

# Eric Barth

## 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.

71  
papers

685  
citations

14  
h-index

23  
g-index

86  
ext. papers

831  
ext. citations

2.9  
avg, IF

4.16  
L-index

#	Paper	IF	Citations
71	Targeting Epilepsy Through the Foremen Ovale: How Many Helical Needles are Needed?. <i>Annals of Biomedical Engineering</i> , <b>2022</b> , 50, 499	4.7	0
70	Modal-Based Kinematics and Contact Detection of Soft Robots. <i>Soft Robotics</i> , <b>2021</b> , 8, 298-309	9.2	26
69	The Vanderbilt Open-Source Ventilator: From Napkin Sketch to Ready to Save Lives in Three Weeks. <i>IEEE Robotics and Automation Magazine</i> , <b>2021</b> , 28, 101-114	3.4	1
68	Patient-specific, touch-based registration during robotic, image-guided partial nephrectomy. <i>World Journal of Urology</i> , <b>2021</b> , 1	4	1
67	Accuracy of Touch-Based Registration During Robotic Image-Guided Partial Nephrectomy Before and After Tumor Resection in Validated Phantoms. <i>Journal of Endourology</i> , <b>2021</b> , 35, 362-368	2.7	3
66	Design and Characterization of a Miniature Hydraulic Power Supply for High-Bandwidth Control of Soft Robotics <b>2020</b> ,		2
65	Toward Practical and Accurate Touch-Based Image Guidance for Robotic Partial Nephrectomy. <i>IEEE Transactions on Medical Robotics and Bionics</i> , <b>2020</b> , 2, 196-205	3.1	3
64	Circulatory loop design and components introduce artifacts impacting in vitro evaluation of ventricular assist device thrombogenicity: A call for caution. <i>Artificial Organs</i> , <b>2020</b> , 44, E226-E237	2.6	2
63	Comparing the accuracy of the da Vinci Xi and da Vinci Si for image guidance and automation. <i>International Journal of Medical Robotics and Computer Assisted Surgery</i> , <b>2020</b> , 16, 1-10	2.9	5
62	Fiber Optic Shape Sensing for Soft Robotics. <i>Soft Robotics</i> , <b>2019</b> , 6, 671-684	9.2	44
61	. <i>IEEE/ASME Transactions on Mechatronics</i> , <b>2019</b> , 24, 1294-1305	5.5	10
60	MR-conditional steerable needle robot for intracerebral hemorrhage removal. <i>International Journal of Computer Assisted Radiology and Surgery</i> , <b>2019</b> , 14, 105-115	3.9	14
59	Design, Model, and Experimental Validation of a Pneumatic Boost Converter. <i>Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME</i> , <b>2019</b> , 141,	1.6	1
58	Methodology for Identifying Radiation Effects in Robotic Systems With Mechanical and Control Performance Variations. <i>IEEE Transactions on Nuclear Science</i> , <b>2019</b> , 66, 184-189	1.7	2
57	Energy conservation in industrial pneumatics: A state model for predicting energetic savings using a novel pneumatic strain energy accumulator. <i>Applied Energy</i> , <b>2017</b> , 198, 239-249	10.7	16
56	Experimental evaluation of the efficiency of a pneumatic strain energy accumulator. <i>International Journal of Fluid Power</i> , <b>2017</b> , 18, 167-180		4
55	Radiation Response and Adaptive Control-Based Degradation Mitigation of MEMS Accelerometers in Ionizing Dose Environments. <i>IEEE Sensors Journal</i> , <b>2017</b> , 17, 1132-1143	4	4

