

# Cesare Fantuzzi

## List of Publications by Year in descending order

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184  
papers

3,087  
citations

236925

25  
h-index

276875

41  
g-index

186  
all docs

186  
docs citations

186  
times ranked

2092  
citing authors

#	ARTICLE	IF	CITATIONS
1	Sampled data systems passivity and discrete port-Hamiltonian systems. , 2005, 21, 574-587.		155
2	A tank-based approach to impedance control with variable stiffness. , 2013, , .		132
3	A variable admittance control strategy for stable physical human-robot interaction. International Journal of Robotics Research, 2019, 38, 747-765.	8.5	100
4	A SysML-Based Methodology for Manufacturing Machinery Modeling and Design. IEEE/ASME Transactions on Mechatronics, 2011, 16, 1049-1062.	5.8	97
5	Ensemble Coordination Approach in Multi-AGV Systems Applied to Industrial Warehouses. IEEE Transactions on Automation Science and Engineering, 2015, 12, 922-934.	5.2	97
6	Diagnosis techniques for sensor faults of industrial processes. IEEE Transactions on Control Systems Technology, 2000, 8, 848-855.	5.2	88
7	Cooperative cloud robotics architecture for the coordination of multi-AGV systems in industrial warehouses. Mechatronics, 2017, 45, 1-13.	3.3	82
8	Arbitrarily shaped formations of mobile robots: artificial potential fields and coordinate transformation. Autonomous Robots, 2011, 30, 385-397.	4.8	81
9	A model-based design methodology for the development of mechatronic systems. Mechatronics, 2014, 24, 833-843.	3.3	78
10	Fault diagnosis in power plant using neural networks. Information Sciences, 2000, 127, 125-136.	6.9	74
11	Admittance control parameter adaptation for physical human-robot interaction. , 2017, , .		63
12	On the Use of UML for Modeling Mechatronic Systems. IEEE Transactions on Automation Science and Engineering, 2007, 4, 105-113.	5.2	61
13	AGV global localization using indistinguishable artificial landmarks. , 2011, , .		61
14	Dynamic system identification and model-based fault diagnosis of an industrial gas turbine prototype. Mechatronics, 2006, 16, 341-363.	3.3	57
15	Design patterns for model-based automation software design and implementation. Control Engineering Practice, 2013, 21, 1608-1619.	5.5	55
16	Position Drift Compensation in Port-Hamiltonian Based Telemanipulation. , 2006, , .		51
17	The PAN-Robots Project: Advanced Automated Guided Vehicle Systems for Industrial Logistics. IEEE Robotics and Automation Magazine, 2018, 25, 55-64.	2.0	51
18	Safety barrier functions and multi-camera tracking for human-robot shared environment. Robotics and Autonomous Systems, 2020, 124, 103388.	5.1	51

