

Mahmoud I Hussein

List of Publications by Year in descending order

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Version: 2024-02-01

63
papers

4,167
citations

201674

27
h-index

175258

52
g-index

74
all docs

74
docs citations

74
times ranked

1994
citing authors

#	ARTICLE	IF	CITATIONS
1	Closed-form existence conditions for bandgap resonances in a finite periodic chain under general boundary conditions. <i>Journal of the Acoustical Society of America</i> , 2022, 151, 286-298.	1.1	10
2	Metadamping in inertially amplified metamaterials: Trade-off between spatial attenuation and temporal attenuation. <i>Journal of Sound and Vibration</i> , 2022, 531, 116977.	3.9	18
3	State-space Bloch mode synthesis for fast band-structure calculations of non-classically damped phononic materials. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2022, 396, 115018.	6.6	6
4	Coiled Phononic Crystal with Periodic Rotational Locking: Subwavelength Bragg Band Gaps. <i>Physical Review Applied</i> , 2022, 18, .	3.8	6
5	Brillouin-zone characterization of piezoelectric material intrinsic energy-harvesting availability. <i>Smart Materials and Structures</i> , 2021, 30, 085022.	3.5	3
6	Physics of surface vibrational resonances: pillared phononic crystals, metamaterials, and metasurfaces. <i>Reports on Progress in Physics</i> , 2021, 84, 086502.	20.1	94
7	Editorial for the Special Issue on "Emerging Trends in Phononic Crystals". <i>Crystals</i> , 2021, 11, 911.	2.2	0
8	Directional thermal channeling: A phenomenon triggered by tight packing of heat sources. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	7.1	9
9	Inertial amplification band-gap generation by coupling a levered mass with a locally resonant mass. <i>International Journal of Mechanical Sciences</i> , 2021, 207, 106630.	6.7	61
10	Theoretical band-gap bounds and coupling sensitivity for a waveguide with periodically attached resonating branches. <i>Journal of Sound and Vibration</i> , 2021, 514, 116428.	3.9	5
11	Broadband and Intense Sound Transmission Loss by a Coupled-Resonance Acoustic Metamaterial. <i>Physical Review Applied</i> , 2021, 16, .	3.8	13
12	Time-independent harmonics dispersion relation for time-evolving nonlinear waves. <i>Science Advances</i> , 2021, 7, eabl3695.	10.3	5
13	Thermal Conductivity Reduction in a Nanophononic Metamaterial versus a Nanophononic Crystal: A Review and Comparative Analysis. <i>Advanced Functional Materials</i> , 2020, 30, 1906718.	14.9	42
14	Explicit dispersion relation for strongly nonlinear flexural waves using the homotopy analysis method. <i>Nonlinear Dynamics</i> , 2020, 99, 737-752.	5.2	9
15	Resonant Thermal Transport in Nanophononic Metamaterials. , 2020, , 953-973.		1
16	The finite-element time-domain method for elastic band-structure calculations. <i>Computer Physics Communications</i> , 2019, 238, 77-87.	7.5	8
17	Generalized Bloch mode synthesis for accelerated calculation of elastic band structures. <i>Journal of Computational Physics</i> , 2018, 357, 183-205.	3.8	44
18	Metadamping: Dissipation Emergence in Elastic Metamaterials. <i>Advances in Applied Mechanics</i> , 2018, , 115-164.	2.3	50

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19	Resonant Thermal Transport in Nanophononic Metamaterials. , 2018, , 1-21.		0
20	Nonlinear Bloch waves and balance between hardening and softening dispersion. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2018, 474, 20180173.	2.1	25
21	Two orders of magnitude reduction in silicon membrane thermal conductivity by resonance hybridizations. Physical Review B, 2018, 97, .	3.2	52
22	Inertial amplification of continuous structures: Large band gaps from small masses. Journal of Applied Physics, 2016, 119, .	2.5	126
23	Thermal transport size effects in silicon membranes featuring nanopillars as local resonators. Applied Physics Letters, 2016, 108, .	3.3	42
24	Anisotropic dissipation in lattice metamaterials. AIP Advances, 2016, 6, .	1.3	21
25	Preface to Special Topic: Selected Articles from Phononics 2015: The Third International Conference on Phononic Crystals/Metamaterials, Phonon Transport and Phonon Coupling, 31 May-5 June 2015, Paris, France. AIP Advances, 2016, 6, 121501.	1.3	2
26	Generalized Bloch's theorem for viscous metamaterials: Dispersion and effective properties based on frequencies and wavenumbers that are simultaneously complex. Comptes Rendus Physique, 2016, 17, 565-577.	0.9	55
27	Spectral energy analysis of locally resonant nanophononic metamaterials by molecular simulations. Physical Review B, 2016, 93, .	3.2	50
28	Viscous-to-viscoelastic transition in phononic crystal and metamaterial band structures. Journal of the Acoustical Society of America, 2015, 138, 3169-3180.	1.1	51
29	Bloch mode synthesis: Ultrafast methodology for elastic band-structure calculations. Physical Review E, 2014, 90, 063306.	2.1	22
30	Dispersion characteristics of a nonlinear elastic metamaterial. AIP Advances, 2014, 4, .	1.3	101
31	Preface to Special Topic: Selected Articles from Phononics 2013: The Second International Conference on Phononic Crystals/Metamaterials, Phonon Transport and Optomechanics, 2-7 June 2013, Sharm El-Sheikh, Egypt. AIP Advances, 2014, 4, .	1.3	3
32	Closure to "Discussion of "Dynamics of Phononic Materials and Structures: Historical Origins, Recent Progress, and Future Outlook" (Hussein, M. I., Leamy, M. J., and Ruzzene, M., 2014, ASME Appl.) Tj ET 00 0 0 rgt /Overlo		0
33	Dynamics of Phononic Materials and Structures: Historical Origins, Recent Progress, and Future Outlook. Applied Mechanics Reviews, 2014, 66, .	10.1	1,141
34	Nanophononic Metamaterial: Thermal Conductivity Reduction by Local Resonance. Physical Review Letters, 2014, 112, 055505.	7.8	234
35	Thermal conductivity reduction by nanophononic metamaterials. , 2014, , .		0
36	Metadamping: An emergent phenomenon in dissipative metamaterials. Journal of Sound and Vibration, 2013, 332, 4767-4774.	3.9	199

