John Michael McCarthy

List of Publications by Year
in descending order

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98 papers	1,427 citations	279798 23 h-index	395702 33 g-index
106 all docs	106 docs citations	106 times ranked	541 citing authors

#	Article	IF	Citations
1	Design of a Flapping Wing Mechanism to Coordinate Both Wing Swing and Wing Pitch. Journal of Mechanisms and Robotics, 2018, 10, .	2.2	13
2	Synthesis of Linkages to Trace Plane Curves. Springer Proceedings in Advanced Robotics, 2018, , 245-253.	1.3	0
3	Synthesis of a Flapping Wing Mechanism Using a Constrained Spatial RRR Serial Chain. Journal of Mechanisms and Robotics, 2018, 10, .	2.2	6
4	Design of a Spatial RPR-2SS Valve Mechanism. Journal of Mechanisms and Robotics, 2018, 10, .	2.2	1
5	Synthesis of a linkage to draw a plane algebraic curve. Mechanism and Machine Theory, 2017, 111, 10-20.	4.5	7
6	Analysis of Two Spherical Parallel Manipulators With Hidden Revolute Joints. Journal of Mechanisms and Robotics, 2017, 9, .	2.2	1
7	Design of Mechanisms to Draw Trigonometric Plane Curves. Journal of Mechanisms and Robotics, 2017, 9, .	2.2	5
8	Design of a Linkage System to Write in Cursive. Journal of Computing and Information Science in Engineering, 2017, 17, .	2.7	2
9	Design of Wearable Lower Leg Orthotic Based on Six-Bar Linkage. , 2017, , .		6
10	Design of a Spatial Six-Bar Flapping Wing Mechanism for Combined Control of Swing and Pitch. , 2017, , .		0
11	The Design and Manufacture of a Gear-Coupled Serial Chain to Trace the Butterfly Curve. , 2017, , .		0
12	Homotopy Directed Optimization to Design a Six-Bar Linkage for a Lower Limb With a Natural Ankle Trajectory. Journal of Mechanisms and Robotics, 2016, 8, .	2.2	36
13	Singularity Variety of a 3SPS-1S Spherical Parallel Manipulator. , 2016, , .		0
14	Controlling the Movement of a TRR Spatial Chain With Coupled Six-Bar Function Generators for Biomimetic Motion. Journal of Mechanisms and Robotics, 2016, 8, .	2.2	6
15	Design of Mechanisms to Trace Plane Curves. , 2016, , .		1
16	An Adjustable Single Degree-of-Freedom System to Guide Natural Walking Movement for Rehabilitation. Journal of Medical Devices, Transactions of the ASME, 2016, 10, .	0.7	15
17	A Design System for Eight-Bar Linkages as Constrained 4R Serial Chains. Journal of Mechanisms and Robotics, 2016, 8, .	2.2	1
18	Mechanism and Actuation. Springer Handbooks, 2016, , 67-90.	0.6	5

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19	Synthesis of eight-bar linkages by constraining a 6R loop. Mechanism and Machine Theory, 2016, 105, 337-351.	4.5	10
20	Computational Design of Stephenson II Six-Bar Function Generators for 11 Accuracy Points. Journal of Mechanisms and Robotics, 2016, 8, .	2.2	40
21	Design of Stephenson linkages that guide a point along a specified trajectory. Mechanism and Machine Theory, 2016, 96, 38-51.	4.5	44
22	Kinematic synthesis of Stephenson III six-bar function generators. Mechanism and Machine Theory, 2016, 97, 112-126.	4.5	34
23	A Design System for Six-Bar Linkages Integrated With a Solid Modeler. Journal of Computing and Information Science in Engineering, 2015, 15, .	2.7	2
24	Flexure Design for Eight-Bar Rectilinear Motion Mechanism. , 2015, , .		0
25	Automated Generation of Linkage Loop Equations for Planar One Degree-of-Freedom Linkages, Demonstrated up to 8-Bar. Journal of Mechanisms and Robotics, 2015, 7, .	2.2	10
26	Synthesis of Useful Eight-Bar Linkages as Constrained 6R Loops. , 2014, , .		2
27	Synthesis of an NR Robot With Four-Bar Constraining Modules. , 2014, , .		1
28	Automated Generation of Linkage Loop Equations for Planar 1-DoF Linkages, Demonstrated up to 8-Bar. , 2014, , .		2
29	Vehicle Suspension Design Based on a Six-Bar Linkage. , 2014, , .		2
30	Numerical Synthesis of Six-Bar Linkages for Mechanical Computation. Journal of Mechanisms and Robotics, 2014, 6, .	2.2	28
31	Computer Aided Design of Useful Spherical Watt I Six-Bar Linkages. , 2013, , .		7
32	Use of the Jacobian to Verify Smooth Movement in Watt I and Stephenson I Six-Bar Linkages. , 2013, , .		1
33	Synthesis of a Stephenson II Function Generator for Eight Precision Positions. , 2013, , .		3
34	Design of a 5-SS Spatial Steering Linkage. , 2012, , .		7
35	Dimensional Synthesis of Planar Six-Bar Linkages by Mechanically Constrain a PRR Serial Chain. , 2012, , .		3
36	A constraint graph representation of metamorphic linkages. Mechanism and Machine Theory, 2011, 46, 228-238.	4.5	29

