Xinyu Liu

List of Publications by Year
in descending order

146 papers	5,383 citations	87723 38 h-index	91712 69 g-index
173 all docs	173 docs citations	173 times ranked	5895 citing authors

#	Article	IF	Citations
1	An SEM-Based Nanomanipulation System for Multiphysical Characterization of Single InGaN/GaN Nanowires. IEEE Transactions on Automation Science and Engineering, 2023, 20, 233-243.	3.4	7
2	SPEEDS: A portable serological testing platform for rapid electrochemical detection of SARS-CoV-2 antibodies. Biosensors and Bioelectronics, 2022, 197, 113762.	5.3	33
3	Optical Printing of Conductive Silver on Ultrasmooth Nanocellulose Paper for Flexible Electronics. Advanced Engineering Materials, 2022, 24, .	1.6	8
4	MEMS-Based Platforms for Multi-Physical Characterization of Nanomaterials: A Review. IEEE Sensors Journal, 2022, 22, 1827-1841.	2.4	8
5	A Paper-Based Microfluidic Analytical Device with A Highly Integrated On-Chip Valve For Autonomous ELISA. , 2022, , .		1
6	An Ionic Hydrogel-Based Antifreezing Triboelectric Nanogenerator. ACS Applied Electronic Materials, 2022, 4, 1930-1938.	2.0	21
7	Microrobotic Swarms for Intracellular Measurement with Enhanced Signal-to-Noise Ratio. ACS Nano, 2022, 16, 10824-10839.	7.3	12
8	Automated Robotic Microinjection of the Nematode Worm Caenorhabditis elegans. IEEE Transactions on Automation Science and Engineering, 2021, 18, 850-859.	3.4	14
9	Enhancing the performance of paper-based electrochemical impedance spectroscopy nanobiosensors: An experimental approach. Biosensors and Bioelectronics, 2021, 177, 112672.	5.3	100
10	Onâ€Chip Rotation of <i>Caenorhabditis elegans</i> Using Microfluidic Vortices. Advanced Materials Technologies, 2021, 6, .	3.0	6
11	Force-controlled robotic systems for mechanical stimulation of Drosophila larvae. , 2021, , 363-379.		0
12	Microfluidic devices for immobilization and micromanipulation of single cells and small organisms. , 2021, , 391-412.		0
13	Force-Controlled Mechanical Stimulation and Single-Neuron Fluorescence Imaging of <i>Drosophila</i> Larvae. IEEE Robotics and Automation Letters, 2021, 6, 3736-3743.	3.3	6
14	Toward a living soft microrobot through optogenetic locomotion control of <i>Caenorhabditis elegans</i>. Science Robotics, 2021, 6, .	9.9	33
15	Recent Advances on SEM-Based In Situ Multiphysical Characterization of Nanomaterials. Scanning, 2021, 2021, 1-16.	0.7	4
16	Understanding Carbon Nanotubeâ€Based Ionic Diodes: Design and Mechanism. Small, 2021, 17, e2100383.	5.2	15
17	Dynamic Magnetic Field Generation With High Accuracy Modeling Applied to Magnetic Robots. IEEE Transactions on Magnetics, 2021, 57, 1-10.	1.2	3
18	Photoresponsive Biomimetic Soft Robots Enabled by Nearâ€Infraredâ€Driven and Ultrarobust Sandwichâ€Structured Nanocomposite Films. Advanced Intelligent Systems, 2021, 3, 2100012.	3.3	5

