

# E M Abdel-Rahman

## List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

142  
papers

3,714  
citations

27  
h-index

58  
g-index

168  
ext. papers

4,250  
ext. citations

3.5  
avg, IF

5.53  
L-index

#	Paper	IF	Citations
142	Performance and Ergonomic Characteristics of Expert Masons. <i>Lecture Notes in Civil Engineering</i> , <b>2023</b> , 505-515	0.3	
141	Measurement of the electric permittivity using Bleustein-Gulyaev wave sensor. <i>Journal of Micromechanics and Microengineering</i> , <b>2022</b> , 32, 034004	2	0
140	Automatic clustering of proper working postures for phases of movement. <i>Automation in Construction</i> , <b>2022</b> , 138, 104223	9.6	1
139	Single Input Single Output MEMS Gas Sensor <b>2022</b> , 321-334		
138	Highly Sensitive Self-Actuated Zinc Oxide Resonant Microcantilever Humidity Sensor.. <i>Nano Letters</i> , <b>2022</b> ,	11.5	1
137	Electronic field effect detection of SARS-CoV-2 N-protein before the onset of symptoms.. <i>Biosensors and Bioelectronics</i> , <b>2022</b> , 210, 114331	11.8	2
136	Detection of Volatile Organic Compounds by Using MEMS Sensors. <i>Sensors</i> , <b>2022</b> , 22, 4102	3.8	1
135	On Design and Analysis of Electrostatic Arch Micro-Tweezers. <i>Journal of Vibration and Acoustics, Transactions of the ASME</i> , <b>2021</b> , 143,	1.6	4
134	Inertial Motion Capture-Based Whole-Body Inverse Dynamics. <i>Sensors</i> , <b>2021</b> , 21,	3.8	6
133	Arch microbeam bifurcation gas sensors. <i>Nonlinear Dynamics</i> , <b>2021</b> , 104, 923-940	5	8
132	Characterization of Shear Horizontal Waves Using a 1D Laser Doppler Vibrometer. <i>Sensors</i> , <b>2021</b> , 21,	3.8	2
131	Analysis of tunable Bleustein-Gulyaev permittivity sensors. <i>Journal of Applied Physics</i> , <b>2021</b> , 129, 164501	2.5	1
130	An ultrasensitive heart-failure BNP biosensor using B/N co-doped graphene oxide gel FET. <i>Biosensors and Bioelectronics</i> , <b>2021</b> , 180, 113114	11.8	9
129	Analysis of the Limits of Automated Rule-Based Ergonomic Assessment in Bricklaying. <i>Journal of Construction Engineering and Management - ASCE</i> , <b>2021</b> , 147, 04020163	4.2	6
128	The impact of thermal-noise on bifurcation MEMS sensors. <i>Mechanical Systems and Signal Processing</i> , <b>2021</b> , 161, 107941	7.8	2
127	Bifurcation-based MEMS mass sensors. <i>International Journal of Mechanical Sciences</i> , <b>2020</b> , 180, 105705	5.5	9
126	Analysis of Relationships between Body Load and Training, Work Methods, and Work Rate: Overcoming the Novice Mason's Risk Hump. <i>Journal of Construction Engineering and Management - ASCE</i> , <b>2020</b> , 146, 04020097	4.2	12

