Hui Xie

List of Publications by Year
in descending order

124 papers	3,899 citations	117453 34 h-index	138251 58 g-index
128 all docs	128 docs citations	128 times ranked	3216 citing authors

#	Article	IF	Citations
1	Reconfigurable magnetic microrobot swarm: Multimode transformation, locomotion, and manipulation. Science Robotics, 2019, 4, .	9.9	459
2	Dual-responsive biohybrid neutrobots for active target delivery. Science Robotics, 2021, 6, .	9.9	227
3	Shape-Transformable, Fusible Rodlike Swimming Liquid Metal Nanomachine. ACS Nano, 2018, 12, 10212-10220.	7.3	186
4	Magnetically Actuated Peanut Colloid Motors for Cell Manipulation and Patterning. ACS Nano, 2018, 12, 2539-2545.	7.3	153
5	Reconfigurable multifunctional ferrofluid droplet robots. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 27916-27926.	3.3	138
6	A survey of piezoelectric actuators with long working stroke in recent years: Classifications, principles, connections and distinctions. Mechanical Systems and Signal Processing, 2019, 123, 591-605.	4.4	126
7	Red Blood Cell-Mimicking Micromotor for Active Photodynamic Cancer Therapy. ACS Applied Materials & Interfaces, 2019, 11, 23392-23400.	4.0	126
8	Magnetic biohybrid micromotors with high maneuverability for efficient drug loading and targeted drug delivery. Nanoscale, 2019, 11, 18382-18392.	2.8	86
9	A versatile atomic force microscope for three-dimensional nanomanipulation and nanoassembly. Nanotechnology, 2009, 20, 215301.	1.3	79
10	Development of a Flexible Robotic System for Multiscale Applications of Micro/Nanoscale Manipulation and Assembly. IEEE/ASME Transactions on Mechatronics, 2011, 16, 266-276.	3.7	79
11	Reconfigurable Magnetic Slime Robot: Deformation, Adaptability, and Multifunction. Advanced Functional Materials, 2022, 32, .	7.8	71
12	Ferrofluid Droplets as Liquid Microrobots with Multiple Deformabilities. Advanced Functional Materials, 2020, 30, 2000138.	7.8	69
13	Surface functionalization of TFC FO membranes with zwitterionic polymers: Improvement of antifouling and salt-responsive cleaning properties. Journal of Membrane Science, 2017, 544, 368-377.	4.1	66
14	A novel LncRNA HITT forms a regulatory loop with HIF-1Î± to modulate angiogenesis and tumor growth. Cell Death and Differentiation, 2020, 27, 1431-1446.	5.0	66
15	Three-dimensional automated micromanipulation using a nanotip gripper with multi-feedback. Journal of Micromechanics and Microengineering, 2009, 19, 075009.	1.5	65
16	Arthropodâ€Metamerismâ€Inspired Resonant Piezoelectric Millirobot. Advanced Intelligent Systems, 2021, 3, 2100015.	3.3	64
17	Construction and evaluation of a wavelet-based focus measure for microscopy imaging. Microscopy Research and Technique, 2007, 70, 987-995.	1.2	58
18	High-Efficiency Automated Nanomanipulation With Parallel Imaging/Manipulation Force Microscopy. IEEE Nanotechnology Magazine, 2012, 11, 21-33.	1.1	56

