Nanshu Lu

List of Publications by Year
in descending order

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122 papers	20,967 citations	23544 58 h-index	22808 112 g-index
125 all docs	125 docs citations	125 times ranked	22883 citing authors

#	Article	IF	Citations
1	Epidermal Electronics. Science, 2011, 333, 838-843.	6.0	3,944
2	A graphene-based electrochemical device with thermoresponsive microneedles for diabetes monitoring and therapy. Nature Nanotechnology, 2016, 11, 566-572.	15.6	1,394
3	Multifunctional wearable devices for diagnosis and therapy of movement disorders. Nature Nanotechnology, 2014, 9, 397-404.	15.6	1,246
4	Evidence for moirÃ© excitons in van der Waals heterostructures. Nature, 2019, 567, 71-75.	13.7	933
5	A review on mechanics and mechanical properties of 2D materialsâ€”Graphene and beyond. Extreme Mechanics Letters, 2017, 13, 42-77.	2.0	920
6	Highly Sensitive Skinâ€Mountable Strain Gauges Based Entirely on Elastomers. Advanced Functional Materials, 2012, 22, 4044-4050.	7.8	709
7	Materials for multifunctional balloon catheters with capabilities in cardiac electrophysiological mapping and ablation therapy. Nature Materials, 2011, 10, 316-323.	13.3	670
8	Flexible and Stretchable Electronics for Biointegrated Devices. Annual Review of Biomedical Engineering, 2012, 14, 113-128.	5.7	631
9	Foldable Printed Circuit Boards on Paper Substrates. Advanced Functional Materials, 2010, 20, 28-35.	7.8	630
10	3D multifunctional integumentary membranes for spatiotemporal cardiac measurements and stimulation across the entire epicardium. Nature Communications, 2014, 5, 3329.	5.8	485
11	Graphene Electronic Tattoo Sensors. ACS Nano, 2017, 11, 7634-7641.	7.3	476
12	High-Performance, Highly Bendable MoS₂ Transistors with High-K Dielectrics for Flexible Low-Power Systems. ACS Nano, 2013, 7, 5446-5452.	7.3	445
13	Flexible and Stretchable Electronics Paving the Way for Soft Robotics. Soft Robotics, 2014, 1, 53-62.	4.6	436
14	Flexible Black Phosphorus Ambipolar Transistors, Circuits and AM Demodulator. Nano Letters, 2015, 15, 1883-1890.	4.5	394
15	Human eye-inspired soft optoelectronic device using high-density MoS2-graphene curved image sensor array. Nature Communications, 2017, 8, 1664.	5.8	381
16	Metal films on polymer substrates stretched beyond 50%. Applied Physics Letters, 2007, 91, .	1.5	345
17	Wearable and Implantable Devices for Cardiovascular Healthcare: from Monitoring to Therapy Based on Flexible and Stretchable Electronics. Advanced Functional Materials, 2019, 29, 1808247.	7.8	345
18	Integrated flexible chalcogenide glass photonic devices. Nature Photonics, 2014, 8, 643-649.	15.6	291

