Huanyu Cheng

List of Publications by Year
in descending order

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134	17,648	23567 58	12946 131
papers	citations	h-index	g-index

141	141	141	16447
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Stretchable batteries with self-similar serpentine interconnects and integrated wireless recharging systems. Nature Communications, 2013, 4, 1543.	12.8	1,169
2	A Physically Transient Form of Silicon Electronics. Science, 2012, 337, 1640-1644.	12.6	1,085
3	Ultrathin conformal devices for precise and continuous thermal characterization of humanÂskin. Nature Materials, 2013, 12, 938-944.	27.5	1,002
4	Fractal design concepts for stretchable electronics. Nature Communications, 2014, 5, 3266.	12.8	821
5	Bioresorbable silicon electronic sensors for the brain. Nature, 2016, 530, 71-76.	27.8	778
6	Assembly of micro/nanomaterials into complex, three-dimensional architectures by compressive buckling. Science, 2015, 347, 154-159.	12.6	745
7	Materials and Optimized Designs for Humanâ€Machine Interfaces Via Epidermal Electronics. Advanced Materials, 2013, 25, 6839-6846.	21.0	649
8	3D multifunctional integumentary membranes for spatiotemporal cardiac measurements and stimulation across the entire epicardium. Nature Communications, 2014, 5, 3329.	12.8	485
9	Large-area graphene-nanomesh/carbon-nanotube hybrid membranes for ionic and molecular nanofiltration. Science, 2019, 364, 1057-1062.	12.6	475
10	Bioresorbable silicon electronics for transient spatiotemporal mapping of electrical activity fromÂthe cerebral cortex. Nature Materials, 2016, 15, 782-791.	27.5	400
11	Soft network composite materials with deterministic and bio-inspired designs. Nature Communications, 2015, 6, 6566.	12.8	392
12	Dissolvable Metals for Transient Electronics. Advanced Functional Materials, 2014, 24, 645-658.	14.9	379
13	Highâ€Performance Biodegradable/Transient Electronics on Biodegradable Polymers. Advanced Materials, 2014, 26, 3905-3911.	21.0	359
14	Transient, Biocompatible Electronics and Energy Harvesters Based on ZnO. Small, 2013, 9, 3398-3404.	10.0	342
15	Graphene Reinforced Carbon Nanotube Networks for Wearable Strain Sensors. Advanced Functional Materials, 2016, 26, 2078-2084.	14.9	328
16	Largeâ€Area Ultrathin Graphene Films by Singleâ€Step Marangoni Selfâ€Assembly for Highly Sensitive Strain Sensing Application. Advanced Functional Materials, 2016, 26, 1322-1329.	14.9	326
17	Soft, curved electrode systems capable of integration on the auricle as a persistent brainâ€“computer interface. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 3920-3925.	7.1	319
18	Rugged and breathable forms of stretchable electronics with adherent composite substrates for transcutaneous monitoring. Nature Communications, 2014, 5, 4779.	12.8	309

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19	Stretchable, Transparent Graphene Interconnects for Arrays of Microscale Inorganic Light Emitting Diodes on Rubber Substrates. Nano Letters, 2011, 11, 3881-3886.	9.1	307
20	Biodegradable Elastomers and Silicon Nanomembranes/Nanoribbons for Stretchable, Transient Electronics, and Biosensors. Nano Letters, 2015, 15, 2801-2808.	9.1	281
21	Materials and Designs for Wireless Epidermal Sensors of Hydration and Strain. Advanced Functional Materials, 2014, 24, 3846-3854.	14.9	263
22	Capacitive Epidermal Electronics for Electrically Safe, Longâ€Term Electrophysiological Measurements. Advanced Healthcare Materials, 2014, 3, 642-648.	7.6	231
