Charles Nicholson

List of Publications by Year in Descending Order

37 papers	7,486 citations	25 h-index	39 g-index
39 ext. papers	8,851 ext. citations	7 avg, IF	6.02 L-index

#	Paper	IF	Citations
37	The secret world in the gaps between brain cells. *Physics Today*, **2022**, 75, 26-32	0.9	0
36	Rapid volume pulsation of the extracellular space coincides with epileptiform activity in mice and depends on the NBCe1 transporter. *Journal of Physiology*, **2021**, 599, 3195-3220	3.9	3
35	Reduction of Dimensionality in Monte Carlo Simulation of Diffusion in Extracellular Space Surrounding Cubic Cells. *Neurochemical Research*, **2020**, 45, 42-52	4.6	3
34	Interactions between insulin and diet on striatal dopamine uptake kinetics in rodent brain slices. *European Journal of Neuroscience*, **2019**, 49, 794-804	3.5	11
33	Brain Interstitial Structure Revealed Through Diffusive Spread of Molecules **2018**, 93-114		2
32	Real-time Iontophoresis with Tetramethylammonium to Quantify Volume Fraction and Tortuosity of Brain Extracellular Space. *Journal of Visualized Experiments*, **2017**,	1.6	12
31	Brain Extracellular Space: The Final Frontier of Neuroscience. *Biophysical Journal*, **2017**, 113, 2133-2142	2.9	133
30	Anomalous diffusion inspires anatomical insights. *Biophysical Journal*, **2015**, 108, 2091-3	2.9	9
29	Clearance systems in the brain-implications for Alzheimer disease. *Nature Reviews Neurology*, **2015**, 11, 457-70	15	759
28	The quest for a better insight into physiology of fluids and barriers of the brain: the exemplary career of Joseph D. Fenstermacher. *Fluids and Barriers of the CNS*, **2015**, 12, 1	7	10
27	Sleep drives metabolite clearance from the adult brain. *Science*, **2013**, 342, 373-7	33.3	2329
26	Brain extracellular space: geometry, matrix and physiological importance. *Basic and Clinical Neuroscience*, **2013**, 4, 282-6	1.4	25
25	Brain Extracellular Space as a Diffusion Barrier. *Computing and Visualization in Science*, **2011**, 14, 309-325	1	65
24	Enhanced striatal dopamine transmission and motor performance with LRRK2 overexpression in mice is eliminated by familial Parkinson's disease mutation G2019S. *Journal of Neuroscience*, **2010**, 30, 1788-97	6.6	270
23	Calcium diffusion enhanced after cleavage of negatively charged components of brain extracellular matrix by chondroitinase ABC. *Journal of Physiology*, **2009**, 587, 4029-49	3.9	78
22	Diffusion of flexible random-coil dextran polymers measured in anisotropic brain extracellular space by integrative optical imaging. *Biophysical Journal*, **2008**, 95, 1382-92	2.9	46
21	Aquaporin-4-deficient mice have increased extracellular space without tortuosity change. *Journal of Neuroscience*, **2008**, 28, 5460-4	6.6	112

20	Diffusion in brain extracellular space. *Physiological Reviews*, **2008**, 88, 1277-340	47.9	891
19	In vivo diffusion of lactoferrin in brain extracellular space is regulated by interactions with heparan sulfate. *Proceedings of the National Academy of Sciences of the United States of America*, **2008**, 105, 8416-21	11.5	100
18	Characterizing molecular probes for diffusion measurements in the brain. *Journal of Neuroscience Methods*, **2008**, 171, 218-25	3	11
17	In vivo diffusion analysis with quantum dots and dextrans predicts the width of brain extracellular space. *Proceedings of the National Academy of Sciences of the United States of America*, **2006**, 103, 5567-72	11.5	442
16	Contribution of dead-space microdomains to tortuosity of brain extracellular space. *Neurochemistry International*, **2004**, 45, 467-77	4.4	68
15	Diffusion of epidermal growth factor in rat brain extracellular space measured by integrative optical imaging. *Journal of Neurophysiology*, **2004**, 92, 3471-81	3.2	139
14	Dead-space microdomains hinder extracellular diffusion in rat neocortex during ischemia. *Journal of Neuroscience*, **2003**, 23, 8351-9	6.6	72
13	Light scattering in rat neocortical slices differs during spreading depression and ischemia. *Brain Research*, **2002**, 952, 290-300	3.7	24
12	Measurement of diffusion parameters using a sinusoidal iontophoretic source in rat cortex. *Journal of Neuroscience Methods*, **2002**, 122, 97-108	3	9
11	Water compartmentalization and spread of ischemic injury in thick-slice ischemia model. *Journal of Cerebral Blood Flow and Metabolism*, **2002**, 22, 80-8	7.3	29
10	Independence of extracellular tortuosity and volume fraction during osmotic challenge in rat neocortex. *Journal of Physiology*, **2002**, 542, 515-27	3.9	60
9	Diffusion and related transport mechanisms in brain tissue. *Reports on Progress in Physics*, **2001**, 64, 815-884	14	343
8	Dextran decreases extracellular tortuosity in thick-slice ischemia model. *Journal of Cerebral Blood Flow and Metabolism*, **2000**, 20, 1306-10	7.3	27
7	Perspectives on spreading depression. *Brain Research Reviews*, **2000**, 32, 215-34		198
6	Diffusion of molecules in brain extracellular space: theory and experiment. *Progress in Brain Research*, **2000**, 125, 129-54	2.9	77
5	Extracellular space structure revealed by diffusion analysis. *Trends in Neurosciences*, **1998**, 21, 207-15	13.3	724
4	Ion-selective microelectrodes and diffusion measurements as tools to explore the brain cell microenvironment. *Journal of Neuroscience Methods*, **1993**, 48, 199-213	3	141
3	Quantitative analysis of extracellular space using the method of TMA+ iontophoresis and the issue of TMA+ uptake. *Canadian Journal of Physiology and Pharmacology*, **1992**, 70 Suppl, S314-22	2.4	66

2	Measurement of nanomolar dopamine diffusion using low-noise perfluorinated ionomer coated carbon fiber microelectrodes and high-speed cyclic voltammetry. *Analytical Chemistry*, **1989**, 61, 1805-10	7.8	90
1	The migration of substances in the neuronal microenvironment. *Annals of the New York Academy of Sciences*, **1986**, 481, 55-71	6.5	105