

## Session 1: Wednesday 25/3, 10:10-11:30 h

Room	Stora salen		Henny		Ingemar		Martin	
Topic	A1: Product and production development for circularity		F: Robots and agents for product development and production		J: Education and upskilling		H1: Artificial Intelligence and Machine Learning in manufacturing	
Chair	Anna Syberfeldt		Torbjörn Ilar		Kristina Säfsten		Anders Skoogh	
10:10	Drone design for circularity	<i>Carolin Weckendrup, Omkar Salunkhe, A. Moriz, A. Göppert, M. Despeisse, B. Johansson, R.H. Schmitt</i>  <i>RWTH Aachen University, Germany</i>	Design and Development of a VR System to Familiarize Users with Collaborative Robot Safety Functions	<i>My Legendi, Anna Syberfeldt, Göran Grahn and Maurice Lamb</i>  <i>University of Skövde</i>	Conceptualizing maintenance knowledge and learning in digitalized production	<i>Oscar Larsson, Jon Bokrantz and Annika Engström</i>  <i>Chalmers University of Technology</i>	A transformer approach for remaining useful life prediction and fault diagnosis of mechanical equipment	<i>Yuchen Liu, Siyuan Chen and Ebru Turanoglu Bekar</i>  <i>Chalmers University of Technology</i>
	Proceedings: 012012		Proceedings: 012046		Proceedings: 012072		Proceedings: 012059	
10:30	Information structures for requirements management of environmental performance in industrialised house building	<i>Gustav Jansson, Djordje Popovic, Fredrik Elgh and Rohith Areth Koroth</i>  <i>Luleå University of Technology</i>	Robots and Intelligent Agents for Product Creation and Manufacturing in Sustainable Digitalized Manufacturing Systems	<i>Rajesh Patil and Magnus Löfstrand</i>  <i>Örebro University</i>	Course-Based Work-Integrated Learning in Engineering Education: A Case Study of Short-Term Industry Placements	<i>Miranda Kedbäck and Victor Hedén</i>  <i>University of Skövde</i>	Spatio-Temporal Graph Neural Network Surrogate Modeling for Predicting Sheet Metal Deformation in a Novel Forming Process.	<i>Ali Kheirandish, Marie Jonsson and Mehdi Tarkian</i>  <i>Linköping University</i>
	Proceedings: 012009		Proceedings: 012043		Proceedings: 012073		Proceedings: 012058	
10:50	A comparative study of remanufacturing practices in the Swedish furniture industry	<i>Jimmy Johansson, Peter Almström, Mirka Kans and Malin Löfving</i>  <i>Linnaeus University</i>	Toward Cognitive Augmentation: Personalization and Standardization of Humanoid Social Robot Instruction	<i>Huizhong Cao, Siyuan Chen, Greta Braun and Johan Stahre</i>  <i>Chalmers University of Technology</i>	Augmented Reality Applications in Mining: Enhancing Training and Equipment Maintenance	<i>Phillip Tretten, Joel Lööv and Prasanna Illankoon</i>  <i>Luleå University of Technology</i>	LLMS, Manufacturing Knowledge Graphs & GraphRAG enabling Intuitive Analytics	<i>Richard Senington, Ludwig Mittermeier and Amos Ng</i>  <i>University of Skövde</i>
	Proceedings: 012003		Proceedings: 012045		Proceedings: 012074		Proceedings: 012057	
11:10	Toward a Circular Future: Research Directions for circular product life cycle stages in manufacturing companies	<i>Malin Löfving and Roland Stolt</i>  <i>Jönköping University</i>	Vision-Based Robot Manipulation for Protective Cap Removal at an Industrial Assembly Station	<i>Hampus Hjalmarsson, Kevin Karlsson, Anna Syberfeldt, My Legendi and Atieh Hanna</i>  <i>University of Skövde</i>	The Concept of Skill Gaps: A Thematic Analysis of Global Industry Perspectives	<i>Greta Braun, Mattias Bokinge, Paavo Rätty, Pauliina Rikala, Raija Hämäläinen, Anna Syberfeldt, Johan Stahre</i>  <i>Chalmers University of Technology</i>	Machine Learning Based Prediction of Surface Quality in Friction Stir Welding	<i>Naveen Loganathan, Joel Andersson and Vivek Patel</i>  <i>University West</i>
	Proceedings: 012005		Proceedings: 012044		Proceedings: 012071		Proceedings: 012061	

