Takahara (Japan)*
12.15 - 12.30	Automated Machine Learning in Production Planning and Control – A Systematic Review *Rick Hörsting; Kevin Gleich; Clara Stetter; Martin Benfer; Gisela Lanza (Germany)*	Piezoelectric EBS Nanofibrous Membranes for Low-Power Sensors Applications *Eman Elnabawy; In Fong Lei; Mohamed H. Mourad; Mahmoud A. El-Sayed; Abdulrahman Obaid; Islam Shyha (UK)*	A Data Pipeline for Anomaly Detection in Continuous Coating Processes in Battery Production *Leonard Wilhelm Sensmeier, Nils Christian Hamacher, Alexander Mattern (Germany)*	Stabilization of PV Energy Network by Distributing Patterns of EVs *Takahiro Noguchi; Hiroyasu Ando; Yumi Watahiki; Isamu Takahara (Japan)*
12.30 - 12.45	Mapping Self-Organization Technologies to Decision Problems in Production Planning and Control *Martin Krockert; Marvin Matthes; Torsten Munkelt (Germany)*	Optimizing Long-Term Supplier Selection and Development for Recyclable Materials under Consideration of Short-Term Production Process Demands *Kevin Gleich; Moritz Hörger; Martin Benfer; Gisela Lanza (Germany)*	Method for communicating production system planning requirements using BIM methodology throughout design and execution planning *Natalja Rube; Sarah Anika Janzen; Arno Schmetz; Achim Kampker (Germany)*	Emergent Synthesis and Effectuation Theory: Designing Artifacts in a VUCA World *Takeshi Takenaka (Japan)*
12.45 - 13.00	Component-based Design and Optimization of Reinforcement Learning for Job-Shop Scheduling *Sven Cellary; Rene Berger; Vincent Lanzinger; Fabian Erlenbusch; Nicole Stricker (Germany)*	Analyzing Model-Based Cross-Generational Modelling of Products and Circular Economy in the Model of SGE – System Generation Engineering *Kristian Vlajic; Gabriel Moser; Alex Martin; Tobias Düser; Albert Albers (Germany)*	Data-driven Predictive Maintenance in Battery Production *David Roth; Thomas Ackermann; Leonardo Knauer (Germany)*	Optimizing Threshold for Crowdsourcing-Based Manufacturing: A Game-Theoretic Approach *Takuma Kurihara; Ryo Miyajima; Mizuki Kobayashi; Sanjic Lee; Kohei Nishiyama; Nariaki Nishino (Japan)*
13.00 - 13.15	Cross-level production planning and control in order production *Paul Gerds; Bastian Ernst; Konrad Jagusch; Jan Sender (Germany)*	Impact of Multiple Recycling and Thermo-Oxidative Ageing on the Physico-Chemical Properties of Metallocene and Ziegler-Natta Polypropylene *Niklas Rode; Madina Shamsuyeva; Hans-Josef Endres (Germany)*	Knowledge Graph Creation from Unstructured Maintenance Documentation: An LLM-Based Approach *Julian Granitza; Antje Fitzner; Thomas Ackermann; Armin Stein (Germany)*	Systems Resilience and Emergent Synthesis *Nobutada Fujii (Japan)*
13.15 - 13.30	CausalPlan: Integrating Causal Models to Estimate Processing Times for Production Plans *Marvin Matthes; Martin Krockert; Torsten Munkelt (Germany)*	Software Architecture for Sustainability Assessment in Product Value Chains *Iris Graessler; Sven Rarbach (Germany)*	Integration of an Inline Fuzzy Controller for Slot Die Coating of Battery Electrodes *Florian Denk; Florian Triebskorn; Sebastian Schabel; Jürgen Fleischer (Germany)*	
13.30 - 15.00	***Lunch***			

DAY 2	*Thursday, July 17 - Afternoon Sessions: 15.00 – 17.15*			
	SESSION A5 Chair: Alessandra Caggiano	**SESSION B5 Chair: Gianfranco Genta**	**SESSION C5 Chair: Luca Mastrogiacomo**	**SESSION D5 Chair: Niels König**
	Production Systems & Networks II	**Sustainability in Manufacturing III**	**Assembly I**	**'ICNAP' Special Session**
