

# Jian-Chun Cheng

## List of Publications by Citations

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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	Acoustic diode: rectification of acoustic energy flux in one-dimensional systems. <i>Physical Review Letters</i> , <b>2009</b> , 103, 104301	7.4	426
119	Reflected wavefront manipulation based on ultrathin planar acoustic metasurfaces. <i>Scientific Reports</i> , <b>2013</b> , 3, 2546	4.9	364
118	Acoustic metasurfaces. <i>Nature Reviews Materials</i> , <b>2018</b> , 3, 460-472	73.3	290
117	Experimental Realization of Full Control of Reflected Waves with Subwavelength Acoustic Metasurfaces. <i>Physical Review Applied</i> , <b>2014</b> , 2,	4.3	284
116	Acoustic focusing by coiling up space. <i>Applied Physics Letters</i> , <b>2012</b> , 101, 233508	3.4	232
115	Metascreen-Based Acoustic Passive Phased Array. <i>Physical Review Applied</i> , <b>2015</b> , 4,	4.3	227
114	Convert Acoustic Resonances to Orbital Angular Momentum. <i>Physical Review Letters</i> , <b>2016</b> , 117, 034301	7.4	183
113	Acoustic cloaking by a superlens with single-negative materials. <i>Physical Review Letters</i> , <b>2011</b> , 106, 014301	7.4	148
112	Unidirectional acoustic transmission through a prism with near-zero refractive index. <i>Applied Physics Letters</i> , <b>2013</b> , 103, 053505	3.4	134
111	Experimental Demonstration of Acoustic Chern Insulators. <i>Physical Review Letters</i> , <b>2019</b> , 122, 014302	7.4	113
110	Three-dimensional ultrathin planar lenses by acoustic metamaterials. <i>Scientific Reports</i> , <b>2014</b> , 4, 6830	4.9	110
109	Fine manipulation of sound via lossy metamaterials with independent and arbitrary reflection amplitude and phase. <i>Nature Communications</i> , <b>2018</b> , 9, 1632	17.4	101
108	Extraordinary acoustic transmission through ultrathin acoustic metamaterials by coiling up space. <i>Applied Physics Letters</i> , <b>2013</b> , 103, 063509	3.4	99
107	Dispersionless Manipulation of Reflected Acoustic Wavefront by Subwavelength Corrugated Surface. <i>Scientific Reports</i> , <b>2015</b> , 5, 10966	4.9	98
106	Ultra-broadband absorption by acoustic metamaterials. <i>Applied Physics Letters</i> , <b>2014</b> , 105, 243505	3.4	96
105	One-way mode transmission in one-dimensional phononic crystal plates. <i>Journal of Applied Physics</i> , <b>2010</b> , 108, 124909	2.5	91
104	Twisted Acoustics: Metasurface-Enabled Multiplexing and Demultiplexing. <i>Advanced Materials</i> , <b>2018</b> , 30, e1800257	24	84

