Katia Bertoldi

List of Publications by Year
in descending order

Source: https://exaly.com/author-pdf/2413210/publications.pdf

Version: 2024-02-01

92 papers	11,341 citations	43973 48 h-index	42291 92 g-index
97 all docs	97 docs citations	97 times ranked	8089 citing authors

#	Article	IF	Citations
1	Unfolding Textile-Based Pneumatic Actuators for Wearable Applications. Soft Robotics, 2022, 9, 163-172.	4.6	38
2	A Modular and Selfâ€Contained Fluidic Engine for Soft Actuators. Advanced Intelligent Systems, 2022, 4, 2100094.	3.3	8
3	Architected Multimaterial Lattices with Thermally Programmable Mechanical Response. Advanced Functional Materials, 2022, 32, 2105128.	7.8	44
4	Inverse Design of Inflatable Soft Membranes Through Machine Learning. Advanced Functional Materials, 2022, 32, .	7.8	26
5	A buckling-sheet ring oscillator for electronics-free, multimodal locomotion. Science Robotics, 2022, 7, eabg5812.	9.9	25
6	Curvilinear Kirigami Skins Let Soft Bending Actuators Slither Faster. Frontiers in Robotics and AI, 2022, 9, 872007.	2.0	4
7	Self-regulated non-reciprocal motions in single-material microstructures. Nature, 2022, 605, 76-83.	13.7	63
8	Inflatable Origami: Multimodal Deformation via Multistability. Advanced Functional Materials, 2022, 32, .	7.8	30
9	Mechanically robust lattices inspired by deep-sea glass sponges. Nature Materials, 2021, 20, 237-241.	13.3	144
10	A Modeling Framework for Jamming Structures. Advanced Functional Materials, 2021, 31, 2007554.	7.8	27
11	Harnessing Mechanical Deformation to Reduce Spherical Aberration in Soft Lenses. Physical Review Letters, 2021, 126, 084301.	2.9	2
12	Liquid-induced topological transformations of cellular microstructures. Nature, 2021, 592, 386-391.	13.7	82
13	Multistable inflatable origami structures at the metre scale. Nature, 2021, 592, 545-550.	13.7	174
14	Deployable Structures Based on Buckling of Curved Beams Upon a Rotational Input. Advanced Functional Materials, 2021, 31, 2101144.	7.8	9
15	Microstructural design for mechanicalâ€“optical multifunctionality in the exoskeleton of the flower beetle Torynorrhina flammea. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	23
16	Programming nonreciprocity and reversibility in multistable mechanical metamaterials. Nature Communications, 2021, 12, 3454.	5.8	34
17	Deployable Structures Based on Buckling of Curved Beams Upon a Rotational Input (Adv. Funct. Mater.) Tj ETQq1 1 0.784314 rgBT /Ov	7.8	1
18	Mechanical and hydrodynamic analyses of helical strake-like ridges in a glass sponge. Journal of the Royal Society Interface, 2021, 18, 20210559.	1.5	16

#	Article	IF	Citations
19	Controlling Liquid Crystal Orientations for Programmable Anisotropic Transformations in Cellular Microstructures. Advanced Materials, 2021, 33, e2105024.	11.1	22
20	Mechanical Valves for Onâ€Board Flow Control of Inflatable Robots. Advanced Science, 2021, 8, e2101941.	5.6	20
21	Universally bistable shells with nonzero Gaussian curvature for two-way transition waves. Nature Communications, 2021, 12, 695.	5.8	37
22	Harnessing Viscous Flow to Simplify the Actuation of Fluidic Soft Robots. Soft Robotics, 2020, 7, 1-9.	4.6	65
23	Programmable Hierarchical Kirigami. Advanced Functional Materials, 2020, 30, 1906711.	7.8	70
24	Characterization, stability, and application of domain walls in flexible mechanical metamaterials. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 31002-31009.	3.3	32
25	Metamaterials: Kirigamiâ€Inspired Inflatables with Programmable Shapes (Adv. Mater. 33/2020). Advanced Materials, 2020, 32, 2070250.	11.1	0
26	Snapping of hinged arches under displacement control: Strength loss and nonreciprocity. Physical Review E, 2020, 101, 053004.	0.8	7
27	Bioinspired kirigami metasurfaces as assistive shoe grips. Nature Biomedical Engineering, 2020, 4, 778-786.	11.6	61
28	Inflatable soft jumper inspired by shell snapping. Science Robotics, 2020, 5, .	9.9	128
29	Octopus Arm-Inspired Tapered Soft Actuators with Suckers for Improved Grasping. Soft Robotics, 2020, 7, 639-648.	4.6	171
30	Kirigamiâ€Inspired Inflatables with Programmable Shapes. Advanced Materials, 2020, 32, e2001863.	11.1	117
31	Programmable Hierarchical Kirigami: Programmable Hierarchical Kirigami (Adv. Funct. Mater. 6/2020). Advanced Functional Materials, 2020, 30, 2070039.	7.8	2
32	Navigating the landscape of nonlinear mechanical metamaterials for advanced programmability. Physical Review B, 2020, 101, .	1.1	22
33	Harnessing transition waves to realize deployable structures. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 4015-4020.	3.3	53
34	Guided transition waves in multistable mechanical metamaterials. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 2319-2325.	3.3	141
35	Geometric charges and nonlinear elasticity of two-dimensional elastic metamaterials. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 10195-10202.	3.3	21
36	Optimal turbine blade design enabled by auxetic honeycomb. Smart Materials and Structures, 2020, 29, 125004.	1.8	6

