James L Mcgrath

List of Publications by Year
in descending order

103 papers	4,191 citations	126858 33 h-index	118793 62 g-index
108 all docs	108 docs citations	108 times ranked	5671 citing authors

#	Article	IF	Citations
1	Mechanical properties and deformation mechanisms of amorphous nanoporous silicon nitride membranes via combined atomistic simulations and experiments. Acta Materialia, 2022, 222, 117451.	3.8	8
2	Real time imaging of single extracellular vesicle pH regulation in a microfluidic cross-flow filtration platform. Communications Biology, 2022, 5, 13.	2.0	9
3	Rapid and specific detection of intact viral particles using functionalized microslit silicon membranes as a fouling-based sensor. Analyst, The, 2022, 147, 213-222.	1.7	3
4	Human Organ-on-a-Chip Microphysiological Systems to Model Musculoskeletal Pathologies and Accelerate Therapeutic Discovery. Frontiers in Bioengineering and Biotechnology, 2022, 10, 846230.	2.0	12
5	Molecular mechanisms underlying the heterogeneous barrier responses of two primary endothelial cell types to sphingosine-1-phosphate. European Journal of Cell Biology, 2022, 101, 151233.	1.6	3
6	Brain endothelial tricellular junctions as novel sites for T cell diapedesis across the bloodâ€“brain barrier. Journal of Cell Science, 2021, 134, .	1.2	37
7	Staphylococcus aureus Cell Wall Biosynthesis Modulates Bone Invasion and Osteomyelitis Pathogenesis. Frontiers in Microbiology, 2021, 12, 723498.	1.5	19
8	A predictive model of nanoparticle capture on ultrathin nanoporous membranes. Journal of Membrane Science, 2021, 633, 119357.	4.1	3
9	Ultrathin Silicon Membranes for <i>in Situ</i> Optical Analysis of Nanoparticle Translocation across a Human Bloodâ€“Brain Barrier Model. ACS Nano, 2020, 14, 1111-1122.	7.3	33
10	Development of isoporous microslit silicon nitride membranes for sterile filtration applications. Biotechnology and Bioengineering, 2020, 117, 879-885.	1.7	7
11	Critical flux behavior of ultrathin membranes in protein-rich solutions. Separation and Purification Technology, 2020, 251, 117342.	3.9	9
12	Silicon Nanomembrane Filtration and Imaging for the Evaluation of Microplastic Entrainment along a Municipal Water Delivery Route. Sustainability, 2020, 12, 10655.	1.6	1
13	Molecular dynamics simulations of brittle to ductile transition in failure mechanism of silicon nitride nanoporous membranes. Materials Today Communications, 2020, 25, 101657.	0.9	6
14	Free Standing, Large-Area Silicon Nitride Membranes for High Toxin Clearance in Blood Surrogate for Small-Format Hemodialysis. Membranes, 2020, 10, 119.	1.4	2
15	Microvascular Mimetics for the Study of Leukocyteâ€“Endothelial Interactions. Cellular and Molecular Bioengineering, 2020, 13, 125-139.	1.0	16
16	Second Generation Nanoporous Silicon Nitride Membranes for High Toxin Clearance and Small Format Hemodialysis. Advanced Healthcare Materials, 2020, 9, e1900750.	3.9	21
17	Identification of Penicillin Binding Protein 4 (PBP4) as a critical factor for Staphylococcus aureus bone invasion during osteomyelitis in mice. PLoS Pathogens, 2020, 16, e1008988.	2.1	32
18	Endothelial cell apicobasal polarity coordinates distinct responses to luminally versus abluminally delivered TNF-Î± in a microvascular mimetic. Integrative Biology (United Kingdom), 2020, 12, 275-289.	0.6	12

