

Ranjan K Dash

List of Publications by Year in descending order

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105
papers

1,519
citations

236925

25
h-index

377865

34
g-index

108
all docs

108
docs citations

108
times ranked

1597
citing authors

#	ARTICLE	IF	CITATIONS
1	Substrate-dependent differential regulation of mitochondrial bioenergetics in the heart and kidney cortex and outer medulla. <i>Biochimica Et Biophysica Acta - Bioenergetics</i> , 2022, 1863, 148518.	1.0	10
2	Depolarized mitochondrial membrane potential and protection with duroquinone in isolated perfused lungs from rats exposed to hyperoxia. <i>Journal of Applied Physiology</i> , 2022, 132, 346-356.	2.5	4
3	Substrate- and Calcium-Dependent Differential Regulation of Mitochondrial Oxidative Phosphorylation and Energy Production in the Heart and Kidney. <i>Cells</i> , 2022, 11, 131.	4.1	13
4	Assessment of Mitochondrial Respiratory Function in Isolated Nephron Segments of Dahl SS Rats in Salt Induced Hypertension. <i>FASEB Journal</i> , 2022, 36, .	0.5	0
5	Mathematical Modeling of Protracted HCMV Replication using Genome Substrates and Protein Temporal Profiles. <i>FASEB Journal</i> , 2022, 36, .	0.5	1
6	Substrate-Dependent Differential Regulation of Mitochondrial Bioenergetics and ROS emission in the Heart and Kidney Cortex and Outer Medulla. <i>FASEB Journal</i> , 2022, 36, .	0.5	0
7	Metabolomic Kidney Input and Output Analyses in Salt-Sensitive Hypertension. <i>FASEB Journal</i> , 2022, 36, .	0.5	0
8	Computational Modeling of Substrate-Dependent Differential Regulation of Mitochondrial Bioenergetics in the Heart and Kidney Cortex and Outer Medulla. <i>FASEB Journal</i> , 2022, 36, .	0.5	0
9	Depolarized Mitochondrial Membrane Potential and Protection with Duroquinone in Isolated Perfused Lungs from Rats Exposed to Hyperoxia. <i>FASEB Journal</i> , 2022, 36, .	0.5	0
10	Changes in Oxygen Consumption and Metabolomic Profiles in the Kidney of Sprague-Dawley Rat fed a High-Salt Diet. <i>FASEB Journal</i> , 2022, 36, .	0.5	0
11	Reverse Electron Transfer is a More Dominant Source of Mitochondrial ROS Production in the Heart and Kidney Outer Medulla than in the Kidney Cortex. <i>FASEB Journal</i> , 2022, 36, .	0.5	0
12	High Salt Diet Increases Renal Oxygen Consumption in Sprague-Dawley Rats. <i>FASEB Journal</i> , 2021, 35, .	0.5	0
13	Integration of a Random-Rapid-Equilibrium Binding Model of NOX2 Assembly with a Five-State Rate-Limiting Model of NOX2 Electron Flow facilitating Superoxide Production. <i>FASEB Journal</i> , 2021, 35, .	0.5	0
14	Crosstalk between Plk1, p53, cell cycle, and G2/M DNA damage checkpoint regulation in cancer: computational modeling and analysis. <i>Npj Systems Biology and Applications</i> , 2021, 7, 46.	3.0	26
15	A size-modified poisson-boltzmann ion channel model in a solvent of multiple ionic species: Application to voltage-dependent anion channel. <i>Journal of Computational Chemistry</i> , 2020, 41, 218-230.	3.3	9
16	Mechanistic computational modeling of the kinetics and regulation of NADPH oxidase 2 assembly and activation facilitating superoxide production. <i>Free Radical Research</i> , 2020, 54, 695-721.	3.3	10
17	Elucidating the roles of solubility and ventilation-perfusion mismatch in the second gas effect using a two-step model of gas exchange. <i>Journal of Applied Physiology</i> , 2020, 128, 1587-1593.	2.5	2
18	Quantification of mitochondrial membrane potential in the isolated rat lung using rhodamine 6G. <i>Journal of Applied Physiology</i> , 2020, 128, 892-906.	2.5	12

