Shuaishuai Sun

List of Publications by Year
in descending order

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120 papers	3,210 citations	147566 31 h-index	189595 50 g-index
121 all docs	121 docs citations	121 times ranked	2167 citing authors

#	Article	IF	Citations
1	Liquid metal-filled magnetorheological elastomer with positive piezoconductivity. Nature Communications, 2019, 10, 1300.	5.8	267
2	Experimental study and modeling of a novel magnetorheological elastomer isolator. Smart Materials and Structures, 2013, 22, 117001.	1.8	111
3	Takagiâ€“Sugeno Fuzzy Control for Semi-Active Vehicle Suspension With a Magnetorheological Damper and Experimental Validation. IEEE/ASME Transactions on Mechatronics, 2017, 22, 291-300.	3.7	107
4	A Liquidâ€Metalâ€Based Magnetoactive Slurry for Stimuliâ€Responsive Mechanically Adaptive Electrodes. Advanced Materials, 2018, 30, e1802595.	11.1	106
5	Development of a novel multi-layer MRE isolator for suppression of building vibrations under seismic events. Mechanical Systems and Signal Processing, 2016, 70-71, 811-820.	4.4	96
6	A semi-active suspension using a magnetorheological damper with nonlinear negative-stiffness component. Mechanical Systems and Signal Processing, 2021, 147, 107071.	4.4	95
7	Disturbance observer based Takagi-Sugeno fuzzy control for an active seat suspension. Mechanical Systems and Signal Processing, 2017, 93, 515-530.	4.4	94
8	Mode coupling chatter suppression for robotic machining using semi-active magnetorheological elastomers absorber. Mechanical Systems and Signal Processing, 2019, 117, 221-237.	4.4	82
9	Active control of an innovative seat suspension system with acceleration measurement based friction estimation. Journal of Sound and Vibration, 2016, 384, 28-44.	2.1	81
10	A Compact Variable Stiffness and Damping Shock Absorber for Vehicle Suspension. IEEE/ASME Transactions on Mechatronics, 2015, 20, 2621-2629.	3.7	77
11	Liquid Metal Composites with Anisotropic and Unconventional Piezoconductivity. Matter, 2020, 3, 824-841.	5.0	77
12	An active seat suspension design for vibration control of heavy-duty vehicles. Journal of Low Frequency Noise Vibration and Active Control, 2016, 35, 264-278.	1.3	75
13	A Review on Chatter in Robotic Machining Process Regarding Both Regenerative and Mode Coupling Mechanism. IEEE/ASME Transactions on Mechatronics, 2018, 23, 2240-2251.	3.7	74
14	Versatile Microfluidic Platforms Enabled by Novel Magnetorheological Elastomer Microactuators. Advanced Functional Materials, 2018, 28, 1705484.	7.8	71
15	An adaptive tuned vibration absorber based on multilayered MR elastomers. Smart Materials and Structures, 2015, 24, 045045.	1.8	64
16	An Energy Saving Variable Damping Seat Suspension System With Regeneration Capability. IEEE Transactions on Industrial Electronics, 2018, 65, 8080-8091.	5.2	63
17	Vibration control of an energy regenerative seat suspension with variable external resistance. Mechanical Systems and Signal Processing, 2018, 106, 94-113.	4.4	62
18	A variable resonance magnetorheological-fluid-based pendulum tuned mass damper for seismic vibration suppression. Mechanical Systems and Signal Processing, 2019, 116, 530-544.	4.4	60

