

# Ryan L Harne

## List of Publications by Year in descending order

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135  
papers

2,944  
citations

218381

26  
h-index

189595

50  
g-index

153  
all docs

153  
docs citations

153  
times ranked

1984  
citing authors

#	ARTICLE	IF	CITATIONS
1	Online Signal Denoising Using Adaptive Stochastic Resonance in Parallel Array and Its Application to Acoustic Emission Signals. <i>Journal of Vibration and Acoustics, Transactions of the ASME</i> , 2022, 144, .	1.0	7
2	A machine learning approach for maximizing direct current power of nonlinear energy harvesting systems subjected to periodic impulse excitation. <i>Mechanical Systems and Signal Processing</i> , 2022, 164, 108262.	4.4	0
3	Investigations on energy harvesting systems incorporating mechanical and electrical nonlinearities to charge reusable batteries. <i>Energy Conversion and Management</i> , 2022, 252, 115045.	4.4	7
4	Acoustic Wave Focusing From Reconfigurable Acoustic Arrays Based on a Bricard-Miura Synthesis. <i>Journal of Vibration and Acoustics, Transactions of the ASME</i> , 2022, 144, .	1.0	1
5	Design Optimization of Origami-Tunable Frequency Selective Surfaces. <i>IEEE Open Journal of Antennas and Propagation</i> , 2021, 2, 897-910.	2.5	2
6	Digital logic gates in soft, conductive mechanical metamaterials. <i>Nature Communications</i> , 2021, 12, 1633.	5.8	70
7	Bayesian Optimization of Equilibrium States in Elastomeric Beams. <i>Journal of Mechanical Design, Transactions of the ASME</i> , 2021, 143, .	1.7	1
8	Cut-out resonators for tuned vibration suppression of plates. <i>Thin-Walled Structures</i> , 2021, 167, 108200.	2.7	4
9	Reconfigurable Acoustic Arrays With Deployable Structure Based on a Hobermanâ€œMiura System Synthesis. <i>Journal of Mechanical Design, Transactions of the ASME</i> , 2021, 143, .	1.7	3
10	Harmonic analysis and experimental validation of bistable vibration energy harvesters interfaced with rectifying electrical circuits. <i>Communications in Nonlinear Science and Numerical Simulation</i> , 2020, 82, 105069.	1.7	16
11	Soft Topological Metamaterials with Pronounced Polar Elasticity in Mechanical and Dynamic Behaviors. <i>Physical Review Applied</i> , 2020, 14, .	1.5	6
12	Liquid metal microchannels as digital sensors in mechanical metamaterials. <i>Extreme Mechanics Letters</i> , 2020, 40, 100871.	2.0	12
13	Directing acoustic energy by flasher-based origami inspired arrays. <i>Journal of the Acoustical Society of America</i> , 2020, 148, 2935-2944.	0.5	7
14	Circularlyâ€œpolarised origamiâ€œinspired folding patch antenna subâ€œarray. <i>IET Microwaves, Antennas and Propagation</i> , 2020, 14, 1262-1271.	0.7	5
15	Foundations for Soft, Smart Matter by Active Mechanical Metamaterials. <i>Advanced Science</i> , 2020, 7, 2001384.	5.6	52
16	Structurally-integrated resonators for broadband panel vibration suppression. <i>Smart Materials and Structures</i> , 2020, 29, 085010.	1.8	5
17	Acoustic wave focusing by doubly curved origami-inspired arrays. <i>Journal of Intelligent Material Systems and Structures</i> , 2020, 31, 1041-1052.	1.4	4
18	Deployable tessellated transducer array for ultrasound focusing and bio-heat generation in a multilayer environment. <i>Ultrasonics</i> , 2020, 104, 106108.	2.1	6

