Birgit Vogel-Heuser

List of Publications by Year
in descending order

434 papers	5,735 citations	201385 27 h-index	155451 55 g-index
447 all docs	447 docs citations	447 times ranked	2301 citing authors

#	Article	IF	Citations
1	Industry 4.0 and Industry 5.0—Inception, conception and perception. Journal of Manufacturing Systems, 2021, 61, 530-535.	7.6	686
2	Evolution of software in automated production systems: Challenges and research directions. Journal of Systems and Software, 2015, 110, 54-84.	3.3	274
3	Guest Editorial Industry 4.0—Prerequisites and Visions. IEEE Transactions on Automation Science and Engineering, 2016, 13, 411-413.	3.4	247
4	Design, modelling, simulation and integration of cyber physical systems: Methods and applications. Computers in Industry, 2016, 82, 273-289.	5.7	205
5	Challenges for Software Engineering in Automation. Journal of Software Engineering and Applications, 2014, 07, 440-451.	0.8	104
6	Model-driven engineering of Manufacturing Automation Software Projects — A SysML-based approach. Mechatronics, 2014, 24, 883-897.	2.0	87
7	Coupling heterogeneous production systems by a multi-agent based cyber-physical production system. , 2014, , .		74
8	Cyber-physical production systems architecture based on multi-agent's design pattern—comparison of selected approaches mapping four agent patterns. International Journal of Advanced Manufacturing Technology, 2019, 105, 4005-4034.	1.5	74
9	Agents enabling cyber-physical production systems. Automatisierungstechnik, 2015, 63, 777-789.	0.4	64
10	System architectures for Industrie 4.0 applications. Production Engineering, 2019, 13, 247-257.	1.1	64
11	Towards a Formal Specification Framework for Manufacturing Execution Systems. IEEE Transactions on Industrial Informatics, 2012, 8, 311-320.	7.2	61
12	Towards Effective Management of Inconsistencies in Model-Based Engineering of Automated Production Systems. IFAC-PapersOnLine, 2015, 48, 916-923.	0.5	56
13	An interdisciplinary SysML based modeling approach for analyzing change influences in production plants to support the engineering. , 2013, , .		54
14	Enhancing a model-based engineering approach for distributed manufacturing automation systems with characteristics and design patterns. Journal of Systems and Software, 2015, 101, 221-235.	3.3	52
15	Criteria-based alarm flood pattern recognition using historical data from automated production systems (aPS). Mechatronics, 2015, 31, 89-100.	2.0	51
16	Development of PLC-Based Software for Increasing the Dependability of Production Automation Systems. IEEE Transactions on Industrial Informatics, 2013, 9, 2397-2406.	7.2	50
17	Sparse representation and its applications in micro-milling condition monitoring: noise separation and tool condition monitoring. International Journal of Advanced Manufacturing Technology, 2014, 70, 185-199.	1.5	49
18	Modularity and architecture of PLC-based software for automated production Systems: An analysis in industrial companies. Journal of Systems and Software, 2017, 131, 35-62.	3.3	49