#	Article	IF	Citations
19	An Antiâ€Freezing, Ambientâ€Stable and Highly Stretchable Ionic Skin with Strong Surface Adhesion for Wearable Sensing and Soft Robotics. Advanced Functional Materials, 2021, 31, 2104665.	7.8	140
20	Reconfigurable multi-component micromachines driven by optoelectronic tweezers. Nature Communications, 2021, 12, 5349.	5.8	41
21	Photoresponsive Biomimetic Soft Robots Enabled by Nearâ€Infraredâ€Driven and Ultrarobust Sandwichâ€Structured Nanocomposite Films. Advanced Intelligent Systems, 2021, 3, 2170067.	3.3	1
22	Skin-like hydrogel devices for wearable sensing, soft robotics and beyond. IScience, 2021, 24, 103174.	1.9	103
23	A portable analytical system for rapid on-site determination of total nitrogen in water. Water Research, 2021, 202, 117410.	5.3	12
24	A thread-based wearable sweat nanobiosensor. Biosensors and Bioelectronics, 2021, 188, 113270.	5.3	58
25	A microfluidic field-effect transistor biosensor with rolled-up indium nitride microtubes. Biosensors and Bioelectronics, 2021, 190, 113264.	5.3	20
26	Robotic and microfluidic systems for single cell injection. , 2021, , 241-260.		0
27	Microfluidic Vortices: Onâ€Chip Rotation of <i>Caenorhabditis elegans</i> Using Microfluidic Vortices (Adv. Mater. Technol. 1/2021). Advanced Materials Technologies, 2021, 6, 2170002.	3.0	0
28	A Soft Robotic Gripper with Anti-Freezing Ionic Hydrogel-Based Sensors for Learning-Based Object Recognition. , 2021, , .		7
29	An ambient-stable and stretchable ionic skin with multimodal sensation. Materials Horizons, 2020, 7, 477-488.	6.4	103
30	Robotic Prototyping of Paper-Based Field-Effect Transistors with Rolled-Up Semiconductor Microtubes. IEEE/ASME Transactions on Mechatronics, 2020, , 1-1.	3.7	5
31	Fighting COVID-19: Integrated Micro- and Nanosystems for Viral Infection Diagnostics. Matter, 2020, 3, 628-651.	5.0	77
32	The more and less of electronic-skin sensors. Science, 2020, 370, 910-911.	6.0	66
33	Ionotronics Based on Horizontally Aligned Carbon Nanotubes. Advanced Functional Materials, 2020, 30, 2003177.	7.8	33
34	NanoPADs and nanoFACEs: an optically transparent nanopaper-based device for biomedical applications. Lab on A Chip, 2020, 20, 3322-3333.	3.1	21
35	A Novel Stick-Slip Nanopositioning Stage Integrated with a Flexure Hinge-Based Friction Force Adjusting Structure. Micromachines, 2020, 11, 765.	1.4	2
36	3D-Printed Strain-Gauge Micro Force Sensors. IEEE Sensors Journal, 2020, 20, 6971-6978.	2.4	18