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19	Ultrahigh-Precision Rotational Positioning Under a Microscope: Nanorobotic System, Modeling, Control, and Applications. IEEE Transactions on Robotics, 2018, 34, 497-507.	7.3	56
20	Autonomous Biohybrid Urchinâ€Like Microperforator for Intracellular Payload Delivery. Small, 2020, 16, e1906701.	5.2	55
21	Cooperative recyclable magnetic microsubmarines for oil and microplastics removal from water. Applied Materials Today, 2020, 20, 100682.	2.3	53
22	Enzymeâ€Modulated Anaerobic Encapsulation of Chlorella Cells Allows Switching from O₂ to H₂ Production. Angewandte Chemie - International Edition, 2019, 58, 3992-3995.	7.2	48
23	Selfâ€Propelled Rolledâ€Up Polyelectrolyte Multilayer Microrockets. Advanced Functional Materials, 2018, 28, 1705684.	7.8	46
24	Swarming Microdroplets to a Dexterous Micromanipulator. Advanced Functional Materials, 2021, 31, 2011193.	7.8	46
25	Nanospot welding of carbon nanotubes using near-field enhancement effect of AFM probe irradiated by optical fiber probe laser. RSC Advances, 2015, 5, 56677-56685.	1.7	45
26	Programmable Generation and Motion Control of a Snakelike Magnetic Microrobot Swarm. IEEE/ASME Transactions on Mechatronics, 2019, 24, 902-912.	3.7	45
27	Wavelet-Based Focus Measure and 3-D Surface Reconstruction Method for Microscopy Images. , 2006, , .		44
28	High-Precision Automated Micromanipulation and Adhesive Microbonding With Cantilevered Micropipette Probes in the Dynamic Probing Mode. IEEE/ASME Transactions on Mechatronics, 2018, 23, 1425-1435.	3.7	43
29	Broad modulus range nanomechanical mapping by magnetic-drive soft probes. Nature Communications, 2017, 8, 1944.	5.8	42
30	Automated Noncontact Micromanipulation Using Magnetic Swimming Microrobots. IEEE Nanotechnology Magazine, 2018, 17, 666-669.	1.1	40
31	Magnetic/pH-sensitive double-layer microrobots for drug delivery and sustained release. Applied Materials Today, 2020, 19, 100583.	2.3	39
32	Advances in the atomic force microscopy for critical dimension metrology. Measurement Science and Technology, 2017, 28, 012001.	1.4	37
33	Magnetically Actuated Rolling of Starâ€Shaped Hydrogel Microswimmer. Macromolecular Chemistry and Physics, 2018, 219, 1700540.	1.1	36
34	A vacuum microgripping tool with integrated vibration releasing capability. Review of Scientific Instruments, 2014, 85, 085002.	0.6	35
35	Investigating interfacial contact configuration and behavior of single-walled carbon nanotube-based nanodevice with atomistic simulations. Journal of Nanoparticle Research, 2017, 19, 1.	0.8	35
36	High-Speed AFM Imaging of Nanopositioning Stages Using H$_{infty }$ and Iterative Learning Control. IEEE Transactions on Industrial Electronics, 2020, 67, 2430-2439.	5.2	35

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37	A lncRNA coordinates with Ezh2 to inhibit HIF-1Î± transcription and suppress cancer cell adaption to hypoxia. Oncogene, 2020, 39, 1860-1874.	2.6	35
38	Calibration of lateral force measurements in atomic force microscopy with a piezoresistive force sensor. Review of Scientific Instruments, 2008, 79, 033708.	0.6	34
39	Polybenzoxazole Nanofiber-Reinforced Moisture-Responsive Soft Actuators. Scientific Reports, 2017, 7, 769.	1.6	34
40	New optical near-field nanolithography with optical fiber probe laser irradiating atomic force microscopy probe tip. Integrated Ferroelectrics, 2016, 169, 124-132.	0.3	33
41	Nanofabrication with the thermal AFM metallic tip irradiated by continuous laser. Integrated Ferroelectrics, 2017, 179, 140-147.	0.3	32
42	Interplay of long non-coding RNAs and HIF-1Î±: A new dimension to understanding hypoxia-regulated tumor growth and metastasis. Cancer Letters, 2021, 499, 49-59.	3.2	32
43	Atomistic simulations on the axial nanowelding configuration and contact behavior between Ag nanowire and single-walled carbon nanotubes. Journal of Nanoparticle Research, 2017, 19, 1.	0.8	31
44	Development of Three-Dimensional Atomic Force Microscope for Sidewall Structures Imaging with Controllable Scanning Density. IEEE/ASME Transactions on Mechatronics, 2015, , 1-1.	3.7	29
45	Melt Electrospinning Writing of Magnetic Microrobots. Advanced Science, 2021, 8, 2003177.	5.6	29
46	In Situ Quantification of Living Cell Adhesion Forces: Single Cell Force Spectroscopy with a Nanotweezer. Langmuir, 2014, 30, 2952-2959.	1.6	28
47	Development of a Magnetically Driven Microgripper for PicoNewton Force-Controlled Microscale Manipulation and Characterization. IEEE Transactions on Industrial Electronics, 2020, 67, 2065-2075.	5.2	28
48	In Situ Selfâ€Assembly of Coacervate Microdroplets into Viable Artificial Cell Wall with Heritability. Advanced Functional Materials, 2018, 28, 1705699.	7.8	26
49	Magnetically actuated intelligent hydrogel-based child-parent microrobots for targeted drug delivery. Journal of Materials Chemistry B, 2021, 9, 1030-1039.	2.9	26
50	3-D finite element calculation of electric field enhancement for nanostructures fabrication mechanism on silicon surface with AFM tip induced local anodic oxidation. Integrated Ferroelectrics, 2018, 190, 129-141.	0.3	25
51	Experimental Study on the Creation of Nanodots with Combined-Dynamic Mode â€œDip-Penâ€• Nanolithography. Integrated Ferroelectrics, 2014, 151, 7-13.	0.3	23
52	Large-scale assembly of single-walled carbon nanotubes based on aqueous solution. Integrated Ferroelectrics, 2018, 190, 39-47.	0.3	21
53	Nanorobotic Manipulation System for 360$^{circ }$ Characterization Atomic Force Microscopy. IEEE Transactions on Industrial Electronics, 2020, 67, 2916-2924.	5.2	20
54	Triple-Configurational Magnetic Robot for Targeted Drug Delivery and Sustained Release. ACS Applied Materials & Interfaces, 2021, 13, 45315-45324.	4.0	20

