

Fehmi Najjar

List of Publications by Year in descending order

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79
papers

1,383
citations

393982

19
h-index

360668

35
g-index

81
all docs

81
docs citations

81
times ranked

860
citing authors

#	ARTICLE	IF	CITATIONS
1	An energy harvester using piezoelectric cantilever beams undergoing coupled bending-torsion vibrations. <i>Smart Materials and Structures</i> , 2011, 20, 115007.	1.8	160
2	Design and performance of variable-shaped piezoelectric energy harvesters. <i>Journal of Intelligent Material Systems and Structures</i> , 2014, 25, 174-186.	1.4	117
3	Modeling and design of variable-geometry electrostatic microactuators. <i>Journal of Micromechanics and Microengineering</i> , 2005, 15, 419-429.	1.5	116
4	Nonlinear dynamics of a resonant gas sensor. <i>Nonlinear Dynamics</i> , 2010, 59, 607-618.	2.7	67
5	Nonlinear Analysis of MEMS Electrostatic Microactuators: Primary and Secondary Resonances of the First Mode*. <i>JVC/Journal of Vibration and Control</i> , 2010, 16, 1321-1349.	1.5	61
6	Dynamics and Global Stability of Beam-based Electrostatic Microactuators. <i>JVC/Journal of Vibration and Control</i> , 2010, 16, 721-748.	1.5	61
7	Dynamic analysis of variable-geometry electrostatic microactuators. <i>Journal of Micromechanics and Microengineering</i> , 2006, 16, 2449-2457.	1.5	57
8	Modeling and performance study of a beam microgyroscope. <i>Journal of Sound and Vibration</i> , 2010, 329, 4970-4979.	2.1	56
9	Nonlinear nonlocal analysis of electrostatic nanoactuators. <i>Composite Structures</i> , 2015, 120, 117-128.	3.1	51
10	Energy harvesting from a multifrequency response of a tuned bending-torsion system. <i>Smart Materials and Structures</i> , 2012, 21, 075029.	1.8	45
11	Experimental and mathematical analysis of a piezoelectrically actuated multilayered imperfect microbeam subjected to applied electric potential. <i>Composite Structures</i> , 2018, 184, 950-960.	3.1	40
12	Static and dynamic analytical coupled field analysis of piezoelectric flexoelectric nanobeams: A strain gradient theory approach. <i>International Journal of Solids and Structures</i> , 2018, 135, 110-124.	1.3	39
13	A double microbeam MEMS ohmic switch for RF-applications with low actuation voltage. <i>Nonlinear Dynamics</i> , 2011, 63, 719-734.	2.7	32
14	Strong nonlinear dynamics of MEMS and NEMS structures based on semi-analytical approaches. <i>Communications in Nonlinear Science and Numerical Simulation</i> , 2018, 61, 1-21.	1.7	32
15	A double-side electrically-actuated arch microbeam for pressure sensing applications. <i>International Journal of Mechanical Sciences</i> , 2020, 178, 105624.	3.6	31
16	Modeling and Dynamics of a Horizontal Axis Wind Turbine. <i>JVC/Journal of Vibration and Control</i> , 2010, 16, 2001-2021.	1.5	27
17	Modeling and parametric analysis of a unimorph piezocomposite energy harvester with interdigitated electrodes. <i>Composite Structures</i> , 2016, 135, 176-190.	3.1	26
18	A new type of triboelectric nanogenerator with self-actuated series-to-parallel electrical interface based on self-synchronized mechanical switches for exponential charge accumulation in a capacitor. <i>Nano Energy</i> , 2019, 62, 465-474.	8.2	23

