

Hu Gengkai

List of Publications by Year in descending order

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126
papers

5,120
citations

81743

39
h-index

98622

67
g-index

126
all docs

126
docs citations

126
times ranked

2974
citing authors

#	ARTICLE	IF	CITATIONS
1	Experimental study on negative effective mass in a 1D mass-spring system. <i>New Journal of Physics</i> , 2008, 10, 043020.	1.2	321
2	Ultrathin low-frequency sound absorbing panels based on coplanar spiral tubes or coplanar Helmholtz resonators. <i>Applied Physics Letters</i> , 2014, 105, .	1.5	305
3	A hybrid elastic metamaterial with negative mass density and tunable bending stiffness. <i>Journal of the Mechanics and Physics of Solids</i> , 2017, 105, 179-198.	2.3	185
4	Tunable Digital Metamaterial for Broadband Vibration Isolation at Low Frequency. <i>Advanced Materials</i> , 2016, 28, 9857-9861.	11.1	178
5	Smart three-dimensional lightweight structure triggered from a thin composite sheet via 3D printing technique. <i>Scientific Reports</i> , 2016, 6, 22431.	1.6	172
6	Chiral effect in plane isotropic micropolar elasticity and its application to chiral lattices. <i>Journal of the Mechanics and Physics of Solids</i> , 2012, 60, 1907-1921.	2.3	158
7	Analytic model of elastic metamaterials with local resonances. <i>Physical Review B</i> , 2009, 79, .	1.1	152
8	A low-frequency sound absorbing material with subwavelength thickness. <i>Applied Physics Letters</i> , 2017, 110, .	1.5	143
9	A method of plasticity for general aligned spheroidal void or fiber-reinforced composites. <i>International Journal of Plasticity</i> , 1996, 12, 439-449.	4.1	125
10	Topological phase transition in mechanical honeycomb lattice. <i>Journal of the Mechanics and Physics of Solids</i> , 2019, 122, 54-68.	2.3	119
11	Analytical coupled vibroacoustic modeling of membrane-type acoustic metamaterials: Membrane model. <i>Journal of the Acoustical Society of America</i> , 2014, 136, 969-979.	0.5	118
12	Design method for electromagnetic cloak with arbitrary shapes based on Laplace's equation. <i>Optics Express</i> , 2009, 17, 1308.	1.7	116
13	Pattern Transformation of Heat-Shrinkable Polymer by Three-Dimensional (3D) Printing Technique. <i>Scientific Reports</i> , 2015, 5, 8936.	1.6	115
14	Broadband solid cloak for underwater acoustics. <i>Physical Review B</i> , 2017, 95, .	1.1	109
15	Latticed pentamode acoustic cloak. <i>Scientific Reports</i> , 2015, 5, 15745.	1.6	106
16	Design method for quasi-isotropic transformation materials based on inverse Laplace's equation with sliding boundaries. <i>Optics Express</i> , 2010, 18, 6089.	1.7	105
17	Thermally induced vibrations of flexible beams using Absolute Nodal Coordinate Formulation. <i>Aerospace Science and Technology</i> , 2013, 29, 386-393.	2.5	100
18	Investigation of the negative-mass behaviors occurring below a cut-off frequency. <i>New Journal of Physics</i> , 2010, 12, 103025.	1.2	99