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Session 2: Wednesday 25/3, 15:20-16:40 h

Room	Stora salen	Henny	Ingemar	Martin
Topic	B1: Circular and sustainable manufacturing	A2: Product and production development for circularity	I: Advanced manufacturing processes	H2: Artificial Intelligence and Machine Learning in manufacturing
Chair	Frank Brückner	Anna Öhrwall-Rönnbäck	Michael Rethmeier	Magnus Wiktorsson
15:20	From Production Data to Resource Efficiency: A Case Study on Machining Operations <i>Qi Fang, Carlos Alberto Barrera Diaz, Mélanie Despeisse, Kanika Gandhi, Lena Moestam, B. Johansson</i> <i>Chalmers University of Technology</i> Proceedings: 012025	Green design opportunities in three robot investment case studies <i>Martin Kurdve and Malin Elvin</i> Proceedings: 012001 <i>RISE</i>	From Fixed Plans to Dynamic Production: Lot-Sizing and Production Sequencing Optimization in CNC Manufacturing – A Case Study <i>Anan Ashrabi Ananno and Marie Jonsson</i> Proceedings: 012066 <i>Linköping University</i>	Developing RAGs for robot code generation <i>Omkar Salunkhe, Siyuan Chen, Anna Syberfeldt and Johan Stahre</i> <i>Chalmers University of Technology</i> Proceedings: 012064
15:40	Exploring Smart Circular Economy in Manufacturing Industries: Feasible Use Cases and Key Challenges <i>Nithin Nagendra, Koteswar Chirumalla, Auday Al-Dulaimy, Anna Öhrwall Rönnbäck and Mohamed Elnourani</i> <i>Mälardalens University</i> Proceedings: 012018	Modelling Production Equipment Requirements by Function-Means Principlesto Support Reconfigurable Solutions <i>Abdul Wahab, Fredrik Elgh, Carin Rösiö and Filip Skärin</i> Proceedings: 012002 <i>Jönköping University</i>	Enabling Scalable Structural Battery Composite Production: Key Considerations and Possibilities <i>Ellinor Jansson, Emelie Seignér, Johanna Xu, Leif Asp and Björn Johansson</i> <i>Chalmers University of Technology</i> Proceedings: 012070	Integrating Domain Knowledge and Data for Fault Diagnosis in Production Machinery: A Hybrid Framework <i>Pu Sun, Ruirui Zhong, Binbin Qiu and Andreas Archenti</i> <i>KTH Royal Institute of Technology</i> Proceedings: 012065
16:00	Developing dynamic maintenance to achieve sustainable, robust and resilient production – a case study from a sawmill <i>Liselott Lycke, Mirka Kans, Kristina Eriksson, Anders Skoog and Tinh Sjökvist</i> <i>University West</i> Proceedings: 012023	Autonomous and semi-autonomous data collection for production planning in engineer-to-order manufacturing: Lessons from construction use cases <i>Jarkko Erikshammar, Lars Stehn and Mathias Haage</i> <i>Luleå University of Technology</i> Proceedings: 012042	Hybrid AHP -TOPSIS and Constraint Programming for Maintenance Prioritisation and Scheduling in Production Systems <i>Vishwas Aravind, Mohan Rajashekarappa, Alice Namutebi, Roger Burman, Marcus Ljung, Akshay Bhat, Ebru Turanoglu Bekar</i> <i>Chalmers University of Technology</i> Proceedings: 012068	Agentic Framework for Production Time Estimation of Sheet Metal Parts from Engineering Drawings Using Multi-Modal Document Analysis <i>Hamideh Pourrasoul Ouzi, Marie Jonsson and Mehdi Tarkian</i> <i>Linköping University</i> Proceedings: 012062
16:20	Identifying Energy Bottlenecks in Manufacturing Systems through an Integrated Dashboard <i>Sunith Bandaru, Amos H.C. Ng, Carlos Alberto Barrera Diaz and Lars Hanson</i> <i>University of Skövde</i> Proceedings: 012060	The state of practice in product development for the circular economy in industrial manufacturing companies in Sweden <i>Roland Stolt and Malin Löfving</i> <i>Jönköping University</i> Proceedings: 012006	Tensile properties of 1100M high strength steel manufactured with laser directed energy deposition wire method <i>Vesa Tepponen, Shahriar Afkhami, Kalle Lipiäinen and Ilkka Poutiainen</i> <i>LUT University, Finland</i> Proceedings: 012069	Prerequisites for Data Driven Production Planning: Evidence from a Heavy Duty Vehicle Manufacturer <i>Christos Kakouros, Anna Granlund, Stavros Vouros and Kristian Sandström</i> <i>Mälardalen University</i> Proceedings: 012063

