Izhak bucher

List of Publications by Year
in descending order

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Version: 2024-02-01

96 papers	1,129 citations	430442 18 h-index	454577 30 g-index
101 all docs	101 docs citations	101 times ranked	624 citing authors

#	Article	IF	Citations
1	Experimental Dispersion identification using a fitted state-space model. Journal of Sound and Vibration, 2022, 517, 116580.	2.1	2
2	Balancing high-speed rotors at low speed using optimized parametric excitation and tuned nonlinear feedback. International Journal of Non-Linear Mechanics, 2022, 139, 103873.	1.4	1
3	Active Detection of Small Imperfections in Structures With Cyclic Symmetry. Journal of Vibration and Acoustics, Transactions of the ASME, 2021, 143, .	1.0	2
4	Experimental multimode traveling waves identification in an acoustic waveguide. Mechanical Systems and Signal Processing, 2021, 153, 107515.	4.4	5
5	Nonlinear control of boundary impedance in an acoustic waveguide. Journal of the Acoustical Society of America, 2021, 150, 3889-3903.	0.5	1
6	Multidimensional topography sensing simulating an AFM. Sensors and Actuators A: Physical, 2020, 303, 111690.	2.0	3
7	In Situ Identification of Natural Frequency Branches in Gyroscopic Systems via Autoresonance and Phase-Locked Loop. Journal of Vibration and Acoustics, Transactions of the ASME, 2020, 142, .	1.0	1
8	Levitated and Parametrically Excited Sphere Dynamics in a Single-Axis Ultrasonic Levitator. , 2020, , 369-377.		0
9	Adaptive model-based control of boundary impedance in an acoustic impedance tube. Proceedings of Meetings on Acoustics, 2020, , .	0.3	1
10	Balancing High-Speed Rotors at Low Rotation Speeds Using Parametric Excitation. Mechanisms and Machine Science, 2019, , 327-339.	0.3	0
11	Tangential motion mechanism and reverse hydrodynamic effects of acoustic platform with nonparallel squeeze film. Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology, 2019, 233, 194-204.	1.0	1
12	A Contactless Stage Based on Near-Field Acoustic Levitation for Object Handling and Positioningâ€"Concept, Design, Modeling, and Experiments. IEEE/ASME Transactions on Mechatronics, 2019, 24, 1954-1963.	3.7	16
13	Noncontact Dynamic Oscillations of Acoustically Levitated Particles by Parametric Excitation. Physical Review Applied, 2019, 12, .	1.5	12
14	Balancing fast flexible gyroscopic systems at low speed using parametric excitation. Mechanical Systems and Signal Processing, 2019, 130, 452-469.	4.4	5
15	Dispersion based reduced-order model identification and boundary impedance control in a weakly coupled impedance tube. Proceedings of Meetings on Acoustics, 2019, , .	0.3	3
16	Waveguide dispersion curves identification at low-frequency using two actuators and phase perturbations. Journal of the Acoustical Society of America, 2019, 146, 2443-2451.	0.5	3
17	Experimental travelling waves identification in mechanical structures. Mathematics and Mechanics of Solids, 2019, 24, 152-167.	1.5	6
18	Optimizing the dynamical behavior of a dual-frequency parametric amplifier with quadratic and cubic nonlinearities. Nonlinear Dynamics, 2018, 92, 1955-1974.	2.7	14

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19	Dual frequency parametric excitation of a nonlinear, multi degree of freedom mechanical amplifier with electronically modified topology. Journal of Sound and Vibration, 2018, 419, 420-435.	2.1	6
20	Theoretical investigation and prototype design for non-parallel squeeze film movement platform driven by standing waves. Tribology International, 2018, 119, 539-548.	3.0	15
21	Realization of an automatic, contactless, acoustic levitation motor via degenerate mode excitation and autoresonance. Sensors and Actuators A: Physical, 2018, 276, 34-42.	2.0	12
22	Automatic vibration mode selection and excitation; combining modal filtering with autoresonance. Mechanical Systems and Signal Processing, 2018, 101, 140-155.	4.4	12
23	Dynamic balancing of super-critical rotating structures using slow-speed data via parametric excitation. Journal of Sound and Vibration, 2018, 415, 59-77.	2.1	29
24	A vibrating mechanism for large amplitude, non-reciprocal motion, exploiting multiple buckling modes. Mechanism and Machine Theory, 2018, 121, 613-632.	2.7	0
25	A rotational traveling wave based levitation device â€“ Modelling, design, and control. Sensors and Actuators A: Physical, 2017, 255, 34-45.	2.0	32
26	The effect of acoustically levitated objects on the dynamics of ultrasonic actuators. Journal of Applied Physics, 2017, 121, 114504.	1.1	10
27	Decomposition of stiffness and friction tangential contact forces during periodic motion. Mechanical Systems and Signal Processing, 2017, 94, 400-414.	4.4	3
28	Modeling and closed loop control of near-field acoustically levitated objects. Mechanical Systems and Signal Processing, 2017, 85, 367-381.	4.4	16
29	Experimental and Numerical Validation of Digital, Electromechanical, Parametrically Excited Amplifiers. Journal of Vibration and Acoustics, Transactions of the ASME, 2016, 138, .	1.0	5
30	Identification and Modeling of Contact Dynamics of Precise Direct Drive Stages. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2016, 138, .	0.9	2
31	Controlled acoustic levitation â€” physical model and real-time digital implementation. , 2016, , .		1
32	Tuneable, non-degenerated, nonlinear, parametrically-excited amplifier. Journal of Sound and Vibration, 2016, 361, 176-189.	2.1	17
33	A Parametric Amplifier for Weak, Low-Frequency Forces. , 2015, , .		4
34	On the slow dynamics of near-field acoustically levitated objects under High excitation frequencies. Journal of Sound and Vibration, 2015, 354, 154-166.	2.1	26
35	Propulsion at low Reynolds numbers by multiple traveling waves. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 2014, 228, 2938-2949.	1.1	3
36	Parametric excitation of traveling waves in a circular non-dispersive medium. Journal of Sound and Vibration, 2014, 333, 1408-1420.	2.1	8

