Patrick Ruther

List of Publications by Year
in descending order

75 papers	1,780 citations	279798 23 h-index	315739 38 g-index
83 all docs	83 docs citations	83 times ranked	2028 citing authors

#	Article	IF	Citations
1	Microfluidic chip connected to porous microneedle array for continuous ISF sampling. Drug Delivery and Translational Research, 2022, 12, 435-443.	5.8	25
2	Stackable Wireless Controller of Single-Sided ÂµLed Arrays For Optogenetics in Freely Behaving Animals. , 2022, , .		0
3	Multichannel optogenetics combined with laminar recordings for ultra-controlled neuronal interrogation. Nature Communications, 2022, 13, 985.	12.8	6
4	Singleâ€layer triâ€state switching as an economical method to address linear lightâ€emitting diode arrays. IET Optoelectronics, 2022, 16, 106-115.	3.3	1
5	Recording site placement on planar silicon-based probes affects signal quality in acute neuronal recordings. Scientific Reports, 2021, 11, 2028.	3.3	16
6	Histological assessment of a chronically implanted cylindrically-shaped, polymer-based neural probe in the monkey. Journal of Neural Engineering, 2021, 18, 024001.	3.5	4
7	Advanced Cardiac Rhythm Management by Applying Optogenetic Multi-Site Photostimulation in Murine Hearts. Journal of Visualized Experiments, 2021, , .	0.3	2
8	Multifunctional optrode for opsin delivery, optical stimulation, and electrophysiological recordings in freely moving rats. Journal of Neural Engineering, 2021, 18, 066013.	3.5	8
9	Intracortical probe arrays with silicon backbone and microelectrodes on thin polyimide wings enable long-term stable recordings in vivo. Journal of Neural Engineering, 2021, 18, 066026.	3.5	2
10	CMOS-Compatible, Flexible, Intracortical Neural Probes. IEEE Transactions on Biomedical Engineering, 2020, 67, 1366-1376.	4.2	11
11	Nanostructured planar-type uni-leg Si thermoelectric generators. Applied Physics Express, 2020, 13, 095001.	2.4	25
12	Multichannel optogenetic stimulation of the auditory pathway using microfabricated LED cochlear implants in rodents. Science Translational Medicine, 2020, 12, .	12.4	54
13	Customized Thinning of Silicon-based Neural Probes Down to 2 Âµm. , 2020, 2020, 3388-3392.		5
14	Towards the clinical translation of optogenetic skeletal muscle stimulation. Pflugers Archiv European Journal of Physiology, 2020, 472, 527-545.	2.8	12
15	High-density electrophysiological recordings in macaque using a chronically implanted 128-channel passive silicon probe. Journal of Neural Engineering, 2020, 17, 026036.	3.5	8
16	Compact Optical Neural Probes With Up to 20 Integrated Thin-Film muLEDs Applied in Acute Optogenetic Studies. IEEE Transactions on Biomedical Engineering, 2020, 67, 2603-2615.	4.2	14
17	Î¼LEDâ€based optical cochlear implants for spectrally selective activation of the auditory nerve. EMBO Molecular Medicine, 2020, 12, e12387.	6.9	29
18	Fine-scale mapping of cortical laminar activity during sleep slow oscillations using high-density linear silicon probes. Journal of Neuroscience Methods, 2019, 316, 58-70.	2.5	25