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19	â€œCutâ€andâ€Pasteâ€Manufacture of Multiparametric Epidermal Sensor Systems. Advanced Materials, 2015, 27, 6423-6430.	11.1	254
20	The effect of film thickness on the failure strain of polymer-supported metal films. Acta Materialia, 2010, 58, 1679-1687.	3.8	221
21	Electronic sensor and actuator webs for large-area complex geometry cardiac mapping and therapy. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 19910-19915.	3.3	209
22	Bioresorbable Electronic Stent Integrated with Therapeutic Nanoparticles for Endovascular Diseases. ACS Nano, 2015, 9, 5937-5946.	7.3	203
23	Silicon nanomembranes for fingertip electronics. Nanotechnology, 2012, 23, 344004.	1.3	196
24	Materials for stretchable electronics in bioinspired and biointegrated devices. MRS Bulletin, 2012, 37, 226-235.	1.7	184
25	Electromechanical cardioplasty using a wrapped elasto-conductive epicardial mesh. Science Translational Medicine, 2016, 8, 344ra86.	5.8	181
26	Cephalopodâ€Inspired Miniaturized Suction Cups for Smart Medical Skin. Advanced Healthcare Materials, 2016, 5, 80-87.	3.9	175
27	Mechanics of Epidermal Electronics. Journal of Applied Mechanics, Transactions ASME, 2012, 79, .	1.1	161
28	Largeâ€Area Monolayer MoS₂ for Flexible Lowâ€Power RF Nanoelectronics in the GHz Regime. Advanced Materials, 2016, 28, 1818-1823.	11.1	161
29	Extremely Vivid, Highly Transparent, and Ultrathin Quantum Dot Lightâ€Emitting Diodes. Advanced Materials, 2018, 30, 1703279.	11.1	157
30	Wearable Force Touch Sensor Array Using a Flexible and Transparent Electrode. Advanced Functional Materials, 2017, 27, 1605286.	7.8	151
31	Flexible, sticky, and biodegradable wireless device for drug delivery to brain tumors. Nature Communications, 2019, 10, 5205.	5.8	148
32	Stretchability and compliance of freestanding serpentine-shaped ribbons. International Journal of Solids and Structures, 2014, 51, 4026-4037.	1.3	142
33	A Chestâ€Laminated Ultrathin and Stretchable Eâ€Tattoo for the Measurement of Electrocardiogram, Seismocardiogram, and Cardiac Time Intervals. Advanced Science, 2019, 6, 1900290.	5.6	137
34	Inorganic semiconductor nanomaterials for flexible and stretchable bio-integrated electronics. NPG Asia Materials, 2012, 4, e15-e15.	3.8	134
35	Highly Sensitive Capacitive Pressure Sensors over a Wide Pressure Range Enabled by the Hybrid Responses of a Highly Porous Nanocomposite. Advanced Materials, 2021, 33, e2103320.	11.1	133
36	Low-cost, Î¼m-thick, tape-free electronic tattoo sensors with minimized motion and sweat artifacts. Npj Flexible Electronics, 2018, 2, .	5.1	132

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37	Mechanics of spontaneously formed nanoblisters trapped by transferred 2D crystals. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 7884-7889.	3.3	130
38	Stretchable and Transparent Biointerface Using Cellâ€Sheetâ€“Graphene Hybrid for Electrophysiology and Therapy of Skeletal Muscle. Advanced Functional Materials, 2016, 26, 3207-3217.	7.8	123
39	Imperceptible electrooculography graphene sensor system for humanâ€“robot interface. Npj 2D Materials and Applications, 2018, 2, .	3.9	114
40	Soft implantable drug delivery device integrated wirelessly with wearable devices to treat fatal seizures. Science Advances, 2021, 7, .	4.7	107
41	Failure by simultaneous grain growth, strain localization, and interface debonding in metal films on polymer substrates. Journal of Materials Research, 2009, 24, 379-385.	1.2	105
42	An aquatic-vision-inspired camera based on a monocentric lens and a silicon nanorod photodiode array. Nature Electronics, 2020, 3, 546-553.	13.1	100
43	Electrically compensated, tattoo-like electrodes for epidermal electrophysiology at scale. Science Advances, 2020, 6, .	4.7	99
44	Gauge Factor and Stretchability of Silicon-on-Polymer Strain Gauges. Sensors, 2013, 13, 8577-8594.	2.1	97
45	Out-of-Plane Electromechanical Response of Monolayer Molybdenum Disulfide Measured by Piezoresponse Force Microscopy. Nano Letters, 2017, 17, 5464-5471.	4.5	94
46	Monolithically integrated stretchable photonics. Light: Science and Applications, 2018, 7, 17138-17138.	7.7	94
47	Strategies for body-conformable electronics. Matter, 2022, 5, 1104-1136.	5.0	90
48	Interface-Governed Deformation of Nanobubbles and Nanotents Formed by Two-Dimensional Materials. Physical Review Letters, 2018, 121, 266101.	2.9	86
49	Modular and Reconfigurable Wireless Eâ€Tattoos for Personalized Sensing. Advanced Materials Technologies, 2019, 4, 1900117.	3.0	86
50	Interface Adhesion between 2D Materials and Elastomers Measured by Buckle Delaminations. Advanced Materials Interfaces, 2015, 2, 1500176.	1.9	85
51	Wearable and Implantable Soft Bioelectronics: Device Designs and Material Strategies. Annual Review of Chemical and Biomolecular Engineering, 2021, 12, 359-391.	3.3	81
52	Soft Capacitive Pressure Sensors: Trends, Challenges, and Perspectives. ACS Nano, 2022, 16, 3442-3448.	7.3	78
53	Delamination of stiff islands patterned on stretchable substrates. International Journal of Materials Research, 2007, 98, 717-722.	0.1	73
54	Multifunctional Cell-Culture Platform for Aligned Cell Sheet Monitoring, Transfer Printing, and Therapy. ACS Nano, 2015, 9, 2677-2688.	7.3	72