125	Quasi-Static Pull-in: an Instability in Electrostatic Actuators. <i>Scientific Reports</i> , <b>2020</b> , 10, 4990	4.9	3
124	A Study of Noise Impact on the Stability of Electrostatic MEMS. <i>Journal of Computational and Nonlinear Dynamics</i> , <b>2020</b> , 15,	1.4	3
123	Large oscillation of electrostatically actuated curved beams. <i>Journal of Micromechanics and Microengineering</i> , <b>2020</b> , 30, 095005	2	6
122	Health and productivity impact of semi-automated work systems in construction. <i>Automation in Construction</i> , <b>2020</b> , 120, 103396	9.6	6
121	A unified model for electrostatic sensors in fluid media. <i>Nonlinear Dynamics</i> , <b>2020</b> , 101, 271-291	5	7
120	Colocalized Sensing and Intelligent Computing in Micro-Sensors. <i>Sensors</i> , <b>2020</b> , 20,	3.8	4
119	Measurement of In-Plane Motions in MEMS. <i>Sensors</i> , <b>2020</b> , 20,	3.8	2
118	Porosity Modulated High-Performance Piezoelectric Nanogenerator Based on Organic/Inorganic Nanomaterials for Self-Powered Structural Health Monitoring. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2020</b> , 12, 47503-47512	9.5	19
117	Electrostatic arch micro-tweezers. <i>International Journal of Non-Linear Mechanics</i> , <b>2020</b> , 118, 103298	2.8	16
116	Aqueous Media Electrostatic MEMS Sensors <b>2019</b> ,		2
115	Jerk as an indicator of physical exertion and fatigue. <i>Automation in Construction</i> , <b>2019</b> , 104, 120-128	9.6	34
114	Nonlinear Analysis and Performance of Electret-Based Microcantilever Energy Harvesters. <i>Energies</i> , <b>2019</b> , 12, 4249	3.1	5
113	Automated Monitoring of Physical Fatigue Using Jerk <b>2019</b> ,		5
112	Long-Term Stability of Ferroelectret Energy Harvesters. <i>Materials</i> , <b>2019</b> , 13,	3.5	1
111	Dynamic bifurcation MEMS gas sensors. <i>Journal of Micromechanics and Microengineering</i> , <b>2019</b> , 29, 015005		17
110	Dimpled electrostatic MEMS actuators. <i>Journal of Applied Physics</i> , <b>2019</b> , 125, 024304	2.5	7
109	A comparative study of in-field motion capture approaches for body kinematics measurement in construction. <i>Robotica</i> , <b>2019</b> , 37, 928-946	2.1	11
108	Nonlinear dynamic modeling of a V-shaped metal based thermally driven MEMS actuator for RF switches. <i>Journal of Micromechanics and Microengineering</i> , <b>2018</b> , 28, 054004	2	4

107	Modeling of low-damping laterally actuated electrostatic MEMS. <i>Mechatronics</i> , <b>2018</b> , 52, 1-6	3	4
106	Dual actuation micro-mirrors. <i>Journal of Micromechanics and Microengineering</i> , <b>2018</b> , 28, 075014	2	4
105	A square wave is the most efficient and reliable waveform for resonant actuation of micro switches. <i>Journal of Micromechanics and Microengineering</i> , <b>2018</b> , 28, 055002	2	7
104	Evaluation of Silicon Nanonet Field Effect Transistor as Photodiodes. <i>Proceedings (mdpi)</i> , <b>2018</b> , 2, 124	0.3	
103	Motion Data Based Construction Worker Training Support Tool: Case Study of Masonry Work <b>2018</b> ,		3
102	Switching intermittency. <i>Applied Physics Letters</i> , <b>2018</b> , 113, 153501	3.4	3
101	A High Performance and Consolidated Piezoelectric Energy Harvester Based on 1D/2D Hybrid Zinc Oxide Nanostructures. <i>Advanced Materials Interfaces</i> , <b>2018</b> , 5, 1801167	4.6	16
100	Reliability Criteria for Thick Bonding Wire. <i>Materials</i> , <b>2018</b> , 11,	3.5	2
99	Fatigue Detection Using Phase-Space Warping. <i>Journal of Biomechanical Engineering</i> , <b>2017</b> , 139,	2.1	4
98	Experience, Productivity, and Musculoskeletal Injury among Masonry Workers. <i>Journal of Construction Engineering and Management - ASCE</i> , <b>2017</b> , 143, 05017003	4.2	27
97	A parametric study of the nonlinear dynamics and sensitivity of a beam-rigid body microgyroscope. <i>Communications in Nonlinear Science and Numerical Simulation</i> , <b>2017</b> , 50, 180-192	3.7	9
96	Detection of cyclic-fold bifurcation in electrostatic MEMS transducers by motion-induced current. <i>Journal of Micromechanics and Microengineering</i> , <b>2017</b> , 27, 085007	2	5
95	A Tunable MEMS Magnetic Sensor. <i>Journal of Microelectromechanical Systems</i> , <b>2017</b> , 26, 255-263	2.5	13
94	Identifying poses of safe and productive masons using machine learning. <i>Automation in Construction</i> , <b>2017</b> , 84, 345-355	9.6	27
93	A mechanical thermal noise analysis of a nonlinear microgyroscope. <i>Mechanical Systems and Signal Processing</i> , <b>2017</b> , 83, 163-175	7.8	17
92	On modeling beam-rigid-body microgyroscopes. <i>Applied Mathematical Modelling</i> , <b>2017</b> , 42, 753-760	4.5	10
91	Out-of-Plane Continuous Electrostatic Micro-Power Generators. <i>Sensors</i> , <b>2017</b> , 17,	3.8	2
90	Nonlinear Parameter Identification of a Resonant Electrostatic MEMS Actuator. <i>Sensors</i> , <b>2017</b> , 17,	3.8	11

