

Wednesday,
November 11th
2020

8:45AM - 9:00AM	Chair's Intro: Conference & Day Chair: Klaus-Dieter Thoben, Universität Bremen	M. Massmann, M. Meyer, M. Frank, S. von Enzberg, A. Kühn, R. Dumitrescu: <i>Framework for Data Analytics in Data-Driven Product Planning</i>
9:00AM - 9:40AM	D1K1: Keynote by Ravinder Dahiya Chair: Walter Lang, Universität Bremen R. Dahiya, University of Glasgow: <i>Soft Squishy Electronic Skin</i>	C. S. Soares Guimarães Jr, M. De Andrade, F. Rocha De Avila, V. E. De Oliveira Gomes, V. Camargo Nardelli: <i>IoT Architecture for Interoperability and Monitoring of Industrial Nodes</i> M. M. Mueller, G. Terziev, J. Metternich, N. Landmann: <i>Knowledge management on the shop floor through recommender engines</i>
9:40AM - 10:40AM	D1-AM1-O: Enabling Technologies I Chair: Walter Lang, Universität Bremen M. Bakr, F. Bossuyt, J. Vanfleteren, Y. Su: <i>Flexible microsystems using over-molding technology</i> M. G. Vargas Gleason, W. Lang: <i>Towards self-healing biomimetic hair flow sensor</i> K. Shenoy Panambur, S. Desai, A. K. Singh, K.-D. Thoben: <i>A Hybrid Approach for Digital Representation of Sensors in Real-Time Applications</i>	T. Ni, H. Wicaksono: <i>An Automated Information System for Medium to Short-Term Manpower Capacity Planning in Make-To-Order Manufacturing</i> G. Vorwerk-Handing, P. Welzbacher, E. Kirchner: <i>Consideration of Uncertainty within the Conceptual Integration of Measurement Functions into Existing Systems</i> L. S. Angreani, A. Vijaya, H. Wicaksono: <i>Systematic Literature Review of Industry 4.0 Maturity Model for Manufacturing and Logistics Sectors</i>
10:40AM - 11:00AM	Coffee Break	O. Fatahi Valilai, M. Sodachi: <i>Inspiration of Industry 4.0 to Enable a Proactive Sustainability Assessment Model through the Supply Chain</i>
11:00AM - 1:00PM	D1-AM2-O: Enabling Technologies II Chair: Klaus-Dieter Thoben, Universität Bremen J. Lenz, V. Pelosi, M. Taisch, E. M. MacDonald, T. Wuest: <i>Data-driven context awareness of smart products in discrete smart manufacturing systems</i> I. Vishev, T. Wenzel, M. Rossdeutscher, M. Lüdke: <i>Data-based approach for identifying repeatability, reproducibility, and stability of industrial processes in series production</i> W. Baumung, V. Baumung: <i>Application of Machine Learning and Vision for real-time condition monitoring and acceleration of product development cycles</i> S. Wellsandt, M. Foosherian, K.-D. Thoben: <i>Interacting with a Digital Twin using Amazon Alexa</i> J. Qu, D. Barton, P. Gönzheimer, F. Pinsker, D. Kufer, J. Fleischer: <i>Self-aware LiDAR sensors in autonomous systems using a convolutional neural network</i> S. Bosse: <i>Self-adaptive Traffic and Logistics Flow Control using Learning Agents and Ubiquitous</i>	X. Bai, H. Wicaksono: <i>How Relevant Are Environmental Factors in The Ergonomic Performance Assessments?</i>
		3:20PM - 3:40PM Coffee Break
		3:40PM - 4:20PM D1K2: Keynote by Eric MacDonald Chair: Dirk Lehnhus, Fraunhofer IFAM E. MacDonald: <i>3D Printing of Multi-Functional Structures</i>
		4:20PM - 5:20PM D1-PM2-O: Enabling Technologies III Chair: Dirk Lehnhus, Fraunhofer IFAM S. N. Gottwald, B. Reitz, D. Albrecht, L. Overmeyer: <i>Concept of an Assembly Technology for Dies below 150 Micrometers</i> E. Hardi, M. Veigt, M. Koerdt, A. S. Herrmann, M. Freitag: <i>Monitoring of the vacuum infusion process by integrated RFID-Transponders</i> S. Bosse: <i>Learning Damage Event Discriminator Functions with Distributed Multi-instance RNN/LSTM Machine Learning - Mastering the Challenge</i>
1:00PM - 1:40PM	Lunch Break	
1:40PM - 3:20PM	D1-PM1-P: Poster Session Chair: Stefan Wiesner, BIBA M. Fajrul Falah, S. Sukaridhoto, M. Udin Harun Al Rasyid, H. Wicaksono: <i>Design of Virtual Engineering and Digital Twin Platform as Implementation of Cyber Physical Systems</i> W. Quint, E.-M. Iwer, A. Binder: <i>Big Data Management using Ontologies for CPQ Solutions</i>	5:20PM - 6:30PM Virtual Guided Tours Chair: Aleksandra Himstedt, BIBA Bremen BIBA/LogDynamics Lab & IMSAS, Matthias Burwinkel