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19	Development of a novel variable stiffness and damping magnetorheological fluid damper. Smart Materials and Structures, 2015, 24, 085021.	1.8	53
20	An electromagnetic variable inertance device for seat suspension vibration control. Mechanical Systems and Signal Processing, 2019, 133, 106259.	4.4	49
21	Development and evaluation of a versatile semi-active suspension system for high-speed railway vehicles. Mechanical Systems and Signal Processing, 2020, 135, 106338.	4.4	49
22	A New Generation of Magnetorheological Vehicle Suspension System With Tunable Stiffness and Damping Characteristics. IEEE Transactions on Industrial Informatics, 2019, 15, 4696-4708.	7.2	47
23	Study on lateral dynamic characteristics of vehicle/turnout system. Vehicle System Dynamics, 2005, 43, 285-303.	2.2	44
24	Vibration reduction of seat suspension using observer based terminal sliding mode control with acceleration data fusion. Mechatronics, 2017, 44, 71-83.	2.0	42
25	Performance evaluation and comparison of magnetorheological elastomer absorbers working in shear and squeeze modes. Journal of Intelligent Material Systems and Structures, 2015, 26, 1757-1763.	1.4	40
26	Microscopic characteristics of magnetorheological fluids subjected to magnetic fields. Journal of Magnetism and Magnetic Materials, 2020, 501, 166443.	1.0	40
27	A Magnetorheological Fluid-Filled Soft Crawling Robot With Magnetic Actuation. IEEE/ASME Transactions on Mechatronics, 2020, 25, 2700-2710.	3.7	39
28	Development of magnetorheological elastomersâ€“based tuned mass damper for building protection from seismic events. Journal of Intelligent Material Systems and Structures, 2018, 29, 1777-1789.	1.4	37
29	Improving the critical speeds of high-speed trains using magnetorheological technology. Smart Materials and Structures, 2013, 22, 115012.	1.8	35
30	A hybrid magnetorheological elastomer-fluid (MRE-F) isolation mount: development and experimental validation. Smart Materials and Structures, 2016, 25, 015026.	1.8	35
31	Development of a linear damper working with magnetorheological shear thickening fluids. Journal of Intelligent Material Systems and Structures, 2015, 26, 1811-1817.	1.4	34
32	Control of a multiple-DOF vehicle seat suspension with roll and vertical vibration. Journal of Sound and Vibration, 2018, 435, 170-191.	2.1	34
33	Controllable Electrically Interconnected Suspension System for Improving Vehicle Vibration Performance. IEEE/ASME Transactions on Mechatronics, 2020, 25, 859-871.	3.7	30
34	An Electromagnetic Variable Stiffness Device for Semiactive Seat Suspension Vibration Control. IEEE Transactions on Industrial Electronics, 2020, 67, 6773-6784.	5.2	29
35	Investigation of a new metamaterial magnetorheological elastomer isolator with tunable vibration bandgaps. Mechanical Systems and Signal Processing, 2022, 170, 108806.	4.4	29
36	A rotary variable admittance device and its application in vehicle seat suspension vibration control. Journal of the Franklin Institute, 2019, 356, 7873-7895.	1.9	28

