Gianluca Rizzello

List of Publications by Year
in descending order

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		394421	414414
116	1,357	19	32
papers	citations	h-index	g-index

116	116	116	757
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Modeling and experimental validation of thin, tightly rolled dielectric elastomer actuators. Smart Materials and Structures, 2022, 31, 015008.	3.5	7
2	High-frequency voltage-driven vibrations in dielectric elastomer membranes. Mechanical Systems and Signal Processing, 2022, 168, 108677.	8.0	21
3	Smart materials for mini-actuators. , 2022, , 117-163.		3
4	Soft robotic tentacle arm element actuated by rolled dielectric elastomer artificial muscles. , 2022, , .		0
5	Finite element modeling and parameter study of a fully-polymeric array of coupled dielectric elastomers. , 2022, , .		2
6	Experimental characterization of the mechanical coupling in a DE-array. , 2022, , .		2
7	A Multiâ€Mode, Multiâ€Frequency Dielectric Elastomer Actuator. Advanced Functional Materials, 2022, 32, .	14.9	20
8	Finite element modeling and validation of a soft array of spatially coupled dielectric elastomer transducers. Smart Materials and Structures, 2022, 31, 084001.	3.5	4
9	Reinforcement Learning-Based Minimum Energy Position Control of Dielectric Elastomer Actuators. IEEE Transactions on Control Systems Technology, 2021, 29, 1674-1688.	5.2	8
10	Modeling and parameter identification of rolled dielectric elastomer actuators for soft robots. , 2021, , .		2
11	Design, Manufacturing, and Characterization of Thin, Core-Free, Rolled Dielectric Elastomer Actuators. Actuators, 2021, 10, 69.	2.3	17
12	Characterization and modeling of an array of dielectric elastomer taxels. , 2021, , .		3
13	A multi-domain dynamical model for cone-shaped dielectric elastomer loudspeakers. , 2021, , .		6
14	A Hybrid Dynamical Modeling Framework for Shape Memory Alloy Wire Actuated Structures. IEEE Robotics and Automation Letters, 2021, 6, 3886-3893.	5.1	4
15	Smith-Predictor-Based Torque Control of a Rolling Diaphragm Hydrostatic Transmission. IEEE Robotics and Automation Letters, 2021, 6, 2970-2977.	5.1	7
16	Bistable Actuation in Multi-DoF Soft Robotic Modules Driven by Rolled Dielectric Elastomer Actuators. , 2021, , .		6
17	Editorial: Soft Robotics Based on Electroactive Polymers. Frontiers in Robotics and AI, 2021, 8, 676406.	3.2	6
18	Fully Polymeric Domes as High-Stroke Biasing System for Soft Dielectric Elastomer Actuators. Frontiers in Robotics and AI, 2021, 8, 695918.	3.2	6

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19	Model-Based Design Optimization of Soft Polymeric Domes Used as Nonlinear Biasing Systems for Dielectric Elastomer Actuators. Actuators, 2021, 10, 209.	2.3	4
20	Nanoscale Nickel-Based Thin Films as Highly Conductive Electrodes for Dielectric Elastomer Applications with Extremely High Stretchability up to 200%. ACS Applied Materials & Interfaces, 2021, 13, 39894-39904.	8.0	14
21	Modeling and Validation of a High Voltage Driving Circuit for Dielectric Elastomer Actuators. , 2021, , .		1
22	An SMA-Based Multifunctional Implant for Improved Bone Fracture Healing. , 2021, , .		1
23	Finite Element Modeling and Simulation of a Soft Array of Dielectric Elastomer Actuators. , 2021, , .		4
24	Towards Sensorless Soft Robotics: Self-Sensing Stiffness Control of Dielectric Elastomer Actuators. IEEE Transactions on Robotics, 2020, 36, 174-188.	10.3	26
25	A Soft Five-Fingered Hand Actuated by Shape Memory Alloy Wires: Design, Manufacturing, and Evaluation. Frontiers in Robotics and AI, 2020, 7, 608841.	3.2	15
26	Data-Driven Optimal Structured Control for Unknown Symmetric Systems. , 2020, , .		2
27	A Shape Memory Alloy Smart Handling System for Advanced Manufacturing Applications. , 2020, , .		2
28	Nonlinear multi-scale dynamics modeling of piezoceramic energy harvesters with ferroelectric and ferroelastic hysteresis. Nonlinear Dynamics, 2020, 100, 1985-2003.	5.2	8
29	Design and validation of a dielectric elastomer membrane actuator driven pneumatic pump. Smart Materials and Structures, 2020, 29, 075021.	3.5	32
30	A lumped parameter model for strip-shaped dielectric elastomer membrane transducers with arbitrary aspect ratio. Smart Materials and Structures, 2020, 29, 115030.	3.5	8
31	Self-Sensing Control of Antagonistic SMA Actuators Based on Resistance-Displacement Hysteresis Compensation. , 2020, , .		8
32	SMA Antagonistic-Micro-Wire Bundle: First Measurement Results. , 2020, , .		3
33	Soft robotic module actuated by silicone-based rolled dielectric elastomer actuators: modeling and simulation. , 2020, , .		10
34	Force measurement based on dielectric elastomers for an intelligent glove providing worker assessment in the digital production. , 2020, , .		4
35	Modular Design of an SMA Driven Continuum Robot. , 2020, , .		9
36	On the optimization of actuator saturation limits for LTI systems: an LMI-based invariant ellipsoid approach. IFAC-PapersOnLine, 2020, 53, 5567-5572.	0.9	1