Thursday,
November 12th
2020

8:45AM - 9:00AM	Day's Intro Chair: Walter Lang, Universität Bremen	2:00PM - 4:00PM	D2-PM1-O: Future of Manufacturing I Chair: Klaus-Dieter Thoben, Universität Bremen
9:00AM - 10:40AM	D2-AM1-O: Structural Health Monitoring Chair: Walter Lang, Universität Bremen L. Rittmeier, M. Sinapius, T. Losch, R. Lammering: <i>Investigation of in-plane wave motion in a Fibre Metal Laminate using PVDF foil sensors</i> D. Gräbner, T. Schotzko, R. Zahn, U. Giese, W. Lang: <i>Condition Monitoring of O-Ring Seals with Integrated Strain Gauges and Finite Element Analysis Assisted Signal Evaluation</i> O. Altun, D. Zhang, R. Siqueira, P. Wolniak, I. Mozgova, R. Lachmayer: <i>Identification of dynamic loads on structural component with artificial neural networks</i> P. J. Steinbild, U. Hentschel, A. Schwaar, M. Dannemann, N. Modler, A. Schürer, A. Wilhelm: <i>Strain-based monitoring system for ski poles with low impact on their total mass and inertia</i> M. Kreuz, A. Ait Alla, K. Varasteh, M. Lütjen, M. Freitag, K.-D. Thoben: <i>Investigation of icing causes on wind turbine rotor blades using machine learning models, minimalistic input data and a full-factorial design</i>		C. Nicksch, A. Kluge-Wilkes, M. Huber, R. H. Schmitt: <i>Global Reference System for Factory-wide Integration of Metrology Enabling Flexible Automation in Aeroplane Assembly – Requirements, Concept and Suitable Technologies</i> G. Egger, D. Chaltsev, A. Giusti, D. T. Matt: <i>A deployment-friendly decentralized scheduling approach for cooperative multi-agent systems in the production environments</i> M. Daudi, K.-D. Thoben: <i>Self-Organizing Logistics Networks for Less-Than-Truckload</i> R. Kiesel, J. van Roessel, R. H. Schmitt: <i>Quantification of economic potential of 5G for latency critical applications in production</i> R. Hellbach, K. Klein, K. Hribernik, K.-D. Thoben: <i>IoT-enabled communication systems in testing environments</i> L. Hartmann, J. Metternich: <i>Waste in value streams caused by information flow: An analysis of information flow barriers and possible solutions</i>
10:40AM - 11:00AM	Coffee Break	4:00PM - 4:20PM	Coffee Break
11:00AM - 11:40AM	D2K1: Keynote by Annika Raatz Chair: Maurizio Valle, University of Genova A. Raatz: <i>Soft Material Robotic Systems</i>	4:20PM - 6:00PM	D2-PM2-O: Future of Manufacturing II Chair: Tobias Stiehl, Leibniz Universität Hannover T. Sheveleva, O. Koepler, I. Mozgova, R. Lachmayer, S. Auer: <i>Development of a domain-specific Ontology to support Research Data Management for the Tailored Forming Technology</i> B. Denkena, B. Bergmann, M. Handrup: <i>Piezo-actuated hybrid tool for the micro structuring of cylinder liners in an energy-efficient process chain</i> H.-C. Möhring, P. Georgi, S. Eschelbacher: <i>Fundamental investigation on the correlation between surface properties and acceleration data from a sensor integrated milling tool</i> H.-C. Möhring, S. Schmauder, R. Wegert, V. Guski: <i>Determination of thermo-mechanical quantities with a sensor-integrated tool for single lip deep hole drilling</i> B. Denkena, B. Bergmann, E. Wnendt, T. Brühne: <i>Deflection compensation on a force sensing mobile machine tool</i>
11:40AM - 1:20PM	D2-AM2-O: Soft Robotics Chair: Maurizio Valle, University of Genova A. Winkler, A. Ehrenhofer, T. Wallmersperger, M. Gude, N. Modler: <i>Soft robotic structures by smart encapsulation of electronic devices</i> A. Ibrahim, H. Younes, M. Alameh, M. Valle: <i>Near Sensors Computation based on Embedded Machine Learning for Electronic Skin</i> J. Chavez Vega, P. Schorr, T. Kaufhold, K. Zimmermann, L. Zentner, V. Böhm: <i>Influence of Elastomeric Tensioned Members on the Characteristics of Compliant Tensegrity Structures in Soft Robotic Applications</i> F. Schmatz, F. Beuß, J. Sender, W. Flügge: <i>Quality optimization of mechanical joining processes by the use of human-robot collaboration</i> D. Andronas, A. Argyrou, K. Fourtakas, P. Paraskevopoulos, S. Makris: <i>Design of Human Robot Collaboration workstations – Two automotive case studies</i>	6:00PM - 6:30PM	Virtual Guided Tour Chair: Aleksandra Himstedt, BIBA Bremen Fraunhofer IFAM, Dirk Lehnhus
1:20PM - 2:00PM	Lunch Break		

