Jeffrey F Rhoads

List of Publications by Year
in descending order

107 papers	2,186 citations	304368 22 h-index	243296 44 g-index
113 all docs	113 docs citations	113 times ranked	1424 citing authors

#	Article	IF	Citations
1	Nonlinear Dynamics and Its Applications in Micro- and Nanoresonators. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2010, 132, .	0.9	217
2	Generalized parametric resonance in electrostatically actuated microelectromechanical oscillators. Journal of Sound and Vibration, 2006, 296, 797-829.	2.1	194
3	The nonlinear response of resonant microbeam systems with purely-parametric electrostatic actuation. Journal of Micromechanics and Microengineering, 2006, 16, 890-899.	1.5	158
4	Tunable Microelectromechanical Filters that Exploit Parametric Resonance. Journal of Vibration and Acoustics, Transactions of the ASME, 2005, 127, 423-430.	1.0	122
5	Bifurcation-based mass sensing using piezoelectrically-actuated microcantilevers. Applied Physics Letters, 2011, 98, .	1.5	118
6	Linear and Nonlinear Tuning of Parametrically Excited MEMS Oscillators. Journal of Microelectromechanical Systems, 2007, 16, 310-318.	1.7	94
7	Low-frequency meandering piezoelectric vibration energy harvester. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2012, 59, 846-858.	1.7	94
8	A single input-single output coupled microresonator array for the detection and identification of multiple analytes. Applied Physics Letters, 2008, 93, .	1.5	75
9	Additive manufacturing of multifunctional reactive materials. Additive Manufacturing, 2017, 17, 176-182.	1.7	72
10	The impact of nonlinearity on degenerate parametric amplifiers. Applied Physics Letters, 2010, 96, .	1.5	62
11	Parametric noise squeezing and parametric resonance of microcantilevers in air and liquid environments. Review of Scientific Instruments, 2012, 83, 065109.	0.6	61
12	Modeling, Analysis, and Experimental Validation of a Bifurcation-Based Microsensor. Journal of Microelectromechanical Systems, 2012, 21, 549-558.	1.7	48
13	A single inputâ€“single output mass sensor based on a coupled array of microresonators. Sensors and Actuators A: Physical, 2007, 137, 147-156.	2.0	47
14	Mechanical Domain Parametric Amplification. Journal of Vibration and Acoustics, Transactions of the ASME, 2008, 130, .	1.0	47
15	The non-linear dynamics of electromagnetically actuated microbeam resonators with purely parametric excitations. International Journal of Non-Linear Mechanics, 2013, 55, 79-89.	1.4	36
16	Two-component additive manufacturing of nanothermite structures via reactive inkjet printing. Journal of Applied Physics, 2017, 122, .	1.1	34
17	Observation of nonclassical scaling laws in the quality factors of cantilevered carbon nanotube resonators. Journal of Applied Physics, 2011, 110, .	1.1	33
18	Thermal and mechanical response of PBX 9501 under contact excitation. Journal of Applied Physics, 2013, 113, 084904.	1.1	33

