Patrick Degenaar

List of Publications by Year in descending order

126 papers	2,142 citations	304368 22 h-index	264894 42 g-index
130 all docs	130 docs citations	130 times ranked	2257 citing authors

#	Article	IF	Citations
1	Magnetoâ€Optogenetic Deepâ€Brain Multimodal Neurostimulation. Advanced Intelligent Systems, 2022, 4, 2100082.	3.3	5
2	Visual Prosthesis, Optogenetic Approaches. , 2022, , 3615-3618.		0
3	A Closed-Loop Optogenetic Platform. Frontiers in Neuroscience, 2021, 15, 718311.	1.4	4
4	Context-Based Object Recognition: Indoor Versus Outdoor Environments. Advances in Intelligent Systems and Computing, 2020, , 473-490.	0.5	4
5	Objects and scenes classification with selective use of central and peripheral image content. Journal of Visual Communication and Image Representation, 2020, 66, 102698.	1.7	6
6	Detection of Simulated Tactile Gratings by Electro-Static Friction Show a Dependency on Bar Width for Blind and Sighted Observers, and Preliminary Neural Correlates in Sighted Observers. Frontiers in Neuroscience, 2020, 14, 548030.	1.4	1
7	Medicine-by-wire: Practical considerations on formal techniques for dependable medical systems. Science of Computer Programming, 2020, 200, 102545.	1.5	2
8	The Neural Engine: A Reprogrammable Low Power Platform for Closed-Loop Optogenetics. IEEE Transactions on Biomedical Engineering, 2020, 67, 3004-3015.	2.5	6
9	Ultrasound Intra Body Multi Node Communication System for Bioelectronic Medicine. Sensors, 2020, 20, 31.	2.1	5
10	A novel hybrid technique to fabricate silicon-based micro-implants with near defect-free quality for neuroprosthetics application. Materials Science and Engineering C, 2020, 110, 110737.	3.8	1
11	A scalable data transmission scheme for implantable optogenetic visual prostheses. Journal of Neural Engineering, 2020, 17, 055001.	1.8	1
12	Fully Balanced LED Driving Circuit for Optogenetics Stimulation. , 2020, , .		0
13	Newcastle Visual Prosthesis Implantable Control Unit. , 2020, , .		1
14	A Reprogrammable Low Power Closed-Loop Optogenetic Platform for Freely Moving Animals. , 2019, , .		0
15	Closed-Loop Proportion-Derivative Control of Suppressing Seizures in a Neural Mass Model. , 2019, , .		4
16	Modelling Optogenetic Subthreshold Effects. , 2019, 2019, 6136-6140.		3
17	Micro-machinability and edge chipping mechanism studies on diamond micro-milling of monocrystalline silicon. Journal of Manufacturing Processes, 2019, 38, 93-103.	2.8	24
18	A high-performance 4 nV (âˆšHz)‹sup›â^'1‹/sup› analog front-end architecture for artefact suppression in local field potential recordings during deep brain stimulation. Journal of Neural Engineering, 2019, 16, 066003.	1.8	8

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19	Edge chipping minimisation strategy for milling of monocrystalline silicon: A molecular dynamics study. Applied Surface Science, 2019, 486, 166-178.	3.1	8
20	Wearable Glasses for Retinal Pigmentiosa Based on Optogenetics. , 2019, , .		3
21	Comparison between Different Optical Systems for Optogenetics based Head Mounted Device for Retina Pigmentosa. , 2019, 2019, 382-385.		0
22	Design Considerations for Artefact-Free Optoelectronic Systems. , 2019, 2019, 3742-3745.		1
23	Wireless Optogenetics Visual Cortical Prosthesis Control System. , 2019, , .		1
24	A high-performance 8â€‰nV/âˆšHz 8-channel wearable and wireless system for real-time monitoring of bioelectrical signals. Journal of NeuroEngineering and Rehabilitation, 2019, 16, 156.	2.4	11
25	Wireless Ultrasonic Communication for Biomedical Injectable Implantable Device. , 2019, 2019, 4024-4027.		4
26	A current-mode system to self-measure temperature on implantable optoelectronics. BioMedical Engineering OnLine, 2019, 18, 117.	1.3	5
27	Live Demonstration: Optogenetic Neuro-prosthetics. , 2019, , .		1
28	Self-sensing of temperature rises on light emitting diode based optrodes. Journal of Neural Engineering, 2018, 15, 026012.	1.8	15
29	Optoâ€electroâ€thermal optimization of photonic probes for optogenetic neural stimulation. Journal of Biophotonics, 2018, 11, e201700358.	1.1	29
30	A Scalable Optoelectronic Neural Probe Architecture With Self-Diagnostic Capability. IEEE Transactions on Circuits and Systems I: Regular Papers, 2018, 65, 2431-2442.	3.5	18
31	Photonic Interaction with the Nervous System. , 2018, , 233-258.		2
32	A Rodent Flash FPGA Control System for Closed-loop Optogenetic Stimulation to Suppress Seizures. , 2018, , .		0
33	Optical Recording and stimulation of an Injectable Wireless Medical Implant. , 2018, , .		1
34	A head mounted device stimulator for optogenetic retinal prosthesis. Journal of Neural Engineering, 2018, 15, 065002.	1.8	32
35	Extraspectral Imaging for Improving the Perceived Information Presented in Retinal Prosthesis. Journal of Healthcare Engineering, 2018, 2018, 1-14.	1.1	5
36	Fractional order PID system for suppressing epileptic activities. , 2018, , .		10