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19	A silicon-based spiky probe providing improved cell accessibility during in vitro slice recordings. Sensors and Actuators B: Chemical, 2019, 297, 126649.	7.8	2
20	High-yield indium-based wafer bonding for large-area multi-pixel optoelectronic probes for neuroscientific research. Journal of Micromechanics and Microengineering, 2019, 29, 095006.	2.6	5
21	Flexible $muext{LED}$-Based Optogenetic Tool with Integrated mu-Lens Array and Conical Concentrators Providing Light Extraction Improvements above 80%. , 2019, , .		7
22	Microfluidic Neural Probes with Buried Channels Fabricated Using Continuous Flow XeF2 Etching of Silicon. , 2019, , .		1
23	In vivo Recording Quality of Mechanically Decoupled Floating Versus Skull-Fixed Silicon-Based Neural Probes. Frontiers in Neuroscience, 2019, 13, 464.	2.8	13
24	Microfluidic chip to interface porous microneedles for ISF collection. Biomedical Microdevices, 2019, 21, 28.	2.8	50
25	A Slim Needle Neural Probe with 160 Active Recording Sites and Selectable ADCs. , 2019, , .		2
26	Long-term recording performance and biocompatibility of chronically implanted cylindrically-shaped, polymer-based neural interfaces. Biomedizinische Technik, 2018, 63, 301-315.	0.8	20
27	A silicon-based neural probe with densely-packed low-impedance titanium nitride microelectrodes for ultrahigh-resolution in vivo recordings. Biosensors and Bioelectronics, 2018, 106, 86-92.	10.1	61
28	A magnetic, micro-spring-suspended system for the safe electrical interconnection of neural implants. , 2018, , .		1
29	Invasive Optical Pacing in Perfused, Optogenetically Modified Mouse Heart Using Stiff Multi-LED Optical Probes. , 2018, 2018, 1-4.		3
30	Tapered Fibers Combined With a Multi-Electrode Array for Optogenetics in Mouse Medial Prefrontal Cortex. Frontiers in Neuroscience, 2018, 12, 771.	2.8	35
31	A Porous Microneedle Array Connected to Microfluidic System for ISF Collection. , 2018, , .		1
32	CMOS Neural Probe With 1600 Close-Packed Recording Sites and 32 Analog Output Channels. Journal of Microelectromechanical Systems, 2018, 27, 1023-1034.	2.5	29
33	Fully Immersible Subcortical Neural Probes With Modular Architecture and a Delta-Sigma ADC Integrated Under Each Electrode for Parallel Readout of 144 Recording Sites. IEEE Journal of Solid-State Circuits, 2018, 53, 3111-3125.	5.4	62
34	High-Density Î¼LED-Based Optical Cochlear Implant With Improved Thermomechanical Behavior. Frontiers in Neuroscience, 2018, 12, 659.	2.8	66
35	Development, Modeling, Fabrication, and Characterization of a Magnetic, Micro-Spring-Suspended System for the Safe Electrical Interconnection of Neural Implants. Micromachines, 2018, 9, 424.	2.9	4
36	High-yield indium-based wafer bonding for large-area multi-pixel optoelectronic probes for neuroscience. , 2017, , .		5

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37	Hybrid intracerebral probe with integrated bare LED chips for optogenetic studies. Biomedical Microdevices, 2017, 19, 49.	2.8	36
38	Let There Be Lightâ€"Optoprobes for Neural Implants. Proceedings of the IEEE, 2017, 105, 101-138.	21.3	51
39	Large-scale recording of thalamocortical circuits: in vivo electrophysiology with the two-dimensional electronic depth control silicon probe. Journal of Neurophysiology, 2016, 116, 2312-2330.	1.8	33
40	Integration of silicon-based neural probes and micro-drive arrays for chronic recording of large populations of neurons in behaving animals. Journal of Neural Engineering, 2016, 13, 046018.	3.5	39
41	Led-based optical cochlear implant on highly flexible triple layer polyimide substrates. , 2016, , .		15
42	Extending the Cortical Grasping Network: Pre-supplementary Motor Neuron Activity During Vision and Grasping of Objects. Cerebral Cortex, 2016, 26, 4435-4449.	2.9	36
43	Miniaturized 3×3 optical fiber array for optogenetics with integrated 460 nm light sources and flexible electrical interconnection. , 2015, , .		20
44	Flexible silicon-polymer neural probe rigidified by dissolvable insertion vehicle for high-resolution neural recording with improved duration. , 2015, , .		10
45	Isotropic 3D silicon hall sensor. , 2015, , .		10
46	Accurate neuronal tracing of microelectrodes based on PEDOT-dye coatings. , 2015, , .		2
47	New approaches for CMOS-based devices for large-scale neural recording. Current Opinion in Neurobiology, 2015, 32, 31-37.	4.2	60
48	Oscillatory Activity in the Medial Prefrontal Cortex and Nucleus Accumbens Correlates with Impulsivity and Reward Outcome. PLoS ONE, 2014, 9, e111300.	2.5	68
49	In vivo validation of the electronic depth control probes. Biomedizinische Technik, 2014, 59, 283-9.	0.8	8
50	Automatic channel selection and neural signal estimation across channels of neural probes. , 2014, , .		2
51	GaN-based micro-LED arrays on flexible substrates for optical cochlear implants. Journal Physics D: Applied Physics, 2014, 47, 205401.	2.8	143
52	A Wireless Stress Mapping System for Orthodontic Brackets Using CMOS Integrated Sensors. IEEE Journal of Solid-State Circuits, 2013, 48, 2191-2202.	5.4	28
53	Ultrathin, dual-sided silicon neural microprobes realized using BCB bonding and aluminum sacrificial etching. , 2013, , .		4
54	Novel technology for the in-plane to out-of-plane transfer of multiple interconnection lines in 3D neural probes. , 2013, , .		5

