Yuen K Yong

List of Publications by Year
in descending order

107 papers	3,262 citations	172386 29 h-index	155592 55 g-index
108 all docs	108 docs citations	108 times ranked	1468 citing authors

#	Article	IF	Citations
1	Experimental analysis of tip vibrations at higher eigenmodes of QPlus sensors for atomic force microscopy. Nanotechnology, 2022, 33, 185503.	1.3	4
2	Nonlinear Estimation and Control of Bending Soft Pneumatic Actuators Using Feedback Linearization and UKF. IEEE/ASME Transactions on Mechatronics, 2022, 27, 1919-1927.	3.7	10
3	Model-Based Nonlinear Feedback Controllers for Pressure Control of Soft Pneumatic Actuators Using On/Off Valves. Frontiers in Robotics and AI, 2022, 9, 818187.	2.0	3
4	Simultaneous tip force and displacement sensing for AFM cantilevers with on-chip actuation: Design and characterization for off-resonance tapping mode. Sensors and Actuators A: Physical, 2022, 338, 113496.	2.0	1
5	High performance raster scanning of atomic force microscopy using Model-free Repetitive Control. Mechanical Systems and Signal Processing, 2022, 173, 109027.	4.4	3
6	Soft Pneumatic Actuators: A Review of Design, Fabrication, Modeling, Sensing, Control and Applications. IEEE Access, 2022, 10, 59442-59485.	2.6	72
7	Finite Element Modeling of Soft Fluidic Actuators: Overview and Recent Developments. Advanced Intelligent Systems, 2021, 3, 2000187.	3.3	130
8	Active atomic force microscope cantilevers with integrated device layer piezoresistive sensors. Sensors and Actuators A: Physical, 2021, 319, 112519.	2.0	7
9	Serial-kinematic monolithic nanopositioner with in-plane bender actuators. Mechatronics, 2021, 75, 102541.	2.0	6
10	Five-axis bimorph monolithic nanopositioning stage: Design, modeling, and characterization. Sensors and Actuators A: Physical, 2021, 332, 113125.	2.0	3
11	Design and Control of Pneumatic Systems for Soft Robotics: A Simulation Approach. IEEE Robotics and Automation Letters, 2021, 6, 5800-5807.	3.3	26
12	3D-printed omnidirectional soft pneumatic actuators: Design, modeling and characterization. Sensors and Actuators A: Physical, 2021, 332, 113199.	2.0	28
13	A Control and Drive System for Pneumatic Soft Robots: PneuSoRD. , 2021, , .		7
14	Adaptive Scan for Atomic Force Microscopy Based on Online Optimization: Theory and Experiment. IEEE Transactions on Control Systems Technology, 2020, 28, 869-883.	3.2	8
15	Scan Rate Adaptation for AFM Imaging Based on Performance Metric Optimization. IEEE/ASME Transactions on Mechatronics, 2020, 25, 418-428.	3.7	3
16	Modelling and Simulation of Pneumatic Sources for Soft Robotic Applications. , 2020, , .		7
17	Guest Editorial: Focused Section on Nano/Micromotion System: Design, Sensing, and Control. IEEE/ASME Transactions on Mechatronics, 2020, 25, 487-490.	3.7	0
18	Amplitude noise spectrum of a lock-in amplifier: Application to microcantilever noise measurements. Sensors and Actuators A: Physical, 2020, 312, 112092.	2.0	5