103	Acoustic one-way open tunnel by using metasurface. <i>Applied Physics Letters</i> , <b>2015</b> , 107, 113501	3-4	83
102	Broadband and stable acoustic vortex emitter with multi-arm coiling slits. <i>Applied Physics Letters</i> , <b>2016</b> , 108, 203501	3-4	75
101	Ultrathin Acoustic Metasurface-Based Schroeder Diffuser. <i>Physical Review X</i> , <b>2017</b> , 7,	9-1	69
100	A broadband acoustic omnidirectional absorber comprising positive-index materials. <i>Applied Physics Letters</i> , <b>2011</b> , 99, 193507	3-4	67
99	Broadband asymmetric acoustic transmission in a gradient-index structure. <i>Applied Physics Letters</i> , <b>2012</b> , 101, 263502	3-4	66
98	Broadband directional acoustic waveguide with high efficiency. <i>Applied Physics Letters</i> , <b>2012</b> , 101, 043503	3-4	63
97	Acoustic one-way metasurfaces: Asymmetric Phase Modulation of Sound by Subwavelength Layer. <i>Scientific Reports</i> , <b>2016</b> , 6, 28023	4-9	56
96	Omnidirectional ventilated acoustic barrier. <i>Applied Physics Letters</i> , <b>2017</b> , 111, 203502	3-4	50
95	Broadband unidirectional transmission of sound in unblocked channel. <i>Applied Physics Letters</i> , <b>2015</b> , 106, 173508	3-4	48
94	Broadband non-reciprocal transmission of sound with invariant frequency. <i>Scientific Reports</i> , <b>2016</b> , 6, 19824	4-9	43
93	Acoustic illusion near boundaries of arbitrary curved geometry. <i>Scientific Reports</i> , <b>2013</b> , 3, 1427	4-9	42
92	Deep-Subwavelength-Scale Directional Sensing Based on Highly Localized Dipolar Mie Resonances. <i>Physical Review Applied</i> , <b>2016</b> , 5,	4-3	41
91	Acoustic focusing by symmetrical self-bending beams with phase modulations. <i>Applied Physics Letters</i> , <b>2016</b> , 108, 073501	3-4	41
90	Broadband field rotator based on acoustic metamaterials. <i>Applied Physics Letters</i> , <b>2014</b> , 104, 083510	3-4	35
89	Broadband compact acoustic absorber with high-efficiency ventilation performance. <i>Applied Physics Letters</i> , <b>2018</b> , 113, 103501	3-4	35
88	Broadband acoustic energy harvesting metasurface with coupled Helmholtz resonators. <i>Applied Physics Letters</i> , <b>2018</b> , 113, 153503	3-4	34
87	Delivering sound energy along an arbitrary convex trajectory. <i>Scientific Reports</i> , <b>2014</b> , 4, 6628	4-9	33
86	Broadband convergence of acoustic energy with binary reflected phases on planar surface. <i>Applied Physics Letters</i> , <b>2016</b> , 109, 243501	3-4	32

85	Multi-frequency acoustic metasurface for extraordinary reflection and sound focusing. <i>AIP Advances</i> , <b>2016</b> , 6, 121702	1.5	28
84	Broadband Acoustic Cloaking within an Arbitrary Hard Cavity. <i>Physical Review Applied</i> , <b>2015</b> , 3,	4.3	27
83	Self-ordering induces multiple topological transitions for in-plane bulk waves in solid phononic crystals. <i>Physical Review B</i> , <b>2018</b> , 98,	3.3	24
82	Wavefront manipulation by acoustic metasurfaces: from physics and applications. <i>Nanophotonics</i> , <b>2018</b> , 7, 1191-1205	6.3	24
81	Meta-neural-network for real-time and passive deep-learning-based object recognition. <i>Nature Communications</i> , <b>2020</b> , 11, 6309	17.4	23
80	Experimental realization of broadband acoustic omnidirectional absorber by homogeneous anisotropic metamaterials. <i>Journal of Applied Physics</i> , <b>2015</b> , 117, 074502	2.5	22
79	Ultrathin Acoustic Parity-Time Symmetric Metasurface Cloak. <i>Research</i> , <b>2019</b> , 2019, 8345683	7.8	21
78	Study of acoustic wave behavior in silicon-based one-dimensional phononic-crystal plates using harmony response analysis. <i>Journal of Applied Physics</i> , <b>2009</b> , 106, 104901	2.5	20
77	Scattering reduction for an acoustic sensor using a multilayered shell comprising a pair of homogeneous isotropic single-negative media. <i>Applied Physics Letters</i> , <b>2012</b> , 101, 033509	3.4	19
76	Sound Insulation in a Hollow Pipe with Subwavelength Thickness. <i>Scientific Reports</i> , <b>2017</b> , 7, 44106	4.9	18
75	One-way acoustic mirror based on anisotropic zero-index media. <i>Applied Physics Letters</i> , <b>2015</b> , 107, 213504	3.4	17
74	Ultrathin Planar Metasurface-based Acoustic Energy Harvester with Deep Subwavelength Thickness and Mechanical Rigidity. <i>Scientific Reports</i> , <b>2019</b> , 9, 11152	4.9	16
73	Asymmetric sound transmission in a passive non-blocking structure with multiple ports. <i>Applied Physics Letters</i> , <b>2016</b> , 109, 103504	3.4	16
72	Acoustic one-way frequency up-converter with high transmission efficiency. <i>Journal of Applied Physics</i> , <b>2013</b> , 114, 134508	2.5	15
71	Controllable acoustic rectification in one-dimensional piezoelectric composite plates. <i>Journal of Applied Physics</i> , <b>2013</b> , 114, 164504	2.5	15
70	Acoustic broadband metacouplers. <i>Applied Physics Letters</i> , <b>2017</b> , 110, 203504	3.4	14
69	Nonresonant Metasurface for Fast Decoding in Acoustic Communications. <i>Physical Review Applied</i> , <b>2020</b> , 13,	4.3	14
68	Three-dimensional broadband acoustic illusion cloak for sound-hard boundaries of curved geometry. <i>Scientific Reports</i> , <b>2016</b> , 6, 36936	4.9	14