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37	Wave dispersion under finite deformation. <i>Wave Motion</i> , 2013, 50, 374-388.	2.0	33
38	Trampoline metamaterial: Local resonance enhancement by springboards. <i>Applied Physics Letters</i> , 2013, 103, 111901.	3.3	144
39	Analysis of Damped Bloch Waves by the Rayleigh Perturbation Method. <i>Journal of Vibration and Acoustics, Transactions of the ASME</i> , 2013, 135, .	1.6	28
40	Damped Phononic Crystals and Acoustic Metamaterials. <i>Springer Series in Solid-state Sciences</i> , 2013, , 201-215.	0.3	5
41	Microdynamics of Phononic Materials. , 2013, , .		1
42	Wave Motion in Periodic Flexural Beams and Characterization of the Transition Between Bragg Scattering and Local Resonance. <i>Journal of Applied Mechanics, Transactions ASME</i> , 2012, 79, .	2.2	245
43	Topologically evolved phononic material: breaking the world record in band gap size. , 2012, , .		10
44	Analysis of Elastic Wave Propagation in Nonlinear Beams. , 2011, , .		1
45	Thermal conductivity prediction of nanoscale phononic crystal slabs using a hybrid lattice dynamics-continuum mechanics technique. <i>AIP Advances</i> , 2011, 1, .	1.3	21
46	Ultrawide phononic band gap for combined in-plane and out-of-plane waves. <i>Physical Review E</i> , 2011, 84, 065701.	2.1	166
47	Analysis of Periodicity Termination in Phononic Crystals. , 2011, , .		11
48	Optimization of Phononic Crystals for the Simultaneous Attenuation of Out-of-Plane and In-Plane Waves. , 2011, , .		8
49	Preface to Special Topic: Selected Articles from Phononics 2011: The First International Conference on Phononic Crystals, Metamaterials and Optomechanics, 29 May-2 June 2011, Santa Fe, New Mexico, USA. <i>AIP Advances</i> , 2011, 1, .	1.3	10
50	Thermal characterization of nanoscale phononic crystals using supercell lattice dynamics. <i>AIP Advances</i> , 2011, 1, .	1.3	27
51	Dispersion Relation for Generally Damped Periodic Materials. , 2010, , .		0
52	Band structure of phononic crystals with general damping. <i>Journal of Applied Physics</i> , 2010, 108, .	2.5	121
53	Band Structure Calculations by Modal Analysis. <i>IUTAM Symposium on Cellular, Molecular and Tissue Mechanics</i> , 2010, , 319-324.	0.2	2
54	Reduced Bloch mode expansion for periodic media band structure calculations. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2009, 465, 2825-2848.	2.1	163

#	ARTICLE	IF	CITATIONS
55	Theory of damped Bloch waves in elastic media. <i>Physical Review B</i> , 2009, 80, .	3.2	95
56	Plasticity size effects in voided crystals. <i>Journal of the Mechanics and Physics of Solids</i> , 2008, 56, 114-131.	4.8	43
57	Dispersive elastodynamics of 1D banded materials and structures: Design. <i>Journal of Sound and Vibration</i> , 2007, 307, 865-893.	3.9	121
58	Design Space Exploration of Multi-Phase Layered Phononic Materials via Natural Evolution. , 2006, , 155.		1
59	Dispersive elastodynamics of 1D banded materials and structures: analysis. <i>Journal of Sound and Vibration</i> , 2006, 289, 779-806.	3.9	188
60	Multiobjective evolutionary optimization of periodic layered materials for desired wave dispersion characteristics. <i>Structural and Multidisciplinary Optimization</i> , 2006, 31, 60-75.	3.5	145
61	Mode-enriched dispersion models of periodic materials within a multiscale mixed finite element framework. <i>Finite Elements in Analysis and Design</i> , 2006, 42, 602-612.	3.2	22
62	Hierarchical Design of Phononic Materials and Structures. , 2005, , 163.		4
63	Effects of "Finiteness" on Wave Propagation and Vibration in Elastic Periodic Structures. , 2004, , 437.		3