Zhan Kang

List of Publications by Year
in descending order

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144 papers	7,695 citations	53751 45 h-index	56687 83 g-index
147 all docs	147 docs citations	147 times ranked	5828 citing authors

#	Article	IF	Citations
1	Multifunctional Epidermal Electronics Printed Directly Onto the Skin. Advanced Materials, 2013, 25, 2773-2778.	11.1	714
2	Waterproof AlInGaP optoelectronics on stretchable substrates with applications in biomedicine andÂrobotics. Nature Materials, 2010, 9, 929-937.	13.3	557
3	Current and future trends in topology optimization for additive manufacturing. Structural and Multidisciplinary Optimization, 2018, 57, 2457-2483.	1.7	533
4	Robust design of structures using optimization methods. Computer Methods in Applied Mechanics and Engineering, 2004, 193, 2221-2237.	3.4	248
5	A multi-material level set-based topology and shape optimization method. Computer Methods in Applied Mechanics and Engineering, 2015, 283, 1570-1586.	3.4	208
6	Continuum topology optimization with non-probabilistic reliability constraints based on multi-ellipsoid convex model. Structural and Multidisciplinary Optimization, 2009, 39, 297-310.	1.7	197
7	Non-probabilistic reliability-based topology optimization of geometrically nonlinear structures using convex models. Computer Methods in Applied Mechanics and Engineering, 2009, 198, 3228-3238.	3.4	179
8	Mechanics of Epidermal Electronics. Journal of Applied Mechanics, Transactions ASME, 2012, 79, .	1.1	161
9	Structural reliability assessment based on probability and convex set mixed model. Computers and Structures, 2009, 87, 1408-1415.	2.4	158
10	Topological shape optimization of microstructural metamaterials using a level set method. Computational Materials Science, 2014, 87, 178-186.	1.4	151
11	Thin, Flexible Sensors and Actuators as â€˜Instrumentedâ€™ Surgical Sutures for Targeted Wound Monitoring and Therapy. Small, 2012, 8, 3263-3268.	5.2	141
12	Structural topology optimization based on non-local Shepard interpolation of density field. Computer Methods in Applied Mechanics and Engineering, 2011, 200, 3515-3525.	3.4	125
13	On topology optimization of damping layer in shell structures under harmonic excitations. Structural and Multidisciplinary Optimization, 2012, 46, 51-67.	1.7	125
14	Multi-material topology optimization considering interface behavior via XFEM and level set method. Computer Methods in Applied Mechanics and Engineering, 2016, 308, 113-133.	3.4	124
15	On non-probabilistic reliability-based design optimization of structures with uncertain-but-bounded parameters. Structural Safety, 2011, 33, 196-205.	2.8	122
16	An enhanced aggregation method for topology optimization with local stress constraints. Computer Methods in Applied Mechanics and Engineering, 2013, 254, 31-41.	3.4	116
17	Reliability-based structural optimization with probability and convex set hybrid models. Structural and Multidisciplinary Optimization, 2010, 42, 89-102.	1.7	111
18	Topology optimization of continuum structures with Druckerâ€“Prager yield stress constraints. Computers and Structures, 2012, 90-91, 65-75.	2.4	107

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19	A level set method for structural shape and topology optimization using radial basis functions. Computers and Structures, 2009, 87, 425-434.	2.4	100
20	Dynamic topology optimization of piezoelectric structures with active control for reducing transient response. Computer Methods in Applied Mechanics and Engineering, 2014, 281, 200-219.	3.4	91
21	Bi-material microstructural design of chiral auxetic metamaterials using topology optimization. Composite Structures, 2018, 195, 232-248.	3.1	91
22	Level set-based topology optimization with overhang constraint: Towards support-free additive manufacturing. Computer Methods in Applied Mechanics and Engineering, 2018, 339, 591-614.	3.4	90
23	Topology optimization of geometrically nonlinear structures based on an additive hyperelasticity technique. Computer Methods in Applied Mechanics and Engineering, 2015, 286, 422-441.	3.4	87