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55	Directly Writing Nanodots on Silicon Surface by Combined-Dynamic Dip-Pen Nanolithography. Key Engineering Materials, 0, 609-610, 191-195.	0.4	19
56	In Situ Gelation-Induced Death of Cancer Cells Based on Proteinosomes. Biomacromolecules, 2017, 18, 2446-2453.	2.6	19
57	Simulation study of near-field enhancement on an Ag nanoparticle dimer system in a laser-induced nanowelding process. Integrated Ferroelectrics, 2018, 191, 72-79.	0.3	19
58	Enhanced Accuracy of Force Application for AFM Nanomanipulation Using Nonlinear Calibration of Optical Levers. IEEE Sensors Journal, 2008, 8, 1478-1485.	2.4	18
59	Multiparametric Kelvin Probe Force Microscopy for the Simultaneous Mapping of Surface Potential and Nanomechanical Properties. Langmuir, 2017, 33, 2725-2733.	1.6	18
60	Atomic force microscope caliper for critical dimension measurements of micro and nanostructures through sidewall scanning. Ultramicroscopy, 2015, 158, 8-16.	0.8	17
61	In situ peeling of one-dimensional nanostructures using a dual-probe nanotweezer. Review of Scientific Instruments, 2010, 81, 035112.	0.6	16
62	The hierarchical structure and mechanical performance of a natural nanocomposite material: The turtle shell. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2017, 520, 97-104.	2.3	15
63	Optimizing the Quality Factor of Quartz Tuning Fork Force Sensor for Atomic Force Microscopy: Impact of Additional Mass and Mass Rebalance. IEEE Sensors Journal, 2017, 17, 2797-2806.	2.4	14
64	A novel linear-rotary piezoelectric positioning stage based on surface's rectangular trajectory driving. Precision Engineering, 2019, 55, 376-380.	1.8	14
65	A Flexible Experimental System for Complex Microassembly under Microscale Force and Vision-Based Control. International Journal of Optomechatronics, 2007, 1, 81-102.	3.3	13
66	Optical lever calibration in atomic force microscope with a mechanical lever. Review of Scientific Instruments, 2008, 79, 096101.	0.6	13
67	Development and experiment evaluation of a compact inchworm piezoelectric actuator using three-jaw type clamping mechanism. Smart Materials and Structures, 2022, 31, 045020.	1.8	13
68	Atomic force microscopy deep trench and sidewall imaging with an optical fiber probe. Review of Scientific Instruments, 2014, 85, 123704.	0.6	12
69	The cube-shaped hematite microrobot for biomedical application. Mechatronics, 2021, 74, 102498.	2.0	12
70	Capillary bridges and capillary forces between two axisymmetric powerâ€“law particles. Particuology, 2016, 27, 122-127.	2.0	11
71	Development of a novel long range piezoelectric motor based on double rectangular trajectories driving. Microsystem Technologies, 2018, 24, 1733-1742.	1.2	11
72	Enzymeâ€Modulated Anaerobic Encapsulation of Chlorella Cells Allows Switching from O 2 to H 2 Production. Angewandte Chemie, 2019, 131, 4032-4035.	1.6	10