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37	A novel negative stiffness magnetic spring design for vehicle seat suspension system. Mechatronics, 2020, 68, 102370.	2.0	27
38	Event-triggered <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si10.svg"><mml:mrow><mml:msub><mml:mrow><mml:mi>H</mml:mi></mml:mrow><mml:mrow><mml:mi>â^ž</mml:mi></m control for active seat suspension systems based on relaxed conditions for stability. Mechanical Systems and Signal Processing, 2021, 149, 107210.	4.4	26
39	A highly stiffness-adjustable robot leg for enhancing locomotive performance. Mechanical Systems and Signal Processing, 2019, 126, 458-468.	4.4	25
40	Integrated active and semi-active control for seat suspension of a heavy duty vehicle. Journal of Intelligent Material Systems and Structures, 2018, 29, 91-100.	1.4	24
41	Investigation of a seat suspension installed with compact variable stiffness and damping rotary magnetorheological dampers. Mechanical Systems and Signal Processing, 2022, 171, 108802.	4.4	24
42	Development of an MRE adaptive tuned vibration absorber with self-sensing capability. Smart Materials and Structures, 2015, 24, 095012.	1.8	23
43	A Novel Electrical Variable Stiffness Device for Vehicle Seat Suspension Control With Mismatched Disturbance Compensation. IEEE/ASME Transactions on Mechatronics, 2019, 24, 2019-2030.	3.7	23
44	Numerical and experimental studies on a new variable stiffness and damping magnetorheological fluid damper. Journal of Intelligent Material Systems and Structures, 2019, 30, 1639-1652.	1.4	23
45	Experimental testing and modelling of a rotary variable stiffness and damping shock absorber using magnetorheological technology. Journal of Intelligent Material Systems and Structures, 2019, 30, 1453-1465.	1.4	23
46	Theoretical and experimental investigation of a stiffness-controllable suspension for railway vehicles to avoid resonance. International Journal of Mechanical Sciences, 2020, 187, 105901.	3.6	23
47	Design a Novel Target to Improve Positioning Accuracy of Autonomous Vehicular Navigation System in GPS Denied Environments. IEEE Transactions on Industrial Informatics, 2021, 17, 7575-7588.	7.2	23
48	Development of a self-sensing magnetorheological damper with magnets in-line coil mechanism. Sensors and Actuators A: Physical, 2017, 255, 71-78.	2.0	22
49	Design of an enhanced wideband energy harvester using a parametrically excited array. Journal of Sound and Vibration, 2017, 410, 416-428.	2.1	22
50	Liquid Metal Hybrid Composites with High-Sensitivity and Large Dynamic Range Enabled by Micro- and Macrostructure Engineering. ACS Applied Polymer Materials, 2021, 3, 5302-5315.	2.0	22
51	Development of a nonlinear adaptive absorber based on magnetorheological elastomer. Journal of Intelligent Material Systems and Structures, 2018, 29, 194-204.	1.4	20
52	Investigation of a novel MRE metamaterial sandwich beam with real-time tunable band gap characteristics. Journal of Sound and Vibration, 2022, 527, 116870.	2.1	20
53	An innovative MRE absorber with double natural frequencies for wide frequency bandwidth vibration absorption. Smart Materials and Structures, 2016, 25, 055035.	1.8	19
54	Development and characterization of a multi-layer magnetorheological elastomer isolator based on a Halbach array. Smart Materials and Structures, 2016, 25, 105015.	1.8	19

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55	Improving Positioning Accuracy of the Mobile Laser Scanning in GPS-Denied Environments: An Experimental Case Study. IEEE Sensors Journal, 2019, 19, 10753-10763.	2.4	17
56	A new AI-surrogate model for dynamics analysis of a magnetorheological damper in the semi-active seat suspension. Smart Materials and Structures, 2020, 29, 037001.	1.8	17
57	Vibration suppression of tunnel boring machines using non-resonance approach. Mechanical Systems and Signal Processing, 2020, 145, 106969.	4.4	17
58	An Innovative Two-Layer Multiple-DOF Seat Suspension for Vehicle Whole Body Vibration Control. IEEE/ASME Transactions on Mechatronics, 2018, 23, 1787-1799.	3.7	16
59	A magnetorheological elastomer rail damper for wideband attenuation of rail noise and vibration. Journal of Intelligent Material Systems and Structures, 2020, 31, 220-228.	1.4	16
60	Variable stiffness and damping suspension system for train. Proceedings of SPIE, 2014, , .	0.8	15
61	Performance Analysis of a Magnetorheological Damper with Energy Harvesting Ability. Shock and Vibration, 2016, 2016, 1-10.	0.3	14
62	Soft magneto-sensitive elastomer and polyvinylidene fluoride polymer based nonlinear piezoelectric energy harvesting: design, modelling and experiment. Smart Materials and Structures, 2019, 28, 015031.	1.8	14
63	Smart Refreshable Braille Display Device Based on Magnetoâ€Resistive Composite with Triple Shape Memory. Advanced Materials Technologies, 2022, 7, 2100777.	3.0	14
64	Vibration control of a tunnel boring machine using adaptive magnetorheological damper. Smart Materials and Structures, 2019, 28, 115012.	1.8	13
65	Integration of an omnidirectional self-powering component to an MRE isolator towards a smart passive isolation system. Mechanical Systems and Signal Processing, 2020, 144, 106853.	4.4	13
66	A controllable mechanical motion rectifier-based semi-active magnetorheological inerter for vibration control. Smart Materials and Structures, 2020, 29, 114005.	1.8	13
67	A highly adaptive magnetorheological fluid robotic leg for efficient terrestrial locomotion. Smart Materials and Structures, 2016, 25, 095019.	1.8	12
68	Advanced vehicle suspension with variable stiffness and damping MR damper. , 2017, , .		12
69	Overcoming the conflict requirement between high-speed stability and curving trafficability of the train using an innovative magnetorheological elastomer rubber joint. Journal of Intelligent Material Systems and Structures, 2018, 29, 214-222.	1.4	12
70	Development of a variable stiffness magnetorheological damper with self-powered generation capability. Journal of Intelligent Material Systems and Structures, 2020, 31, 209-219.	1.4	12
71	Development of a biomimetic scallop robot capable of jet propulsion. Bioinspiration and Biomimetics, 2020, 15, 036008.	1.5	11
72	Experimental Study of a Variable Stiffness Seat Suspension Installed With a Compact Rotary MR Damper. Frontiers in Materials, 2021, 8, .	1.2	11