Friday
November 13th
2020

8:45AM - 9:00AM	Day's Intro Chair: Dirk Lehmus, Fraunhofer IFAM	1:20PM - 3:00PM	D3-PM1-O: Systems Engineering II Chair: Thorsten Wuest, West Virginia University
9:00AM - 10:40AM	D3-AM1-O: Future of Manufacturing III Chair: Christopher Link, University of Paderborn V. Kirchner, I. Vishev, M. Roßdeutscher: <i>Detecting Process Instabilities in Industrial Gas Metal Arc Welding Time Series</i> S. Lauer, P. Wiese, S. Dryba, W. Flügge: <i>Data driven aproach for Robot-assisted multi-pass-welding thick sheet metal connections</i> B. Denkena, M.-A. Dittrich, J. Mainka: <i>Simulation-based feed rate adaption considering tool wear condition</i> A. Ebrahimi, U. Fritsching, M. Heuser, D. Lehmus, A. Struß, A. Toenjes, A. von Hehl: <i>A digital twin approach to predict and compensate distortion in a High Pressure Die Casting (HPDC) process chain</i> L. Gutiérrez, L. F. Palatto, E. Vargas, B. Vargas: <i>A Methodology for the Optimization of Mechanical Properties of Automotive Iron-Casting Brakes using Artificial Neural Networks</i>		S. Pfeifer, T. Seidenberg, C. Jürgenhake, H. Anacker, R. Dumitrescu: <i>Towards a modular product architecture for electric ferries using Model-Based Systems Engineering</i> L. M. Steinbacher, M. Trapp, K. Klockgether, M. Freitag: <i>Development of an Autonomous Light Control Algorithm with a Simulation Model of a Container Terminal</i> A. Deuter, S. Imort: <i>PLM/ALM Integration with the Asset Administration Shell</i> J. Yee, C. Y. Low, C. T. Koh, S. von Enzberg, A. Wegel, L. Asmar, F. A. Hanapiah, N. Mohamad Hashim, N. A. Che Zakaria: <i>Data Science Platform for Smart Diagnosis of Upper Limb Spasticity</i> C. Petzoldt, J. Wilhelm, N. H. Hoppe, L. Rolfs, T. Beinke, M. Freitag: <i>Control architecture for digital twin-based human-machine interaction in a novel robotic container unloading system</i>
10:40AM - 11:00AM	Coffee Break	3:00PM - 3:30PM	Award Session Et Closing Chair: Walter Lang, Universität Bremen
11:00AM - 12:40PM	D3-AM2-O: Systems Engineering I Chair: Dirk Lehmus, Fraunhofer IFAM M. Hillebrand, M. Lakhani, R. Dumitrescu: <i>A design methodology for deep reinforcement learning in autonomous systems</i> S. S. Shabestari, B. Bender, M. Neumann, Y.-W. Song: <i>Decision support for Design Conflicts: A model-based method to analyze the interactions between technical requirements and product characteristics</i> D. Kloock-Schreiber, P. C. Gembariski, R. Lachmayer: <i>Application of System Dynamics for holistic Product-Service System Development</i> S. Zimmer, P. Lucas, M. Helwig, A. Winkler, N. Modler2: <i>Systematic engineering of functionally integrated wireless power transfer systems for electric vehicles</i> K. Kübler, D. Schopper, O. Riedel, S. Rudolph: <i>Towards an Automated Product-Production System Design – Combining Simulation-based Engineering and Graph-based Design Languages</i>		
12:40PM - 1:20PM	Lunch Break		