89	Wideband, low-frequency springless vibration energy harvesters: part I. <i>Journal of Micromechanics and Microengineering</i> , <b>2016</b> , 26, 115021	2	9
88	Wideband, low-frequency springless vibration energy harvesters: part II. <i>Journal of Micromechanics and Microengineering</i> , <b>2016</b> , 26, 115022	2	4
87	Cascade-type hybrid energy cells for driving wireless sensors. <i>Nano Energy</i> , <b>2016</b> , 26, 641-647	17.1	4
86	Techniques for dynamic analysis of bonding wire. <i>Microelectronics Reliability</i> , <b>2016</b> , 58, 73-81	1.2	1
85	Nanogenerators based on vertically aligned InN nanowires. <i>Nanoscale</i> , <b>2016</b> , 8, 2097-106	7.7	30
84	Analysis of new actuation methods for capacitive shunt micro switches. <i>MATEC Web of Conferences</i> , <b>2016</b> , 83, 04003	0.3	
83	A novel differential frequency micro-gyroscope. <i>JVC/Journal of Vibration and Control</i> , <b>2015</b> , 21, 872-882	2	18
82	Primary resonance of a beam-rigid body microgyroscope. <i>International Journal of Non-Linear Mechanics</i> , <b>2015</b> , 77, 364-375	2.8	16
81	Performance optimization of p-n homojunction nanowire-based piezoelectric nanogenerators through control of doping concentration. <i>Journal of Applied Physics</i> , <b>2015</b> , 118, 094307	2.5	11
80	Measuring the Quality Factor in MEMS Devices. <i>Micromachines</i> , <b>2015</b> , 6, 1935-1945	3.3	7
79	Electromagnetic Impact Vibration Energy Harvesters. <i>Springer Proceedings in Physics</i> , <b>2015</b> , 29-58	0.2	7
78	Surface and thermal load effects on the buckling of curved nanowires <b>2014</b> , 17, 279-283		17
77	Modeling and analysis of a horizontally-aligned energy harvester. <i>MATEC Web of Conferences</i> , <b>2014</b> , 16, 01003	0.3	2
76	A Parametric Study of the Response of a Beam-Rigid-Body Microgyroscope <b>2014</b> ,		1
75	Binary MEMS gas sensors. <i>Journal of Micromechanics and Microengineering</i> , <b>2014</b> , 24, 065007	2	23
74	Contact damping in microelectromechanical actuators. <i>Applied Physics Letters</i> , <b>2014</b> , 105, 253501	3.4	5
73	Test and Validation of a Nonlinear Electromagnetic Energy Harvester <b>2014</b> ,		1
72	Nonlinear Dynamics of a Beam-Rigid Body Microgyroscope <b>2014</b> ,		2

71	The application of a new beam-rigid body MEMS gyroscope in the frequency-modulation mode <b>2014,</b>		1
70	Model for nano-scale bonding wires under thermal loading <b>2014,</b>		1
69	High-efficiency passive full wave rectification for electromagnetic harvesters. <i>Journal of Applied Physics</i> , <b>2014</b> , 116, 134902	2.5	7
68	A Technique to Detect Fatigue in the Lower Limbs <b>2014,</b>		2
67	Architecture for MEMS-based analogue demodulation. <i>Journal of Micromechanics and Microengineering</i> , <b>2013</b> , 23, 045013	2	8
66	<b>2013,</b>		9
65	A Human Body Posture Sensor for Monitoring and Diagnosing MSD Risk Factors <b>2013,</b>		8
64	Analysis of out-of-plane Micro-Power Generators <b>2012,</b>		1
63	Low-voltage closed loop MEMS actuators. <i>Nonlinear Dynamics</i> , <b>2012</b> , 69, 565-575	5	4
62	Dynamics of a close-loop controlled MEMS resonator. <i>Nonlinear Dynamics</i> , <b>2012</b> , 69, 615-633	5	35
61	Lorentz-force transduction for RF micromechanical filters. <i>Journal of Micromechanics and Microengineering</i> , <b>2012</b> , 22, 035018	2	1
60	Doped Polyaniline for the Detection of Formaldehyde. <i>Journal of Macromolecular Science - Pure and Applied Chemistry</i> , <b>2012</b> , 49, 1-6	2.2	22
59	Low voltage electrostatic actuation and angular displacement measurement of micromirror coupled with resonant drive circuit <b>2012,</b>		1
58	Modeling of Contact and Stiction in Electrostatic Microcantilever Actuators. <i>Journal of Nanotechnology in Engineering and Medicine</i> , <b>2012</b> , 3,		5
57	Prototypes of a Field Disruption Energy Harvester <b>2012,</b>		3
56	Nonlinear Modeling and Analysis of a Vertical Springless Energy Harvester. <i>MATEC Web of Conferences</i> , <b>2012</b> , 1, 01004	0.3	4
55	Low Voltage Electrostatic Actuation and Displacement Measurement Through Resonant Drive Circuit <b>2012,</b>		1
54	Dynamic actuation methods for capacitive MEMS shunt switches. <i>Journal of Micromechanics and Microengineering</i> , <b>2011</b> , 21, 035009	2	21