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73	Development and evaluation of an MRE-based absorber with two individually controllable natural frequencies. Smart Materials and Structures, 2018, 27, 095002.	1.8	10
74	Development and evaluation of a highly adaptive MRF-based absorber with a large effective frequency range. Smart Materials and Structures, 2019, 28, 105003.	1.8	10
75	The variable resonance magnetorheological pendulum tuned mass damper: Mathematical modelling and seismic experimental studies. Journal of Intelligent Material Systems and Structures, 2020, 31, 263-276.	1.4	10
76	Using Weighted Total Least Squares and 3-D Conformal Coordinate Transformation to Improve the Accuracy of Mobile Laser Scanning. IEEE Transactions on Geoscience and Remote Sensing, 2020, 58, 203-217.	2.7	9
77	A bionic soft tongue driven by shape memory alloy and pneumatics. Bioinspiration and Biomimetics, 2021, 16, .	1.5	9
78	Design, Fabrication, and Testing of a Novel Ferrofluid Soft Capsule Robot. IEEE/ASME Transactions on Mechatronics, 2022, 27, 1403-1413.	3.7	9
79	Development and damping properties of a seismic linear motion damper with MR fluid porous composite rotary brake. Smart Materials and Structures, 2020, 29, 115043.	1.8	9
80	Precise locomotion controller design for a novel magnetorheological fluid robot based on improved gray wolf optimization algorithm. Smart Materials and Structures, 2021, 30, 025038.	1.8	8
81	Innovative variable stiffness and variable damping magnetorheological actuation system for robotic arm positioning. Journal of Intelligent Material Systems and Structures, 2023, 34, 123-137.	1.4	8
82	Design and modeling analysis of a changeable stiffness robotic leg working with magnetorheological technology. Journal of Intelligent Material Systems and Structures, 2018, 29, 3725-3736.	1.4	7
83	Design and Analysis of a Novel Magnetorheological Fluid Dual Clutch for Electric Vehicle Transmission. , 0, , .		7
84	Development of a smart rubber joint for train using shear thickening fluids. Smart Materials and Structures, 2020, 29, 055036.	1.8	6
85	Design and experimental evaluation of a new modular underactuated multi-fingered robot hand. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 2020, 234, 3709-3724.	1.1	6
86	Numerical Study of Rotary Magnetorheological Seat Suspension on the Impact Protection. Lecture Notes in Electrical Engineering, 2022, , 1003-1017.	0.3	6
87	A Novel MR Device with Variable Stiffness and Damping Capability. International Journal of Aerospace and Lightweight Structures (IJALS), 2013, 3, 325.	0.1	6
88	Real-time adaptive leg-stiffness for roll compensation via magnetorheological control in a legged robot. Smart Materials and Structures, 2022, 31, 045003.	1.8	6
89	Semi-Active Chatter Reduction for Robotic Machining Using Magnetorheological Elastomers (MREs). , 2017, , .		5
90	A smart passive MR damper with a hybrid powering system for impact mitigation: An experimental study. Journal of Intelligent Material Systems and Structures, 2021, 32, 1452-1461.	1.4	5