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## Session 3: Thursday 26/3, 12:00-13:40/14:00 h

Room	Stora salen	Henny	Ingemar	Martin
Topic	B2: Circular and sustainable manufacturing	A3: Product and production development for circularity	E1: Digital transformation and digital twins	G1: Human-centered manufacturing
Chair	Andreas Archenti	Amos Ng	Natalie Agerskans	Lena Abrahamsson
12:00	<p>Redefining Remanufacturing from Industrial and Policy perspectives</p> <p><i>Erik Sundin, Jennifer Russell and Carl Dalhammar</i></p> <p>Proceedings: 012017 <i>Linköping University</i></p>	<p>First talk cancelled; the session starts at 12:20 h</p>	<p>Digitalisation and Carbon Footprint Evaluation of Gas Metal Arc Welding and Wire-Arc Directed Energy Deposition</p> <p><i>Cagtay Fabry, Andreas Pittner, Alexander Kaplan and Michael Rethmeier</i></p> <p>Proceedings: 012067 <i>BAM, Germany</i></p>	<p>Sociotechnical Barriers to Circular Furniture Production: A Case Study of Swedish Regional Counties</p> <p><i>Leon H. Hansen, Jimmy Johansson and Mirka Kans</i></p> <p>Proceedings: 012055 <i>Linnaeus University</i></p>
12:20	<p>Current Practices in Using Performance Indicators to Integrate Sustainability and Circularity Aspects in Product Realisation and Circularity Aspects in Product Realisation</p> <p><i>Sinah Malz, Kristina Säfsten and Paraskeva Wlazlak</i></p> <p>Proceedings: 012013 <i>Jönköping University</i></p>	<p>Assembly-aware concept evaluation in Modular Function Deployment, establishing an early-phase criteria subset and a selection routine</p> <p><i>Fabio Marco Monetti and Marin Dancer</i></p> <p>Proceedings: 012007 <i>KTH Royal Institute of Technology</i></p>	<p>Adopting Digital Product Passports in Supply Chains: Insights from the ABCDE Model and Sectoral Comparisons</p> <p><i>Areej Al-Sabban, Tarun Agrawal, Patricia van Loon and Patrik Jonsson</i></p> <p>Proceedings: 012004 <i>Chalmers University of Technology</i></p>	<p>Defining Perceived Complexity in automation systems</p> <p><i>Anupama Govindaraj, Mats Jackson and Linn Gustafsson</i></p> <p>Proceedings: 012050 <i>Mälardalens University</i></p>
12:40	<p>Circular Value Propositions for Second-Life Battery Energy Storage Solutions: An Explorative Study of Charging Infrastructure</p> <p><i>Koteshwar Chirumalla, Suchandra Paul, Wiebke Reim, Erik Dahlquist, Ignat Kulkov and Vinit Parida</i></p> <p>Proceedings: 012021 <i>Mälardalen University</i></p>	<p>Reflections on Packaging Transitions: Industry Perspectives from SMEs and Large Companies in Sweden</p> <p><i>Nina Bilal and Mohamed Elnourani</i></p> <p>Proceedings: 012008 <i>Luleå University of Technology</i></p>	<p>Towards Advanced Collaboration Systems for Design Reviews in Product Development</p> <p><i>Francisco Garcia Rivera, Puranjay Mugur, Dan Li, Henrik Söderlund</i></p> <p>Proceedings: 012040 <i>Volvo Cars Corporation</i></p>	<p>Human-centric Perception AI in Industrial Autonomous Systems - A Review</p> <p><i>Mahmood Reza Khabbazi, Fredrik Sikström, Fredrik Danielsson, Morgan Nilsen, Kristina Eriksson</i></p> <p>Proceedings: 012047 <i>University West</i></p>