24	Reliability-based design optimization of adhesive bonded steelâ€“concrete composite beams with probabilistic and non-probabilistic uncertainties. Engineering Structures, 2011, 33, 2110-2119.	2.6	74
25	Integrated Optimization of Material Layout and Control Voltage for Piezoelectric Laminated Plates. Journal of Intelligent Material Systems and Structures, 2008, 19, 889-904.	1.4	71
26	An adaptive refinement approach for topology optimization based on separated density field description. Computers and Structures, 2013, 117, 10-22.	2.4	71
27	Integrated topology optimization with embedded movable holes based on combined description by material density and level sets. Computer Methods in Applied Mechanics and Engineering, 2013, 255, 1-13.	3.4	71
28	Mechanics of self-folding of single-layer graphene. Journal Physics D: Applied Physics, 2013, 46, 055308.	1.3	68
29	Topology optimization of damping layers for minimizing sound radiation of shell structures. Journal of Sound and Vibration, 2013, 332, 2500-2519.	2.1	64
30	A level set method for shape and topology optimization of coated structures. Computer Methods in Applied Mechanics and Engineering, 2018, 329, 553-574.	3.4	64
31	Construction and application of an ellipsoidal convex model using a semi-definite programming formulation from measured data. Computer Methods in Applied Mechanics and Engineering, 2016, 300, 461-489.	3.4	63
32	Topology optimization using material-field series expansion and Kriging-based algorithm: An effective non-gradient method. Computer Methods in Applied Mechanics and Engineering, 2020, 364, 112966.	3.4	63
33	Wrinkle-free design of thin membrane structures using stress-based topology optimization. Journal of the Mechanics and Physics of Solids, 2017, 102, 277-293.	2.3	61
34	Topological design of compliant smart structures with embedded movable actuators. Smart Materials and Structures, 2014, 23, 045024.	1.8	59
35	Robust shape and topology optimization considering geometric uncertainties with stochastic level set perturbation. International Journal for Numerical Methods in Engineering, 2017, 110, 31-56.	1.5	59
36	Parametric study of bonded steelâ€“concrete composite beams by using finite element analysis. Engineering Structures, 2012, 34, 40-51.	2.6	57

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37	Robust design of non-linear structures using optimization methods. Computer Methods in Applied Mechanics and Engineering, 2005, 194, 1779-1795.	3.4	56
38	Topology optimization-based distribution design of actuation voltage in static shape control of plates. Computers and Structures, 2008, 86, 1885-1893.	2.4	55
39	A nodal variable method of structural topology optimization based on Shepard interpolant. International Journal for Numerical Methods in Engineering, 2012, 90, 329-342.	1.5	55
40	Adaptive topology optimization with independent error control for separated displacement and density fields. Computers and Structures, 2014, 135, 50-61.	2.4	55
41	Topology optimization for concurrent design of layer-wise graded lattice materials and structures. International Journal of Engineering Science, 2019, 138, 26-49.	2.7	55
42	Realization of full and directional band gap design by non-gradient topology optimization in acoustic metamaterials. Extreme Mechanics Letters, 2021, 42, 101126.	2.0	55
43	Non-probabilistic uncertainty quantification and response analysis of structures with a bounded field model. Computer Methods in Applied Mechanics and Engineering, 2019, 347, 663-678.	3.4	51
44	Structural shape and topology optimization of cast parts using level set method. International Journal for Numerical Methods in Engineering, 2017, 111, 1252-1273.	1.5	50
45	Robust topology optimization of phononic crystals with random field uncertainty. International Journal for Numerical Methods in Engineering, 2018, 115, 1154-1173.	1.5	50
46	A velocity field level set method for shape and topology optimization. International Journal for Numerical Methods in Engineering, 2018, 115, 1315-1336.	1.5	49
