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	GaN-based micro-LED arrays on flexible substrates for optical cochlear implants. Journal Physics D: Applied Physics, 2014, 47, 205401.	2.8	143
2	A Wireless Multi-Channel Recording System for Freely Behaving Mice and Rats. PLoS ONE, 2011, 6, e22033.	2.5	132
3	Oscillatory Activity in the Medial Prefrontal Cortex and Nucleus Accumbens Correlates with Impulsivity and Reward Outcome. PLoS ONE, 2014, 9, e111300.	2.5	68
4	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
5	Recent Progress in Neural Probes Using Silicon MEMS Technology. IEEJ Transactions on Electrical and Electronic Engineering, 2010, 5, 505-515.	1.4	66
6	High-Density Î¼LED-Based Optical Cochlear Implant With Improved Thermomechanical Behavior. Frontiers in Neuroscience, 2018, 12, 659.	2.8	66
7	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
8	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
9	New approaches for CMOS-based devices for large-scale neural recording. Current Opinion in Neurobiology, 2015, 32, 31-37.	4.2	60
10	Short and long term biocompatibility of NeuroProbes silicon probes. Journal of Neuroscience Methods, 2010, 189, 216-229.	2.5	55
11	Multichannel optogenetic stimulation of the auditory pathway using microfabricated LED cochlear implants in rodents. Science Translational Medicine, 2020, 12, .	12.4	54
12	Two-Dimensional Multi-Channel Neural Probes With Electronic Depth Control. IEEE Transactions on Biomedical Circuits and Systems, 2011, 5, 403-412.	4.0	51
13	Let There Be Lightâ€"Optoprobes for Neural Implants. Proceedings of the IEEE, 2017, 105, 101-138.	21.3	51
14	Microfluidic chip to interface porous microneedles for ISF collection. Biomedical Microdevices, 2019, 21, 28.	2.8	50
15	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
16	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
17	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
18	Hybrid intracerebral probe with integrated bare LED chips for optogenetic studies. Biomedical Microdevices, 2017, 19, 49.	2.8	36

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19	Tapered Fibers Combined With a Multi-Electrode Array for Optogenetics in Mouse Medial Prefrontal Cortex. Frontiers in Neuroscience, 2018, 12, 771.	2.8	35
20	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
21	A Novel Concept for Strain Sensing Based on the Ferromagnetic Shape Memory Alloy NiMnGa. IEEE Sensors Journal, 2011, 11, 2683-2689.	4.7	31
22	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
23	Î¼LEDâ€based optical cochlear implants for spectrally selective activation of the auditory nerve. EMBO Molecular Medicine, 2020, 12, e12387.	6.9	29
24	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
25	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
26	Nanostructured planar-type uni-leg Si thermoelectric generators. Applied Physics Express, 2020, 13, 095001.	2.4	25
27	Microfluidic chip connected to porous microneedle array for continuous ISF sampling. Drug Delivery and Translational Research, 2022, 12, 435-443.	5.8	25
28	Miniaturized 3×3 optical fiber array for optogenetics with integrated 460 nm light sources and flexible electrical interconnection. , 2015, , .		20
29	Long-term recording performance and biocompatibility of chronically implanted cylindrically-shaped, polymer-based neural interfaces. Biomedizinische Technik, 2018, 63, 301-315.	0.8	20
30	The NeuroProbes project: A concept for electronic depth control. , 2008, 2008, 1857.		18
31	Diffusion-Limited Deposition of Parylene C. Journal of Microelectromechanical Systems, 2011, 20, 239-250.	2.5	17
32	Recording site placement on planar silicon-based probes affects signal quality in acute neuronal recordings. Scientific Reports, 2021, 11, 2028.	3.3	16
33	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
34	Led-based optical cochlear implant on highly flexible triple layer polyimide substrates. , 2016, , .		15
35	Advanced silicon microstructures, sensors, and systems. IEEJ Transactions on Electrical and Electronic Engineering, 2007, 2, 199-215.	1.4	14
36	CMOS-based high-density silicon microprobe for stress mapping in intracortical applications. , 2010, , .		14