#	Article	IF	Citations
19	Automatic Parameter Estimation for Reusable Software Components of Modular and Reconfigurable Cyber-Physical Production Systems in the Domain of Discrete Manufacturing. IEEE Transactions on Industrial Informatics, 2018, 14, 275-282.	7.2	48
20	A comprehensive approach for managing inter-model inconsistencies in automated production systems engineering. , 2016, , .		46
21	Evolution in industrial plant automation: A case study. , 2013, , .		43
22	Managing inter-model inconsistencies in model-based systems engineering: Application in automated production systems engineering. Journal of Systems and Software, 2019, 153, 105-134.	3.3	41
23	Fault Handling in PLC-Based Industry 4.0 Automated Production Systems as a Basis for Restart and Self-Configuration and Its Evaluation. Journal of Software Engineering and Applications, 2016, 09, 1-43.	0.8	41
24	A comparison of inconsistency management approaches using a mechatronic manufacturing system design case study. , 2015, , .		39
25	Towards modern inclusive factories: A methodology for the development of smart adaptive human-machine interfaces. , 2017, , .		39
26	Close integration between UML and IEC 61131-3: New possibilities through object-oriented extensions. , 2009, , .		38
27	Combining Knowledge Modeling and Machine Learning for Alarm Root Cause Analysis. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2013, 46, 1843-1848.	0.4	38
28	Automatic generation of field control strategies for supporting (re-)engineering of manufacturing systems. Journal of Intelligent Manufacturing, 2014, 25, 1101-1111.	4.4	38
29	A Model-Driven Approach on Object-Oriented PLC Programming for Manufacturing Systems with Regard to Usability. IEEE Transactions on Industrial Informatics, 2015, 11, 790-800.	7.2	38
30	Evaluating Docker for Lightweight Virtualization of Distributed and Time-Sensitive Applications in Industrial Automation. IEEE Transactions on Industrial Informatics, 2021, 17, 3566-3576.	7.2	38
31	Combining a SysML-based Modeling Approach and Semantic Technologies for Analyzing Change Influences in Manufacturing Plant Models. Procedia CIRP, 2014, 17, 451-456.	1.0	37
32	Test case generation approach for industrial automation systems. , 2011, , .		36
33	Review of Model-Based Testing Approaches in Production Automation and Adjacent Domains—Current Challenges and Research Gaps. Journal of Software Engineering and Applications, 2015, 08, 499-519.	0.8	36
34	PLC-Statecharts: An Approach to Integrate UML-Statecharts in Open-Loop Control Engineering – Aspects on Behavioral Semantics and Model-Checking. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 7866-7872.	0.4	35
35	Family model mining for function block diagrams in automation software. , 2014, , .		33
36	Computing dependent industrial alarms for alarm flood reduction. , 2012, , .		31

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37	Challenges for maintenance of PLC-software and its related hardware for automated production systems: Selected industrial Case Studies. , 2015, , .		30
38	Maintainability and evolvability of control software in machine and plant manufacturing â€"ÂAn industrial survey. Control Engineering Practice, 2018, 80, 157-173.	3.2	29
39	Key Directions for Industrial Agent Based Cyber-Physical Production Systems. , 2019, , .		29
40	Usability Experiments to Evaluate UML/SysML-Based Model Driven Software Engineering Notations for Logic Control in Manufacturing Automation. Journal of Software Engineering and Applications, 2014, 07, 943-973.	0.8	29
41	Automated test case generation approach for PLC control software exception handling using fault injection. , 2011, , .		28
42	Multi-objective optimization of hybrid electric vehicles considering fuel consumption and dynamic performance. , 2010, , .		27
43	Dynamic Resource Task Negotiation to Enable Product Agent Exploration in Multi-Agent Manufacturing Systems. IEEE Robotics and Automation Letters, 2019, 4, 2854-2861.	3.3	27
44	Modeling network architecture and time behavior of Distributed Control Systems in industrial plant automation. , 2011, , .		26
45	Evaluation of a UML-Based Versus an IEC 61131-3-Based Software Engineering Approach for Teaching PLC Programming. IEEE Transactions on Education, 2013, 56, 329-335.	2.0	26
46	A model-based framework for increasing the interdisciplinary design of mechatronic production systems. Journal of Engineering Design, 2018, 29, 617-643.	1.1	26
47	Challenges of Parallel Evolution in Production Automation Focusing on Requirements Specification and Fault Handling. Automatisierungstechnik, 2014, 62, 758-770.	0.4	25
48	A configurable partial-order planning approach for field level operation strategies of PLC-based industry 4.0 automated manufacturing systems. Engineering Applications of Artificial Intelligence, 2017, 66, 128-144.	4.3	25
49	A Qualitative Study of Variability Management of Control Software for Industrial Automation Systems. , 2018, , .		25
50	A Framework for Automatic Initialization of Multi-Agent Production Systems Using Semantic Web Technologies. IEEE Robotics and Automation Letters, 2019, 4, 4330-4337.	3.3	25
51	A flexible architecture for data mining from heterogeneous data sources in automated production systems. , 2017, , .		24
52	Interface Behavior Modeling for Automatic Verification of Industrial Automation Systems' Functional Conformance. Automatisierungstechnik, 2014, 62, 815-825.	0.4	23
53	Anforderungen an CPS aus Sicht der Automatisierungstechnik / Requirements on CPS from the Viewpoint of Automation. Automatisierungstechnik, 2013, 61, 669-676.	0.4	21
54	Selected challenges of software evolution for automated production systems. , 2015, , .		21

