

# Kam K Leang

## List of Publications by Citations

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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.

101  
papers

3,238  
citations

29  
h-index

56  
g-index

114  
ext. papers

3,835  
ext. citations

2.7  
avg, IF

5.75  
L-index

#	Paper	IF	Citations
101	Invited review article: high-speed flexure-guided nanopositioning: mechanical design and control issues. <i>Review of Scientific Instruments</i> , <b>2012</b> , 83, 121101	1.7	318
100	Feedback-Linearized Inverse Feedforward for Creep, Hysteresis, and Vibration Compensation in AFM Piezoactuators. <i>IEEE Transactions on Control Systems Technology</i> , <b>2007</b> , 15, 927-935	4.8	278
99	A Review of Feedforward Control Approaches in Nanopositioning for High-Speed SPM. <i>Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME</i> , <b>2009</b> , 131,	1.6	251
98	. <i>IEEE/ASME Transactions on Mechatronics</i> , <b>2012</b> , 17, 356-369	5.5	245
97	Feedforward control of piezoactuators in atomic force microscope systems. <i>IEEE Control Systems</i> , <b>2009</b> , 29, 70-82	2.9	185
96	Design of hysteresis-compensating iterative learning control for piezo-positioners: Application to atomic force microscopes. <i>Mechatronics</i> , <b>2006</b> , 16, 141-158	3	127
95	High-speed serial-kinematic SPM scanner: design and drive considerations. <i>Asian Journal of Control</i> , <b>2009</b> , 11, 144-153	1.7	87
94	Integrated strain and force feedback for high-performance control of piezoelectric actuators. <i>Sensors and Actuators A: Physical</i> , <b>2010</b> , 161, 256-265	3.9	86
93	Design, Modeling and Control of Nanopositioning Systems. <i>Advances in Industrial Control</i> , <b>2014</b> ,	0.3	83
92	Bridging the gap between conventional and video-speed scanning probe microscopes. <i>Ultramicroscopy</i> , <b>2010</b> , 110, 1205-14	3.1	82
91	An IPMC-enabled bio-inspired bending/twisting fin for underwater applications. <i>Smart Materials and Structures</i> , <b>2013</b> , 22, 014003	3.4	80
90	Charge drives for scanning probe microscope positioning stages. <i>Ultramicroscopy</i> , <b>2008</b> , 108, 1551-7	3.1	79
89	Fused filament 3D printing of ionic polymer-metal composites (IPMCs). <i>Smart Materials and Structures</i> , <b>2015</b> , 24, 125021	3.4	76
88	Compact ultra-fast vertical nanopositioner for improving scanning probe microscope scan speed. <i>Review of Scientific Instruments</i> , <b>2011</b> , 82, 123703	1.7	72
87	Accounting for hysteresis in repetitive control design: Nanopositioning example. <i>Automatica</i> , <b>2012</b> , 48, 1751-1758	5.7	71
86	Control Issues in High-speed AFM for Biological Applications: Collagen Imaging Example. <i>Asian Journal of Control</i> , <b>2004</b> , 6, 164-178	1.7	68
85	. <i>IEEE Journal of Oceanic Engineering</i> , <b>2014</b> , 39, 540-551	3.3	66

