Yuen K Yong

List of Publications by Year
in descending order

107	3,262	172386	155592
papers	citations	29 h-index	55 g-index

108	108	108	1468
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Invited Review Article: High-speed flexure-guided nanopositioning: Mechanical design and control issues. Review of Scientific Instruments, 2012, 83, 121101.	0.6	399
2	Design, Identification, and Control of a Flexure-Based XY Stage for Fast Nanoscale Positioning. IEEE Nanotechnology Magazine, 2009, 8, 46-54.	1.1	316
3	Review of circular flexure hinge design equations and derivation of empirical formulations. Precision Engineering, 2008, 32, 63-70.	1.8	301
4	Finite Element Modeling of Soft Fluidic Actuators: Overview and Recent Developments. Advanced Intelligent Systems, 2021, 3, 2000187.	3.3	130
5	High-speed Lissajous-scan atomic force microscopy: Scan pattern planning and control design issues. Review of Scientific Instruments, 2012, 83, 063701.	0.6	128
6	High-speed cycloid-scan atomic force microscopy. Nanotechnology, 2010, 21, 365503.	1.3	121
7	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
8	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
9	Kinetostatic modeling of 3-RRR compliant micro-motion stages with flexure hinges. Mechanism and Machine Theory, 2009, 44, 1156-1175.	2.7	111
10	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
11	A threeâ€ÐOF compliant micromotion stage with flexure hinges. Industrial Robot, 2004, 31, 355-361.	1.2	74
12	Soft Pneumatic Actuators: A Review of Design, Fabrication, Modeling, Sensing, Control and Applications. IEEE Access, 2022, 10, 59442-59485.	2.6	72
13	Miniature Resonant Ambulatory Robot. IEEE Robotics and Automation Letters, 2017, 2, 337-343.	3.3	61
14	Video-Rate Lissajous-Scan Atomic Force Microscopy. IEEE Nanotechnology Magazine, 2014, 13, 85-93.	1.1	57
15	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
16	Design of an Inertially Counterbalanced Z -Nanopositioner for High-Speed Atomic Force Microscopy. IEEE Nanotechnology Magazine, 2013, 12, 137-145.	1.1	54
17	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
18	A Feedback Controlled MEMS Nanopositioner for On-Chip High-Speed AFM. Journal of Microelectromechanical Systems, 2014, 23, 610-619.	1.7	51

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19	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
20	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
21	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
22	Multimodal atomic force microscopy with optimized higher eigenmode sensitivity using on-chip piezoelectric actuation and sensing. Nanotechnology, 2019, 30, 085503.	1.3	40
23	A serial-kinematic nanopositioner for high-speed atomic force microscopy. Review of Scientific Instruments, 2014, 85, 105104.	0.6	37
24	Atomic force microscopy with a 12-electrode piezoelectric tube scanner. Review of Scientific Instruments, 2010, 81, 033701.	0.6	36
25	Control of a piezoelectrically actuated high-speed serial-kinematic AFM nanopositioner. Smart Materials and Structures, 2014, 23, 025030.	1.8	35
26	Simultaneous sensing and actuation with a piezoelectric tube scanner. Review of Scientific Instruments, 2008, 79, 073702.	0.6	32
27	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
28	Monolithic Piezoelectric Insect With Resonance Walking. IEEE/ASME Transactions on Mechatronics, 2018, 23, 524-530.	3.7	32
29	High-speed vertical positioning stage with integrated dual-sensor arrangement. Sensors and Actuators A: Physical, 2016, 248, 184-192.	2.0	30
30	3D-printed omnidirectional soft pneumatic actuators: Design, modeling and characterization. Sensors and Actuators A: Physical, 2021, 332, 113199.	2.0	28
31	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
32	Design and Control of Pneumatic Systems for Soft Robotics: A Simulation Approach. IEEE Robotics and Automation Letters, 2021, 6, 5800-5807.	3.3	26
33	High speed single- and dual-stage vertical positioners. Review of Scientific Instruments, 2016, 87, 085104.	0.6	24
34	A new preload mechanism for a high-speed piezoelectric stack nanopositioner. Mechatronics, 2016, 36, 159-166.	2.0	23
35	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
36	Piezoelectric Actuators With Integrated High-Voltage Power Electronics. IEEE/ASME Transactions on Mechatronics, 2015, 20, 611-617.	3.7	15