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55	Versatile, kinetically controlled, high precision electrohydrodynamic writing of micro/nanofibers. Scientific Reports, 2014, 4, 5949.	1.6	70
56	Mechanics for stretchable sensors. Current Opinion in Solid State and Materials Science, 2015, 19, 149-159.	5.6	70
57	Piezoresistive Strain Sensors and Multiplexed Arrays Using Assemblies of Single-Crystalline Silicon Nanoribbons on Plastic Substrates. IEEE Transactions on Electron Devices, 2011, 58, 4074-4078.	1.6	68
58	Indium Tin Oxide (ITO) serpentine ribbons on soft substrates stretched beyond 100%. Extreme Mechanics Letters, 2015, 2, 37-45.	2.0	65
59	Mechanics at the interfaces of 2D materials: Challenges and opportunities. Current Opinion in Solid State and Materials Science, 2020, 24, 100837.	5.6	61
60	Fabrication, characterization and applications of graphene electronic tattoos. Nature Protocols, 2021, 16, 2395-2417.	5.5	59
61	Conformability of a Thin Elastic Membrane Laminated on a Soft Substrate With Slightly Wavy Surface. Journal of Applied Mechanics, Transactions ASME, 2016, 83, .	1.1	58
62	A 1-V 0.25- $mu ext{W}$ Inverter Stacking Amplifier With 1.07 Noise Efficiency Factor. IEEE Journal of Solid-State Circuits, 2018, 53, 896-905.	3.5	56
63	Inorganic islands on a highly stretchable polyimide substrate. Journal of Materials Research, 2009, 24, 3338-3342.	1.2	54
64	Flexible and Stretchable Photonics: The Next Stretch of Opportunities. ACS Photonics, 2020, 7, 2618-2635.	3.2	49
65	Work of adhesion/separation between soft elastomers of different mixing ratios. Journal of Materials Research, 2015, 30, 2702-2712.	1.2	47
66	An amphibious artificial vision system with a panoramic visual field. Nature Electronics, 2022, 5, 452-459.	13.1	40
67	Elasticity Solutions to Nonbuckling Serpentine Ribbons. Journal of Applied Mechanics, Transactions ASME, 2017, 84, .	1.1	37
68	A 0.025-mm² 0.8-V 78.5-dB SNDR VCO-Based Sensor Readout Circuit in a Hybrid PLL-$DeltaSigma$ M Structure. IEEE Journal of Solid-State Circuits, 2020, 55, 666-679.	3.5	37
69	A Thin Elastic Membrane Conformed to a Soft and Rough Substrate Subjected to Stretching/Compression. Journal of Applied Mechanics, Transactions ASME, 2017, 84, .	1.1	36
70	Flexible Single-Crystal Silicon Nanomembrane Photonic Crystal Cavity. ACS Nano, 2014, 8, 12265-12271.	7.3	35
71	Assessment of Dry Epidermal Electrodes for Long-Term Electromyography Measurements. Sensors, 2018, 18, 1269.	2.1	34
72	Radial buckle delamination around 2D material tents. Journal of the Mechanics and Physics of Solids, 2020, 137, 103843.	2.3	34

