

Jian-Chun Cheng

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

120
papers

4,689
citations

33
h-index

67
g-index

135
ext. papers

5,678
ext. citations

4.7
avg, IF

5.91
L-index

#	Paper	IF	Citations
120	Machine learning-assisted low-frequency and broadband sound absorber with coherently coupled weak resonances. <i>Applied Physics Letters</i> , 2022 , 120, 033501	3.4	1
119	Design and experimental demonstration of effective acoustic gain medium for PT-symmetric refractive index. <i>Applied Physics Letters</i> , 2022 , 120, 063503	3.4	0
118	Tunable acoustic metasurface based on tunable piezoelectric composite structure.. <i>Journal of the Acoustical Society of America</i> , 2022 , 151, 838	2.2	0
117	Broadband tunable acoustic metasurface based on piezoelectric composite structure with two resonant modes. <i>Applied Physics Express</i> , 2022 , 15, 014004	2.4	0
116	Broadband acoustic insulation via gradient impedance boundary waveguide. <i>Applied Physics Letters</i> , 2022 , 120, 123501	3.4	1
115	Tunable acoustic metasurface based on PVDF/polyimide unimorph sheets. <i>Applied Physics Express</i> , 2022 , 15, 014001	2.4	0
114	Twisting Linear to Orbital Angular Momentum in an Ultrasonic Motor.. <i>Advanced Materials</i> , 2022 , e2201575	3.7	0
113	Efficient nonreciprocal mode transitions in spatiotemporally modulated acoustic metamaterials. <i>Science Advances</i> , 2021 , 7, eabj1198	14.3	6
112	Compact acoustic monolayered metadecoder for efficient and flexible orbital angular momentum demultiplexing. <i>Applied Physics Letters</i> , 2021 , 119, 213502	3.4	3
111	Machine-Learning-Assisted Acoustic Consecutive Fano Resonances: Application to a Tunable Broadband Low-Frequency Metasilencer. <i>Physical Review Applied</i> , 2021 , 16,	4.3	3
110	Tunable low-frequency and broadband acoustic metamaterial absorber. <i>Journal of Applied Physics</i> , 2021 , 129, 094502	2.5	10
109	Tunable asymmetric acoustic transmission via binary metasurface and zero-index metamaterials. <i>Applied Physics Letters</i> , 2021 , 118, 113501	3.4	5
108	Experimental demonstration of a three-dimensional acoustic hyperlens for super-resolution imaging. <i>Applied Physics Letters</i> , 2021 , 118, 203504	3.4	3
107	Acoustic constant mode one-way device based on wave pattern filter. <i>Applied Physics Letters</i> , 2021 , 118, 263503	3.4	1
106	Method to Derive the Hamiltonian of Acoustic Topological Crystalline Insulators. <i>Physical Review Applied</i> , 2021 , 15,	4.3	2
105	Focusing a Two-Dimensional Acoustic Vortex Beyond Diffraction Limit on an Ultrathin Structured Surface. <i>Physical Review Applied</i> , 2021 , 15,	4.3	3
104	Experimental demonstration of a three-dimensional omnidirectional and broadband acoustic concentrator using an anisotropic metamaterial. <i>Science China: Physics, Mechanics and Astronomy</i> , 2021 , 64, 1	3.6	6