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19	Network mechanisms and dysfunction within an integrated computational model of progression through mitosis in the human cell cycle. PLoS Computational Biology, 2020, 16, e1007733.	3.2	7
20	Characterizing Substrate Dependent Differential Regulation of Mitochondrial Respiration in the Heart and Kidney Using Computational Modeling. FASEB Journal, 2020, 34, 1-1.	0.5	0
21	Computational/Experimental Interrogation of the Failing Heart—A Perspective on Impaired Myocardial Energetics Causes Mechanical Dysfunction in Decompensated Failing Hearts. Function, 2020, 1, zqaa022.	2.3	0
22	Progressive Alterations of Mitochondrial Function in the Kidney and Heart During the Development of Salt-Induced Hypertension. FASEB Journal, 2020, 34, 1-1.	0.5	0
23	Quantification of Mitochondrial Membrane Potential in the Isolated Rat Lung Using Rhodamine 6G. FASEB Journal, 2020, 34, 1-1.	0.5	0
24	Abstract 16: Progressive Alterations Of Mitochondrial Bioenergetics In The Kidney During The Development Of Salt-induced Hypertension. Hypertension, 2020, 76, .	2.7	0
25	Title is missing!. , 2020, 16, e1007733.		0
26	Title is missing!. , 2020, 16, e1007733.		0
27	Title is missing!. , 2020, 16, e1007733.		0
28	Title is missing!. , 2020, 16, e1007733.		0
29	Title is missing!. , 2020, 16, e1007733.		0
30	Title is missing!. , 2020, 16, e1007733.		0
31	miR-21-5p regulates mitochondrial respiration and lipid content in H9C2 cells. American Journal of Physiology - Heart and Circulatory Physiology, 2019, 316, H710-H721.	3.2	31
32	Influence of a Hyperglycemic Microenvironment on a Diabetic Versus Healthy Rat Vascular Endothelium Reveals Distinguishable Mechanistic and Phenotypic Responses. Frontiers in Physiology, 2019, 10, 558.	2.8	19
33	Integrated Computational Model of Lung Tissue Bioenergetics. Frontiers in Physiology, 2019, 10, 191.	2.8	2
34	Effect of net gas volume changes on alveolar and arterial gas partial pressures in the presence of ventilation-perfusion mismatch. Journal of Applied Physiology, 2019, 126, 558-568.	2.5	3
35	A thermodynamically-constrained mathematical model for the kinetics and regulation of NADPH oxidase 2 complex-mediated electron transfer and superoxide production. Free Radical Biology and Medicine, 2019, 134, 581-597.	2.9	13
36	Control of Cardiac Mitochondrial Fuel Selection by Calcium. FASEB Journal, 2019, 33, lb313.	0.5	0

