Charles M Lieber

List of Publications by Year
in descending order

154 papers	55,981 citations	2975 93 h-index	8167 148 g-index
159 all docs	159 docs citations	159 times ranked	38209 citing authors

#	Article	IF	Citations
1	Scalable Three-Dimensional Recording Electrodes for Probing Biological Tissues. Nano Letters, 2022, 22, 4552-4559.	9.1	9
2	All-Tissue-like Multifunctional Optoelectronic Mesh for Deep-Brain Modulation and Mapping. Nano Letters, 2021, 21, 3184-3190.	9.1	9
3	Nanowire-enabled bioelectronics. Nano Today, 2021, 38, 101135.	11.9	31
4	Nanowire probes could drive high-resolution brain-machine interfaces. Nano Today, 2020, 31, 100821.	11.9	18
5	Nanoenabled Direct Contact Interfacing of Syringe-Injectable Mesh Electronics. Nano Letters, 2019, 19, 5818-5826.	9.1	41
6	Scalable ultrasmall three-dimensional nanowire transistor probes for intracellular recording. Nature Nanotechnology, 2019, 14, 783-790.	31.5	129
7	Precision electronic medicine in the brain. Nature Biotechnology, 2019, 37, 1007-1012.	17.5	62
8	Advanced One- and Two-Dimensional Mesh Designs for Injectable Electronics. Nano Letters, 2019, 19, 4180-4187.	9.1	23
9	Nanowired Bioelectric Interfaces. Chemical Reviews, 2019, 119, 9136-9152.	47.7	92
10	Novel electrode technologies for neural recordings. Nature Reviews Neuroscience, 2019, 20, 330-345.	10.2	436
11	Bioinspired neuron-like electronics. Nature Materials, 2019, 18, 510-517.	27.5	277
12	Single-Cell Profiles of Retinal Ganglion Cells Differing in Resilience to Injury Reveal Neuroprotective Genes. Neuron, 2019, 104, 1039-1055.e12.	8.1	396
13	Highly Transparent Contacts to the 1D Hole Gas in Ultrascaled Ge/Si Core/Shell Nanowires. ACS Nano, 2019, 13, 14145-14151.	14.6	15
14	Gate Tunable Hole Charge Qubit Formed in a Ge/Si Nanowire Double Quantum Dot Coupled to Microwave Photons. Nano Letters, 2019, 19, 1052-1060.	9.1	20
15	Mesh Nanoelectronics: Seamless Integration of Electronics with Tissues. Accounts of Chemical Research, 2018, 51, 309-318.	15.6	68
16	Tissue-like Neural Probes for Understanding and Modulating the Brain. Biochemistry, 2018, 57, 3995-4004.	2.5	33
17	Helical Hole State in Multiple Conduction Modes in Ge/Si Core/Shell Nanowire. Nano Letters, 2018, 18, 6144-6149.	9.1	19
18	Creating Functional Interfaces with Biological Circuits. Accounts of Chemical Research, 2018, 51, 987-987.	15.6	5