15.00 - 15.15	A Model Predictive Control Approach Solving Flexible Job Shop Rescheduling Problems with Material Delivery Delays *Julian Herrmann; Joachim Metternich (Germany)*	An Approach for Modelling Product Structures for the Disassembly of Unknown Mechanical Products *Marc Ahrens; Finn Bail; Fabian Erlenbusch; Nicole Stricker; Gisela Lanza (Germany)*	A Systematic Approach to Efficient Rework Management in Industrial Assembly *Sarah Zimmer; Lennard Margies; Rainer Müller (Germany)*	Identification and Analysis of Potentials and Challenges in the Development of Product-Specific Traceability in Large Scale Battery Cell Production *Thomas Ackermann; Julian Wonneberger; Jonathan Krauß (Germany)*
15.15 - 15.30	Quantification of Input Factors for Determining Planned Order Lead Times in Job Shop Production Using Machine Learning: A Case Study *Patrick Jaenecke; Alexander Rokoss; Matthias Schmidt (Germany)*	From forest to framework: Wood-based construction profiles *Michael Geueke; Rainer Steinheimer; Christophe Kuhnhen; Martin Manns; Bernd Engel (Germany)*	Digital Platform for Agile Assembly Sequence Recommendations *Günther Schuh; Esben Schukat; Nils Lehde genannt Kettler; Manuel G. J. Lauer; Leander Wessing; Amr I. Musa (Germany)*	Enabling Remanufacturing through Traceability: Connecting First and Second Life of Lithium-Ion Batteries *Thomas Ackermann; Alexander D. Kies; Manuel Blömker (Germany)*
15.30 - 15.45	Towards Automated Rescheduling: a Framework for Extracting Domain Knowledge in Production Planning and Control *Florian Pleier; Jonathan Wurth; Victor Gerling; Marcus Albrecht; Michael Heider; Jörg Hähner; Johannes Schilp (Germany)*	Multi-objective optimization of a sterilization process in a fruits and vegetables processing industry *Alberto Piovano; Elisa Verna; Gianfranco Genta; Maurizio Galetto (Italy)*	Enhancing Data-Driven Root Cause Analysis in Dynamic Manufacturing Environments through Drift Detection *Angela Klassen; Dominik Pietsch; Uwe Wieland; Jivka Ovtcharova; Steffen Ihlenfeldt (Germany)*	Designing and Validating a Spatially-Resolved Traceability System of Quality Characteristics and Process Parameters in Roll-to-Roll Processes for Electrode Production of Lithium-Ion Batteries *Thomas Ackermann; Daniel Sökefeld; Fabian Kux; Julian Wonneberger (Germany)*
15.45 – 16.00	Temporal Flexibility in the Flexible Job Shop Scheduling Problem *Andreas Leinenbach; Marcus Albrecht; Johannes Schilp (Germany)*	A Data-Driven Approach to Reducing Lead Times and Costs in Spirit Bottling Using Industry 4.0 Technologies *Adelaide Marzano; Michal Wojcik (UK)*	Decision Support on Manufacturing and Assembly Technologies in Electrolyzers for Scalable, Modular Factory and Production Concepts *Günther Schuh; Esben Schukat; Nils Lehde genannt Kettler; M. Walotka; M. Scholz (Germany)*	Categorization of Sustainability-Focused Applications for Traceability Systems in Battery Production *Alexander D. Kies; Nora Schelte; Julian Röder; Robert H. Schmitt (Germany)*
16.00 - 16.15	Simulation Based Production Planning and Control in Small and Medium Enterprises *Laura Robl; Konrad Jagusch; Jan Sender (Germany)*	Investigation of Critical Machine Parameters for Handling Limp Fuel Cell Components Using Modelling Approaches *Ling Ma; Sebastian Schabel; Jürgen Fleischer (Germany)*	Integrating Cognitive and Executive Function Analysis with Assessment Tools: Toward Ex-Ante Assessment of Cognitive Workload in Manufacturing *L. Mastrogiacomo; R. Gervasi; M. Capponi; A. Ciminaghi; R. A. Allegretta; F. Franceschini (Italy)*	Conceptualization Framework for IT Architectures of Traceability Systems Enabling Sustainability-Focused Applications in Battery Cell Production *Alexander D. Kies; Daniel Dieckmann; Thomas Ackermann; Robert H. Schmitt (Germany)*