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19	Collapse characterization and shock mitigation by elastomeric metastructures. <i>Extreme Mechanics Letters</i> , 2020, 37, 100682.	2.0	6
20	Characterization of challenges in asymmetric nonlinear vibration energy harvesters subjected to realistic excitation. <i>Journal of Sound and Vibration</i> , 2020, 482, 115460.	2.1	13
21	Acoustic-Structure Interaction in an Adaptive Helmholtz Resonator by Compliance and Constraint. <i>Journal of Vibration and Acoustics, Transactions of the ASME</i> , 2020, 142, .	1.0	5
22	Tailoring concurrent shear and translational vibration control mechanisms in elastomeric metamaterials for cylindrical structures. <i>Mechanical Systems and Signal Processing</i> , 2019, 117, 609-633.	4.4	9
23	Exploiting Functionally Graded Elastomeric Materials to Program Collapse and Mechanical Properties. <i>Advanced Engineering Materials</i> , 2019, 21, 1900807.	1.6	9
24	Origins of broadband vibration attenuation empowered by optimized viscoelastic metamaterial inclusions. <i>Journal of Sound and Vibration</i> , 2019, 458, 218-237.	2.1	16
25	Vibration energy harvesters with optimized geometry, design, and nonlinearity for robust direct current power delivery. <i>Smart Materials and Structures</i> , 2019, 28, 075040.	1.8	21
26	Tailoring reflected and diffracted wave fields from tessellated acoustic arrays by origami folding. <i>Wave Motion</i> , 2019, 89, 193-206.	1.0	9
27	Soft Materials with Broadband and Near-Total Absorption of Sound. <i>Physical Review Applied</i> , 2019, 12, .	1.5	20
28	Statistical quantification of DC power generated by bistable piezoelectric energy harvesters when driven by random excitations. <i>Journal of Sound and Vibration</i> , 2019, 442, 770-786.	2.1	33
29	Electrical power management and optimization with nonlinear energy harvesting structures. <i>Journal of Intelligent Material Systems and Structures</i> , 2019, 30, 213-227.	1.4	18
30	Dynamic response of flexible hybrid electronic material systems. <i>Composite Structures</i> , 2019, 208, 377-384.	3.1	5
31	Targeted mode attenuation and broadband vibration control with optimized elastomeric metamaterials. , 2019, , .		0
32	Optimized piezoelectric energy harvesters for performance robust operation in periodic vibration environments. , 2019, , .		0
33	An Experimental Characterization of the Impedance and Spectral Content of Multistable Structural Responses During Dynamic Bifurcations. <i>Journal of Vibration and Acoustics, Transactions of the ASME</i> , 2018, 140, .	1.0	1
34	Acoustic Wave Guiding by Reconfigurable Tessellated Arrays. <i>Physical Review Applied</i> , 2018, 9, .	1.5	18
35	Comparative methods to assess harmonic response of nonlinear piezoelectric energy harvesters interfaced with AC and DC circuits. <i>Journal of Sound and Vibration</i> , 2018, 421, 61-78.	2.1	36
36	Impulsive energy conversion with magnetically coupled nonlinear energy harvesting systems. <i>Journal of Intelligent Material Systems and Structures</i> , 2018, 29, 2374-2391.	1.4	6