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19	In vitro Studies of Transendothelial Migration for Biological and Drug Discovery. Frontiers in Medical Technology, 2020, 2, 600616.	1.3	19
20	Tangential Flow Microfluidics for the Capture and Release of Nanoparticles and Extracellular Vesicles on Conventional and Ultrathin Membranes. Advanced Materials Technologies, 2019, 4, 1900539.	3.0	53
21	Entropic Trapping of DNA with a Nanofiltered Nanopore. ACS Applied Nano Materials, 2019, 2, 4773-4781.	2.4	22
22	An in vitro platform for elucidating the molecular genetics of S. aureus invasion of the osteocyte lacuno-canalicular network during chronic osteomyelitis. Nanomedicine: Nanotechnology, Biology, and Medicine, 2019, 21, 102039.	1.7	28
23	Monolithic Fabrication of NPN/SiN x Dual Membrane Cavity for Nanoporeâ€Based DNA Sensing. Advanced Materials Interfaces, 2019, 6, 1900684.	1.9	10
24	Ultrathin Dualâ€Scale Nanoâ€and Microporous Membranes for Vascular Transmigration Models. Small, 2019, 15, e1804111.	5.2	30
25	Refractory Infantile Chronic Diarrhea and Failure to Thrive in a 6-Month-Old Boy With a Complex Past Medical History. Clinical Pediatrics, 2019, 58, 707-710.	0.4	2
26	Dualâ€Scale Nanomembranes: Ultrathin Dualâ€Scale Nanoâ€and Microporous Membranes for Vascular Transmigration Models (Small 6/2019). Small, 2019, 15, 1970035.	5.2	0
27	A silicon nanomembrane platform for the visualization of immune cell trafficking across the human bloodâ€"brain barrier under flow. Journal of Cerebral Blood Flow and Metabolism, 2019, 39, 395-410.	2.4	57
28	Finite element modeling to analyze TEER values across silicon nanomembranes. Biomedical Microdevices, 2018, 20, 11.	1.4	16
29	Ultrathin nanoporous membranes for insulator-based dielectrophoresis. Nanotechnology, 2018, 29, 235704.	1.3	8
30	DNA Translocations through Nanopores under Nanoscale Preconfinement. Nano Letters, 2018, 18, 660-668.	4.5	59
31	TEM Tomography of Pores with Application to Computational Nanoscale Flows in Nanoporous Silicon Nitride (NPN). Membranes, 2018, 8, 26.	1.4	7
32	Modification of Nanoporous Silicon Nitride with Stable and Functional Organic Monolayers. Chemistry of Materials, 2017, 29, 2294-2302.	3.2	9
33	Evidence of <i>Staphylococcus Aureus</i> Deformation, Proliferation, and Migration in Canaliculi of Live Cortical Bone in Murine Models of Osteomyelitis. Journal of Bone and Mineral Research, 2017, 32, 985-990.	3.1	193
34	A predictive model of separations in dead-end filtration with ultrathin membranes. Separation and Purification Technology, 2017, 189, 40-47.	3.9	14
35	Predicting the failure of ultrathin porous membranes in bulge tests. Thin Solid Films, 2017, 631, 152-160.	0.8	16
36	Analytical and Finite Element Modeling of Nanomembranes for Miniaturized, Continuous Hemodialysis. Membranes, 2016, 6, 6.	1.4	9

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37	Ultrathin Membrane Fouling Mechanism Transitions in Dead-End Filtration of Protein. , 2016, , .		3
38	Ultrathin Silicon Membranes for Improving Extracorporeal Blood Therapies. , 2016, 2016, .		1
39	Nanoporous membrane robustness / stability in small form factor microfluidic filtration system. , 2016, 2016, 1955-1958.		0
40	Membrane capacity and fouling mechanisms for ultrathin nanomembranes in dead-end filtration. Journal of Membrane Science, 2016, 499, 282-289.	4.1	28
41	The electric field strength in orifice-like nanopores of ultrathin membranes. Nanotechnology, 2015, 26, 045704.	1.3	9
42	Influence of silicon dioxide capping layers on pore characteristics in nanocrystalline silicon membranes. Nanotechnology, 2015, 26, 055706.	1.3	4
43	Highly Porous Silicon Membranes Fabricated from Silicon Nitride/Silicon Stacks. Small, 2014, 10, 2946-2953.	5.2	15
44	Highly permeable silicon membranes for shear free chemotaxis and rapid cell labeling. Lab on A Chip, 2014, 14, 2456-2468.	3.1	47
45	Nanoporous silicon nitride membranes fabricated from porous nanocrystalline silicon templates. Nanoscale, 2014, 6, 10798-10805.	2.8	73
46	Endothelial vacuolization induced by highly permeable silicon membranes. Acta Biomaterialia, 2014, 10, 4670-4677.	4.1	11
47	Super-thin membranes clear the way for chip-sized pumps. Membrane Technology, 2013, 2013, 9.	0.5	0
48	Ultrathin Silicon Membranes for Wearable Dialysis. Advances in Chronic Kidney Disease, 2013, 20, 508-515.	0.6	46
49	High-performance, low-voltage electroosmotic pumps with molecularly thin silicon nanomembranes. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 18425-18430.	3.3	64
50	Dynamics of adhesion molecule domains on neutrophil membranes: surfing the dynamic cell topography. European Biophysics Journal, 2013, 42, 851-855.	1.2	5
51	Novel Mutations Including Deletions of the Entire<i>OFD1</i>Gene in 30 Families with Type 1 Orofaciodigital Syndrome: A Study of the Extensive Clinical Variability. Human Mutation, 2013, 34, 237-247.	1.1	41
52	Opposing roles for RhoH GTPase during T-cell migration and activation. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 10474-10479.	3.3	26
53	Dynamics of adhesion molecule domains on neutrophil membranes. Microscopy and Microanalysis, 2012, 18, 132-133.	0.2	0
54	Optically transparent and permeable microarrays for cellular assays. Microscopy and Microanalysis, 2012, 18, 262-263.	0.2	0

