

Wednesday 18 June 2025

Aula Magna

- 08:30 Registration
- 10:00 Welcome and Opening
- 10:30 Keynote 1: Prof. Mélanie Despeisse  
Chalmers University of Technology
- 11:30 Industrial Keynote: Dipl. Ing. Florian Baumgartner  
Director Process Planning at Alpitronic
- 12:30 Lunch break

PARALLEL PRESENTATIONS

B1.1.12 – Room 2

Production and Supply Chain Management - 1  
Chair: Dr. Jettarat Janmontree

- 14:00 161 The strategic role of Industry 4.0 for SME International Competitiveness.  
Romanello, Rubina; Veglio, Valerio; Chiarvesio, Maria
- 14:15 105 Leveraging a generative artificial intelligence tool to aid engineering research and education in a non-English-speaking country.  
Katongtung, Tossapon; Tippayawong, Nakorn; Tippayawong, Korrakot Yaibuathet
- 14:30 153 Development of a Conceptional Framework for Circular Economy Collaborations in the Manufacturing Industry.  
Emir, Merve; Fottner, Johannes
- 14:45 115 A comprehensive survey on resilience influencing factors in manufacturing companies.  
Stang, Julian; Bernhard, Olivia; Zaeh, Michael F.; Reuter, Christina
- 15:00 110 Capturing the Paradigms of Future-Proof Production Systems – Unified Modeling of Lean, Digitalization, and Sustainability.  
Bernhard, Olivia; Schirling, Daniel; Stang, Julian; Zaeh, Michael

B1.1.14 – Room 3

Production and Supply Chain Management - 1  
Chair: Prof. Jannicke Baalsrud Hauge

- 14:00 152 AI-ML based models: The Path to Optimal Workload Management and Safety Assurance.  
Pereira, Eduarda; Costa, Nélson; Costa, Nuno; Sampaio, Adriana
- 14:15 151 AI vs. human performance in university assessments: a case study in production management.  
Fantozzi, Italo Cesidio; Martuscelli, Luca; Schiraldi, Massimiliano M.
- 14:30 146 Enhancing Safety in the Iron and Steel Industry through Artificial Intelligence.  
Cocca, Paola; Guarascio, Massimo; Pisani, Francesco Sergio; Tomasoni, Giuseppe; Valente, Bernardo; Zorzi, Martina
- 14:45 140 Industrial metaverse for smart manufacturing: Live data visualization with OPC UA and AAS.  
Brandt, Nico; Ajdinović, Samed; Littfinski, Daniel; Maisch, Nicolai; Díaz, Alberto Sancho; Lechler, Armin; Riedel, Oliver
- 15:00 139 Modularity in manufacturing: Investigating its influence on manufacturing lead time and efficiency.  
Nazarejova, Julia; Soltysova, Zuzana; Modrak, Vladimir

- 15:15 Coffee break
- 16:00 Lab tours
- 18:00 Standing dinner

Thursday 19 June 2025

PARALLEL PRESENTATIONS

Aula Magna

EPIEM – 18th EPIEM Conference – 1

Chair: Prof Bemd Zunk

- 09:00
- Welcome EPIEM by local Chairs and EPIEM President
- 09:15
- 124 Assessing sustainability in subregional industrial value chains: Opportunities and challenges.**  
Retegi, Jabier; Igartua, Juan Ignacio; Ibarra, Dorleta; Eguren, José Alberto
- 09:30
- 127 Clustering Thailand’s industry based on supply chain performance: a sustainable and resilience approach.**  
Watanabe, Woramol Chaowarat; Patitad, Patchanee; Ransikarbum, Kasin; Janmontree, Jettarat
- 09:45
- 144 Corporate sustainability reporting in energy-flexible production systems.**  
Sambale, Simon; Wörle, Markus; Geier, Jan; Zaeh, Michael F.
- 10:00
- 148 Sustainability performance monitoring and reporting: a global comparison, gaps and emerging solutions.**  
Emer, Asja; Sandforth, Guido; Rauch, Erwin; Matt, Dominik

