Zheng Jia

List of Publications by Year in descending order

49 papers	4,341 citations	236925 25 h-index	214800 47 g-index
49 all docs	49 docs citations	49 times ranked	5816 citing authors

#	Article	IF	Citations
1	Machine-learning-accelerated design of functional structural components in deep-sea soft robots. Extreme Mechanics Letters, 2022, 52, 101635.	4.1	9
2	A versatile hydrogel networkâ€“repairing strategy achieved by the covalent-like hydrogen bond interaction. Science Advances, 2022, 8, eabl5066.	10.3	96
3	Beyond Skin Pressure Sensing: 3D Printed Laminated Graphene Pressure Sensing Material Combines Extremely Low Detection Limits with Wide Detection Range. Advanced Functional Materials, 2022, 32, .	14.9	54
4	Molecular Mechanism Underpinning Stable Mechanical Performance and Enhanced Conductivity of Air-Aged Ionic Conductive Elastomers. Macromolecules, 2022, 55, 4665-4674.	4.8	4
5	Pulling actuation enabled by harnessing the torsional instability of hyperelastic soft rods. Extreme Mechanics Letters, 2022, 55, 101807.	4.1	1
6	Stress evolution during the two-step charging of high-capacity electrode materials. Journal of Power Sources, 2021, 486, 229371.	7.8	5
7	A Mechanically Robust and Versatile Liquidâ€Free Ionic Conductive Elastomer. Advanced Materials, 2021, 33, e2006111.	21.0	188
8	Effect of interfacial stiffness on the stretchability of metal/elastomer bilayers under in-plane biaxial tension. Theoretical and Applied Mechanics Letters, 2021, 11, 100247.	2.8	4
9	Self-powered soft robot in the Mariana Trench. Nature, 2021, 591, 66-71.	27.8	545
10	Ambiently and Mechanically Stable Ionogels for Soft Ionotronics. Advanced Functional Materials, 2021, 31, 2102773.	14.9	95
11	Ultrafast Digital Fabrication of Designable Architectured Liquid Crystalline Elastomer. Advanced Materials, 2021, 33, e2105597.	21.0	37
12	Differential diffusion driven far-from-equilibrium shape-shifting of hydrogels. Nature Communications, 2021, 12, 6155.	12.8	26
13	3D Printed Mechanically Robust Graphene/CNT Electrodes for Highly Efficient Overall Water Splitting. Advanced Materials, 2020, 32, e1908201.	21.0	84
14	Red-phosphorus-impregnated carbon nanofibers for sodium-ion batteries and liquefaction of red phosphorus. Nature Communications, 2020, 11, 2520.	12.8	77
15	A constitutive model of microfiber reinforced anisotropic hydrogels: With applications to wood-based hydrogels. Journal of the Mechanics and Physics of Solids, 2020, 138, 103893.	4.8	24
16	Dual pH-Responsive Hydrogel Actuator for Lipophilic Drug Delivery. ACS Applied Materials & Interfaces, 2020, 12, 12010-12017.	8.0	162
17	Mechanics-guided design of shape-morphing composite sheets with hard and soft materials. Extreme Mechanics Letters, 2020, 35, 100643.	4.1	8
18	Highly Stretchable Bilayer Lattice Structures That Elongate via Inâ€Plane Deformation. Advanced Functional Materials, 2020, 30, 1909473.	14.9	3

