Nanshu Lu

List of Publications by Citations

113 papers	15,773 citations	51 h-index	125 g-index
125 ext. papers	18,390 ext. citations	10.1 avg, IF	6.57 L-index

#	Paper	IF	Citations
113	Epidermal electronics. *Science*, **2011**, 333, 838-43	33.3	3216
112	A graphene-based electrochemical device with thermoresponsive microneedles for diabetes monitoring and therapy. *Nature Nanotechnology*, **2016**, 11, 566-572	28.7	1093
111	Multifunctional wearable devices for diagnosis and therapy of movement disorders. *Nature Nanotechnology*, **2014**, 9, 397-404	28.7	1037
110	A review on mechanics and mechanical properties of 2D materials□Graphene and beyond. *Extreme Mechanics Letters*, **2017**, 13, 42-77	3.9	581
109	Materials for multifunctional balloon catheters with capabilities in cardiac electrophysiological mapping and ablation therapy. *Nature Materials*, **2011**, 10, 316-23	27	580
108	Highly Sensitive Skin-Mountable Strain Gauges Based Entirely on Elastomers. *Advanced Functional Materials*, **2012**, 22, 4044-4050	15.6	577
107	Foldable Printed Circuit Boards on Paper Substrates. *Advanced Functional Materials*, **2010**, 20, 28-35	15.6	553
106	Flexible and stretchable electronics for biointegrated devices. *Annual Review of Biomedical Engineering*, **2012**, 14, 113-28	12	546
105	Evidence for moiré□excitons in van der Waals heterostructures. *Nature*, **2019**, 567, 71-75	50.4	538
104	High-performance, highly bendable MoS2 transistors with high-k dielectrics for flexible low-power systems. *ACS Nano*, **2013**, 7, 5446-52	16.7	386
103	3D multifunctional integumentary membranes for spatiotemporal cardiac measurements and stimulation across the entire epicardium. *Nature Communications*, **2014**, 5, 3329	17.4	384
102	Flexible and Stretchable Electronics Paving the Way for Soft Robotics. *Soft Robotics*, **2014**, 1, 53-62	9.2	358
101	Flexible black phosphorus ambipolar transistors, circuits and AM demodulator. *Nano Letters*, **2015**, 15, 1883-90	11.5	341
100	Metal films on polymer substrates stretched beyond 50%. *Applied Physics Letters*, **2007**, 91, 221909	3.4	305
99	Graphene Electronic Tattoo Sensors. *ACS Nano*, **2017**, 11, 7634-7641	16.7	304
98	Human eye-inspired soft optoelectronic device using high-density MoS-graphene curved image sensor array. *Nature Communications*, **2017**, 8, 1664	17.4	241
97	Integrated flexible chalcogenide glass photonic devices. *Nature Photonics*, **2014**, 8, 643-649	33.9	216

96	Wearable and Implantable Devices for Cardiovascular Healthcare: from Monitoring to Therapy Based on Flexible and Stretchable Electronics. *Advanced Functional Materials*, **2019**, 29, 1808247	15.6	207
95	"Cut-and-Paste" Manufacture of Multiparametric Epidermal Sensor Systems. *Advanced Materials*, **2015**, 27, 6423-30	24	201
94	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, 19910-5	11.5	190
93	The effect of film thickness on the failure strain of polymer-supported metal films. *Acta Materialia*, **2010**, 58, 1679-1687	8.4	178
92	Silicon nanomembranes for fingertip electronics. *Nanotechnology*, **2012**, 23, 344004	3.4	168
91	Materials for stretchable electronics in bioinspired and biointegrated devices. *MRS Bulletin*, **2012**, 37, 226-235	3.2	166
90	Bioresorbable Electronic Stent Integrated with Therapeutic Nanoparticles for Endovascular Diseases. *ACS Nano*, **2015**, 9, 5937-46	16.7	158
89	Cephalopod-Inspired Miniaturized Suction Cups for Smart Medical Skin. *Advanced Healthcare Materials*, **2016**, 5, 80-7	10.1	147
88	Electromechanical cardioplasty using a wrapped elasto-conductive epicardial mesh. *Science Translational Medicine*, **2016**, 8, 344ra86	17.5	136
87	Mechanics of Epidermal Electronics. *Journal of Applied Mechanics, Transactions ASME*, **2012**, 79,	2.7	129
86	Extremely Vivid, Highly Transparent, and Ultrathin Quantum Dot Light-Emitting Diodes. *Advanced Materials*, **2018**, 30, 1703279	24	122
85	Large-Area Monolayer MoS2 for Flexible Low-Power RF Nanoelectronics in the GHz Regime. *Advanced Materials*, **2016**, 28, 1818-23	24	122
84	Wearable Force Touch Sensor Array Using a Flexible and Transparent Electrode. *Advanced Functional Materials*, **2017**, 27, 1605286	15.6	121
83	Inorganic semiconductor nanomaterials for flexible and stretchable bio-integrated electronics. *NPG Asia Materials*, **2012**, 4, e15-e15	10.3	116
82	Stretchability and compliance of freestanding serpentine-shaped ribbons. *International Journal of Solids and Structures*, **2014**, 51, 4026-4037	3.1	108
81	Stretchable and Transparent Biointerface Using Cell-Sheet□Graphene Hybrid for Electrophysiology and Therapy of Skeletal Muscle. *Advanced Functional Materials*, **2016**, 26, 3207-3217	15.6	103
80	Flexible, sticky, and biodegradable wireless device for drug delivery to brain tumors. *Nature Communications*, **2019**, 10, 5205	17.4	91
79	Failure by simultaneous grain growth, strain localization, and interface debonding in metal films on polymer substrates. *Journal of Materials Research*, **2009**, 24, 379-385	2.5	90

