

Zhengyou Liu

List of Publications by Year in descending order

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154
papers

11,243
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29994

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157
docs citations

157
times ranked

4573
citing authors

#	ARTICLE	IF	CITATIONS
1	Observation of topological valley transport of sound in sonic crystals. <i>Nature Physics</i> , 2017, 13, 369-374.	6.5	666
2	Focusing of Sound in a 3D Phononic Crystal. <i>Physical Review Letters</i> , 2004, 93, 024301.	2.9	536
3	Metamaterial with Simultaneously Negative Bulk Modulus and Mass Density. <i>Physical Review Letters</i> , 2007, 99, 093904.	2.9	483
4	Negative refraction of acoustic waves in two-dimensional phononic crystals. <i>Applied Physics Letters</i> , 2004, 85, 341-343.	1.5	429
5	Analytic model of phononic crystals with local resonances. <i>Physical Review B</i> , 2005, 71, .	1.1	408
6	Valley Vortex States in Sonic Crystals. <i>Physical Review Letters</i> , 2016, 116, 093901.	2.9	336
7	Topological negative refraction of surface acoustic waves in a Weyl phononic crystal. <i>Nature</i> , 2018, 560, 61-64.	13.7	330
8	Elastic wave scattering by periodic structures of spherical objects: Theory and experiment. <i>Physical Review B</i> , 2000, 62, 2446-2457.	1.1	329
9	Anomalous refraction of airborne sound through ultrathin metasurfaces. <i>Scientific Reports</i> , 2014, 4, 6517.	1.6	299
10	On-chip valley topological materials for elastic wave manipulation. <i>Nature Materials</i> , 2018, 17, 993-998.	13.3	265
11	Weyl points and Fermi arcs in a chiral phononic crystal. <i>Nature Physics</i> , 2018, 14, 30-34.	6.5	258
12	Ultrasound Tunneling through 3D Phononic Crystals. <i>Physical Review Letters</i> , 2002, 88, 104301.	2.9	253
13	Three-component elastic wave band-gap material. <i>Physical Review B</i> , 2002, 65, .	1.1	240
14	Coding Acoustic Metasurfaces. <i>Advanced Materials</i> , 2017, 29, 1603507.	11.1	207
15	Valley Topological Phases in Bilayer Sonic Crystals. <i>Physical Review Letters</i> , 2018, 120, 116802.	2.9	181
16	Acoustic Realization of Quadrupole Topological Insulators. <i>Physical Review Letters</i> , 2020, 124, 206601.	2.9	160
17	Effective Mass Density of Fluid-Solid Composites. <i>Physical Review Letters</i> , 2006, 96, 024301.	2.9	156
18	Dirac cones in two-dimensional artificial crystals for classical waves. <i>Physical Review B</i> , 2014, 89, .	1.1	153