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19	Design of a capacitive MEMS double beam switch using dynamic pull-in actuation at very low voltage. <i>Microsystem Technologies</i> , 2017, 23, 5317-5327.	1.2	19
20	Nonlinear Dynamics of MEMS Arches Assuming Out-of-Plane Actuation Arrangement. <i>Journal of Vibration and Acoustics, Transactions of the ASME</i> , 2019, 141, .	1.0	17
21	Arch microbeam bifurcation gas sensors. <i>Nonlinear Dynamics</i> , 2021, 104, 923-940.	2.7	17
22	Dynamic Study of a Capacitive MEMS Switch with Double Clamped-Clamped Microbeams. <i>Shock and Vibration</i> , 2014, 2014, 1-7.	0.3	16
23	Modeling and design of an electrically actuated resonant microswitch. <i>JVC/Journal of Vibration and Control</i> , 2016, 22, 559-569.	1.5	16
24	Nonlinear feedback controller of a microbeam resonator. <i>JVC/Journal of Vibration and Control</i> , 2015, 21, 1680-1697.	1.5	15
25	2D electrostatic energy harvesting device using a single shallow arched microbeam. <i>International Journal of Non-Linear Mechanics</i> , 2021, 132, 103700.	1.4	14
26	Modeling and experimental characterization of squeeze film effects in nonlinear capacitive circular microplates. <i>Mechanical Systems and Signal Processing</i> , 2019, 127, 68-88.	4.4	13
27	Fluid sensing using microcantilevers: From physics-based modeling to deep learning. <i>Applied Mathematical Modelling</i> , 2020, 88, 224-237.	2.2	12
28	Dynamic analysis of a nonlinear nanobeam with flexoelectric actuation. <i>Journal of Applied Physics</i> , 2019, 125, .	1.1	11
29	Multifidelity modeling and comparative analysis of electrically coupled microbeams under squeeze-film damping effect. <i>Nonlinear Dynamics</i> , 2020, 99, 445-460.	2.7	11
30	A unified model for electrostatic sensors in fluid media. <i>Nonlinear Dynamics</i> , 2020, 101, 271-291.	2.7	11
31	Nonlinear analysis and effectiveness of weakly coupled microbeams for mass sensing applications. <i>Nonlinear Dynamics</i> , 2021, 104, 383-397.	2.7	11
32	Parametric analysis of multilayered unimorph piezoelectric vibration energy harvesters. <i>JVC/Journal of Vibration and Control</i> , 2017, 23, 2538-2553.	1.5	10
33	Deep learning for simultaneous measurements of pressure and temperature using arch resonators. <i>Applied Mathematical Modelling</i> , 2021, 93, 728-744.	2.2	10
34	Shape improvement for piezoelectric energy harvesting applications. , 2009, , .		9
35	Stiffness control of a nonlinear mechanical folded beam for wideband vibration energy harvesters. <i>TM Technisches Messen</i> , 2018, 85, 553-564.	0.3	9
36	Pendulum-based embedded energy harvester for rotating systems. <i>Mechanical Systems and Signal Processing</i> , 2022, 180, 109415.	4.4	9

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37	Mathematical Modeling of an Active-Fiber Composite Energy Harvester with Interdigitated Electrodes. Shock and Vibration, 2014, 2014, 1-9.	0.3	8
38	MEMS SPDT microswitch with low actuation voltage for RF applications. Microelectronics International, 2015, 32, 55-62.	0.4	8
39	A square wave is the most efficient and reliable waveform for resonant actuation of micro switches. Journal of Micromechanics and Microengineering, 2018, 28, 055002.	1.5	8
40	Deep learning for gas sensing using MOFs coated weakly-coupled microbeams. Applied Mathematical Modelling, 2022, 105, 711-728.	2.2	7
41	Design and modelling of MEMS DC-DC converter. Electronics Letters, 2015, 51, 860-861.	0.5	6
42	Design of a MEMS Electrostatic Kinetic Energy Harvester and its Bennet Conditioning Circuit in Integrated Technologies. , 2019, , .		6
43	Energy harvesting using a clamped-clamped piezoelectric-flexoelectric beam. Journal Physics D: Applied Physics, 2021, 54, 415501.	1.3	6
44	Nonlinear Dynamical analysis of an AFM tapping mode microcantilever beam. MATEC Web of Conferences, 2012, 1, 04002.	0.1	5
45	Nonlinear Analysis of Electrically Actuated Carbon Nanotube Resonator Using a Novel Discretization Technique. Mathematical Problems in Engineering, 2013, 2013, 1-9.	0.6	5
46	Internal resonance and nonlinear dynamics of a dielectric elastomer circular membrane. International Journal of Solids and Structures, 2022, 236-237, 111338.	1.3	5
47	On the equivalence between mass perturbation and DC voltage bias in coupled MEMS resonators: Theoretical and experimental investigation. Journal of Applied Physics, 2022, 132, 024502.	1.1	5
48	Novel design of MEMS ohmic RF switch with low voltage actuation. , 2009, , .		4
49	Modeling and nonlinear dynamics of an Active-Fiber Composite energy harvester with Interdigitated Electrodes. , 2014, , .		4
50	Energy harvesters for rotating systems: Modeling and performance analysis. TM Technisches Messen, 2021, 88, 164-177.	0.3	4
51	Modeling and design of an ultra low-power NEMS relays: application to logic gate inverters. Analog Integrated Circuits and Signal Processing, 2020, 104, 17-26.	0.9	4
52	Nonlinear Feedback Control and Dynamics of an Electrostatically Actuated Microbeam Filter. , 2008, , .		3
53	A finite element analysis of a new design of a biomimetic shape memory alloy artificial muscle. Smart Structures and Systems, 2015, 16, 479-496.	1.9	3
54	Dynamics of Variable-Geometry Electrostatic Microactuators. , 2006, , 273.		2