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55	Ballistic and non-ballistic gas flow through ultrathin nanopores. Nanotechnology, 2012, 23, 145706.	1.3	20
56	LC/LCâ€"MS/MS of an innovative prostate human epithelial cancer (PHEC) in vitro model system. Journal of Chromatography B: Analytical Technologies in the Biomedical and Life Sciences, 2012, 893-894, 34-42.	1.2	7
57	Chemical capacitive sensing using ultrathin flexible nanoporous electrodes. Sensors and Actuators B: Chemical, 2012, 162, 22-26.	4.0	22
58	Robust antigen-specific humoral immune responses to sublingually delivered adenoviral vectors encoding HIV-1 Env: Association with mucoadhesion and efficient penetration of the sublingual barrier. Vaccine, 2011, 29, 7080-7089.	1.7	16
59	A phase unwrapping algorithm based on Branch cuts for living cell's interference pattern. , 2011, , .		0
60	An experimental and theoretical analysis of molecular separations by diffusion through ultrathin nanoporous membranes. Journal of Membrane Science, 2011, 369, 119-129.	4.1	71
61	Highly permeable membranes for live cell imaging of coâ€cultures. FASEB Journal, 2011, 25, lb515.	0.2	0
62	Recurrent Distal 7q11.23 Deletion Including HIP1 and YWHAG Identified in Patients with Intellectual Disabilities, Epilepsy, and Neurobehavioral Problems. American Journal of Human Genetics, 2010, 87, 857-865.	2.6	58
63	Porous nanocrystalline silicon membranes as highly permeable and molecularly thin substrates for cell culture. Biomaterials, 2010, 31, 5408-5417.	5.7	87
64	Image correlation microscopy for uniform illumination. Journal of Microscopy, 2010, 237, 39-50.	0.8	5
65	Ion-Selective Permeability of an Ultrathin Nanoporous Silicon Membrane as Probed by Scanning Electrochemical Microscopy Using Micropipet-Supported ITIES Tips. Analytical Chemistry, 2010, 82, 7127-7134.	3.2	68
66	High-Performance Separation of Nanoparticles with Ultrathin Porous Nanocrystalline Silicon Membranes. ACS Nano, 2010, 4, 6973-6981.	7.3	138
67	Pore Size Control of Ultrathin Silicon Membranes by Rapid Thermal Carbonization. Nano Letters, 2010, 10, 3904-3908.	4.5	35
68	Methods for controlling the pore properties of ultra-thin nanocrystalline silicon membranes. Journal of Physics Condensed Matter, 2010, 22, 454134.	0.7	31
69	Hybrid Polymer/Ultrathin Porous Nanocrystalline Silicon Membranes System for Flow-through Chemical Vapor and Gas Detection. Materials Research Society Symposia Proceedings, 2009, 1190, 196.	0.1	0
70	Activated Integrin VLA-4 Localizes to the Lamellipodia and Mediates T Cell Migration on VCAM-1. Journal of Immunology, 2009, 183, 359-369.	0.4	64
71	Porous ultrathin silicon membranes for purification of nanoscale materials. Materials Research Society Symposia Proceedings, 2009, 1209, 1.	0.1	1
72	The influence of protein adsorption on nanoparticle association with cultured endothelial cells. Biomaterials, 2009, 30, 603-610.	5.7	368