84	Cyclic energy harvesting from pyroelectric materials. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , <b>2011</b> , 58, 10-7	3.2	63
83	Performance of Thin Piezoelectric Materials for Pyroelectric Energy Harvesting. <i>Journal of Intelligent Material Systems and Structures</i> , <b>2010</b> , 21, 243-249	2.3	57
82	Design and Analysis of Discrete-Time Repetitive Control for Scanning Probe Microscopes. <i>Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME</i> , <b>2009</b> , 131,	1.6	57
81	. <i>IEEE/ASME Transactions on Mechatronics</i> , <b>2012</b> , 17, 345-355	5.5	50
80	Nanothorn electrodes for ionic polymer-metal composite artificial muscles. <i>Scientific Reports</i> , <b>2014</b> , 4, 6176	4.9	47
79	. <i>IEEE Transactions on Aerospace and Electronic Systems</i> , <b>2017</b> , 53, 1855-1865	3.7	43
78	A comprehensive review of select smart polymeric and gel actuators for soft mechatronics and robotics applications: fundamentals, freeform fabrication, and motion control. <i>International Journal of Smart and Nano Materials</i> , <b>2017</b> , 8, 144-213	3.6	43
77	Design and Control for High-Speed Nanopositioning: Serial-Kinematic Nanopositioners and Repetitive Control for Nanofabrication. <i>IEEE Control Systems</i> , <b>2013</b> , 33, 86-105	2.9	41
76	A Twistable Ionic Polymer-Metal Composite Artificial Muscle for Marine Applications. <i>Marine Technology Society Journal</i> , <b>2011</b> , 45, 83-98	0.5	34
75	Dual-stage repetitive control with Prandtl-Bhlinkii hysteresis inversion for piezo-based nanopositioning. <i>Mechatronics</i> , <b>2012</b> , 22, 271-281	3	33
74	Emerging Challenges of Microactuators for Nanoscale Positioning, Assembly, and Manipulation. <i>Journal of Manufacturing Science and Engineering, Transactions of the ASME</i> , <b>2010</b> , 132,	3.3	32
73	. <i>IEEE/ASME Transactions on Mechatronics</i> , <b>2008</b> , 13, 700-709	5.5	31
72	Mitigating IPMC back relaxation through feedforward and feedback control of patterned electrodes. <i>Smart Materials and Structures</i> , <b>2012</b> , 21, 085002	3.4	29
71	Frequency-weighted feedforward control for dynamic compensation in ionic polymer-metal composite actuators. <i>Smart Materials and Structures</i> , <b>2009</b> , 18, 125016	3.4	26
70	3D-Printing and Machine Learning Control of Soft Ionic Polymer-Metal Composite Actuators. <i>Scientific Reports</i> , <b>2019</b> , 9, 17482	4.9	24
69	. <i>IEEE Systems Journal</i> , <b>2019</b> , 13, 3524-3535	4.3	22
68	<b>2017</b> ,		21
67	Optimal Output Transitions for Dual-Stage Systems. <i>IEEE Transactions on Control Systems Technology</i> , <b>2008</b> , 16, 869-881	4.8	21

66	. <i>IEEE Transactions on Robotics</i> , <b>2019</b> , 35, 967-986	6.5	19
65	High-speed serial-kinematic AFM scanner: Design and drive considerations <b>2008</b> ,		18
64	In-Ground-Effect Modeling and Nonlinear-Disturbance Observer for Multirotor Unmanned Aerial Vehicle Control. <i>Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME</i> , <b>2019</b> , 141,	1.6	16
63	Repetitive control with Prandtl-Ishlinskii hysteresis inverse for piezo-based nan positioning <b>2009</b> ,		15
62	Fused filament 3D printing of ionic polymer-metal composites for soft robotics <b>2017</b> ,		13
61	Low-order continuous-time robust repetitive control: Application in nan positioning. <i>Mechatronics</i> , <b>2015</b> , 30, 231-243	3	13
60	Design, characterization, and control of a monolithic three-axis high-bandwidth nan positioning stage <b>2010</b> ,		13
59	Evaluation of charge drives for scanning probe microscope positioning stages <b>2008</b> ,		12
58	Range-based control of dual-stage nan positioning systems. <i>Review of Scientific Instruments</i> , <b>2014</b> , 85, 045003	1.7	11
57	A micro spherical rolling and flying robot <b>2015</b> ,		10
56	On-board model-based automatic collision avoidance: application in remotely-piloted unmanned aerial vehicles. <i>Autonomous Robots</i> , <b>2017</b> , 41, 1539-1554	3	9
55	Slender tube-shaped and square rod-shaped IPMC actuators with integrated sensing for soft mechatronics. <i>Meccanica</i> , <b>2015</b> , 50, 2781-2795	2.1	9
54	Soft Endoluminal Robots Propelled by Rotating Magnetic Dipole Fields. <i>IEEE Transactions on Medical Robotics and Bionics</i> , <b>2020</b> , 2, 598-607	3.1	9
53	Dynamic underactuated flying-walking (DUCK) robot <b>2016</b> ,		9
52	Master-slave control with hysteresis inversion for dual-stage nan positioning systems <b>2016</b> ,		8
51	Iterative and Feedback Control for Hysteresis Compensation in SMA. <i>Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME</i> , <b>2009</b> , 131,	1.6	8
50	Open-sector rapid-reactive collision avoidance: Application in aerial robot navigation through outdoor unstructured environments. <i>Robotics and Autonomous Systems</i> , <b>2019</b> , 112, 211-220	3.5	7
49	Nonlinear Vision-Based Observer for Visual Servo Control of an Aerial Robot in Global Positioning System Denied Environments. <i>Journal of Mechanisms and Robotics</i> , <b>2018</b> , 10,	2.2	7

