Morten Gram Pedersen

List of Publications by Year
in descending order

70 papers	1,950 citations	257450 24 h-index	276875 41 g-index
75 all docs	75 docs citations	75 times ranked	2046 citing authors

#	Article	IF	Citations
1	Reduced Insulin Exocytosis in Human Pancreatic Î²-Cells With Gene Variants Linked to Type 2 Diabetes. Diabetes, 2012, 61, 1726-1733.	0.6	204
2	A simplified model for mitochondrial ATP production. Journal of Theoretical Biology, 2006, 243, 575-586.	1.7	145
3	Intra- and Inter-Islet Synchronization of Metabolically Driven Insulin Secretion. Biophysical Journal, 2005, 89, 107-119.	0.5	129
4	Interaction of Glycolysis and Mitochondrial Respiration in Metabolic Oscillations of Pancreatic Islets. Biophysical Journal, 2007, 92, 1544-1555.	0.5	104
5	Newcomer insulin secretory granules as a highly calcium-sensitive pool. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 7432-7436.	7.1	94
6	Ca2+ channel clustering with insulin-containing granules is disturbed in type 2 diabetes. Journal of Clinical Investigation, 2017, 127, 2353-2364.	8.2	70
7	Mathematical Modeling of Heterogeneous Electrophysiological Responses in Human Î²-Cells. PLoS Computational Biology, 2014, 10, e1003389.	3.2	63
8	A Biophysical Model of Electrical Activity in Human Î²-Cells. Biophysical Journal, 2010, 99, 3200-3207.	0.5	54
9	Dapagliflozin stimulates glucagon secretion at high glucose: experiments and mathematical simulations of human A-cells. Scientific Reports, 2016, 6, 31214.	3.3	50
10	CFTR is involved in the regulation of glucagon secretion in human and rodent alpha cells. Scientific Reports, 2017, 7, 90.	3.3	48
11	A subcellular model of glucose-stimulated pancreatic insulin secretion. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2008, 366, 3525-3543.	3.4	45
12	Quasi steady-state approximations in complex intracellular signal transduction networks â€“ a word of caution. Journal of Mathematical Chemistry, 2008, 43, 1318-1344.	1.5	42
13	Complex Patterns of Metabolic and Ca2+ Entrainment in Pancreatic Islets by Oscillatory Glucose. Biophysical Journal, 2013, 105, 29-39.	0.5	40
14	Heterogeneity and nearest-neighbor coupling can explain small-worldness and wave properties in pancreatic islets. Chaos, 2016, 26, 053103.	2.5	40
15	Advancing Our Understanding of the Glucose System via Modeling: A Perspective. IEEE Transactions on Biomedical Engineering, 2014, 61, 1577-1592.	4.2	38
16	New trends and perspectives in nonlinear intracellular dynamics: one century from Michaelisâ€“Menten paper. Continuum Mechanics and Thermodynamics, 2015, 27, 659-684.	2.2	38
17	Mathematical modeling of gap junction coupling and electrical activity in human<i>Î²</i>-cells. Physical Biology, 2015, 12, 066002.	1.8	36
18	Glucose-dependent docking and SNARE protein-mediated exocytosis in mouse pancreatic alpha-cell. Pflugers Archiv European Journal of Physiology, 2011, 462, 443-454.	2.8	35