#	ARTICLE	IF	CITATIONS
19	Survey on Human-Robot Interaction for Robot Programming in Industrial Applications. IFAC-PapersOnLine, 2018, 51, 66-71.	0.9	48
20	Parameter identification for piecewise-affine fuzzy models in noisy environment. International Journal of Approximate Reasoning, 1999, 22, 149-167.	3.3	46
21	Edge-weighted consensus-based formation control strategy with collision avoidance. Robotica, 2015, 33, 332-347.	1.9	46
22	High-speed DSP-based implementation of piecewise-affine and piecewise-quadratic fuzzy systems. Signal Processing, 2000, 80, 951-963.	3.7	45
23	Hierarchical traffic control for partially decentralized coordination of multi AGV systems in industrial environments. , 2014, , .		45
24	Augmented reality based approach for on-line quality assessment of polished surfaces. Robotics and Computer-Integrated Manufacturing, 2019, 59, 158-167.	9.9	43
25	Identification of piecewise affine models in noisy environment. International Journal of Control, 2002, 75, 1472-1485.	1.9	42
26	A Control Barrier Function Approach for Maximizing Performance While Fulfilling to ISO/TS 15066 Regulations. IEEE Robotics and Automation Letters, 2020, 5, 5921-5928.	5.1	40
27	Towards modern inclusive factories: A methodology for the development of smart adaptive human-machine interfaces. , 2017, , .		39
28	Implementation of Coordinated Complex Dynamic Behaviors in Multirobot Systems. IEEE Transactions on Robotics, 2015, 31, 1018-1032.	10.3	36
29	Relieving operators's™ workload: Towards affective robotics in industrial scenarios. Mechatronics, 2018, 54, 144-154.	3.3	36
30	Coordination of industrial AGVs. International Journal of Vehicle Autonomous Systems, 2011, 9, 5.	0.2	32
31	Coordination of multiple AGVs in an industrial application. , 2008, , .		30
32	Design and verification of mechatronic object-oriented models for industrial control systems. , 0, , .		29
33	An algorithm to diagnose ball bearing faults in servomotors running arbitrary motion profiles. Mechanical Systems and Signal Processing, 2012, 27, 667-682.	8.0	29
34	A Natural Infrastructure-Less Human-Robot Interaction System. IEEE Robotics and Automation Letters, 2017, 2, 1640-1647.	5.1	27
35	Walk-through Programming for Industrial Applications. Procedia Manufacturing, 2017, 11, 31-38.	1.9	26
36	Variable admittance control preventing undesired oscillating behaviors in physical human-robot interaction. , 2017, , .		26

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37	Object-Oriented Modeling of Complex Mechatronic Components for the Manufacturing Industry. IEEE/ASME Transactions on Mechatronics, 2007, 12, 696-702.	5.8	25
38	Towards decentralized coordination of multi robot systems in industrial environments: A hierarchical traffic control strategy. , 2013, , .		25
39	An automatic approach for the generation of the roadmap for multi-AGV systems in an industrial environment. , 2014, , .		23
40	A Low-Cost Navigation Strategy for Yield Estimation in Vineyards. , 2018, , .		23
41	Obstacle avoidance for industrial AGVs. , 2014, , .		22
42	MATE Robots Simplifying My Work: The Benefits and Socioethical Implications. IEEE Robotics and Automation Magazine, 2018, 25, 37-45.	2.0	21
43	A Framework for Affect-Based Natural Human-Robot Interaction. , 2018, , .		21
44	A Methodology for Comparative Analysis of Collaborative Robots for Industry 4.0. , 2019, , .		20
45	A Graph-Based Collision-Free Distributed Formation Control Strategy. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 6011-6016.	0.4	19
46	Smartwatch-Enhanced Interaction with an Advanced Troubleshooting System for Industrial Machines. IFAC-PapersOnLine, 2016, 49, 277-282.	0.9	19
47	Closed-Curve Path Tracking for Decentralized Systems of Multiple Mobile Robots. Journal of Intelligent and Robotic Systems: Theory and Applications, 2013, 71, 109-123.	3.4	18
48	Passivity Preserving Force Scaling for Enhanced Teleoperation of Multirobot Systems. IEEE Robotics and Automation Letters, 2018, 3, 1925-1932.	5.1	18
49	Controllability and Observability Preservation for Networked Systems with Time Varying Topologies. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2014, 47, 1837-1842.	0.4	17
50	TIREBOT: A collaborative robot for the tire workshop. Robotics and Computer-Integrated Manufacturing, 2019, 57, 129-137.	9.9	17
51	Multisensor data fusion for obstacle detection in automated factory logistics. , 2014, , .		16
52	Transparency in Port-Hamiltonian-Based Telemanipulation. IEEE Transactions on Robotics, 2008, 24, 903-910.	10.3	15
53	An Adaptive Virtual Training System Based on Universal Design. IFAC-PapersOnLine, 2019, 51, 335-340.	0.9	15
54	Decentralized control strategy for the implementation of cooperative dynamic behaviors in networked systems. , 2013, , .		14