103	Tunable pipe-type acoustic metamaterials based on piezoelectric composite side-branches. <i>Journal of Applied Physics</i> , 2021 , 129, 084505	2.5	1
102	Acoustic skin meta-muffler. <i>Science China: Physics, Mechanics and Astronomy</i> , 2021 , 64, 1	3.6	4
101	Helical Higher-Order Topological States in an Acoustic Crystalline Insulator. <i>Physical Review Letters</i> , 2020 , 125, 255502	7.4	7
100	Meta-neural-network for real-time and passive deep-learning-based object recognition. <i>Nature Communications</i> , 2020 , 11, 6309	17.4	23
99	Generation of Non-aliased Two-dimensional Acoustic Vortex with Enclosed Metasurface. <i>Scientific Reports</i> , 2020 , 10, 3827	4.9	6
98	Broadband thin sound absorber based on hybrid labyrinthine metastructures with optimally designed parameters. <i>Scientific Reports</i> , 2020 , 10, 10705	4.9	5
97	Nonresonant Metasurface for Fast Decoding in Acoustic Communications. <i>Physical Review Applied</i> , 2020 , 13,	4.3	14
96	Acoustic waveguide with virtual soft boundary based on metamaterials. <i>Scientific Reports</i> , 2020 , 10, 9814.9	4.9	13
95	Wavelength-dependent multi-functional wavefront manipulation for reflected acoustic waves. <i>Applied Physics Express</i> , 2020 , 13, 094003	2.4	2
94	Tunable annular acoustic metasurface for transmitted wavefront modulation. <i>Applied Physics Express</i> , 2020 , 13, 014002	2.4	5
93	Inverse design of acoustic metamaterials based on machine learning using a Gaussian Bayesian model. <i>Journal of Applied Physics</i> , 2020 , 128, 134902	2.5	13
92	Two-way collinear mixing of a longitudinal and a transverse plane wave in materials with cubic nonlinearity. <i>Waves in Random and Complex Media</i> , 2020 , 1-20	1.9	1
91	Topological Interface States in the Low-Frequency Band Gap of One-Dimensional Phononic Crystals. <i>Physical Review Applied</i> , 2020 , 14,	4.3	6
90	Boundary-dependent corner states in topological acoustic resonator array. <i>Applied Physics Letters</i> , 2020 , 117, 113501	3.4	2
89	An ultrathin planar acoustic metasurface diffuser with narrowband uniform reflection. <i>AIP Advances</i> , 2020 , 10, 085122	1.5	1
88	Topology-Optimized Omnidirectional Broadband Acoustic Ventilation Barrier. <i>Physical Review Applied</i> , 2020 , 14,	4.3	11
87	Voltage-controlled membrane-type active acoustic metasurfaces with ultrathin thickness. <i>Applied Physics Express</i> , 2019 , 12, 064501	2.4	9
86	Ultrathin Planar Metasurface-based Acoustic Energy Harvester with Deep Subwavelength Thickness and Mechanical Rigidity. <i>Scientific Reports</i> , 2019 , 9, 11152	4.9	16

85	Topological phononic crystals with tunable interface state based on local resonance. <i>Applied Physics Express</i> , 2019 , 12, 094002	2.4	5
84	Ultrathin Acoustic Parity-Time Symmetric Metasurface Cloak. <i>Research</i> , 2019 , 2019, 8345683	7.8	21
83	Illusion for Airborne Sound Source by a Closed Layer with Subwavelength Thickness. <i>Scientific Reports</i> , 2019 , 9, 1750	4.9	8
82	Experimental Demonstration of Acoustic Chern Insulators. <i>Physical Review Letters</i> , 2019 , 122, 014302	7.4	113
81	Broadband acoustic phased array with subwavelength active tube array. <i>Applied Physics Letters</i> , 2018 , 112, 093503	3.4	7
80	Fine manipulation of sound via lossy metamaterials with independent and arbitrary reflection amplitude and phase. <i>Nature Communications</i> , 2018 , 9, 1632	17.4	101
79	Twisted Acoustics: Metasurface-Enabled Multiplexing and Demultiplexing. <i>Advanced Materials</i> , 2018 , 30, e1800257	24	84
78	Converting a Monopole Emission into a Dipole Using a Subwavelength Structure. <i>Physical Review Applied</i> , 2018 , 9,	4.3	10
77	Acoustic planar antireflective focusing lens with sub-diffraction-limit resolution based on metamaterials. <i>Journal of Applied Physics</i> , 2018 , 123, 091717	2.5	9
76	Self-ordering induces multiple topological transitions for in-plane bulk waves in solid phononic crystals. <i>Physical Review B</i> , 2018 , 98,	3.3	24
75	Effects of periodically corrugated surfaces on sound scattering. <i>Journal of Sound and Vibration</i> , 2018 , 436, 1-14	3.9	
74	Wavefront manipulation by acoustic metasurfaces: from physics and applications. <i>Nanophotonics</i> , 2018 , 7, 1191-1205	6.3	24
73	Broadband acoustic energy harvesting metasurface with coupled Helmholtz resonators. <i>Applied Physics Letters</i> , 2018 , 113, 153503	3.4	34
72	Acoustic metasurfaces. <i>Nature Reviews Materials</i> , 2018 , 3, 460-472	73.3	290
71	Broadband compact acoustic absorber with high-efficiency ventilation performance. <i>Applied Physics Letters</i> , 2018 , 113, 103501	3.4	35
70	One-way Acoustic Beam Splitter. <i>Scientific Reports</i> , 2018 , 8, 13573	4.9	4
69	Broadband transmission-type coding metamaterial for wavefront manipulation for airborne sound. <i>Applied Physics Express</i> , 2018 , 11, 077301	2.4	13
68	Multi-relaxation-time lattice Boltzmann modeling of the acoustic field generated by focused transducer. <i>International Journal of Modern Physics C</i> , 2017 , 28, 1750038	1.1	2

