

Chris Melhuish

List of Publications by Year in descending order

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Version: 2024-02-01

114
papers

4,272
citations

109321

35
h-index

123424

61
g-index

118
all docs

118
docs citations

118
times ranked

3400
citing authors

#	ARTICLE	IF	CITATIONS
1	Stigmergy, Self-Organization, and Sorting in Collective Robotics. <i>Artificial Life</i> , 1999, 5, 173-202.	1.3	349
2	Microbial fuel cells based on carbon veil electrodes: Stack configuration and scalability. <i>International Journal of Energy Research</i> , 2008, 32, 1228-1240.	4.5	293
3	Comparative study of three types of microbial fuel cell. <i>Enzyme and Microbial Technology</i> , 2005, 37, 238-245.	3.2	247
4	Urine utilisation by microbial fuel cells; energy fuel for the future. <i>Physical Chemistry Chemical Physics</i> , 2012, 14, 94-98.	2.8	205
5	Self-sustainable electricity production from algae grown in a microbial fuel cell system. <i>Biomass and Bioenergy</i> , 2015, 82, 87-93.	5.7	176
6	Waste to real energy: the first MFC powered mobile phone. <i>Physical Chemistry Chemical Physics</i> , 2013, 15, 15312.	2.8	158
7	Reinforcement learning and optimal adaptive control: An overview and implementation examples. <i>Annual Reviews in Control</i> , 2012, 36, 42-59.	7.9	156
8	Energetically autonomous robots: Food for thought. <i>Autonomous Robots</i> , 2006, 21, 187-198.	4.8	122
9	Simultaneous electricity generation and microbially-assisted electrosynthesis in ceramic MFCs. <i>Bioelectrochemistry</i> , 2015, 104, 58-64.	4.6	105
10	Miniature microbial fuel cells and stacks for urine utilisation. <i>International Journal of Hydrogen Energy</i> , 2013, 38, 492-496.	7.1	86
11	Facial behaviour mapping – From video footage to a robot head. <i>Robotics and Autonomous Systems</i> , 2008, 56, 1042-1049.	5.1	84
12	Electricity generation and struvite recovery from human urine using microbial fuel cells. <i>Journal of Chemical Technology and Biotechnology</i> , 2016, 91, 647-654.	3.2	80
13	Whiskerbot: A Robotic Active Touch System Modeled on the Rat Whisker Sensory System. <i>Adaptive Behavior</i> , 2007, 15, 223-240.	1.9	77
14	Energy accumulation and improved performance in microbial fuel cells. <i>Journal of Power Sources</i> , 2005, 145, 253-256.	7.8	75
15	Photosynthetic cathodes for Microbial Fuel Cells. <i>International Journal of Hydrogen Energy</i> , 2013, 38, 11559-11564.	7.1	72
16	Towards a Platform-Independent Cooperative Human Robot Interaction System: III An Architecture for Learning and Executing Actions and Shared Plans. <i>IEEE Transactions on Autonomous Mental Development</i> , 2012, 4, 239-253.	1.6	71
17	Improved power and long term performance of microbial fuel cell with Fe-N-C catalyst in air-breathing cathode. <i>Energy</i> , 2018, 144, 1073-1079.	8.8	71
18	Electricity and disinfectant production from wastewater: Microbial Fuel Cell as a self-powered electrolyser. <i>Scientific Reports</i> , 2016, 6, 25571.	3.3	69