16.15 - 16.30	Lean Manufacturing as a Service – Key Factors for the Integration into Production Processes *Götz Müller; Roland Jochem (Germany)*	Teaching Sustainable Production: A Gamification Approach *Markus Brillinger; Georg Wagner; Michael Bader (Germany)*	Evaluating an Assembly- and Disassembly-Oriented Expansion of Modular Function Deployment through a Workshop-Based Assessment *Fabio Marco Monetti (Sweden)*	Digital Twin Enabled Dynamic Life Cycle Inventory in Battery Cell Production *Alexander D. Kies; Sebastian Schönleben; Niels König; Robert H. Schmitt (Germany)*
16.30 - 16.45	Quantitative Resilience Assessment on the Shop Floor: A Systematic Literature Review *Lorenz Fink, Maximilian Trautendorfer, Fabian Zink, Bernhard Wallner, Friedrich Bleicher, T. Trautner (Austria)*	Integrating successfully Industry 5.0 in industry: Technological perspective and experiential training at process level *A. Papacharalampopoulos; P. Stavropoulos; O.M. Karagianni; M. Ippolito (Greece)*	Concept for Generating an Assembly Sequence with World Model Based Reinforcement Learning *Andreas Leinenbach; Robin Huwa; Marcus Albrecht; Johannes Schilp (Germany)*	Comparison of Unsupervised Anomaly Detection Models for Label Efficient Defect Detection on Lithium-Ion Battery Electrodes *A. Mattern; J.-P. Abramowski; D. Grunert; R. H. Schmitt (Germany)*
16.45 - 17.00	Point Cloud Registration Acceleration for Low Latency Tracking of Industrial Moving Parts *Marco Schumann; Rico Löser; Philipp Klimant (Germany)*	Unlocking the Hidden Sustainability Potential of Upcycled Metal Machining Chips: A Literature Review *Markus Brillinger; Florian Lackner; Josef Domitner; Zahra Silvayeh (Austria)*	Context Aware Process Mining and Optimization on Jet Engine Build and Balancing *Iman Sonji; Carina Fresemann; Sebastian Neumann; Rainer Stark (Germany)*	Potential Analysis for the Automation of Tasks in Shipbuilding: A Comparative Study of Mobile Robots *Till Braun; Konstantin von Haugwitz; Jan Sender (Germany)*
17.00 – 17.15	Framework for an Integrated Global Production Network Optimization *Moritz Hörger; Timon Hartwich; Kevin Gleich; Michael Martin; Martin Benfer; Gisela Lanza (Germany)*	Unlocking the Hidden Sustainability Potential of Upcycled Metal Machining Chips: An Experimental Study *Markus Brillinger; Florian Lackner; Josef Domitner; Zahra Silvayeh (Austria)*	Adaptive information provision for a human-centred and resilient automotive assembly *Günther Schuh; Esben Schukat; Siyuan Wang; Felix Passlick; Rana Koc; Laslo Brumund (Germany)*	Data Quality Assessment and Outlier Detection in Forming Processes *Marvin Vogt; Sebastian Becker; Martin Wagner; Viraj Rohit Gala; Mohaned Alaluss; Robin Kurth; Martin Schneider (Germany)*
20.00	***Garden Dinner at 20.00, Hotel Continental Ischia***			

DAY 3	*Friday, July 18 - Morning Sessions: 09.00 – 13.30*			
	SESSION A6 **Chair:** **Alessandro Simeone**	**SESSION B6** **Chair:** **Dario Antonelli**	**SESSION C6** **Chair:** **Dominik Lucke**	**SESSION D6** **Chair:** **Yasuhiro Kakinuma**
	Production Systems & Networks III	**Robotics & Human–Robot Collaboration**	**Digital & Smart Factory II**	**Grinding & Abrasive Manufacturing**