48	Image-Based Estimation, Planning, and Control of a Cable-Suspended Payload for Package Delivery. <i>IEEE Robotics and Automation Letters</i> , <b>2020</b> , 5, 2698-2705	4.2	6
47	Stochastic automatic collision avoidance for tele-operated unmanned aerial vehicles <b>2015</b> ,		6
46	Decentralized Multi-agent information-theoretic control for target estimation and localization: finding gas leaks. <i>International Journal of Robotics Research</i> , <b>2020</b> , 39, 1525-1548	5.7	6
45	. <i>IEEE Transactions on Automation Science and Engineering</i> , <b>2021</b> , 18, 1453-1468	4.9	6
44	Image-based estimation, planning, and control for high-speed flying through multiple openings. <i>International Journal of Robotics Research</i> , <b>2020</b> , 39, 1122-1137	5.7	5
43	. <i>IEEE/ASME Transactions on Mechatronics</i> , <b>2020</b> , 25, 558-569	5.5	5
42	Low-Order Damping and Tracking Control for Scanning Probe Systems. <i>Frontiers in Mechanical Engineering</i> , <b>2015</b> , 1,	2.6	5
41	. <i>IEEE/ASME Transactions on Mechatronics</i> , <b>2021</b> , 26, 1412-1421	5.5	5
40	A 3D-printed 3-DOF tripedal microrobotic platform for unconstrained and omnidirectional sample positioning. <i>International Journal of Intelligent Robotics and Applications</i> , <b>2018</b> , 2, 425-435	1.7	5
39	Analysis and experimental comparison of range-based control for dual-stage nanopositioners. <i>Mechatronics</i> , <b>2020</b> , 69, 102371	3	4
38	Robust damping PI repetitive control for nanopositioning <b>2012</b> ,		4
37	Toward Magneto-Electroactive Endoluminal Soft (MEESo) Robots <b>2019</b> ,		4
36	Adaptive-Repetitive Visual-Servo Control of Low-Flying Aerial Robots via Uncalibrated High-Flying Cameras. <i>Journal of Nonlinear Science</i> , <b>2017</b> , 27, 1235-1256	2.8	3
35	Spatial Filter Design for Dual-Stage Systems <b>2017</b> ,		3
34	Gaussian-Based Kernel for Multi-Agent Aerial Chemical-Plume Mapping <b>2019</b> ,		3
33	Spatial-temporal trajectory redesign for dual-stage nanopositioning systems <b>2017</b> ,		2
32	Mutual Information Control for Target Acquisition: A Method to Localize a Gas/Chemical Plume Source Using a Mobile Sensor <b>2017</b> ,		2
31	Mechanical Design of High-Speed Nanopositioning Systems <b>2016</b> , 61-121		2