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19	A method for single-neuron chronic recording from the retina in awake mice. Science, 2018, 360, 1447-1451.	12.6	132
20	Syringe-injectable Mesh Electronics for Stable Chronic Rodent Electrophysiology. Journal of Visualized Experiments, 2018, , .	0.3	22
21	Mesh electronics: a new paradigm for tissue-like brain probes. Current Opinion in Neurobiology, 2018, 50, 33-41.	4.2	131
22	Electrochemical Deposition of Conformal and Functional Layers on High Aspect Ratio Silicon Micro/Nanowires. Nano Letters, 2017, 17, 4502-4507.	9.1	50
23	Syringe-injectable mesh electronics integrate seamlessly with minimal chronic immune response in the brain. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 5894-5899.	7.1	181
24	Friction between van der Waals Solids during Lattice Directed Sliding. Nano Letters, 2017, 17, 4116-4121.	9.1	48
25	Syringe-Injectable Electronics with a Plug-and-Play Input/Output Interface. Nano Letters, 2017, 17, 5836-5842.	9.1	59
26	Highly scalable multichannel mesh electronics for stable chronic brain electrophysiology. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, E10046-E10055.	7.1	120
27	Scaling of subgap excitations in a superconductor-semiconductor nanowire quantum dot. Physical Review B, 2017, 95, .	3.2	45
28	Advances in nanowire bioelectronics. Reports on Progress in Physics, 2017, 80, 016701.	20.1	99
29	Specific detection of biomolecules in physiological solutions using graphene transistor biosensors. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 14633-14638.	7.1	200
30	Plateauâ€"Rayleigh Crystal Growth of Nanowire Heterostructures: Strain-Modified Surface Chemistry and Morphological Control in One, Two, and Three Dimensions. Nano Letters, 2016, 16, 2830-2836.	9.1	49
31	Stable long-term chronic brain mapping at the single-neuron level. Nature Methods, 2016, 13, 875-882.	19.0	256
32	Three-dimensional mapping and regulation of action potential propagation in nanoelectronics-innervated tissues. Nature Nanotechnology, 2016, 11, 776-782.	31.5	160
33	Encoding Active Device Elements at Nanowire Tips. Nano Letters, 2016, 16, 4713-4719.	9.1	11
34	Shape-Controlled Deterministic Assembly of Nanowires. Nano Letters, 2016, 16, 2644-2650.	9.1	57
35	Nano-Bioelectronics. Chemical Reviews, 2016, 116, 215-257.	47.7	530
36	Spontaneous Internalization of Cell Penetrating Peptide-Modified Nanowires into Primary Neurons. Nano Letters, 2016, 16, 1509-1513.	9.1	86

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37	Syringe-injectable electronics. Nature Nanotechnology, 2015, 10, 629-636.	31.5	543
38	Nanoscience and the nano-bioelectronics frontier. Nano Research, 2015, 8, 1-22.	10.4	93
39	General Strategy for Biodetection in High Ionic Strength Solutions Using Transistor-Based Nanoelectronic Sensors. Nano Letters, 2015, 15, 2143-2148.	9.1	215
40	Plateauâ€“Rayleigh crystal growth of periodic shells on one-dimensional substrates. Nature Nanotechnology, 2015, 10, 345-352.	31.5	131
41	Facile, Rapid, and Large-Area Periodic Patterning of Semiconductor Substrates with Submicron Inorganic Structures. Journal of the American Chemical Society, 2015, 137, 3739-3742.	13.7	5
42	Beyond the Patch Clamp: Nanotechnologies for Intracellular Recording. Neuron, 2015, 86, 21-24.	8.1	51
43	Three-dimensional macroporous nanoelectronic networks as minimally invasive brain probes. Nature Materials, 2015, 14, 1286-1292.	27.5	334
44	Syringe Injectable Electronics: Precise Targeted Delivery with Quantitative Input/Output Connectivity. Nano Letters, 2015, 15, 6979-6984.	9.1	109
45	Sub-10-nm intracellular bioelectronic probes from nanowireâ€“nanotube heterostructures. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 1259-1264.	7.1	59
46	Free-standing kinked nanowire transistor probes for targeted intracellular recording in three dimensions. Nature Nanotechnology, 2014, 9, 142-147.	31.5	230
47	Long Term Stability of Nanowire Nanoelectronics in Physiological Environments. Nano Letters, 2014, 14, 1614-1619.	9.1	126
48	Nanowire nanocomputer as a finite-state machine. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 2431-2435.	7.1	88
49	Spin-resolved Andreev levels and parity crossings in hybrid superconductorâ€“semiconductor nanostructures. Nature Nanotechnology, 2014, 9, 79-84.	31.5	481
50	A room temperature low-threshold ultraviolet plasmonic nanolaser. Nature Communications, 2014, 5, 4953.	12.8	278
51	Semiconductor nanowire solar cells: synthetic advances and tunable properties. Pure and Applied Chemistry, 2014, 86, 13-26.	1.9	11
52	Synthetic Nanoelectronic Probes for Biological Cells and Tissues. Annual Review of Analytical Chemistry, 2013, 6, 31-51.	5.4	82
53	Semiconductor nanowires: a platform for exploring limits and concepts for nano-enabled solar cells. Energy and Environmental Science, 2013, 6, 719.	30.8	189
54	A nanoscale combing technique for the large-scale assembly of highly aligned nanowires. Nature Nanotechnology, 2013, 8, 329-335.	31.5	276