23	Multifunctional Skinâ€Like Electronics for Quantitative, Clinical Monitoring of Cutaneous Wound Healing. Advanced Healthcare Materials, 2014, 3, 1597-1607.	7.6	226
24	Si/Ge Double-Layered Nanotube Array as a Lithium Ion Battery Anode. ACS Nano, 2012, 6, 303-309.	14.6	225
25	Stretchable piezoelectric energy harvesters and self-powered sensors for wearable and implantable devices. Biosensors and Bioelectronics, 2020, 168, 112569.	10.1	225
26	Epidermal Electronics with Advanced Capabilities in Near-Field Communication. Small, 2015, 11, 906-912.	10.0	224
27	A nonlinear mechanics model of bio-inspired hierarchical lattice materials consisting of horseshoe microstructures. Journal of the Mechanics and Physics of Solids, 2016, 90, 179-202.	4.8	220
28	Dissolution Behaviors and Applications of Silicon Oxides and Nitrides in Transient Electronics. Advanced Functional Materials, 2014, 24, 4427-4434.	14.9	206
29	Silicon nanomembranes for fingertip electronics. Nanotechnology, 2012, 23, 344004.	2.6	196
30	Mechanics of ultra-stretchable self-similar serpentine interconnects. Acta Materialia, 2013, 61, 7816-7827.	7.9	183
31	Dissolution Chemistry and Biocompatibility of Single-Crystalline Silicon Nanomembranes and Associated Materials for Transient Electronics. ACS Nano, 2014, 8, 5843-5851.	14.6	171
32	25th Anniversary Article: Materials for Highâ€Performance Biodegradable Semiconductor Devices. Advanced Materials, 2014, 26, 1992-2000.	21.0	161
33	High-energy all-in-one stretchable micro-supercapacitor arrays based on 3D laser-induced graphene foams decorated with mesoporous ZnP nanosheets for self-powered stretchable systems. Nano Energy, 2021, 81, 105609.	16.0	148
34	Dissolution Chemistry and Biocompatibility of Silicon- and Germanium-Based Semiconductors for Transient Electronics. ACS Applied Materials & Interfaces, 2015, 7, 9297-9305.	8.0	147
35	Novel gas sensing platform based on a stretchable laser-induced graphene pattern with self-heating capabilities. Journal of Materials Chemistry A, 2020, 8, 6487-6500.	10.3	135
36	Shear-enhanced adhesiveless transfer printing for use in deterministic materials assembly. Applied Physics Letters, 2011, 98, .	3.3	127

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37	Bioinspired, multifunctional dual-mode pressure sensors as electronic skin for decoding complex loading processes and human motions. Nano Energy, 2020, 78, 105337.	16.0	121
38	Wearable Pressure Sensors Based on MXene/Tissue Papers for Wireless Human Health Monitoring. ACS Applied Materials & Interfaces, 2021, 13, 60531-60543.	8.0	121
39	Multimodal Sensors with Decoupled Sensing Mechanisms. Advanced Science, 2022, 9, .	11.2	120
40	Elastomer Surfaces with Directionally Dependent Adhesion Strength and Their Use in Transfer Printing with Continuous Rollâ€toâ€Roll Applications. Advanced Materials, 2012, 24, 2117-2122.	21.0	115
41	Laser-induced graphene non-enzymatic glucose sensors for on-body measurements. Biosensors and Bioelectronics, 2021, 193, 113606.	10.1	112
42	Fabricating functional circuits on 3D freeform surfaces via intense pulsed light-induced zinc mass transfer. Materials Today, 2021, 50, 24-34.	14.2	98
43	Epidermal Impedance Sensing Sheets for Precision Hydration Assessment and Spatial Mapping. IEEE Transactions on Biomedical Engineering, 2013, 60, 2848-2857.	4.2	95
44	Electrochemical Properties of Siâ€Ge Heterostructures as an Anode Material for Lithium Ion Batteries. Advanced Functional Materials, 2014, 24, 1458-1464.	14.9	78