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37	An SEM-Based Nanomanipulation System for Multi-Physical Characterization of Single InGaN/GaN Nanowires. , 2020, , .		1
38	Occluded Pedestrian Detection Based on Depth Vision Significance in Biomimetic Binocular. IEEE Sensors Journal, 2019, 19, 11469-11474.	2.4	5
39	Assembly of Topographical Micropatterns with Optoelectronic Tweezers. Advanced Optical Materials, 2019, 7, 1900669.	3.6	14
40	A paper-based microfluidic platform with shape-memory-polymer-actuated fluid valves for automated multi-step immunoassays. Microsystems and Nanoengineering, 2019, 5, 50.	3.4	49
41	A Nanocelluloseâ€Paperâ€Based SERS Multiwell Plate with High Sensitivity and High Signal Homogeneity. Advanced Materials Interfaces, 2019, 6, 1901346.	1.9	27
42	Experimental comparison of surface chemistries for biomolecule immobilization on paper-based microfluidic devices. Journal of Micromechanics and Microengineering, 2019, 29, 124003.	1.5	10
43	Vision-Based Automated Sorting of C. Elegans on a Microfluidic Device. , 2019, , .		2
44	Nanoparticles at biointerfaces: Antibacterial activity and nanotoxicology. Colloids and Surfaces B: Biointerfaces, 2019, 184, 110550.	2.5	39
45	â€œPlug-n-Playâ€•Sensing with Digital Microfluidics. Analytical Chemistry, 2019, 91, 2506-2515.	3.2	35
46	Magnetic Photoluminescent Nanoplatform Built from Large-Pore Mesoporous Silica. Chemistry of Materials, 2019, 31, 3201-3210.	3.2	34
47	An Automated Microfluidic System for Morphological Measurement and Size-Based Sorting of C. Elegans. IEEE Transactions on Nanobioscience, 2019, 18, 373-380.	2.2	16
48	Effects of material heterogeneity on self-rolling of strained membranes. Extreme Mechanics Letters, 2019, 29, 100451.	2.0	0
49	Nanopaper: A Nanocelluloseâ€Paperâ€Based SERS Multiwell Plate with High Sensitivity and High Signal Homogeneity (Adv. Mater. Interfaces 24/2019). Advanced Materials Interfaces, 2019, 6, 1970155.	1.9	0
50	Multifunctional Self-Assembled Supernanoparticles for Deep-Tissue Bimodal Imaging and Amplified Dual-Mode Heating Treatment. ACS Nano, 2019, 13, 408-420.	7.3	68
51	Robotic Stimulation of Freely Moving <italic>Drosophila</italic> Larvae Using a 3D-Printed Micro Force Sensor. IEEE Sensors Journal, 2019, 19, 3165-3173.	2.4	11
52	Superior Sensing Properties of Black Phosphorus as Gas Sensors: A Case Study on the Volatile Organic Compounds. Advanced Theory and Simulations, 2019, 2, 1800103.	1.3	53
53	An Integrated Multifunctional Nanoplatform for Deepâ€Tissue Dualâ€Mode Imaging. Advanced Functional Materials, 2018, 28, 1706235.	7.8	32
54	Bioimaging: An Integrated Multifunctional Nanoplatform for Deepâ€Tissue Dualâ€Mode Imaging (Adv.) Tj ETQq0 0 0 rgBT /Overlock 10 T	7.8	1

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55	Characterizing the electrical breakdown properties of single n-i-n-n+:GaN nanowires. Applied Physics Letters, 2018, 113, .	1.5	4
56	Automated Robotic Stimulation of Freely Moving Drosophila Larvae. , 2018, , .		0
57	Predictive modeling of misfit dislocation induced strain relaxation effect on self-rolling of strain-engineered nanomembranes. Applied Physics Letters, 2018, 113, .	1.5	1
58	Rolled-up SiO x /SiN x microtubes with an enhanced quality factor for sensitive solvent sensing. Nanotechnology, 2018, 29, 415501.	1.3	11
59	A paper-based wall-climbing robot enabled by electrostatic adhesion. , 2018, , .		9
60	A Paper-Based Piezoelectric Accelerometer. Micromachines, 2018, 9, 19.	1.4	50
61	Effect of topological patterning on self-rolling of nanomembranes. Nanotechnology, 2018, 29, 345301.	1.3	7
62	10.1063/1.5046314.1. , 2018, , .		0
63	Switched Fuzzy-PD Control of Contact Forces in Robotic Microbiomanipulation. IEEE Transactions on Biomedical Engineering, 2017, 64, 1169-1177.	2.5	19
64	Closed-form modelling and design analysis of V- and Z-shaped electrothermal microactuators. Journal of Micromechanics and Microengineering, 2017, 27, 015023.	1.5	34
65	Group III nitride nanomaterials for biosensing. Nanoscale, 2017, 9, 7320-7341.	2.8	51
66	Microscale Compression and Shear Testing of Soft Materials Using an MEMS Microgripper With Two-Axis Actuators and Force Sensors. IEEE Transactions on Automation Science and Engineering, 2017, 14, 834-843.	3.4	19
67	Quantitative analysis and predictive engineering of self-rolling of nanomembranes under anisotropic mismatch strain. Nanotechnology, 2017, 28, 485302.	1.3	13
68	MEMS-based platforms for mechanical manipulation and characterization of cells. Journal of Micromechanics and Microengineering, 2017, 27, 123003.	1.5	36
69	Investigating the impact of SEM chamber conditions and imaging parameters on contact resistance of<i>in situ</i>nanoprobing. Nanotechnology, 2017, 28, 345702.	1.3	9
70	A Model Compensation-Prediction Scheme for Control of Micromanipulation Systems With a Single Feedback Loop. IEEE/ASME Transactions on Mechatronics, 2017, 22, 1973-1982.	3.7	4
71	Flexible physical sensors made from paper substrates integrated with zinc oxide nanostructures. Flexible and Printed Electronics, 2017, 2, 034001.	1.5	17
72	Dynamic modelling and analysis of V- and Z-shaped electrothermal microactuators. Microsystem Technologies, 2017, 23, 3775-3789.	1.2	36