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73	Hybrid Vision-Force Control for Automatic Assembly of Miniaturized Gear System. , 0, , .		9
74	Visual servoing with modified Smith predictor for micromanipulation tasks. , 0, , .		9
75	Gentle and fast atomic force microscopy with a piezoelectric scanning probe for nanorobotics applications. Nanotechnology, 2013, 24, 065502.	1.3	9
76	Atomic Force Microscopy Sidewall Imaging with a Quartz Tuning Fork Force Sensor. Sensors, 2018, 18, 100.	2.1	9
77	Torsional Harmonic Kelvin Probe Force Microscopy for High-Sensitivity Mapping of Surface Potential. IEEE Transactions on Industrial Electronics, 2022, 69, 1654-1662.	5.2	8
78	Sidewall Imaging of Microarray-Based Biosensor Using an Orthogonal Cantilever Probe. IEEE Transactions on Instrumentation and Measurement, 2021, 70, 1-8.	2.4	8
79	Image Fusion and 3-D Surface Reconstruction of Microparts Using Complex Valued Wavelet Transforms. , 2006, , .		7
80	In Situ Quantification the Complex Poisson's Ratio of Single Cells Using a Magnetic-Drive Dynamic Atomic Force Microscopy Approach. IEEE Nanotechnology Magazine, 2018, 17, 680-683.	1.1	7
81	Correlation of Surface Morphology and Interfacial Adhesive Behavior between Cellulose Surfaces: Quantitative Measurements in Peak-Force Mode with the Colloidal Probe Technique. Langmuir, 2019, 35, 7312-7321.	1.6	7
82	360Â° multiparametric imaging atomic force microscopy: A method for three-dimensional nanomechanical mapping. Ultramicroscopy, 2019, 196, 83-87.	0.8	7
83	Task-Reconfigurable System for MEMS Assembly. , 0, , .		6
84	Enhanced Sensitivity of Mass Detection Using the First Torsional Mode of Microcantilevers. , 2007, , .		6
85	High-sensitivity mass and position detection of micro-objects adhered to microcantilevers. Journal of Micro-Nano Mechatronics, 2008, 4, 17-25.	1.0	6
86	Analysis of nanoscale mechanical grasping under ambient conditions. Journal of Micromechanics and Microengineering, 2011, 21, 045009.	1.5	6
87	Fast Specimen Boundary Tracking and Local Imaging with Scanning Probe Microscopy. Scanning, 2018, 2018, 1-11.	0.7	6
88	Living Cell Manipulation and In Situ Nanoinjection Based on Frequency Shift Feedback Using Cantilevered Micropipette Probes. IEEE Transactions on Automation Science and Engineering, 2020, 17, 142-150.	3.4	6
89	Probing Multidimensional Mechanical Phenotyping of Intracellular Structures by Viscoelastic Spectroscopy. ACS Applied Materials & Interfaces, 2020, 12, 1913-1923.	4.0	6
90	Onâ€Chip Rotation of Caenorhabditis elegans Using Microfluidic Vortices. Advanced Materials Technologies, 2021, 6, .	3.0	6