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19	Tuning Fabry-Perot resonances via diffraction evanescent waves. <i>Physical Review B</i> , 2007, 76, .	1.1	150
20	Negative-refraction imaging with two-dimensional phononic crystals. <i>Physical Review B</i> , 2005, 72, .	1.1	146
21	Theory for elastic wave scattering by a two-dimensional periodical array of cylinders: An ideal approach for band-structure calculations. <i>Physical Review B</i> , 2003, 67, .	1.1	139
22	Extremal Transmission and Beating Effect of Acoustic Waves in Two-Dimensional Sonic Crystals. <i>Physical Review Letters</i> , 2008, 101, 264303.	2.9	130
23	Far-field imaging of acoustic waves by a two-dimensional sonic crystal. <i>Physical Review B</i> , 2005, 71, .	1.1	121
24	Dynamic mass density and acoustic metamaterials. <i>Physica B: Condensed Matter</i> , 2007, 394, 256-261.	1.3	110
25	Observation of acoustic valley vortex states and valley-chirality locked beam splitting. <i>Physical Review B</i> , 2017, 95, .	1.1	106
26	Higher-order topological semimetal in acoustic crystals. <i>Nature Materials</i> , 2021, 20, 812-817.	13.3	106
27	Acoustic far-field focusing effect for two-dimensional graded negative refractive-index sonic crystals. <i>Applied Physics Letters</i> , 2010, 96, .	1.5	100
28	Making sound vortices by metasurfaces. <i>AIP Advances</i> , 2016, 6, .	0.6	99
29	High performance of polyimide/CaCu ₃ Ti ₄ O ₁₂ @Ag hybrid films with enhanced dielectric permittivity and low dielectric loss. <i>Journal of Materials Chemistry A</i> , 2015, 3, 4916-4921.	5.2	98
30	Particle manipulation with acoustic vortex beam induced by a brass plate with spiral shape structure. <i>Applied Physics Letters</i> , 2016, 109, .	1.5	94
31	TiO ₂ Photonic Crystals with Localized Surface Photothermal Effect and Enhanced Photocatalytic CO ₂ Reduction Activity. <i>ACS Sustainable Chemistry and Engineering</i> , 2018, 6, 15653-15661.	3.2	94
32	Asymmetric acoustic gratings. <i>Applied Physics Letters</i> , 2011, 98, .	1.5	90
33	Experimental characterization of fragile topology in an acoustic metamaterial. <i>Science</i> , 2020, 367, 797-800.	6.0	90
34	Effective dynamic mass density of composites. <i>Physical Review B</i> , 2007, 76, .	1.1	89
35	Theoretical study of subwavelength imaging by acoustic metamaterial slabs. <i>Journal of Applied Physics</i> , 2009, 105, .	1.1	88
36	Acoustic Landau quantization and quantum-Hall-like edge states. <i>Nature Physics</i> , 2019, 15, 352-356.	6.5	84

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37	Valley-locked waveguide transport in acoustic heterostructures. Nature Communications, 2020, 11, 3000.	5.8	84
38	Acoustic Transmission Enhancement through a Periodically Structured Stiff Plate without Any Opening. Physical Review Letters, 2010, 105, 074301.	2.9	81
39	Subwavelength imaging by a simple planar acoustic superlens. Applied Physics Letters, 2010, 97, .	1.5	81
40	Mode-selecting acoustic filter by using resonant tunneling of two-dimensional double phononic crystals. Applied Physics Letters, 2005, 87, 104101.	1.5	80
41	Valley Physics in Non-Hermitian Artificial Acoustic Boron Nitride. Physical Review Letters, 2018, 120, 246601.	2.9	79
42	Phononic-Crystal-Based Acoustic Sieve for Tunable Manipulations of Particles by a Highly Localized Radiation Force. Physical Review Applied, 2014, 1, .	1.5	71
43	Multiband Asymmetric Transmission of Airborne Sound by Coded Metasurfaces. Physical Review Applied, 2017, 7, .	1.5	71
44	Acoustic directional radiation and enhancement caused by band-edge states of two-dimensional phononic crystals. Applied Physics Letters, 2006, 89, 063106.	1.5	67
45	Energy Velocity of Diffusing Waves in Strongly Scattering Media. Physical Review Letters, 1997, 79, 3166-3169.	2.9	66
46	Phononic crystals. Physica Status Solidi (B): Basic Research, 2004, 241, 3454-3462.	0.7	66
47	Nodal rings and drumhead surface states in phononic crystals. Nature Communications, 2019, 10, 1769.	5.8	66
48	Group velocity of acoustic waves in strongly scattering media: Dependence on the volume fraction of scatterers. Physical Review E, 1998, 58, 6626-6636.	0.8	65
49	Negative refraction imaging of acoustic waves by a two-dimensional three-component phononic crystal. Physical Review B, 2006, 73, .	1.1	65
50	Coupling of cavity modes and guiding modes in two-dimensional phononic crystals. Solid State Communications, 2005, 133, 397-402.	0.9	60
51	Experimental demonstration of acoustic semimetal with topologically charged nodal surface. Science Advances, 2020, 6, eaav2360.	4.7	60
52	The layer multiple-scattering method for calculating transmission coefficients of 2D phononic crystals. Solid State Communications, 2005, 134, 765-770.	0.9	59
53	Directional acoustic source based on the resonant cavity of two-dimensional phononic crystals. Applied Physics Letters, 2005, 86, 224105.	1.5	57
54	Experimental Realization of Type-II Weyl Points and Fermi Arcs in Phononic Crystal. Physical Review Letters, 2019, 122, 104302.	2.9	57