13:00	<p>Operationalizing circularity and reconfigurability in production system design and development: insights from practice</p> <p><i>Filip Skärin, Carin Rösiö, Lars Töbj, Fredrik Johansson, Gary Linnéusson, Martin Birtic, Enrique Ruiz Zúñiga</i></p> <p>Proceedings: 012014 <i>Jönköping University</i></p>	<p>Adopting digital product passports: a sociotechnical perspective and research agenda</p> <p><i>Paraskeva Wlazlak, Annika Moscati, Ulf Seigerroth, Peter Johansson, Erik Bergström, Andreas Briggert, Rahel Kebede, J. Kävestad, R. Stolt Jönköping University</i></p> <p>Proceedings: 012033</p>	<p>Software-defined Automation in Industrial Production: Drivers of Transformation</p> <p><i>Sairaju Ponnouju, Jessica Bruch, Mohammad Ashjaei and Zenepe Satka</i></p> <p>Proceedings: 012032 <i>Mälardalen University</i></p>	<p>Inclusive Human-Centric Manufacturing – reviewing vulnerable workers' demands</p> <p><i>Sandra Jakšić, Huizhong Cao, Greta Braun and Johan Stahre</i></p> <p>Proceedings: 012048 <i>Chalmers University of Technology</i></p>
13:20	<p>Introducing the concept of smart and portable automation systems</p> <p><i>Mats Ahlskog, Maïke Klockner, Anupama Govindaraj, Mats Jackson and Jessica Bruch</i></p> <p>Proceedings: 012020 <i>Mälardalen University</i></p>	<p>LLM-Based Natural Language Interface for Robotic Control in Mixed Reality</p> <p><i>Iley Alvarez Funcke, Saul Alexis Heredia Perez, Kanako Harada and Andreas Archenti</i></p> <p>Proceedings: 012010 <i>KTH Royal Institute of Technology</i></p>	<p>Extending Discrete-Event Simulation Capabilities through Python Integration for Industry 4.0 Technologies</p> <p><i>Lateef Afolabi Oladosu, Qi Fang, Adrian Borbolla, Devarajan Ramanujan and Björn Johansson</i></p> <p>Proceedings: 012034 <i>Chalmers University of Technology</i></p>	<p>RePAIR Lab: Hybrid Intelligence for Human-Centered, Sustainable Remanufacturing of Electronics following a Human-Technology-Organization approach</p> <p><i>Remote by webb-conference: Doris Aschenbrenner, Maximilian Ummer, Martin Heckmann and Nicole Stricker Aalen University, Germany</i></p> <p>Proceedings: 012056</p>
13:40	<p>Energy Consumption and Argon Gas Emissions Analysis of Directed Energy Deposition of Inconel 718: Towards Sustainable Additive Manufacturing</p> <p><i>Olayinka Olaogun, Wickrama Arachchige Ravindu Sulakka Fernando, Fabian Hanning and Claes Fredriksson</i></p> <p>Proceedings: 012022 <i>University West</i></p>		<p>Towards Smart and Sustainable Production: A Conceptual Framework for Sustainability Aspects in Digital Technology Selection and Integration</p> <p><i>Natalie Agerskans</i></p> <p>Proceedings: 012041 <i>Mälardalen University</i></p>	