67	Acoustic transistor: Amplification and switch of sound by sound. <i>Applied Physics Letters</i> , <b>2014</b> , 105, 083510	3.0	14
66	Effective medium method for sound propagation in a soft medium containing air bubbles. <i>Journal of the Acoustical Society of America</i> , <b>2008</b> , 124, 1419-29	2.2	14
65	Numerical Analysis on Laser-Generated Guided Elastic Waves in a Hollow Cylinder. <i>Journal of Nondestructive Evaluation</i> , <b>2002</b> , 21, 45-53	2.1	14
64	Acoustic waveguide with virtual soft boundary based on metamaterials. <i>Scientific Reports</i> , <b>2020</b> , 10, 9814	4.9	13
63	Inverse design of acoustic metamaterials based on machine learning using a Gaussian Bayesian model. <i>Journal of Applied Physics</i> , <b>2020</b> , 128, 134902	2.5	13
62	Broadband transmission-type coding metamaterial for wavefront manipulation for airborne sound. <i>Applied Physics Express</i> , <b>2018</b> , 11, 077301	2.4	13
61	Non-blind acoustic invisibility by dual layers of homogeneous single-negative media. <i>Scientific Reports</i> , <b>2017</b> , 7, 42533	4.9	12
60	Ultra-broadband and planar sound diffuser with high uniformity of reflected intensity. <i>Applied Physics Letters</i> , <b>2017</b> , 111, 103502	3.4	12
59	Three-dimensional ultra-broadband focusing flat mirror for airborne sound. <i>Applied Physics Letters</i> , <b>2016</b> , 109, 153501	3.4	12
58	Topology-Optimized Omnidirectional Broadband Acoustic Ventilation Barrier. <i>Physical Review Applied</i> , <b>2020</b> , 14,	4.3	11
57	Converting a Monopole Emission into a Dipole Using a Subwavelength Structure. <i>Physical Review Applied</i> , <b>2018</b> , 9,	4.3	10
56	Tunable low-frequency and broadband acoustic metamaterial absorber. <i>Journal of Applied Physics</i> , <b>2021</b> , 129, 094502	2.5	10
55	Voltage-controlled membrane-type active acoustic metasurfaces with ultrathin thickness. <i>Applied Physics Express</i> , <b>2019</b> , 12, 064501	2.4	9
54	Acoustic planar antireflective focusing lens with sub-diffraction-limit resolution based on metamaterials. <i>Journal of Applied Physics</i> , <b>2018</b> , 123, 091717	2.5	9
53	Acoustic band pinning in the phononic crystal plates of anti-symmetric structure. <i>Chinese Physics B</i> , <b>2011</b> , 20, 116301	1.2	9
52	Illusion for Airborne Sound Source by a Closed Layer with Subwavelength Thickness. <i>Scientific Reports</i> , <b>2019</b> , 9, 1750	4.9	8
51	Omnidirectional broadband acoustic deflector based on metamaterials. <i>Applied Physics Express</i> , <b>2017</b> , 10, 027201	2.4	7
50	Radiation directivity rotation by acoustic metamaterials. <i>Applied Physics Letters</i> , <b>2015</b> , 107, 093506	3.4	7