47	Concurrent two-scale topological design of multiple unit cells and structure using combined velocity field level set and density model. Computer Methods in Applied Mechanics and Engineering, 2019, 347, 340-364.	3.4	48
48	Buckling behavior of carbon nanotube-based intramolecular junctions under compression: Molecular dynamics simulation and finite element analysis. Computational Materials Science, 2010, 50, 253-259.	1.4	47
49	A topology optimization method for geometrically nonlinear structures with meshless analysis and independent density field interpolation. Computational Mechanics, 2014, 54, 629-644.	2.2	47
50	An analytical model of strain isolation for stretchable and flexible electronics. Applied Physics Letters, 2011, 98, .	1.5	45
51	On robust design optimization of truss structures with bounded uncertainties. Structural and Multidisciplinary Optimization, 2013, 47, 699-714.	1.7	43
52	Layout design of reinforced concrete structures using two-material topology optimization with Druckerâ€“Prager yield constraints. Structural and Multidisciplinary Optimization, 2013, 47, 95-110.	1.7	43
53	Topology optimization considering fracture mechanics behaviors at specified locations. Structural and Multidisciplinary Optimization, 2017, 55, 1847-1864.	1.7	43
54	Combined optimization of bi-material structural layout and voltage distribution for in-plane piezoelectric actuation. Computer Methods in Applied Mechanics and Engineering, 2011, 200, 1467-1478.	3.4	42

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55	Topology optimization of piezoelectric layers in plates with active vibration control. Journal of Intelligent Material Systems and Structures, 2014, 25, 697-712.	1.4	41
56	Structural topology optimization with minimum distance control of multiphase embedded components by level set method. Computer Methods in Applied Mechanics and Engineering, 2016, 306, 299-318.	3.4	38
57	A Superâ€Stretchable and Highly Sensitive Carbon Nanotube Capacitive Strain Sensor for Wearable Applications and Soft Robotics. Advanced Materials Technologies, 2022, 7, 2100769.	3.0	36
58	Achieving directional propagation of elastic waves via topology optimization. Ultrasonics, 2018, 82, 1-10.	2.1	35
59	Perturbation-based stochastic FE analysis and robust design of inelastic deformation processes. Computer Methods in Applied Mechanics and Engineering, 2006, 195, 2231-2251.	3.4	34
60	A strain-isolation design for stretchable electronics. Acta Mechanica Sinica/Lixue Xuebao, 2010, 26, 881-888.	1.5	34
61	A Viscoelastic Model for the Rate Effect in Transfer Printing. Journal of Applied Mechanics, Transactions ASME, 2013, 80, .	1.1	34
62	Topology optimization of electrode coverage of piezoelectric thin-walled structures with CGVF control for minimizing sound radiation. Structural and Multidisciplinary Optimization, 2014, 50, 799-814.	1.7	34
63	Robust topology optimization of multi-material structures considering uncertain graded interface. Composite Structures, 2019, 208, 395-406.	3.1	34
64	Two-scale concurrent topology optimization of lattice structures with connectable microstructures. Additive Manufacturing, 2020, 36, 101427.	1.7	34
65	Topology optimization of hyperelastic structures with frictionless contact supports. International Journal of Solids and Structures, 2016, 81, 373-382.	1.3	33
66	Integrated topology optimization of multi-component structures considering connecting interface behavior. Computer Methods in Applied Mechanics and Engineering, 2018, 341, 851-887.	3.4	32
67	Reliabilityâ€based topology optimization against geometric imperfections with random threshold model. International Journal for Numerical Methods in Engineering, 2018, 115, 99-116.	1.5	31
68	Topology optimization of bending actuators with multilayer piezoelectric material. Smart Materials and Structures, 2010, 19, 075018.	1.8	30
69	Robust topology optimization for dynamic compliance minimization under uncertain harmonic excitations with inhomogeneous eigenvalue analysis. Structural and Multidisciplinary Optimization, 2016, 54, 1469-1484.	1.7	30