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37	The Role of Calcium in the Regulation of Mitochondrial Respiration under Various Substrate Combinations in the Heart and Kidney. <i>FASEB Journal</i> , 2019, 33, .	0.5	0
38	Can Mathematical Modeling Explain the Measured Magnitude of the Second Gas Effect?. <i>Anesthesiology</i> , 2018, 128, 1075-1083.	2.5	6
39	Modeling Mechanisms of Cardiac L-Type Ca ²⁺ Channel Regulation: Interactions of Voltage, Ca ²⁺ , and Isoflurane. <i>Biophysical Journal</i> , 2018, 114, 304a.	0.5	0
40	Detection of hydrogen peroxide production in the isolated rat lung using Amplex red. <i>Free Radical Research</i> , 2018, 52, 1052-1062.	3.3	11
41	Integrated computational model of the bioenergetics of isolated lung mitochondria. <i>PLoS ONE</i> , 2018, 13, e0197921.	2.5	14
42	Slow Ca ²⁺ Efflux by Ca ²⁺ /H ⁺ Exchange in Cardiac Mitochondria Is Modulated by Ca ²⁺ Re-uptake via MCU, Extra-Mitochondrial pH, and H ⁺ Pumping by FOF1-ATPase. <i>Frontiers in Physiology</i> , 2018, 9, 1914.	2.8	14
43	Differential response of GK and WKY rat microvascular endothelial cells to a hyperglycemic environment. <i>FASEB Journal</i> , 2018, 32, 902.6.	0.5	0
44	Calcium Regulation of Mitochondrial Respiration is Substrate Dependent and Tissue Specific. <i>FASEB Journal</i> , 2018, 32, .	0.5	0
45	Modeling the detailed kinetics of mitochondrial cytochrome <i>c</i> oxidase: Catalytic mechanism and nitric oxide inhibition. <i>Journal of Applied Physiology</i> , 2016, 121, 1196-1207.	2.5	21
46	Mg ²⁺ differentially regulates two modes of mitochondrial Ca ²⁺ uptake in isolated cardiac mitochondria: implications for mitochondrial Ca ²⁺ sequestration. <i>Journal of Bioenergetics and Biomembranes</i> , 2016, 48, 175-188.	2.3	26
47	Simple accurate mathematical models of blood HbO ₂ and HbCO ₂ dissociation curves at varied physiological conditions: evaluation and comparison with other models. <i>European Journal of Applied Physiology</i> , 2016, 116, 97-113.	2.5	45
48	The Pathway for Oxygen: Tutorial Modelling on Oxygen Transport from Air to Mitochondrion. <i>Advances in Experimental Medicine and Biology</i> , 2016, 876, 103-110.	1.6	2
49	Letter to the Editor: Mitochondrial cytochrome <i>c</i> oxidase: mechanism of action and role in regulating oxidative phosphorylation. <i>Journal of Applied Physiology</i> , 2015, 119, 157-157.	2.5	7
50	Mechanistic characterization of the thioredoxin system in the removal of hydrogen peroxide. <i>Free Radical Biology and Medicine</i> , 2015, 78, 42-55.	2.9	52
51	Mitochondrial targets for volatile anesthetics against cardiac ischemia-reperfusion injury. <i>Frontiers in Physiology</i> , 2014, 5, 341.	2.8	28
52	Computational analysis of Ca ²⁺ dynamics in isolated cardiac mitochondria predicts two distinct modes of Ca ²⁺ uptake. <i>Journal of Physiology</i> , 2014, 592, 1917-1930.	2.9	22
53	Isoflurane modulates cardiac mitochondrial bioenergetics by selectively attenuating respiratory complexes. <i>Biochimica Et Biophysica Acta - Bioenergetics</i> , 2014, 1837, 354-365.	1.0	30
54	A mechanistic mathematical model for the catalytic action of <i>glutathione peroxidase</i> . <i>Free Radical Research</i> , 2014, 48, 487-502.	3.3	26

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55	Determining the origins of superoxide and hydrogen peroxide in the mammalian NADH:ubiquinone oxidoreductase. <i>Free Radical Biology and Medicine</i> , 2014, 77, 121-129.	2.9	33
56	Markov Chain Monte Carlo Model Analysis of Cardiac Mitochondrial VDAC1 Kinetics. <i>Biophysical Journal</i> , 2014, 106, 761a.	0.5	0
57	Dynamic buffering of mitochondrial Ca ²⁺ during Ca ²⁺ uptake and Na ⁺ -induced Ca ²⁺ release. <i>Journal of Bioenergetics and Biomembranes</i> , 2013, 45, 189-202.	2.3	37
58	Carrier-Mediated Transport Through Biomembranes. , 2013, , 181-212.		1
59	A biophysically based mathematical model for the catalytic mechanism of glutathione reductase. <i>Free Radical Biology and Medicine</i> , 2013, 65, 1385-1397.	2.9	33
60	Mitochondrial handling of excess Ca ²⁺ is substrate-dependent with implications for reactive oxygen species generation. <i>Free Radical Biology and Medicine</i> , 2013, 56, 193-203.	2.9	25
61	Extra-matrix Mg ²⁺ limits Ca ²⁺ uptake and modulates Ca ²⁺ uptake-independent respiration and redox state in cardiac isolated mitochondria. <i>Journal of Bioenergetics and Biomembranes</i> , 2013, 45, 203-218.	2.3	24
62	Modeling the calcium sequestration system in isolated guinea pig cardiac mitochondria. <i>Journal of Bioenergetics and Biomembranes</i> , 2013, 45, 177-188.	2.3	31
63	Effect of P2X4 and P2X7 receptor antagonism on the pressure diuresis relationship in rats. <i>Frontiers in Physiology</i> , 2013, 4, 305.	2.8	33
64	Characterization of Different Modes of Ca ²⁺ Uptake under Physiological Conditions in Heart Mitochondria. <i>FASEB Journal</i> , 2013, 27, 1209.20.	0.5	0
65	Post-translationally modified cardiac mitochondrial VDAC1 gating kinetics analyzed using continuous-time MCMC model. <i>FASEB Journal</i> , 2013, 27, 1209.15.	0.5	0
66	Substrate-dependent Action of Isoflurane on Electron Transport Chain Complexes. <i>FASEB Journal</i> , 2013, 27, 1209.9.	0.5	0
67	A Biophysical Model of the Mitochondrial ATP-Mg/Pi Carrier. <i>Biophysical Journal</i> , 2012, 103, 1616-1625.	0.5	11
68	Modeling to Link Regional Myocardial Work, Metabolism and Blood Flows. <i>Annals of Biomedical Engineering</i> , 2012, 40, 2379-2398.	2.5	13
69	Enhanced charge-independent mitochondrial free Ca ²⁺ and attenuated ADP-induced NADH oxidation by isoflurane: Implications for cardioprotection. <i>Biochimica Et Biophysica Acta - Bioenergetics</i> , 2012, 1817, 453-465.	1.0	16
70	Isoflurane Increases Mitochondrial Free Ca ²⁺ by Attenuating the Na ⁺ /Ca ²⁺ Exchanger Activity. <i>FASEB Journal</i> , 2012, 26, 888.4.	0.5	0
71	Mitochondrial sensitivity to regulatory signals in muscle energy balance: is it constant during exercise?. <i>FASEB Journal</i> , 2012, 26, 887.13.	0.5	0
72	Mitochondrial handling of excess Ca ²⁺ is substrate-dependent with implications on ROS generation. <i>FASEB Journal</i> , 2012, 26, 678.17.	0.5	0