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19	Cellular modeling: insight into oral minimal models of insulin secretion. American Journal of Physiology - Endocrinology and Metabolism, 2010, 298, E597-E601.	3.5	34
20	The Total Quasi-Steady-State Approximation for Fully Competitive Enzyme Reactions. Bulletin of Mathematical Biology, 2007, 69, 433-457.	1.9	33
21	Contributions of Mathematical Modeling of Beta Cells to the Understanding of Beta-Cell Oscillations and Insulin Secretion. Journal of Diabetes Science and Technology, 2009, 3, 12-20.	2.2	33
22	The total quasi-steady-state approximation for complex enzyme reactions. Mathematics and Computers in Simulation, 2008, 79, 1010-1019.	4.4	32
23	Calcium signaling and secretory granule pool dynamics underlie biphasic insulin secretion and its amplification by glucose: experiments and modeling. American Journal of Physiology - Endocrinology and Metabolism, 2019, 316, E475-E486.	3.5	29
24	Mathematical modelling of local calcium and regulated exocytosis during inhibition and stimulation of glucagon secretion from pancreatic alphaâ€cells. Journal of Physiology, 2015, 593, 4519-4530.	2.9	28
25	Introducing total substrates simplifies theoretical analysis at non-negligible enzyme concentrations: pseudo first-order kinetics and the loss of zero-order ultrasensitivity. Journal of Mathematical Biology, 2010, 60, 267-283.	1.9	27
26	Mathematical modeling and statistical analysis of calcium-regulated insulin granule exocytosis in Î²-cells from mice and humans. Progress in Biophysics and Molecular Biology, 2011, 107, 257-264.	2.9	27
27	Is bursting more effective than spiking in evoking pituitary hormone secretion? A spatiotemporal simulation study of calcium and granule dynamics. American Journal of Physiology - Endocrinology and Metabolism, 2016, 310, E515-E525.	3.5	27
28	The Effect of Noise on Î²â€Cell Burst Period. SIAM Journal on Applied Mathematics, 2007, 67, 530-542.	1.8	24
29	Phantom bursting is highly sensitive to noise and unlikely to account for slow bursting in -cells: Considerations in favor of metabolically driven oscillations. Journal of Theoretical Biology, 2007, 248, 391-400.	1.7	22
30	A comment on noise enhanced bursting in pancreatic -cells. Journal of Theoretical Biology, 2005, 235, 1-3.	1.7	19
31	Multiscale Modeling of Insulin Secretion. IEEE Transactions on Biomedical Engineering, 2011, 58, 3020-3023.	4.2	18
32	Geometric analysis of mixed-mode oscillations in a model of electrical activity in human beta-cells. Nonlinear Dynamics, 2021, 104, 4445-4457.	5.2	18
33	Inwardly rectifying Kir2.1 currents in human Î²-cells control electrical activity: Characterisation and mathematical modelling. Biochemical and Biophysical Research Communications, 2015, 459, 284-287.	2.1	15
34	Explicit Theoretical Analysis of How the Rate of Exocytosis Depends on Local Control by Ca²⁺ Channels. Computational and Mathematical Methods in Medicine, 2018, 2018, 1-12.	1.3	15
35	Amplitude-modulated spiking as a novel route to bursting: Coupling-induced mixed-mode oscillations by symmetry breaking. Chaos, 2022, 32, 013121.	2.5	15
36	Homogenization of Heterogeneously Coupled Bistable ODE'sâ€”Applied to Excitation Waves in Pancreatic Islets of Langerhans. Journal of Biological Physics, 2004, 30, 285-303.	1.5	14

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37	Modeling Mechanisms of Cell Secretion. Acta Biotheoretica, 2010, 58, 315-327.	1.5	13
38	Concise Whole-Cell Modeling of BK Ca -CaV Activity Controlled by Local Coupling and Stoichiometry. Biophysical Journal, 2017, 112, 2387-2396.	0.5	13
39	Gap-junction coupling can prolong beta-cell burst period by an order of magnitude via phantom bursting. Chaos, 2018, 28, 063111.	2.5	13
40	Wave speeds of density dependent Nagumo diffusion equations â€" inspired by oscillating gap-junction conductance in the islets of Langerhans. Journal of Mathematical Biology, 2005, 50, 683-698.	1.9	12
41	TIPS-Pentacene as Biocompatible Material for Solution Processed High-Performance Electronics Operating in Water. IEEE Electron Device Letters, 2018, 39, 1401-1404.	3.9	12
42	Heterogeneous alpha-cell population modeling of glucose-induced inhibition of electrical activity. Journal of Theoretical Biology, 2020, 485, 110036.	1.7	12
43	Wave-Block Due to a Threshold Gradient Underlies Limited Coordination in Pancreatic Islets. Journal of Biological Physics, 2008, 34, 425-432.	1.5	11
44	On Depolarization-Evoked Exocytosis as a Function of Calcium Entry: Possibilities and Pitfalls. Biophysical Journal, 2011, 101, 793-802.	0.5	11
45	Recent advances in mathematical modeling and statistical analysis of exocytosis in endocrine cells. Mathematical Biosciences, 2017, 283, 60-70.	1.9	11
46	Surging critical care capacity for COVID-19: Key now and in the future. Progress in Disaster Science, 2020, 8, 100136.	2.7	11
47	Prediabetes: Evaluation of Î²-Cell Function. Diabetes, 2012, 61, 270-271.	0.6	10
48	Data-driven estimation of change points reveals correlation between face mask use and accelerated curtailing of the first wave of the COVID-19 epidemic in Italy. Infectious Diseases, 2021, 53, 243-251.	2.8	10
49	Spatiotemporal Modeling of Triggering and Amplifying Pathways in GLP-1 Secreting Intestinal L Cells. Biophysical Journal, 2017, 112, 162-171.	0.5	9
50	Mathematical Modeling of Interacting Glucose-Sensing Mechanisms and Electrical Activity Underlying Glucagon-Like Peptide 1 Secretion. PLoS Computational Biology, 2015, 11, e1004600.	3.2	9
51	Calcium Signaling in the Photodamaged Skin: In Vivo Experiments and Mathematical Modeling. Function, 2021, 3, zqab064.	2.3	9
52	Minimal modeling of insulin secretion in the perfused rat pancreas: a drug effect case study. American Journal of Physiology - Endocrinology and Metabolism, 2014, 306, E627-E634.	3.5	8
53	Simultaneous stimulation and recording of cell activity with reference-less sensors: Is it feasible?. Organic Electronics, 2018, 62, 676-684.	2.6	8
54	Insulin Secretory Granules Enter a Highly Calciumâ€Sensitive State following Palmitateâ€Induced Dissociation from Calcium Channels: A Theoretical Study. Journal of Neuroendocrinology, 2010, 22, 1315-1324.	2.6	7

