Michel M Maharbiz

List of Publications by Year
in descending order

81 papers	4,179 citations	172457 29 h-index	123424 61 g-index
92 all docs	92 docs citations	92 times ranked	6115 citing authors

#	Article	IF	Citations
1	A Highly Elastic, Capacitive Strain Gauge Based on Percolating Nanotube Networks. Nano Letters, 2012, 12, 1821-1825.	9.1	447
2	Wireless Recording in the Peripheral Nervous System with Ultrasonic Neural Dust. Neuron, 2016, 91, 529-539.	8.1	417
3	A Minimally Invasive 64-Channel Wireless Î¼ECoG Implant. IEEE Journal of Solid-State Circuits, 2015, 50, 344-359.	5.4	295
4	A wireless millimetre-scale implantable neural stimulator with ultrasonically powered bidirectional communication. Nature Biomedical Engineering, 2020, 4, 207-222.	22.5	278
5	Physical principles for scalable neural recording. Frontiers in Computational Neuroscience, 2013, 7, 137.	2.1	215
6	Impedance sensing device enables early detection of pressure ulcers in vivo. Nature Communications, 2015, 6, 6575.	12.8	176
7	Model validation of untethered, ultrasonic neural dust motes for cortical recording. Journal of Neuroscience Methods, 2015, 244, 114-122.	2.5	140
8	Galvanotactic control of collective cell migration in epithelial monolayers. Nature Materials, 2014, 13, 409-417.	27.5	139
9	Inkjetâ€Printed Flexible Gold Electrode Arrays for Bioelectronic Interfaces. Advanced Functional Materials, 2016, 26, 1004-1013.	14.9	133
10	Energy-Looping Nanoparticles: Harnessing Excited-State Absorption for Deep-Tissue Imaging. ACS Nano, 2016, 10, 8423-8433.	14.6	122
11	Microbioreactor arrays with parametric control for high-throughput experimentation. Biotechnology and Bioengineering, 2004, 85, 376-381.	3.3	104
12	A Large-Scale Interface for Optogenetic Stimulation and Recording in Nonhuman Primates. Neuron, 2016, 89, 927-939.	8.1	94
13	A Sub-mm³ Ultrasonic Free-Floating Implant for Multi-Mote Neural Recording. IEEE Journal of Solid-State Circuits, 2019, 54, 3017-3030.	5.4	83
14	Recent advances in neural dust: towards a neural interface platform. Current Opinion in Neurobiology, 2018, 50, 64-71.	4.2	81
15	Monitoring deep-tissue oxygenation with a millimeter-scale ultrasonic implant. Nature Biotechnology, 2021, 39, 855-864.	17.5	74
16	PEDOT:PSS-based Multilayer Bacterial-Composite Films for Bioelectronics. Scientific Reports, 2018, 8, 15293.	3.3	69
17	A microsystem for sensing and patterning oxidative microgradients during cell culture. Lab on A Chip, 2006, 6, 611.	6.0	67
18	Generating steep, shear-free gradients of small molecules for cell culture. Biomedical Microdevices, 2009, 11, 65-73.	2.8	67