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55	Hybrid-Order Topological Insulators in a Phononic Crystal. <i>Physical Review Letters</i> , 2021, 126, 156801.	2.9	57
56	Bending and branching of acoustic waves in two-dimensional phononic crystals with linear defects. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2005, 338, 413-419.	0.9	55
57	Acoustic wave transmission through a bullâ€™s eye structure. <i>Applied Physics Letters</i> , 2008, 92, .	1.5	54
58	Subwavelength imaging of acoustic waves by a canalization mechanism in a two-dimensional phononic crystal. <i>Applied Physics Letters</i> , 2008, 93, .	1.5	53
59	Acoustic transmission through asymmetric grating structures made of cylinders. <i>Journal of Applied Physics</i> , 2012, 111, .	1.1	53
60	Acoustic spin-Chern insulator induced by synthetic spinâ€™orbit coupling with spin conservation breaking. <i>Nature Communications</i> , 2020, 11, 3227.	5.8	52
61	Observation of quadratic Weyl points and double-helicoid arcs. <i>Nature Communications</i> , 2020, 11, 1820.	5.8	50
62	Unidirectional transmission of acoustic waves based on asymmetric excitation of Lamb waves. <i>Applied Physics Letters</i> , 2013, 102, .	1.5	49
63	Probing Weyl Physics with One-Dimensional Sonic Crystals. <i>Physical Review Letters</i> , 2019, 122, 136802.	2.9	48
64	Wettability of urea-doped TiO ₂ nanoparticles and their high electrorheological effects. <i>Journal of Sol-Gel Science and Technology</i> , 2008, 47, 311-315.	1.1	47
65	Nonleaky surface acoustic waves on a textured rigid surface. <i>Physical Review B</i> , 2011, 83, .	1.1	47
66	Magnetically responsive elastic microspheres. <i>Applied Physics Letters</i> , 2008, 92, .	1.5	46
67	Observation of valley-selective microwave transport in photonic crystals. <i>Applied Physics Letters</i> , 2017, 111, .	1.5	46
68	Tunable transmission spectra of acoustic waves through double phononic crystal slabs. <i>Applied Physics Letters</i> , 2008, 92, .	1.5	45
69	Elastic Waves Scattering without Conversion in Metamaterials with Simultaneous Zero Indices for Longitudinal and Transverse Waves. <i>Physical Review Letters</i> , 2015, 115, 175502.	2.9	45
70	Acoustic square-root topological states. <i>Physical Review B</i> , 2020, 102, .	1.1	45
71	Experimental determination for resonance-induced transmission of acoustic waves through subwavelength hole arrays. <i>Journal of Applied Physics</i> , 2008, 104, .	1.1	44
72	Focusing of spoof surface-acoustic-waves by a gradient-index structure. <i>Journal of Applied Physics</i> , 2013, 114, .	1.1	44