67	Omnidirectional broadband acoustic deflector based on metamaterials. <i>Applied Physics Express</i> , 2017 , 10, 027201	2.4	7
66	Non-blind acoustic invisibility by dual layers of homogeneous single-negative media. <i>Scientific Reports</i> , 2017 , 7, 42533	4.9	12
65	Acoustic broadband metacouplers. <i>Applied Physics Letters</i> , 2017 , 110, 203504	3.4	14
64	Acoustic field of an ultrasonic cavity resonator with two open ends: Experimental measurements and lattice Boltzmann method modeling. <i>Journal of Applied Physics</i> , 2017 , 121, 124502	2.5	5
63	Sound Insulation in a Hollow Pipe with Subwavelength Thickness. <i>Scientific Reports</i> , 2017 , 7, 44106	4.9	18
62	A fully integrated broadband, high-gain, high-power and high-efficiency UHF amplifier using GaAs HBT and GaN HEMT. <i>IEICE Electronics Express</i> , 2017 , 14, 20170639-20170639	0.5	0
61	Spatial filtering of audible sound with acoustic landscapes. <i>Applied Physics Letters</i> , 2017 , 111, 041904	3.4	1
60	Ultra-broadband and planar sound diffuser with high uniformity of reflected intensity. <i>Applied Physics Letters</i> , 2017 , 111, 103502	3.4	12
59	Omnidirectional ventilated acoustic barrier. <i>Applied Physics Letters</i> , 2017 , 111, 203502	3.4	50
58	Ultrathin Acoustic Metasurface-Based Schroeder Diffuser. <i>Physical Review X</i> , 2017 , 7,	9.1	69
57	A broadband low-reflection bending waveguide for airborne sound. <i>Applied Physics Letters</i> , 2017 , 110, 253502	3.4	7
56	Deep-Subwavelength-Scale Directional Sensing Based on Highly Localized Dipolar Mie Resonances. <i>Physical Review Applied</i> , 2016 , 5,	4.3	41
55	Convert Acoustic Resonances to Orbital Angular Momentum. <i>Physical Review Letters</i> , 2016 , 117, 034301	7.4	183
54	Acoustic one-way metasurfaces: Asymmetric Phase Modulation of Sound by Subwavelength Layer. <i>Scientific Reports</i> , 2016 , 6, 28023	4.9	56
53	Three-dimensional broadband acoustic illusion cloak for sound-hard boundaries of curved geometry. <i>Scientific Reports</i> , 2016 , 6, 36936	4.9	14
52	Broadband non-reciprocal transmission of sound with invariant frequency. <i>Scientific Reports</i> , 2016 , 6, 19824	4.9	43
51	Acoustic focusing by symmetrical self-bending beams with phase modulations. <i>Applied Physics Letters</i> , 2016 , 108, 073501	3.4	41
50	Broadband and stable acoustic vortex emitter with multi-arm coiling slits. <i>Applied Physics Letters</i> , 2016 , 108, 203501	3.4	75