78	Low-cost, μm-thick, tape-free electronic tattoo sensors with minimized motion and sweat artifacts. *Npj Flexible Electronics*, **2018**, 2,	10.7	87
77	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	11.5	80
76	A Chest-Laminated Ultrathin and Stretchable E-Tattoo for the Measurement of Electrocardiogram, Seismocardiogram, and Cardiac Time Intervals. *Advanced Science*, **2019**, 6, 1900290	13.6	79
75	Gauge factor and stretchability of silicon-on-polymer strain gauges. *Sensors*, **2013**, 13, 8577-94	3.8	76
74	Monolithically integrated stretchable photonics. *Light: Science and Applications*, **2018**, 7, 17138	16.7	72
73	Imperceptible electrooculography graphene sensor system for human–robot interface. *Npj 2D Materials and Applications*, **2018**, 2,	8.8	72
72	Out-of-Plane Electromechanical Response of Monolayer Molybdenum Disulfide Measured by Piezoresponse Force Microscopy. *Nano Letters*, **2017**, 17, 5464-5471	11.5	71
71	Interface Adhesion between 2D Materials and Elastomers Measured by Buckle Delaminations. *Advanced Materials Interfaces*, **2015**, 2, 1500176	4.6	66
70	Delamination of stiff islands patterned on stretchable substrates. *International Journal of Materials Research*, **2007**, 98, 717-722	0.5	60
69	Versatile, kinetically controlled, high precision electrohydrodynamic writing of micro/nanofibers. *Scientific Reports*, **2014**, 4, 5949	4.9	59
68	Multifunctional cell-culture platform for aligned cell sheet monitoring, transfer printing, and therapy. *ACS Nano*, **2015**, 9, 2677-88	16.7	58
67	Modular and Reconfigurable Wireless E-Tattoos for Personalized Sensing. *Advanced Materials Technologies*, **2019**, 4, 1900117	6.8	57
66	Mechanics for stretchable sensors. *Current Opinion in Solid State and Materials Science*, **2015**, 19, 149-159	12	57
65	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	2.9	54
64	Indium Tin Oxide (ITO) serpentine ribbons on soft substrates stretched beyond 100%. *Extreme Mechanics Letters*, **2015**, 2, 37-45	3.9	51
63	Electrically compensated, tattoo-like electrodes for epidermal electrophysiology at scale. *Science Advances*, **2020**, 6,	14.3	51
62	Interface-Governed Deformation of Nanobubbles and Nanotents Formed by Two-Dimensional Materials. *Physical Review Letters*, **2018**, 121, 266101	7.4	50
61	An aquatic-vision-inspired camera based on a monocentric lens and a silicon nanorod photodiode array. *Nature Electronics*, **2020**, 3, 546-553	28.4	45