54	Optimization of Curvilinear Needle Trajectories for Transforaminal Hippocampotomy. <i>Operative Neurosurgery</i> , <b>2017</b> , 13, 15-22	1.6	13
53	Treating Epilepsy via Thermal Ablation: Initial Experiments With an MRI-Guided Concentric Tube Robot <b>2017</b> ,		1
52	Assessing Stability and Predicting Power Generation of Electromagnetic Vibration Energy Harvesters Using Bridge Vibration Data. <i>IEEE/ASME Transactions on Mechatronics</i> , <b>2017</b> , 22, 269-279	5.5	4
51	Characterization and Control of a Pneumatic Motor for MR-conditional Robotic Applications. <i>IEEE/ASME Transactions on Mechatronics</i> , <b>2017</b> , 22, 2780-2789	5.5	18
50	Analytical Tools for Investigating Stability and Power Generation of Electromagnetic Vibration Energy Harvesters. <i>IEEE/ASME Transactions on Mechatronics</i> , <b>2016</b> , 21, 717-726	5.5	9
49	Follow-the-Leader Deployment of Steerable Needles Using a Magnetic Resonance-Compatible Robot With Stepper Actuators <sup>1</sup> . <i>Journal of Medical Devices, Transactions of the ASME</i> , <b>2016</b> , 10,	1.3	2
48	Design, Additive Manufacture, and Control of a Pneumatic, MR-Compatible Needle Driver. <i>IEEE Transactions on Robotics</i> , <b>2016</b> , 32, 138-149	6.5	37
47	System Health Awareness in Total-Ionizing Dose Environments. <i>IEEE Transactions on Nuclear Science</i> , <b>2015</b> , 62, 1674-1681	1.7	2
46	Modeling of a Pneumatic Strain Energy Accumulator for Variable System Configurations With Quantified Projections of Energy Efficiency Increases <b>2015</b> ,		2
45	Bayesian Inference Modeling of Total Ionizing Dose Effects on System Performance. <i>IEEE Transactions on Nuclear Science</i> , <b>2015</b> , 62, 2517-2524	1.7	5
44	Advanced Strain Energy Accumulator: Materials, Modeling and Manufacturing <b>2014</b> ,		2
43	Range-Finding Sensor Degradation in Gamma Radiation Environments. <i>IEEE Sensors Journal</i> , <b>2014</b> , 1-1	4	9
42	Design and Control of an Magnetic Resonance Compatible Precision Pneumatic Active Cannula Robot. <i>Journal of Medical Devices, Transactions of the ASME</i> , <b>2014</b> , 8,	1.3	27
41	Total-Ionizing-Dose Induced Timing Window Violations in CMOS Microcontrollers. <i>IEEE Transactions on Nuclear Science</i> , <b>2014</b> , 61, 2979-2984	1.7	2
40	Design, Fabrication, and Evaluation of a Distributed Piston Strain-Energy Accumulator. <i>International Journal of Fluid Power</i> , <b>2013</b> , 14, 47-56		6
39	Pneumatic Strain Energy Accumulators for Exhaust Gas Recycling <b>2013</b> ,		1
38	The High Inertance Free Piston Engine Compressor Part II: Design and Experimental Evaluation. <i>Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME</i> , <b>2013</b> , 135,	1.6	2
37	The High Inertance Free Piston Engine Compressor Part I: Dynamic Modeling. <i>Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME</i> , <b>2013</b> , 135,	1.6	3