#	ARTICLE	IF	CITATIONS
37	A Soft, Modular, and Bi-stable Dome Actuator for Programmable Multi-Modal Locomotion. , 2020, , .		7
38	Reconfigurable soft body trajectories using unidirectionally stretchable composite laminae. Nature Communications, 2019, 10, 3464.	5.8	71
39	Direct Laser Writing: Additive Manufacturing of Nanostructures That Are Delicate, Complex, and Smaller than Ever (Small 33/2019). Small, 2019, 15, 1970173.	5.2	4
40	Focusing and Mode Separation of Elastic Vector Solitons in a 2D Soft Mechanical Metamaterial. Physical Review Letters, 2019, 123, 024101.	2.9	37
41	Anomalous Collisions of Elastic Vector Solitons in Mechanical Metamaterials. Physical Review Letters, 2019, 122, 044101.	2.9	31
42	Additive Manufacturing of Nanostructures That Are Delicate, Complex, and Smaller than Ever. Small, 2019, 15, e1902370.	5.2	17
43	Frequency-doubling effect in acoustic reflection by a nonlinear, architected rotating-square metasurface. Physical Review E, 2019, 99, 052209.	0.8	20
44	Propagation of pop ups in kirigami shells. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 8200-8205.	3.3	92
45	Programming soft robots with flexible mechanical metamaterials. Science Robotics, 2019, 4, .	9.9	118
46	Kirigami skins make a simple soft actuator crawl. Science Robotics, 2018, 3, .	9.9	409
47	Manipulating acoustic wave reflection by a nonlinear elastic metasurface. Journal of Applied Physics, 2018, 123, .	1.1	26
48	Nonlnear elastic metasurface design achieving acoustic wave scatering control. , 2018, , .		0
49	Metamaterials with amplitude gaps for elastic solitons. Nature Communications, 2018, 9, 3410.	5.8	94
50	Rational design of reconfigurable prismatic architected materials. Nature, 2017, 541, 347-352.	13.7	236
51	Buckling-Induced Kirigami. Physical Review Letters, 2017, 118, 084301.	2.9	182
52	Harnessing Geometric Frustration to Form Band Gaps in Acoustic Channel Lattices. Physical Review Letters, 2017, 118, 084302.	2.9	25
53	Harnessing Instabilities to Design Tunable Architected Cellular Materials. Annual Review of Materials Research, 2017, 47, 51-61.	4.3	110
54	Motion microscopy for visualizing and quantifying small motions. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 11639-11644.	3.3	55