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55	A PackML-based Design Pattern for Modular PLC Code. IFAC-PapersOnLine, 2015, 48, 178-183.	0.9	14
56	Interacting With a Mobile Robot with a Natural Infrastructure-Less Interface. IFAC-PapersOnLine, 2017, 50, 12753-12758.	0.9	14
57	A General Methodology for Adapting Industrial HMIs to Human Operators. IEEE Transactions on Automation Science and Engineering, 2021, 18, 164-175.	5.2	14
58	An efficient control strategy for the traffic coordination of AGVs. , 2011, , .		13
59	A Design Pattern for translating UML software models into IEC 61131-3 Programming Languages. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 9158-9163.	0.4	13
60	Mission Assignment for Multi-Vehicle Systems in Industrial Environments**This paper is written within PAN-Robots project. The research leading to these results has received funding from the European Union Seventh Framework Programme (FP7/2007-2013) under grant agreement n. 314193.. IFAC-PapersOnLine, 2015, 48, 268-273.	0.9	13
61	Optimized power modulation in wave based bilateral teleoperation. IEEE/ASME Transactions on Mechatronics, 2020, , 1-1.	5.8	13
62	The INCLUSIVE System: A General Framework for Adaptive Industrial Automation. IEEE Transactions on Automation Science and Engineering, 2021, 18, 1969-1982.	5.2	13
63	Potential based control strategy for arbitrary shape formations of mobile robots. , 2009, , .		12
64	Discrete time model for two-machine one-buffer transfer lines with restart policy. Annals of Operations Research, 2013, 209, 41-65.	4.1	12
65	Optimized simultaneous conflict-free task assignment and path planning for multi-AGV systems. , 2017, , .		12
66	Experimental comparison of 3D vision sensors for mobile robot localization for industrial application: Stereo-camera and RGB-D sensor. , 2012, , .		11
67	TIREBOT: A novel tire workshop assistant robot. , 2016, , .		11
68	A Passivity-Based Strategy for Coaching in Human-Robot Interaction. , 2018, , .		11
69	s-norm aggregation of infinite collections. Fuzzy Sets and Systems, 1996, 84, 255-269.	2.7	10
70	Collision avoidance using gyroscopic forces for cooperative Lagrangian dynamical systems. , 2013, , .		10
71	Coordinated Dynamic Behaviors for Multirobot Systems With Collision Avoidance. IEEE Transactions on Cybernetics, 2017, 47, 4062-4073.	9.5	10
72	Humans interacting with multi-robot systems: a natural affect-based approach. Autonomous Robots, 2020, 44, 601-616.	4.8	10

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73	Behavioural inheritance in object-oriented models for mechatronic systems. International Journal of Manufacturing Research, 2006, 1, 421.	0.2	9
74	Cooperative dynamic behaviors in networked systems with decentralized state estimation. , 2014, , .		9
75	Advanced sensing and control techniques for multi AGV systems in shared industrial environments. , 2015, , .		9
76	A dynamic routing strategy for the traffic control of AGVs in automatic warehouses. , 2015, , .		9
77	Achieving the desired dynamic behavior in multi-robot systems interacting with the environment. , 2017, , .		9
78	Toward Future Automatic Warehouses: An Autonomous Depalletizing System Based on Mobile Manipulation and 3D Perception. Applied Sciences (Switzerland), 2021, 11, 5959.	2.5	9
79	Unified Modeling and Verification of Logic Controllers for Physical Systems. , 0, , .		8
80	A Distributed Embedded Control System for Agricultural Machines. , 2006, , .		8
81	Variable delay in scaled port-Hamiltonian telemanipulation. Mechatronics, 2008, 18, 357-363.	3.3	8
82	Formation control over delayed communication networks. , 2008, , .		8
83	Tool compensation in walk-through programming for admittance-controlled robots. , 2016, , .		8
84	Catching the wave: A transparency oriented wave based teleoperation architecture. , 2016, , .		8
85	Simulation and optimization of industrial production lines. Automatisierungstechnik, 2018, 66, 320-330.	0.8	8
86	Object-oriented modeling of multi-domain systems. , 0, , .		7
87	Decentralized global connectivity maintenance for interconnected Lagrangian systems in the presence of data corruption. European Journal of Control, 2013, 19, 461-468.	2.6	7
88	Interacting with a multi AGV system. , 2015, , .		7
89	Modelling and Simulation for the Integrated Design of Mechatronic Systems. IFAC-PapersOnLine, 2015, 48, 75-80.	0.9	7
90	Cloud robotics paradigm for enhanced navigation of autonomous vehicles in real world industrial applications. , 2015, , .		7