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37	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
38	In vivo Recording Quality of Mechanically Decoupled Floating Versus Skull-Fixed Silicon-Based Neural Probes. Frontiers in Neuroscience, 2019, 13, 464.	2.8	13
39	Towards the clinical translation of optogenetic skeletal muscle stimulation. Pflugers Archiv European Journal of Physiology, 2020, 472, 527-545.	2.8	12
40	Compact wireless neural recording system for small animals using silicon-based probe arrays. , 2011, 2011, 2284-7.		11
41	CMOS-Compatible, Flexible, Intracortical Neural Probes. IEEE Transactions on Biomedical Engineering, 2020, 67, 1366-1376.	4.2	11
42	Flexible silicon-polymer neural probe rigidified by dissolvable insertion vehicle for high-resolution neural recording with improved duration. , 2015, , .		10
43	Isotropic 3D silicon hall sensor. , 2015, , .		10
44	Novel method for the assembly and electrical contacting of out-of-plane microstructures. , 2010, , .		8
45	In vivo validation of the electronic depth control probes. Biomedizinische Technik, 2014, 59, 283-9.	0.8	8
46	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
47	Multifunctional optrode for opsin delivery, optical stimulation, and electrophysiological recordings in freely moving rats. Journal of Neural Engineering, 2021, 18, 066013.	3.5	8
48	Piezoresistive Response of Vertical Hall Devices. IEEE Sensors Journal, 2011, 11, 2628-2635.	4.7	7
49	Flexible $muext{LED}$-Based Optogenetic Tool with Integrated mu-Lens Array and Conical Concentrators Providing Light Extraction Improvements above 80%. , 2019, , .		7
50	Two-dimensional multi-channel neural probes with electronic depth control. , 2010, , .		6
51	Multichannel optogenetics combined with laminar recordings for ultra-controlled neuronal interrogation. Nature Communications, 2022, 13, 985.	12.8	6
52	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
53	Systematic Characterization of DRIE-Based Fabrication Process of Silicon Microneedles. Materials Research Society Symposia Proceedings, 2007, 1052, 1.	0.1	5
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	High-yield indium-based wafer bonding for large-area multi-pixel optoelectronic probes for neuroscience. , 2017, , .		5
56	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
57	Customized Thinning of Silicon-based Neural Probes Down to 2 Âµm. , 2020, 2020, 3388-3392.		5
58	Ultrathin, dual-sided silicon neural microprobes realized using BCB bonding and aluminum sacrificial etching. , 2013, , .		4
59	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
60	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
61	Invasive Optical Pacing in Perfused, Optogenetically Modified Mouse Heart Using Stiff Multi-LED Optical Probes. , 2018, 2018, 1-4.		3
62	High channel count electrode system to investigate thalamocortical interactions. Procedia Computer Science, 2011, 7, 178-179.	2.0	2
63	Automatic channel selection and neural signal estimation across channels of neural probes. , 2014, , .		2
64	Accurate neuronal tracing of microelectrodes based on PEDOT-dye coatings. , 2015, , .		2
65	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
66	A Slim Needle Neural Probe with 160 Active Recording Sites and Selectable ADCs. , 2019, , .		2
67	Advanced Cardiac Rhythm Management by Applying Optogenetic Multi-Site Photostimulation in Murine Hearts. Journal of Visualized Experiments, 2021, , .	0.3	2
68	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
69	Reliability characterization of interconnects in CMOS integrated circuits under mechanical stress. , 2009, , .		1
70	A magnetic, micro-spring-suspended system for the safe electrical interconnection of neural implants. , 2018, , .		1
71	A Porous Microneedle Array Connected to Microfluidic System for ISF Collection. , 2018, , .		1
72	Microfluidic Neural Probes with Buried Channels Fabricated Using Continuous Flow XeF2 Etching of Silicon. , 2019, , .		1

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73	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
74	711 Megasonically Mold Filling for Replication of Complex Microstructures. The Proceedings of Ibaraki District Conference, 2010, 2010.18, 195-198.	0.0	0
75	Stackable Wireless Controller of Single-Sided ÂµLed Arrays For Optogenetics in Freely Behaving Animals. , 2022, , .		0