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73	Recombinant human activated protein C inhibits integrin-mediated neutrophil migration. Blood, 2009, 113, 4078-4085.	0.6	108
74	Membrane Mobility of Î²2 Integrins and Rolling Associated Adhesion Molecules in Resting Neutrophils. Biophysical Journal, 2008, 95, 4934-4947.	0.2	21
75	A Structureâ˜'Permeability Relationship of Ultrathin Nanoporous Silicon Membrane:â€‰ A Comparison with the Nuclear Envelope. Journal of the American Chemical Society, 2008, 130, 4230-4231.	6.6	52
76	Disruption of cAMP and Prostaglandin E₂Transport by Multidrug Resistance Protein 4 Deficiency Alters cAMP-Mediated Signaling and Nociceptive Response. Molecular Pharmacology, 2008, 73, 243-251.	1.0	95
77	Evidence for Actin Cytoskeleton-dependent and -independent Pathways for RelA/p65 Nuclear Translocation in Endothelial Cells. Journal of Biological Chemistry, 2007, 282, 3940-3950.	1.6	57
78	Sheet migration by wounded monolayers as an emergent property of single-cell dynamics. Journal of Cell Science, 2007, 120, 876-884.	1.2	116
79	Charge- and size-based separation of macromolecules using ultrathin silicon membranes. Nature, 2007, 445, 749-753.	13.7	692
80	Cell Spreading: The Power to Simplify. Current Biology, 2007, 17, R357-R358.	1.8	52
81	Relationships between Actin Regulatory Mechanisms and Measurable State Variables. Annals of Biomedical Engineering, 2007, 35, 995-1011.	1.3	8
82	DYNAMICS OF THE NEUTROPHIL SURFACE DURING EMIGRATION FROM BLOOD. , 2006, , 123-142.		1
83	Metallization of surface- attached actin networks. , 2006, 2006, 1466-9.		0
84	Cell Mechanics: FilaminA Leads the Way. Current Biology, 2006, 16, R326-R327.	1.8	4
85	Microtubule Mechanics: A Little Flexibility Goes a Long Way. Current Biology, 2006, 16, R800-R802.	1.8	4
86	Segregation of adhesion molecules during neutrophil crawling. FASEB Journal, 2006, 20, A648.	0.2	0
87	Metallization of surface- attached actin networks. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2006, , .	0.5	0
88	Dynein Motility: Four Heads Are Better Than Two. Current Biology, 2005, 15, R970-R972.	1.8	9
89	Binding between particles and proteins in extracts: implications for microrheology and toxicity. Acta Biomaterialia, 2005, 1, 305-315.	4.1	54
90	Formin' new ideas about actin filament generation. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 14685-14686.	3.3	12

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91	The Role of Substrate Curvature in Actin-Based Pushing Forces. Current Biology, 2004, 14, 1094-1098.	1.8	41
92	Actin Motility: Staying on Track Takes a Little More Effort. Current Biology, 2004, 14, R931-R932.	1.8	3
93	A Mechanistic Model of the Actin Cycle. Biophysical Journal, 2004, 86, 2720-2739.	0.2	84
94	The Force-Velocity Relationship for the Actin-Based Motility of Listeria monocytogenes. Current Biology, 2003, 13, 329-332.	1.8	88
95	Cell dynamics and the actin cytoskeleton. , 2001, , 170-203.		2
96	Steps and fluctuations of Listeria monocytogenes during actin-based motility. Nature, 2000, 407, 1026-1029.	13.7	118
97	Regulation of the actin cycle in vivo by actin filament severing. Proceedings of the National Academy of Sciences of the United States of America, 2000, 97, 6532-6537.	3.3	90
98	The Mechanics of F-Actin Microenvironments Depend on the Chemistry of Probing Surfaces. Biophysical Journal, 2000, 79, 3258-3266.	0.2	84
99	Measuring actin dynamics in endothelial cells. , 1998, 43, 385-394.		22
100	Simultaneous Measurements of Actin Filament Turnover, Filament Fraction, and Monomer Diffusion in Endothelial Cells. Biophysical Journal, 1998, 75, 2070-2078.	0.2	163
101	Dynamique du Cytosquelette: Modele Des Processus De Diffusion Et D'echange En Fluorescence Photo-Activee. Archives of Physiology and Biochemistry, 1995, 103, C99-C99.	1.0	0
102	Interpreting photoactivated fluorescence microscopy measurements of steady-state actin dynamics. Biophysical Journal, 1995, 69, 1674-1682.	0.2	52
103	Understanding steady-state actin dynamics with photoactivated fluorescence microscopy. Biology of the Cell, 1995, 84, 224-224.	0.7	0