45	Transfer Printing and its Applications in Flexible Electronic Devices. Nanomaterials, 2019, 9, 283.	4.1	78
46	Human motion-driven self-powered stretchable sensing platform based on laser-induced graphene foams. Applied Physics Reviews, 2022, 9, .	11.3	77
47	Multifunctional Stretchable Sensors for Continuous Monitoring of Long-Term Leaf Physiology and Microclimate. ACS Omega, 2019, 4, 9522-9530.	3.5	76
48	An Analytical Model of Reactive Diffusion for Transient Electronics. Advanced Functional Materials, 2013, 23, 3106-3114.	14.9	74
49	Smart bioadhesives for wound healing and closure. Bioactive Materials, 2023, 19, 360-375.	15.6	74
50	Facile Synthesis of Free-Standing Silicon Membranes with Three-Dimensional Nanoarchitecture for Anodes of Lithium Ion Batteries. Nano Letters, 2013, 13, 3340-3346.	9.1	69
51	Porous graphene foam composite-based dual-mode sensors for underwater temperature and subtle motion detection. Chemical Engineering Journal, 2022, 444, 136631.	12.7	69
52	3D Printed, Customizable, and Multifunctional Smart Electronic Eyeglasses for Wearable Healthcare Systems and Humanâ€“Machine Interfaces. ACS Applied Materials & Interfaces, 2020, 12, 21424-21432.	8.0	68
53	Conformal manufacturing of soft deformable sensors on the curved surface. International Journal of Extreme Manufacturing, 2021, 3, 042001.	12.7	68
54	Standalone stretchable RF systems based on asymmetric 3D microstrip antennas with on-body wireless communication and energy harvesting. Nano Energy, 2022, 96, 107069.	16.0	67

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55	Surface Wettability for Skinâ€Interfaced Sensors and Devices. Advanced Functional Materials, 2022, 32, .	14.9	67
56	Modulated Degradation of Transient Electronic Devices through Multilayer Silk Fibroin Pockets. ACS Applied Materials & Interfaces, 2015, 7, 19870-19875.	8.0	66
57	Skin-interfaced microfluidic devices with one-opening chambers and hydrophobic valves for sweat collection and analysis. Lab on A Chip, 2020, 20, 2635-2645.	6.0	66
58	Wearable Circuits Sintered at Room Temperature Directly on the Skin Surface for Health Monitoring. ACS Applied Materials & Interfaces, 2020, 12, 45504-45515.	8.0	65
59	Recent development of transient electronics. Theoretical and Applied Mechanics Letters, 2016, 6, 21-31.	2.8	61
60	Structural Design for Stretchable Microstrip Antennas. ACS Applied Materials & Interfaces, 2019, 11, 8867-8877.	8.0	61
61	Moisture-resistant, stretchable NOx gas sensors based on laser-induced graphene for environmental monitoring and breath analysis. Microsystems and Nanoengineering, 2022, 8, .	7.0	61
62	Enhanced adhesion with pedestal-shaped elastomeric stamps for transfer printing. Applied Physics Letters, 2012, 100, .	3.3	57
63	Recent Developments of Flexible and Stretchable Electrochemical Biosensors. Micromachines, 2020, 11, 243.	2.9	57
64	Moisture-resistant MXene-sodium alginate sponges with sustained superhydrophobicity for monitoring human activities. Chemical Engineering Journal, 2022, 432, 134370.	12.7	55
65	Efficient coupling of semiconductors into metallic MnO2@CoMn2O4 heterostructured electrode with boosted charge transfer for high-performance supercapacitors. Electrochimica Acta, 2020, 347, 136246.	5.2	54
66	An analytical model for shear-enhanced adhesiveless transfer printing. Mechanics Research Communications, 2012, 43, 46-49.	1.8	52
67	Buckling of a stiff thin film on a pre-strained bi-layer substrate. International Journal of Solids and Structures, 2014, 51, 3113-3118.	2.7	52