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37	Five Position Synthesis of a Slider-Crank Function Generator. , 2011, , .		11
38	Kinematics, Polynomials, and Computersâ€"A Brief History. Journal of Mechanisms and Robotics, 2011, 3, .	2.2	8
39	21st Century Kinematics: Synthesis, Compliance, and Tensegrity. Journal of Mechanisms and Robotics, 2011, 3, .	2.2	24
40	Configuration Synthesis of Metamorphic Mechanisms Based on Characteristic Incidence Matrix. , 2010, , .		0
41	Parametric Design of a Spherical Eight-Bar Linkage Based on a Spherical Parallel Manipulator. Journal of Mechanisms and Robotics, 2009, 1, .	2.2	9
42	Seven-Position Synthesis of a Spatial Eight-Bar Linkage by Constraining a TRS Serial Chain. , 2009, , .		1
43	Failure Recovery Planning for an Arm Mounted on an Exploratory Rover. IEEE Transactions on Robotics, 2009, 25, 1448-1453.	10.3	4
44	Introduction of the ASME Journal of Mechanisms and Robotics. Journal of Mechanisms and Robotics, 2009, 1, .	2.2	0
45	Applications of the Geometric Design of Mechanical Linkages With Task Acceleration Specifications. , 2009, , .		5
46	The algebraic synthesis of a spatial TS chain for a prescribed acceleration task. Mechanism and Machine Theory, 2008, 43, 1268-1280.	4.5	10
47	The synthesis of six-bar linkages as constrained planar 3R chains. Mechanism and Machine Theory, 2008, 43, 160-170.	4.5	57
48	Five Position Synthesis of Spherical (6, 7) Linkages. , 2008, , .		2
49	Kinematic Mapping Based Assembly Mode Evaluation of Planar Four-Bar Mechanisms. Journal of Mechanical Design, Transactions of the ASME, 2007, 129, 924-929.	2.9	22
50	Synthesis of Bistable Compliant Four-Bar Mechanisms Using Polynomial Homotopy. Journal of Mechanical Design, Transactions of the ASME, 2007, 129, 1094-1098.	2.9	46
51	Kinematic Synthesis With Contact Direction and Curvature Constraints on the Workpiece. , 2007, , 581.		16
52	Assessment Criteria for the Conceptual Design of Six-Bar Linkages. , 2007, , .		3
53	A Polynomial Homotopy Formulation of the Inverse Static Analysis of Planar Compliant Mechanisms. Journal of Mechanical Design, Transactions of the ASME, 2006, 128, 776-786.	2.9	39
54	Kinematic Synthesis of Spatial Serial Chains Using Clifford Algebra Exponentials. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 2006, 220, 953-968.	2.1	32

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55	Algorithm 857. ACM Transactions on Mathematical Software, 2006, 32, 561-579.	2.9	35
56	Engineering Design in 2030: Human Centered Design. Journal of Mechanical Design, Transactions of the ASME, 2005, 127, 357-357.	2.9	1
57	Clifford Algebra Exponentials and Planar Linkage Synthesis Equations. Journal of Mechanical Design, Transactions of the ASME, 2005, 127, 931-940.	2.9	28
58	Geometric design of RRP, RPR and PRR serial chains. Mechanism and Machine Theory, 2005, 40, 1294-1311.	4.5	12
59	The synthesis of an RPS serial chain to reach a given set of task positions. Mechanism and Machine Theory, 2005, 40, 757-775.	4.5	9
60	Dual Quaternion Synthesis of Constrained Robotic Systems. Journal of Mechanical Design, Transactions of the ASME, 2004, 126, 425-435.	2.9	107
61	Geometric Design of Cylindric PRS Serial Chains. Journal of Mechanical Design, Transactions of the ASME, 2004, 126, 269-277.	2.9	18
62	Generalized Linear Product Homotopy Algorithms and the Computation of Reachable Surfaces. Journal of Computing and Information Science in Engineering, 2004, 4, 226-234.	2.7	29
63	Trajectory Planning for Constrained Parallel Manipulators. Journal of Mechanical Design, Transactions of the ASME, 2003, 125, 709-716.	2.9	25
64	Dimensional Synthesis of Bennett Linkages. Journal of Mechanical Design, Transactions of the ASME, 2003, 125, 98-104.	2.9	38
65	Xâ€ray guided robotic radiosurgery for solid tumors. Industrial Robot, 2002, 29, 221-227.	2.1	0
66	Bennett's linkage and the cylindroid. Mechanism and Machine Theory, 2002, 37, 1245-1260.	4.5	23
67	Classification of RRSS linkages. Mechanism and Machine Theory, 2002, 37, 1413-1433.	4.5	22
68	The Clifford Algebra and the Optimization of Robot Design. , 2001, , 235-251.		7
69	Avoiding singular configurations in finite position synthesis of spherical 4R linkages. Mechanism and Machine Theory, 2000, 35, 451-462.	4.5	20
70	Burmester Lines of Spatial Five Position Synthesis from the Analysis of a 3-CPC Platform. Journal of Mechanical Design, Transactions of the ASME, 1999, 121, 45-49.	2.9	11
71	The design of spherical 4R linkages for four specified orientations. Mechanism and Machine Theory, 1999, 34, 677-692.	4.5	58
72	Interpolation of Spatial Displacements Using the Clifford Algebra of E4. Journal of Mechanical Design, Transactions of the ASME, 1999, 121, 39-44.	2.9	12