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55	Increasing flexibility of modular automated material flow systems: A meta model architecture. IFAC-PapersOnLine, 2016, 49, 1543-1548.	0.5	21
56	Multi-agent systems to enable Industry 4.0. Automatisierungstechnik, 2020, 68, 445-458.	0.4	21
57	Detection of Temporal Dependencies in Alarm Time Series of Industrial Plants. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2014, 47, 1802-1807.	0.4	20
58	Model based design of knowledge bases in multi agent systems for enabling automatic reconfiguration capabilities of material flow modules. , 2016, , .		20
59	A Light-Weight Fault Injection Approach to Test Automated Production System PLC Software in Industrial Practice. Control Engineering Practice, 2017, 58, 12-23.	3.2	20
60	Knowledge-Based Technologies for Future Factory Engineering and Control. Studies in Computational Intelligence, 2013, , 355-374.	0.7	20
61	Modeling of Manufacturing Execution Systems: An interdisciplinary challenge. , 2010, , .		19
62	Design patterns for distributed automation systems with consideration of non-functional requirements. , 2012, , .		19
63	Industrially Applicable System Regression Test Prioritization in Production Automation. IEEE Transactions on Automation Science and Engineering, 2018, 15, 1839-1851.	3.4	19
64	The role of spatial, verbal, numerical, and general reasoning abilities in complex word problem solving for young female and male adults. Mathematics Education Research Journal, 2020, 32, 189-211.	0.9	19
65	Leveraging the Asset Administration Shell for Agent-Based Production Systems. IFAC-PapersOnLine, 2021, 54, 837-844.	0.5	19
66	PERFORMANCE ANALYSIS OF INDUSTRIAL ETHERNET NETWORKS BY MEANS OF TIMED MODEL-CHECKING. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2006, 39, 101-106.	0.4	18
67	Delta modeling for variant-rich and evolving manufacturing systems. , 2014, , .		18
68	Technical debt in Automated Production Systems. , 2015, , .		18
69	Highly reconfigurable production systems controlled by real-time agents. , 2011, , .		17
70	An approach for leveraging Digital Twins in agent-based production systems. Automatisierungstechnik, 2021, 69, 1026-1039.	0.4	17
71	Specification of the Requirements to Support Information Technology-Cycles in the Machine and Plant Manufacturing Industry. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 1077-1082.	0.4	16
72	Model-based testing of PLC software: test of plants' reliability by using fault injection on component level. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2014, 47, 3509-3515.	0.4	16

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73	Applicability of Technical Debt as a Concept to Understand Obstacles for Evolution of Automated Production Systems. , 2015, , .		16
74	Metrics for software quality in automated production systems as an indicator for technical debt. , 2017, , .		16
75	Platform Independent Multi-Agent System for Robust Networks of Production Systems. IFAC-PapersOnLine, 2018, 51, 1261-1268.	0.5	16
76	Automation in the Wood and Paper Industry. , 2009, , 1015-1026.		16
77	UML-PA AS AN ENGINEERING MODEL FOR DISTRIBUTED PROCESS AUTOMATION. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2005, 38, 129-134.	0.4	15
78	Automatic program verification of continuous function chart based on model checking. , 2009, , .		15
79	Implementation and evaluation of UML as modeling notation in object oriented software engineering for machine and plant automation. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 9151-9157.	0.4	15
80	Increasing agility in engineering and runtime of automated manufacturing systems. , 2013, , .		15
81	Keeping requirements and test cases consistent: Towards an ontology-based approach. , 2014, , .		15
82	Design for future: managed software evolution. Computer Science - Research and Development, 2015, 30, 321-331.	2.7	15
83	Architecture-based change impact analysis in cross-disciplinary automated production systems. Journal of Systems and Software, 2018, 146, 167-185.	3.3	15
84	An Adaptive Virtual Training System Based on Universal Design. IFAC-PapersOnLine, 2019, 51, 335-340.	0.5	15
85	Interdisciplinary engineering of cyber-physical production systems: highlighting the benefits of a combined interdisciplinary modelling approach on the basis of an industrial case. Design Science, 2020, 6, .	1.1	15
86	COMBINING UML WITH IEC 61131-3 LANGUAGES TO PRESERVE THE USABILITY OF GRAPHICAL NOTATIONS IN THE SOFTWARE DEVELOPMENT OF COMPLEX AUTOMATION SYSTEMS. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2007, 40, 90-94.	0.4	14
87	Common communication model for distributed automation systems. , 2011, , .		14
88	Semantic integration of multi-agent systems using an OPC UA information modeling approach. , 2016, , .		14
89	An agent-based approach for dependable planning of production sequences in automated production systems. Automatisierungstechnik, 2017, 65, 766-778.	0.4	14
90	Metrics for the evaluation of data quality of signal data in industrial processes. , 2017, , .		14