53	Modeling MEMS Resonators Past Pull-In. <i>Journal of Computational and Nonlinear Dynamics</i> , <b>2011</b> , 6,	1.4	13
52	Analysis of a Chaotic Electrostatic Micro-Oscillator. <i>Journal of Computational and Nonlinear Dynamics</i> , <b>2011</b> , 6,	1.4	21
51	On the Use of the Subharmonic Resonance as a Method for Filtration. <i>Journal of Computational and Nonlinear Dynamics</i> , <b>2011</b> , 6,	1.4	6
50	A large-stroke electrostatic micro-actuator. <i>Journal of Micromechanics and Microengineering</i> , <b>2011</b> , 21, 075023	2	37
49	Lorentz force transduction for RF micromechanical filters <b>2011</b> ,		1
48	Output Power Optimization for Electromagnetic Vibration Energy Harvesters <b>2010</b> ,		2
47	Springless Vibration Energy Harvesters <b>2010</b> ,		4
46	Electromechanical coupling in electrostatic micro-power generators. <i>Smart Materials and Structures</i> , <b>2010</b> , 19, 025007	3-4	8
45	Nonlinear Analysis of MEMS Electrostatic Microactuators: Primary and Secondary Resonances of the First Mode*. <i>JVC/Journal of Vibration and Control</i> , <b>2010</b> , 16, 1321-1349	2	53
44	Dynamics and Global Stability of Beam-based Electrostatic Microactuators. <i>JVC/Journal of Vibration and Control</i> , <b>2010</b> , 16, 721-748	2	55
43	Nonlinear dynamics of a resonant gas sensor. <i>Nonlinear Dynamics</i> , <b>2010</b> , 59, 607-618	5	59
42	Modeling and analysis of electrostatic MEMS filters. <i>Nonlinear Dynamics</i> , <b>2010</b> , 60, 385-401	5	27
41	Vibrations of balanced fault-free ball bearings. <i>Journal of Sound and Vibration</i> , <b>2010</b> , 329, 1332-1347	3-9	34
40	Modeling and performance study of a beam microgyroscope. <i>Journal of Sound and Vibration</i> , <b>2010</b> , 329, 4970-4979	3-9	40
39	A Mass Sensing Technique for Electrostatically-Actuated MEMS <b>2009</b> ,		5
38	Dynamic Pull-in of Shunt Capacitive MEMS Switches. <i>Procedia Chemistry</i> , <b>2009</b> , 1, 622-625		7
37	Two-to-one internal resonance in microscanners. <i>Nonlinear Dynamics</i> , <b>2009</b> , 57, 231-251	5	19
36	A Design Procedure for Wideband Micropower Generators. <i>Journal of Microelectromechanical Systems</i> , <b>2009</b> , 18, 1288-1299	2.5	63