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55	Multiscale modelling of insulin secretion during an intravenous glucose tolerance test. Interface Focus, 2013, 3, 20120085.	3.0	7
56	Human pancreatic islet miRNA-mRNA networks of altered miRNAs due to glycemic status. IScience, 2022, 25, 103995.	4.1	7
57	Calcium Current Inactivation Rather than Pool Depletion Explains Reduced Exocytotic Rate with Prolonged Stimulation in Insulin-Secreting INS-1 832/13 Cells. PLoS ONE, 2014, 9, e103874.	2.5	4
58	Reactive oxygen and nitrogen species disturb Ca2+ oscillations in insulin-secreting MIN6 Î²-cells. Islets, 2015, 7, e1107255.	1.8	4
59	Stopping waves: geometric analysis of coupled bursters in an asymmetric excitation field. Nonlinear Dynamics, 2019, 96, 1927-1937.	5.2	4
60	Biological mechanisms beyond network analysis via mathematical modeling. Physics of Life Reviews, 2018, 24, 156-158.	2.8	3
61	Statistical Frailty Modeling for Quantitative Analysis of Exocytotic Events Recorded by Live Cell Imaging: Rapid Release of Insulin-Containing Granules Is Impaired in Human Diabetic Î²-cells. PLoS ONE, 2016, 11, e0167282.	2.5	3
62	From Local to Global Modeling for Characterizing Calcium Dynamics and Their Effects on Electrical Activity and Exocytosis in Excitable Cells. International Journal of Molecular Sciences, 2019, 20, 6057.	4.1	2
63	Modeling Serum Creatinine in Septic ICU Patients. Cardiovascular Engineering (Dordrecht,) Tj ETQq1 1 0.784314 rgBT /Overlock 10 Tf 5	1.0	1
64	Whole-Body and Cellular Models of Glucose-Stimulated Insulin Secretion. , 2011, , 489-503.		1
65	A Morphological Peak-Detector for Single-Unit Neural Recording Acquisition Systems. IEEE Transactions on Instrumentation and Measurement, 2022, 71, 1-11.	4.7	1
66	Modeling SK-Channels and Electrical Activity in Human Beta-Cells. Biophysical Journal, 2013, 104, 474a-475a.	0.5	0
67	Insulin Modelling. , 2014, , 333-353.		0
68	Modeling Electrical Activity in Intestinal L-Cells. Biophysical Journal, 2014, 106, 376a.	0.5	0
69	Is Bursting More Effective than Spiking in Evoking Pituitary Hormone Secretion? A Spatiotemporal Simulation Study of Calcium Diffusion and Exocytosis. Biophysical Journal, 2016, 110, 432a.	0.5	0
70	Mathematical Modeling of Human Pancreatic Alpha-Cells: Insight into the Role of SGLT2 in Glucagon Secretion. Biophysical Journal, 2016, 110, 452a.	0.5	0