

Bahram Djafari Rouhani

List of Publications by Year in descending order

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126
papers

7,199
citations

76326

40
h-index

56724

83
g-index

126
all docs

126
docs citations

126
times ranked

2911
citing authors

#	ARTICLE	IF	CITATIONS
1	Acoustic band structure of periodic elastic composites. <i>Physical Review Letters</i> , 1993, 71, 2022-2025.	7.8	2,336
2	Two-dimensional phononic crystals: Examples and applications. <i>Surface Science Reports</i> , 2010, 65, 229-291.	7.2	462
3	Evidence of Fano-Like Interference Phenomena in Locally Resonant Materials. <i>Physical Review Letters</i> , 2002, 88, 225502.	7.8	314
4	Low-frequency gaps in a phononic crystal constituted of cylindrical dots deposited on a thin homogeneous plate. <i>Physical Review B</i> , 2008, 78, .	3.2	307
5	A one-dimensional optomechanical crystal with a complete phononic band gap. <i>Nature Communications</i> , 2014, 5, 4452.	12.8	138
6	Gradient index phononic crystals and metamaterials. <i>Nanophotonics</i> , 2019, 8, 685-701.	6.0	108
7	Tunable waveguide and cavity in a phononic crystal plate by controlling whispering-gallery modes in hollow pillars. <i>Physical Review B</i> , 2016, 93, .	3.2	100
8	Photon, electron, magnon, phonon and plasmon mono-mode circuits. <i>Surface Science Reports</i> , 2004, 54, 1-156.	7.2	99
9	Modeling of two-dimensional nanoscale Y-bent plasmonic waveguides with cavities for demultiplexing of the telecommunication wavelengths. <i>New Journal of Physics</i> , 2009, 11, 103020.	2.9	99
10	Enhanced acousto-optic interactions in a one-dimensional phoxonic cavity. <i>Physical Review B</i> , 2010, 82, .	3.2	96
11	Physics of surface vibrational resonances: pillared phononic crystals, metamaterials, and metasurfaces. <i>Reports on Progress in Physics</i> , 2021, 84, 086502.	20.1	94
12	Acousto-optic couplings in two-dimensional phoxonic crystal cavities. <i>Applied Physics Letters</i> , 2012, 101, 061109.	3.3	91
13	Modeling light-sound interaction in nanoscale cavities and waveguides. <i>Nanophotonics</i> , 2014, 3, 413-440.	6.0	82
14	Giant gaps in photonic band structures. <i>Physical Review B</i> , 1998, 57, R9388-R9391.	3.2	79
15	Experimental and theoretical evidence for the existence of photonic bandgaps and selective transmissions in serial loop structures. <i>Journal of Applied Physics</i> , 2004, 95, 1102-1113.	2.5	73
16	Transmission gaps and Fano resonances in an acoustic waveguide: analytical model. <i>Journal of Physics Condensed Matter</i> , 2008, 20, 255212.	1.8	73
17	Simultaneous sensing of light and sound velocities of fluids in a two-dimensional phoXonic crystal with defects. <i>Journal of Applied Physics</i> , 2014, 115, .	2.5	71
18	Exceptional Point Enhances Sensitivity of Optomechanical Mass Sensors. <i>Physical Review Applied</i> , 2019, 12, .	3.8	69