60	Inorganic islands on a highly stretchable polyimide substrate. *Journal of Materials Research*, **2009**, 24, 3338-3342	2.5	45
59	Conformability of a Thin Elastic Membrane Laminated on a Soft Substrate With Slightly Wavy Surface. *Journal of Applied Mechanics, Transactions ASME*, **2016**, 83,	2.7	42
58	Soft implantable drug delivery device integrated wirelessly with wearable devices to treat fatal seizures. *Science Advances*, **2021**, 7,	14.3	36
57	. *IEEE Journal of Solid-State Circuits*, **2018**, 53, 896-905	5.5	35
56	Work of adhesion/separation between soft elastomers of different mixing ratios. *Journal of Materials Research*, **2015**, 30, 2702-2712	2.5	34
55	Elasticity Solutions to Nonbuckling Serpentine Ribbons. *Journal of Applied Mechanics, Transactions ASME*, **2017**, 84,	2.7	30
54	Flexible single-crystal silicon nanomembrane photonic crystal cavity. *ACS Nano*, **2014**, 8, 12265-71	16.7	29
53	Wearable and Implantable Soft Bioelectronics: Device Designs and Material Strategies. *Annual Review of Chemical and Biomolecular Engineering*, **2021**, 12, 359-391	8.9	28
52	Next-generation flexible neural and cardiac electrode arrays. *Biomedical Engineering Letters*, **2014**, 4, 95-108	3.6	27
51	A Thin Elastic Membrane Conformed to a Soft and Rough Substrate Subjected to Stretching/Compression. *Journal of Applied Mechanics, Transactions ASME*, **2017**, 84,	2.7	27
50	Assessment of Dry Epidermal Electrodes for Long-Term Electromyography Measurements. *Sensors*, **2018**, 18,	3.8	25
49	Mechanics at the interfaces of 2D materials: Challenges and opportunities. *Current Opinion in Solid State and Materials Science*, **2020**, 24, 100837	12	24
48	Soft-packaged sensory glove system for human-like natural interaction and control of prosthetic hands. *NPG Asia Materials*, **2019**, 11,	10.3	22
47	Water Transfer Printing Enhanced by Water-Induced Pattern Expansion: Toward Large-Area 3D Electronics. *Advanced Materials Technologies*, **2019**, 4, 1800600	6.8	22
46	Stretchability of indium tin oxide (ITO) serpentine thin films supported by Kapton substrates. *International Journal of Fracture*, **2014**, 190, 99-110	2.3	22
45	Debonding and fracture of ceramic islands on polymer substrates. *Journal of Applied Physics*, **2012**, 111, 013517	2.5	22
44	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	24	22
43	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	5.5	19

42	Flexible and Stretchable Photonics: The Next Stretch of Opportunities. *ACS Photonics*, **2020**, 7, 2618-2635	6.3	18
41	Stretchable Tattoo-Like Heater with On-Site Temperature Feedback Control. *Micromachines*, **2018**, 9,	3.3	17
40	Variational formulations, instabilities and critical loadings of space curved beams. *International Journal of Solids and Structures*, **2016**, 87, 48-60	3.1	14
39	NFC-enabled, tattoo-like stretchable biosensor manufactured by "cut-and-paste" method. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2017**, 2017, 4094-4097	0.9	14
38	Experimentally and Numerically Validated Analytical Solutions to Nonbuckling Piezoelectric Serpentine Ribbons. *Journal of Applied Mechanics, Transactions ASME*, **2019**, 86,	2.7	13
37	. *IEEE Transactions on Components, Packaging and Manufacturing Technology*, **2015**, 5, 1237-1243	1.7	13
36	Analytical solutions for bonded elastically compressible layers. *International Journal of Solids and Structures*, **2015**, 58, 353-365	3.1	13
35	Fabrication, characterization and applications of graphene electronic tattoos. *Nature Protocols*, **2021**, 16, 2395-2417	18.8	13
34	Radial buckle delamination around 2D material tents. *Journal of the Mechanics and Physics of Solids*, **2020**, 137, 103843	5	12
33	Large scale and integrated platform for digital mass culture of anchorage dependent cells. *Nature Communications*, **2019**, 10, 4824	17.4	12
32	At the Crossroads: Interdisciplinary Paths to Soft Robots. *Soft Robotics*, **2014**, 1, 63-69	9.2	12
31	Strategies for body-conformable electronics. *Matter*, **2022**, 5, 1104-1136	12.7	12
30	Out-of-plane electromechanical coupling in transition metal dichalcogenides. *Applied Physics Letters*, **2020**, 116, 053101	3.4	11
29	Epidermal electrodes with enhanced breathability and high sensing performance. *Materials Today Physics*, **2020**, 12, 100191	8	11
28	Islands stretch test for measuring the interfacial fracture energy between a hard film and a soft substrate. *Journal of Applied Physics*, **2013**, 113, 223702	2.5	10
27	Singular stress fields at corners in flip-chip packages. *Engineering Fracture Mechanics*, **2012**, 86, 38-47	4.2	8
26	Poking and bulging of suspended thin sheets: Slippage, instabilities, and metrology. *Journal of the Mechanics and Physics of Solids*, **2021**, 149, 104320	5	8
25	Elastic wetting: Substrate-supported droplets confined by soft elastic membranes. *Journal of the Mechanics and Physics of Solids*, **2021**, 151, 104399	5	8