70	A method using successive iteration of analysis and design for large-scale topology optimization considering eigenfrequencies. Computer Methods in Applied Mechanics and Engineering, 2020, 362, 112847.	3.4	30
71	Multi-material structural topology optimization considering material interfacial stress constraints. Computer Methods in Applied Mechanics and Engineering, 2020, 363, 112887.	3.4	29
72	A novel mechanical metamaterial with simultaneous stretching- and compression-expanding property. Materials and Design, 2021, 208, 109930.	3.3	28

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73	Topology optimization of piezoelectric smart structures for minimum energy consumption under active control. Structural and Multidisciplinary Optimization, 2018, 58, 185-199.	1.7	27
74	A phase-field based robust topology optimization method for phononic crystals design considering uncertain diffuse regions. Computational Materials Science, 2019, 160, 159-172.	1.4	26
75	Topological design of microstructures using periodic material-field series-expansion and gradient-free optimization algorithm. Materials and Design, 2021, 199, 109437.	3.3	26
76	Maximal Stiffness Design of Two-Material Structures by Topology Optimization with Nonprobabilistic Reliability. AIAA Journal, 2012, 50, 1993-2003.	1.5	25
77	Molecular dynamics study on buckling of single-wall carbon nanotube-based intramolecular junctions and influence factors. Computational Materials Science, 2013, 67, 390-396.	1.4	24
78	Global shape optimization of fixtures to suppress wrinkles in large-displacement membrane structures. International Journal of Solids and Structures, 2018, 144-145, 301-312.	1.3	24
79	Robust topology optimization for structures under bounded random loads and material uncertainties. Computers and Structures, 2021, 252, 106569.	2.4	24
80	Topology optimization of space vehicle structures considering attitude control effort. Finite Elements in Analysis and Design, 2009, 45, 431-438.	1.7	22
81	Topology Optimization for Static Shape Control of Piezoelectric Plates With Penalization on Intermediate Actuation Voltage. Journal of Mechanical Design, Transactions of the ASME, 2012, 134, .	1.7	22
82	Topology optimization method for the design of bioinspired self-similar hierarchical microstructures. Computer Methods in Applied Mechanics and Engineering, 2020, 372, 113399.	3.4	22
83	A multi-material topology optimization approach for wrinkle-free design of cable-suspended membrane structures. Computational Mechanics, 2017, 59, 967-980.	2.2	21
84	Robust topology optimization of vibrating structures considering random diffuse regions via a phase-field method. Computer Methods in Applied Mechanics and Engineering, 2019, 344, 766-797.	3.4	21
85	Vibration suppression using integrated topology optimization of host structures and damping layers. JVC/Journal of Vibration and Control, 2016, 22, 60-76.	1.5	20
86	Folding of multi-layer graphene sheets induced by van der Waals interaction. Acta Mechanica Sinica/Lixue Xuebao, 2014, 30, 410-417.	1.5	19
87	Uncertainty of membrane wrinkling behaviors considering initial thickness imperfections. International Journal of Solids and Structures, 2020, 191-192, 264-277.	1.3	19
88	Design of two-dimensional horseshoe layout for stretchable electronic systems. Journal of Materials Science, 2013, 48, 8443-8448.	1.7	17
89	Nonlinear analysis of carbon nanotube reinforced functionally graded plates with magneto-electro-elastic multiphase matrix. Composite Structures, 2022, 297, 115969.	3.1	17
90	A numerical study on nonlinear vibration of an inclined cable coupled with the deck in cable-stayed bridges. JVC/Journal of Vibration and Control, 2012, 18, 404-416.	1.5	16

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91	Multi-Functional Electronics: Multifunctional Epidermal Electronics Printed Directly Onto the Skin (Adv. Mater. 20/2013). Advanced Materials, 2013, 25, 2772-2772.	11.1	16
