

# Hamish Meffin

## List of Publications by Year in descending order

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Version: 2024-02-01

91  
papers

1,679  
citations

331670

21  
h-index

345221

36  
g-index

98  
all docs

98  
docs citations

98  
times ranked

1539  
citing authors

#	ARTICLE	IF	CITATIONS
1	Learning receptive field properties of complex cells in V1. PLoS Computational Biology, 2021, 17, e1007957.	3.2	7
2	Neural activity shaping utilizing a partitioned target pattern. Journal of Neural Engineering, 2021, 18, 046025.	3.5	2
3	Analysis of extracellular spike waveforms and associated receptive fields of neurons in cat primary visual cortex. Journal of Physiology, 2021, 599, 2211-2238.	2.9	25
4	Improved visual acuity using a retinal implant and an optimized stimulation strategy. Journal of Neural Engineering, 2020, 17, 016018.	3.5	23
5	Determination of the electrical impedance of neural tissue from its microscopic cellular constituents. Journal of Neural Engineering, 2020, 17, 016037.	3.5	1
6	Hybrid diamond/ carbon fiber microelectrodes enable multimodal electrical/chemical neural interfacing. Biomaterials, 2020, 230, 119648.	11.4	41
7	In vivo feasibility of epiretinal stimulation using ultrananocrystalline diamond electrodes. Journal of Neural Engineering, 2020, 17, 045014.	3.5	4
8	High Fidelity Bidirectional Neural Interfacing with Carbon Fiber Microelectrodes Coated with Boron-Doped Carbon Nanowalls: An Acute Study. Advanced Functional Materials, 2020, 30, 2006101.	14.9	10
9	Mechanisms of Feature Selectivity and Invariance in Primary Visual Cortex. Cerebral Cortex, 2020, 30, 5067-5087.	2.9	13
10	Minimizing axon bundle activation of retinal ganglion cells with oriented rectangular electrodes. Journal of Neural Engineering, 2020, 17, 036016.	3.5	6
11	Stimulation Strategies for Improving the Resolution of Retinal Prostheses. Frontiers in Neuroscience, 2020, 14, 262.	2.8	38
12	Toward a Biologically Plausible Model of LGN-V1 Pathways Based on Efficient Coding. Frontiers in Neural Circuits, 2019, 13, 13.	2.8	15
13	Global activity shaping strategies for a retinal implant. Journal of Neural Engineering, 2019, 16, 026008.	3.5	21
14	Synaptic Basis for Contrast-Dependent Shifts in Functional Identity in Mouse V1. ENeuro, 2019, 6, ENEURO.0480-18.2019.	1.9	6
15	Upper stimulation threshold for retinal ganglion cell activation. Journal of Neural Engineering, 2018, 15, 046012.	3.5	19
16	Bistability in Hodgkin-Huxley-type equations. , 2018, 2018, 4728-4731.		2
17	Neuroprostheses: method to evaluate the information content of stimulation strategies. , 2018, 2018, 4724-4727.		0
18	Compensation for Traveling Wave Delay Through Selection of Dendritic Delays Using Spike-Timing-Dependent Plasticity in a Model of the Auditory Brainstem. Frontiers in Computational Neuroscience, 2018, 12, 36.	2.1	8

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19	Feasibility of Nitrogen Doped Ultrananocrystalline Diamond Microelectrodes for Electrophysiological Recording From Neural Tissue. <i>Frontiers in Bioengineering and Biotechnology</i> , 2018, 6, 85.	4.1	8
20	In vitro assessment of the differences in retinal ganglion cell responses to intra- and extracellular electrical stimulation. <i>Journal of Neural Engineering</i> , 2018, 15, 046022.	3.5	6
21	Biophysical basis of the linear electrical receptive fields of retinal ganglion cells. <i>Journal of Neural Engineering</i> , 2018, 15, 055001.	3.5	15
22	Electrical receptive fields of retinal ganglion cells: Influence of presynaptic neurons. <i>PLoS Computational Biology</i> , 2018, 14, e1005997.	3.2	15
23	Minimizing activation of overlying axons with epiretinal stimulation: The role of fiber orientation and electrode configuration. <i>PLoS ONE</i> , 2018, 13, e0193598.	2.5	24
24	Diamond Devices for High Acuity Prosthetic Vision. <i>Advanced Biology</i> , 2017, 1, e1600003.	3.0	35
25	Prediction of cortical responses to simultaneous electrical stimulation of the retina. <i>Journal of Neural Engineering</i> , 2017, 14, 016006.	3.5	18
26	26th Annual Computational Neuroscience Meeting (CNS*2017): Part 3. <i>BMC Neuroscience</i> , 2017, 18, .	1.9	7
27	Single-compartment models of retinal ganglion cells with different electrophysiologies. <i>Network: Computation in Neural Systems</i> , 2017, 28, 74-93.	3.6	10
28	Neural Responses to Multielectrode Stimulation of Healthy and Degenerate Retina. , 2017, 58, 3770.		21
29	26th Annual Computational Neuroscience Meeting (CNS*2017): Part 2. <i>BMC Neuroscience</i> , 2017, 18, .	1.9	7
30	A computational model of orientation-dependent activation of retinal ganglion cells. , 2016, 2016, 5447-5450.		2
31	Spectral distribution of local field potential responses to electrical stimulation of the retina. <i>Journal of Neural Engineering</i> , 2016, 13, 036003.	3.5	15
32	Optimizing growth and post treatment of diamond for high capacitance neural interfaces. <i>Biomaterials</i> , 2016, 104, 32-42.	11.4	45
33	Brazing techniques for the fabrication of biocompatible carbon-based electronic devices. <i>Carbon</i> , 2016, 107, 180-189.	10.3	14
34	Development of a Magnetic Attachment Method for Bionic Eye Applications. <i>Artificial Organs</i> , 2016, 40, E12-24.	1.9	9
35	<i>In vivo</i> biocompatibility of boron doped and nitrogen included conductive diamond for use in medical implants. <i>Journal of Biomedical Materials Research - Part B Applied Biomaterials</i> , 2016, 104, 19-26.	3.4	52
36	Diamond for neural interfacing: A review. <i>Carbon</i> , 2016, 102, 437-454.	10.3	61