68	Flexible Conductive Composite Integrated with Personal Earphone for Wireless, Real-Time Monitoring of Electrophysiological Signs. ACS Applied Materials & Interfaces, 2018, 10, 21184-21190.	8.0	52
69	Mechanics of Interfacial Delamination in Epidermal Electronics Systems. Journal of Applied Mechanics, Transactions ASME, 2014, 81, .	2.2	46
70	An analytical model of strain isolation for stretchable and flexible electronics. Applied Physics Letters, 2011, 98, .	3.3	45
71	Flexible and stretchable metal oxide gas sensors for healthcare. Science China Technological Sciences, 2019, 62, 209-223.	4.0	44
72	Recent Development of Flexible and Stretchable Antennas for Bio-Integrated Electronics. Sensors, 2018, 18, 4364.	3.8	42

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73	Stretchable wideband dipole antennas and rectennas for RF energy harvesting. Materials Today Physics, 2021, 18, 100377.	6.0	41
74	Stretchable, ultrasensitive, and low-temperature NO2 sensors based on MoS2@rGO nanocomposites. Materials Today Physics, 2020, 15, 100265.	6.0	40
75	Synthetic Melanin E-Ink. ACS Applied Materials & Interfaces, 2017, 9, 16553-16560.	8.0	39
76	Intrinsically Breathable and Flexible NO₂ Gas Sensors Produced by Laser Direct Writing of Self-Assembled Block Copolymers. ACS Applied Materials & Interfaces, 2022, 14, 17818-17825.	8.0	39
77	A Viscoelastic Model for the Rate Effect in Transfer Printing. Journal of Applied Mechanics, Transactions ASME, 2013, 80, .	2.2	34
78	Expandable and implantable bioelectronic complex for analyzing and regulating real-time activity of the urinary bladder. Science Advances, 2020, 6, .	10.3	34
79	Analysis of a concentric coplanar capacitor for epidermal hydration sensing. Sensors and Actuators A: Physical, 2013, 203, 149-153.	4.1	33
80	Real Time Analysis of Bioanalytes in Healthcare, Food, Zoology and Botany. Sensors, 2018, 18, 5.	3.8	32
81	Stretchable gas sensors for detecting biomarkers from humans and exposed environments. TrAC - Trends in Analytical Chemistry, 2020, 133, 116085.	11.4	32
82	Biodegradable, flexible silicon nanomembrane-based NOx gas sensor system with record-high performance for transient environmental monitors and medical implants. NPG Asia Materials, 2020, 12, .	7.9	32
83	Significantly improved conductivity of spinel Co₃O₄ porous nanowires partially substituted by Sn in tetrahedral sites for high-performance quasi-solid-state supercapacitors. Journal of Materials Chemistry A, 2021, 9, 7005-7017.	10.3	31
84	A Finite-Deformation Mechanics Theory for Kinetically Controlled Transfer Printing. Journal of Applied Mechanics, Transactions ASME, 2013, 80, .	2.2	29
85	Inorganic dissolvable electronics: materials and devices for biomedicine and environment. Journal of Materials Research, 2016, 31, 2549-2570.	2.6	28
86	Heteroâ€Integration of Silicon Nanomembranes with 2D Materials for Bioresorbable, Wireless Neurochemical System. Advanced Materials, 2022, 34, e2108203.	21.0	28
87	A Simply Analytic Study of Buckled Thin Films on Compliant Substrates. Journal of Applied Mechanics, Transactions ASME, 2014, 81, .	2.2	27
88	Reconfigurable systems for multifunctional electronics. Npj Flexible Electronics, 2017, 1, .	10.7	27
89	Fully Water-Soluble, High-Performance Transient Sensors on a Versatile Galactomannan Substrate Derived from the Endosperm. ACS Applied Materials & Interfaces, 2018, 10, 36664-36674.	8.0	26