## Session 4: Thursday 26/3, 14:20-16:00 h

Room	Stora salen	Henny	Ingemar	Martin
Topic	<b>B3: Circular and sustainable manufacturing</b>	<b>C/D: Resilience and dual-use in manufacturing development for circularity / Industrial and societal symbiosis</b>	<b>E2: Digital transformation and digital twins</b>	<b>G2: Human-centered manufacturing</b>
Chair	Alexander Kaplan	Arpita Chari	Magnus Holm	Dan Högberg
14:20	Cloneable Automation Systems - Industrial Needs and Development Areas <i>Mats Jackson, Maïke Klockner, Anupama Govindaraj, Mats Ahlskog and Jessica Bruch</i> Proceedings: 012019 <i>Mälardalens University</i>	Crisis resilience through a remanufacturing supply of electronics <i>Martin Kurdve, Hanna Linden and Kerstin Johansen</i> Proceedings: 012027 <i>RISE</i>	An IIoT based Approach to monitoring production performance-A case study. <i>Fongang Eric Nochawo, Daheem Mahmood, Mats Jackson, Monica Bellgran and Natalie Agerskans</i> <i>Mälardalens University</i> Proceedings: 012038	Multi-disciplinary Optimization for Designing Human-Robot Collaborated Work-Cell for Low-Volume and High-Variant Production <i>Siwei Fu, Aitor Iriondo Pascual, Amir Nourmohammadi, Amos H.C. Ng, Magnus Holm, Sunith Bandaru, Filip Larsson, Jerry Olsson</i> Proceedings: 012054 <i>University of Skövde</i>
14:40	Sustainability and circularity practices in product realisation: on the development of a maturity assessment instrument for the manufacturing industry <i>Kristina Säfsten, Ulrika Harlin, Fredrik Elgh and Filip Skärin</i> Proceedings: 012015 <i>Jönköping University</i>	AI-Driven Changeover Optimisation in Discrete Manufacturing: A Production Line-Based Analysis of Technology Readiness in Bearing Production <i>Magnus Wahlgård, Arpita Chari, Muhammad Azam, Björn Johansson, Anna Syberfeldt, Johan Stahre</i> <i>Chalmers University of Technology</i> Proceedings: 012028	Making a Digital Transformation Framework for SMEs come Alive <i>Magnus Holm and Mattias Strand</i> Proceedings: 012039 <i>University of Skövde</i>	Leadership development for improved health and safety in a complex production environment <i>Joel Lööv, Mats Jakobsson, Stanislav Astakhov, Marcus Kullman and Johan Larsson</i> Proceedings: 012052 <i>Luleå University of Technology</i>
15:00	Circularity in the Swedish Steel Industry: Perspectives, Challenges and Opportunities <i>Marco Frara, Mattias Lindahl, Ida Kero, Linn Berglund and Pia Åkerfeldt</i> <i>Luleå University of Technology</i> Proceedings: 012016	Enhancing Co-Production Impact in Industry - Academia Collaboration: Insights from Five Industrial PhD Workshops <i>Anna Ericson Öberg, Mats Jackson and Andreas Hjertröm</i> Proceedings: 012030 <i>Volvo CE and Karlstad</i>	Smart Circularity in Manufacturing: Value Propositions from Five Industrial Use Cases <i>Koteshwar Chirumalla, Nithin Nagendra, Auday Al-Dulaimy and Anna Öhrwall Rönnbäck</i> Proceedings: 012035 <i>Mälardalen University</i>	Defining Human-centeredness – a systematic review <i>Sandra Mattsson, Nils Thylen and Johan Stahre</i> Proceedings: 012051 <i>RISE</i>
15:20	Data Needs in Cross-Functional Remanufacturing Decisions: Insights from Product Development, Sales, and Production <i>Natalie Agerskans and Nicolas Leberruyer</i> <i>Mälardalen University</i> Proceedings: 012026	Dimensions of Production Innovation in Sweden's Production 2030 Initiative: Insights from a Thematic Portfolio Analysis <i>Mohamed Elnourani, Hossein Rahnama, Lisa Larsson and Anna Öhrwall Rönnbäck</i> <i>Luleå University of Technology</i> Proceedings: 012029	A Multidimensional Perspective on Legacy-to-CPPS Transformation in Global Manufacturing Companies <i>Tobias Englund, Jessica Bruch, Koteshwar Chirumalla and Mohammad Ashjaei</i> <i>Mälardalen University</i> Proceedings: 012037	Supporting Ergonomics Evaluations in Manufacturing – A Comparison of Computer Vision and IMU-Based Motion Capture <i>Raquel Quesada Díaz, Aitor Iriondo Pascual, Dan Högberg, Sunith Bandaru and Lars Hanson</i> <i>University of Skövde</i> Proceedings: 012053
15:40	Designing Circular Systems: Rethinking Production, Manufacturing, Finance, and Policy for Sustainable Industrial Futures <i>Bernd Weiss, Stella Schuebel, Anna Öhrwall Rönnbäck and René Laufer</i> <i>Luleå University of Technology</i> Proceedings: 012024	A cloud decision support system for the reduction of electrical power peaks utilizing digital twins and machine learning predictors <i>Simon Lidberg, Sofia Encinales Mejia, Stéphane Bouchereau, Jesper Bergquist and Amos Ng</i> <i>Volvo Trucks Technology and Industrial Division</i> Proceedings: 012031	Developing and Executing a Digital Strategy in a Manufacturing SME – Reports from an Extensive Case Study <i>Mattias Strand and Magnus Holm</i> Proceedings: 012036 <i>University of Skövde</i>	Human-Robot Communication using Large Language Models for Automated Kitting <i>Mattias Bennulf, Fredrik Danielsson and Xiaoxiao Zhang</i> Proceedings: 012049 <i>University West</i>

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