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55	CMOS-Based High-Density Silicon Microprobe Arrays for Electronic Depth Control in Intracortical Neural Recordingâ€“Characterization and Application. Journal of Microelectromechanical Systems, 2012, 21, 1426-1435.	2.5	41
56	Piezoresistive Response of Vertical Hall Devices. IEEE Sensors Journal, 2011, 11, 2628-2635.	4.7	7
57	A Novel Concept for Strain Sensing Based on the Ferromagnetic Shape Memory Alloy NiMnGa. IEEE Sensors Journal, 2011, 11, 2683-2689.	4.7	31
58	Diffusion-Limited Deposition of Parylene C. Journal of Microelectromechanical Systems, 2011, 20, 239-250.	2.5	17
59	CMOS-Based High-Density Silicon Microprobe Arrays for Electronic Depth Control in Intracortical Neural Recording. Journal of Microelectromechanical Systems, 2011, 20, 1439-1448.	2.5	67
60	High channel count electrode system to investigate thalamocortical interactions. Procedia Computer Science, 2011, 7, 178-179.	2.0	2
61	Two-Dimensional Multi-Channel Neural Probes With Electronic Depth Control. IEEE Transactions on Biomedical Circuits and Systems, 2011, 5, 403-412.	4.0	51
62	Compact wireless neural recording system for small animals using silicon-based probe arrays. , 2011, 2011, 2284-7.		11
63	A Wireless Multi-Channel Recording System for Freely Behaving Mice and Rats. PLoS ONE, 2011, 6, e22033.	2.5	132
64	Short and long term biocompatibility of NeuroProbes silicon probes. Journal of Neuroscience Methods, 2010, 189, 216-229.	2.5	55
65	Recent Progress in Neural Probes Using Silicon MEMS Technology. IEEJ Transactions on Electrical and Electronic Engineering, 2010, 5, 505-515.	1.4	66
66	CMOS-based high-density silicon microprobe for stress mapping in intracortical applications. , 2010, , .		14
67	Novel method for the assembly and electrical contacting of out-of-plane microstructures. , 2010, , .		8
68	Two-dimensional multi-channel neural probes with electronic depth control. , 2010, , .		6
69	711 Megasonically Mold Filling for Replication of Complex Microstructures. The Proceedings of Ibaraki District Conference, 2010, 2010.18, 195-198.	0.0	0
70	Reliability characterization of interconnects in CMOS integrated circuits under mechanical stress. , 2009, , .		1
71	The NeuroProbes project: A concept for electronic depth control. , 2008, 2008, 1857.		18
72	Systematic Characterization of DRIE-Based Fabrication Process of Silicon Microneedles. Materials Research Society Symposia Proceedings, 2007, 1052, 1.	0.1	5

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73	Simultaneous and Independent Measurement of Stress and Temperature Using a Single Field-Effect Transistor Structure. Journal of Microelectromechanical Systems, 2007, 16, 1232-1242.	2.5	15
74	Advanced silicon microstructures, sensors, and systems. IEEJ Transactions on Electrical and Electronic Engineering, 2007, 2, 199-215.	1.4	14
75	Mechanical Characterization of Thin-Film Composites using the Load-Deflection Response of Multilayer Membranes - Elastic and Fracture Properties. Materials Research Society Symposia Proceedings, 2006, 977, 1.	0.1	5