B1.1.12 – Room 2

Production and Supply Chain Management - 2

Chair: Prof. Erwin Rauch

- 09:00
- 129 A novel method for accounting Scope 3 Carbon Emissions at a Supply Chain level.**  
Lombardi, Giorgio; Bressanelli, Gianmarco; Saccani, Nicola; Settembre Blundo, Davide
- 09:15
- 126 Supply chain resistance: a framework integrating resilience and robustness.**  
de Simas, Davi; Alvim, Silvio Luiz; Morosini Frazzon, Enzo; Taboada Rodriguez, Carlos Manoel; Ribeiro da Silva, Elias
- 09:30
- 119 Criteria development for hydrogen fuel cell supplier selection using the Bayesian best-worst method**  
Janmontree, Jettarat; Shinde, Aditya; Ransikarbum, Kasin; Zadek, Hartmut
- 09:45
- 120 Sustaining Quality in Production: Workers and Quality interactions**  
Das, Ajay
- 10:00
- 123 Scope 3 emissions assessment in European automotive value chains.**  
Retegi, Jabier; Igartua, Juan Ignacio; Ibarra, Dorleta; Arregi, Ane

B1.1.14 – Room 3

Industrial Engineering and Management – 2

Chair: Dr. Margherita Molinaro

- 09:00
- 113 The impact of top and middle management commitment to Occupational Safety and Health on Corporate Social Responsibility in mining industry.**  
Spasojević Brkić, Vesna Konstantin; Petrović, Nikola Vladimir; Mihajlović, Ivan Nenad; Janev, Nemanja Nenad; Papić, Neda Ljubiša; Zunk, Bernd Markus
- 09:15
- 166 Managing and mitigating cognitive biases in product design: Insights from the literature.**  
Tiruneh, Muluken Abebe; Suzic, Nikola; Turner, Frances
- 09:30
- 170 AI-driven remote expert system architecture approach: an integration of AI, MR, and NLP.**  
Kongon, Bhusana; Jantarakongkul, Benchaporn; Kanangnanon, Tanat; Jitngernmadan, Prajaks
- 09:45
- 171 Indirect workforce planning tool**  
Teixeira, Diogo; Pimentel, Carina

PARALLEL PRESENTATIONS

10:00 **174 Quantifying performance in AR-based industrial maintenance application: a framework for activity data analysis.**  
Kankam, Suphawit; Fongsamut, Chalermpan; Khunnen, Methasit; Kubola, Kanuengnij; Jitngernmadan, Prajaks

10:30 Coffee break

Aula Magna

**EPIEM – 18th EPIEM Conference – 2**  
Chair: Prof. Guido Orzes

11:00 **156 The influence of manufacturing and innovation strategies in driving automotive sector market trends.**  
Bataleblu, Ali Asghar; Esmaeilian, Maryam; Rauch, Erwin; Cochran, David S

11:15 **158 Challenges for implementation of digital transformation across industries.**  
Argilovski, Aleksandar; Jovanoski, Bojan; Minovski, Robert

11:30 **173 Sustainable Shop Floor Management: An exploratory narrative literature review.**  
Pimentel, Carina; Calcado, Rodrigo; Matias, João; Zunk, Bernd Markus

11:45 Closing remarks and announcement of next EPIEM conference

B1.1.12 – Room 2

**Production and Supply Chain Management - 3**  
Chair: Prof. Valerio Veglio

11:00 **134 Advancing sustainability in manufacturing: The role of Industry 4.0 technologies.**  
Molinaro, Margherita; Hmouda, Ahmed Mohamed Omar; Sartor, Marco; Orzes, Guido

11:15 **133 The impact of mountain location on supply chain structure decisions.**  
Molinaro, Margherita; Teshome, Mehari Beyene; Podrecca, Matteo