36	Design and Precision Control of an MR-Compatible Flexible Fluidic Actuator <b>2013</b> ,		6
35	Design of a Stirling Thermocompressor for a Pneumatically Actuated Ankle-Foot Orthosis <b>2013</b> ,		2
34	MR-Compatible Fluid-Powered Medical Devices. <i>Mechanical Engineering</i> , <b>2013</b> , 135, S13-S16	0.9	2
33	Experimental Research Platform for Structural Health Monitoring. <i>Smart Sensors, Measurement and Instrumentation</i> , <b>2013</b> , 43-68	0.3	0
32	Self-sustaining Wireless Acoustic Emission Sensor System for Bridge Monitoring. <i>Lecture Notes in Electrical Engineering</i> , <b>2011</b> , 15-39	0.2	3
31	A Control Approach for Broadening the Operating Frequency Range of a Bridge Vibration Energy Harvester <b>2011</b> ,		3
30	Modeling and Validation of Free-Piston Stirling Engines Using Impedance Controlled Hardware-in-the-Loop <b>2011</b> ,		8
29	Precision Position Tracking of MR-Compatible Pneumatic Piston-Cylinder Using Sliding Mode Control <b>2011</b> ,		2
28	Accurate Sub-Millimeter Servo-Pneumatic Tracking using Model Reference Adaptive Control (MRAC). <i>International Journal of Fluid Power</i> , <b>2010</b> , 11, 43-55		4
27	A Lumped-Parameter Dynamic Model of a Thermal Regenerator for Free-Piston Stirling Engines <b>2009</b> ,		3
26	Design and Validation of a High Energy Density Elastic Accumulator Using Polyurethane <b>2009</b> ,		9
25	A Globally Stable, Load-Independent Pressure Observer for the Servo Control of Pneumatic Actuators. <i>IEEE/ASME Transactions on Mechatronics</i> , <b>2009</b> , 14, 295-306	5.5	60
24	Passivity-Based Impact and Force Control of a Pneumatic Actuator. <i>Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME</i> , <b>2008</b> , 130,	1.6	10
23	An Energetic Control Methodology for Exploiting the Passive Dynamics of Pneumatically Actuated Hopping. <i>Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME</i> , <b>2008</b> , 130,	1.6	2
22	Dynamic Modeling and Design of a Bulk-Loaded Liquid Monopropellant Powered Rifle. <i>Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME</i> , <b>2008</b> , 130,	1.6	6
21	Control-based design of free-piston stirling engines <b>2008</b> ,		19
20	A Free Piston Compressor as a Pneumatic Mobile Robot Power Supply: Design, Characterization and Experimental Operation. <i>International Journal of Fluid Power</i> , <b>2007</b> , 8, 17-28		4
19	Design and Analysis of a Resonating Free Liquid-Piston Engine Compressor <b>2007</b> , 239		3

18	Dynamic Modeling of a Monopropellant-Based Chemofluidic Actuation System. <i>Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME</i> , <b>2007</b> , 129, 435-445	1.6	3
17	Nonlinear Model-Based Control of Pulse Width Modulated Pneumatic Servo Systems. <i>Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME</i> , <b>2006</b> , 128, 663-669	1.6	54
16	A Unified Force Controller for a Proportional-Injector Direct-Injection Monopropellant-Powered Actuator. <i>Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME</i> , <b>2006</b> , 128, 159-164	1.6	16
15	Dynamic Constraint-Based Energy-Saving Control of Pneumatic Servo Systems. <i>Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME</i> , <b>2006</b> , 128, 655-662	1.6	23
14	Predictive Control for Time-Delayed Switching Control Systems. <i>Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME</i> , <b>2006</b> , 128, 999-1004	1.6	1
13	Real-time Dynamic Path Planning for DubinsUNonholonomic Robot <b>2006</b> ,		6
12	Experimental Operation and Characterization of a Free Piston Compressor <b>2005</b> , 175		
11	The Horsepower Reserve Formulation of Driveability for a Vehicle Fitted With a Continuously Variable Transmission. <i>Vehicle System Dynamics</i> , <b>2004</b> , 41, 157-180	2.8	8
10	On the Observability of Pressure in a Pneumatic Servo Actuator. <i>Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME</i> , <b>2004</b> , 126, 921-924	1.6	19
9	Dynamic Characteristics of a Free Piston Compressor <b>2004</b> , 47		2
8	A Compressible Fluid Power Dynamic Model of a Liquid Propellant Powered Rifle <b>2004</b> ,		2
7	A Multi-Objective Sliding Mode Approach for the Energy Saving Control of Pneumatic Servo Systems <b>2003</b> , 133		5
6	Control Design for Relative Stability in a PWM-Controlled Pneumatic System. <i>Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME</i> , <b>2003</b> , 125, 504-508	1.6	21
5	Design and energetic characterization of a liquid-propellant-powered actuator for self-powered robots. <i>IEEE/ASME Transactions on Mechatronics</i> , <b>2003</b> , 8, 254-262	5.5	74
4	Predictive Pressure Control of a Monopropellant Powered Actuator <b>2003</b> ,		2
3	The Limited Coupling Approximation with Application to CMAC Networks. <i>International Journal of Smart Engineering System Design</i> , <b>2002</b> , 4, 195-204		
2	The Design and Modeling of a Liquid-Propellant-Powered Actuator for Energetically Autonomous Robots <b>2002</b> ,		7
1	A Control Design Method for Switching Systems With Application to Pneumatic Servo Systems <b>2002</b> ,		5