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73	Graded negative index lens with designable focal length by phononic crystal. Journal Physics D: Applied Physics, 2009, 42, 185505.	1.3	41
74	Acoustic Dirac degeneracy and topological phase transitions realized by rotating scatterers. Journal of Applied Physics, 2018, 123, .	1.1	41
75	Facile synthesis of PANI-modified CoFe ₂ O ₄ @TiO ₂ hierarchical flower-like nanoarchitectures with high photocatalytic activity. Journal of Nanoparticle Research, 2013, 15, 1.	0.8	40
76	Topological dislocation modes in three-dimensional acoustic topological insulators. Nature Communications, 2022, 13, 508.	5.8	40
77	Flat superlens by using negative refraction in two-dimensional phononic crystals. Solid State Communications, 2007, 142, 177-180.	0.9	39
78	Surface acoustic waves in two-dimensional phononic crystals: Dispersion relation and the eigenfield distribution of surface modes. Physical Review B, 2007, 76, .	1.1	38
79	Negative Refraction and Partition in Acoustic Valley Materials of a Square Lattice. Physical Review Applied, 2019, 12, .	1.5	38
80	Symmetry-enforced three-dimensional Dirac phononic crystals. Light: Science and Applications, 2020, 9, 38.	7.7	38
81	Broadband asymmetric acoustic transmission by a plate with quasi-periodic surface ridges. Applied Physics Letters, 2014, 105, .	1.5	37
82	Valley-projected edge modes observed in underwater sonic crystals. Applied Physics Letters, 2019, 114, .	1.5	37
83	Multiple-scattering theory for out-of-plane propagation of elastic waves in two-dimensional phononic crystals. Journal of Physics Condensed Matter, 2005, 17, 3735-3757.	0.7	36
84	Rotational manipulation by acoustic radiation torque of high-order vortex beams generated by an artificial structured plate. Applied Physics Letters, 2018, 113, .	1.5	35
85	Defect states in 2D acoustic band-gap materials with bend-shaped linear defects. Solid State Communications, 2004, 130, 67-71.	0.9	34
86	Acoustic trapping of particle by a periodically structured stiff plate. Applied Physics Letters, 2011, 99, .	1.5	34
87	Observation of corner states in second-order topological electric circuits. Physical Review B, 2020, 102, .	1.1	34
88	Acoustic Bloch oscillations in a two-dimensional phononic crystal. Physical Review E, 2007, 76, 056605.	0.8	33
89	3D Hinge Transport in Acoustic Higher-Order Topological Insulators. Physical Review Letters, 2021, 127, 255501.	2.9	32
90	Transmission enhancement of acoustic waves through a thin hard plate embedded with elastic inclusions. Applied Physics Letters, 2012, 101, .	1.5	31

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91	Surface Resonant-States-Enhanced Acoustic Wave Tunneling in Two-Dimensional Phononic Crystals. Physical Review Letters, 2007, 99, 044301.	2.9	29
92	Dexterous acoustic trapping and patterning of particles assisted by phononic crystal plate. Applied Physics Letters, 2015, 106, .	1.5	29
93	Ideal Type-II Weyl Phase and Topological Transition in Phononic Crystals. Physical Review Letters, 2020, 124, 206802.	2.9	29
94	Broadband transmission enhancement of acoustic waves through a hybrid grating. Applied Physics Letters, 2012, 100, .	1.5	28
95	Acoustic Topological Transport and Refraction in a Kekulé Lattice. Physical Review Applied, 2019, 11, .	1.5	28
96	Acoustic tweezers and motor for living cells. Applied Physics Letters, 2020, 116, .	1.5	28
97	Guiding acoustic waves with graded phononic crystals. Solid State Communications, 2008, 148, 74-77.	0.9	26
98	Surface morphology and raman analysis of the polyimide film aged under bipolar pulse voltage. Polymer Engineering and Science, 2013, 53, 1536-1541.	1.5	25
99	Localized states of acoustic waves in three-dimensional periodic composites with point defects. European Physical Journal B, 2003, 34, 265-268.	0.6	24
100	Acoustic collimating beams by negative refraction in two-dimensional phononic crystal. Journal of Applied Physics, 2009, 105, .	1.1	24
101	Acoustic band gaps for a two-dimensional periodic array of solid cylinders in viscous liquid. Journal of Physics Condensed Matter, 2003, 15, 8207-8212.	0.7	23
102	Peculiar transmission property of acoustic waves in a one-dimensional layered phononic crystal. Physica B: Condensed Matter, 2007, 390, 159-166.	1.3	23
103	Nodal-Chain Semimetal States and Topological Focusing in Phononic Crystals. Physical Review Applied, 2020, 13, .	1.5	22
104	Experimental Observation of Non-Abelian Earring Nodal Links in Phononic Crystals. Physical Review Letters, 2022, 128, .	2.9	22
105	Phononic-Crystal-Enabled Dynamic Manipulation of Microparticles and Cells in an Acoustofluidic Channel. Physical Review Applied, 2020, 13, .	1.5	21
106	Bound state in the continuum in topological inductor-capacitor circuit. Applied Physics Letters, 2020, 116, .	1.5	20
107	Pseudomagnetic Fields Enabled Manipulation of On-Chip Elastic Waves. Physical Review Letters, 2021, 127, 136401.	2.9	19
108	Parallel-field electrorheological clutch: Enhanced high shear rate performance. Applied Physics Letters, 2005, 87, 104106.	1.5	18