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37	On-Probe Neural Interface ASIC for Combined Electrical Recording and Optogenetic Stimulation. IEEE Transactions on Biomedical Circuits and Systems, 2018, 12, 576-588.	2.7	42
38	A Flash-FPGA based Rodent Control System for Closed-loop Optogenetic Control of Epilepsy. , 2018, , .		4
39	High Density, High Radiance mu LED Matrix for Optogenetic Retinal Prostheses and Planar Neural Stimulation. IEEE Transactions on Biomedical Circuits and Systems, 2017, 11, 347-359.	2.7	31
40	Deep learning-based artificial vision for grasp classification in myoelectric hands. Journal of Neural Engineering, 2017, 14, 036025.	1.8	123
41	Processing occlusions using elastic-net hierarchical MAX model of the visual cortex. , 2017, , .		2
42	Optogenetics in Silicon: A Neural Processor for Predicting Optically Active Neural Networks. IEEE Transactions on Biomedical Circuits and Systems, 2017, 11, 15-27.	2.7	22
43	A low power flash-FPGA based brain implant micro-system of PID control. , 2017, 2017, 173-176.		4
44	LED-based temperature sensor. , 2017, , .		2
45	Live demonstration: A closed-loop cortical brain implant for optogenetic curing epilepsy. , 2017, , .		1
46	Ultrasonic wireless powering link of visual cortical prosthesis implant. , 2017, , .		1
47	Object Recognition With an Elastic Net-Regularized Hierarchical MAX Model of the Visual Cortex. IEEE Signal Processing Letters, 2016, 23, 1062-1066.	2.1	16
48	Micro-Machinability Studies of Single Crystal Silicon Using Diamond End-Mill. , 2016, , .		0
49	An optrode with built-in self-diagnostic and fracture sensor for cortical brain stimulation. , 2016, , .		4
50	High density Î¼LED array for retinal prothesis with a eye-tracking system. , 2016, , .		2
51	Biphasic micro-LED driver for optogenetics. , 2016, , .		5
52	Biologically-inspired object recognition system for recognizing natural scene categories. , 2016, , .		3
53	Effect of crystallographic orientation and employment of different cutting tools on micro-end-milling of monocrystalline silicon. Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture, 2016, 230, 1756-1764.	1.5	11
54	A fixed window Level Crossing ADC with activity dependent power dissipation. , 2016, , .		7