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19	Empirically inspired simulated electro-mechanical model of the rat mystacial follicle-sinus complex. Proceedings of the Royal Society B: Biological Sciences, 2004, 271, 2509-2516.	2.6	62
20	Tactile Discrimination Using Active Whisker Sensors. IEEE Sensors Journal, 2012, 12, 350-362.	4.7	62
21	Joint action understanding improves robot-to-human object handover. , 2013, , .		62
22	A novel small scale Microbial Fuel Cell design for increased electricity generation and waste water treatment. International Journal of Hydrogen Energy, 2015, 40, 4263-4268.	7.1	61
23	Water formation at the cathode and sodium recovery using Microbial Fuel Cells (MFCs). Sustainable Energy Technologies and Assessments, 2014, 7, 187-194.	2.7	60
24	Power for Robotic Artificial Muscles. IEEE/ASME Transactions on Mechatronics, 2011, 16, 107-111.	5.8	53
25	Cerebellar-Inspired Adaptive Control of a Robot Eye Actuated by Pneumatic Artificial Muscles. IEEE Transactions on Systems, Man, and Cybernetics, 2009, 39, 1420-1433.	5.0	52
26	Microbial Fuel Cells for Robotics: Energy Autonomy through Artificial Symbiosis. ChemSusChem, 2012, 5, 1020-1026.	6.8	50
27	Ceramic MFCs with internal cathode producing sufficient power for practical applications. International Journal of Hydrogen Energy, 2015, 40, 14627-14631.	7.1	49
28	EcoBot-II: An Artificial Agent with a Natural Metabolism. International Journal of Advanced Robotic Systems, 2005, 2, 31.	2.1	45
29	Algorithms for Building Annular Structures with Minimalist Robots Inspired by Brood Sorting in Ant Colonies. Autonomous Robots, 2004, 17, 115-136.	4.8	44
30	Safe Adaptive Compliance Control of a Humanoid Robotic Arm with Anti-Windup Compensation and Posture Control. International Journal of Social Robotics, 2010, 2, 305-319.	4.6	44
31	Experimental implementation of mobile robot taxis with onboard Belousovâ€Žhabotinsky chemical medium. Materials Science and Engineering C, 2004, 24, 541-548.	7.3	42
32	Electro-osmotic-based catholyte production by Microbial Fuel Cells for carbon capture. Water Research, 2015, 86, 108-115.	11.3	42
33	Experimental Reactionâ€ŽDiffusion Chemical Processors for Robot Path Planning. Journal of Intelligent and Robotic Systems: Theory and Applications, 2003, 37, 233-249.	3.4	41
34	Micro-porous layer (MPL)-based anode for microbial fuel cells. International Journal of Hydrogen Energy, 2014, 39, 21811-21818.	7.1	40
35	Brood sorting by ants: two phases and differential diffusion. Animal Behaviour, 2004, 68, 1095-1106.	1.9	36
36	Seeing by Touch: Evaluation of a Soft Biologically-Inspired Artificial Fingertip in Real-Time Active Touch. Sensors, 2014, 14, 2561-2577.	3.8	36

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37	Dynamic electrical reconfiguration for improved capacitor charging in microbial fuel cell stacks. <i>Journal of Power Sources</i> , 2014, 272, 34-38.	7.8	36
38	Convoying: using choring to form travelling groups of minimal agents. <i>Robotics and Autonomous Systems</i> , 1999, 28, 207-216.	5.1	34
39	Stability and reliability of anodic biofilms under different feedstock conditions: Towards microbial fuel cell sensors. <i>Sensing and Bio-Sensing Research</i> , 2015, 6, 43-50.	4.2	30
40	Autonomous Energy Harvesting and Prevention of Cell Reversal in MFC Stacks. <i>Journal of the Electrochemical Society</i> , 2017, 164, H3047-H3051.	2.9	30
41	Artificial Metabolism: Towards True Energetic Autonomy in Artificial Life. <i>Lecture Notes in Computer Science</i> , 2003, , 792-799.	1.3	29
42	Adaptive sliding mode control for MIMO nonlinear systems based on fuzzy logic scheme. <i>International Journal of Automation and Computing</i> , 2004, 1, 51-62.	4.5	26
43	Artificial gills for robots: MFC behaviour in water. <i>Bioinspiration and Biomimetics</i> , 2007, 2, S83-S93.	2.9	26
44	EXCITABLE CHEMICAL MEDIUM CONTROLLER FOR A ROBOTIC HAND: CLOSED-LOOP EXPERIMENTS. <i>International Journal of Bifurcation and Chaos in Applied Sciences and Engineering</i> , 2004, 14, 3347-3354.	1.7	25
45	Lump localisation through a deformation-based tactile feedback system using a biologically inspired finger sensor. <i>Robotics and Autonomous Systems</i> , 2012, 60, 1442-1448.	5.1	25
46	Prokaryotic Bio-Inspired Model for Embryonics. , 2009, , .		24
47	Towards Safety in Human Robot Interaction. <i>International Journal of Social Robotics</i> , 2010, 2, 217-219.	4.6	23
48	Design of a Wearable Fingertip Haptic Device for Remote Palpation: Characterisation and Interface with a Virtual Environment. <i>Frontiers in Robotics and AI</i> , 2018, 5, 62.	3.2	22
49	Design and testing of a hybrid expressive face for a humanoid robot. , 2010, , .		21
50	High-Performance, Totally Flexible, Tubular Microbial Fuel Cell. <i>ChemElectroChem</i> , 2014, 1, 1994-1999.	3.4	21
51	Toward Bio-Inspired Tactile Sensing Capsule Endoscopy for Detection of Submucosal Tumors. <i>IEEE Sensors Journal</i> , 2017, 17, 848-857.	4.7	21
52	Multi-functional microbial fuel cells for power, treatment and electro-osmotic purification of urine. <i>Journal of Chemical Technology and Biotechnology</i> , 2019, 94, 2098-2106.	3.2	21
53	Ant-inspired sorting by robots: the importance of initial clustering. <i>Journal of the Royal Society Interface</i> , 2006, 3, 235-242.	3.4	20
54	Small Scale Microbial Fuel Cells and Different Ways of Reporting Output. <i>ECS Transactions</i> , 2010, 28, 1-9.	0.5	20