90	Effects of laser processing parameters on properties of laser-induced graphene by irradiating CO2 laser on polyimide. Science China Technological Sciences, 2022, 65, 41-52.	4.0	24

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91	Integration of biological systems with electronic-mechanical assemblies. Acta Biomaterialia, 2019, 95, 91-111.	8.3	23
92	Dissolvable tattoo sensors: from science fiction to a viable technology. Physica Scripta, 2017, 92, 013001.	2.5	20
93	Mechanics of finger-tip electronics. Journal of Applied Physics, 2013, 114, 164511.	2.5	19
94	Micro/nanodevices for assessment and treatment in stomatology and ophthalmology. Microsystems and Nanoengineering, 2021, 7, 11.	7.0	19
95	Mechanics of Solar Module on Structured Substrates. Journal of Applied Mechanics, Transactions ASME, 2014, 81, .	2.2	18
96	Surfaceâ€Coverageâ€Dependent Cycle Stability of Coreâ€Shell Nanostructured Electrodes for Use in Lithium Ion Batteries. Advanced Energy Materials, 2014, 4, 1300472.	19.5	18
97	Design and Analysis of Magnetic-Assisted Transfer Printing. Journal of Applied Mechanics, Transactions ASME, 2018, 85, .	2.2	18
98	Strain-Insensitive Hierarchically Structured Stretchable Microstrip Antennas for Robust Wireless Communication. Nano-Micro Letters, 2021, 13, 108.	27.0	17
99	Highly sensitive piezoresistive pressure sensors based on laser-induced graphene with molybdenum disulfide nanoparticles. Science China Technological Sciences, 2021, 64, 2408-2414.	4.0	17
100	Multi-deformable piezoelectric energy nano-generator with high conversion efficiency for subtle body movements. Nano Energy, 2022, 97, 107223.	16.0	16
101	Tunable Adhesion for Bio-Integrated Devices. Micromachines, 2018, 9, 529.	2.9	15
102	Controlled buckling and postbuckling behaviors of thin film devices suspended on an elastomeric substrate with trapezoidal surface relief structures. International Journal of Solids and Structures, 2019, 160, 96-102.	2.7	14
103	Buckling analysis of stiff thin films suspended on a substrate with tripod surface relief structure. Applied Physics Letters, 2017, 111, .	3.3	13
104	Assembly of Heterogeneous Materials for Biology and Electronics: From Bio-Inspiration to Bio-Integration. Journal of Electronic Packaging, Transactions of the ASME, 2017, 139, .	1.8	12
105	Strain-Tunable Microfluidic Devices with Crack and Wrinkle Microvalves for Microsphere Screening and Fluidic Logic Gates. ACS Applied Materials & Interfaces, 2021, 13, 36849-36858.	8.0	12
106	Stretchable 3D Wideband Dipole Antennas from Mechanical Assembly for On-Body Communication. ACS Applied Materials & Interfaces, 2022, 14, 12855-12862.	8.0	12
107	Epidermal Electronics: Materials and Optimized Designs for Humanâ€Machine Interfaces Via Epidermal Electronics (Adv. Mater. 47/2013). Advanced Materials, 2013, 25, 6776-6776.	21.0	11
108	Reconfigurable, Stretchable Strain Sensor with the Localized Controlling of Substrate Modulus by Two-Phase Liquid Metal Cells. Nanomaterials, 2022, 12, 882.	4.1	11

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109	Design of non-dimensional parameters in stretchable microstrip antennas with coupled mechanics-electromagnetics. Materials and Design, 2021, 205, 109721.	7.0	10
110	Direct Laser Writing of Microscale Metal Oxide Gas Sensors from Liquid Precursors. ACS Applied Materials & Interfaces, 2022, 14, 28163-28173.	8.0	10
111	Process and wear behavior of monolithic SiC and short carbon fiber-SiC matrix composite. Journal of Materials Science, 2000, 35, 4477-4484.	3.7	9