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91	Interdisciplinary effects of technical debt in companies with mechatronic products â€"Âa qualitative study. Journal of Systems and Software, 2021, 171, 110809.	3.3	14
92	A General Methodology for Adapting Industrial HMIs to Human Operators. IEEE Transactions on Automation Science and Engineering, 2021, 18, 164-175.	3.4	14
93	Automation platform independent multi-agent system for robust networks of production resources in industry 4.0. Journal of Intelligent Manufacturing, 2021, 32, 2023-2041.	4.4	14
94	PLC-statecharts: An approach to integrate umlstatecharts in open-loop control engineering. , 2010, , .		13
95	On Modelling the State-Space of Manufacturing Systems using UML. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 469-474.	0.4	13
96	Towards the co-evolution of industrial products and its production systems by combining models from development and hardware/software deployment in cyber-physical systems. Production Engineering, 2017, 11, 687-694.	1.1	13
97	Model-based development of a multi-agent system for controlling material flow systems. Automatisierungstechnik, 2018, 66, 438-448.	0.4	13
98	Analyzing Variability in Automation Software with the Variability Analysis Toolkit. , 2019, , .		13
99	The INCLUSIVE System: A General Framework for Adaptive Industrial Automation. IEEE Transactions on Automation Science and Engineering, 2021, 18, 1969-1982.	3.4	13
100	Agentenbasierte dynamische Rekonfiguration von vernetzten intelligenten Produktionsanlagen â€" Evolution statt Revolution. , 2014, , 145-158.		13
101	Performance analysis of industrial ethernet networks by means of timed model-checking. , 2006, 39, 99-104.		13
102	Cyber-Physical Systems in the Context of Industry 4.0: A Review, Categorization and Outlook. Information Systems Frontiers, 0, , 1.	4.1	13
103	Typical automation functions and their distribution in automation systems. , 2011, , .		12
104	Dynamic redeployment of control software in distributed industrial automation systems during runtime. , 2012, , .		12
105	Design, implementation and evaluation of a hybrid approach for software agents in automation. , 2012, , .		12
106	Engineering Support in the Machine Manufacturing Domain through Interdisciplinary Product Lines: An Applicability Analysis. IFAC-PapersOnLine, 2015, 48, 211-218.	0.5	12
107	An agent approach to flexible automated production systems based on discrete and continuous reasoning. , 2016, , .		12
108	Cross-disciplinary and cross-life-cycle-phase Technical Debt in automated Production Systems: two industrial case studies and a survey. IFAC-PapersOnLine, 2018, 51, 1192-1199.	0.5	12