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73	Rapid prototyping of paper-based electronics by robotic printing and micromanipulation. , 2017, , .		1
74	Regulating surface traction of a soft robot through electrostatic adhesion control. , 2017, , .		14
75	Rethinking the Design of Low-Cost Point-of-Care Diagnostic Devices. Micromachines, 2017, 8, 317.	1.4	15
76	Experimental investigation of the impact of SEM chamber conditions on the contact resistance of in-situ nanoprobing. , 2017, , .		0
77	A model compensation-prediction scheme for control of micromanipulation systems with a single feedback loop. , 2016, , .		0
78	Dynamic electro-thermal modeling of V- and Z-shaped electrothermal microactuator. , 2016, , .		10
79	Corrections to â€œControllable Hydrothermal Growth of ZnO Nanowires on Cellulose Paper for Flexible Sensors and Electronicsâ€•[Nov 15 6100-6107]. IEEE Sensors Journal, 2016, 16, 6142-6142.	2.4	0
80	A portable paper-based microfluidic platform for multiplexed electrochemical detection of human immunodeficiency virus and hepatitis C virus antibodies in serum. Biomicrofluidics, 2016, 10, 024119.	1.2	70
81	A microfluidic device for automated, high-speed microinjection of <i>Caenorhabditis elegans</i>. Biomicrofluidics, 2016, 10, 011912.	1.2	28
82	Microfluidic Paper-Based Multiplexing Biosensors for Electrochemical Detection of Metabolic Biomarkers. , 2016, , 205-218.		2
83	A MEMS<i>XY</i>-stage integrating compliant mechanism for nanopositioning at sub-nanometer resolution. Journal of Micromechanics and Microengineering, 2016, 26, 025014.	1.5	25
84	Design and calibration of 3D-printed micro force sensors. , 2016, , .		3
85	Microfluidicsâ€Based Biosensors: A Microfluidic Paperâ€Based Origami Nanobiosensor for Labelâ€Free, Ultrasensitive Immunoassays (Adv. Healthcare Mater. 11/2016). Advanced Healthcare Materials, 2016, 5, 1378-1378.	3.9	6
86	A 3D-printed portable microindenter for mechanical characterization of soft materials. , 2016, , .		1
87	Towards understanding the unusual photoluminescence intensity variation of ultrasmall colloidal PbS quantum dots with the formation of a thin CdS shell. Physical Chemistry Chemical Physics, 2016, 18, 31828-31835.	1.3	11
88	A Microfluidic Paperâ€Based Origami Nanobiosensor for Labelâ€Free, Ultrasensitive Immunoassays. Advanced Healthcare Materials, 2016, 5, 1326-1335.	3.9	69
89	An Automated Force-Controlled Robotic Micromanipulation System for Mechanotransduction Studies of Drosophila Larvae. IEEE Transactions on Automation Science and Engineering, 2016, 13, 789-797.	3.4	37
90	A MEMS XY-stage with sub-nanometer positioning resolution. , 2015, , .		1