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37	Investigation of direct current power delivery from nonlinear vibration energy harvesters under combined harmonic and stochastic excitations. <i>Journal of Intelligent Material Systems and Structures</i> , 2018, 29, 514-529.	1.4	22
38	Impedance measures in analysis and characterization of multistable structures subjected to harmonic excitation. <i>Mechanical Systems and Signal Processing</i> , 2018, 98, 78-90.	4.4	7
39	Adaptive magnetoelastic metamaterials: A new class of magnetorheological elastomers. <i>Journal of Intelligent Material Systems and Structures</i> , 2018, 29, 265-278.	1.4	36
40	Leveraging the arrangement of multiple, critically constrained inclusions in resonant metamaterials for control of broadband vibroacoustic energy. <i>Applied Acoustics</i> , 2018, 130, 222-229.	1.7	3
41	Computational and experimental studies of microvascular void features for passive-adaptation of structural panel dynamic properties. <i>Journal of Sound and Vibration</i> , 2018, 412, 17-27.	2.1	3
42	Characterizing the nonlinear response of elastomeric material systems under critical point constraints. <i>International Journal of Solids and Structures</i> , 2018, 135, 197-207.	1.3	12
43	Illuminating Origins of Impact Energy Dissipation in Mechanical Metamaterials. <i>Advanced Engineering Materials</i> , 2018, 20, 1700828.	1.6	8
44	Charging power optimization for nonlinear vibration energy harvesting systems subjected to arbitrary, persistent base excitations. <i>Smart Materials and Structures</i> , 2018, 27, 015011.	1.8	13
45	A New Class of Reconfigurable Origami Antennas Based on E-Textile Embroidery. , 2018, , .		4
46	Multiphysics Modeling and Experimental Validation of Reconfigurable, E-Textile Origami Antennas. , 2018, , .		0
47	Modular and programmable material systems drawing from the architecture of skeletal muscle. <i>Physical Review E</i> , 2018, 98, .	0.8	11
48	Piecewise assembled acoustic arrays based on reconfigurable tessellated structures. <i>Journal of the Acoustical Society of America</i> , 2018, 144, 2324-2333.	0.5	5
49	E-Textile Origami Dipole Antennas With Graded Embroidery for Adaptive RF Performance. <i>IEEE Antennas and Wireless Propagation Letters</i> , 2018, 17, 2218-2222.	2.4	34
50	Modal evaluation and generalized analysis of the steady-state dynamics of harmonically excited multistable structures. <i>Journal of Sound and Vibration</i> , 2018, 432, 387-404.	2.1	0
51	Analytical Modeling and Impedance Characterization of the Nonlinear Dynamics of Thermomechanically Coupled Structures. <i>Journal of Applied Mechanics, Transactions ASME</i> , 2018, 85, .	1.1	8
52	Flexible Hybrid Electronic Material Systems with Programmable Strain Sensing Architectures. <i>Advanced Engineering Materials</i> , 2018, 20, 1800499.	1.6	5
53	Investigating a magnetically coupled vibration energy harvesting system under impulsive excitations. , 2018, , .		0
54	Energy release for the actuation and deployment of muscle-inspired asymmetrically multistable chains. , 2018, , .		0

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55	Predicting Non-Stationary and Stochastic Activation of Saddle-Node Bifurcation. Journal of Computational and Nonlinear Dynamics, 2017, 12, .	0.7	6
56	Characterizing the robustness and susceptibility of steady-state dynamics in post-buckled structures to stochastic perturbations. Journal of Sound and Vibration, 2017, 395, 258-271.	2.1	12
57	Signal denoising using stochastic resonance and bistable circuit for acoustic emission-based structural health monitoring. Proceedings of SPIE, 2017, , .	0.8	0
58	Maximizing direct current power delivery from bistable vibration energy harvesting beams subjected to realistic base excitations. , 2017, , .		0
59	Multistability inspired by the oblique, pennate architectures of skeletal muscle. , 2017, , .		0
60	Enhancing Broadband Vibration Energy Suppression Using Local Buckling Modes in Constrained Metamaterials. Journal of Vibration and Acoustics, Transactions of the ASME, 2017, 139, .	1.0	10
61	Strategies to predict radiated sound fields from foldable, Miura-ori-based transducers for acoustic beamfolding. Journal of the Acoustical Society of America, 2017, 141, 480-489.	0.5	13
62	Adaptive acoustic energy delivery to near and far fields using foldable, tessellated star transducers. Smart Materials and Structures, 2017, 26, 055021.	1.8	17
63	Constraint Tuning of Lightweight Elastomeric Metamaterials for Structural Impact Tolerance. , 2017, , .		0
64	Folding Star-Shaped Acoustic Transducers for Real-Time Guidance of Radiated Acoustic Waves. , 2017, , .		2
65	Towards Optimizing DC Loads for Power Generation From Arbitrarily Excited Nonlinear Vibration Energy Harvesters. , 2017, , .		0
66	Computational Characterization of Double Porosity Metamaterials for Broadband Sound Insulation. , 2017, , .		0
67	Energy capture and storage in asymmetrically multistable modular structures inspired by skeletal muscle. Smart Materials and Structures, 2017, 26, 085011.	1.8	19
68	Tailoring broadband acoustic energy suppression characteristics of double porosity metamaterials with compression constraints and mass inclusions. Journal of the Acoustical Society of America, 2017, 141, 4715-4726.	0.5	7
69	Trapping and attenuating broadband vibroacoustic energy with hyperdamping metamaterials. Extreme Mechanics Letters, 2017, 12, 41-47.	2.0	25
70	Correlating Dynamic Bifurcations With Impedance Measures for Multistable Structures. , 2017, , .		0
71	Directive and focused acoustic wave radiation by tessellated transducers with folded curvatures. Proceedings of Meetings on Acoustics, 2017, , .	0.3	1
72	Predicting Non-Stationary and Stochastic Activation of Saddle-Node Bifurcation. , 2016, , .		0