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19	A programmable metasurface for real time control of broadband elastic rays. Smart Materials and Structures, 2018, 27, 115011.	1.8	93
20	Analytical coupled vibroacoustic modeling of membrane-type acoustic metamaterials: Plate model. Journal of the Acoustical Society of America, 2014, 136, 2926-2934.	0.5	92
21	Superlensing effect of an anisotropic metamaterial slab with near-zero dynamic mass. Applied Physics Letters, 2011, 98, 263510.	1.5	80
22	Programmable elastic valley Hall insulator with tunable interface propagation routes. Extreme Mechanics Letters, 2019, 28, 76-80.	2.0	76
23	Tailored Mechanical Metamaterials with Programmable Quasi-Zero Stiffness Features for Full-Band Vibration Isolation. Advanced Functional Materials, 2021, 31, 2101428.	7.8	74
24	A finite element beam model including cross-section distortion in the absolute nodal coordinate formulation. Nonlinear Dynamics, 2014, 77, 1019-1033.	2.7	73
25	A continuum micromechanical theory of overall plasticity for particulate composites including particle size effect. International Journal of Plasticity, 2005, 21, 777-799.	4.1	64
26	Droplet Splashing on an Inclined Surface. Physical Review Letters, 2019, 122, 054501.	2.9	57
27	An active mechanical Willis meta-layer with asymmetric polarizabilities. Nature Communications, 2020, 11, 3681.	5.8	56
28	Approximate method for controlling solid elastic waves by transformation media. Physical Review B, 2011, 84, .	1.1	52
29	Effective medium theory of thin-plate acoustic metamaterials. Journal of the Acoustical Society of America, 2014, 135, 1844-1852.	0.5	51
30	Nonsingular two dimensional cloak of arbitrary shape. Applied Physics Letters, 2009, 95, 011107.	1.5	50
31	Super-resolution imaging by resonant tunneling in anisotropic acoustic metamaterials. Journal of the Acoustical Society of America, 2012, 132, 2800-2806.	0.5	50
32	Tunable fluid-solid metamaterials for manipulation of elastic wave propagation in broad frequency range. Applied Physics Letters, 2018, 112, .	1.5	50
33	Dirac degeneracy and elastic topological valley modes induced by local resonant states. Physical Review B, 2020, 101, .	1.1	49
34	Controlling elastic waves with isotropic materials. Applied Physics Letters, 2011, 98, .	1.5	47
35	Experimental study for metamaterials based on dielectric resonators and wire frame. Metamaterials, 2008, 2, 220-226.	2.2	46
36	Broadband and High-Transmission Metasurface for Converting Underwater Cylindrical Waves to Plane Waves. Physical Review Applied, 2019, 12, .	1.5	45

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37	A variational method for non-linear micropolar composites. <i>Mechanics of Materials</i> , 2005, 37, 407-425.	1.7	44
38	Elastic wave transparency of a solid sphere coated with metamaterials. <i>Physical Review B</i> , 2008, 77, .	1.1	44
39	Non-resonant metasurface for broadband elastic wave mode splitting. <i>Applied Physics Letters</i> , 2020, 116, .	1.5	42
40	Effective moduli for micropolar composite with interface effect. <i>International Journal of Solids and Structures</i> , 2007, 44, 8106-8118.	1.3	38
41	Experimental study on acoustic subwavelength imaging based on zero-mass metamaterials. <i>Europhysics Letters</i> , 2015, 109, 28001.	0.7	37
42	Creation of acoustic vortex knots. <i>Nature Communications</i> , 2020, 11, 3956.	5.8	35
43	Effective in plane moduli of composites with a micropolar matrix and coated fibers. <i>International Journal of Solids and Structures</i> , 2004, 41, 247-265.	1.3	34
44	Experimental study on acoustic subwavelength imaging of holey-structured metamaterials by resonant tunneling. <i>Journal of the Acoustical Society of America</i> , 2014, 135, 1686-1691.	0.5	34
45	A numerical method for designing acoustic cloak with arbitrary shapes. <i>Computational Materials Science</i> , 2009, 46, 708-712.	1.4	32
46	A micromechanical method for particulate composites with finite particle concentration. <i>Mechanics of Materials</i> , 2004, 36, 359-368.	1.7	31
47	Inclusion problem of microstretch continuum. <i>International Journal of Engineering Science</i> , 2004, 42, 849-860.	2.7	31
48	Overall plasticity of micropolar composites with interface effect. <i>Mechanics of Materials</i> , 2008, 40, 721-728.	1.7	31
49	Influences of imperfectness and inner constraints on an acoustic cloak with unideal pentamode materials. <i>Journal of Sound and Vibration</i> , 2019, 458, 62-73.	2.1	29
50	Mechanical behaviour of $\pm 55^\circ$ filament-wound glass-fibre/epoxy-resin tubes III. Macromechanical model of the macroscopic behaviour of tubular structures with damage and failure envelope prediction. <i>Composites Science and Technology</i> , 1998, 58, 19-29.	3.8	27
51	Designing 3D Digital Metamaterial for Elastic Waves: From Elastic Wave Polarizer to Vibration Control. <i>Advanced Science</i> , 2019, 6, 1900401.	5.6	27
52	Thermal shock induced dynamics of a spacecraft with a flexible deploying boom. <i>Acta Astronautica</i> , 2017, 141, 123-131.	1.7	25
53	Stress transfer for a SMA fiber pulled out from an elastic matrix and related bridging effect. <i>Composites Part A: Applied Science and Manufacturing</i> , 2005, 36, 1142-1151.	3.8	24
54	Design of arbitrary shaped pentamode acoustic cloak based on quasi-symmetric mapping gradient algorithm. <i>Journal of the Acoustical Society of America</i> , 2016, 140, EL405-EL409.	0.5	23