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91	Optimizing the use of power in wave based bilateral teleoperation. , 2016, , .		7
92	MyAID: a Troubleshooting Application for Supporting Human Operators in Industrial Environment. IFAC-PapersOnLine, 2016, 49, 391-396.	0.9	7
93	Collision avoidance for multiple Lagrangian dynamical systems with gyroscopic forces. International Journal of Advanced Robotic Systems, 2017, 14, 172988141668710.	2.1	7
94	Methodological approach for the design of a complex inclusive human-machine system. , 2017, , .		7
95	Natural interaction based on affective robotics for multi-robot systems. , 2017, , .		7
96	On the Use of Energy Tanks for Multi-Robot Interconnection. , 2018, , .		7
97	Measurement and classification of human characteristics and capabilities during interaction tasks. Paladyn, 2019, 10, 182-192.	2.7	7
98	Survey on usability assessment for industrial user interfaces. IFAC-PapersOnLine, 2019, 52, 25-30.	0.9	7
99	Tracking of closed-curve trajectories for multi-robot systems. , 2010, , .		6
100	Decentralized Control of Cooperative Robotic Systems for Arbitrary Setpoint Tracking while Avoiding Collisions. IFAC-PapersOnLine, 2015, 48, 57-62.	0.9	6
101	Improving AGV systems: Integration of advanced sensing and control technologies. , 2015, , .		6
102	Conducting multi-robot systems: Gestures for the passive teleoperation of multiple slaves. , 2015, , .		6
103	Discrete time model of a two-station one-buffer serial system with inventory level-dependent operation. Computers and Industrial Engineering, 2017, 113, 46-63.	6.3	6
104	Tuning of myoelectric prostheses using fuzzy logic. Artificial Intelligence in Medicine, 2001, 21, 221-225.	6.5	5
105	Transparency in port-Hamiltonian based telemanipulation. , 2005, , .		5
106	On the Use of UML for Modeling Physical Systems. , 0, , .		5
107	Energy shaping over networks for mechanical systems. , 2007, , .		5
108	Coordination of Multiple Robots with Assigned Paths. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2010, 43, 312-317.	0.4	5

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109	Decentralized Global Connectivity Maintenance for Interconnected Lagrangian Systems with Communication Delays. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 78-83.	0.4	5
110	An Inertial/RFID Based Localization Method for Autonomous Lawnmowers. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 145-150.	0.4	5
111	Tools for the development of a design methodology for mechatronic systems. , 2013, , .		5
112	A low cost localization algorithm for an autonomous lawnmower. , 2013, , .		5
113	The two-machine one-buffer continuous time model with restart policy. Annals of Operations Research, 2015, 231, 33-64.	4.1	5
114	Hierarchical coordination strategy for multi-AGV systems based on dynamic geodesic environment partitioning. , 2016, , .		5
115	Design of cyber-physical systems: Definition and metamodel for reusable resources. , 2016, , .		5
116	Worker satisfaction with adaptive automation and working conditions: a theoretical model and questionnaire as an assessment tool. International Journal of Occupational Safety and Ergonomics, 2021, 27, 1235-1250.	1.9	5
117	An object-oriented approach to manufacturing systems modeling. , 2006, , .		4
118	Intrinsically Passive Force Scaling in Haptic Interfaces. , 2006, , .		4
119	A Coordination Technique for Automatic Guided Vehicles in an Industrial Environment. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2009, 42, 359-364.	0.4	4
120	Time-complemented event-driven control framework for distributed motion control systems based on IEC 61499 and IEEE 1588. , 2011, , .		4
121	Hardware in the loop simulation and Machine Modular Development: Concepts and application. , 2013, , .		4
122	Verification and validation based on the generation of testing sequences from timing diagram specifications in industrial automation. , 2015, , .		4
123	Eigenvalue placement for asymptotic stability in piecewise linear switched systems. , 2015, , .		4
124	Design of mechatronic systems through aspect and object-oriented modeling. Automatisierungstechnik, 2016, 64, 244-252.	0.8	4
125	Smart Node Networks Orchestration: A New E2E Approach for Analysis and Design for Agile 4.0 Implementation. Sensors, 2021, 21, 1624.	3.8	4
126	A User Study for the Evaluation of Adaptive Interaction Systems for Inclusive Industrial Workplaces. IEEE Transactions on Automation Science and Engineering, 2022, 19, 3300-3310.	5.2	4