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73	Characterization of Mg ²⁺ Inhibition of Mitochondrial Ca ²⁺ Uptake by a Mechanistic Model of Mitochondrial Ca ²⁺ Uniporter. <i>Biophysical Journal</i> , 2011, 101, 2071-2081.	0.5	29
74	Detailed kinetics and regulation of mammalian 2-oxoglutarate dehydrogenase. <i>BMC Biochemistry</i> , 2011, 12, 53.	4.4	35
75	Stimulatory Effects of Calcium on Respiration and NAD(P)H Synthesis in Intact Rat Heart Mitochondria Utilizing Physiological Substrates Cannot Explain Respiratory Control in Vivo. <i>Journal of Biological Chemistry</i> , 2011, 286, 30816-30822.	3.4	22
76	A Minimal Model for the Mitochondrial Rapid Mode of Ca ²⁺ Uptake Mechanism. <i>PLoS ONE</i> , 2011, 6, e21324.	2.5	18
77	Characterization of Membrane Potential Dependency of Mitochondrial Ca ²⁺ Uptake by an Improved Biophysical Model of Mitochondrial Ca ²⁺ Uniporter. <i>PLoS ONE</i> , 2010, 5, e13278.	2.5	21
78	A Biophysically Based Mathematical Model for the Kinetics of Mitochondrial Na ⁺ -Ca ²⁺ Antiporter. <i>Biophysical Journal</i> , 2010, 98, 218-230.	0.5	39
79	Mitochondrial Free [Ca ²⁺] Increases during ATP/ADP Antiport and ADP Phosphorylation: Exploration of Mechanisms. <i>Biophysical Journal</i> , 2010, 99, 997-1006.	0.5	30
80	Kinetics and Regulation of Mammalian NADH-Ubiquinone Oxidoreductase (Complex I). <i>Biophysical Journal</i> , 2010, 99, 1426-1436.	0.5	19
81	Buffer Magnesium Limits Mitochondrial Calcium Uptake but not Matrix Calcium Buffering in Response to ADP. <i>Biophysical Journal</i> , 2010, 98, 736a.	0.5	0
82	Mathematical Characterization of the Inhibitory Effect of Mg ²⁺ on the Kinetics of Mitochondrial Ca ²⁺ Uniporter. <i>FASEB Journal</i> , 2010, 24, 1065.6.	0.5	0
83	Ranolazine delays Ca ²⁺ induced mitochondrial permeability transition pore opening and membrane potential depolarization in guinea pig heart mitochondria. <i>FASEB Journal</i> , 2010, 24, 601.9.	0.5	0
84	Role of NADH/NAD ⁺ transport activity and glycogen store on skeletal muscle energy metabolism during exercise: in silico studies. <i>American Journal of Physiology - Cell Physiology</i> , 2009, 296, C25-C46.	4.6	37
85	Generating rate equations for complex enzyme systems by a computer-assisted systematic method. <i>BMC Bioinformatics</i> , 2009, 10, 238.	2.6	34
86	An improved algorithm and its parallel implementation for solving a general blood-tissue transport and metabolism model. <i>Journal of Computational Physics</i> , 2009, 228, 7850-7861.	3.8	3
87	A Biophysically Based Mathematical Model for the Kinetics of Mitochondrial Calcium Uniporter. <i>Biophysical Journal</i> , 2009, 96, 1318-1332.	0.5	44
88	Characterizing The Calcium Uniporter: Effect Of Partial Depolarization On Calcium Flux. <i>Biophysical Journal</i> , 2009, 96, 244a.	0.5	0
89	A Thermodynamically Balanced Kinetic Model of the Mitochondrial Na ⁺ Ca ²⁺ Antiporter. <i>FASEB Journal</i> , 2009, 23, 994.1.	0.5	0
90	Modeling of Cellular Metabolism and Microcirculatory Transport. <i>Microcirculation</i> , 2008, 15, 777-793.	1.8	15