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37	Preloading Piezoelectric Stack Actuators in High-Speed Nanopositioning Systems. Frontiers in Mechanical Engineering, 2016, 2, .	0.8	15
38	Multimodal cantilevers with novel piezoelectric layer topology for sensitivity enhancement. Beilstein Journal of Nanotechnology, 2017, 8, 358-371.	1.5	15
39	Loop closure theory in deriving linear and simple kinematic model for a 3-DOF parallel micromanipulator. , 2004, 5276, 57.		13
40	Image-Guided Locomotion of a Pneumatic-Driven Peristaltic Soft Robot. , 2019, , .		13
41	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
42	A compact XYZ scanner for fast atomic force microscopy in constant force contact mode. , 2010, , .		12
43	A simple and efficient dynamic modeling method for compliant micropositioning mechanisms using flexure hinges. , 2004, , .		11
44	Piezoelectric Bimorph Actuator With Integrated Strain Sensing Electrodes. IEEE Sensors Journal, 2018, 18, 5812-5817.	2.4	10
45	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
46	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
47	Position control of a 3 DOF compliant micro-motion stage. , 0, , .		8
48	Design and control of a novel non-raster scan pattern for fast scanning probe microscopy. , 2012, , .		8
49	Design and characterization of a miniature monolithic piezoelectric hexapod robot. , 2016, , .		8
50	Mechanical Design of High-Speed Nanopositioning Systems. , 2016, , 61-121.		8
51	Multivariable Model-less Feedforward Control of a Monolithic Nanopositioning Stage with FIR Filter Inversion. , 2019, , .		8
52	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
53	Comparison of circular flexure hinge design equations and the derivation of empirical stiffness formulations. , 2009, , .		7
54	Analog control of a high-speed atomic force microscope scanner. , 2011, , .		7

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55	Diagonal control design for atomic force microscope piezoelectric tube nanopositioners. Review of Scientific Instruments, 2013, 84, 023705.	0.6	7
56	Design of a two degree of freedom resonant miniature robotic leg. , 2015, , .		7
57	A review of scanning methods and control implications for scanning probe microscopy. , 2016, , .		7
58	Tracking Control of a Monolithic Piezoelectric Nanopositioning Stage using an Integrated Sensor.. IFAC-PapersOnLine, 2017, 50, 10913-10917.	0.5	7
59	A Novel State Transformation Approach to Tracking of Piecewise Linear Trajectories. IEEE Transactions on Control Systems Technology, 2018, 26, 128-138.	3.2	7
60	Modelling and Simulation of Pneumatic Sources for Soft Robotic Applications. , 2020, , .		7
61	Active atomic force microscope cantilevers with integrated device layer piezoresistive sensors. Sensors and Actuators A: Physical, 2021, 319, 112519.	2.0	7
62	A Control and Drive System for Pneumatic Soft Robots: PneuSoRD. , 2021, , .		7
63	A new piezoelectric tube scanner for simultaneous sensing and actuation. , 2009, , .		6
64	Design and characterisation of cantilevers for multiâ€frequency atomic force microscopy. Micro and Nano Letters, 2017, 12, 315-320.	0.6	6
65	Design of Hybrid Piezoelectric/Piezoresistive Cantilevers for Dynamic-mode Atomic Force Microscopy. , 2018, , .		6
66	An optimization framework for the design of piezoelectric AFM cantilevers. Precision Engineering, 2019, 60, 130-142.	1.8	6
67	A Five-Axis Monolithic Nanopositioning Stage Constructed from a Bimorph Piezoelectric Sheet. , 2019, , .		6
68	AFM Cantilever Design for Multimode Q Control: Arbitrary Placement of Higher Order Modes. IEEE/ASME Transactions on Mechatronics, 2020, 25, 1389-1397.	3.7	6
69	Serial-kinematic monolithic nanopositioner with in-plane bender actuators. Mechatronics, 2021, 75, 102541.	2.0	6
70	A novel serial-kinematic AFM scanner: Design and characterization. , 2011, , .		5
71	Multivariable Control Designs for Piezoelectric tubes. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 2030-2035.	0.4	5
72	Design, modeling, and characterization of an XY nanopositioning stage constructed from a single sheet of piezoelectric material. , 2016, , .		5