11:30 **104 Towards changeable production logistics: a framework for analyzing logistic factors and their interactions.**  
Vollmuth, Pia Caroline; Weidinger, Jacqueline; Fottner, Johannes

11:45 **101 Sustainability-Based Barriers Assessment for Hydrogen Fuel in Logistics from an Industrial Perspective.**  
Ransikarbum, Kasin; Niemsakul, Jirawan; Hiranmahapol, Surat; Janmontree, Jettarat; Zadek, Hartmut

12:00 **100 Environmental hotspots for sustainability in additive manufacturing: insights from expert interviews.**  
Ördek, Baris; Borgianni, Yuri; Spreafico, Christian

B1.1.14 – Room 3

**Engineering Education 5.0**

11:00 **132 Engineering education 5.0: specific work 5.0 competence-based requirements for smart and sustainable operations management.**  
Zare, Leila; Rauch, Erwin; Matt, Dominik

11:15 **106 Self-Assessment Biases in Spreadsheet Programming among STEM Students.**  
Máté, Domicián; Csernoch, Mária

11:30 **108 Lean Digital Education.**  
Csernoch, Mária

11:45 **145 Progress roadmap and information hub for purdue university fort wayne student success.**  
Konatham, Anuradha; Gaddam, Vedhan Reddy; Cochran, David S.

12:00 **116 Fatigue characterization of L-PBF AlSi10Mg alloy for fastener-free aeronautic joints.**  
De Pasquale, Giorgio; Margaria, Luca; Coluccia, Antonio



12:30 Lunch break

Aula Magna

14:00 **Keynote 2: Prof. Andrea Trianni**  
University of Technology Sydney

PARALLEL PRESENTATIONS

B1.1.12 – Room 2

**SME 5.0 – Introducing Industry 5.0 in SMEs – 1**  
Chair: Prof. Emmanuel Francalanza

15:00 **114 Customer Success Management as a Driver for Sustainability: Insights from a Case Study in the Steel Manufacturing Industry.**  
Seidenstricker, Sven; Kriebel, Sebastian; Fischer, Heiko; Bank, Maximilian

15:15 **136 Asian engineering competence survey (AECS): The impact of competence on performance of asian industrial engineering and management alumni.**  
Woschank, Manuel; Pacher, Corina; Olipp, Nadine; Zunk, Bernd M.; Tippayawong, Korrakot Y.; Fongsamootr, Prim

15:30 **157 System architecture for enhancing Resiliency in Cyber-Physical Production Systems.**  
Barrero, Arciniegas, Humberto, Alejandro; Bataleblu, Ali Asghar; Don, Davide; Rauch, Erwin; Matt, Dominik T.

15:45 **135 The impact of circular economy practices on business performance in manufacturing enterprises: A preliminary research study.**  
Olipp, Nadine; Woschank, Manuel

16:00 **177 Reengineering for Industries 4.0 and 5.0 with Suh’s Axiomatic Design.**  
Brown, Christopher A.; Meinhold, Lauren

B1.1.14 – Room 3

**Human-centric Manufacturing and Collaborative Automation – 1**  
Chair: Prof. Renato Vidoni

15:00 **112 Catching adaptive patterns: from the theory of graceful extensibility to empirical findings in a simulated environment.**  
Bernabei, Margherita; Patriarca, Riccardo

15:15 **122 Human-Robot Collaboration: Worker Utilization and its Impact on Worker Well-Being.**  
Javernik, Aljaz; Buchmeister, Borut; Ojstersek, Robert

15:30 **125 The use of novel solutions and Human-Machine interaction in case of fire incidents on containerships.**  
Sangermano, Vittorio; Pistella, Alessandro; Russo, Francesco; Palma Esposito, Daniele; Duca, Gabriell