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19	Strategies for optical control and simultaneous electrical readout of extended cortical circuits. Journal of Neuroscience Methods, 2015, 256, 220-231.	2.5	62
20	Deciphering the Role of a Coleopteran Steering Muscle via Free Flight Stimulation. Current Biology, 2015, 25, 798-803.	3.9	50
21	StimDust: A 6.5mm³, wireless ultrasonic peripheral nerve stimulator with 82% peak chip efficiency. , 2018, , .		49
22	A silicon carbide array for electrocorticography and peripheral nerve recording. Journal of Neural Engineering, 2017, 14, 056006.	3.5	46
23	Charge-pumping in a synthetic leaf for harvesting energy from evaporation-driven flows. Applied Physics Letters, 2009, 95, .	3.3	44
24	Reliable Next-Generation Cortical Interfaces for Chronic Brainâ€“Machine Interfaces and Neuroscience. Proceedings of the IEEE, 2017, 105, 73-82.	21.3	44
25	Interrogating cellular fate decisions with high-throughput arrays of multiplexed cellular communities. Nature Communications, 2016, 7, 10309.	12.8	41
26	A Biological Micro Actuator: Graded and Closed-Loop Control of Insect Leg Motion by Electrical Stimulation of Muscles. PLoS ONE, 2014, 9, e105389.	2.5	41
27	Ultrasonic sculpting of virtual optical waveguides in tissue. Nature Communications, 2019, 10, 92.	12.8	39
28	Wireless User-Generic Ear EEG. IEEE Transactions on Biomedical Circuits and Systems, 2020, 14, 727-737.	4.0	37
29	Transpiration actuation: the design, fabrication and characterization of biomimetic microactuators driven by the surface tension of water. Journal of Micromechanics and Microengineering, 2006, 16, 2375-2383.	2.6	33
30	Design of Wireless Links to Implanted Brainâ€“Machine Interface Microelectronic Systems. IEEE Antennas and Wireless Propagation Letters, 2012, 11, 1663-1666.	4.0	33
31	A Feedback Quenched Oscillator Produces Turing Patterning with One Diffuser. PLoS Computational Biology, 2012, 8, e1002331.	3.2	32
32	Smart bone plates can monitor fracture healing. Scientific Reports, 2019, 9, 2122.	3.3	32
33	Cyborg Beetles. Scientific American, 2010, 303, 94-99.	1.0	29
34	Miniaturizing Ultrasonic System for Portable Health Care and Fitness. IEEE Transactions on Biomedical Circuits and Systems, 2016, 9, 1-1.	4.0	29
35	A portable bioelectronic sensing system (BESSY) for environmental deployment incorporating differential microbial sensing in miniaturized reactors. PLoS ONE, 2017, 12, e0184994.	2.5	27
36	A Modified Consumer Inkjet for Spatiotemporal Control of Gene Expression. PLoS ONE, 2009, 4, e7086.	2.5	26

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37	Rodent wearable ultrasound system for wireless neural recording. , 2017, 2017, 221-225.		26
38	Ceramic packaging in neural implants. Journal of Neural Engineering, 2021, 18, 025002.	3.5	26
39	Electrostatically-driven elastomer components for user-reconfigurable high density microfluidics. Lab on A Chip, 2009, 9, 1274.	6.0	25
40	17.5 A 0.8mm³ Ultrasonic Implantable Wireless Neural Recording System With Linear AM Backscattering. , 2019, , .		22
41	Microbioreactor arrays with parametric control for high-throughput experimentation. Biotechnology and Bioengineering, 2004, 86, 485-90.	3.3	21
42	34.4 A 4.5mm³ Deep-Tissue Ultrasonic Implantable Luminescence Oxygen Sensor. , 2020, , .		18
43	Patterned delivery and expression of gene constructs into zebrafish embryos using microfabricated interfaces. Biomedical Microdevices, 2009, 11, 633-641.	2.8	16
44	New opportunities for fracture healing detection: Impedance spectroscopy measurements correlate to tissue composition in fractures. Journal of Orthopaedic Research, 2017, 35, 2620-2629.	2.3	16
45	Upconverting nanoparticle micro-lightbulbs designed for deep tissue optical stimulation and imaging. Biomedical Optics Express, 2018, 9, 4359.	2.9	16
46	Semi-chronic chamber system for simultaneous subdural electrocorticography, local field potentials, and spike recordings. , 2015, , .		15
47	Design of Ceramic Packages for Ultrasonically Coupled Implantable Medical Devices. IEEE Transactions on Biomedical Engineering, 2020, 67, 2230-2240.	4.2	15
48	Design and scaling of microscale Tesla turbines. Journal of Micromechanics and Microengineering, 2013, 23, 125001.	2.6	14
49	Can we build synthetic, multicellular systems by controlling developmental signaling in space and time?. Current Opinion in Chemical Biology, 2007, 11, 604-611.	6.1	13
50	A Synthetic Chemomechanical Machine Driven by Ligandâ€“Receptor Bonding. Nano Letters, 2012, 12, 4983-4987.	9.1	13
51	Synthetic multicellularity. Trends in Cell Biology, 2012, 22, 617-623.	7.9	13
52	Ultrasonic beamforming system for interrogating multiple implantable sensors. , 2015, 2015, 2673-6.		13
53	MEMS-Actuated Carbon Fiber Microelectrode for Neural Recording. IEEE Transactions on Nanobioscience, 2019, 18, 234-239.	3.3	13
54	Ion concentration polarization (ICP) of proteins at silicon micropillar nanogaps. PLoS ONE, 2019, 14, e0223732.	2.5	12