49	Broadband convergence of acoustic energy with binary reflected phases on planar surface. <i>Applied Physics Letters</i> , 2016 , 109, 243501	3-4	32
48	Three-dimensional ultra-broadband focusing flat mirror for airborne sound. <i>Applied Physics Letters</i> , 2016 , 109, 153501	3-4	12
47	Asymmetric sound transmission in a passive non-blocking structure with multiple ports. <i>Applied Physics Letters</i> , 2016 , 109, 103504	3-4	16
46	Multi-frequency acoustic metasurface for extraordinary reflection and sound focusing. <i>AIP Advances</i> , 2016 , 6, 121702	1-5	28
45	Cloaking an acoustic sensor with single-negative materials. <i>Annals of Physics</i> , 2015 , 358, 83-91	2-5	2
44	Experimental realization of broadband acoustic omnidirectional absorber by homogeneous anisotropic metamaterials. <i>Journal of Applied Physics</i> , 2015 , 117, 074502	2-5	22
43	Acoustic one-way open tunnel by using metasurface. <i>Applied Physics Letters</i> , 2015 , 107, 113501	3-4	83
42	Radiation directivity rotation by acoustic metamaterials. <i>Applied Physics Letters</i> , 2015 , 107, 093506	3-4	7
41	A collimated focused ultrasound beam of high acoustic transmission and minimum diffraction achieved by using a lens with subwavelength structures. <i>Applied Physics Letters</i> , 2015 , 107, 113505	3-4	7
40	Broadband Acoustic Cloaking within an Arbitrary Hard Cavity. <i>Physical Review Applied</i> , 2015 , 3,	4-3	27
39	Metascreen-Based Acoustic Passive Phased Array. <i>Physical Review Applied</i> , 2015 , 4,	4-3	227
38	An integral equation method for calculating sound field diffracted by a rigid barrier on an impedance ground. <i>Journal of the Acoustical Society of America</i> , 2015 , 138, 1608-13	2-2	4
37	One-way acoustic mirror based on anisotropic zero-index media. <i>Applied Physics Letters</i> , 2015 , 107, 213503	3-4	17
36	Dispersionless Manipulation of Reflected Acoustic Wavefront by Subwavelength Corrugated Surface. <i>Scientific Reports</i> , 2015 , 5, 10966	4-9	98
35	Controlling an acoustic wave with a cylindrically-symmetric gradient-index system. <i>Chinese Physics B</i> , 2015 , 24, 024301	1-2	1
34	Broadband unidirectional transmission of sound in unblocked channel. <i>Applied Physics Letters</i> , 2015 , 106, 173508	3-4	48
33	Delivering sound energy along an arbitrary convex trajectory. <i>Scientific Reports</i> , 2014 , 4, 6628	4-9	33
32	Three-dimensional ultrathin planar lenses by acoustic metamaterials. <i>Scientific Reports</i> , 2014 , 4, 6830	4-9	110