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55	Real-Time Simulation of Passage-of-Time Encoding in Cerebellum Using a Scalable FPGA-Based System. IEEE Transactions on Biomedical Circuits and Systems, 2016, 10, 742-753.	2.7	36
56	Blockade of pathological retinal ganglion cell hyperactivity improves optogenetically evoked light responses in rd1 mice. Frontiers in Cellular Neuroscience, 2015, 9, 330.	1.8	45
57	Optical Waveguide Mode Selection Based Pattern- adjustable Optrode for Optogenetics. , 2015, , .		0
58	Surface and subsurface characterisation in micro-milling of monocrystalline silicon. International Journal of Advanced Manufacturing Technology, 2015, 81, 1319-1331.	1.5	43
59	Wireless data and power transfer of an optogenetic implantable visual cortex stimulator. , 2015, 2015, 8006-9.		7
60	A CMOS-based neural implantable optrode for optogenetic stimulation and electrical recording. , 2015, , .		14
61	Power gating in asynchronous micropiplines for low power data driven computing. , 2015, , .		2
62	Optogenetic approaches to retinal prosthesis. Visual Neuroscience, 2014, 31, 345-354.	0.5	71
63	An implantable optrode with Self-diagnostic function in 0.35µm CMOS for optical neural stimulation. , 2014, , .		7
64	FPGA design for dual-spectrum visual scene preparation in retinal prosthesis. , 2014, 2014, 4691-4.		3
65	A scalable FPGA-based cerebellum for passage-of-time representation. , 2014, 2014, 3102-5.		2
66	An 8100 pixel optoelectronic array for optogenetic retinal prosthesis. , 2014, , .		10
67	A real-time silicon cerebellum spiking neural model based on FPGA. , 2014, , .		1
68	Arrays of MicroLEDs and Astrocytes: Biological Amplifiers to Optogenetically Modulate Neuronal Networks Reducing Light Requirement. PLoS ONE, 2014, 9, e108689.	1.1	21
69	A Processing Platform for Optoelectronic/Optogenetic Retinal Prosthesis. IEEE Transactions on Biomedical Engineering, 2013, 60, 781-791.	2.5	40
70	FPGA design of an even power distributor for optoelectronic neural stimulation. , 2013, , .		0
71	Measured hyperbolic-sine (sinh) CMOS results: A high-order 10Hzâ€“1kHz notch filter for 50/60Hz noise. Microelectronics Journal, 2013, 44, 1268-1277.	1.1	11
72	FPGA design of a pulse encoder for optoelectronic neural stimulation and recording arrays. , 2013, , .		1

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73	Development of optics with micro-LED arrays for improved opto-electronic neural stimulation. , 2013, , .		14
74	Efficient scene preparation and downscaling prior to stimulation in retinal prosthesis. , 2013, , .		3
75	Towards reliable hybrid bio-silicon integration using novel adaptive control system. , 2013, , .		0
76	A Coding Scheme for Optoelectronic/Optogenetic Retinal Prosthesis. , 2013, , .		0
77	Extremely slow photocurrent response from hemoprotein films in planar diode geometry. Applied Physics Letters, 2012, 101, 223701.	1.5	6
78	Implantable optrode design for optogenetic visual cortical prosthesis. Proceedings of SPIE, 2012, , .	0.8	2
79	Microtextured Surfaces for Deep-Brain Stimulation Electrodes: A Biologically Inspired Design to Reduce Lead Migration. World Neurosurgery, 2012, 77, 569-576.	0.7	17
80	Individually addressable optoelectronic arrays for optogenetic neural stimulation. , 2011, , .		6
81	High-frequency limit of neural stimulation with ChR2. , 2011, 2011, 4167-70.		15
82	Scene optimization for optogenetic retinal prosthesis. , 2011, , .		7
83	Modeling Study of the Light Stimulation of a Neuron Cell With Channelrhodopsin-2 Mutants. IEEE Transactions on Biomedical Engineering, 2011, 58, 1742-1751.	2.5	97
84	A preliminary study of vapour-phase polymerized poly(3,4-ethylenedioxythiophene) as a transparent neural electrode. , 2011, , .		0
85	Insertion experiments of a biologically inspired microtextured and multi-part probe based on reciprocal motion. , 2010, 2010, 3190-3.		8
86	Individually addressable optoelectronic arrays for optogenetic neural stimulation. , 2010, , .		8
87	An optogenetic neural stimulation platform for concurrent induction and recording of neural activity. , 2010, , .		1
88	Designing and testing scene enhancement algorithms for patients with retina degenerative disorders. BioMedical Engineering OnLine, 2010, 9, 27.	1.3	34
89	Improved content aware scene retargeting for retinitis pigmentosa patients. BioMedical Engineering OnLine, 2010, 9, 52.	1.3	19
90	Multi-site optical excitation using ChR2 and micro-LED array. Journal of Neural Engineering, 2010, 7, 016004.	1.8	218