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55	Nanowire nanoelectronics: Building interfaces with tissue and cells at the natural scale of biology. Pure and Applied Chemistry, 2013, 85, 883-901.	1.9	24
56	Multifunctional three-dimensional macroporous nanoelectronic networks for smart materials. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 6694-6699.	7.1	85
57	Intracellular recordings of action potentials by an extracellular nanoscale field-effect transistor. Nature Nanotechnology, 2012, 7, 174-179.	31.5	412
58	Macroporous nanowire nanoelectronic scaffolds for synthetic tissues. Nature Materials, 2012, 11, 986-994.	27.5	561
59	Outside Looking In: Nanotube Transistor Intracellular Sensors. Nano Letters, 2012, 12, 3329-3333.	9.1	113
60	Hole spin relaxation in Geâ€“Si coreâ€“shell nanowire qubits. Nature Nanotechnology, 2012, 7, 47-50.	31.5	183
61	Synthetically Encoded Ultrashort-Channel Nanowire Transistors for Fast, Pointlike Cellular Signal Detection. Nano Letters, 2012, 12, 2639-2644.	9.1	82
62	Kinked pâ€“n Junction Nanowire Probes for High Spatial Resolution Sensing and Intracellular Recording. Nano Letters, 2012, 12, 1711-1716.	9.1	119
63	Semiconductor nanowires: A platform for nanoscience and nanotechnology. MRS Bulletin, 2011, 36, 1052-1063.	3.5	187
64	Three-Dimensional, Flexible Nanoscale Field-Effect Transistors as Localized Bioprobes. Science, 2010, 329, 830-834.	12.6	734
65	Assembly and integration of semiconductor nanowires for functional nanosystems. Pure and Applied Chemistry, 2010, 82, 2295-2314.	1.9	130
66	Nanowire transistor arrays for mapping neural circuits in acute brain slices. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 1882-1887.	7.1	187
67	Semiconductor nanowires: A platform for nanoscience and nanotechnology. , 2010, , .		1
68	Coaxial silicon nanowires as solar cells and nanoelectronic power sources. , 2010, , 58-62.		1
69	Flexible electrical recording from cells using nanowire transistor arrays. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 7309-7313.	7.1	206
70	Response to Comment on "Detection, Stimulation, and Inhibition of Neuronal Signals with High-Density Nanowire Transistor Arrays". Science, 2009, 323, 1429-1429.	12.6	8
71	Nanomaterials for Neural Interfaces. Advanced Materials, 2009, 21, 3970-4004.	21.0	460
72	Single-crystalline kinked semiconductor nanowire superstructures. Nature Nanotechnology, 2009, 4, 824-829.	31.5	352