35	Quadratic controller for a chaotic micro-resonator <b>2009</b> ,		1
34	A wideband vibration-based energy harvester. <i>Journal of Micromechanics and Microengineering</i> , <b>2008</b> , 18, 115021	2	223
33	Design and modeling of a wideband MEMS-based energy harvester with experimental verification <b>2008</b> ,		5
32	A Study of Subharmonic Excitation of Mechanically Coupled Microbeams for Filtration <b>2008</b> ,		1
31	Nonlinear Feedback Control and Dynamics of an Electrostatically Actuated Microbeam Filter <b>2008</b> ,		3
30	Static and Dynamic Analysis of a Bistable Micro-Actuator <b>2008</b> ,		1
29	Modelling MEMS Resonators Past Pull-In <b>2008</b> ,		1
28	Special issue on micro- and nano-electromechanical systems. <i>Nonlinear Dynamics</i> , <b>2008</b> , 54, 1-2	5	2
27	Modal interactions in contact-mode atomic force microscopes. <i>Nonlinear Dynamics</i> , <b>2008</b> , 54, 151-166	5	30
26	Towards a stable low-voltage torsional microscanner. <i>Microsystem Technologies</i> , <b>2008</b> , 14, 725-737	1.7	19
25	Dynamic pull-in phenomenon in MEMS resonators. <i>Nonlinear Dynamics</i> , <b>2007</b> , 48, 153-163	5	333
24	Control of a Digital Micromirror Device Using Input Shaping <b>2007</b> , 237		
23	Chaos in Healthy Ball Bearings <b>2007</b> , 369		2
22	A Subharmonic Resonance-Based MEMS Filter <b>2007</b> ,		2
21	Dynamic analysis of variable-geometry electrostatic microactuators. <i>Journal of Micromechanics and Microengineering</i> , <b>2006</b> , 16, 2449-2457	2	55
20	Dynamics of Variable-Geometry Electrostatic Microactuators <b>2006</b> , 273		2
19	Contact force identification using the subharmonic resonance of a contact-mode atomic force microscopy. <i>Nanotechnology</i> , <b>2005</b> , 16, 199-207	3-4	37
18	Modeling and design of variable-geometry electrostatic microactuators. <i>Journal of Micromechanics and Microengineering</i> , <b>2005</b> , 15, 419-429	2	100



17	Reduced-Order Models for MEMS Applications. <i>Nonlinear Dynamics</i> , <b>2005</b> , 41, 211-236	5	212
16	A reduced-order model for electrically actuated microplates. <i>Journal of Micromechanics and Microengineering</i> , <b>2004</b> , 14, 900-906	2	102
15	Finite-Amplitude Motions of Beam Resonators and Their Stability. <i>Journal of Computational and Theoretical Nanoscience</i> , <b>2004</b> , 1, 385-391	0.3	8
14	Two-Dimensional Control for Ship-Mounted Cranes: A Feasibility Study. <i>JVC/Journal of Vibration and Control</i> , <b>2003</b> , 9, 1327-1342	2	8
13	A Nonlinear Reduced-Order Model for Electrostatic MEMS <b>2003</b> , 1771		7
12	Mechanical Behavior of an Electrostatically Actuated Microplate <b>2003</b> , 1875		1
11	Axisymmetric Natural Frequencies of Statically Loaded Annular Plates. <i>Shock and Vibration</i> , <b>2003</b> , 10, 301-312	1.1	5
10	. <i>Journal of Microelectromechanical Systems</i> , <b>2003</b> , 12, 672-680	2.5	416
9	Secondary resonances of electrically actuated resonant microsensors. <i>Journal of Micromechanics and Microengineering</i> , <b>2003</b> , 13, 491-501	2	98
8	Pendulation Reduction in Boom Cranes Using Cable Length Manipulation. <i>Nonlinear Dynamics</i> , <b>2002</b> , 27, 255-269	5	27
7	Characterization of the mechanical behavior of an electrically actuated microbeam. <i>Journal of Micromechanics and Microengineering</i> , <b>2002</b> , 12, 759-766	2	337
6	Static and Dynamic Behavior of an Electrically Excited Resonant Microbeam <b>2002</b> ,		14
5	Nonlinear Dynamics of a Boom Crane. <i>JVC/Journal of Vibration and Control</i> , <b>2001</b> , 7, 199-220	2	28
4	Three-dimensional dynamic behaviour of the human knee joint under impact loading. <i>Medical Engineering and Physics</i> , <b>1998</b> , 20, 276-90	2.4	104
3	A two-dimensional dynamic anatomical model of the human knee joint. <i>Journal of Biomechanical Engineering</i> , <b>1993</b> , 115, 357-65	2.1	57
2	Analysis of response to thermal noise in electrostatic MEMS bifurcation sensors. <i>Nonlinear Dynamics</i> ,1	5	2
1	An overview of sensors and sensing materials for heavy metals in aqueous environments. <i>Canadian Journal of Chemical Engineering</i> ,	2.3	2