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73	A Nonlinear, Monolithic Structural-Material System for Vibration Energy Harvesting and Storage. , 2016, , .		0
74	Characterization of Adaptive Magnetoelastic Metamaterials Under Applied Magnetic Fields. , 2016, , .		3
75	Acoustic Beamfolding With a Miura-Ori Tessellated Transducer Array. , 2016, , .		0
76	Robustness of Adaptive, Multistable Structures Under Combined Harmonic and Stochastic Loads. , 2016, , .		0
77	Strain Energy Trapping due to Energetic Asymmetry in Modular Structures Inspired by Muscle Cross-Bridges. , 2016, , .		0
78	An analytical approach for predicting the energy capture and conversion by impulsively-excited bistable vibration energy harvesters. Journal of Sound and Vibration, 2016, 373, 205-222.	2.1	26
79	Energy exchange and localization in a modular metastructure under impulsive excitation. Proceedings of SPIE, 2016, , .	0.8	0
80	Origami acoustics: using principles of folding structural acoustics for simple and large focusing of sound energy. Smart Materials and Structures, 2016, 25, 085031.	1.8	36
81	Resilience to Impact by Extreme Energy Absorption in Lightweight Material Inclusions Constrained Near a Critical Point. Advanced Engineering Materials, 2016, 18, 1871-1876.	1.6	16
82	Exploring the roles of standard rectifying circuits on the performance of a nonlinear piezoelectric energy harvester. , 2016, , .		1
83	Spatial tuning of a RF frequency selective surface through origami. Proceedings of SPIE, 2016, , .	0.8	6
84	Exploring a modular adaptive metastructure concept inspired by muscle's cross-bridge. Journal of Intelligent Material Systems and Structures, 2016, 27, 1189-1202.	1.4	23
85	Adaptation of Energy Dissipation in a Mechanical Metastable Module Excited Near Resonance. Journal of Vibration and Acoustics, Transactions of the ASME, 2016, 138, .	1.0	24
86	Axial Suspension Compliance and Compression for Enhancing Performance of a Nonlinear Vibration Energy Harvesting Beam System. Journal of Vibration and Acoustics, Transactions of the ASME, 2016, 138, .	1.0	27
87	Designing and Harnessing the Metastable States of a Modular Metastructure for Programmable Mechanical Properties Adaptation. Journal of Mechanical Design, Transactions of the ASME, 2016, 138, .	1.7	37
88	Reconstructing the transient, dissipative dynamics of a bistable Duffing oscillator with an enhanced averaging method and Jacobian elliptic functions. International Journal of Non-Linear Mechanics, 2016, 79, 26-37.	1.4	19
89	Leveraging nonlinear saturation-based phenomena in an L-shaped vibration energy harvesting system. Journal of Sound and Vibration, 2016, 363, 517-531.	2.1	62
90	Mechanical Properties Adaptivity by the Design and Exploitation of Metastable States in a Modular Metastructure. , 2015, , .		0