15:45 **130 A Human-Centric AutomationML framework for adaptive UX-driven automation.**  
Khamaisi, Riccardo Karim; Valentini, Lorenzo; Borghi, Simone; De Ciantis, Rocco; Grandi, Fabio; Peruzzini, Margherita

16:00 **141 Development of a Web and Mobile Application for Control and Management of a Pneumatic Rehabilitation Glove.**  
Rahimic, Senad; Hadzic, Ermin; Dedic, Amila; Smajic, Azra

16:15 Coffee break

B1.1.14 – Room 2

**SME 5.0 – Introducing Industry 5.0 in SMEs – 2**  
Chair: Prof. Sergio Salimbeni

16:45 **137 From reacting to pandemic to broad-based proactive preparedness: ambitions and shifting needs in manufacturing SMEs.**  
Birkie, Seyoum Eshetu; Hauge, Jannicke Baalsrud; Tulardilok, Tulaya

17:00 **138 Inclusiveness of Workers in Manufacturing – Recommendations for Action for SMEs.**  
Haid, Charlotte; Metzner, Annina; Fottner, Johannes

- 17:15    **150 Exploring the current Status of Circular Economy and Best Practices in South Tyrol.**  
Jakobs, Lars; Kargruber, Johanna; Rauch, Erwin; Matt, Dominik
- B1.1.14 – Room 3
- Human-centric Manufacturing and Collaborative Automation – 2  
Chair: Dr. Fabio Grandi
- 16:45    **147 Risk assessment in manual load handling: application of a technical guide and digital simulation.**  
Ruiz de la Torre Acha, Aitor; Alzola Bernardo, Jon; Rio Belver, Rosa Maria; Fernández Alvarez, Álvaro
- 17:00    **160 Leveraging Large Language Models for efficient assembly task support in multilingual manufacturing environments.**  
Siddiqui, Md Khalid; Engel, Tobias
- 17:15    **167 Cobottwin: a fiware-based digital twinning solution for collaborative robots.**  
Amorim, Vítor; Cruz, António; Lopes, Sérgio
- 17:30    **172 Neuroergonomics in Cognitive Load and Decision-Making in Industry 5.0.**  
Andreau, J. Mario; Salimbeni, Sergio
- 17:45    **176 Experimental evaluation of sensor redundancy and filtering for human tracking in industrial collaborative applications.**  
Mallavarapu, Rabert Rajesh; Manzardo, Matteo; Gualtieri, Luca; Yan, Yicheng; Huesing, Mathias; Corves, Burkhard; Vidoni, Renato

19:30    Gala Dinner at Castel Maretsch

Friday 20 June 2025

PARALLEL PRESENTATIONS

- B1.1.12 – Room 2
- Advances of Digital Twins – 1  
Chair: Dr. Matteo De Marchi
- 09:00    **111 Digital twins as enablers for supply chain integration: connecting multiple locations of smart factories.**  
Cenk, Gökhan; Andersson, Jonas; Engel, Tobias
- 09:15    **121 Industry 5.0 in EU and ASEAN: A Comparative Analysis of Intelligent, Sustainable, and Human-Centered Manufacturing Readiness.**  
Jangkrajarn, Varattaya; Ramingwong, Sakgasem; Tippayawong, Korrakot Y.; Santiteerakul, Salinee; Jintana, Jutamat
- 09:30    **154 Human-machine-interface for machine remote control.**  
Hismatov, Mansur; Hubbert, Frank; Engel, Tobias
- 09:45    **155 Optimization of manufacturing parameters using digital twin simulation.**  
Kanangnanon, Tanat; Fongsamut, Chalermpan; Kongon, Bhusana; Jitngernmadan, Prajaks
- 10:00    **162 A FIWARE-based digital twin for the textile & clothing sector: The Adalberto use case.**  
Quesado, Gonçalo; Cruz, António; Pedroso, João; Lopes, Sérgio
- B1.1.14 – Room 3
- Automation and Manufacturing Technologies  
Chair: Prof. Sérgio Ivan Lopes
- 09:00    **107 Process automation using offline programming of industrial robots.**  
Goyal, Akshay; Faruk Acar, Ömer; Erlandsson, Gustav; Aslanidou, Ioanna
- 09:15    **159 An Engineering Education 5.0 Holistic Environment with EPR and AI.**  
Manopiniwes, Wapee; Chernbumroong, Sainatee; Tutko, Martin