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91	A New Individually Addressable Micro-LED Array for Photogenetic Neural Stimulation. IEEE Transactions on Biomedical Circuits and Systems, 2010, 4, 469-476.	2.7	58
92	Computational Modelling of the Drosophila Phototransduction Cascade. Biophysical Journal, 2010, 98, 495a.	0.2	1
93	A stochastic model of the single photon response in Drosophila photoreceptors. Integrative Biology (United Kingdom), 2010, 2, 354.	0.6	16
94	Photocycles of Channelrhodopsinâ€2. Photochemistry and Photobiology, 2009, 85, 400-411.	1.3	198
95	A CMOS image sensor with light-controlled oscillating pixels for an investigative optobionic retinal prosthesis system. Microelectronics Journal, 2009, 40, 1202-1211.	1.1	8
96	Optobionic visionâ€"a new genetically enhanced light on retinal prosthesis. Journal of Neural Engineering, 2009, 6, 035007.	1.8	113
97	Soft tissue traversal with zero net force: Feasibility study of a biologically inspired design based on reciprocal motion. , 2009, , .		14
98	Insertion of a Cytochrome c Protein into a Complex Lipid Monolayer under an Electric Field. Journal of Physical Chemistry C, 2009, 113, 14377-14380.	1.5	6
99	Photostimulator for optogenetic retinal prosthesis. , 2009, , .		3
100	Optoelectronic microarrays for retinal prosthesis. , 2009, , .		1
101	Seeing the light: a photonic visual prosthesis for the blind. Proceedings of SPIE, 2009, , .	0.8	1
102	Noise reduction in analogue computation of Drosophila photoreceptors. Journal of Computational Electronics, 2008, 7, 458-461.	1.3	4
103	Polymer Transfer Printing: Application to Layer Coating, Pattern Definition, and Diode Dark Current Blocking. Advanced Materials, 2008, 20, 1679-1683.	11.1	90
104	A CMOS image sensor with spiking pixels for retinal stimulation. , 2008, , .		2
105	Parallelism to reduce power consumption on FPGA spatiotemporal image processing. , 2008, , .		15
106	A Robust Edge Enhancement Approach for Low Vision Patients Using Scene Simplification. , 2008, , .		16
107	Micro-LED arrays: a tool for two-dimensional neuron stimulation. Journal Physics D: Applied Physics, 2008, 41, 094014.	1.3	112
108	A Minimum Jerk Design of Active Artificial Foot. , 2008, , .		1

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109	A Spatiotemporal Parallel Image Processing on FPGA for Augmented Vision System. , 2008, , 558-561.		2
110	Biologically inspired microtexturing: Investigation into the surface topography of next-generation neurosurgical probes. , 2008, 2008, 5611-4.		18
111	Low-power pulse-width-modulated neuromorphic spiking circuit allowing signed double byte data transfer along a single channel. Electronics Letters, 2007, 43, 704.	0.5	2
112	A Bio-Inspired Adaptive Retinal Processing Neuron with Multiplexed Spiking Outputs. , 2007, , .		1
113	A Non-Invasive Retinal Prosthesis - Testing the Concept. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2007, 2007, 6365-8.	0.5	17
114	An optoelectronic platform for retinal prosthesis. , 2006, , .		5
115	Reducing Collision Noise In Asynchronous Vision Chips. Midwest Symposium on Circuits and Systems, 2006, , .	1.0	0
116	Adaptive ON-OFF spiking photoreceptor. Electronics Letters, 2006, 42, 196.	0.5	1
117	Modeling and Engineering aspects of ChannelRhodopsin2 System for Neural Photostimulation. , 2006, 2006, 1626-9.		28
118	Modeling and Engineering aspects of ChannelRhodopsin2 System for Neural Photostimulation. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2006, , .	0.5	2
119	Distributed current-mode image processing filters. Electronics Letters, 2005, 41, 1201.	0.5	24
120	Enzyme-Linked Sensitive Fluorometric Imaging of Glutamate Release from Cerebral Neurons of Chick Embryos. Journal of Biochemistry, 2003, 134, 353-358.	0.9	11
121	Near-Field Optics in Biology. Microtechnology and MEMS, 2003, , 83-119.	0.2	0
122	Techniques for patterning and guidance of primary culture neurons on micro-electrode arrays. Sensors and Actuators B: Chemical, 2002, 83, 15-21.	4.0	40
123	A Method for Micrometer Resolution Patterning of Primary Culture Neurons for SPM Analysis. Journal of Biochemistry, 2001, 130, 367-376.	0.9	24
124	Cell Placement and Neural Guidance Using a Three-Dimensional Microfluidic Array. Japanese Journal of Applied Physics, 2001, 40, 5485-5490.	0.8	29
125	<title>Near-field imaging of neurotransmitter release and uptake in patterned neuron networks</title>. , 2000, , .		0
126	An Adaptable Foveating Vision Chip. , 0, , .		6