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19	Surface and interface elastic waves in superlattices: Transverse localized and resonant modes. <i>Physical Review B</i> , 1993, 48, 10987-10997.	3.2	68
20	Robustness of conventional and topologically protected edge states in phononic crystal plates. <i>Physical Review B</i> , 2018, 98, .	3.2	64
21	Theory of surface and interface transverse elastic waves in N-layer superlattices. <i>Physical Review B</i> , 1996, 54, 14728-14741.	3.2	63
22	Engineering the Hypersonic Phononic Band Gap of Hybrid Bragg Stacks. <i>Nano Letters</i> , 2012, 12, 3101-3108.	9.1	63
23	Phononic Crystal Plate with Hollow Pillars Actively Controlled by Fluid Filling. <i>Crystals</i> , 2016, 6, 64.	2.2	59
24	Defect modes in one-dimensional comblike photonic waveguides. <i>Physical Review B</i> , 1999, 59, 13446-13452.	3.2	58
25	Negative effective mass density of acoustic metamaterial plate decorated with low frequency resonant pillars. <i>Journal of Applied Physics</i> , 2014, 116, .	2.5	57
26	Robust Fano resonance in a topological mechanical beam. <i>Physical Review B</i> , 2020, 101, .	3.2	57
27	Acoustic spectral gaps and discrete transmission in slender tubes. <i>Solid State Communications</i> , 1998, 106, 659-663.	1.9	55
28	Simultaneous control of the S and A Lamb modes by graded phononic crystal plates. <i>Journal of Applied Physics</i> , 2015, 117, .	2.5	55
29	Intelligent on-demand design of phononic metamaterials. <i>Nanophotonics</i> , 2022, 11, 439-460.	6.0	55
30	Theoretical analysis of the density of states and phase times: Application to resonant electromagnetic modes in finite superlattices. <i>Physical Review B</i> , 2001, 63, .	3.2	54
31	Elastic Metasurfaces for Deep and Robust Subwavelength Focusing and Imaging. <i>Physical Review Applied</i> , 2021, 15, .	3.8	53
32	Large magnonic band gaps and defect modes in one-dimensional comblike structures. <i>Physical Review B</i> , 1999, 59, 8709-8719.	3.2	46
33	Optomechanical interaction in a corrugated phononic nanobeam cavity. <i>Physical Review B</i> , 2014, 89, .	3.2	46
34	Rayleigh Waves in Phononic Crystal Made of Multilayered Pillars: Confined Modes, Fano Resonances, and Acoustically Induced Transparency. <i>Physical Review Applied</i> , 2018, 9, .	3.8	45
35	Topological cavities in phononic plates for robust energy harvesting. <i>Mechanical Systems and Signal Processing</i> , 2022, 162, 108047.	8.0	45
36	Pillar-type acoustic metasurface. <i>Physical Review B</i> , 2017, 96, .	3.2	44

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37	Trapped-mode-induced Fano resonance and acoustical transparency in a one-dimensional solid-fluid phononic crystal. <i>Physical Review B</i> , 2018, 97, .	3.2	44
38	Broadband Rayleigh wave attenuation by gradient metamaterials. <i>International Journal of Mechanical Sciences</i> , 2021, 205, 106592.	6.7	43
39	Defect-Controlled Hypersound Propagation in Hybrid Superlattices. <i>Physical Review Letters</i> , 2013, 111, 164301.	7.8	42
40	Effective medium theory for elastic metamaterials in thin elastic plates. <i>Physical Review B</i> , 2014, 90, .	3.2	41
41	Topological states in twisted pillared phononic plates. <i>Extreme Mechanics Letters</i> , 2020, 39, 100777.	4.1	41
42	Gradient Index Devices for the Full Control of Elastic Waves in Plates. <i>Scientific Reports</i> , 2016, 6, 24437.	3.3	40
43	Theoretical and experimental evidence of Fano-like resonances in simple monomode photonic circuits. <i>Journal of Applied Physics</i> , 2013, 113, .	2.5	39
44	Surface electromagnetic waves in Fibonacci superlattices: Theoretical and experimental results. <i>Physical Review B</i> , 2006, 74, .	3.2	38
45	Surface states in one-dimensional photonic band gap structures. <i>Vacuum</i> , 2001, 63, 177-183.	3.5	37
46	Propagation and localization of acoustic waves in Fibonacci phononic circuits. <i>Journal of Physics Condensed Matter</i> , 2005, 17, 4245-4262.	1.8	36
47	Topological valley, pseudospin, and pseudospin-valley protected edge states in symmetric pillared phononic crystals. <i>Physical Review B</i> , 2019, 100, .	3.2	35
48	Asymmetric topological state in an elastic beam based on symmetry principle. <i>International Journal of Mechanical Sciences</i> , 2020, 186, 105897.	6.7	35
49	Experimental realization of a pillared metasurface for flexural wave focusing. <i>APL Materials</i> , 2021, 9, .	5.1	35
50	Propagation and localization of electromagnetic waves in quasiperiodic serial loop structures. <i>Physical Review E</i> , 2005, 72, 056601.	2.1	34
51	Optomechanical interactions in two-dimensional Si and GaAs phoXonic cavities. <i>Journal of Physics Condensed Matter</i> , 2014, 26, 015005.	1.8	33
52	Stopping and filtering waves in phononic circuits. <i>Journal of Physics Condensed Matter</i> , 2004, 16, 37-44.	1.8	32
53	Magnonic circuits and crystals. <i>Surface Science Reports</i> , 2011, 66, 29-75.	7.2	32
54	Phononic crystal plate with hollow pillars connected by thin bars. <i>Journal Physics D: Applied Physics</i> , 2017, 50, 035301.	2.8	32