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73	12 GHz $F_{m MAX}$GaN/AlN/AlGaN Nanowire MISFET. IEEE Electron Device Letters, 2009, 30, 322-324.	3.9	55
74	Electrical Recording from Hearts with Flexible Nanowire Device Arrays. Nano Letters, 2009, 9, 914-918.	9.1	205
75	Nanoelectronics from the bottom up. , 2009, , 137-146.		15
76	A wavelength-selective photonic-crystal waveguide coupled to a nanowire light source. Nature Photonics, 2008, 2, 622-626.	31.4	162
77	Nanowire Transistor Performance Limits and Applications. IEEE Transactions on Electron Devices, 2008, 55, 2859-2876.	3.0	306
78	Sub-100 Nanometer Channel Length Ge/Si Nanowire Transistors with Potential for 2 THz Switching Speed. Nano Letters, 2008, 8, 925-930.	9.1	150
79	Single and Tandem Axial <i>p-i-n</i> Nanowire Photovoltaic Devices. Nano Letters, 2008, 8, 3456-3460.	9.1	401
80	Nanomaterial-incorporated blown bubble films for large-area, aligned nanostructures. Journal of Materials Chemistry, 2008, 18, 728.	6.7	95
81	Semiconductor Nanowire Lasers. Conference Proceedings - Lasers and Electro-Optics Society Annual Meeting-LEOS, 2007, , .	0.0	2
82	Performance Analysis of a Ge/Si Core/Shell Nanowire Field-Effect Transistor. Nano Letters, 2007, 7, 642-646.	9.1	157
83	Nanoelectronics from the bottom up. Nature Materials, 2007, 6, 841-850.	27.5	1,419
84	A Ge/Si heterostructure nanowire-based double quantum dot with integrated charge sensor. Nature Nanotechnology, 2007, 2, 622-625.	31.5	287
85	Coaxial silicon nanowires as solar cells and nanoelectronic power sources. Nature, 2007, 449, 885-889.	27.8	2,791
86	Detection, Stimulation, and Inhibition of Neuronal Signals with High-Density Nanowire Transistor Arrays. Science, 2006, 313, 1100-1104.	12.6	797
87	Ge/Si nanowire mesoscopic Josephson junctions. Nature Nanotechnology, 2006, 1, 208-213.	31.5	255
88	Fabrication of silicon nanowire devices for ultrasensitive, label-free, real-time detection of biological and chemical species. Nature Protocols, 2006, 1, 1711-1724.	12.0	709
89	Ge/Si nanowire heterostructures as high-performance field-effect transistors. Nature, 2006, 441, 489-493.	27.8	1,401
90	Semiconductor nanowires embedded in optical microcavities. , 2006, , .		1

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91	Multiplexed electrical detection of cancer markers with nanowire sensor arrays. Nature Biotechnology, 2005, 23, 1294-1301.	17.5	2,249
92	Parallel and Complementary Detection of Proteins by p-type and n-type Silicon Nanowire Transistor Arrays. Materials Research Society Symposia Proceedings, 2005, 900, 1.	0.1	0
93	One-dimensional hole gas in germanium/silicon nanowire heterostructures. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 10046-10051.	7.1	443
94	Single-crystal metallic nanowires and metal/semiconductor nanowire heterostructures. Nature, 2004, 430, 61-65.	27.8	957
95	Electrical detection of single viruses. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 14017-14022.	7.1	1,208
96	Rational Growth of Branched and Hyperbranched Nanowire Structures. Nano Letters, 2004, 4, 871-874.	9.1	384
97	Scalable Interconnection and Integration of Nanowire Devices without Registration. Nano Letters, 2004, 4, 915-919.	9.1	337
98	Growth and transport properties of complementary germanium nanowire field-effect transistors. Applied Physics Letters, 2004, 84, 4176-4178.	3.3	351
99	Single-Walled Carbon Nanotube AFM Probes:â€‰ Optimal Imaging Resolution of Nanoclusters and Biomolecules in Ambient and Fluid Environments. Nano Letters, 2004, 4, 1725-1731.	9.1	114
100	Gallium Nitride-Based Nanowire Radial Heterostructures for Nanophotonics. Nano Letters, 2004, 4, 1975-1979.	9.1	609
101	Direct Ultrasensitive Electrical Detection of DNA and DNA Sequence Variations Using Nanowire Nanosensors. Nano Letters, 2004, 4, 51-54.	9.1	1,267
102	Controlled Growth and Structures of Molecular-Scale Silicon Nanowires. Nano Letters, 2004, 4, 433-436.	9.1	892
103	Multiplexed Electrical Detection of Single Viruses. Materials Research Society Symposia Proceedings, 2004, 828, 97.	0.1	4
104	High Performance Silicon Nanowire Field Effect Transistors. Nano Letters, 2003, 3, 149-152.	9.1	2,010
105	Synthesis of p-Type Gallium Nitride Nanowires for Electronic and Photonic Nanodevices. Nano Letters, 2003, 3, 343-346.	9.1	455
106	Nonvolatile Memory and Programmable Logic from Molecule-Gated Nanowires. Nano Letters, 2002, 2, 487-490.	9.1	330
107	Nanowire Superlattices. Nano Letters, 2002, 2, 81-82.	9.1	102
108	Diameter-Controlled Synthesis of Carbon Nanotubes. Journal of Physical Chemistry B, 2002, 106, 2429-2433.	2.6	747