31	Broadband field rotator based on acoustic metamaterials. <i>Applied Physics Letters</i> , 2014 , 104, 083510	3.4	35
30	Ultra-broadband absorption by acoustic metamaterials. <i>Applied Physics Letters</i> , 2014 , 105, 243505	3.4	96
29	Acoustic focusing of sub-wavelength scale achieved by multiple Fabry-Perot resonance effect. <i>Journal of Applied Physics</i> , 2014 , 115, 104504	2.5	6
28	Experimental Realization of Full Control of Reflected Waves with Subwavelength Acoustic Metasurfaces. <i>Physical Review Applied</i> , 2014 , 2,	4.3	284
27	Acoustic transistor: Amplification and switch of sound by sound. <i>Applied Physics Letters</i> , 2014 , 105, 083510	3.4	14
26	The velocity field around two interacting cavitation bubbles in an ultrasound field. <i>Science China: Physics, Mechanics and Astronomy</i> , 2013 , 56, 1246-1252	3.6	3
25	Unidirectional acoustic transmission through a prism with near-zero refractive index. <i>Applied Physics Letters</i> , 2013 , 103, 053505	3.4	134
24	Reflected wavefront manipulation based on ultrathin planar acoustic metasurfaces. <i>Scientific Reports</i> , 2013 , 3, 2546	4.9	364
23	Acoustic illusion near boundaries of arbitrary curved geometry. <i>Scientific Reports</i> , 2013 , 3, 1427	4.9	42
22	Acoustic one-way frequency up-converter with high transmission efficiency. <i>Journal of Applied Physics</i> , 2013 , 114, 134508	2.5	15
21	Controllable acoustic rectification in one-dimensional piezoelectric composite plates. <i>Journal of Applied Physics</i> , 2013 , 114, 164504	2.5	15
20	Extraordinary acoustic transmission through ultrathin acoustic metamaterials by coiling up space. <i>Applied Physics Letters</i> , 2013 , 103, 063509	3.4	99
19	Broadband asymmetric acoustic transmission in a gradient-index structure. <i>Applied Physics Letters</i> , 2012 , 101, 263502	3.4	66
18	Scattering reduction for an acoustic sensor using a multilayered shell comprising a pair of homogeneous isotropic single-negative media. <i>Applied Physics Letters</i> , 2012 , 101, 033509	3.4	19
17	Concealing a Passive Sensing System with Single-Negative Layers. <i>Chinese Physics Letters</i> , 2012 , 29, 014108	3.4	6
16	Broadband directional acoustic waveguide with high efficiency. <i>Applied Physics Letters</i> , 2012 , 101, 043503	3.4	63
15	Acoustic focusing by coiling up space. <i>Applied Physics Letters</i> , 2012 , 101, 233508	3.4	232
14	A broadband acoustic omnidirectional absorber comprising positive-index materials. <i>Applied Physics Letters</i> , 2011 , 99, 193507	3.4	67

13	Acoustic cloaking by a superlens with single-negative materials. <i>Physical Review Letters</i> , 2011 , 106, 014301	1.4	148
12	Acoustic band pinning in the phononic crystal plates of anti-symmetric structure. <i>Chinese Physics B</i> , 2011 , 20, 116301	1.2	9
11	One-way mode transmission in one-dimensional phononic crystal plates. <i>Journal of Applied Physics</i> , 2010 , 108, 124909	2.5	91
10	Study of acoustic wave behavior in silicon-based one-dimensional phononic-crystal plates using harmony response analysis. <i>Journal of Applied Physics</i> , 2009 , 106, 104901	2.5	20
9	Acoustic diode: rectification of acoustic energy flux in one-dimensional systems. <i>Physical Review Letters</i> , 2009 , 103, 104301	7.4	426
8	An eigenfunction expansion method for the elastodynamic response of an elastic solid with mixed boundary surfaces. <i>Progress in Natural Science: Materials International</i> , 2008 , 18, 1063-1068	3.6	3
7	Effective medium method for sound propagation in a soft medium containing air bubbles. <i>Journal of the Acoustical Society of America</i> , 2008 , 124, 1419-29	2.2	14
6	Temperature stable amorphous-TeO ₂ /B ₂ O ₃ /Y-X LiTaO ₃ substrates for surface acoustic wave applications. <i>Applied Physics Letters</i> , 2008 , 92, 233501	3.4	2
5	An inverse method of elastic constants for unidirectional fiber-reinforced composite plate. <i>Frontiers of Physics in China</i> , 2006 , 1, 230-237		
4	Effective medium method of slightly compressible elastic media permeated with air-filled bubbles. <i>Frontiers of Physics in China</i> , 2006 , 1, 500-505		2
3	Numerical simulations of the guided elastic waves generated by laser-induced AS and ES in hollow cylinders. <i>Progress in Natural Science: Materials International</i> , 2003 , 13, 288-294	3.6	
2	Acoustic band gaps of two-dimensional three-component composite. <i>Progress in Natural Science: Materials International</i> , 2003 , 13, 809-813	3.6	2
1	Numerical Analysis on Laser-Generated Guided Elastic Waves in a Hollow Cylinder. <i>Journal of Nondestructive Evaluation</i> , 2002 , 21, 45-53	2.1	14