PARALLEL PRESENTATIONS

- 09:30    **117 Driveline Concept Generation and Optimization for positioning Machines.**  
Verschueren, Andreas; Roelfs, Martin; Houwen, Simon; Haemers, Michiel; Maes, Brecht; Vanwallegghem, Bart; Stockman, Kurt; Derammelaere, Stijn
- 09:45    **118 Contact force estimation in industrial robot joints using moving-horizon-estimation.**  
Kamm, Valentin; Lehner, Jannik; Bauer, Christian J. E.; Lechler, Armin; Verl, Alexander
- 10:00    **128 Wait-free concurrent data access for real-time systems.**  
Fischer, Marc; Walker, Moritz; Neumann, Rebekka; Lechler, Armin; Verl, Alexander
- 10:15    **109 3D printing in the construction sector: identification of key topics, technologies, applications and relevant factors discussed in the literature.**  
Öztürk, Ece; Borgianni, Yuri; Ince, Ceren

10:30    Coffee break

B1.1.12 – Room 2

**Advances of Digital Twins – 2**  
Chair: Prof. Prajaks Jitngernmadan

- 11:00    **164 The concept of a digital twin of an autonomous mobile robot.**  
Natmeladze, Nino; Pitel', Ján; Židek, Kamil; Romaniuk, Vitalii; Bonello, Amberlynn
- 11:15    **165 Addressing challenges in cobot integration: using discrete event simulation models to redesign multistage manufacturing flow lines.**  
Felder, Manuel; Onay, Anita; Hagendorfer, Elias; Plunger, Simon; Rauch, Erwin
- 11:30    **168 A FIWARE-based digital twin for the textile sector: the MTEX NS use case.**  
Lemos, Tiago Fernandes; Severino, Ricardo; Cruz, António Miguel; Teixeira, Patrício; Lopes, Sérgio Ivan
- 11:45    **169 Towards a digital-twin driven laser welding.**  
Gbagba, Sadiq Omobowale; Concli, Franco
- 12:00    **149 A semi-empirical ground interaction tool for tracked heavy-duty vehicles.**  
Secades Rodríguez, Alejandro; Fellin, Wolfgang; Ferdik, Manuel

B1.1.12 – Room 3

**Mechanical Engineering and Design**  
Chair: Prof. Paolo Boscariol

- 11:00    **142 Beyond conventional design: Enhancing the reliability of pouch sorter systems with multi-body simulation.**  
Kröpfel, Patrick; Ortner-Pichler, Alexander; Landschützer, Christian
- 11:15    **143 Design of a 2-DOFs gripper mechanism with linear actuation.**  
Boscariol, Paolo; Fontana, Matteo; Tamellin, Iacopo
- 11:30    **163 Structural performance of novel 3D-printed multilayer composite sandwich structures with bio-inspired cellular architectures.**  
Taghizadeh, Seyedahmad; Cheng, Liangliang; Macconi, Lorenzo; Concli, Franco
- 11:45    **175 Evaluation of Deviations in a Generative Designed Component Fabricated via Additive Manufacturing.**  
Dianda, Angelica; Maccioni, Lorenzo; Borgianni, Yuri

Aula Magna

- 12:15    **Best Paper Award and Closing Ceremony**  
Prof. Dominik T. Matt  
Head of Research Area Industrial Engineering and Automation (IEA)

Prof. Renato Vidoni  
Università degli Studi di Udine