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19	Wide-bandwidth, meandering vibration energy harvester with distributed circuit board inertial mass. Sensors and Actuators A: Physical, 2012, 188, 148-157.	2.0	31
20	Nonlinear Dynamics and Its Applications in Micro- and Nanoresonators. , 2008, , .		30
21	Tailoring the reactivity of printable Al/PVDF filament. Combustion and Flame, 2021, 223, 110-117.	2.8	30
22	Development and Characterization of a Photopolymeric Binder for Additively Manufactured Composite Solid Propellant Using Vibration Assisted Printing. Propellants, Explosives, Pyrotechnics, 2020, 45, 853-863.	1.0	27
23	Microelectromechanical bandpass filters based on cyclic coupling architectures. Journal of Sound and Vibration, 2010, 329, 4313-4332.	2.1	26
24	Nonlinear parametric amplification and attenuation in a base-excited cantilever beam. Journal of Sound and Vibration, 2011, 330, 5401-5409.	2.1	20
25	The impact of crystal morphology on the thermal responses of ultrasonically-excited energetic materials. Journal of Applied Physics, 2016, 119, .	1.1	20
26	Thermal and mechanical response of particulate composite plates under inertial excitation. Journal of Applied Physics, 2014, 116, .	1.1	18
27	Heat generation in an elastic binder system with embedded discrete energetic particles due to high-frequency, periodic mechanical excitation. Journal of Applied Physics, 2014, 116, .	1.1	17
28	The effects of crystal proximity and crystal-binder adhesion on the thermal responses of ultrasonically-excited composite energetic materials. Journal of Applied Physics, 2017, 122, .	1.1	17
29	The Effects of Confinement on the Fracturing Performance of Printed Nanothermites. Propellants, Explosives, Pyrotechnics, 2019, 44, 47-54.	1.0	17
30	Tunable, Dual-Gate, Silicon-on-Insulator (SOI) Nanoelectromechanical Resonators. IEEE Nanotechnology Magazine, 2012, 11, 1093-1099.	1.1	16
31	Controlled Substrate Destruction Using Nanothermite. Propellants, Explosives, Pyrotechnics, 2017, 42, 579-584.	1.0	16
32	The effect of interlayer cooling on the mechanical properties of components printed via fused deposition. Additive Manufacturing, 2018, 24, 243-248.	1.7	16
33	Parametrically Excited MEMS-Based Filters. , 2005, , 137-146.		15
34	On the use of evanescent plane waves for low-frequency energy transmission across material interfaces. Journal of the Acoustical Society of America, 2015, 138, 2062-2078.	0.5	15
35	Parametric system identification of resonant micro/nanosystems operating in a nonlinear response regime. Mechanical Systems and Signal Processing, 2017, 84, 241-264.	4.4	15
36	A band-pass filter approach within molecular dynamics for the prediction of intrinsic quality factors of nanoresonators. Journal of Applied Physics, 2012, 112, .	1.1	14

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37	Influence of Stoichiometry on the Thrust and Heat Deposition of Onâ€Chip Nanothermites. Propellants, Explosives, Pyrotechnics, 2018, 43, 258-266.	1.0	13
38	Student Perspectives on the Learning Resources in an Active, Blended, and Collaborative (ABC) Pedagogical Environment. International Journal of Engineering Pedagogy, 2020, 10, 7.	0.7	13
39	Modifying the Surface Chemistry and Nanostructure of Carbon Nanotubes Facilitates the Detection of Aromatic Hydrocarbon Gases. ACS Applied Nano Materials, 2020, 3, 10389-10398.	2.4	12
40	On the Nonlinear Dynamics of Electromagnetically Transduced Microresonators. Journal of Microelectromechanical Systems, 2013, 22, 1020-1031.	1.7	10
41	Perspectives on pedagogical change: instructor and student experiences of a newly implemented undergraduate engineering dynamics curriculum. European Journal of Engineering Education, 2018, 43, 664-678.	1.5	10
42	Motivators and barriers in undergraduate mechanical engineering studentsâ€™ use of learning resources. European Journal of Engineering Education, 2020, 45, 879-899.	1.5	10
43	Photoflash and laser ignition of Al/PVDF films and additively manufactured igniters for solid propellant. Combustion and Flame, 2022, 244, 112252.	2.8	10
44	Sources and implications of resonant mode splitting in silicon nanowire devices. Nanotechnology, 2011, 22, 455502.	1.3	9
45	Structural Energetic Properties of Al/PVDF Composite Materials Prepared Using Fused Filament Fabrication. Propellants, Explosives, Pyrotechnics, 2021, 46, 670-678.	1.0	9
46	Manipulating polymer composition to create low-cost, high-fidelity sensors for indoor CO2 monitoring. Scientific Reports, 2021, 11, 13237.	1.6	9
47	On the Thermomechanical Response of HTPB-Based Composite Beams Under Near-Resonant Excitation. Journal of Vibration and Acoustics, Transactions of the ASME, 2015, 137, .	1.0	8
48	Characterizing the Spatially Dependent Sensitivity of Resonant Mass Sensors Using Inkjet Deposition. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2017, 139, .	0.9	8
49	The Effect of Process Parameters on the Structural Energetic Properties of Additively Manufactured Reactive Structures. Journal of Engineering Materials and Technology, Transactions of the ASME, 2020, 142, .	0.8	8
50	A single-input, single-output electromagnetically-transduced microresonator array. Journal of Micromechanics and Microengineering, 2014, 24, 065005.	1.5	7
51	Dynamics of Globally and Dissipatively Coupled Resonators. Journal of Vibration and Acoustics, Transactions of the ASME, 2015, 137, .	1.0	7
52	The dynamics of large-scale arrays of coupled resonators. Journal of Sound and Vibration, 2017, 392, 232-239.	2.1	7
53	A megahertz-frequency tunable piecewise-linear electromechanical resonator realized via nonlinear feedback. Journal of Sound and Vibration, 2018, 425, 257-274.	2.1	7
54	In-situ X-ray observations of ultrasound-induced explosive decomposition. Applied Materials Today, 2019, 15, 286-294.	2.3	6