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91	3D haptic handling of microspheres. , 2010, , .		5
92	Simultaneously Measuring Force and Displacement: Calibration of Magnetic Torque Actuated Microcantilevers for Nanomechanical Mapping. IEEE Sensors Journal, 2018, 18, 2682-2689.	2.4	4
93	<italic>In Situ</italic> Quantification of the Youngâ€™s Modulus of Nuclei in Multiple Cellular States Using a Modified Fiber Probe Sensor. IEEE Sensors Journal, 2019, 19, 2887-2894.	2.4	4
94	Nanomechanics of AFM Based Nanomanipulation. Springer Tracts in Advanced Robotics, 2011, , 87-143.	0.3	4
95	A nondestructive calibration method for maximizing the range and accuracy of AFM force measurement. Journal of Micromechanics and Microengineering, 2014, 24, 025005.	1.5	3
96	Three-Dimensional Kelvin Probe Force Microscopy. ACS Applied Materials & Interfaces, 2022, 14, 32719-32728.	4.0	3
97	Micromanipulation robot for automatic fiber alignment. , 0, , .		2
98	Achieving three-dimensional automated micromanipulation at the scale of several micrometers with a nanotip gripper. , 2009, , .		2
99	Stiffness analysis and modal analysis of precision parallel manipulator with flexure hinge. , 2012, , .		2
100	Simulations of the Near-Field Enhancement on AFM Tip Irradiated by Annular Laser Beam. IEEE Nanotechnology Magazine, 2019, 18, 979-982.	1.1	2
101	Automated Control of AFM Based Nanomanipulation. Springer Tracts in Advanced Robotics, 2011, , 237-311.	0.3	2
102	Descriptions and Challenges of AFM Based Nanorobotic Systems. Springer Tracts in Advanced Robotics, 2011, , 13-29.	0.3	2
103	A Flexible Microassembly System for Automated Fabrication of MEMS Sensors. , 2006, , .		1
104	Quantification of living cell adhesion forces with a nanorobotic system. , 2013, , .		1
105	Measurement of surface potential and adhesion with Kelvin Probe Force Microscopy. , 2016, , .		1
106	Calibration of atomic force microscope probes using a pneumatic micromanipulation system. , 2017, , .		1
107	Nanoscale Mapping of the Surface Potential: Multifrequency Modulation Open-Loop Kelvin Probe Force Microscopy. IEEE Nanotechnology Magazine, 2018, 17, 670-674.	1.1	1
108	Electrochemical etching of lightweight nanotips for high qualityâ€factor quartz tuning fork force sensor: atomic force microscopy applications. Micro and Nano Letters, 2018, 13, 1136-1140.	0.6	1

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109	Sidewall Imaging of Microstructures with a Tilted Quartz Tuning Fork (QTF) Force Sensor. , 2018, , .		1
110	High-Bandwidth Multiparametric Kelvin Probe Force Microscopy With Polymer Microcantilevers. IEEE Access, 2019, 7, 183906-183913.	2.6	1
111	Instrumentation Issues of an AFM Based Nanorobotic System. Springer Tracts in Advanced Robotics, 2011, , 31-86.	0.3	1
112	Teleoperation Based AFM Manipulation Control. Springer Tracts in Advanced Robotics, 2011, , 145-235.	0.3	1
113	Quantification of the Microrheology of Living Cells Using Multi-Frequency Magnetic Force Modulation Atomic Force Microscopy. IEEE Transactions on Instrumentation and Measurement, 2022, 71, 1-9.	2.4	1
114	Optomechatronic Design of Integrated Systems for Microassembly of MEMS Sensors. , 2006, , .		0
115	Calibration and nonlinearity compensation for force application in AFM based nanomanipulation. , 2008, , .		0
116	Force calibration of a dual-probe nanotweezer using a mechanical lever. , 2012, , .		0
117	Mechanism of force mode dip-pen nanolithography. Journal of Applied Physics, 2014, 115, 174314.	1.1	0
118	Study of adhesion force between cellulose micro-sphere and cellulose membrane. , 2016, , .		0
119	Amplitude calibration of quartz tuning fork (QTF) force sensor with an atomic force microscope. , 2017, , .		0
120	Investigation of HepG2 Cells' Local Extrusion Induced Electric Property Variation via Nanorobotic Manipulation System. , 2018, , .		0
121	Impact of Inter Tine Coupling on the Spring Constant of the Quartz Tuning Fork. , 2019, , .		0
122	Fast Batch Quantification of the Cellulose-Cellulose Adhesion Using a Cantilevered Microgripper. IEEE Sensors Journal, 2019, 19, 4849-4856.	2.4	0
123	Microfluidic Vortices: Onâ€Chip Rotation of Caenorhabditis elegans Using Microfluidic Vortices (Adv. Mater. Technol. 1/2021). Advanced Materials Technologies, 2021, 6, 2170002.	3.0	0
124	Characterization of topography and adhesion of sidewall using an orthogonal cantilever probe. , 2021, , .		0