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109	Improving imaging resolution of a phononic crystal lens by employing acoustic surface waves. <i>Journal of Applied Physics</i> , 2009, 106, 026105.	1.1	18
110	Directional excitation of the designer surface acoustic waves. <i>Applied Physics Letters</i> , 2015, 106, .	1.5	18
111	Straight nodal lines and waterslide surface states observed in acoustic metacrystals. <i>Physical Review B</i> , 2019, 100, .	1.1	18
112	Acoustic spin-1 Weyl semimetal. <i>Science China: Physics, Mechanics and Astronomy</i> , 2020, 63, 1.	2.0	18
113	Dirac points and the transition towards Weyl points in three-dimensional sonic crystals. <i>Light: Science and Applications</i> , 2020, 9, 201.	7.7	18
114	Research Update: Polyimide/CaCu ₃ Ti ₄ O ₁₂ nanofiber functional hybrid films with improved dielectric properties. <i>APL Materials</i> , 2013, 1, .	2.2	17
115	Theoretical Study of Large-Angle Bending Transport of Microparticles by 2D Acoustic Half-Bessel Beams. <i>Scientific Reports</i> , 2015, 5, 13063.	1.6	17
116	Negative refraction imaging of solid acoustic waves by two-dimensional three-component phononic crystal. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2008, 372, 3861-3867.	0.9	16
117	Applications of antireflection coatings in sonic crystal-based acoustic devices. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2011, 375, 1348-1351.	0.9	16
118	Extraordinary acoustic shielding by a monolayer of periodical polymethyl methacrylate cylinders immersed in water. <i>Journal of Applied Physics</i> , 2011, 110, .	1.1	16
119	Acoustic manipulating of capsule-shaped particle assisted by phononic crystal plate. <i>Applied Physics Letters</i> , 2018, 112, .	1.5	16
120	Acoustic higher-order topology derived from first-order with built-in Zeeman-like fields. <i>Science Bulletin</i> , 2022, 67, 488-494.	4.3	16
121	Non-Hermitian second-order topology induced by resistances in electric circuits. <i>Physical Review B</i> , 2022, 105, .	1.1	16
122	Acoustically driven particle delivery assisted by a graded grating plate. <i>Applied Physics Letters</i> , 2017, 111, 031903.	1.5	15
123	Enhanced and directional water wave emission by embedded sources. <i>Wave Motion</i> , 2010, 47, 131-138.	1.0	14
124	Experimental demonstration of surface acoustic waves in two-dimensional phononic crystals with fluid background. <i>Journal of Applied Physics</i> , 2009, 106, 044512.	1.1	13
125	Effective medium of periodic fluid-solid composites. <i>Europhysics Letters</i> , 2012, 98, 54001.	0.7	13
126	Acoustic Valley Spin Chern Insulators. <i>Physical Review Applied</i> , 2021, 16, .	1.5	13