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37	On the dynamics and optimization of a non-smooth bistable oscillator â€“ Application to energy harvesting. Journal of Sound and Vibration, 2014, 333, 4653-4667.	2.1	7
38	Optimal phase calibration of nonlinear, delayed sensors. Mechanical Systems and Signal Processing, 2014, 45, 424-432.	4.4	5
39	Directional Order Tracking in Rotating Machines. Journal of Vibration and Acoustics, Transactions of the ASME, 2013, 135, .	1.0	1
40	Robotic swimmer/pump based on an optimal wave generating mechanism. Mechanism and Machine Theory, 2013, 70, 266-277.	2.7	6
41	Optimizing parametric oscillators with tunable boundary conditions. Journal of Sound and Vibration, 2013, 332, 487-493.	2.1	11
42	Asymmetry identification in rigid rotating bodiesâ€"Theory and experiment. Mechanical Systems and Signal Processing, 2013, 41, 502-509.	4.4	7
43	On the advantage of a bistable energy harvesting oscillator under band-limited stochastic excitation. Journal of Intelligent Material Systems and Structures, 2013, 24, 1736-1746.	1.4	15
44	Low-Reynolds-number swimmer utilizing surface traveling waves: Analytical and experimental study. Physical Review E, 2012, 85, 066304.	0.8	16
45	The Dynamics of a Bi-Stable Energy Harvester: Exploration via Slow-Fast Decomposition and Analytical Modeling. , 2012, , .		0
46	Model based signal processing in Smart rotating machines. , 2012, , 25-44.		0
47	Slow-fast response decomposition of a bi-stable energy harvester. Mechanical Systems and Signal Processing, 2012, 31, 29-39.	4.4	36
48	An Optimal Waving Device Utilized in Micro Swimmer/Pump: Analytical, Numerical and Experimental Analysis. , 2012, , .		0
49	Flexural vibration patterning using an array of actuators. Journal of Sound and Vibration, 2011, 330, 1121-1140.	2.1	20
50	Transforming and separating rotating disk vibrations using a sensor array. Journal of Sound and Vibration, 2011, 330, 1244-1264.	2.1	7
51	A Micro-Scale Swimmer Propelled by Traveling Surface Waves. , 2011, , .		2
52	Spatial and Temporal Excitation to Generate Traveling Waves in Structures. Journal of Applied Mechanics, Transactions ASME, 2010, 77, .	1.1	26
53	A Mechanical Fourier Series Generator: An Exact Solution. Journal of Vibration and Acoustics, Transactions of the ASME, 2009, 131, .	1.0	0
54	Experimental Identification of Nonlinearities under Free and Forced Vibration using the Hilbert Transform. JVC/Journal of Vibration and Control, 2009, 15, 1563-1579.	1.5	18

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55	Optimal electrode shaping for precise modal electromechanical filtering. Structural and Multidisciplinary Optimization, 2009, 38, 627-641.	1.7	10
56	Excitation and sensing of multiple vibrating traveling waves in one-dimensional structures. Journal of Sound and Vibration, 2009, 319, 406-425.	2.1	36
57	A method for reducing the inaccuracy of harmonic ratios in the dynamics of a multiple-degrees-of-freedom MEMS scanning mirror. Journal of Micromechanics and Microengineering, 2008, 18, 025028.	1.5	2
58	On the synthesis of micro-electromechanical filters using structural dynamics. Journal of Micromechanics and Microengineering, 2008, 18, 125018.	1.5	5
59	Generating Traveling Vibration Waves in Finite Structures. , 2008, , .		0
60	Mechanical Fourier Series Generator: Theory and Practice. , 2007, , 155.		0
61	Dynamic lateral torsional post-buckling of a beam-mass system: Experiments. Journal of Sound and Vibration, 2007, 299, 1049-1073.	2.1	3
62	Dynamic lateral torsional post-buckling of a beamâ€“mass system: Theory. Journal of Sound and Vibration, 2007, 303, 832-857.	2.1	5
63	Determination of External Forcesâ€”Application to the Calibration of an Electromagnetic Actuator. Journal of Vibration and Acoustics, Transactions of the ASME, 2006, 128, 545-554.	1.0	0
64	On Vibrating Traveling Waves Actuation, Sensing, and Tuning in Finite Structures. , 2006, , 809.		2
65	Comparing numerical and analytical solutions for squeeze-film levitation force. Journal of Fluids and Structures, 2006, 22, 713-719.	1.5	26
66	Resonance tracking in a squeeze-film levitation device. Mechanical Systems and Signal Processing, 2006, 20, 1696-1724.	4.4	9
67	On the Dynamics of a Post-Buckled Vibrating Beam: An Experimental Study. , 2006, , 819.		0
68	On the sensing and tuning of progressive structural vibration waves. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2005, 52, 1565-1576.	1.7	33
69	Damping of a micro-resonator torsion mirror in rarefied gas ambient. Journal of Micromechanics and Microengineering, 2005, 15, 1762-1769.	1.5	50
70	Levitation force induced by pressure radiation in gas squeeze films. Journal of the Acoustical Society of America, 2004, 116, 217-226.	0.5	56
71	Resonance tracking in nonlinear system: application to a squeeze-film levitation device. , 2004, 5383, 417.		0
72	Estimating the ratio between travelling and standing vibration waves under non-stationary conditions. Journal of Sound and Vibration, 2004, 270, 341-359.	2.1	60