24	Suction effects in cratered surfaces. *Journal of the Royal Society Interface*, **2017**, 14,	4.1	7
23	Thickness ratio andd33effects on flexible piezoelectric unimorph energy conversion. *Smart Materials and Structures*, **2016**, 25, 035037	3.4	7
22	The effect of coating in increasing the critical size of islands on a compliant substrate. *Applied Physics Letters*, **2007**, 90, 211912	3.4	7
21	Stretchability of PMMA-supported CVD graphene and of its electrical contacts. *2D Materials*, **2020**, 7, 014003	5.9	7
20	Effects of surface tension on the suction forces generated by miniature craters. *Extreme Mechanics Letters*, **2017**, 15, 130-138	3.9	6
19	Suction effects of crater arrays. *Extreme Mechanics Letters*, **2019**, 30, 100496	3.9	5
18	2D Material Bubbles: Fabrication, Characterization, and Applications. *Trends in Chemistry*, **2021**, 3, 204-217	14.8	5
17	Epidermal Electronics: Cephalopod-Inspired Miniaturized Suction Cups for Smart Medical Skin (Adv. Healthcare Mater. 1/2016). *Advanced Healthcare Materials*, **2016**, 5, 186-186	10.1	4
16	Suction effects of craters under water. *Soft Matter*, **2018**, 14, 8509-8520	3.6	4
15	Epidermal electronic systems for sensing and therapy **2017**,		3
14	"Cut-and-paste" method for the rapid prototyping of soft electronics.. *Science China Technological Sciences*, **2019**, 62, 199-208	3.5	3
13	Mechanics of Crater-Enabled Soft Dry Adhesives: A Review. *Frontiers in Mechanical Engineering*, **2020**, 6,	2.6	3
12	Stretchable Electronics: Stretchable and Transparent Biointerface Using Cell-Sheet–Graphene Hybrid for Electrophysiology and Therapy of Skeletal Muscle (Adv. Funct. Mater. 19/2016). *Advanced Functional Materials*, **2016**, 26, 3182-3182	15.6	3
11	Stress analysis for nanomembranes under stamp compression. *Extreme Mechanics Letters*, **2016**, 7, 136-144	3.9	2
10	Mechanics of flexible electronics and photonics based on inorganic micro- and nanomaterials **2014**,		2
9	Stretchability, Conformability, and Low-Cost Manufacture of Epidermal Sensors. *Microsystems and Nanosystems*, **2016**, 31-51	0.4	2
8	Reversible Dry Adhesives. *Soft Robotics*, **2016**, 3, 99-100	9.2	1
7	A 1V 0.25uW inverter-stacking amplifier with 1.07 noise efficiency factor **2017**,		1

6	Stretchable Electronic and Optoelectronic Devices Using Single-Crystal Inorganic Semiconductor Materials **2012**, 235-269		1
5	Stretchable Integrated Microphotonics **2018**,		1
4	A Wrist-worn Respiration Monitoring Device using Bio-Impedance. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2020**, 2020, 3989-3993	0.9	1
3	Ultrathin flexible coils for wireless power and data link in biomedical sensors **2017**,		0
2	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, 2170382	24	0
1	Corrections to Piezoresistive Strain Sensors and Multiplexed Arrays Using Assemblies of Single-Crystalline Silicon Nanoribbons on Plastic Substrates[Nov 11 4074-4078]. *IEEE Transactions on Electron Devices*, **2012**, 59, 520-520	2.9	