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109	Technical Debt as indicator for weaknesses in engineering of automated production systems. Production Engineering, 2019, 13, 273-282.	1.1	12
110	Potential for combining semantics and data analysis in the context of digital twins. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2021, 379, 20200368.	1.6	12
111	Custom-tailored clone detection for IEC 61131-3 programming languages. Journal of Systems and Software, 2021, 182, 111070.	3.3	12
112	Towards a taxonomy of errors in PLC programming. Cognition, Technology and Work, 2015, 17, 417-430.	1.7	11
113	Improving Transferability Between Different Engineering Stages in the Development of Automated Material Flow Modules. IEEE Transactions on Automation Science and Engineering, 2016, 13, 1422-1432.	3.4	11
114	A model-based failure recovery approach for automated production systems combining SysML and industrial standards. , 2016, , .		11
115	(Re)deployment of Smart Algorithms in Cyber–Physical Production Systems Using DSL4hDNCS. Proceedings of the IEEE, 2021, 109, 542-555.	16.4	11
116	A Multi-Agent Architecture for Compensating Unforeseen Failures on Field Control Level. Studies in Computational Intelligence, 2014, , 195-208.	0.7	11
117	Time as non-functional requirement in distributed control systems. , 2012, , .		10
118	Software changes in factory automation: Towards automatic change based regression testing. , 2014, , .		10
119	Towards interdisciplinary variability modeling for automated production systems: Opportunities and challenges when applying delta modeling: A case study. , 2015, , .		10
120	Model driven engineering of manufacturing execution systems using a formal specification. , 2015, , .		10
121	Changeability of Manufacturing Automation Systems using an Orchestration Engine for Programmable Logic Controllers. IFAC-PapersOnLine, 2015, 48, 1573-1579.	0.5	10
122	Online parameter estimation for cyber-physical production systems based on mixed integer nonlinear programming, process mining and black-box optimization techniques. Automatisierungstechnik, 2018, 66, 331-343.	0.4	10
123	Increasing system test coverage in production automation systems. Control Engineering Practice, 2018, 73, 171-185.	3.2	10
124	Bringing Automated Intelligence to Cyber-Physical Production Systems in Factory Automation. , 2018, , .		10
125	Applying knowledge bases to make factories smarter. Automatisierungstechnik, 2019, 67, 504-517.	0.4	10
126	Graphical modeling notation for data collection and analysis architectures in cyber-physical systems of systems. Journal of Industrial Information Integration, 2020, 19, 100155.	4.3	10

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127	Causal Inference in Industrial Alarm Data by Timely Clustered Alarms and Transfer Entropy. , 2020, , .		10
128	Automated PLC Software Testing using adapted UML Sequence Diagrams. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 1615-1621.	0.4	9
129	MDE of manufacturing automation software â€" Integrating SysML and standard development tools. , 2014, , .		9
130	Anforderungen an die Softwareevolution in der Automatisierung des Maschinen- und Anlagenbaus. Automatisierungstechnik, 2014, 62, .	0.4	9
131	An Integrated Approach to Analyze Change-situations in the Development of Production Systems. Procedia CIRP, 2014, 17, 148-153.	1.0	9
132	Data-driven valve diagnosis to increase the overall equipment effectiveness in process industry. , 2016, , .		9
133	Supporting Operators in Process Control Tasksâ€"Benefits of Interactive 3-D Visualization. IEEE Transactions on Human-Machine Systems, 2016, 46, 895-907.	2.5	9
134	Analysis framework for evaluating PLC software: An application of Semantic Web technologies. , 2016, , .		9
135	Failure mode classification for control valves for supporting data-driven fault detection. , 2017, , .		9
136	Key maturity indicators for module libraries for PLC-based control software in the domain of automated Production Systems. IFAC-PapersOnLine, 2018, 51, 1610-1617.	0.5	9
137	Unified sensor data provisioning with semantic technologies. , 2011, , .		8
138	Modeling of Networked Automation Systems for simulation and model checking of time behavior. , 2012, , .		8
139	Benefit of e-learning teaching C-programming and software engineering in a very large mechanical engineering beginners class. , 2013, , .		8
140	Female characteristics and requirements in software engineering in mechanical engineering. , 2014, , .		8
141	Towards industrial application of model-driven platform-independent PLC programming using UML. , 2014, , .		8
142	Enabling flexible automation system hardware: Dynamic reconfiguration of a real-time capable field-bus. , 2015, , .		8
143	Reconfiguration architecture for updates of automation systems during operation. , 2015, , .		8
144	Data integration in manufacturing industry: Model-based integration of data distributed from ERP to PLC. , 2015, , .		8