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91	Passive measurement of progressive mass change via bifurcation sensing with a multistable micromechanical system. <i>Journal of Intelligent Material Systems and Structures</i> , 2015, 26, 1622-1632.	1.4	8
92	An Analytical Approach for Predicting Power Generation of Impulsively-Excited Bistable Vibration Energy Harvesters. , 2015, , .		0
93	Excitation-Induced Stability in a Bistable Duffing Oscillator: Analysis and Experiments. <i>Journal of Computational and Nonlinear Dynamics</i> , 2015, 10, .	0.7	12
94	Origami Actuator Design and Networking Through Crease Topology Optimization. <i>Journal of Mechanical Design, Transactions of the ASME</i> , 2015, 137, .	1.7	39
95	Enhancing Structural Damage Identification Robustness to Noise and Damping With Integrated Bistable and Adaptive Piezoelectric Circuitry. <i>Journal of Vibration and Acoustics, Transactions of the ASME</i> , 2015, 137, .	1.0	11
96	Dipteran wing motor-inspired flapping flight versatility and effectiveness enhancement. <i>Journal of the Royal Society Interface</i> , 2015, 12, 20141367.	1.5	20
97	Harnessing intrinsic localized modes to identify impurities in nonlinear periodic systems. <i>Journal of Applied Physics</i> , 2015, 117, .	1.1	4
98	An investigation on vibration energy harvesting using nonlinear dynamic principles inspired by trees. <i>Proceedings of SPIE</i> , 2015, , .	0.8	2
99	Special Issue on Modeling and Control of Adaptive Dynamic Systems and Structures. <i>Journal of Vibration and Acoustics, Transactions of the ASME</i> , 2015, 137, .	1.0	1
100	Damage identification in nonlinear periodic structures utilizing the dynamics of intrinsic localized modes. <i>Proceedings of SPIE</i> , 2015, , .	0.8	0
101	Topology optimization for the design of folding liquid crystal elastomer actuators. <i>Soft Matter</i> , 2015, 11, 7288-7295.	1.2	72
102	An Axially-Suspended Vibration Energy Harvesting Beam for Broadband Performance and High Versatility. , 2014, , .		0
103	A Disturbance Cancellation Perspective on Vibration Control Using a Bistable Snap-Through Attachment. <i>Journal of Vibration and Acoustics, Transactions of the ASME</i> , 2014, 136, .	1.0	36
104	Muscle-Like Characteristics With an Engineered Metastructure. , 2014, , .		1
105	Energy Harvester Synthesis Via Coupled Linear-Bistable System With Multistable Dynamics. <i>Journal of Applied Mechanics, Transactions ASME</i> , 2014, 81, .	1.1	61
106	Enhancing Damage Identification Robustness to Noise and Damping Using Integrated Bistable and Adaptive Piezoelectric Circuitry. , 2014, , .		0
107	Multistable chain for ocean wave vibration energy harvesting. , 2014, , .		2
108	Prospects for Nonlinear Energy Harvesting Systems Designed Near the Elastic Stability Limit When Driven by Colored Noise. <i>Journal of Vibration and Acoustics, Transactions of the ASME</i> , 2014, 136, .	1.0	39