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19	Electrode Configurations for Piezoelectric Tube Actuators With Improved Scan Range and Reduced Cross-Coupling. IEEE/ASME Transactions on Mechatronics, 2020, 25, 1479-1486.	3.7	13
20	AFM Cantilever Design for Multimode <i>Q</i> Control: Arbitrary Placement of Higher Order Modes. IEEE/ASME Transactions on Mechatronics, 2020, 25, 1389-1397.	3.7	6
21	Sensing and Decentralized Control of a Five-Axis Monolithic Nanopositioning Stage. IFAC-PapersOnLine, 2020, 53, 9087-9092.	0.5	1
22	Integrated force and displacement sensing in active microcantilevers for off-resonance tapping mode atomic force microscopy. , 2020, , .		0
23	Design and Analysis of Low-Distortion Demodulators for Modulated Sensors. IEEE/ASME Transactions on Mechatronics, 2019, 24, 1861-1870.	3.7	3
24	Capacitive Instrumentation and Sensor Fusion for High-Bandwidth Nanopositioning. , 2019, 3, 1-3.		5
25	An optimization framework for the design of piezoelectric AFM cantilevers. Precision Engineering, 2019, 60, 130-142.	1.8	6
26	Experimental Characterisation of Hydraulic Fiber-Reinforced Soft Actuators for Worm-Like Robots. , 2019, , .		5
27	Multivariable Model-less Feedforward Control of a Monolithic Nanopositioning Stage with FIR Filter Inversion. , 2019, , .		8
28	Image-Guided Locomotion of a Pneumatic-Driven Peristaltic Soft Robot. , 2019, , .		13
29	Model-based Q Factor Control for Photothermally Excited Microcantilevers. , 2019, , .		1
30	A Five-Axis Monolithic Nanopositioning Stage Constructed from a Bimorph Piezoelectric Sheet. , 2019, , .		6
31	Multimodal atomic force microscopy with optimized higher eigenmode sensitivity using on-chip piezoelectric actuation and sensing. Nanotechnology, 2019, 30, 085503.	1.3	40
32	Monolithic Piezoelectric Insect With Resonance Walking. IEEE/ASME Transactions on Mechatronics, 2018, 23, 524-530.	3.7	32
33	A comparison of scanning methods and the vertical control implications for scanning probe microscopy. Asian Journal of Control, 2018, 20, 1352-1366.	1.9	26
34	A Novel State Transformation Approach to Tracking of Piecewise Linear Trajectories. IEEE Transactions on Control Systems Technology, 2018, 26, 128-138.	3.2	7
35	Arbitrary Placement of AFM Cantilever Higher Eigenmodes Using Structural Optimization. , 2018, , .		1
36	A Monolithic Serial-Kinematic Nanopositioner with Integrated Sensors and Actuators. , 2018, , .		5

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37	Design of Hybrid Piezoelectric/Piezoresistive Cantilevers for Dynamic-mode Atomic Force Microscopy. , 2018, , .		6
38	Piezoelectric Bimorph Actuator With Integrated Strain Sensing Electrodes. IEEE Sensors Journal, 2018, 18, 5812-5817.	2.4	10
39	Combining Spiral Scanning and Internal Model Control for Sequential AFM Imaging at Video Rate. IEEE/ASME Transactions on Mechatronics, 2017, 22, 371-380.	3.7	55
40	Switched self-sensing actuator for a MEMS nanopositioner. , 2017, , .		1
41	Design and characterisation of cantilevers for multiâ€frequency atomic force microscopy. Micro and Nano Letters, 2017, 12, 315-320.	0.6	6
42	Note: An improved low-frequency correction technique for piezoelectric force sensors in high-speed nanopositioning systems. Review of Scientific Instruments, 2017, 88, 046105.	0.6	3
43	An Ultrathin Monolithic XY Nanopositioning Stage Constructed From a Single Sheet of Piezoelectric Material. IEEE/ASME Transactions on Mechatronics, 2017, 22, 2611-2618.	3.7	50
44	Design and analysis of piezoelectric cantilevers with enhanced higher eigenmodes for atomic force microscopy. , 2017, , .		1
45	Note: Guaranteed collocated multimode control of an atomic force microscope cantilever using on-chip piezoelectric actuation and sensing. Review of Scientific Instruments, 2017, 88, 086109.	0.6	17
46	Miniature Resonant Ambulatory Robot. IEEE Robotics and Automation Letters, 2017, 2, 337-343.	3.3	61
47	Tracking Control of a Monolithic Piezoelectric Nanopositioning Stage using an Integrated Sensor.. IFAC-PapersOnLine, 2017, 50, 10913-10917.	0.5	7
48	Piezoelectric bimorph actuator with integrated strain sensing electrodes. , 2017, , .		2
49	Multimodal cantilevers with novel piezoelectric layer topology for sensitivity enhancement. Beilstein Journal of Nanotechnology, 2017, 8, 358-371.	1.5	15
50	Preloading Piezoelectric Stack Actuators in High-Speed Nanopositioning Systems. Frontiers in Mechanical Engineering, 2016, 2, .	0.8	15
51	High speed single- and dual-stage vertical positioners. Review of Scientific Instruments, 2016, 87, 085104.	0.6	24
52	Design and characterization of a miniature monolithic piezoelectric hexapod robot. , 2016, , .		8
53	Design, modeling, and characterization of an XY nanopositioning stage constructed from a single sheet of piezoelectric material. , 2016, , .		5
54	A review of scanning methods and control implications for scanning probe microscopy. , 2016, , .		7