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145	Guided semi-automatic system testing in factory automation. , 2016, , .		8
146	Interdisciplinary Communication and Comprehension in Factory Automation Engineering - A Concept for an Immersive Virtual Environment. IFAC-PapersOnLine, 2016, 49, 227-232.	0.5	8
147	Maintenance effort estimation with KAMP4aPS for cross-disciplinary automated PLC-based Production Systems - a collaborative approach. IFAC-PapersOnLine, 2017, 50, 4360-4367.	0.5	8
148	Data-driven model development for quality prediction in forming technology. , 2017, , .		8
149	A virtual training system for aging employees in machine operation. , 2017, , .		8
150	Generalized test tables: A powerful and intuitive specification language for reactive systems. , 2017, , .		8
151	Consistent Automated Production Systems Modeling in a Multi-disciplinary Engineering Workflow. , 2018, , .		8
152	Integrating Haptic Interaction into a Virtual Training System for Manual Procedures in Industrial Environments. IFAC-PapersOnLine, 2018, 51, 60-65.	0.5	8
153	Model-based training of manual procedures in automated production systems. Mechatronics, 2018, 55, 212-223.	2.0	8
154	Inconsistency Management in Heterogeneous Models - An Approach for the Identification of Model Dependencies and Potential Inconsistencies. Proceedings of the Design Society International Conference on Engineering Design, 2019, 1, 3661-3670.	0.6	8
155	Applying Semantic Web Technologies to Provide Feasibility Feedback in Early Design Phases. Journal of Computing and Information Science in Engineering, 2019, 19, .	1.7	8
156	Introduction and Evaluation of Complexity Metrics for Network-based, Graphical IEC 61131-3 Programming Languages. , 2019, , .		8
157	Design, Application, and Evaluation of a Multiagent System in the Logistics Domain. IEEE Transactions on Automation Science and Engineering, 2020, , 1-14.	3.4	8
158	A Host Intrusion Detection System architecture for embedded industrial devices. Journal of the Franklin Institute, 2021, 358, 210-236.	1.9	8
159	Formal Technical Process Specification and Verification for Automated Production Systems. Lecture Notes in Computer Science, 2014, , 287-303.	1.0	8
160	Benefit and Evaluation of Interactive 3D Process Data Visualization for the Presentation of Complex Problems. Lecture Notes in Computer Science, 2009, , 869-878.	1.0	8
161	An Analytical Alarm Flood Reduction to Reduce Operatorâ€™s Workload. Lecture Notes in Computer Science, 2011, , 297-306.	1.0	8
162	Fundamental Aspects Concerning the Usability Evaluation of Model-Driven Object Oriented Programming Approaches in Machine and Plant Automation. Lecture Notes in Computer Science, 2011, , 497-506.	1.0	8

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163	Industrie 4.0 am Beispiel einer Verbundanlage. Atp Magazin, 2014, 56, 52.	0.3	8
164	Measuring the Overall Complexity of Graphical and Textual IEC 61131-3 Control Software. IEEE Robotics and Automation Letters, 2021, 6, 5784-5791.	3.3	8
165	Formalization of Design Patterns and Their Automatic Identification in PLC Software for Architecture Assessment. IFAC-PapersOnLine, 2020, 53, 7819-7826.	0.5	8
166	Benefit and evaluation of interactive 3D process data visualization in operator training of plant manufacturing industry. , 2009, , .		7
167	Dealing with non-functional requirements in distributed control systems engineering. , 2011, , .		7
168	Formal MES Modeling Framework â€"Integration of Different Views. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 14109-14114.	0.4	7
169	Usability evaluation on teaching and applying model-driven object oriented approaches for PLC software. , 2012, , .		7
170	Agent based control of production systems. , 2013, , .		7
171	Evaluating reconfiguration abilities of automated production systems in Industrie 4.0 with metrics. , 2015, , .		7
172	Configuration of PLC software for automated warehouses based on reusable components- an industrial case study. , 2015, , .		7
173	An Analysis of Challenges and State of the Art for Modular Engineering in the Machine and Plant Manufacturing Domain. IFAC-PapersOnLine, 2015, 48, 87-92.	0.5	7
174	Agent-Based Control of Production Systemsâ€"and Its Architectural Challenges. , 2015, , 153-170.		7
175	Optimizing modular and reconfigurable cyber-physical production systems by determining parameters automatically. , 2016, , .		7
176	A verification-supported evolution approach to assist software application engineers in industrial factory automation. , 2016, , .		7
177	Interdisciplinary product lines to support the engineering in the machine manufacturing domain. International Journal of Production Research, 2017, 55, 3701-3714.	4.9	7
178	Hidden Markov model-based predictive maintenance in semiconductor manufacturing: A genetic algorithm approach. , 2017, , .		7
179	Applicability of generalized test tables: a case study using the manufacturing system demonstrator xPPU. Automatisierungstechnik, 2018, 66, 834-848.	0.4	7
180	Resolving Inconsistencies Optimally in the Model-Based Development of Production Systems. , 2018, , .		7