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55	Algal "lagoon"™ effect for oxygenating MFC cathodes. International Journal of Hydrogen Energy, 2014, 39, 21857-21863.	7.1	20
56	Estimation of Tool-Tissue Forces in Robot-Assisted Minimally Invasive Surgery Using Neural Networks. Frontiers in Robotics and AI, 2019, 6, 56.	3.2	19
57	Towards robot autonomy in the natural world: a robot in predator's clothing. Mechatronics, 2003, 13, 195-228.	3.3	17
58	An Analysis of Emergent Taxis in a Wireless Connected Swarm of Mobile Robots. , 2007, , .		16
59	Adaptive multi-dimensional compliance control of a humanoid robotic arm with anti-windup compensation. , 2010, , .		16
60	The BERT2 infrastructure: An integrated system for the study of human-robot interaction. , 2010, , .		16
61	Microbial Fuel Cell-driven caustic potash production from wastewater for carbon sequestration. Bioresource Technology, 2016, 215, 285-289.	9.6	16
62	The effects of laterotactile information on lump localization through a teletaction system. , 2013, , .		15
63	Tactile edge detection. , 2010, , .		14
64	Robotic hand posture and compliant grasping control using operational space and integral sliding mode control. Robotica, 2016, 34, 2163-2185.	1.9	14
65	Particle sorting by Paramecium cilia arrays. BioSystems, 2017, 156-157, 46-52.	2.0	13
66	A Biomimetic Haptic Sensor. International Journal of Advanced Robotic Systems, 2005, 2, 36.	2.1	12
67	Single motor actuated peristaltic wave generator for a soft bodied worm robot. , 2016, , .		12
68	Collective Energy Distribution: Maintaining the Energy Balance in Distributed Autonomous Robots using Trophallaxis. , 2007, , 275-284.		12
69	Phototaxis of mobile excitable lattices. Chaos, Solitons and Fractals, 2002, 13, 171-184.	5.1	11
70	Manipulating objects with chemical waves: Open loop case of experimental Belousovâ€Žhabotinsky medium coupled with simulated actuator array. Physics Letters, Section A: General, Atomic and Solid State Physics, 2006, 350, 201-209.	2.1	10
71	Gelatin as a promising printable feedstock for microbial fuel cells (MFC). International Journal of Hydrogen Energy, 2017, 42, 1783-1790.	7.1	10
72	Robotic Implementation of Realistic Reaching Motion Using a Sliding Mode/Operational Space Controller. Lecture Notes in Computer Science, 2009, , 230-238.	1.3	10

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73	A Novel Q-Learning Based Adaptive Optimal Controller Implementation for a Humanoid Robotic Arm*. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 13528-13533.	0.4	9
74	A Model of Sensorimotor Coordination in the Rat Whisker System. Lecture Notes in Computer Science, 2006, , 77-88.	1.3	9
75	Microbial Fuel Cells – Scalability and their Use in Robotics. Modern Aspects of Electrochemistry, 2011, , 239-290.	0.2	9
76	Comparisons in Evolution and Engineering: The Collective Intelligence of Sorting. Adaptive Behavior, 2004, 12, 147-159.	1.9	8
77	An optimal sliding mode controller applied to human motion synthesis with robotic implementation. , 2010, , .		8
78	Compliance Control and Human-Robot Interaction: Part II – Experimental Examples. International Journal of Humanoid Robotics, 2014, 11, 1430002.	1.1	8
79	Bootstrapping a robot’s kinematic model. Robotics and Autonomous Systems, 2014, 62, 330-339.	5.1	8
80	Design of a multi-DOF cable-driven mechanism of a miniature serial manipulator for robot-assisted minimally invasive surgery. , 2016, , .		8
81	Emotive Response to a Hybrid-Face Robot and Translation to Consumer Social Robots. IEEE Internet of Things Journal, 2022, 9, 3174-3188.	8.7	8
82	Applying a restricted mating policy to determine state space niches using immediate and delayed reinforcement. Lecture Notes in Computer Science, 1994, , 224-237.	1.3	8
83	Deformation-Based Tactile Feedback Using a Biologically-Inspired Sensor and a Modified Display. Lecture Notes in Computer Science, 2011, , 114-124.	1.3	8
84	Assessment of human response to robot facial expressions through visual evoked potentials. , 2010, , .		7
85	Manipulating objects by discrete excitable media coupled with contact-less actuator array: Open-loop case. Chaos, Solitons and Fractals, 2005, 26, 1377-1389.	5.1	6
86	Ants can sort their brood without a gaseous template. Behavioral Ecology and Sociobiology, 2006, 59, 531-540.	1.4	6
87	Active robot hand compliance using operational space and Integral Sliding Mode Control. , 2013, , .		6
88	A Cilia-inspired Closed-loop Sensor-actuator Array. Journal of Bionic Engineering, 2018, 15, 526-532.	5.0	5
89	MANIPULATING PLANAR SHAPES WITH A LIGHT-SENSITIVE EXCITABLE MEDIUM: COMPUTATIONAL STUDIES OF CLOSED-LOOP SYSTEMS. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2006, 16, 2333-2349.	1.7	4
90	A hybrid microbial dielectric elastomer generator for autonomous robots. Proceedings of SPIE, 2010, , .	0.8	4