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91	A novel magneto-rheological fluid dual-clutch design for two-speed transmission of electric vehicles. Smart Materials and Structures, 2021, 30, 075035.	1.8	5
92	Singular System-Based Approach for Active Vibration Control of Vehicle Seat Suspension. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2020, 142, .	0.9	5
93	Dynamic characteristics modelling and adaptability research of the balise transmission module in high speed railways. WIT Transactions on the Built Environment, 2010, , .	0.0	5
94	Design of a Bionic Scallop Robot Based on Jet Propulsion. , 2018, , .		4
95	Broadband nonlinear behaviour of a soft magneto-sensitive elastomer cantilever under low-frequency and low-magnitude excitation. Journal of Intelligent Material Systems and Structures, 2018, 29, 3165-3184.	1.4	4
96	Design and testing of a novel two-way controllable overrunning clutch based magneto-rheological brake. Smart Materials and Structures, 2019, 28, 095013.	1.8	4
97	A single-shot pose estimation approach for a 2D laser rangefinder. Measurement Science and Technology, 2020, 31, 025105.	1.4	3
98	Comparison of dynamic models based on backbone curve for rotary magneto-rheological damper. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 2020, 234, 2732-2740.	1.1	3
99	Controllable magnetorheological fluid damper-based seat suspension. , 2020, , 37-56.		3
100	A magnetorheological fluid based planetary gear transmission for mechanical power-flow control. Smart Materials and Structures, 2021, 30, 045013.	1.8	3
101	A hybrid MRE isolation system integrated with ball-screw inerter for vibration control. Smart Materials and Structures, 2022, 31, 025009.	1.8	3
102	Fabrication and Characterization of Magneto-Rheological Shear-Stiffened Elastomers. Frontiers in Materials, 2014, 1, .	1.2	2
103	Experimental Nonlinear Model Identification of a Highly Nonlinear Resonator. Journal of Vibration and Acoustics, Transactions of the ASME, 2018, 140, .	1.0	2
104	Compensation of Geometric Parameter Errors for Terrestrial Laser Scanner by Integrating Intensity Correction. IEEE Transactions on Geoscience and Remote Sensing, 2020, 58, 7483-7495.	2.7	2
105	Modelling and experimental evaluation of a variable stiffness MR suspension with self-powering capability. Journal of Intelligent Material Systems and Structures, 2021, 32, 1473-1483.	1.4	2
106	Georeferencing kinematic modeling and error correction of terrestrial laser scanner for 3D scene reconstruction. Automation in Construction, 2021, 126, 103673.	4.8	2
107	Development of a magnetorheological elastomer rubber joint with fail-safe characteristics for high-speed trains. Smart Materials and Structures, 2022, 31, 045008.	1.8	2
108	Variable stiffness and damping semi-active vibration control technology based on magnetorheological fluids. , 2013, , .		1

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109	Hysteretic Model of a Rotary Magnetorheological Damper in Helical Flow Mode. Communications in Computer and Information Science, 2018, , 15-24.	0.4	1
110	Active seat suspension control algorithm. , 2020, , 209-242.		1
111	Building Vibration Suppression Through a Magnetorheological Variable Resonance Pendulum Tuned Mass Damper. , 2021, , 281-287.		1
112	Self-powered MR seat suspension. , 2020, , 57-77.		0
113	Variable equivalent inertance seat suspension. , 2020, , 121-167.		0
114	Single-DOF active seat suspension. , 2020, , 171-179.		0
115	Multiple-DOF active seat suspension. , 2020, , 181-208.		0
116	Variable equivalent stiffness seat suspension. , 2020, , 79-119.		0
117	Hybrid active and semi-active seat suspension. , 2020, , 245-265.		0
118	Development and Experimental Study of an MRF Engine Mount with Controllable Stiffness. Lecture Notes in Electrical Engineering, 2022, , 1018-1030.	0.3	0
119	Variable Admittance Network with Indirect Energy Supply for Semiactive Vibration Control. Lecture Notes in Electrical Engineering, 2022, , 987-1002.	0.3	0
120	Development of a magnetorheological elastomer rubber joint with fail-safe characteristics for high-speed trains. Smart Materials and Structures, 0, , .	1.8	0