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55	Modeling and Analysis of an Optically-Actuated, Bistable MEMS Device. Journal of Computational and Nonlinear Dynamics, 2012, 7, .	0.7	5
56	Defect-Induced Mechanical Mode Splitting in Carbon Nanotube Resonators. Journal of Vibration and Acoustics, Transactions of the ASME, 2013, 135, .	1.0	5
57	Detection of Traumatic Brain Injury Protein Biomarkers With Resonant Microsystems. , 2017, 1, 1-4.		5
58	On the Dynamics of Two Mutually-Coupled, Electromagnetically-Actuated Microbeam Oscillators. Journal of Computational and Nonlinear Dynamics, 2012, 7, .	0.7	5
59	Localized Heating Near a Rigid Spherical Inclusion in a Viscoelastic Binder Material Under Compressional Plane Wave Excitation. Journal of Applied Mechanics, Transactions ASME, 2017, 84, .	1.1	4
60	Mesoscale observations of the thermal decomposition of energetic composites under ultrasonic excitation. Journal of Applied Physics, 2019, 125, 215114.	1.1	4
61	A Chemiresistive CO₂ Sensor Based on CNT-Functional Polymer Composite Films. , 2020, , .		4
62	Characterizing the vibration-assisted printing of high viscosity clay material. Additive Manufacturing, 2021, 47, 102256.	1.7	4
63	MEMS Bandpass Filters Based on Cyclic Coupling Architectures. , 2009, , .		4
64	Nonlinear Response of Parametrically-Excited MEMS. , 2005, , 453.		3
65	The Effects of Nonlinearity on Parametric Amplifiers. , 2008, , .		3
66	Shaping the Frequency Response of Electromechanical Resonators Using a Signal Interference Control Topology. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2017, 139, .	0.9	3
67	Special Section on the Dynamics of MEMS and NEMS. Journal of Vibration and Acoustics, Transactions of the ASME, 2017, 139, .	1.0	3
68	A Resonant CO₂ Sensor Functionalized with a Polymerized Ionic Liquid. , 2019, , .		3
69	Are resource-usage patterns related to achievement? A study of an active, blended, and collaborative learning environment for undergraduate engineering courses. European Journal of Engineering Education, 2021, 46, 416-440.	1.5	3
70	Phase Changes in Embedded HMX in Response to Periodic Mechanical Excitation. Conference Proceedings of the Society for Experimental Mechanics, 2017, , 79-86.	0.3	3
71	Linear and Nonlinear Mass Sensing Using Piezoelectrically-Actuated Microcantilevers. Conference Proceedings of the Society for Experimental Mechanics, 2011, , 57-65.	0.3	3
72	A Carbon Nanotube-Functional Polymer Composite Film for Low-Power Indoor COâ,, Monitoring. IEEE Sensors Journal, 2022, 22, 11233-11240.	2.4	3