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91	Analysis of cardiac mitochondrial Na ⁺ â€“Ca ²⁺ exchanger kinetics with a biophysical model of mitochondrial Ca ²⁺ handling suggests a 3: 1 stoichiometry. Journal of Physiology, 2008, 586, 3267-3285.	2.9	89
92	Modeling Cellular Metabolism and Energetics in Skeletal Muscle: Large-Scale Parameter Estimation and Sensitivity Analysis. IEEE Transactions on Biomedical Engineering, 2008, 55, 1298-1318.	4.2	30
93	Metabolic Dynamics in Skeletal Muscle during Acute Reduction in Blood Flow and Oxygen Supply to Mitochondria: In-Silico Studies Using a Multi-Scale, Top-Down Integrated Model. PLoS ONE, 2008, 3, e3168.	2.5	23
94	ADP and CCCP â€“induced increases in mitochondrial free Ca ²⁺ : greater contribution of matrix Ca ²⁺ buffering by ATP/ADP. FASEB Journal, 2008, 22, 756.6.	0.5	0
95	A computational model of skeletal muscle metabolism linking cellular adaptations induced by altered loading states to metabolic responses during exercise. BioMedical Engineering OnLine, 2007, 6, 14.	2.7	25
96	An efficient deconvolution algorithm for estimating oxygen consumption during muscle activities. Computer Methods and Programs in Biomedicine, 2007, 85, 247-256.	4.7	3
97	Linking Pulmonary Oxygen Uptake, Muscle Oxygen Utilization and Cellular Metabolism during Exercise. Annals of Biomedical Engineering, 2007, 35, 956-969.	2.5	21
98	Simultaneous Bloodâ€“Tissue Exchange of Oxygen, Carbon Dioxide, Bicarbonate, and Hydrogen Ion. Annals of Biomedical Engineering, 2006, 34, 1129-1148.	2.5	64
99	Estimating in Vitro Mitochondrial Oxygen Consumption During Muscle Contraction and Recovery: A Novel Approach that Accounts for Diffusion. Annals of Biomedical Engineering, 2005, 33, 343-355.	2.5	4
100	Blood HbO ₂ and HbCO ₂ Dissociation Curves at Varied O ₂ , CO ₂ , pH, 2,3-DPG and Temperature Levels. Annals of Biomedical Engineering, 2004, 32, 1676-1693.	2.5	56
101	A class of model equations for bi-directional propagation of capillaryâ€“gravity waves. International Journal of Engineering Science, 2003, 41, 201-218.	5.0	26
102	Analytical and numerical studies of a singularly perturbed Boussinesq equation. Applied Mathematics and Computation, 2002, 126, 1-30.	2.2	18
103	Title is missing!. Journal of Engineering Mathematics, 2002, 42, 1-22.	1.2	24
104	Weakly non-local solitary wave solutions of a singularly perturbed Boussinesq equation. Mathematics and Computers in Simulation, 2001, 55, 393-405.	4.4	12
105	Fluorescein Clearance Kinetics in Blood and Bile Indicates Hepatic Ischemia-Reperfusion Injury in Rats. American Journal of Physiology - Renal Physiology, 0, , .	3.4	1