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127	An Adaptive Speech Interface for Assistance in Maintenance and Changeover Procedures. Lecture Notes in Computer Science, 2018, , 152-163.	1.3	4
128	Systematic Approach to Develop a Flexible Adaptive Human-Machine Interface in Socio-Technological Systems. Advances in Intelligent Systems and Computing, 2019, , 276-288.	0.6	4
129	A practical approach to object-oriented modeling of logic control systems for industrial applications. , 2004, , .		3
130	Power scaling in port-Hamiltonian based telemanipulation. , 2005, , .		3
131	A simulation based approach for supporting Automated Guided Vehicles (AGVs) systems design. , 2008, , .		3
132	A Design Pattern for Model Based Software Development for Automatic Machinery. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2009, 42, 1429-1434.	0.4	3
133	Hardware in the loop simulation for distributed automation systems. , 2012, , .		3
134	Implementation of arbitrary periodic dynamic behaviors in networked systems. , 2014, , .		3
135	Towards an abstraction layer for PLC programming using object-oriented features of IEC61131-3 applied to motion control. , 2015, , .		3
136	Coordinated dynamic behaviors in multi-robot systems with time-varying topologies. , 2015, , .		3
137	Multi-robot systems implementing complex behaviors under time-varying topologies. European Journal of Control, 2017, 38, 73-87.	2.6	3
138	A Passivity-Based Strategy for Manual Corrections in Human-Robot Coaching. Electronics (Switzerland), 2019, 8, 320.	3.1	3
139	Herausforderungen in der interdisziplinären Entwicklung von Cyber-Physischen Produktionssystemen. Automatisierungstechnik, 2019, 67, 445-454.	0.8	3
140	Hierarchical and Flexible Traffic Management of Multi-AGV Systems Applied to Industrial Environments. , 2021, , .		3
141	Comparison Between Time-Frequency Techniques to Predict Ball Bearing Faults in Drives Executing Arbitrary Motion Profiles. , 2008, , .		3
142	Formation Control over Delayed Communication Network. Understanding Complex Systems, 2009, , 59-74.	0.6	3
143	Verification of Behavioral Substitutability in Object-Oriented Models for Industrial Controllers. , 0, , .		2
144	Model-driven approach to design ICT infrastructure for precision farming. , 2012, , .		2