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109	Vectorial Growth of Metallic and Semiconducting Single-Wall Carbon Nanotubes. Nano Letters, 2002, 2, 1137-1141.	9.1	247
110	Singleâ€Walled Carbon Nanotubes. Annals of the New York Academy of Sciences, 2002, 960, 203-215.	3.8	41
111	Diameter-controlled synthesis of single-crystal silicon nanowires. Applied Physics Letters, 2001, 78, 2214-2216.	3.3	1,078
112	Resonant Electron Scattering by Defects in Single-Walled Carbon Nanotubes. Science, 2001, 291, 283-285.	12.6	391
113	High-Yield Assembly of Individual Single-Walled Carbon Nanotube Tips for Scanning Probe Microscopies. Journal of Physical Chemistry B, 2001, 105, 743-746.	2.6	332
114	Directed Assembly of One-Dimensional Nanostructures into Functional Networks. Science, 2001, 291, 630-633.	12.6	2,105
115	Nanowire Nanosensors for Highly Sensitive and Selective Detection of Biological and Chemical Species. Science, 2001, 293, 1289-1292.	12.6	5,587
116	Direct haplotyping of kilobase-size DNA using carbon nanotube probes. Nature Biotechnology, 2000, 18, 760-763.	17.5	164
117	Doping and Electrical Transport in Silicon Nanowires. Journal of Physical Chemistry B, 2000, 104, 5213-5216.	2.6	885
118	Structure and Electronic Properties of Carbon Nanotubes. Journal of Physical Chemistry B, 2000, 104, 2794-2809.	2.6	646
119	Molybdenum Selenide Molecular Wires as One-Dimensional Conductors. Physical Review Letters, 1999, 83, 5334-5337.	7.8	105
120	Growth of nanotubes for probe microscopy tips. Nature, 1999, 398, 761-762.	27.8	384
121	Controlled growth and electrical properties of heterojunctions of carbon nanotubes and silicon nanowires. Nature, 1999, 399, 48-51.	27.8	709
122	Up close and personal to atoms. Nature, 1999, 401, 227-230.	27.8	25
123	Nanotube Nanotweezers. Science, 1999, 286, 2148-2150.	12.6	1,119
124	Load-Independent Friction:Â MoO3Nanocrystal Lubricants. Journal of Physical Chemistry B, 1999, 103, 8405-8409.	2.6	102
125	Assembly of AÎ² Amyloid Protofibrils:â€‰ An in Vitro Model for a Possible Early Event in Alzheimer's Disease. Biochemistry, 1999, 38, 8972-8980.	2.5	485
126	Covalently functionalized nanotubes as nanometre- sized probes in chemistry and biology. Nature, 1998, 394, 52-55.	27.8	1,439