09.00 - 09.15	Fault Classification for Small Sewage Treatment Plants Using LLM-based Analysis of Parsed Repair Logs *Waldemar Zeitler; Daniel Rippel; Abderrahim Ait Alla; Michael Lütjen; Michael Freitag (Germany)*	A Kinematic Model for Robot Fixture with Unilateral Constraints *Cong Liu (Denmark)*	Leveraging Enhanced Product Customization in the Industrial Metaverse *Maximilian Fischer; Jonas Bayh; Stefan Eric Schwarz; Tobias Düser; Albert Albers (Germany)*	Advanced prediction of process forces in flute grinding: Integrating stochastic wear and friction effects in kinematic simulations *F. Wiesener; B. Bergmann; V. Boess (Germany)*
09.15 - 09.30	A Hybrid Quantum-Classical Variable Neighborhood Search-based Framework for Setup Group Optimization in PCB Production *Yufei Feng; Masoud Rahnama Esfahani; Christoph Niedermeier; Jörg Franke; Sebastian Reitelshöfer (Germany)*	ROS 2-Based LiDAR Perception Framework for Mobile Manipulators *Lukas Bergs, Tan Chung, Marmik Thakkar, Alexander Moriza, Amon Göppert, Chinnawut Nantabut, Robert H. Schmitt (Germany, Thailand)*	Joint Cloud Architecture for Process Monitoring and CloudRAN *Talib Sankal; Akshay Paranjape; Birkan Baran; Niels König; Robert H. Schmitt (Germany)*	Generating process knowledge for an optimised tool grinding process *Berend Denkena; Klaas Maximilian Heide; Michael Wulf (Germany)*
09.30 – 09.45	Optimization of Capacity Dimensioning in Large Steel Structures Using Variants and Discrete-Event Simulation *Lennart D'Laclaverie; Jakob Moritz Trappel; Florian Beuß; Jan Sender (Germany)*	Methodology for Selecting the Ideal Robot Workpiece Orientation in Automated Assembly *Maximilian Bryg; Hauke Stürenburg; Luca Rueden (Germany)*	Enhancing AI-Driven Anomaly Detection: Standardized and Automated Test Data Generation for Industrial Machine Vision *Christian Kuhn; Heiko Wirtz; Julian Hermann; Thorge Lackner; Dominik Lucke (Germany)*	Data-Driven Detection of Surface States in Automated Grinding of Expulsion Residues from Resistance Spot Welding *Samiha Durnagöz; Quentin Ulmer; Hannah Pulli; Kai Stoll; Mathias Mayer; Heinrich Wild; Bernhard Humm; Marco F. Huber (Germany)*
09.45 - 10.00	The Need for a Multi-Speed Delivery Model in Automotive Product Engineering *Dirk Slama; Jens F. Lachenmaier; Paul Herbst; Dominik Morar; Heiner Lasi (Germany)*	A Pilot Study on Logistic Challenges in Mobile Robot Operations *Dario Antonelli; Khurshid Aliev; Dario Maschio (Italy)*	Retrieval-Augmented Generation-based Decision Support System for Deviation Analysis on the Shop Floor *Yuxi Wang; Yang Cai; Jan Chytraeus; Kevin Zhao; Joachim Metternich (Germany)*	Predicting the wear state of diamond-coated burrs, using acoustic emission features and machine learning techniques *Tom Jessel; Carl Byrne; Mark Eaton; Rhys Pullin (UK)*
10.00 - 10.15	Hybrid GA/MSDLO Approach to Solve a Greenfield Robotized Machine Tending Layout *Ramez Awad; Joshua Beck (Germany)*	Planning Method for Skill-Based Control of Robotic Workcells *Andreas Gaugenrieder; Hari Hara Balasubramaniam; Simon Stricker (Germany)*	Bridging Machine Learning and PLC Systems: A Review of Integration Strategies in Industry 4.0 *Simon Dommer; Kai Peter Birke (Germany)*	In-Process Data Segmentation for Machine Learning Based Burn Prediction in Grinding *Gorka Gutierrez; Olatz Arbelaitz; David Barrenetxea; Jesús M. Pérez (Spain)*