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73	A Monolithic Serial-Kinematic Nanopositioner with Integrated Sensors and Actuators. , 2018, , .		5
74	Capacitive Instrumentation and Sensor Fusion for High-Bandwidth Nanopositioning. , 2019, 3, 1-3.		5
75	Experimental Characterisation of Hydraulic Fiber-Reinforced Soft Actuators for Worm-Like Robots. , 2019, , .		5
76	Amplitude noise spectrum of a lock-in amplifier: Application to microcantilever noise measurements. Sensors and Actuators A: Physical, 2020, 312, 112092.	2.0	5
77	Design, analysis and control of a fast nanopositioning stage. , 2008, , .		4
78	A 12-electrode piezoelectric tube scanner for fast atomic force microscopy. , 2010, , .		4
79	Control of a high-speed nanopositioner for Lissajous-scan video-rate AFM. , 2013, , .		4
80	Experimental analysis of tip vibrations at higher eigenmodes of QPlus sensors for atomic force microscopy. Nanotechnology, 2022, 33, 185503.	1.3	4
81	Vibration control of a novel tube scanner using piezoelectric strain-induced voltage. , 2009, , .		3
82	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
83	Thermal analysis of piezoelectric benders with laminated power electronics. , 2013, , .		3
84	Nanopositioner design using tapered flexures: A parametric study. , 2013, , .		3
85	Design and characterisation of a serial-kinematic nanopositioner for high-speed AFM. , 2014, , .		3
86	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
87	Design and Analysis of Low-Distortion Demodulators for Modulated Sensors. IEEE/ASME Transactions on Mechatronics, 2019, 24, 1861-1870.	3.7	3
88	Scan Rate Adaptation for AFM Imaging Based on Performance Metric Optimization. IEEE/ASME Transactions on Mechatronics, 2020, 25, 418-428.	3.7	3
89	Five-axis bimorph monolithic nanopositioning stage: Design, modeling, and characterization. Sensors and Actuators A: Physical, 2021, 332, 113125.	2.0	3
90	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

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91	High performance raster scanning of atomic force microscopy using Model-free Repetitive Control. Mechanical Systems and Signal Processing, 2022, 173, 109027.	4.4	3
92	Workspace investigation of a 3 DOF compliant micro-motion stage. , 0, , .		2
93	Analog implementation of a damping and tracking controller for a high-speed X-Y nanopositioner. , 2012, , .		2
94	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
95	Piezoelectric bimorph actuator with integrated strain sensing electrodes. , 2017, , .		2
96	A Z-scanner design for high-speed scanning probe microscopy. , 2012, , .		1
97	Switched self-sensing actuator for a MEMS nanopositioner. , 2017, , .		1
98	Design and analysis of piezoelectric cantilevers with enhanced higher eigenmodes for atomic force microscopy. , 2017, , .		1
99	Arbitrary Placement of AFM Cantilever Higher Eigenmodes Using Structural Optimization. , 2018, , .		1
100	Model-based Q Factor Control for Photothermally Excited Microcantilevers. , 2019, , .		1
101	Sensing and Decentralized Control of a Five-Axis Monolithic Nanopositioning Stage. IFAC-PapersOnLine, 2020, 53, 9087-9092.	0.5	1
102	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
103	High-Speed, Ultra-High-Precision Nanopositioning: A Signal Transformation Approach. Lecture Notes in Control and Information Sciences, 2011, , 47-65.	0.6	0
104	Control of vertical axis of a video-speed AFM nanopositioner. , 2015, , .		0
105	Design and control of a MEMS nanopositioner with bulk piezoresistive sensors. , 2015, , .		0
106	Guest Editorial: Focused Section on Nano/Micromotion System: Design, Sensing, and Control. IEEE/ASME Transactions on Mechatronics, 2020, 25, 487-490.	3.7	0
107	Integrated force and displacement sensing in active microcantilevers for off-resonance tapping mode atomic force microscopy. , 2020, , .		0