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91	A paper-based microfluidic biosensor integrating zinc oxide nanowires for electrochemical glucose detection. Microsystems and Nanoengineering, 2015, 1, .	3.4	131
92	A comparison model of V- and Z-shaped electrothermal microactuators. , 2015, , .		26
93	A Fast Colourimetric Assay for Lead Detection Using Label-Free Gold Nanoparticles (AuNPs). Micromachines, 2015, 6, 462-472.	1.4	21
94	An electrochemical microfluidic paper-based glucose sensor integrating zinc oxide nanowires. , 2015, , .		1
95	Switched fuzzy-PD control of contact forces in robotic micromanipulation of Drosophila larvae. , 2015, , .		3
96	A MEMS microgripper with two-axis actuators and force sensors for microscale mechanical characterization of soft materials. , 2015, , .		11
97	A cost-effective microindentation system for soft material characterization. , 2015, , .		2
98	Draw your assay: Fabrication of low-cost paper-based diagnostic and multi-well test zones by drawing on a paper. Talanta, 2015, 144, 289-293.	2.9	50
99	A microfluidic device for efficient chemical testing using Caenorhabditis elegans. Biomedical Microdevices, 2015, 17, 38.	1.4	14
100	Reprint of 'Draw your assay: Fabrication of low-cost paper-based diagnostic and multi-well test zones by drawing on a paper'. Talanta, 2015, 145, 73-77.	2.9	9
101	A portable, paper-based multiplexing immunosensor for detection of HIV and HCV markers in serum. , 2015, , .		0
102	Controllable Hydrothermal Growth of ZnO Nanowires on Cellulose Paper for Flexible Sensors and Electronics. IEEE Sensors Journal, 2015, 15, 6100-6107.	2.4	21
103	A microfluidic device for automated, high-speed microinjection of Caenorhabditis elegans. , 2015, , .		1
104	An automated robotic system for high-speed microinjection of Caenorhabditis elegans. , 2015, , .		3
105	A Comprehensive Analytical Model and Experimental Validation of Z-shaped Electrothermal Microactuators. Mechanisms and Machine Science, 2015, , 177-187.	0.3	13
106	Intelligent Prediction of Fan Rotation Stall in Power Plants Based on Pressure Sensor Data Measured In-Situ. Sensors, 2014, 14, 8794-8809.	2.1	4
107	A force-controlled robotic micromanipulation system for mechanotransduction studies of drosophila larvae. , 2014, 2014, 6526-9.		1
108	A portable lab-on-a-chip system for gold-nanoparticle-based colorimetric detection of metal ions in water. Biomicrofluidics, 2014, 8, 052107.	1.2	33

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109	Paper-Based Piezoelectric Touch Pads with Hydrothermally Grown Zinc Oxide Nanowires. ACS Applied Materials & Interfaces, 2014, 6, 22004-22012.	4.0	53
110	Hydrothermal growth of ZnO nanowires on paper for flexible electronics. , 2014, , .		1
111	Fabrication of three-dimensional microfluidic channels in a single layer of cellulose paper. Microfluidics and Nanofluidics, 2014, 16, 819-827.	1.0	77
112	A paper-based piezoelectric touch pad integrating zinc oxide nanowires. , 2014, , .		2
113	Fabrication of Low-Cost Paper-Based Microfluidic Devices by Embossing or Cut-and-Stack Methods. Chemistry of Materials, 2014, 26, 4230-4237.	3.2	140
114	Magnetic timing valves for fluid control in paper-based microfluidics. Lab on A Chip, 2013, 13, 2609.	3.1	131
115	A paper-based microfluidic device for multiplexed electrochemical detection of biomarkers. , 2013, , .		3
116	A microfluidic paper-based electrochemical biosensor array for multiplexed detection of metabolic biomarkers. Science and Technology of Advanced Materials, 2013, 14, 054402.	2.8	132
117	Elastic and Viscoelastic Characterization of Mouse Oocytes Using Micropipette Indentation. Annals of Biomedical Engineering, 2012, 40, 2122-2130.	1.3	45
118	Proprioceptive Coupling within Motor Neurons Drives C.Âelegans Forward Locomotion. Neuron, 2012, 76, 750-761.	3.8	219
119	Piezoresistivity Characterization of Synthetic Silicon Nanowires Using a MEMS Device. Journal of Microelectromechanical Systems, 2011, 20, 959-967.	1.7	91
120	Paper-based piezoresistive MEMS sensors. Lab on A Chip, 2011, 11, 2189.	3.1	212
121	Electrochemical Microfluidic Paper-Based Analytical Devices Using a Glucometer for Point-of-Care Detection of Multiple Analytes. ECS Meeting Abstracts, 2011, , .	0.0	0
122	Orientation Control of Biological Cells Under Inverted Microscopy. IEEE/ASME Transactions on Mechatronics, 2011, 16, 918-924.	3.7	123
123	Automated Microinjection of Recombinant BCL-X into Mouse Zygotes Enhances Embryo Development. PLoS ONE, 2011, 6, e21687.	1.1	36
124	Cellular Force Measurement Using Computer Vision Microscopy and a Polymeric Microdevice. , 2011, , 133-151.		1
125	A MEMS tensile testing device for mechanical characterization of individual nanowires. , 2010, , .		1
126	In-situ mechanical characterization of mouse oocytes using a cell holding device. , 2010, , .		0