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55	High-speed vertical positioning stage with integrated dual-sensor arrangement. Sensors and Actuators A: Physical, 2016, 248, 184-192.	2.0	30
56	A new preload mechanism for a high-speed piezoelectric stack nanopositioner. Mechatronics, 2016, 36, 159-166.	2.0	23
57	Mechanical Design of High-Speed Nanopositioning Systems. , 2016, , 61-121.		8
58	Control of vertical axis of a video-speed AFM nanopositioner. , 2015, , .		0
59	Design of a two degree of freedom resonant miniature robotic leg. , 2015, , .		7
60	Collocated Z-Axis Control of a High-Speed Nanopositioner for Video-Rate Atomic Force Microscopy. IEEE Nanotechnology Magazine, 2015, 14, 338-345.	1.1	32
61	Design and control of a MEMS nanopositioner with bulk piezoresistive sensors. , 2015, , .		0
62	Piezoelectric Actuators With Integrated High-Voltage Power Electronics. IEEE/ASME Transactions on Mechatronics, 2015, 20, 611-617.	3.7	15
63	A serial-kinematic nanopositioner for high-speed atomic force microscopy. Review of Scientific Instruments, 2014, 85, 105104.	0.6	37
64	Improvement of Transient Response in Signal Transformation Approach by Proper Compensator Initialization. IEEE Transactions on Control Systems Technology, 2014, 22, 729-736.	3.2	9
65	A Feedback Controlled MEMS Nanopositioner for On-Chip High-Speed AFM. Journal of Microelectromechanical Systems, 2014, 23, 610-619.	1.7	51
66	Control of a piezoelectrically actuated high-speed serial-kinematic AFM nanopositioner. Smart Materials and Structures, 2014, 23, 025030.	1.8	35
67	Video-Rate Lissajous-Scan Atomic Force Microscopy. IEEE Nanotechnology Magazine, 2014, 13, 85-93.	1.1	57
68	Design and characterisation of a serial-kinematic nanopositioner for high-speed AFM. , 2014, , .		3
69	Diagonal control design for atomic force microscope piezoelectric tube nanopositioners. Review of Scientific Instruments, 2013, 84, 023705.	0.6	7
70	Design of an Inertially Counterbalanced Z -Nanopositioner for High-Speed Atomic Force Microscopy. IEEE Nanotechnology Magazine, 2013, 12, 137-145.	1.1	54
71	Control of a high-speed nanopositioner for Lissajous-scan video-rate AFM. , 2013, , .		4
72	Thermal analysis of piezoelectric benders with laminated power electronics. , 2013, , .		3