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127	Highly directional liquid surface wave source based on resonant cavity. Physics Letters, Section A: General, Atomic and Solid State Physics, 2009, 373, 2948-2952.	0.9	11
128	The optimum elastic wave band gaps in three dimensional phononic crystals with local resonance. European Physical Journal B, 2004, 42, 477-482.	0.6	10
129	Guiding spoof surface acoustic waves on a monolayer array of rigid cylinders in water. Journal Physics D: Applied Physics, 2016, 49, 125304.	1.3	10
130	Sound-mediated stable configurations for polystyrene particles. Physical Review E, 2017, 96, 052604.	0.8	9
131	Deep subwavelength electromagnetic transparency through dual metallic gratings with ultranarrow slits. Physical Review B, 2013, 87, .	1.1	8
132	Highly efficient isolation of waterborne sound by an air-sealed meta-screen. AIP Advances, 2017, 7, .	0.6	8
133	Acoustically mediated long-range interaction among multiple spherical particles exposed to a plane standing wave. New Journal of Physics, 2016, 18, 113034.	1.2	7
134	Planar Ultrasonic Lenses Formed by Concentric Circular Sandwiched Ring Arrays. Advanced Materials Technologies, 2018, 4, 1800542.	3.0	7
135	Synthesis of polyaniline-Fe ₃ O ₄ nanocomposites and their conductivity and magnetic properties. Journal Wuhan University of Technology, Materials Science Edition, 2010, 25, 760-764.	0.4	5
136	Intrinsic anisotropy of the effective acoustic properties in metafluids made of two-dimensional cylinder arrays. Physics Letters, Section A: General, Atomic and Solid State Physics, 2012, 376, 637-642.	0.9	5
137	Extraordinary lateral beaming of sound from a square-lattice phononic crystal. Physics Letters, Section A: General, Atomic and Solid State Physics, 2017, 381, 886-889.	0.9	5
138	Realization of acoustic omnidirectional radiation with annular anisotropic zero-density metamaterial. Applied Physics Letters, 2019, 114, .	1.5	5
139	Trapping sound at corners. Nature Materials, 2019, 18, 98-99.	13.3	5
140	Acoustic Subwavelength Manipulation of Particles with a Quasiperiodic Plate. Physical Review Applied, 2022, 17, .	1.5	5
141	Experimental investigation of shell modes in two-dimensional phononic crystal consisting of hollow cylinders. Journal of Applied Physics, 2010, 107, 064503.	1.1	4
142	Metafluids beyond the Bulk Modulus. Physical Review Letters, 2020, 125, 185502.	2.9	4
143	Model investigation on the probability of QGP formation at different centralities in relativistic heavy ion collisions. Physical Review C, 2009, 80, .	1.1	3
144	Acoustic Tamm states in double 1D phononic crystals. Journal Wuhan University of Technology, Materials Science Edition, 2012, 27, 374-376.	0.4	3

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145	Zener tunneling of acoustic waves in a one-dimensional phononic crystal. Solid State Communications, 2007, 144, 433-436.	0.9	2
146	Acoustic Zitterbewegung in ordinary sonic crystals: A general classical description. Physics Letters, Section A: General, Atomic and Solid State Physics, 2010, 374, 4933-4936.	0.9	2
147	The synthesis and electrorheological properties of BaTiO ₃ -coated PMMA microspheres. Journal Wuhan University of Technology, Materials Science Edition, 2007, 22, 85-87.	0.4	1
148	Metasurfaces: Coding Acoustic Metasurfaces (Adv. Mater. 6/2017). Advanced Materials, 2017, 29, .	11.1	1
149	Acoustic Funnel and Buncher for Nanoparticle Injection. Physical Review Applied, 2019, 11, .	1.5	1
150	Off-axis directional acoustic wave beaming control by an asymmetric rubber heterostructures film deposited on steel plate in water. , 2009, , .		0
151	Deep subwavelength electromagnetic transparency through dual metallic gratings with ultranarrow slits. , 2012, , .		0
152	Focusing of ultrasonic waves in water with a flat artificial composite plate. , 2017, , .		0
153	Focusing of ultrasonic waves in water with a flat artificial composite plate. , 2017, , .		0
154	ANALYSIS OF POLARIZATION FORCES AND CONDUCTIVITY EFFECTS IN THE ELECTORRHEOLOGICAL SOLID. , 2005, , .		0