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55	Dynamics of 1D mass-spring system with a negative stiffness spring realized by magnets: Theoretical and experimental study. <i>Theoretical and Applied Mechanics Letters</i> , 2017, 7, 17-21.	1.3	23
56	Theory and Realization of Nonresonant Anisotropic Singly Polarized Solids Carrying Only Shear Waves. <i>Physical Review Applied</i> , 2019, 12, .	1.5	23
57	Prestress-controlled asymmetric wave propagation and reciprocity-breaking in tensegrity metastructure. <i>Extreme Mechanics Letters</i> , 2020, 37, 100724.	2.0	23
58	Composite plasticity based on matrix average second order stress moment. <i>International Journal of Solids and Structures</i> , 1997, 34, 1007-1015.	1.3	22
59	Thermally Induced Dynamics of a Spinning Spacecraft with an Axial Flexible Boom. <i>Journal of Spacecraft and Rockets</i> , 2015, 52, 1503-1508.	1.3	22
60	Eshelby tensors for an ellipsoidal inclusion in a micropolar material. <i>International Journal of Engineering Science</i> , 2006, 44, 595-605.	2.7	21
61	Mechanism of dust removal by a standing wave electric curtain. <i>Science China: Physics, Mechanics and Astronomy</i> , 2012, 55, 1018-1025.	2.0	21
62	Sound absorption by acoustic microlattice with optimized pore configuration. <i>Journal of the Acoustical Society of America</i> , 2018, 144, EL138-EL143.	0.5	21
63	Inclusion problem in second gradient elasticity. <i>International Journal of Engineering Science</i> , 2018, 132, 60-78.	2.7	21
64	Highly anisotropic hexagonal lattice material for low frequency water sound insulation. <i>Extreme Mechanics Letters</i> , 2020, 40, 100916.	2.0	21
65	Transformation method and wave control. <i>Acta Mechanica Sinica/Lixue Xuebao</i> , 2010, 26, 889-898.	1.5	19
66	Shape-adaptable hyperlens for acoustic magnifying imaging. <i>Applied Physics Letters</i> , 2016, 109, .	1.5	19
67	Thermal-structural dynamic analysis of a satellite antenna with the cable-network and hoop-truss supports. <i>Journal of Thermal Stresses</i> , 2019, 42, 1339-1356.	1.1	19
68	Small droplet bouncing on a deep pool. <i>Physics of Fluids</i> , 2020, 32, .	1.6	18
69	Size-dependence of overall in-plane plasticity for fiber composites. <i>International Journal of Solids and Structures</i> , 2004, 41, 4713-4730.	1.3	16
70	Mechanical behaviour of $\pm 55^\circ$ filament-wound glass-fibre/epoxy-resin tubes: II. Micromechanical model of damage initiation and the competition between different mechanisms. <i>Composites Science and Technology</i> , 1997, 57, 155-164.	3.8	14
71	Influence of fiber's shape and size on overall elastoplastic property for micropolar composites. <i>International Journal of Solids and Structures</i> , 2006, 43, 3025-3043.	1.3	14
72	Experimental study on interaction between a positive mass and a negative effective mass through a mass-spring system. <i>Theoretical and Applied Mechanics Letters</i> , 2015, 5, 196-199.	1.3	14