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181	Maturity variations of PLC-based control software within a company and among companies from the same industrial sector. , 2018, , .		7
182	Application of a multi-disciplinary design approach in a mechatronic engineering toolchain. Automatisierungstechnik, 2019, 67, 246-269.	0.4	7
183	Toward a Graphical Modeling Tool for Response-Time Requirements Based on Soft and Hard Real-Time Capabilities in Industrial Cyber-Physical Systems. IEEE Journal of Emerging and Selected Topics in Industrial Electronics, 2022, 3, 13-22.	3.0	7
184	Enabling Industrie 4.0 â€" Chancen und Nutzen fÃ¼r die Prozessindustrie. , 2014, , 159-171.		7
185	Improving Common Model Understanding Within Collaborative Engineering Design Research Projects. Lecture Notes in Mechanical Engineering, 2013, , 643-654.	0.3	7
186	A Cross-disciplinary Model-Based Systems Engineering Workflow of Automated Production Systems Leveraging Socio-technical Aspects. , 2020, , .		7
187	BPMN+I to support decision making in innovation management for automated production systems including technological, multi team and organizational aspects. IFAC-PapersOnLine, 2020, 53, 10891-10898.	0.5	7
188	Modular Production Control with Multi-Agent Deep Q-Learning. , 2021, , .		7
189	Current Challenges in the Design of Drives for Robot-Like Systems. , 2020, , .		7
190	Benefit of system modeling in automation and control education. Proceedings of the American Control Conference, 2007, , .	0.0	6
191	Modellintegration von Verhaltens- und energetischen Aspekten fÃ¼r mechatronische Module. Automatisierungstechnik, 2011, 59, 33-41.	0.4	6
192	Usability challenges in the design workflow of reusable PLC software for machine and plant automation. , 2012, , .		6
193	Automatic Generation of Field Control Strategies for Supporting (Re-)Engineering of Manufacturing Systems. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 1574-1579.	0.4	6
194	Using contact points to integrate discipline spanning real-time requirements in modeling Networked Automation Systems for manufacturing systems. , 2012, , .		6
195	Diagnosis of automation devices based on engineering and historical data. , 2012, , .		6
196	A web-based e-learning and exam tool with an automated evaluation process for teaching software engineering. , 2012, , .		6
197	Efficient 3D voxel reconstruction of human shape within robotic work cells. , 2012, , .		6
198	Supporting integrated development of closed-loop PLC control software for production systems. , 2012, , .		6

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199	Comparison of a transformed Matlab/Simulink model into the programming language CFC on different IEC 61131-3 PLC environments. , 2012, , .		6
200	Funktionaler Anwendungsentwurf für agentenbasierte, verteilte Automatisierungssysteme. Xpert Press, 2013, , 3-19.	0.1	6
201	Erweiterung des V-Modells^{Â®} für den Entwurf von verteilten Automatisierungssystemen. Automatisierungstechnik, 2013, 61, 79-91.	0.4	6
202	Consistent engineering information model for mechatronic components in production automation engineering. , 2014, , .		6
203	Interdisziplinärer Produktlinienansatz zur Steigerung der Wiederverwendung. Automatisierungstechnik, 2015, 63, .	0.4	6
204	Variability management for automated production systems using product lines and feature models. , 2016, , .		6
205	Modularized control algorithm for automated material handling systems. , 2016, , .		6
206	Summer school on intelligent agents in automation: Hands-on educational experience on deploying industrial agents. , 2016, , .		6
207	Modeling as the basis for innovation cycle management of PSS: Making use of interdisciplinary models. , 2017, , .		6
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