10.15 - 10.30	Innovative Approaches to Solving the Facility Layout Problem: Application of Reinforcement Learning in Production *Antje Ahrens; Tobias Heinrich (Germany)*	Trust Dynamics in Industrial Human-Robot Collaboration *Jörg Krüger; Eva Wiese; Eckart Uhlmann; Jairo Lara (Germany)*	Development of a Cloud Migration Assessment for business-critical applications at Mercedes-Benz *Juliane Balder; Daniel Maelzer; Stefan Glawe; Rainer Stark (Germany)*	ML-Based Grinding Burn Detection: Multi-Sensor Approach for Sustainable Gear Manufacturing *Frederico Catapan; Fikri Mert Ilten; Nanyuan Zhang; Konrad Wegener (Switzerland)*
10.30 - 10.45	A Reinforcement Learning Framework for Optimized Storage Allocation in Automated Vehicle Logistics Hubs *Mohamed Elghawar; Ricardo Caballero; Michael Freitag (Germany)*	Applications in Large-Scale Structures – Analytical Path Planning *Jacques Biltgen; Steffen Dryba; Jan Sender (Germany)*	An Expert Survey on Models and Digital Twins *Jonathan Reif; Daniel Dittler; Milapji Singh Gill; Tamas Farkas; Valentin Stegmaier; Felix Gehlhoff; Tobias Kleinert; Michael Weyrich (Germany)*	Visualization of process signature in grinding of ceramics *Mari Ichikawa; Seiji Nakayama; Hirofumi Hosokawa; Yasuhiro Kakinuma (Japan)*
10.45 - 11.00	An Algorithmic Approach to Multi-Objective Optimization in Maritime Urban Route Planning *Jakob M. Trappel; Nikita W. Vetter; Lennart D'Laclaverie; Florian Beuß; Jan Sender (Germany)*	Flexible Automation of Hairpin Stator Production *Eckart Uhlmann; Mitchel Polte; Onur Senyüz; Marco Schumann (Germany)*	Enabling Self-Maintenance in FLM Printers Through Design Adaptations for Machine-to-Machine Interaction *Fabian Hoffmann; Dominik Lucke; Ragu Athinarayanan; Christian Kuhn (Germany)*	A Hybrid Machine Learning and Multi-Objective Optimization Framework for Enhancing the Grinding Expert System in Smart Manufacturing *Saman Fattahi; Bahman Azarhoushang; Heike Kitzig-Frank (Germany)*
11.00 - 11.30	***Coffee Break***			

DAY 3	SESSION A7 Chair: Luca Iuliano	SESSION B7 Chair: Ralph Hensel	SESSION C7 Chair: Adelaide Marzano	SESSION D7 Chair: Luigi Nele
	Machine Tools & Special Machinery	**Assembly II**	**Digital & Smart Factory III**	**High Temperature Material Processing: Welding, Casting, Hot Forming & LB-PBF**
11.30 - 11.45	Deep Learning-based ball screw fault detection for machine condition using complete time series *Leire Agirretxe, Borja Tornos, Itziar Ricondo, Gorka Gutierrez (Spain)*	Leveraging Domain Knowledge for Data-Driven Root Cause Analysis in Manufacturing using Active Learning *Dominik Pietsch; Uwe Wieland; Steffen Ihlenfeldt (Germany)*	Step-by-Step Methodology for Digital Production Twins in SMEs: Highlighting Interface Development *Jan Molter; Abbass Ibrahim; Max Eichenwald; Rainer Müller (Germany)*	Reinforcement Learning Based Optimization of MAG Welding Process: A Conceptual Approach *Peter Burggräf; Fabian Steinberg; Alexander Becher; Lili Wu (Germany)*
11.45 - 12.00	Describing web-based Condition Monitoring Services using the Asset Administration Shell *Viktor Berchtenbreiter, Melanie Stolze, Matthias Weigold (Germany)*	A Context-Aware Assembly Assistance System in Augmented Realit…ing Digital Twin Integration and Skill-Based Production Approach *Snehal Walunj; Parsha Pahlevannejad; Alexandra Ritter; Simon Bergweiler; Martin Ruskowski (Germany)*	Creating a Chain of Trust for Industrial Simulation Models Based on FMI *Christian Wolf; Miriam Schleipen; Georg Frey (Germany)*	A Physics-Based Welding Digital Twin for Predicting Temperature Profiles Under Varying Input Parameters *Talha Saleh; Frank Naets (Belgium)*