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73	Acoustic cloak constructed with thin-plate metamaterials. <i>International Journal of Smart and Nano Materials</i> , 2015, 6, 73-83.	2.0	14
74	Broadband dual-anisotropic solid metamaterials. <i>Scientific Reports</i> , 2017, 7, 13197.	1.6	14
75	Eshelby tensors for an ellipsoidal inclusion in a microstretch material. <i>International Journal of Solids and Structures</i> , 2007, 44, 3049-3061.	1.3	13
76	Identification of material parameters of micropolar theory for composites by homogenization method. <i>Computational Materials Science</i> , 2009, 46, 733-737.	1.4	13
77	Dynamic effective models of two-dimensional acoustic metamaterials with cylindrical inclusions. <i>Acta Mechanica</i> , 2013, 224, 1233-1241.	1.1	13
78	Optimization on microlattice materials for sound absorption by an integrated transfer matrix method. <i>Journal of the Acoustical Society of America</i> , 2015, 137, EL334-EL339.	0.5	13
79	Wrinkling of structured thin films via contrasted materials. <i>Soft Matter</i> , 2016, 12, 3937-3942.	1.2	13
80	Mixed mode fracture analysis of adhesive lap joints. <i>Composites Part B: Engineering</i> , 1995, 5, 1043-1050.	0.6	12
81	Topological valley states in sonic crystals with Willis coupling. <i>Applied Physics Letters</i> , 2021, 119, 051903.	1.5	12
82	Constraint condition on transformation relation for generalized acoustics. <i>Wave Motion</i> , 2013, 50, 170-179.	1.0	11
83	Compact acoustic double negative metamaterial based on coexisting local resonances. <i>Applied Physics Letters</i> , 2018, 113, 244101.	1.5	11
84	Analytical and Experimental Investigation on Sound Transmission of Double Thin Plates with Magnetic Negative Stiffness. <i>International Journal of Applied Mechanics</i> , 2018, 10, 1850054.	1.3	11
85	Transformation ray method: Controlling high frequency elastic waves (L). <i>Journal of the Acoustical Society of America</i> , 2012, 132, 2942-2945.	0.5	10
86	Wrinkling of the membrane with square rigid elements. <i>Europhysics Letters</i> , 2016, 116, 24005.	0.7	10
87	Thermoelastic Structural Analysis of Space Thin-Walled Beam Under Solar Flux. <i>AIAA Journal</i> , 2019, 57, 1781-1785.	1.5	10
88	Effective viscoelastic behavior of particulate polymer composites at finite concentration. <i>Applied Mathematics and Mechanics (English Edition)</i> , 2007, 28, 297-307.	1.9	9
89	Experimental study on electromagnetic wave transparency for coated metallic cylinders. <i>Journal of Applied Physics</i> , 2009, 105, 103112.	1.1	9
90	Quadramode materials: Their design method and wave property. <i>Materials and Design</i> , 2021, 210, 110031.	3.3	9

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91	Explicit cross-link relations between effective elastic modulus and thermal conductivity for fiber composites. <i>Computational Materials Science</i> , 2012, 51, 353-359.	1.4	8
92	Sound reduction by metamaterial-based acoustic enclosure. <i>AIP Advances</i> , 2014, 4, .	0.6	8
93	A facile method to realize perfectly matched layers for elastic waves. <i>Wave Motion</i> , 2014, 51, 1170-1178.	1.0	8
94	Mass-spring model of elastic media with customizable Willis coupling. <i>International Journal of Mechanical Sciences</i> , 2022, 224, 107325.	3.6	8
95	Design method for electromagnetic cloak with arbitrary shapes based on Laplace's equation: erratum. <i>Optics Express</i> , 2009, 17, 13070.	1.7	7
96	Wave-based transfer matrix method for dynamic response of large net structures. <i>Journal of Sound and Vibration</i> , 2018, 433, 265-286.	2.1	7
97	Tunable network sound absorber based on additive manufacturing. <i>Journal of the Acoustical Society of America</i> , 2021, 150, 94-101.	0.5	7
98	Design of Load-Bearing Materials for Isolation of Low-Frequency Waterborne Sound. <i>Physical Review Applied</i> , 2022, 17, .	1.5	7
99	Wave characteristics of extremal elastic materials. <i>Extreme Mechanics Letters</i> , 2022, 55, 101789.	2.0	7
100	Influence of Gradual Interphase on Overall Elastic and Viscoelastic Properties of Particulate Composites. <i>Journal of Thermoplastic Composite Materials</i> , 2004, 17, 411-425.	2.6	6
101	Two-dimensional water acoustic waveguide based on pressure compensation method. <i>Review of Scientific Instruments</i> , 2018, 89, 024902.	0.6	6
102	Homogenization in a simpler way: analysis and optimization of periodic unit cells with Cauchy's Born hypothesis. <i>Structural and Multidisciplinary Optimization</i> , 2021, 64, 3911-3935.	1.7	6
103	Odd elasticity realized by piezoelectric material with linear feedback. <i>Science China: Physics, Mechanics and Astronomy</i> , 2021, 64, 1.	2.0	6
104	Linear and nonlinear dielectric properties of particulate composites at finite concentration. <i>Applied Mathematics and Mechanics (English Edition)</i> , 2006, 27, 1021-1030.	1.9	5
105	Wave boundary control method for vibration suppression of large net structures. <i>Acta Mechanica</i> , 2019, 230, 3439-3456.	1.1	5
106	Asymmetric droplet splashing. <i>Physical Review Fluids</i> , 2020, 5, .	1.0	5
107	Droplet impact on a prewetted mesh. <i>Physical Review Fluids</i> , 2021, 6, .	1.0	5
108	Longitudinal elastic wave control by pre-deforming semi-linear materials. <i>Journal of the Acoustical Society of America</i> , 2017, 142, 1229-1235.	0.5	4