112	Design of the Magnetic Stamp Film for Electromagnetic-Assisted Transfer Printing. Journal of Applied Mechanics, Transactions ASME, 2021, 88, .	2.2	9
113	Wearable electronic devices for glaucoma monitoring and therapy. Materials and Design, 2021, 212, 110183.	7.0	9
114	Stretchable Electronics: Epidermal Electronics with Advanced Capabilities in Near-Field Communication (Small 8/2015). Small, 2015, 11, 905-905.	10.0	8
115	Water-driven actuation of Ornithoctonus huwena spider silk fibers. Applied Physics Letters, 2017, 110, .	3.3	8
116	Effects of material properties and geometric parameters on electromagnetic-assisted transfer printing. Journal Physics D: Applied Physics, 2019, 52, 255302.	2.8	8
117	Highly sensitive and broadband photodetectors based on WSe2/MoS2 heterostructures with van der Waals contact electrodes. Applied Physics Letters, 2022, 121, .	3.3	8
118	Transient Electronics: Dissolvable Metals for Transient Electronics (Adv. Funct. Mater. 5/2014). Advanced Functional Materials, 2014, 24, 644-644.	14.9	5
119	Biomedical Sensors: Materials and Designs for Wireless Epidermal Sensors of Hydration and Strain (Adv. Funct. Mater. 25/2014). Advanced Functional Materials, 2014, 24, 3845-3845.	14.9	4
120	Circumferential buckling and postbuckling analysis of thin films integrated on a soft cylindrical substrate with surface relief structures. Extreme Mechanics Letters, 2020, 35, 100624.	4.1	4
121	Controlled Bi-Axial Buckling and Postbuckling of Thin Films Suspended on a Stretchable Substrate With Square Prism Relief Structures. International Journal of Applied Mechanics, 0, , .	2.2	4
122	Strain Sensing: Graphene Reinforced Carbon Nanotube Networks for Wearable Strain Sensors (Adv.) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 5	14.9	3
123	High-energy all-in-one micro-supercapacitors based on ZnO mesoporous nanosheet-decorated laser-induced porous graphene foams. Journal of Materials Research, 2021, 36, 1927-1936.	2.6	3
124	Spin-polarized transport properties of the FeCl2/WSe2/FeCl2 van der Waals heterostructure. Applied Physics Letters, 2022, 120, .	3.3	3
125	Collapse of arbitrary-shaped soft microfluidics. International Journal of Solids and Structures, 2022, 252, 111821.	2.7	3
126	Strain Sensors: Largeâ€Area Ultrathin Graphene Films by Singleâ€Step Marangoni Selfâ€Assembly for Highly Sensitive Strain Sensing Application (Adv. Funct. Mater. 9/2016). Advanced Functional Materials, 2016, 26, 1488-1488.	14.9	2

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127	(Invited) Additive Manufacturing of Functional Circuits on 3D Freeform Surfaces. ECS Meeting Abstracts, 2021, MA2021-01, 1107-1107.	0.0	2
128	Transfer Printing for Cyber-Manufacturing Systems. Springer Series in Wireless Technology, 2017, , 671-690.	1.1	1
129	Laser-induced porous graphene gas sensing platform toward the electronic nose. , 2020, , .		1
130	Fabrication Procedure for Rugged and Breathable Forms of Stretchable Electronics with Adherent and Composite Substrates. Protocol Exchange, 0, , .	0.3	0
131	Rapid preparation and medical application of wearable Flexible electronics. Guangxue Jingmi Gongcheng/Optics and Precision Engineering, 2019, 27, 1362-1369.	0.5	0
132	Inorganic Dissolvable Bioelectronics. , 2020, , 73-100.		0
133	An integrated design approach of piezoelectric vibration energy harvesters. , 2020, , .		0
134	The transport properties of Cl-decorated arsenene controlled by electric field. Electronic Structure, 2020, 2, 045001.	2.8	0