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73	The quartic singularity surfaces of planar platforms in the Clifford algebra of the projective plane. Mechanism and Machine Theory, 1998, 33, 931-944.	4.5	59
74	Center-point Curves Through Six Arbitrary Points. Journal of Mechanical Design, Transactions of the ASME, 1997, 119, 36-39.	2.9	4
75	A planar quaternion approach to the kinematic synthesis of a parallel manipulator. Robotica, 1997, 15, 361-365.	1.9	33
76	Determining Burmester Points from the Analysis of a Planar Platform. Journal of Mechanical Design, Transactions of the ASME, 1995, 117, 303-306.	2.9	3
77	Perspectives in robotic systems. Journal of Field Robotics, 1995, 12, 349-349.	0.7	0
78	Determining maximum payloads for cooperating robots under time-optimal control. Robotics and Computer-Integrated Manufacturing, 1993, 10, 437-443.	9.9	3
79	Kinematic Modules for Singularity-Free Movement With Three Cartesian Freedoms. Journal of Mechanical Design, Transactions of the ASME, 1993, 115, 207-213.	2.9	9
80	A Parameterization of the Central Axis Congruence Associated with Four Positions of a Rigid Body in Space. Journal of Mechanical Design, Transactions of the ASME, 1993, 115, 547-551.	2.9	4
81	Time-Optimal Control of Two Robots Holding the Same Workpiece. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 1993, 115, 441-446.	1.6	6
82	Functional constraints as algebraic manifolds in a Clifford algebra. IEEE Transactions on Automation Science and Engineering, 1991, 7, 670-677.	2.3	10
83	The design and control of a robot finger for tactile sensing. Journal of Field Robotics, 1988, 5, 567-581.	0.7	6
84	The Image Curve of the Planet in a Spherical Epicyclic Gear Train. Journal of Mechanisms, Transmissions, and Automation in Design, 1988, 110, 281-286.	0.2	0
85	The Image Curve of the Coupler of a Special Spherical Four Bar Linkage. Journal of Mechanisms, Transmissions, and Automation in Design, 1988, 110, 276-280.	0.2	1
86	On the Scalar and Dual Formulations of the Curvature Theory of Line Trajectories. Journal of Mechanisms, Transmissions, and Automation in Design, 1987, 109, 101-106.	0.2	31
87	The Instantaneous Kinematics of Line Trajectories in Terms of a Kinematic Mapping of Spatial Rigid Motion. Journal of Mechanisms, Transmissions, and Automation in Design, 1987, 109, 95-100.	0.2	8
88	Discussion: â€œInstantaneous Properties of Multi-Degrees-of-Freedom Motionsâ€”Line Trajectoriesâ€• (Ghosal, A., and Roth, B., 1987, ASME J. Mech. Transm. Autom. Des., 109, pp. 116â€“124). Journal of Mechanisms, Transmissions, and Automation in Design, 1987, 109, 125-125.	0.2	0
89	The differential geometry of curves in an image space of spherical kinematics. Mechanism and Machine Theory, 1987, 22, 205-211.	4.5	9
90	Dual Orthogonal Matrices in Manipulator Kinematics. International Journal of Robotics Research, 1986, 5, 45-51.	8.5	49

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91	Differential Kinematics of Spherical and Spatial Motions Using Kinematic Mapping. Journal of Applied Mechanics, Transactions ASME, 1986, 53, 15-22.	2.2	17
92	On the Relation Between Kinematic Mappings of Planar and Spherical Displacements. Journal of Applied Mechanics, Transactions ASME, 1986, 53, 457-459.	2.2	3
93	The Generalization of Line Trajectories in Spatial Kinematics to Trajectories of Great Circles on a Hypersphere. Journal of Mechanisms, Transmissions, and Automation in Design, 1986, 108, 60-64.	0.2	3
94	Planar and Spatial Rigid Motion as Special Cases of Spherical and 3-Spherical Motion. Journal of Mechanisms, Transmissions, and Automation in Design, 1983, 105, 569-575.	0.2	18
95	Instantaneous Properties of Trajectories Generated by Planar, Spherical, and Spatial Rigid Body Motions. Journal of Mechanical Design, 1982, 104, 39-50.	0.1	11
96	The Curvature Theory of Line Trajectories in Spatial Kinematics. Journal of Mechanical Design, 1981, 103, 718-724.	0.1	38
97	Dimensioning a Constrained Parallel Robot to Reach a Set of Task Positions. , 0, , .		1
98	Sizing a Serial Chain to Fit a Task Trajectory Using Clifford Algebra Exponentials. , 0, , .		9