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55	Tunable Fano resonances of Lamb modes in a pillared metasurface. <i>Journal Physics D: Applied Physics</i> , 2017, 50, 425304.	2.8	31
56	Electromagnetically induced absorption in detuned stub waveguides: a simple analytical and experimental model. <i>Journal of Physics Condensed Matter</i> , 2014, 26, 505901.	1.8	30
57	Phononic crystals and cavity optomechanics. <i>Comptes Rendus Physique</i> , 2016, 17, 555-564.	0.9	30
58	A perspective on elastic metastructures for energy harvesting. <i>Applied Physics Letters</i> , 2022, 120, .	3.3	30
59	Double-Negative Pillared Elastic Metamaterial. <i>Physical Review Applied</i> , 2018, 10, .	3.8	28
60	Love waves dispersion by phononic pillars for nano-particle mass sensing. <i>Applied Physics Letters</i> , 2019, 114, .	3.3	27
61	Propagation and attenuation of Rayleigh and pseudo surface waves in viscoelastic metamaterials. <i>Journal of Applied Physics</i> , 2021, 129, .	2.5	26
62	Temperature biosensor based on triangular lattice phononic crystals. <i>APL Materials</i> , 2021, 9, .	5.1	26
63	Lightweight sound-absorbing metastructures with perforated fish-belly panels. <i>International Journal of Mechanical Sciences</i> , 2022, 226, 107396.	6.7	26
64	Two types of modes in finite size one-dimensional coaxial photonic crystals: General rules and experimental evidence. <i>Physical Review E</i> , 2007, 76, 026607.	2.1	25
65	Robust edge states of subwavelength chiral phononic plates. <i>Extreme Mechanics Letters</i> , 2021, 44, 101209.	4.1	25
66	Phononic and photonic crystals for sensing applications. <i>Advances in Applied Mechanics</i> , 2019, 52, 105-145.	2.3	22
67	Fundamentals, progress and perspectives on high-frequency phononic crystals. <i>Journal Physics D: Applied Physics</i> , 2022, 55, 193002.	2.8	22
68	Acoustic resonances of adsorbed wires and channels. <i>Journal of Physics Condensed Matter</i> , 1993, 5, 8177-8194.	1.8	19
69	Phononic Crystal Made of Multilayered Ridges on a Substrate for Rayleigh Waves Manipulation. <i>Crystals</i> , 2017, 7, 372.	2.2	19
70	Aharonov-Bohm-effect induced transparency and reflection in mesoscopic rings side coupled to a quantum wire. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2020, 116, 113770.	2.7	19
71	Acoustic analogue of electromagnetically induced transparency and Autler-Townes splitting in pillared metasurfaces. <i>Journal Physics D: Applied Physics</i> , 2018, 51, 494004.	2.8	17
72	Photonic demultiplexer based on electromagnetically induced transparency resonances. <i>Journal Physics D: Applied Physics</i> , 2019, 52, 075101.	2.8	17