12.00 - 12.15	Bridging Manual Expertise and Automation: Digitizing Functional Testing for Ball Screw Drives *Rea Lenser, Matthias Klärner, Matthias Deckert, Lothar Kroll (Germany)*	ScenARy: Scene Awareness for Augmented Reality Applications in Assembly Systems *Andreas Steiner; David Kostolani; Sebastian Schlund; Fazel Ansari (Austria)*	Cloud-Edge-End Collaborative Smart Manufacturing Complex Networks Based on Industrial Internet *Zhengang Guo; Weicong Liang; Haifeng Lin; Xiaohua Li; Yingfeng Zhang (China)*	Assessing Methods to Ensure Representative Data Sets in Manufacturing Processes *Felix Fuchs; Martin Biller; Peter Reimann; Marco F. Huber (Germany)*
12.15 - 12.30	Bearing Load Estimation on a Motor Spindle Using Integrated Eddy Current Sensors and Machine Learning *Magnus von Elling, Christoph Vogel, Matthias Weigold (Germany)*	Benchmarking localization technologies for operator tracking in manual assembly: a comparative study *Serkan Solmaz; Cyril Blanc; Jianqiao Cheng; Merwan Birem (Belgium)*	Towards a Standardized Evaluation Framework for Engineering Changes in the Model of SGE – System Generation Engineering *Lars Gesmann; Maximilian Fischer; Alex Martin; Tobias Düser; Albert Albers (Germany)*	Implementation of a CRISP-ML(Q) Approach for Digitalizing Casting Processes With the Example of Casting Quality Prediction *Marija Lindner; Anna-Sophia Wilde; Joshua Bissels; Gabriela Ventura Silva; Christoph Herrmann (Germany)*
12.30 - 12.45	Towards an Efficient Selection Process for Vacuum Generators in Diverse Application Scenarios *Tobias Eberhardt, Walter Schaaf, Alexander Verl (Germany)*	Data-Driven Prediction of Off-Line Rework Efforts in the Assembly of Complex Products *Thomas Mayr; Peter Reimann; Ralph Hensel (Germany)*	Industrial Guideline for Cloud-to-Shop Floor Communication in Automated Series Manufacturing *Samiha Durnagöz, Timo Zimmermann, Mathias Mayer, Zeki Ahmeti, Steffen Ramsperger, Carsten Wittenberg, Marco F. Huber (Germany)*	Comparison of Two AI-Driven Optical Inspection Approaches for Classifying the Degree of Contamination of Metal Parts *Marija Lindner; Robar Arafat; Siqi Chen; Gabriela Ventura Silva; Christoph Herrmann (Germany)*
12.45 - 13.00	Reinforcement Learning-Based Sealant Dispenser Control *Rey Narvato, Peter Kendall, David Sanderson, Svetan Ratchev, Giovanna Martínez-Arellano (UK)*	Enhancing Planning Efficiency in Automotive Assembly: A Comp…tudy of AI, Human Simulation, and Conventional Time Management *Nils Killich; Barbara Brockmann; Jochen Deuse (Germany)*	Exploring the Development of a Cloud-Based Production Platform for Sensor Data Acquisition and Real-Time Analysis *Antonio Papa; Massimo Pacella; Gabriele Papadia; Emiliano Fedeli (Italy)*	Thermography-Based Hardness Prediction in Press Hardening *Martin Boesler; Jihad Qatramiz; Stefan Polster; Hans Kruschke; Marco Schumann; Philipp Klimant (Germany)*
13.00 - 13.15	Evaluation of Electrical Sensor Data for Process Optimization in Subtractive Manufacturing *Clemens Schwaiger, Gerta Kapllani, Dietmar Winkler, Diana Strutzenberger (Austria)*	A video-driven LLM framework for assembly error detection and corrective guidance in manual manufacturing tasks *Yuchen Fan; Mara Borgia; Alessandro Simeone; Dario Antonelli; Paolo C. Priarone; Luca Settineri (Italy)*	An LLM-Based Approach Using Ontologies for Structured Data Processing and Decision Support in Engineering *Sahar Ben Hassine; Iman Sonji; Rainer Stark (Germany)*	Investigation of Laser Beam Powder Bed Fusion Defect Inspection by In-Situ Monitoring and Computed Tomography *Oguz Acar; Cagdas Sen; Emre Ozeren; Soner Oren (Turkey)*