30	Design and Analysis of Scanning Probe Microscopy Cantilevers With Microthermal Actuation. <i>Journal of Microelectromechanical Systems</i> , <b>2015</b> , 24, 1768-1781	2.5	2
29	Teaching the Difference Between Stiffness and Damping [Lecture Notes]. <i>IEEE Control Systems</i> , <b>2012</b> , 32, 95-97	2.9	2
28	Sectored Tube-Shaped Ionic Polymer-Metal Composite Actuator With Integrated Sensor <b>2013</b> ,		2
27	Teaching Modules on Modeling and Control of Piezoactuators for System Dynamics, Controls, and Mechatronics Courses. <i>IEEE Transactions on Education</i> , <b>2010</b> , 53, 372-383	2.1	2
26	. <i>Proceedings of the American Control Conference</i> , <b>2007</b> ,	1.2	2
25	Modeling and Analysis of a Soft Endoluminal Inchworm Robot Propelled by a Rotating Magnetic Dipole Field. <i>Journal of Mechanisms and Robotics</i> , 1-13	2.2	2
24	Chapter 11: Precision Feedback and Feedforward Control of Ionic Polymer Metal Composite Actuators. <i>RSC Smart Materials</i> , <b>2015</b> , 354-385	0.6	2
23	Adaptive repetitive visual-servo control of a low-flying unmanned aerial vehicle with an uncalibrated high-flying camera <b>2016</b> ,		2
22	IPMCs as EAPs: How to Start Experimenting with Them <b>2016</b> , 215-233		1
21	Analog Robust Repetitive Control for Nanopositioning Using Bucket Brigade Devices. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , <b>2014</b> , 47, 1126-1133		1
20	Matlab Tricks and Tips [Focus on Education]. <i>IEEE Control Systems</i> , <b>2013</b> , 33, 39-40	2.9	1
19	An Experiment for Teaching Students About Control at the Nanoscale [Focus on Education]. <i>IEEE Control Systems</i> , <b>2012</b> , 32, 66-68	2.9	1
18	Introduction to the themed articles on ionic polymer metal composites. <i>International Journal of Smart and Nano Materials</i> , <b>2012</b> , 3, 183-187	3.6	1
17	High Performance Nanopositioning with Integrated Strain and Force Feedback. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , <b>2010</b> , 43, 117-124		1
16	Ionic polymer metal composite compression sensors with 3D-structured interfaces. <i>Smart Materials and Structures</i> ,	3.4	1
15	Mechanical Design: Flexure-Based Nanopositioners. <i>Advances in Industrial Control</i> , <b>2014</b> , 57-102	0.3	1
14	Hysteresis Modeling and Control. <i>Advances in Industrial Control</i> , <b>2014</b> , 299-316	0.3	1
13	Study of improved pilot performance using automatic collision avoidance for tele-operated unmanned aerial vehicles <b>2016</b> ,		1

12	Short Online Videos to Excite and Engage Students About Control [Focus on Education]. <i>IEEE Control Systems</i> , <b>2012</b> , 32, 70-71	2.9	0
11	Low-Coupling Hybrid Parallel-Serial-Kinematic Nanopositioner with Nonorthogonal Flexure: Nonlinear Design and Control. <i>IEEE/ASME Transactions on Mechatronics</i> , <b>2021</b> , 1-11	5.5	0
10	Tracking Control for Nanopositioning Systems <b>2016</b> , 213-244		0
9	Particle swarm optimization for source localization in realistic complex urban environments. <i>Atmospheric Environment</i> , <b>2021</b> , 262, 118636	5.3	0
8	IPMCs as EAPs: How to Start Experimenting with Them <b>2016</b> , 1-19		
7	Position Sensors for Nanopositioning <b>2016</b> , 245-294		
6	Dual-Stage Repetitive Control for High-Speed Nanopositioning. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , <b>2010</b> , 43, 105-110		
5	Charge Drives. <i>Advances in Industrial Control</i> , <b>2014</b> , 317-336	0.3	
4	Noise in Nanopositioning Systems. <i>Advances in Industrial Control</i> , <b>2014</b> , 337-393	0.3	
3	Feedforward Control. <i>Advances in Industrial Control</i> , <b>2014</b> , 251-273	0.3	
2	Command Shaping. <i>Advances in Industrial Control</i> , <b>2014</b> , 275-298	0.3	
1	Manufacturing for the Masses: A Novel Concept for Consumer 3D Printer Networks in the Context of Crisis Relief. <i>Advanced Intelligent Systems</i> , 2100121	6	