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73	Next-generation flexible neural and cardiac electrode arrays. Biomedical Engineering Letters, 2014, 4, 95-108.	2.1	33
74	Poking and bulging of suspended thin sheets: Slippage, instabilities, and metrology. Journal of the Mechanics and Physics of Solids, 2021, 149, 104320.	2.3	32
75	2D Material Bubbles: Fabrication, Characterization, and Applications. Trends in Chemistry, 2021, 3, 204-217.	4.4	31
76	Soft-packaged sensory glove system for human-like natural interaction and control of prosthetic hands. NPG Asia Materials, 2019, 11, .	3.8	30
77	Stretchability of indium tin oxide (ITO) serpentine thin films supported by Kapton substrates. International Journal of Fracture, 2014, 190, 99-110.	1.1	29
78	Water Transfer Printing Enhanced by Waterâ€Induced Pattern Expansion: Toward Largeâ€Area 3D Electronics. Advanced Materials Technologies, 2019, 4, 1800600.	3.0	29
79	Debonding and fracture of ceramic islands on polymer substrates. Journal of Applied Physics, 2012, 111, .	1.1	25
80	Elastic wetting: Substrate-supported droplets confined by soft elastic membranes. Journal of the Mechanics and Physics of Solids, 2021, 151, 104399.	2.3	24
81	Stretchable Tattoo-Like Heater with On-Site Temperature Feedback Control. Micromachines, 2018, 9, 170.	1.4	23
82	Analytical solutions for bonded elastically compressible layers. International Journal of Solids and Structures, 2015, 58, 353-365.	1.3	21
83	Out-of-plane electromechanical coupling in transition metal dichalcogenides. Applied Physics Letters, 2020, 116, .	1.5	21
84	Epidermal electrodes with enhanced breathability and high sensing performance. Materials Today Physics, 2020, 12, 100191.	2.9	19
85	NFC-enabled, tattoo-like stretchable biosensor manufactured by â€œcut-and-pasteâ€•method. , 2017, 2017, 4094-4097.		19
86	At the Crossroads: Interdisciplinary Paths to Soft Robots. Soft Robotics, 2014, 1, 63-69.	4.6	17
87	Conformability of a Thin Elastic Membrane Laminated on a Rigid Substrate With Corrugated Surface. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2015, 5, 1237-1243.	1.4	17
88	Large scale and integrated platform for digital mass culture of anchorage dependent cells. Nature Communications, 2019, 10, 4824.	5.8	17
89	Stretchability of PMMA-supported CVD graphene and of its electrical contacts. 2D Materials, 2020, 7, 014003.	2.0	17
90	Variational formulations, instabilities and critical loadings of space curved beams. International Journal of Solids and Structures, 2016, 87, 48-60.	1.3	16