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37	A Simple and Accurate Model to Predict Responses to Multi-electrode Stimulation in the Retina. PLoS Computational Biology, 2016, 12, e1004849.	3.2	30
38	Prosthetic vision: devices, patient outcomes and retinal research. Australasian journal of optometry, The, 2015, 98, 395-410.	1.3	30
39	Spatial phase sensitivity of complex cells in primary visual cortex depends on stimulus contrast. Journal of Neurophysiology, 2015, 114, 3326-3338.	1.8	12
40	Broadband Onset Inhibition Can Suppress Spectral Splatter in the Auditory Brainstem. PLoS ONE, 2015, 10, e0126500.	2.5	8
41	The effects of temperature changes on retinal ganglion cell responses to electrical stimulation. , 2015, 2015, 7506-9.		4
42	Hermetic diamond capsules for biomedical implants enabled by gold active braze alloys. Biomaterials, 2015, 53, 464-474.	11.4	39
43	Spike history neural response model. Journal of Computational Neuroscience, 2015, 38, 463-481.	1.0	5
44	Modelling extracellular electrical stimulation: IV. Effect of the cellular composition of neural tissue on its spatio-temporal filtering properties. Journal of Neural Engineering, 2014, 11, 065005.	3.5	23
45	Modelling extracellular electrical stimulation: III. Derivation and interpretation of neural tissue equations. Journal of Neural Engineering, 2014, 11, 065004.	3.5	27
46	Feedback stimulation strategy: Control of retinal ganglion cells activation. , 2014, 2014, 1703-6.		0
47	Electrical stimulation of neural tissue modeled as a cellular composite: Point Source electrode in an isotropic tissue. , 2014, 2014, 4856-9.		0
48	The effect of morphology upon electrophysiological responses of retinal ganglion cells: simulation results. Journal of Computational Neuroscience, 2014, 36, 157-175.	1.0	19
49	A Complete 256-Electrode Retinal Prosthesis Chip. IEEE Journal of Solid-State Circuits, 2014, 49, 751-765.	5.4	73
50	Fabrication of planarised conductively patterned diamond for bio-applications. Materials Science and Engineering C, 2014, 43, 135-144.	7.3	23
51	A comparison of open-loop and closed-loop stimulation strategies to control excitation of retinal ganglion cells. Biomedical Signal Processing and Control, 2014, 14, 164-174.	5.7	4
52	An all-diamond, hermetic electrical feedthrough array for a retinal prosthesis. Biomaterials, 2014, 35, 908-915.	11.4	89
53	Modeling intrinsic electrophysiology of All amacrine cells: Preliminary results. , 2013, 2013, 6551-4.		3
54	Retinal ganglion cells electrophysiology: The effect of cell morphology on impulse waveform. , 2013, 2013, 2583-6.		0