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127	Integration of paper-based microfluidic devices with commercial electrochemical readers. Lab on A Chip, 2010, 10, 3163.	3.1	452
128	In situ mechanical characterization of mouse oocytes using a cell holding device. Lab on A Chip, 2010, 10, 2154.	3.1	64
129	Autonomous Robotic Pick-and-Place of Microobjects. IEEE Transactions on Robotics, 2010, 26, 200-207.	7.3	159
130	Automated mouse embryo injection moves toward practical use. , 2009, , .		4
131	Manipulation at the NanoNewton level: Micrograpsing for mechanical characterization of biomaterials. , 2009, , .		1
132	Elastic and viscoelastic characterization of microcapsules for drug delivery using a force-feedback MEMS microgripper. Biomedical Microdevices, 2009, 11, 421-427.	1.4	53
133	Microfabricated glass devices for rapid single cell immobilization in mouse zygote microinjection. Biomedical Microdevices, 2009, 11, 1169-1174.	1.4	34
134	Cell Contour Tracking and Data Synchronization for Real-Time, High-Accuracy Micropipette Aspiration. IEEE Transactions on Automation Science and Engineering, 2009, 6, 536-543.	3.4	32
135	Nanonewton Force Sensing and Control in Microrobotic Cell Manipulation. International Journal of Robotics Research, 2009, 28, 1065-1076.	5.8	118
136	Visually Servoed Orientation Control of Biological Cells in Microrobotic Cell Manipulation. Springer Tracts in Advanced Robotics, 2009, , 179-187.	0.3	6
137	MicroNewton Force-Controlled Manipulation of Biomaterials using a Monolithic MEMS Microgripper with Two-Axis Force Feedback. , 2008, , .		17
138	Nanonewton force-controlled manipulation of biological cells using a monolithic MEMS microgripper with two-axis force feedback. Journal of Micromechanics and Microengineering, 2008, 18, 055013.	1.5	259
139	Mechanical characterization of polymeric microcapsules using a force-feedback MEMS microgripper. , 2008, 2008, 1845-8.		8
140	Vision-based cellular force measurement using an elastic microfabricated device. Journal of Micromechanics and Microengineering, 2007, 17, 1281-1288.	1.5	67
141	Millimeter-sized nanomanipulator with sub-nanometer positioning resolution and large force output. Smart Materials and Structures, 2007, 16, 1742-1750.	1.8	39
142	Real-Time High-Accuracy Micropipette Aspiration for Characterizing Mechanical Properties of Biological Cells. Proceedings - IEEE International Conference on Robotics and Automation, 2007, , .	0.0	8
143	Contact Detection in Microrobotic Manipulation. International Journal of Robotics Research, 2007, 26, 821-828.	5.8	64
144	A MEMS stage for 3-axis nanopositioning. Journal of Micromechanics and Microengineering, 2007, 17, 1796-1802.	1.5	64

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145	A Fully Automated Robotic System for Microinjection of Zebrafish Embryos. PLoS ONE, 2007, 2, e862.	1.1	217
146	Dynamic evaluation of autofocusing for automated microscopic analysis of blood smear and pap smear. Journal of Microscopy, 2007, 227, 15-23.	0.8	81