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73	Design and analysis of multidegrees of freedom micromirror for triangular wave scanning. , 2004, , .		2
74	Coupled dynamics of a squeeze-film levitated mass and a vibrating piezoelectric disc: numerical analysis and experimental study. Journal of Sound and Vibration, 2003, 263, 241-268.	2.1	47
75	Model updating via weighted reference basis with connectivity constraints. Journal of Sound and Vibration, 2003, 265, 561-581.	2.1	32
76	Design and Analysis of Multi-DOF Micro-Mirror for Triangular Wave Scanning. Journal of the Mechanical Behavior of Materials, 2003, 14, 369-382.	0.7	1
77	Model Updating: A Combined Reference Basis - Sensitivity Method. Journal of the Mechanical Behavior of Materials, 2003, 14, 355-368.	0.7	1
78	Noncontacting lateral transportation using gas squeeze film generated by flexural traveling wavesâ€"Numerical analysis. Journal of the Acoustical Society of America, 2003, 113, 2464-2473.	0.5	34
79	Non-Parametric Identification of Nonlinear Electromagnetic and Squeeze-Film Devices, Application for On-Line Monitoring. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2002, 35, 365-370.	0.4	0
80	Parametric Optimization of Structures Under Combined Base Motion Direct Forces and Static Loading. Journal of Vibration and Acoustics, Transactions of the ASME, 2002, 124, 132-140.	1.0	8
81	Experimental crack identification using electrical impedance tomography. NDT and E International, 2002, 35, 301-316.	1.7	10
82	Modal analysis and testing of rotating structures. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2001, 359, 61-96.	1.6	86
83	Reducing Friction Forces by Means of Applied Vibration. , 2001, , .		1
84	<title>Method for measuring two degrees of freedom of a rigid mass with a single laser interferometer</title>. , 2000, 4072, 201.		1
85	Measuring Spatial Vibration Using Continuous Laser Scanning. Shock and Vibration, 2000, 7, 203-208.	0.3	4
86	EXACT ADJUSTMENT OF DYNAMIC FORCES IN PRESENCE OF NON-LINEAR FEEDBACK AND SINGULARITYâ€"THEORY AND ALGORITHM. Journal of Sound and Vibration, 1998, 218, 1-27.	2.1	7
87	<title>Measuring vibration spatial information using continuous laser scanning</title>. , 1998, 3411, 409.		3
88	Left Eigenvectors: Extraction From Measurements and Physical Interpretation. Journal of Applied Mechanics, Transactions ASME, 1997, 64, 97-105.	1.1	21
89	MULTIDIMENSIONAL DECOMPOSITION OF TIME-VARYING VIBRATION RESPONSE SIGNALS IN ROTATING MACHINERY. Mechanical Systems and Signal Processing, 1997, 11, 577-601.	4.4	19
90	Multi-Dimensional Directional Spectrograms and Campbell (ZMOD) Diagrams for Rotating Machinery. , 1995, , .		3

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91	Efficient Optimization Procedure For Minimizing Vibratory Response Via Redesign Or Modification, Part I: Theory. Journal of Sound and Vibration, 1994, 175, 433-453.	2.1	9
92	Efficient Optimization Procedure For Minimizing Vibratory Response Via Redesign Or Modification, Part II: Examples. Journal of Sound and Vibration, 1994, 175, 455-473.	2.1	5
93	‹title›Laser-based measurement system for measuring the vibration on rotating discs‹/title›. , 1994, , .		18
94	The structural modification inverse problem: an exact solution. Mechanical Systems and Signal Processing, 1993, 7, 217-238.	4.4	59
95	A model-based method for ranking measured channels. Mechanical Systems and Signal Processing, 1992, 6, 433-446.	4.4	2
96	Automatic locking of a parametrically resonating, base-excited, nonlinear beam. Nonlinear Dynamics, 0, , 1.	2.7	1