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127	Chemically-Sensitive Imaging in Tapping Mode by Chemical Force Microscopy:Â Relationship between Phase Lag and Adhesion. Langmuir, 1998, 14, 1508-1511.	3.5	163
128	A Laser Ablation Method for the Synthesis of Crystalline Semiconductor Nanowires. Science, 1998, 279, 208-211.	12.6	4,213
129	Single-walled carbon nanotube probes for high-resolution nanostructure imaging. Applied Physics Letters, 1998, 73, 3465-3467.	3.3	169
130	Chemical Force Microscopy: Probing and Imaging Interactions Between Functional Groups. ACS Symposium Series, 1998, , 312-320.	0.5	2
131	Columnar defect formation in nanorod/Tl2Ba2Ca2Cu3Oz superconducting composites. Applied Physics Letters, 1997, 70, 3158-3160.	3.3	23
132	High-Pressure Chemistry of Carbon Nitride Materials. Materials Research Society Symposia Proceedings, 1997, 499, 309.	0.1	4
133	Nanostructured high-temperature superconductors: Creation of strong-pinning columnar defects in nanorod/superconductor composites. Journal of Materials Research, 1997, 12, 2981-2996.	2.6	276
134	CHEMICAL FORCE MICROSCOPY. Annual Review of Materials Research, 1997, 27, 381-421.	5.5	439
135	Chemical Force Microscopy. Microscopy and Microanalysis, 1997, 3, 1253-1254.	0.4	1
136	High-Temperature Superconductors. Science, 1997, 277, 1909-1914.	12.6	1
137	Growth of Metal Carbide Nanotubes and Nanorods. Chemistry of Materials, 1996, 8, 2041-2046.	6.7	104
138	Pulsed Laser Deposition of Diamond-Like Carbon Thin Films: Ablation Dynamics and Growth. Materials Research Society Symposia Proceedings, 1996, 438, 593.	0.1	4
139	Creation of Nanocrystals Via a Tip-Induced Solid-Solid Transformation. Materials Research Society Symposia Proceedings, 1996, 466, 89.	0.1	2
140	Pulsed laser deposition and physical properties of carbon nitride thin films. Journal of Electronic Materials, 1996, 25, 57-61.	2.2	47
141	Diamondlike properties in a single phase carbon nitride solid. Applied Physics Letters, 1996, 68, 2639-2641.	3.3	58
142	Growth and Structure of Carbide Nanorods. Materials Research Society Symposia Proceedings, 1995, 410, 103.	0.1	2
143	Synthesis and characterization of carbide nanorods. Nature, 1995, 375, 769-772.	27.8	1,122
144	Growth and composition of covalent carbon nitride solids. Applied Physics Letters, 1995, 66, 3582-3584.	3.3	131

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145	Coulomb Gap and Correlated Vortex Pinning in Superconductors. Physical Review Letters, 1995, 74, 5132-5135.	7.8	39
146	Path of magnetic flux lines through high-Tc copper oxide superconductors. Nature, 1994, 371, 777-779.	27.8	40
147	Isotope Effect and Superconductivity in Metal-Doped C ₆₀. Science, 1993, 259, 655-658.	12.6	76
148	Nanotube structure and electronic properties probed by scanning tunneling microscopy. Applied Physics Letters, 1993, 62, 2792-2794.	3.3	73
149	Growth of the infinite layer phase of Sr1âˆ’xNdxCuO2by laser ablation. Applied Physics Letters, 1992, 61, 1712-1714.	3.3	34
150	Fieldâ€induced surface modification on the atomic scale by scanning tunneling microscopy. Applied Physics Letters, 1992, 61, 1528-1530.	3.3	28
151	Characterization of nanometer scale wear and oxidation of transition metal dichalcogenide lubricants by atomic force microscopy. Applied Physics Letters, 1991, 59, 3404-3406.	3.3	110
152	Superconductivity at 30 K in caesium-doped C60. Nature, 1991, 352, 223-225.	27.8	219
153	Applications of Scanning Tunneling Microscopy to Inorganic Chemistry. Progress in Inorganic Chemistry, 0, , 431-510.	3.0	6
154	Programmable nanowire circuits for nanoprocessors. , 0, .		1