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55	A class of low voltage, elastomerâ€“metal â€˜wetâ€™ actuators for use in high-density microfluidics. Lab on A Chip, 2007, 7, 164-166.	6.0	11
56	A high-yield method for generating mass-transfer gradients in elastomer microfluidics using impermeable capillaries. Biomedical Microdevices, 2008, 10, 807-811.	2.8	9
57	Micrometerâ€scale oxygen delivery rearranges cells and prevents necrosis in tumor tissue in vitro. Biotechnology Progress, 2012, 28, 515-525.	2.6	9
58	A 2.7-mu W Neuromodulation AFE With 200 mV_{pp} Differential-Mode Stimulus Artifact Canceler Including On-Chip LMS Adaptation. IEEE Solid-State Circuits Letters, 2018, 1, 194-197.	2.0	9
59	Ceramic Packages for Acoustically Coupled Neural Implants. , 2019, , .		9
60	An Actuated Neural Probe Architecture for Reducing Gliosis-Induced Recording Degradation. IEEE Transactions on Nanobioscience, 2019, 18, 220-225.	3.3	8
61	Modular Synthetic Inverters from Zinc Finger Proteins and Small RNAs. PLoS ONE, 2016, 11, e0149483.	2.5	8
62	Cyborg beetles: The remote radio control of insect flight. , 2010, , .		7
63	Optical voltage sensor based on a piezoelectric thin film for grid applications. Optics Express, 2021, 29, 33716.	3.4	7
64	Cyborg eyes: Microfabricated neural interfaces implanted during the development of insect sensory organs produce stable neurorecordings in the adult. , 2012, , .		6
65	A miniaturized monitoring system for electrochemical biosensing using Shewanella oneidensis in environmental applications. , 2015, 2015, 7518-21.		6
66	A Method and Analysis to Enable Efficient Piezoelectric Transducer-Based Ultrasonic Power and Data Links for Miniaturized Implantable Medical Devices. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2021, 68, 3362-3370.	3.0	6
67	A mixed-signal EEG interface circuit for use in first year electronics courses. , 2012, , .		5
68	A quenched oscillator network for pattern formation in gene expression. , 2011, , .		4
69	Teaching design with a tinkering-driven robot hack. , 2016, , .		4
70	Germanium as a scalable sacrificial layer for nanoscale protein patterning. PLoS ONE, 2018, 13, e0195062.	2.5	4
71	A Wireless, Multielectrode, User-generic Ear EEG Recording System. , 2019, , .		4
72	Control of locomotion in ambulatory and airborne insects using implanted thermal microstimulators. , 2009, , .		3

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73	New architecture for patterning gene expression using zinc finger proteins and small RNAs. , 2012, , .		3
74	Ultrasonic thermal dust: A method to monitor deep tissue temperature profiles. , 2017, 2017, 865-868.		3
75	Reply to: The overwhelming role of ballistic photons in ultrasonically guided light through tissue. Nature Communications, 2022, 13, 1872.	12.8	2
76	A synthetic Brownian ratchet architecture for creating tailorable chemomechanical nanomachines. Applied Physics Letters, 2012, 101, 013703.	3.3	1
77	Charge-pumping with finger capacitance in a custom electrostatic energy harvesting ASIC. Applied Physics Letters, 2020, 117, .	3.3	1
78	Cyborg Insects, Neural Interfaces and Other Things Building Interfaces between the Synthetic and the Multicellular. , 2013, , .		0
79	Selective Insulation of Carbon Nanotubes. Physica Status Solidi (B): Basic Research, 2017, 254, 1700202.	1.5	0
80	Blind parallel interrogation of ultrasonic neural dust motes based on canonical polyadic decomposition: A simulation study. , 2017, , .		0
81	A Millimeter-Scale Single Charged Particle Dosimeter for Cancer Radiotherapy. IEEE Journal of Solid-State Circuits, 2020, 55, 2947-2958.	5.4	0