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91	Robust active compliance control for practical grasping of a cylindrical object via a multifingered robot hand. , 2011, , .		4
92	Manipulating objects with gliders in cellular automata. , 2012, , .		4
93	μAngelo: A novel minimally invasive surgical system based on an anthropomorphic design. , 2014, , .		4
94	Emergent Behaviors in a Bio-Inspired Platform Controlled by a Physical Cellular Automata Cluster. Biomimetics, 2016, 1, 5.	3.3	4
95	Wearable Self Sufficient MFC Communication System Powered by Urine. Lecture Notes in Computer Science, 2014, , 131-138.	1.3	4
96	Toward Safe Human Robot Interaction: Integration of Compliance Control, an Anthropomorphic Hand and Verbal Communication. Communications in Computer and Information Science, 2011, , 17-24.	0.5	4
97	Building a Kinematic Model of a Robotâ€™s Arm with a Depth Camera. Lecture Notes in Computer Science, 2012, , 105-116.	1.3	4
98	UAV Horizon Tracking Using Memristors and Cellular Automata Visual Processing. Lecture Notes in Computer Science, 2014, , 64-75.	1.3	4
99	High survivability of a large colony through a small-world relationship. Artificial Life and Robotics, 2009, 14, 168-173.	1.2	3
100	A Novel Approach of Robust Active Compliance for Robot Fingers. Communications in Computer and Information Science, 2011, , 50-57.	0.5	3
101	EvoBot: Towards a Robot-Chemostat for Culturing and Maintaining Microbial Fuel Cells (MFCs). Lecture Notes in Computer Science, 2017, , 453-464.	1.3	3
102	Parallel controllers for decentralized robots: towards nano design. Kybernetes, 2000, 29, 733-745.	2.2	2
103	Hierarchical fuzzy rule based systems using an information theoretic approach. Soft Computing, 2006, 10, 867-879.	3.6	2
104	Towards Realistic Facial Behaviour in Humanoids - Mapping from Video Footage to a Robot Head. , 2007, , .		2
105	A Q-learning based Cartesian model reference compliance controller implementation for a humanoid robot arm. , 2011, , .		2
106	Task Space Integral Sliding Mode Controller Implementation for 4DOF of a Humanoid BERT II Arm with Posture Control. Lecture Notes in Computer Science, 2011, , 299-310.	1.3	2
107	The Effectiveness of Dynamically Processed Incremental Descriptions in Human Robot Interaction. ACM Transactions on Human-Robot Interaction, 2022, 11, 1-24.	4.1	2
108	Bioinspired Control of Electro-Active Polymers for Next Generation Soft Robots. Lecture Notes in Computer Science, 2012, , 424-425.	1.3	1

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109	Indirect Fuzzy Adaptive Control of Robotic Manipulator Based on Sliding Mode Scheme. , 2007, , .		0
110	A neural network method of learning human motion by observation in operational space. , 2010, , .		0
111	TAROS2011. Robotics and Autonomous Systems, 2012, 60, 1355.	5.1	0
112	A FEASIBILITY STUDY FOR ENERGY AUTONOMY IN MULTI ROBOT SEARCH AND RESCUE OPERATIONS. , 2008, , .		0
113	Artificial Symbiosis in EcoBots. , 2009, , 185-211.		0
114	Visual Homing of an Upper Torso Humanoid Robot Using a Depth Camera. Lecture Notes in Computer Science, 2014, , 114-126.	1.3	0