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37	Flatness-based Trajectory-tracking Control of Dielectric Elastomer Actuators. IFAC-PapersOnLine, 2020, 53, 8757-8762.	0.9	0
38	A Hybrid Dynamical Model for Hysteretic Thermal Shape Memory Alloy Wire Actuators. IFAC-PapersOnLine, 2020, 53, 8923-8928.	0.9	0
39	Multifunctional fatigue testing setup for in-plane operating DEAs. , 2020, , .		1
40	Design and fabrication of silicone-based dielectric elastomer rolled actuators for soft robotic applications. , 2020, , .		6
41	Experimental characterization of a smart dielectric elastomer multi-sensor grid. , 2020, , .		2
42	Adaptive Material Handling System Based on Shape Memory Alloy Actuators. , 2020, , .		3
43	Design of a Compliant Industrial Gripper Driven by a Bistable Shape Memory Alloy Actuator. , 2020, , .		3
44	Decoupled Antagonistic SMA Actuator for Valve Applications. , 2020, , .		0
45	High Voltage AC Control of SMA Wires. , 2020, , .		0
46	System Simulation of an Elastocaloric Heating and Cooling Device Based on SMA. , 2020, , .		1
47	A finite element framework for a shape memory alloy actuated finger. Journal of Intelligent Material Systems and Structures, 2019, 30, 2052-2064.	2.5	9
48	Fuzzy Adaptive Dynamic Programming Minimum Energy Control Of Dielectric Elastomer Actuators. , 2019, , .		7
49	A Review on Model Predictive Control and its Applications in Power Electronics. , 2019, , .		27
50	Modeling and Identification of a Shape Memory Alloy Robotic Finger Actuator. , 2019, , .		2
51	Experimental Analysis of Continuous Vibrations in Dielectric Elastomer Membrane Actuators via Three-Dimensional Laser Vibrometry. Journal of Vibration and Acoustics, Transactions of the ASME, 2019, 141, .	1.6	4
52	Development and validation of a fatigue testing setup for dielectric elastomer membrane actuators. Smart Materials and Structures, 2019, 28, 055029.	3.5	2
53	Development of a nonintrusive pressure sensor for polymer tubes based on dielectric elastomer membranes. Sensors and Actuators A: Physical, 2019, 292, 1-10.	4.1	6
54	Hysteresis modeling in thermal shape memory alloy wire actuators: an irreversible port-Hamiltonian approach. , 2019, , .		5