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109	On the fundamental and superharmonic effects in bistable energy harvesting. <i>Journal of Intelligent Material Systems and Structures</i> , 2014, 25, 937-950.	1.4	47
110	A bifurcation-based coupled linear-bistable system for microscale mass sensing. <i>Journal of Sound and Vibration</i> , 2014, 333, 2241-2252.	2.1	69
111	Dynamic stabilization of a bistable suspension system attached to a flexible host structure for operational safety enhancement. <i>Journal of Sound and Vibration</i> , 2014, 333, 6651-6661.	2.1	26
112	Investigation of a bistable dual-stage vibration isolator under harmonic excitation. <i>Smart Materials and Structures</i> , 2014, 23, 045033.	1.8	39
113	Wave heave energy conversion using modular multistability. <i>Applied Energy</i> , 2014, 130, 148-156.	5.1	42
114	Development and testing of a dynamic absorber with corrugated piezoelectric spring for vibration control and energy harvesting applications. <i>Mechanical Systems and Signal Processing</i> , 2013, 36, 604-617.	4.4	32
115	On the linear elastic, isotropic modeling of poroelastic distributed vibration absorbers at low frequencies. <i>Journal of Sound and Vibration</i> , 2013, 332, 3646-3654.	2.1	8
116	Concise and high-fidelity predictive criteria for maximizing performance and robustness of bistable energy harvesters. <i>Applied Physics Letters</i> , 2013, 102, .	1.5	80
117	Modeling and analysis of distributed electromagnetic oscillators for broadband vibration attenuation and concurrent energy harvesting. <i>Applied Mathematical Modelling</i> , 2013, 37, 4360-4370.	2.2	25
118	A review of the recent research on vibration energy harvesting via bistable systems. <i>Smart Materials and Structures</i> , 2013, 22, 023001.	1.8	1,001
119	Vibration Energy Harvesting Using Multi-Stable Two Degree-of-Freedom Nonlinear Dynamics. , 2013, , .		0
120	On Vibration Control Using a Bistable Snap Through Absorber From a Force Balance Perspective. , 2013, , .		0
121	Mass Detection via Bifurcation Sensing With Multistable Microelectromechanical System. , 2013, , .		1
122	Steady-state dynamics of a bistable energy harvester with linear appendage oscillator. , 2013, , .		0
123	Robust sensing methodology for detecting change with bistable circuitry dynamics tailoring. <i>Applied Physics Letters</i> , 2013, 102, .	1.5	30
124	Bistable energy harvesting enhancement with an auxiliary linear oscillator. <i>Smart Materials and Structures</i> , 2013, 22, 125028.	1.8	51
125	Modeling of a distributed device for simultaneous reactive vibration suppression and energy harvesting. <i>Journal of Intelligent Material Systems and Structures</i> , 2012, 23, 655-664.	1.4	4
126	The concurrent suppression of an energy harvesting from surface vibrations: experimental investigations. <i>Proceedings of SPIE</i> , 2012, , .	0.8	0



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127	Theoretical investigations of energy harvesting efficiency from structural vibrations using piezoelectric and electromagnetic oscillators. Journal of the Acoustical Society of America, 2012, 132, 162-172.	0.5	36
128	Concurrent attenuation of, and energy harvesting from, surface vibrations: experimental verification and model validation. Smart Materials and Structures, 2012, 21, 035016.	1.8	15
129	Modeling of a passive distributed vibration control device using a superposition technique. Journal of Sound and Vibration, 2012, 331, 1859-1869.	2.1	9
130	Structural-acoustic aspects in the modeling of sandwich structures and computation of equivalent elasticity parameters. Thin-Walled Structures, 2012, 56, 1-8.	2.7	8
131	Lightweight distributed vibration absorbers for marine structures. Proceedings of Meetings on Acoustics, 2010, , .	0.3	0
132	Methods in Vehicle Mass and Road Grade Estimation. SAE International Journal of Passenger Cars - Mechanical Systems, 0, 7, 981-991.	0.4	43
133	Partially activated reconfigurable arrays to guide acoustic waves. Journal of Intelligent Material Systems and Structures, 0, , 1045389X2110069.	1.4	1
134	Nonlinear behavior of Helmholtz resonator with a compliant wall for low frequency, broadband noise control. Journal of Vibration and Acoustics, Transactions of the ASME, 0, , 1-29.	1.0	3
135	Rapid Pneumatic Control of Bimodal, Hierarchical Mechanical Metamaterials. Advanced Engineering Materials, 0, , 2101375.	1.6	3