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55	A New Dynamical Model of Flexible Cracked Wind Turbines for Health Monitoring. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2013, 135, .	0.9	2
56	Confinement of Vibrations in Variable-Geometry Nonlinear Flexible Beam. Shock and Vibration, 2014, 2014, 1-7.	0.3	2
57	Modeling and design of very low-voltage MEMS microswitch using dynamic pull-in. , 2015, , .		2
58	Dynamic identification of human trunk behavior as a diagnosis tool for pathologic problems. , 2018, , .		2
59	Modeling and Design of an Electrically Actuated Resonant Switch. MATEC Web of Conferences, 2012, 1, 04001.	0.1	1
60	Advanced Parametric Analysis of Piezoelectric Actuators with Interdigitated Electrodes having Various Cross-Sections. Lecture Notes in Mechanical Engineering, 2015, , 489-499.	0.3	1
61	Modeling and parametric analysis of a piezoelectric flexoelectric nanoactuator. MATEC Web of Conferences, 2016, 83, 04002.	0.1	1
62	Coupled Dynamics of a Flexible Horizontal Axis Wind Turbine With Damaged Blades: Experimental and Numerical Validations. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2018, 140, .	0.9	1
63	Extended range of a MEMS electrostatic actuator using an adjustable linear controller. , 2021, , .		1
64	Modeling and Parametric Analysis of a Piezoelectric Flexoelectric Nanoactuator. Springer Proceedings in Physics, 2018, , 85-101.	0.1	1
65	Analysis of the Orbits of Electrostatic MEMS Resonators. , 2008, , .		1
66	Design and modelling of an energy harvester for tire pressure monitoring systems. MATEC Web of Conferences, 2014, 16, 01009.	0.1	0
67	Validation of a new structural health monitoring technique of a wind turbine prototype. , 2015, , .		0
68	Accurate reduced-order modeling of MEMS and NEMS microactuators under dynamic electrostatic loading and large strokes. , 2015, , .		0
69	Design and test of a Bennet's doubler device with mechanical switches for vibrational energy harvesting. Journal of Physics: Conference Series, 2016, 773, 012038.	0.3	0
70	Nonlocal modeling of a Carbon Nanotube actuated by an electrostatic force. MATEC Web of Conferences, 2016, 83, 04004.	0.1	0
71	Analysis of new actuation methods for capacitive shunt micro switches. MATEC Web of Conferences, 2016, 83, 04003.	0.1	0
72	Effects of Squeeze Film and Initial Deflection on the Resonance Frequencies and Modal Damping of Circular Microplates. , 2018, , .		0

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73	Charge Doubler Vibration Energy Harvester Using Self-Synchronized mechanical switches. Journal of Physics: Conference Series, 2018, 1052, 012121.	0.3	0
74	Large Strokes of a Piezocomposite Energy Harvester with Interdigitated Electrodes Accounting for Geometric and Material Nonlinearities. Applied Condition Monitoring, 2021, , 105-116.	0.4	0
75	Arched beam based energy harvester using electrostatic transduction for general in-plane excitations. , 2021, , .		0
76	Novel Capacitive MEMS Logic Gates For Logic Circuits and Systems. , 2021, , .		0
77	Innovative In-Plane Converter Design for a Capacitive Energy Harvester. Applied Condition Monitoring, 2021, , 125-135.	0.4	0
78	Parametric Analysis of a Piezoelectric Flexoelectric Energy Harvesting Nanosystem. Lecture Notes in Mechanical Engineering, 2022, , 174-179.	0.3	0
79	Parametric resonance of bi-directional axial loads shallow arch microresonators. Journal of Micromechanics and Microengineering, 2022, 32, 054004.	1.5	0