#	Article	IF	Citations
55	A Biologically Inspired, Functionally Graded End Effector for Soft Robotics Applications. Soft Robotics, 2017, 4, 317-323.	4.6	41
56	Flexible mechanical metamaterials. Nature Reviews Materials, 2017, 2, .	23.3	1,006
57	Peridynamic Modeling of Ruptures in Biomembranes. PLoS ONE, 2016, 11, e0165947.	1.1	22
58	Harnessing Buckling to Design Architected Materials that Exhibit Effective Negative Swelling. Advanced Materials, 2016, 28, 6619-6624.	11.1	112
59	Hierarchical honeycomb auxetic metamaterials. Scientific Reports, 2016, 5, 18306.	1.6	140
60	Dimpled elastic sheets: a new class of non-porous negative Poissonâ€™s ratio materials. Scientific Reports, 2016, 5, 18373.	1.6	51
61	Acoustic Switches: Harnessing Deformation to Switch On and Off the Propagation of Sound (Adv.) Tj ETQq1 1 0.784314 rgBT /Overlo	11.1	2
62	Stable propagation of mechanical signals in soft media using stored elastic energy. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 9722-9727.	3.3	254
63	Characterization of a Mechanically Tunable Gyroid Photonic Crystal Inspired by the Butterfly Parides Sesostris. Advanced Optical Materials, 2016, 4, 99-105.	3.6	44
64	Tensile Instability in a Thick Elastic Body. Physical Review Letters, 2016, 117, 094301.	2.9	20
65	A three-dimensional actuated origami-inspired transformable metamaterial with multiple degrees of freedom. Nature Communications, 2016, 7, 10929.	5.8	312
66	Elastic metamaterials for tuning circular polarization of electromagnetic waves. Scientific Reports, 2016, 6, 28273.	1.6	14
67	Harnessing Deformation to Switch On and Off the Propagation of Sound. Advanced Materials, 2016, 28, 1631-1635.	11.1	140
68	Architected Materials with Ultraâ€Low Porosity for Vibration Control. Advanced Materials, 2016, 28, 5943-5948.	11.1	56
69	Structure, biomimetics, and fluid dynamics of fish skin surfaces. Physical Review Fluids, 2016, 1, .	1.0	73
70	Honeycomb phononic crystals with self-similar hierarchy. Physical Review B, 2015, 92, .	1.1	103
71	Topological Phononic Crystals with One-Way Elastic Edge Waves. Physical Review Letters, 2015, 115, 104302.	2.9	643
72	Dielectric Elastomer Based â€œGrippersâ€•for Soft Robotics. Advanced Materials, 2015, 27, 6814-6819.	11.1	383

#	Article	IF	Citations
73	Multistable Architected Materials for Trapping Elastic Strain Energy. Advanced Materials, 2015, 27, 4296-4301.	11.1	624
74	Discontinuous Buckling of Wide Beams and Metabeams. Physical Review Letters, 2015, 115, 044301.	2.9	93
75	Locally resonant band gaps in periodic beam lattices by tuning connectivity. Physical Review B, 2015, 91, .	1.1	66
76	A 3D-printed, functionally graded soft robot powered by combustion. Science, 2015, 349, 161-165.	6.0	802
77	Mechanical Programming of Soft Actuators by Varying Fiber Angle. Soft Robotics, 2015, 2, 26-32.	4.6	382
78	Microfluidic Fabrication and Micromechanics of Permeable and Impermeable Elastomeric Microbubbles. Langmuir, 2015, 31, 3489-3493.	1.6	17
79	Amplifying the response of soft actuators by harnessing snap-through instabilities. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 10863-10868.	3.3	181
80	Harnessing Multiple Folding Mechanisms in Soft Periodic Structures for Tunable Control of Elastic Waves. Advanced Functional Materials, 2014, 24, 4935-4942.	7.8	167
81	Harnessing fluid-structure interactions to design self-regulating acoustic metamaterials. Journal of Applied Physics, 2014, 115, 034907.	1.1	34
82	Complex Ordered Patterns in Mechanical Instability Induced Geometrically Frustrated Triangular Cellular Structures. Physical Review Letters, 2014, 112, 098701.	2.9	111
83	Pneumatic Networks for Soft Robotics that Actuate Rapidly. Advanced Functional Materials, 2014, 24, 2163-2170.	7.8	1,125
84	Harnessing Buckling to Design Tunable Locally Resonant Acoustic Metamaterials. Physical Review Letters, 2014, 113, 014301.	2.9	474
85	Structural Transition from Helices to Hemihelices. PLoS ONE, 2014, 9, e93183.	1.1	57
86	Harnessing instabilities for design of soft reconfigurable auxetic/chiral materials. Soft Matter, 2013, 9, 8198.	1.2	174
87	Effects of geometric and material nonlinearities on tunable band gaps and low-frequency directionality of phononic crystals. Physical Review B, 2013, 88, .	1.1	145
88	Metamaterials: 3D Soft Metamaterials with Negative Poisson's Ratio (Adv. Mater. 36/2013). Advanced Materials, 2013, 25, 5116-5116.	11.1	8
89	A Combined Finite Element-Multiple Criteria Optimization Approach for Materials Selection of Gas Turbine Components. Journal of Applied Mechanics, Transactions ASME, 2012, 79, .	1.1	12
90	Some Remarks on the Effect of Interphases on the Mechanical Response and Stability of Fiber-Reinforced Elastomers. Journal of Applied Mechanics, Transactions ASME, 2012, 79, .	1.1	15

#	Article	IF	Citations
91	Spontaneous and deterministic three-dimensional curling of pre-strained elastomeric bi-strips. Soft Matter, 2012, 8, 6291.	1.2	56
92	Osmotic collapse of a void in an elastomer: breathing, buckling and creasing. Soft Matter, 2010, 6, 5770.	1.2	63