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73	Comparison of density of states and scattering parameters in coaxial photonic crystals: Theory and experiment. <i>Physical Review B</i> , 2020, 102, .	3.2	17
74	Elastic stubbed metamaterial plate with torsional resonances. <i>Ultrasonics</i> , 2020, 106, 106142.	3.9	17
75	Invisible omnidirectional lens for flexural waves in thin elastic plates. <i>Journal Physics D: Applied Physics</i> , 2017, 50, 225301.	2.8	16
76	Polarization-dependent and valley-protected Lamb waves in asymmetric pillared phononic crystals. <i>Journal Physics D: Applied Physics</i> , 2019, 52, 505302.	2.8	16
77	Topological surface wave metamaterials for robust vibration attenuation and energy harvesting. <i>Mechanics of Advanced Materials and Structures</i> , 2022, 29, 4759-4767.	2.6	16
78	Non-Hermitian skin effect in a phononic beam based on piezoelectric feedback control. <i>Applied Physics Letters</i> , 2022, 121, .	3.3	16
79	Resonant tunnelling of acoustic waves between two slender tubes. <i>Europhysics Letters</i> , 1999, 46, 467-470.	2.0	15
80	Elastoplasmonic interaction in metal-insulator-metal localized surface plasmon systems. <i>Physical Review B</i> , 2016, 94, .	3.2	15
81	Abnormal topological refraction into free medium at subwavelength scale in valley phononic crystal plates. <i>Physical Review B</i> , 2021, 103, .	3.2	15
82	Electromagnetic wave propagation in quasi-periodic photonic circuits. <i>Journal of Physics Condensed Matter</i> , 2007, 19, 246217.	1.8	14
83	Acoustic demultiplexer based on Fano and induced transparency resonances in slender tubes. <i>EPL Applied Physics</i> , 2020, 90, 10902.	0.7	14
84	Polymer photonic crystal membrane for thermo-regulating textile. <i>Scientific Reports</i> , 2020, 10, 9855.	3.3	14
85	Experimental Evidence of the Existence of Bound States in the Continuum and Fano Resonances in Solid-Liquid Layered Media. <i>Physical Review Applied</i> , 2021, 15, .	3.8	14
86	Conversion between surface acoustic waves and guided modes of a quasi-periodic structured nanobeam. <i>Journal Physics D: Applied Physics</i> , 2019, 52, 32LT01.	2.8	13
87	Optomechanic Coupling in Ag Polymer Nanocomposite Films. <i>Journal of Physical Chemistry C</i> , 2021, 125, 14854-14864.	3.1	13
88	Electromagnetic waves in finite superlattices with buffer and cap layers. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 1999, 16, 1703.	1.5	12
89	Multimodal and omnidirectional beam splitters for Lamb modes in elastic plates. <i>AIP Advances</i> , 2016, 6, 121602.	1.3	12
90	Y-shaped magnonic demultiplexer using induced transparency resonances. <i>AIP Advances</i> , 2019, 9, 035011.	1.3	12