92	Photonic approach to broadband instantaneous microwave frequency measurement with improved accuracy. Optics Communications, 2014, 328, 87-90.	1.0	16
93	Isotropic â€œQuasiâ€Fluidâ€•Metamaterials Designed by Topology Optimization. Advanced Theory and Simulations, 2020, 3, 1900182.	1.3	16
94	A general assessment index for non-probabilistic reliability of structures with bounded field and parametric uncertainties. Computer Methods in Applied Mechanics and Engineering, 2020, 366, 113046.	3.4	16
95	Buckling design optimization of complex built-up structures with shape and size variables. Structural and Multidisciplinary Optimization, 2000, 19, 183-191.	1.7	15
96	Layout design of piezoelectric patches in structural linear quadratic regulator optimal control using topology optimization. Journal of Intelligent Material Systems and Structures, 2018, 29, 2277-2294.	1.4	15
97	Topology optimization of magnetorheological fluid layers in sandwich plates for semi-active vibration control. Smart Materials and Structures, 2015, 24, 085024.	1.8	14
98	Layout optimization of continuum structures embedded with movable components and holes simultaneously. Structural and Multidisciplinary Optimization, 2020, 61, 555-573.	1.7	14
99	Tailoring the thermal and mechanical properties of injectionâ€molded poly (lactic acid) parts through annealing. Journal of Applied Polymer Science, 2021, 138, 49648.	1.3	14
100	MATLAB implementations of velocity field level set method for topology optimization: an 80-line code for 2D and a 100-line code for 3D problems. Structural and Multidisciplinary Optimization, 2021, 64, 4325-4342.	1.7	14
101	An iterative algorithm for analysis of coupled structural-acoustic systems subject to random excitations. Acta Mechanica Sinica/Lixue Xuebao, 2012, 28, 458-467.	1.5	13
102	An adaptive method for high-resolution topology design. Acta Mechanica Sinica/Lixue Xuebao, 2013, 29, 840-850.	1.5	13
103	A molecular dynamics study on tensile strength and failure modes of carbon nanotube junctions. Journal Physics D: Applied Physics, 2013, 46, 495301.	1.3	13
104	Non-uniform global-buckling and local-folding in thin film of stretchable electronics. International Journal of Mechanical Sciences, 2020, 175, 105537.	3.6	13
105	Wrinkled and wrinkle-free membranes. International Journal of Engineering Science, 2021, 167, 103526.	2.7	13
106	Chamber layout design optimization of soft pneumatic robots. Smart Materials and Structures, 2020, 29, 025017.	1.8	12
107	Integrated design optimization of structural topology and heat source layout. International Journal of Heat and Mass Transfer, 2021, 169, 120943.	2.5	12
108	Mechanics analysis of two-dimensionally prestrained elastomeric thin film for stretchable electronics. Acta Mechanica Solida Sinica, 2010, 23, 592-599.	1.0	11

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109	Wrinkling and wrinkling-suppression in graphene membranes with frozen zone. Thin Solid Films, 2017, 638, 345-353.	0.8	11
110	Mechanics of the scrolling and folding of graphene. Nanotechnology, 2018, 29, 245604.	1.3	11
111	Topological design of piezoelectric actuator layer for linear quadratic regulator control of thin-shell structures under transient excitation. Smart Materials and Structures, 2019, 28, 095029.	1.8	11
112	New generation software of structural analysis and design optimization--JIFEX. Structural Engineering and Mechanics, 1999, 7, 589-599.	1.0	11
113	Velocity field levelâ€set method for topological shape optimization using freely distributed design variables. International Journal for Numerical Methods in Engineering, 2019, 120, 1411-1427.	1.5	10
114	A theoretical analysis on self-collapsing of nanotubes. International Journal of Solids and Structures, 2019, 160, 51-58.	1.3	9
115	Topology optimization for minimum stress design with embedded movable holes. Computers and Structures, 2021, 244, 106455.	2.4	8
116	Photonic Band Gap Material Topological Design at Specified Target Frequency. Advanced Theory and Simulations, 2021, 4, 2100125.	1.3	8