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19	A Constitutive Model for Binary-Solvent Gels. Journal of Applied Mechanics, Transactions ASME, 2020, 87, .	2.2	1
20	Nanoscale silicon-based actuators with extremely large actuation strain and extremely low driving voltage. Extreme Mechanics Letters, 2019, 31, 100534.	4.1	3
21	A chemo-mechanical model for fully-coupled lithiation reaction and stress generation in viscoplastic lithiated silicon. Science China Technological Sciences, 2019, 62, 1365-1374.	4.0	8
22	3D Printing of Ultralight Biomimetic Hierarchical Graphene Materials with Exceptional Stiffness and Resilience. Advanced Materials, 2019, 31, e1902930.	21.0	130
23	A micromechanical model for the growth of collagenous tissues under mechanics-mediated collagen deposition and degradation. Journal of the Mechanical Behavior of Biomedical Materials, 2019, 98, 96-107.	3.1	13
24	Bifurcation instability of substrate-supported metal films under biaxial in-plane tension. Journal of the Mechanics and Physics of Solids, 2019, 126, 52-75.	4.8	9
25	Delayed burst of a gel balloon. Journal of the Mechanics and Physics of Solids, 2019, 124, 143-158.	4.8	11
26	Dielectric-elastomer-based capacitive force sensing with tunable and enhanced sensitivity. Extreme Mechanics Letters, 2018, 21, 49-56.	4.1	14
27	Processing bulk natural wood into a high-performance structural material. Nature, 2018, 554, 224-228.	27.8	970
28	Reprogrammable ultra-fast shape-transformation of macroporous composite hydrogel sheets. Journal of Materials Chemistry B, 2017, 5, 2883-2887.	5.8	23
29	Modular-based multiscale modeling on viscoelasticity of polymer nanocomposites. Computational Mechanics, 2017, 59, 187-201.	4.0	9
30	Rate-dependent stress evolution in nanostructured Si anodes upon lithiation. Applied Physics Letters, 2016, 109, .	3.3	16
31	Intrinsic stress mitigation via elastic softening during two-step electrochemical lithiation of amorphous silicon. Journal of the Mechanics and Physics of Solids, 2016, 91, 278-290.	4.8	34
32	Analytical Model on Stress-Regulated Lithiation Kinetics and Fracture of Si-C Yolk-Shell Anodes for Lithium-Ion Batteries. Journal of the Electrochemical Society, 2016, 163, A940-A946.	2.9	10
33	Failure mechanics of a wrinkling thin film anode on a substrate under cyclic charging and discharging. Extreme Mechanics Letters, 2016, 8, 273-282.	4.1	24
34	Stress-modulated driving force for lithiation reaction in hollow nano-anodes. Journal of Power Sources, 2015, 275, 866-876.	7.8	54
35	Anomalous scaling law of strength and toughness of cellulose nanopaper. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 8971-8976.	7.1	296
36	STRESS-MODULATED DRIVING FORCE FOR LITHIATION REACTION IN HOLLOW NANO-SPHERICAL ANODES. Materials Research Society Symposia Proceedings, 2014, 1643, 1.	0.1	0

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37	Hybrid hydrogel sheets that undergo pre-programmed shape transformations. Soft Matter, 2014, 10, 8157-8162.	2.7	65
38	Atomic-Layer-Deposition Oxide Nanoglue for Sodium Ion Batteries. Nano Letters, 2014, 14, 139-147.	9.1	191
39	Two dimensional silicon nanowalls for lithium ion batteries. Journal of Materials Chemistry A, 2014, 2, 6051-6057.	10.3	70
40	Necking limit of substrate-supported metal layers under biaxial in-plane loading. International Journal of Plasticity, 2013, 51, 65-79.	8.8	20
41	A Beaded-String Silicon Anode. ACS Nano, 2013, 7, 2717-2724.	14.6	68
42	Tin Anode for Sodium-Ion Batteries Using Natural Wood Fiber as a Mechanical Buffer and Electrolyte Reservoir. Nano Letters, 2013, 13, 3093-3100.	9.1	556
43	In Situ Electro-Mechanical Experiments and Mechanics Modeling of Fracture in Indium Tin Oxide-Based Multilayer Electrodes. Advanced Engineering Materials, 2013, 15, 250-256.	3.5	36
44	Lithium-Assisted Electrochemical Welding in Silicon Nanowire Battery Electrodes. Nano Letters, 2012, 12, 1392-1397.	9.1	110
45	A map of competing buckling-driven failure modes of substrate-supported thin brittle films. Thin Solid Films, 2012, 520, 6576-6580.	1.8	30
46	Size-dependent rupture strain of elastically stretchable metal conductors. Scripta Materialia, 2012, 66, 919-922.	5.2	28
47	Failure mechanics of organicâ€“inorganic multilayer permeation barriers in flexible electronics. Composites Science and Technology, 2011, 71, 365-372.	7.8	59
48	Concomitant Channel Cracking and Interfacial Delamination in Polymer/Oxide Nano Hybrid Permeation Barriers in Flexible Electronics. Materials Research Society Symposia Proceedings, 2011, 1312, 1.	0.1	0
49	In situ electro-mechanical experiments and mechanics modeling of tensile cracking in indium tin oxide thin films on polyimide substrates. Journal of Applied Physics, 2011, 109, .	2.5	61