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91	Plasmonic-induced transparency in a MIM waveguide with two side-coupled cavities. Applied Physics A: Materials Science and Processing, 2017, 123, 1.	2.3	10
92	Impact of SiO ₂ Particles in Polyethylene Textile Membrane for Indoor Personal Heating. Nanomaterials, 2020, 10, 1968.	4.1	10
93	Induced transparency based subwavelength acoustic demultiplexers. Journal Physics D: Applied Physics, 2021, 54, 175301.	2.8	10
94	Transmission and filtering in photonic circuits: effects of absorption and amplification. Progress in Surface Science, 2003, 74, 389-404.	8.3	9
95	Surface Acoustic Waves-Localized Plasmon Interaction in Pillared Phononic Crystals. Physical Review Applied, 2020, 13, .	3.8	9
96	Sonic band gaps in one-dimensional phononic crystals with a symmetric stub. Physical Review B, 2008, 77, .	3.2	8
97	Analytical and numerical study of T-shaped plasmonic demultiplexer based on Fano and induced transparency resonances. Journal Physics D: Applied Physics, 2022, 55, 075106.	2.8	8
98	Superluminal and negative delay times in isotropic-anisotropic one-dimensional photonic crystal. Journal of Applied Physics, 2017, 122, 183106.	2.5	7
99	Compact Waveguide and Guided Beam Pattern Based on the Whispering-Gallery Mode of a Hollow Pillar in a Phononic Crystal Plate. Physical Review Applied, 2018, 10, .	3.8	7
100	Active control of the transmission of Lamb waves through an elastic metamaterial. Journal of Applied Physics, 2020, 128, .	2.5	6
101	Microstubs resonators integrated to bent Y-branch waveguide. Photonics and Nanostructures - Fundamentals and Applications, 2008, 6, 26-31.	2.0	5
102	Vertical Engineering for Large Brillouin Gain in Unreleased Silicon-Based Waveguides. Physical Review Applied, 2021, 15, .	3.8	5
103	Plasmonic Demultiplexer Based on Induced Transparency Resonances: Analytical and Numerical Study. Lecture Notes in Electrical Engineering, 2021, , 239-247.	0.4	5
104	Plasmonic Tamm states in periodic stubbed MIM waveguides: analytical and numerical study. Journal of the Optical Society of America B: Optical Physics, 2022, 39, 600.	2.1	5
105	Three port photonic and plasmonic demultiplexers based on Cross and U-shaped stub structures: Application for filtering and sensing. Journal of Applied Physics, 2022, 131, 153102.	2.5	5
106	A Biosensor Based on Bound States in the Continuum and Fano Resonances in a Solid-Liquid-Solid Triple Layer. Crystals, 2022, 12, 707.	2.2	5
107	Broadband Asymmetric Propagation in Pillared Meta-Plates. Crystals, 2020, 10, 702.	2.2	4
108	Graphene-Based One-Dimensional Terahertz Phononic Crystal: Band Structures and Surface Modes. Nanomaterials, 2020, 10, 2205.	4.1	4

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109	Scaling Law, Confined and Surface Modes in Photonic Fibonacci Stub Structures: Theory and Experiment. Applied Sciences (Switzerland), 2020, 10, 7767.	2.5	4
110	Acoustic Tamm states in slender tubes. Materials Today: Proceedings, 2021, 45, 7394-7398.	1.8	4
111	Y-Shaped Demultiplexer Photonic Circuits Based on Detuned Stubs: Application to Radiofrequency Domain. Photonics, 2021, 8, 386.	2.0	4
112	Quantization of Acoustic Modes in Dumbbell Nanoparticles. Physical Review Letters, 2022, 128, 048003.	7.8	4
113	Rigorous simulation of nonlinear optomechanical coupling in micro- and nano-structured resonant cavities. International Journal of Optomechatronics, 2018, 12, 11-19.	6.6	3
114	Bound in continuum states and induced transparency in mesoscopic demultiplexer with two outputs. Chinese Physics B, 2020, 29, 127301.	1.4	3
115	Dynamical effective parameters of elastic superlattice with strong acoustic contrast between the constituents. Low Temperature Physics, 2018, 44, 1280-1284.	0.6	2
116	Coupling of Integrated Waveguide and Optomechanic Cavity for Microwave Phonon Excitation in Si Nanobeams. Photonics, 2020, 7, 67.	2.0	2
117	Enhanced phonon-plasmon interaction in film-coupled dimer nanoridges mediated by surface acoustic waves. Optics Express, 2021, 29, 43104.	3.4	2
118	Surface modes in plasmonic stubbed structures. Materials Today: Proceedings, 2021, 45, 7752-7755.	1.8	1
119	Asymmetric Design for a High-Performance Indoor Radiative Heating Fabric. Advanced Materials Technologies, 0, , 2101738.	5.8	1
120	Optical waves in finite layered photonic crystals. , 2021, , 529-568.		0
121	Photonic monomode circuits: comb structures. , 2021, , 219-285.		0
122	Fibonacci loop structures: bandgaps, power law, scaling law, confined and surface modes. , 2021, , 333-371.		0
123	Electromagnetic induced transparency, induced absorption, and Fano resonances in photonic circuits. , 2021, , 155-191.		0
124	Serial loop structures: photonic bandgaps, confined, cavity, and surface modes. , 2021, , 287-331.		0
125	Evanescent Coupling between Aluminum Pillars. , 2021, , .		0
126	Dynamic thermoregulatory photonic crystal fabric for personal thermal management. , 2021, , .		0