13.15 - 13.30	Simulation-Driven Gripper Design: Capturing & Validating Design Requirements through Virtual Commissioning *Tobias Eberhardt, Maximilian Lippert, Valentin Stegmaier, Maik Fiedler, Walter Schaaf, Alexander Verl (Germany)*	Force-Based Determination of End-Effector Orientation on Inclined Surfaces Using Internal Robot Sensors *Maximilian Künstler; Stefan Marx; Attique Bashir; Rainer Müller (Germany)*	Method for Digital Information Continuity in Factory Design *Fabian Bermpohl; Christian Eckart; Thomas Neuhäuser; Sven Forte; Rüdiger Daub (Germany)*	
13.30 - 15.00	***Lunch***			

DAY 3	*Friday, July 18 - Afternoon Sessions: 15.00 – 17.00*	
	SESSION A8 **Chair:** **John Lindström**	**SESSION B8** **Chair:** **Goran Putnik**
	Human-Centered Manufacturing	**Human-Machine Interaction, Human Factors & Education**
15.00 - 15.15	Development of a Software Framework for the Recommender System-based Human-centered Adaptation of Manual Work Stations *Paul Hubert Haas; Benedikt Kelm; Lennard Margies; Rainer Müller (Germany)*	Creating Real-Time Transparency in Digital Work Centers with Variable Takt Principle through Multilevel Visualization *Christoph Kilian Merz; Grecia C. Solis Castillo; Jonas Gram (Germany)*
15.15 - 15.30	Zero Defect Manufacturing in an Industry 5.0 Context: A production case study on improving and optimizing humans-machine symbiosis *John Lindström; Petter Kyösti; Wolfgang Birk; Erik Lejon; Alfred Winston; Germar Schneider; Jens Eliasson; Karl Andersson (Sweden)*	A case-study on ZDM and SME-Academia collaboration *Stine Brenden Bjurlemyr; Geir Ringen; Jan Neidhöfer (Norway)*
15.30 - 15.45	Methodology for Evaluating the Applicability and Performance of Digital Tools in Human-Machine Interaction for Manufacturing Applications *Gilbert Ely Engert; Ann-Kathrin Bischoff; Matthias Weigold (Germany)*	Formative evaluation of the EU.FFICIENT methodology based on findings from the development phase of the platform *Annika Bastian; Ferdinand Zimmermann; Albert Albers (Germany)*
15.45 - 16.00		CAD, CAM and CAD/CAM Curricula in Mechanical Engineering and Industrial Engineering: Differences and Similarities *Goran Putnik, Cátia Alves, Leonilde Varela (Portugal)*
16.00 – 16.30	***CONFERENCE CLOSURE AND FAREWELL*** ***Roberto Teti, CIRP ICME '25 Conference Chairman***	

SESSION OF VIDEO PRESENTATION PAPERS
Leveraging Tensegrity-Structures in Innovative Assembly Technologies Inspired by Gossamer Spacecraft *Henriette Kunze, Peter Auerbach, Steffen Ihlenfeldt (Germany)*
Micro-Electromechanical Systems (MEMS): A Systematic Review of the Most Influential Studies *Samuel Polo, Eva María Rubio, Marta María Marín, José Manuel Sáenz de Pipaón (Spain)*
Modeling of Variable Power Consumption for Sustainable Thin-Wall End Face Turning *Pronamika Borthakur, Sowrabh Kugunavar, Deepika Choudhary, Tufan Chandra Bera, Kuldip Singh Sangwan (India)*
Optimization of a Screw Assembly Process in the Automotive Industry Using AI *Klara Pejić, Leonie Schmidt, Christian Ennes, Konstantin von Haugwitz, Jan Sender (Germany)*
Automated Inline Vision System for Rheology Analysis of Slugs in Digital Concrete 3D Printing *Sina Akhbari, Peter Kinnell, Liam Whyte, Andy Gleadall, Richard Busswell, Sergio Cavalaro (UK)*