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73	Design, Modeling, and FPAA-Based Control of a High-Speed Atomic Force Microscope Nanopositioner. IEEE/ASME Transactions on Mechatronics, 2013, 18, 1060-1071.	3.7	120
74	A Novel Piezoelectric Strain Sensor for Simultaneous Damping and Tracking Control of a High-Speed Nanopositioner. IEEE/ASME Transactions on Mechatronics, 2013, 18, 1113-1121.	3.7	85
75	Nanopositioner design using tapered flexures: A parametric study. , 2013, , .		3
76	Control of a MEMS Nanopositioner for Atomic Force Microscopy*. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2013, 46, 375-382.	0.4	2
77	Design and control of a novel non-raster scan pattern for fast scanning probe microscopy. , 2012, , .		8
78	Analog implementation of a damping and tracking controller for a high-speed X-Y nanopositioner. , 2012, , .		2
79	A Z-scanner design for high-speed scanning probe microscopy. , 2012, , .		1
80	Tracking of Triangular References Using Signal Transformation for Control of a Novel AFM Scanner Stage. IEEE Transactions on Control Systems Technology, 2012, 20, 453-464.	3.2	48
81	Invited Review Article: High-speed flexure-guided nanopositioning: Mechanical design and control issues. Review of Scientific Instruments, 2012, 83, 121101.	0.6	399
82	High-speed Lissajous-scan atomic force microscopy: Scan pattern planning and control design issues. Review of Scientific Instruments, 2012, 83, 063701.	0.6	128
83	Design of a compact serial-kinematic scanner for high-speed atomic force microscopy: an analytical approach. Micro and Nano Letters, 2012, 7, 309.	0.6	50
84	A novel serial-kinematic AFM scanner: Design and characterization. , 2011, , .		5
85	High-Speed, Ultra-High-Precision Nanopositioning: A Signal Transformation Approach. Lecture Notes in Control and Information Sciences, 2011, , 47-65.	0.6	0
86	Multivariable Control Designs for Piezoelectric tubes. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 2030-2035.	0.4	5
87	Analog control of a high-speed atomic force microscope scanner. , 2011, , .		7
88	Tracking Control of a Novel AFM Scanner using Signal Transformation Method. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2010, 43, 84-89.	0.4	3
89	High-speed cycloid-scan atomic force microscopy. Nanotechnology, 2010, 21, 365503.	1.3	121
90	A compact XYZ scanner for fast atomic force microscopy in constant force contact mode. , 2010, , .		12

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91	Atomic force microscopy with a 12-electrode piezoelectric tube scanner. Review of Scientific Instruments, 2010, 81, 033701.	0.6	36
92	A 12-electrode piezoelectric tube scanner for fast atomic force microscopy. , 2010, , .		4
93	Reducing Cross-Coupling in a Compliant XY Nanopositioner for Fast and Accurate Raster Scanning. IEEE Transactions on Control Systems Technology, 2010, 18, 1172-1179.	3.2	112
94	Kinetostatic modeling of 3-RRR compliant micro-motion stages with flexure hinges. Mechanism and Machine Theory, 2009, 44, 1156-1175.	2.7	111
95	A new piezoelectric tube scanner for simultaneous sensing and actuation. , 2009, , .		6
96	Design, Identification, and Control of a Flexure-Based <i>XY </i> Stage for Fast Nanoscale Positioning. IEEE Nanotechnology Magazine, 2009, 8, 46-54.	1.1	316
97	Vibration control of a novel tube scanner using piezoelectric strain-induced voltage. , 2009, , .		3
98	Comparison of circular flexure hinge design equations and the derivation of empirical stiffness formulations. , 2009, , .		7
99	Review of circular flexure hinge design equations and derivation of empirical formulations. Precision Engineering, 2008, 32, 63-70.	1.8	301
100	The effect of the accuracies of flexure hinge equations on the output compliances of planar micro-motion stages. Mechanism and Machine Theory, 2008, 43, 347-363.	2.7	52
101	Design, analysis and control of a fast nanopositioning stage. , 2008, , .		4
102	Simultaneous sensing and actuation with a piezoelectric tube scanner. Review of Scientific Instruments, 2008, 79, 073702.	0.6	32
103	A simple and efficient dynamic modeling method for compliant micropositioning mechanisms using flexure hinges. , 2004, , .		11
104	Loop closure theory in deriving linear and simple kinematic model for a 3-DOF parallel micromanipulator. , 2004, 5276, 57.		13
105	A threeâ€DOF compliant micromotion stage with flexure hinges. Industrial Robot, 2004, 31, 355-361.	1.2	74
106	Position control of a 3 DOF compliant micro-motion stage. , 0, , .		8
107	Workspace investigation of a 3 DOF compliant micro-motion stage. , 0, , .		2