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55	Development, manufacturing, and validation of a dielectric elastomer membrane actuatorâ€“driven contactor. Journal of Intelligent Material Systems and Structures, 2019, 30, 636-648.	2.5	14
56	An accurate dynamic model for polycrystalline shape memory alloy wire actuators and sensors. Smart Materials and Structures, 2019, 28, 025020.	3.5	13
57	Modeling and Design Optimization of a Rotational Soft Robotic System Driven by Double Cone Dielectric Elastomer Actuators. Frontiers in Robotics and AI, 2019, 6, 150.	3.2	13
58	Finite element simulation of plane strain dielectric elastomer membranes actuated by discretized electrodes. , 2019, , .		2
59	Design of a dielectric elastomer actuator driven pneumatic pump. , 2019, , .		1
60	Continuum electro-mechanical damage modelling for dielectric elastomer. , 2019, , .		1
61	A novel design concept to boost the force output of dielectric elastomer membrane actuators. , 2019, , .		1
62	Finite element modeling and simulation of a robotic finger actuated by Ni-Ti shape memory alloy wires. , 2019, , .		1
63	Energy Optimal Control of Dielectric Elastomer Actuators via Adaptive Dynamic Programming. , 2019, , .		1
64	A finite element model of rigid body structures actuated by dielectric elastomer actuators. Smart Materials and Structures, 2018, 27, 065001.	3.5	6
65	Performance Prediction and Scaling Laws of Circular Dielectric Elastomer Membrane Actuators. Journal of Mechanical Design, Transactions of the ASME, 2018, 140, .	2.9	20
66	Simultaneous Self-Sensing of Displacement and Force for Soft Dielectric Elastomer Actuators. IEEE Robotics and Automation Letters, 2018, 3, 1230-1236.	5.1	25
67	Development and experimental characterization of a dielectric elastomer membrane strip actuator. Smart Materials and Structures, 2018, 27, 025019.	3.5	6
68	Silicone based dielectric elastomer strip actuators coupled with nonlinear biasing elements for large actuation strains. Smart Materials and Structures, 2018, 27, 074003.	3.5	30
69	Robust Control of Systems with Output Hysteresis and Input Saturation Using a Finite Time Stability Approach. , 2018, , .		2
70	Position Control of Dielectric Elastomer Actuators Based on Port-Hamiltonian Framework. , 2018, , .		2
71	Simulation Analysis and Performance Evaluation of a Vibratory Feeder Actuated by Dielectric Elastomers. , 2018, , .		5
72	Passivity Analysis and Port-Hamiltonian Formulation of the MÃ¼ller-Achenbach-Seelecke Model for Shape Memory Alloys: the Isothermal Case. IFAC-PapersOnLine, 2018, 51, 713-718.	0.9	2

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73	Analytical Modeling of Clamped Dielectric Elastomer Strip Membranes Exhibiting Necking Effect. IFAC-PapersOnLine, 2018, 51, 701-706.	0.9	2
74	Nonlinear Multi-Scale Dynamics Modeling of a Piezoelectric Energy Harvester. , 2018, , .		1
75	A novel biasing mechanism for circular out-of-plane dielectric actuators based on permanent magnets. Mechatronics, 2018, 56, 48-57.	3.3	22
76	A novel dielectric elastomer membrane actuator concept for high-force applications. Extreme Mechanics Letters, 2018, 23, 24-28.	4.1	45
77	Stimuli-Responsive Smart Polymers and Structures: Characteristics and Applications. International Journal of Polymer Science, 2018, 2018, 1-2.	2.7	1
78	Modeling and simulation of a valve system actuated by polycrystalline shape memory alloy wires. , 2018, , .		2
79	High-speed and high-efficiency shape memory alloy actuation. Smart Materials and Structures, 2018, 27, 075047.	3.5	32
80	Self-sensing for robust automatic charge management of dielectric elastomer generators. , 2018, , .		4
81	Pressure monitoring inside a polymer tube based on a dielectric elastomer membrane sensor. , 2018, , .		3
82	Fast model-based design of large stroke dielectric elastomer membrane actuators biased with pre-stressed buckled beams. , 2018, , .		5
83	Development of a fatigue testing setup for dielectric elastomer membrane actuators. Proceedings of SPIE, 2017, , .	0.8	5
84	Continuum vibration analysis of dielectric elastomer membranes. Proceedings of SPIE, 2017, , .	0.8	1
85	Robust Interaction Control of a Dielectric Elastomer Actuator With Variable Stiffness. IEEE/ASME Transactions on Mechatronics, 2017, 22, 1705-1716.	5.8	15
86	Design and Control of a High-Speed Positioning System Based on Dielectric Elastomer Membrane Actuators. IEEE/ASME Transactions on Mechatronics, 2017, 22, 1259-1267.	5.8	51
87	A Self-Sensing Approach for Dielectric Elastomer Actuators Based on Online Estimation Algorithms. IEEE/ASME Transactions on Mechatronics, 2017, 22, 728-738.	5.8	53
88	Effect of screen printing parameters on sensor and actuator performance of dielectric elastomer (DE) membranes. Sensors and Actuators A: Physical, 2017, 265, 10-19.	4.1	62
89	Permanent magnets as biasing mechanism for improving the performance of circular dielectric elastomer out-of-plane actuators. Proceedings of SPIE, 2017, , .	0.8	8
90	Interaction control of a dielectric elastomer membrane with variable stiffness. , 2017, , .		0