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73	On the Dynamics of Two Mutually-Coupled, Electromagnetically-Actuated Microbeam Oscillators. , 2011, , .		2
74	Thermal and Mechanical Responses of Particulate Composite Plates Under Direct Excitation. , 2013, , .		2
75	On the Thermomechanical Response of HTPB Composite Beams Under Near-Resonant Base Excitation. , 2014, , .		2
76	A model to investigate the mechanisms underlying the emergence and development of independent sitting. Developmental Science, 2015, 18, 622-634.	1.3	2
77	Towards a comprehensive model for a resonant nanoelectromechanical system. Journal of Micromechanics and Microengineering, 2015, 25, 095010.	1.5	2
78	Localized Heating due to Stress Concentrations Induced in a Lossy Elastic Medium via the Scattering of Compressional Waves by a Rigid Spherical Inclusion. , 2016, , .		2
79	Improved Perturbative Solution of Yaroshevskii's Planetary Entry Equation. Journal of Computational and Nonlinear Dynamics, 2016, 11, .	0.7	2
80	Video coding of classroom observations for research and instructional support in an innovative learning environment. Australasian Journal of Engineering Education, 2018, 23, 95-105.	0.2	2
81	Least-squares reconstruction of low-frequency inhomogeneous plane waves. Journal of Sound and Vibration, 2018, 430, 134-149.	2.1	2
82	Synchronization in a network of coupled MEMS-Colpitts oscillators. Nonlinear Dynamics, 2019, 98, 3037-3050.	2.7	2
83	Searching for bed bugs: The design, development, and evaluation of an oscillator-based trans-2-hexenal sensor array. Sensors and Actuators B: Chemical, 2021, 333, 129161.	4.0	2
84	Modeling, Analysis, and Experimental Validation of a Bifurcation-Based Microsensor. , 2011, , .		2
85	The Influence of Formulation Variation and Thermal Boundary Conditions on the Near-Resonant Thermomechanics of Mock Explosives. Conference Proceedings of the Society for Experimental Mechanics, 2018, , 47-55.	0.3	2
86	Energy Release Rate Characterization of Additively Manufactured Al/PVDF with Varying Infill Densities and Patterns. , 2022, , .		2
87	Poly (5-carboxyindole)â€“Î²-cyclodextrin composite material for enhanced formaldehyde gas sensing. Journal of Materials Science, 2022, 57, 11460-11474.	1.7	2
88	Modeling and Analysis of an Optically-Actuated, Bistable MEMS Device. , 2010, , .		1
89	Enhanced acoustic transmission into dissipative solid materials through the use of inhomogeneous plane waves. Journal of Physics: Conference Series, 2016, 744, 012188.	0.3	1
90	Bounded inhomogeneous wave profiles for increased surface wave excitation efficiency at fluidâ€“solid interfaces. Journal of the Acoustical Society of America, 2017, 141, 2779-2787.	0.5	1

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91	Longitudinal analysis of instructor actions in an active, blended, and collaborative classroom environment. , 2017, , .		1
92	The Dynamics of Large Systems of Globally Coupled, Mistuned Electromechanical Resonators. , 2018, , .		1
93	Threshold Color Sensing Using Coupled Oscillator Networks. , 2019, , .		1
94	Addressing the Practical Limitations of Volatile Organic Compound Sensors Through an Oscillator-Based Sensing Array. IEEE Sensors Journal, 2021, 21, 2169-2175.	2.4	1
95	Use of worked‐example videos to support problem‐solving: An analysis of student behavior. Computer Applications in Engineering Education, 0, , .	2.2	1
96	On the Nonlinear Dynamics of Electromagnetically-Transduced Microresonators. , 2012, , .		1
97	Work in Progress: Active Learning Activities to Improve Conceptual Understanding in an Undergraduate Mechanics of Materials Course. , 0, , .		1
98	Vibration-assisted printing of highly viscous food. Additive Manufacturing, 2022, 56, 102851.	1.7	1
99	Sorption Kinetics of Poly(ethyleneimine)–Poly(ethylene Oxide) Blends and the Implication for Low-Cost, Small-Scale CO₂ Sensors. ACS Applied Polymer Materials, 2022, 4, 4389-4397.	2.0	1
100	Addressing Sensing Statistics through Oscillator-Based Sensing Arrays. , 2019, , .		0
101	A Vapor Phase Trinitrotoluene Threshold Detector Enabled by Nonlinear Feedback. , 2020, 4, 1-4.		0
102	Extrusion of AP Composite Propellant with Self-aligned Reactive Fibers. , 2021, , .		0
103	Conductive Polymer Spark Gap Igniters. Propellants, Explosives, Pyrotechnics, 2021, 46, 1500.	1.0	0
104	Direct observations of ultrasonically generated hot spots in polymer composite energetic materials. Combustion and Flame, 2022, 235, 111704.	2.8	0
105	10.1063/1.5088153.3. , 2019, , .		0
106	The thermomechanics of particulate composite mock energetic materials in response to high-frequency (1–100‰kHz) excitation. Journal of Applied Physics, 2022, 131, 045103.	1.1	0
107	What does an In-Class Meeting Entail? A Characterization and Assessment of Instructor Actions in an Active, Blended, and Collaborative Classroom. , 0, , .		0