49	Helical Higher-Order Topological States in an Acoustic Crystalline Insulator. <i>Physical Review Letters</i> , <b>2020</b> , 125, 255502	7.4	7
48	Broadband acoustic phased array with subwavelength active tube array. <i>Applied Physics Letters</i> , <b>2018</b> , 112, 093503	3.4	7
47	A broadband low-reflection bending waveguide for airborne sound. <i>Applied Physics Letters</i> , <b>2017</b> , 110, 253502	3.4	7
46	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> , <b>2015</b> , 107, 113505	3.4	7
45	Generation of Non-aliased Two-dimensional Acoustic Vortex with Enclosed Metasurface. <i>Scientific Reports</i> , <b>2020</b> , 10, 3827	4.9	6
44	Acoustic focusing of sub-wavelength scale achieved by multiple Fabry-Perot resonance effect. <i>Journal of Applied Physics</i> , <b>2014</b> , 115, 104504	2.5	6
43	Concealing a Passive Sensing System with Single-Negative Layers. <i>Chinese Physics Letters</i> , <b>2012</b> , 29, 014108	10	6
42	Efficient nonreciprocal mode transitions in spatiotemporally modulated acoustic metamaterials. <i>Science Advances</i> , <b>2021</b> , 7, eabj1198	14.3	6
41	Topological Interface States in the Low-Frequency Band Gap of One-Dimensional Phononic Crystals. <i>Physical Review Applied</i> , <b>2020</b> , 14,	4.3	6
40	Experimental demonstration of a three-dimensional omnidirectional and broadband acoustic concentrator using an anisotropic metamaterial. <i>Science China: Physics, Mechanics and Astronomy</i> , <b>2021</b> , 64, 1	3.6	6
39	Acoustic field of an ultrasonic cavity resonator with two open ends: Experimental measurements and lattice Boltzmann method modeling. <i>Journal of Applied Physics</i> , <b>2017</b> , 121, 124502	2.5	5
38	Broadband thin sound absorber based on hybrid labyrinthine metastructures with optimally designed parameters. <i>Scientific Reports</i> , <b>2020</b> , 10, 10705	4.9	5
37	Topological phononic crystals with tunable interface state based on local resonance. <i>Applied Physics Express</i> , <b>2019</b> , 12, 094002	2.4	5
36	Tunable annular acoustic metasurface for transmitted wavefront modulation. <i>Applied Physics Express</i> , <b>2020</b> , 13, 014002	2.4	5
35	Tunable asymmetric acoustic transmission via binary metasurface and zero-index metamaterials. <i>Applied Physics Letters</i> , <b>2021</b> , 118, 113501	3.4	5
34	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> , <b>2015</b> , 138, 1608-13	2.2	4
33	One-way Acoustic Beam Splitter. <i>Scientific Reports</i> , <b>2018</b> , 8, 13573	4.9	4
32	Acoustic skin meta-muffler. <i>Science China: Physics, Mechanics and Astronomy</i> , <b>2021</b> , 64, 1	3.6	4