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55	What limits spatial perception with retinal implants?. , 2013, , .		3
56	Effect of soma polarization on electrical stimulation thresholds of retinal ganglion cells. , 2013, , .		2
57	Internal inconsistencies in models of electrical stimulation in neural tissue. , 2013, 2013, 5946-9.		4
58	Multicompartment retinal ganglion cells response to high frequency bi-phasic pulse train stimulation: Simulation results. , 2013, 2013, 69-72.		1
59	Retinal Prosthesis Safety: Alterations in Microglia Morphology due to Thermal Damage and Retinal Implant Contact. , 2012, 53, 7802.		26
60	Epiretinal electrical stimulation and the inner limiting membrane in rat retina. , 2012, 2012, 2989-92.		5
61	Ultra-nanocrystalline diamond electrodes: optimization towards neural stimulation applications. Journal of Neural Engineering, 2012, 9, 016002.	3.5	100
62	Information theoretic inference of the optimal number of electrodes for future cochlear implants using a spiral cochlea model. , 2012, 2012, 2965-8.		5
63	Minimisation of required charge for desired neuronal spike rate. , 2012, 2012, 3009-12.		1
64	Determining the electrical impedance of the retina from a complex voltage map. , 2012, 2012, 3005-8.		1
65	An investigation of dendritic delay in octopus cells of the mammalian cochlear nucleus. Frontiers in Computational Neuroscience, 2012, 6, 83.	2.1	13
66	Modeling extracellular electrical stimulation: I. Derivation and interpretation of neurite equations. Journal of Neural Engineering, 2012, 9, 065005.	3.5	43
67	Modeling extracellular electrical stimulation: II. Computational validation and numerical results. Journal of Neural Engineering, 2012, 9, 065006.	3.5	23
68	Electrical stimulation of retinal ganglion cells with diamond and the development of an all diamond retinal prosthesis. Biomaterials, 2012, 33, 5812-5820.	11.4	109
69	Heating of the Eye by a Retinal Prosthesis: Modeling, Cadaver and In Vivo Study. IEEE Transactions on Biomedical Engineering, 2012, 59, 339-345.	4.2	46
70	Sinusoidal Stimulation of Retinal Bipolar Cells: A Modelling Study. , 2012, , .		2
71	Amplitude modulation in the stellate microcircuit of the cochlear nucleus. , 2011, , .		0
72	Modelling intrinsic electrophysiological properties of ON and OFF retinal ganglion cells. Journal of Computational Neuroscience, 2011, 31, 547-561.	1.0	32

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73	A bifurcation analysis of a modified neural field model: conductance-based synapses act as an anti-epileptic regulatory mechanism. BMC Neuroscience, 2011, 12, .	1.9	0
74	The electrotonic length constant: A theoretical estimate for neuroprosthetic electrical stimulation. Biomedical Signal Processing and Control, 2011, 6, 105-111.	5.7	9
75	Learning a Sparse Code for Temporal Sequences Using STDP and Sequence Compression. Neural Computation, 2011, 23, 2567-2598.	2.2	21
76	Theoretical framework for estimating the conductivity map of the retina through finite element analysis. , 2011, 2011, 6721-4.		1
77	Predicting phosphene elicitation in patients with retinal implants: A mathematical study. , 2011, 2011, 6246-9.		3
78	A Channel Model for Inferring the Optimal Number of Electrodes for Future Cochlear Implants. IEEE Transactions on Information Theory, 2010, 56, 928-940.	2.4	13
79	Differential stimulation of ON and OFF retinal ganglion cells: A modeling study. , 2010, 2010, 4246-9.		6
80	Spiking Neuron Model for Temporal Sequence Recognition. Neural Computation, 2010, 22, 61-93.	2.2	3
81	Thermal heating of a retinal prosthesis: Thermal model and in-vitro study. , 2010, 2010, 1597-600.		10
82	Viability of the inner retina in a novel mouse model of retinitis pigmentosa. , 2010, 2010, 553-6.		3
83	Selective filtering to spurious localization cues in the mammalian auditory brainstem. Journal of the Acoustical Society of America, 2009, 126, 2437-2454.	1.1	19
84	Analysis of the power spectra, autocorrelation function and EEG time-series signal of a network of leaky integrate-and-fire neurons with conductance-based synapses. BMC Neuroscience, 2009, 10, .	1.9	0
85	Constraining neural microcircuits with surrogate physiological data and genetic algorithms. BMC Neuroscience, 2007, 8, .	1.9	1
86	Dynamically adjustable contrast enhancement from cortical background activity. Neurocomputing, 2005, 65-66, 633-639.	5.9	1
87	Spike-Timing-Dependent Plasticity: The Relationship to Rate-Based Learning for Models with Weight Dynamics Determined by a Stable Fixed Point. Neural Computation, 2004, 16, 885-940.	2.2	73
88	An Analytical Model for the "Large, Fluctuating Synaptic Conductance State" Typical of Neocortical Neurons In Vivo. Journal of Computational Neuroscience, 2004, 16, 159-175.	1.0	57
89	Study of neuronal gain in a conductance-based leaky integrate-and-fire neuron model with balanced excitatory and inhibitory synaptic input. Biological Cybernetics, 2003, 89, 119-125.	1.3	45
90	The Bionic Eye: a review of multielectrode arrays. , 0, , 294-312.		1

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91	How Stimulus Statistics Affect the Receptive Fields of Cells in Primary Visual Cortex. Journal of Neuroscience, 0, , JN-RM-0664-21.	3.6	0