117	Dynamic sensitivity analysis and optimum design of aerospace structures. Structural Engineering and Mechanics, 1998, 6, 31-40.	1.0	8
118	Dynamic optimization of a turbine foundation. Structural Optimization, 1997, 13, 244-249.	0.7	7
119	Hydrogen adsorption and desorption with 3D silicon nanotube-network and film-network structures: Monte Carlo simulations. Journal of Applied Physics, 2015, 118, .	1.1	7
120	A Prenecking Strategy Makes Stretched Membranes With Clamped Ends Wrinkle-Free. Journal of Applied Mechanics, Transactions ASME, 2017, 84, .	1.1	7
121	Design of multi-material soft pneumatic modules. Smart Materials and Structures, 2021, 30, 095006.	1.8	7
122	Adhesion of Partially and Fully Collapsed Nanotubes. Journal of Applied Mechanics, Transactions ASME, 2019, 86, .	1.1	6
123	Non-uniform self-folding of impure graphene. International Journal of Mechanical Sciences, 2021, 193, 106158.	3.6	6
124	A Preciselyâ€Controlled Multichannel Phononic Crystal Resonant Cavity. Advanced Theory and Simulations, 2021, 4, 2100250.	1.3	6
125	A velocity field level set method for topology optimization of piezoelectric layer on the plate with active vibration control. Mechanics of Advanced Materials and Structures, 2023, 30, 1326-1339.	1.5	6
126	Stiffness modulation-driven transfer printing and strain isolation in stretchable electronics. Materials and Design, 2022, 217, 110602.	3.3	6

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127	A new form of forbidden frequency band constraint for dynamic topology optimization. Structural and Multidisciplinary Optimization, 2022, 65, 1.	1.7	5
128	Topology design of slender piezoelectric actuators with repetitive component patterns. Journal of Intelligent Material Systems and Structures, 2011, 22, 2161-2172.	1.4	4
129	Optimal topology design for stress-isolation of soft hyperelastic composite structures under imposed boundary displacements. Structural and Multidisciplinary Optimization, 2017, 55, 1747-1758.	1.7	4
130	Mechanics of the folding of a nanotube. Nanotechnology, 2018, 29, 475602.	1.3	4
131	Core melt temperature effects on cylindritic structures of co-injection molded polypropylene parts. International Communications in Heat and Mass Transfer, 2018, 97, 56-63.	2.9	4
132	Interfacial cylindrite of poly(lactic acid) induced by pulling a single glass fiber. European Polymer Journal, 2019, 114, 127-133.	2.6	4
133	Sensitivity analysis of viscoplastic deformation process with application to metal preform design optimization. Engineering Optimization, 2012, 44, 1511-1523.	1.5	3
134	Topology Optimization Design of Compliant Mechanisms under Uncertainties. Jixie Gongcheng Xuebao/Chinese Journal of Mechanical Engineering, 2011, 47, 1.	0.7	3
135	Multi-electrode layout design of electrorheological composite plates considering energy consumption in semi-active control. Thin-Walled Structures, 2021, 165, 108001.	2.7	2
136	Velocity Field Level Set Method Incorporating Topological Derivatives for Topology Optimization. Journal of Applied Mechanics, Transactions ASME, 2022, 89, .	1.1	2
137	Compression-driven collapse of nanotubes. Nanotechnology, 2020, 31, 025603.	1.3	1
138	Mechanics of folding of nanorings. Mechanics of Materials, 2020, 148, 103493.	1.7	1
139	Robust topology optimization for dynamic compliance minimization under uncertain harmonic excitations with inhomogeneous eigenvalue analysis. , 2016, 54, 1469.		1
140	STRUCTURAL OPTIMIZATION FOR PRACTICAL ENGINEERING: SOFTWARE DEVELOPMENT AND APPLICATIONS * *Project supported by the Scientific Fund for National Outstanding Youth of China (19525206). , 1999, , 157-168.		0
141	Microscale, printed LEDs for unusual lighting and display systems. , 2011, , .		0
142	Bi-material Topology Optimization Using Analysis Mesh-Independent Point-Wise Density Interpolation. Acta Mechanica Solida Sinica, 2019, 32, 698-712.	1.0	0
143	Structural OptimizationÂfor Wall FrameÂDesign of a Forging Manipulator. Lecture Notes in Computer Science, 2010, , 317-328.	1.0	0
144	A COMPUTATIONAL TOOL FOR BAYESIAN NETWORKS ENHANCED WITH RELIABILITY METHODS. , 2015, , .		0