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91	An overview on innovative mechatronic actuators based on smart materials. , 2017, , .		2
92	Hybrid Aeronautical Propulsion: Control and Energy Management. IFAC-PapersOnLine, 2017, 50, 169-174.	0.9	16
93	A Thermodynamically Consistent Port-Hamiltonian Model for Dielectric Elastomer Membrane Actuators and Generators. IFAC-PapersOnLine, 2017, 50, 4855-4862.	0.9	9
94	Metal muscles and nervesâ€"a self-sensing SMA-actuated hand concept. Smart Materials and Structures, 2017, 26, 095007.	3.5	42
95	Development and experimental characterization of a pneumatic valve actuated by a dielectric elastomer membrane. Smart Materials and Structures, 2017, 26, 085023.	3.5	34
96	Self-sensing at low sampling-to-signal frequency ratio: An improved algorithm for dielectric elastomer actuators. , 2016, , .		3
97	Robust Control of High-Speed Synchronous Reluctance Machines. IEEE Transactions on Industry Applications, 2016, 52, 3990-4000.	4.9	16
98	Robust Position Control of Dielectric Elastomer Actuators Based on LMI Optimization. IEEE Transactions on Control Systems Technology, 2016, 24, 1909-1921.	5.2	55
99	Closed loop control of dielectric elastomer actuators based on self-sensing displacement feedback. Smart Materials and Structures, 2016, 25, 035034.	3.5	79
100	Robust current control of electrical machines considering saturation effects at high speed regimes. , 2015, , .		3
101	Robust LMI position regulation of a bistable Dielectric Electro-Active Polymer membrane. , 2015, , .		4
102	Robust control of high-speed synchronous reluctance machines. , 2015, , .		0
103	Dynamic Modeling and Experimental Validation of an Annular Dielectric Elastomer Actuator With a Biasing Mass. Journal of Vibration and Acoustics, Transactions of the ASME, 2015, 137, .	1.6	20
104	Modeling, Identification, and Control of a Dielectric Electro-Active Polymer Positioning System. IEEE Transactions on Control Systems Technology, 2015, 23, 632-643.	5.2	102
105	Self-sensing in dielectric electro-active polymer actuator using linear-in-parametes online estimation. , 2015, , .		9
106	LMI-based design of PI controllers for micropositioning dielectric electro-active polymer membranes. , 2015, , .		4
107	A smart experimental technique for the optimization of dielectric elastomer actuator (DEA) systems. Smart Materials and Structures, 2015, 24, 094002.	3.5	11
108	Modeling of the effects of the electrical dynamics on the electromechanical response of a DEAP circular actuator with a massâ€"spring load. Smart Materials and Structures, 2015, 24, 094003.	3.5	63

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109	Modeling and control of innovative smart materials and actuators: A tutorial. , 2014, , .		6
110	An electro-mechanically coupled model for the dynamic behavior of a dielectric electro-active polymer actuator. Smart Materials and Structures, 2014, 23, 104006.	3.5	45
111	High-Frequency Dynamic Model of a Pre-Loaded Circular Dielectric Electro-Active Polymer Actuator. , 2013, , .		11
112	Modeling and position control of an electromechanical actuator based on a mass-spring-biased EAP system. , 2013, , .		4
113	Modeling and Simulation of an Array of Dielectric Elestomeric Actuator Membranes. , 0, , .		1
114	Assembly and Characterization of a DE Actuator Based on Polymeric Domes as Biasing Element. , 0, , .		2
115	Influence of Residual Stresses of Sputtered Thin Film Electrodes for Dielectric Elastomer Applications. , 0, , .		1
116	Highâ€Speed Antagonistic Shape Memory Actuator for High Ambient Temperatures. Advanced Engineering Materials, 0, , .	3.5	4