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91	Experimentally and Numerically Validated Analytical Solutions to Nonbuckling Piezoelectric Serpentine Ribbons. Journal of Applied Mechanics, Transactions ASME, 2019, 86, .	1.1	16
92	Islands stretch test for measuring the interfacial fracture energy between a hard film and a soft substrate. Journal of Applied Physics, 2013, 113, .	1.1	12
93	Suction effects in cratered surfaces. Journal of the Royal Society Interface, 2017, 14, 20170377.	1.5	12
94	Singular stress fields at corners in flip-chip packages. Engineering Fracture Mechanics, 2012, 86, 38-47.	2.0	11
95	Two-dimensional crystals on adhesive substrates subjected to uniform transverse pressure. International Journal of Solids and Structures, 2022, 257, 111829.	1.3	11
96	A 1V 0.25uW inverter-stacking amplifier with 1.07 noise efficiency factor. , 2017, , .		10
97	A Wrist-worn Respiration Monitoring Device using Bio-Impedance. , 2020, 2020, 3989-3993.		9
98	Thickness ratio andd₃₃effects on flexible piezoelectric unimorph energy conversion. Smart Materials and Structures, 2016, 25, 035037.	1.8	8
99	The effect of coating in increasing the critical size of islands on a compliant substrate. Applied Physics Letters, 2007, 90, 211912.	1.5	7
100	Effects of surface tension on the suction forces generated by miniature craters. Extreme Mechanics Letters, 2017, 15, 130-138.	2.0	7
101	Suction effects of craters under water. Soft Matter, 2018, 14, 8509-8520.	1.2	7
102	Suction effects of crater arrays. Extreme Mechanics Letters, 2019, 30, 100496.	2.0	7
103	Mechanics of Crater-Enabled Soft Dry Adhesives: A Review. Frontiers in Mechanical Engineering, 2020, 6, .	0.8	7
104	Epidermal electronic systems for sensing and therapy. Proceedings of SPIE, 2017, , .	0.8	6
105	â€œCut-and-pasteâ€•method for the rapid prototyping of soft electronics. Science China Technological Sciences, 2019, 62, 199-208.	2.0	5
106	Stretchable Electronics: Stretchable and Transparent Biointerface Using Cellâ€Sheetâ€“Graphene Hybrid for Electrophysiology and Therapy of Skeletal Muscle (Adv. Funct. Mater. 19/2016). Advanced Functional Materials, 2016, 26, 3182-3182.	7.8	4
107	Epidermal Electronics: Cephalopodâ€Inspired Miniaturized Suction Cups for Smart Medical Skin (Adv.) Tj ETQq1 1 0.784314 rgBT /Ov	3.9	4
108	Stretchability, Conformability, and Low-Cost Manufacture of Epidermal Sensors. Microsystems and Nanosystems, 2016, , 31-51.	0.1	3

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109	Electronic tattoos: the most multifunctional but imperceptible wearables. , 2019, , .		3
110	Mechanics of flexible electronics and photonics based on inorganic micro- and nanomaterials. , 2014, , .		2
111	Stress analysis for nanomembranes under stamp compression. Extreme Mechanics Letters, 2016, 7, 136-144.	2.0	2
112	Mobile Monitoring of Traumatic Brain Injury in Older Adults: Challenges and Opportunities. Neuroinformatics, 2017, 15, 227-230.	1.5	2
113	Highly Sensitive Capacitive Pressure Sensors over a Wide Pressure Range Enabled by the Hybrid Responses of a Highly Porous Nanocomposite (Adv. Mater. 48/2021). Advanced Materials, 2021, 33, .	11.1	2
114	Corrections to â€œPiezoresistive Strain Sensors and Multiplexed Arrays Using Assemblies of Single-Crystalline Silicon Nanoribbons on Plastic Substratesâ€•[Nov 11 4074-4078]. IEEE Transactions on Electron Devices, 2012, 59, 520-520.	1.6	1
115	Reversible Dry Adhesives. Soft Robotics, 2016, 3, 99-100.	4.6	1
116	Ultrathin flexible coils for wireless power and data link in biomedical sensors. , 2017, , .		1
117	Stretchable Integrated Microphotonics. , 2018, , .		1
118	Bio-integrated electronics. , 2014, , .		0
119	"Cut-and-paste" manufacture of multiparametric epidermal electronic systems. Proceedings of SPIE, 2016, , .	0.8	0
120	Soft Electronics for Human-Centered Robotics. , 2021, , .		0
121	â€˜Cut-and-pasteâ€™ manufacture of multiparametric epidermal electronic systems. SPIE Newsroom, 0, , .	0.1	0
122	Integrated photonics put at full stretch: flexible and stretchable photonic devices enabled by optical and mechanical co-design. , 2019, , .		0