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109	In-Plane Semi-Linear Cloaks with Arbitrary Shape. <i>Acta Mechanica Solida Sinica</i> , 2019, 32, 277-286.	1.0	4
110	Rational design of hyperelastic semi-linear material and its application to elastic wave control. <i>Mechanics of Materials</i> , 2022, 166, 104237.	1.7	4
111	Design of elliptical underwater acoustic cloak with truss-latticed pentamode materials. <i>Theoretical and Applied Mechanics Letters</i> , 2022, 12, 100346.	1.3	4
112	Overall elastoplastic property for micropolar composites with randomly oriented ellipsoidal inclusions. <i>Computational Materials Science</i> , 2006, 37, 582-592.	1.4	3
113	Micromechanical analysis of fatigue properties of metal-matrix composites. <i>Mechanics Research Communications</i> , 1997, 24, 65-68.	1.0	2
114	Invisible cloak design with controlled constitutive parameters and arbitrary shaped boundaries through Helmholtz's equation: comment. <i>Optics Express</i> , 2010, 18, 3917.	1.7	2
115	Particle focusing in a microchannel with acoustic metafluid. <i>Applied Physics Letters</i> , 2013, 103, 031901.	1.5	2
116	A decoupling-design strategy for high sound absorption in subwavelength structures with air ventilation. <i>JASA Express Letters</i> , 2022, 2, 033602.	0.5	2
117	Grating effect in negative permeability meta-material. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2008, 372, 2692-2695.	0.9	1
118	Heat flow control by transformation method with grid generation method. <i>Acta Mechanica Solida Sinica</i> , 2014, 27, 454-460.	1.0	1
119	Quasiconformal maps in transformation optics and their electrostatic analogs. , 2015, , .		1
120	Experimental Study on Tunable Electromagnetic Shielding by Microlattice Materials with Organized Microstructures. <i>Advanced Engineering Materials</i> , 2018, 20, 1700823.	1.6	1
121	Interfacial wave between acoustic media with Willis coupling. <i>Wave Motion</i> , 2022, , 102922.	1.0	1
122	An analytical dislocation multiple-pile-up model for the yield stress of fully lamellar TiAl alloys. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2003, 11, 627-634.	0.8	0
123	Micromechanical modeling of local field distribution for a planar composite under plastic deformation. <i>Acta Mechanica</i> , 2006, 187, 139-149.	1.1	0
124	Digital Metamaterials: Designing 3D Digital Metamaterial for Elastic Waves: From Elastic Wave Polarizer to Vibration Control (<i>Adv. Sci.</i> 16/2019). <i>Advanced Science</i> , 2019, 6, 1970097.	5.6	0
125	Transparency Effect Induced by Elastic Metamaterials. <i>Progress in Electromagnetics Research Symposium: [proceedings] Progress in Electromagnetics Research Symposium</i> , 2008, 4, 197-200.	0.4	0
126	WAVE CHARACTERISTICS IN CHIRAL LATTICE WITH LOCAL RESONATOR. , 2015, , 39-40.		0