31	The velocity field around two interacting cavitation bubbles in an ultrasound field. <i>Science China: Physics, Mechanics and Astronomy</i> , <b>2013</b> , 56, 1246-1252	3.6	3
30	An eigenfunction expansion method for the elastodynamic response of an elastic solid with mixed boundary surfaces. <i>Progress in Natural Science: Materials International</i> , <b>2008</b> , 18, 1063-1068	3.6	3
29	Compact acoustic monolayered metadecoder for efficient and flexible orbital angular momentum demultiplexing. <i>Applied Physics Letters</i> , <b>2021</b> , 119, 213502	3.4	3
28	Machine-Learning-Assisted Acoustic Consecutive Fano Resonances: Application to a Tunable Broadband Low-Frequency Metasilencer. <i>Physical Review Applied</i> , <b>2021</b> , 16,	4.3	3
27	Experimental demonstration of a three-dimensional acoustic hyperlens for super-resolution imaging. <i>Applied Physics Letters</i> , <b>2021</b> , 118, 203504	3.4	3
26	Focusing a Two-Dimensional Acoustic Vortex Beyond Diffraction Limit on an Ultrathin Structured Surface. <i>Physical Review Applied</i> , <b>2021</b> , 15,	4.3	3
25	Multi-relaxation-time lattice Boltzmann modeling of the acoustic field generated by focused transducer. <i>International Journal of Modern Physics C</i> , <b>2017</b> , 28, 1750038	1.1	2
24	Cloaking an acoustic sensor with single-negative materials. <i>Annals of Physics</i> , <b>2015</b> , 358, 83-91	2.5	2
23	Temperature stable amorphous-TeO <sub>2</sub> B <sub>2</sub> O <sub>3</sub> Y-X LiTaO <sub>3</sub> substrates for surface acoustic wave applications. <i>Applied Physics Letters</i> , <b>2008</b> , 92, 233501	3.4	2
22	Effective medium method of slightly compressible elastic media permeated with air-filled bubbles. <i>Frontiers of Physics in China</i> , <b>2006</b> , 1, 500-505		2
21	Acoustic band gaps of two-dimensional three-component composite. <i>Progress in Natural Science: Materials International</i> , <b>2003</b> , 13, 809-813	3.6	2
20	Wavelength-dependent multi-functional wavefront manipulation for reflected acoustic waves. <i>Applied Physics Express</i> , <b>2020</b> , 13, 094003	2.4	2
19	Boundary-dependent corner states in topological acoustic resonator array. <i>Applied Physics Letters</i> , <b>2020</b> , 117, 113501	3.4	2
18	Method to Derive the Hamiltonian of Acoustic Topological Crystalline Insulators. <i>Physical Review Applied</i> , <b>2021</b> , 15,	4.3	2
17	Spatial filtering of audible sound with acoustic landscapes. <i>Applied Physics Letters</i> , <b>2017</b> , 111, 041904	3.4	1
16	Controlling an acoustic wave with a cylindrically-symmetric gradient-index system. <i>Chinese Physics B</i> , <b>2015</b> , 24, 024301	1.2	1
15	Machine learning-assisted low-frequency and broadband sound absorber with coherently coupled weak resonances. <i>Applied Physics Letters</i> , <b>2022</b> , 120, 033501	3.4	1
14	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> , <b>2020</b> , 1-20	1.9	1

13	An ultrathin planar acoustic metasurface diffuser with narrowband uniform reflection. <i>AIP Advances</i> , <b>2020</b> , 10, 085122	1.5	1
12	Acoustic constant mode one-way device based on wave pattern filter. <i>Applied Physics Letters</i> , <b>2021</b> , 118, 263503	3.4	1
11	Tunable pipe-type acoustic metamaterials based on piezoelectric composite side-branches. <i>Journal of Applied Physics</i> , <b>2021</b> , 129, 084505	2.5	1
10	Broadband acoustic insulation via gradient impedance boundary waveguide. <i>Applied Physics Letters</i> , <b>2022</b> , 120, 123501	3.4	1
9	A fully integrated broadband, high-gain, high-power and high-efficiency UHF amplifier using GaAs HBT and GaN HEMT. <i>IEICE Electronics Express</i> , <b>2017</b> , 14, 20170639-20170639	0.5	0
8	Design and experimental demonstration of effective acoustic gain medium for PT-symmetric refractive index. <i>Applied Physics Letters</i> , <b>2022</b> , 120, 063503	3.4	0
7	Tunable acoustic metasurface based on tunable piezoelectric composite structure.. <i>Journal of the Acoustical Society of America</i> , <b>2022</b> , 151, 838	2.2	0
6	Broadband tunable acoustic metasurface based on piezoelectric composite structure with two resonant modes. <i>Applied Physics Express</i> , <b>2022</b> , 15, 014004	2.4	0
5	Tunable acoustic metasurface based on PVDF/polyimide unimorph sheets. <i>Applied Physics Express</i> , <b>2022</b> , 15, 014001	2.4	0
4	Twisting Linear to Orbital Angular Momentum in an Ultrasonic Motor.. <i>Advanced Materials</i> , <b>2022</b> , e2201575	3.5	0
3	Effects of periodically corrugated surfaces on sound scattering. <i>Journal of Sound and Vibration</i> , <b>2018</b> , 436, 1-14	3.9	
2	An inverse method of elastic constants for unidirectional fiber-reinforced composite plate. <i>Frontiers of Physics in China</i> , <b>2006</b> , 1, 230-237		
1	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> , <b>2003</b> , 13, 288-294	3.6	