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145	Generating automatically the documentation from PLC code by D4T3 to improve the usability and life cycle management of software in automation. , 2015, , .		2
146	Coordinated motion for multi-robot systems under time varying communication topologies. , 2016, , .		2
147	Simulation and optimisation of production lines in the framework of the IMPROVE project. , 2017, , .		2
148	Configuring the deployment into software-based controllers through hierarchical simulations. IFAC-PapersOnLine, 2017, 50, 4330-4335.	0.9	2
149	Shaping the Force Feedback by Dynamic Scaling in the Teleoperation of Multi-Robot Systems. IFAC-PapersOnLine, 2018, 51, 143-148.	0.9	2
150	TRAFCON â€“ Traffic Control of AGVs in Automatic Warehouses. Springer Tracts in Advanced Robotics, 2014, , 85-105.	0.4	2
151	An efficient control strategy for the traffic coordination of AGVs. , 2011, , .		2
152	Efficient Least Squares Identification with SISO Takagi-Sugeno Models. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 1997, 30, 539-543.	0.4	1
153	Quantized norms and generalized relational composition on dense universes. International Journal of Approximate Reasoning, 1998, 19, 299-314.	3.3	1
154	Flexray and ISOBUS Integration for Off-Road Vehicles: New Standards Together for Safety and Effective Applications. , 2006, , .		1
155	Complex Packaging Line Modelling and Simulation. Proceedings - IEEE International Conference on Robotics and Automation, 2007, , .	0.0	1
156	An engineering process for the mechatronic development of industrial automation systems. , 2010, , .		1
157	The PLC UML State-chart design pattern. , 2014, , .		1
158	Overcoming real time bond in high level simulation environments. , 2015, , .		1
159	Structured Product Development Process Implementation for a Packaging Company. IFAC-PapersOnLine, 2015, 48, 190-196.	0.9	1
160	Design of a packaging machine and virtual commissioning via modular hardware-in-the-loop simulations. , 2016, , .		1
161	Safe navigation and experimental evaluation of a novel tire workshop assistant robot. , 2017, , .		1
162	An Industrial Social Network for Sharing Knowledge Among Operators. IFAC-PapersOnLine, 2018, 51, 48-53.	0.9	1

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163	Methodological Approach for the Evaluation of an Adaptive and Assistive Human-Machine System. , 2018, , .		1
164	Controlling the Interaction of a Multi-Robot System with External Entities. , 2018, , .		1
165	A General Approach to Natural Human-Robot Interaction. Springer Proceedings in Advanced Robotics, 2019, , 61-71.	1.3	1
166	Towards Object-Oriented Modeling of Complex Mechatronic Systems for the Manufacturing Industry. , 2006, , .		1
167	TRAFCON â€“ Traffic Control of AGVs in Automatic Warehouses. Springer Tracts in Advanced Robotics, 2014, , 85-105.	0.4	1
168	Multi-AGV Systems in Shared Industrial Environments: Advanced Sensing and Control Techniques for Enhanced Safety and Improved Efficiency. , 2016, , 57-81.		1
169	Rule Reduction Algorithm for SISO Takagi-Sugeno Models. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 1997, 30, 385-389.	0.4	0
170	Multiple-Layer Variable Structure Controller with Parameter Adaptation. European Journal of Control, 1998, 4, 249-259.	2.6	0
171	Design by Extension and Inheritance of Behavior in Dynamical Systems. , 2006, , .		0
172	A Study of Fault Diagnosis and Recovery Techniques for Manufacturing Systems. , 2007, , 1372-1377.		0
173	Authors' Reply to â€œComments on Object-Oriented Modeling of Complex Mechatronic Components for the Manufacturing Industryâ€. IEEE/ASME Transactions on Mechatronics, 2008, 13, 487-489.	5.8	0
174	An analytical model for automated packaging lines design. , 2008, , .		0
175	A nonlinear proportional controller for motion control application. , 2010, , .		0
176	Automatic Experiments Design for Discrete Event System. , 2010, , .		0
177	Time critical wireless data transmission in autonomous control applications. , 2013, , .		0
178	Big Data for advanced monitoring system: an approach to manage system complexity. , 2018, , .		0
179	Guest Editorial Special Section on the 2018 Conference on Automation Science and Engineering (CASE). IEEE Transactions on Automation Science and Engineering, 2020, 17, 1182-1183.	5.2	0
180	Knowledge-Based Automation for Smart Manufacturing Systems. IEEE Transactions on Automation Science and Engineering, 2021, 18, 2-4.	5.2	0

#	ARTICLE	IF	CITATIONS
181	PWA Dynamic Identification for Nonlinear Model Fault Detection. , 2007, , 1121-1126.		0
182	Teleoperation of a Multi-robot System with Adjustable Dynamic Parameters. Springer Proceedings in Advanced Robotics, 2019, , 153-165.	1.3	0
183	Smart and Adaptive Interfaces for Inclusive Factory Environments. Springer Reference Technik, 2020, , 1-14.	0.0	0
184	Kinematic Compensation in Port-Hamiltonian Telemanipulation. , 2007, , 99-110.		0