Leonid B Katsnelson

List of Publications by Year
in descending order

60 papers	791 citations	516710 16 h-index	552781 26 g-index
62 all docs	62 docs citations	62 times ranked	466 citing authors

#	Article	IF	Citations
1	Changes in the Cardiotoxic Effects of Lead Intoxication in Rats Induced by Muscular Exercise. International Journal of Molecular Sciences, 2022, 23, 4417.	4.1	5
2	Mathematical modelling of the mechano-electric coupling in the human cardiomyocyte electrically connected with fibroblasts. Progress in Biophysics and Molecular Biology, 2021, 159, 46-57.	2.9	14
3	Cardioinotropic Effects in Subchronic Intoxication of Rats with Lead and/or Cadmium Oxide Nanoparticles. International Journal of Molecular Sciences, 2021, 22, 3466.	4.1	8
4	Editorial: Mechano-Calcium, Mechano-Electric, and Mechano-Metabolic Feedback Loops: Contribution to the Myocardial Contraction in Health and Diseases. Frontiers in Physiology, 2021, 12, 676826.	2.8	1
5	Arrhythmogenesis in calcium-overloaded human cardiomyocytes in isolation and within cardiac tissue. Simulation study. , 2021, , .		0
6	Work Performance in Failing Myocardium Assessed in a Mathematical Model of the Human Ventricular Myocyte Electromechanical Coupling. , 2021, , .		0
7	Preprocessing Images Algorithm without Gaussian Shaped Particles for PIV Analysis and Imaging Vortices on the Epicardial Surface. , 2021, , .		0
8	Analysis of changes in the rat cardiovascular system under the action of lead intoxication and muscular exercise. Gigiena I Sanitariia, 2021, 100, 1467-1474.	0.5	0
9	Force-velocity characteristics of isolated myocardium preparations from rats exposed to subchronic intoxication with lead and cadmium acting separately or in combination. Food and Chemical Toxicology, 2020, 144, 111641.	3.6	10
10	Changes in rat myocardium contractility under subchronic intoxication with lead and cadmium salts administered alone or in combination. Toxicology Reports, 2020, 7, 433-442.	3.3	19
11	Mechano-calcium and mechano-electric feedbacks in the human cardiomyocyte analyzed in a mathematical model. Journal of Physiological Sciences, 2020, 70, 12.	2.1	22
12	The Effects of Mechanical Preload on Transmural Differences in Mechano-Calcium-Electric Feedback in Single Cardiomyocytes: Experiments and Mathematical Models. Frontiers in Physiology, 2020, 11, 171.	2.8	13
13	Mathematical Model of Electrotonic Interaction Between Mechanically Active Cardiomyocyte and Fibroblasts. , 2019, , .		1
14	The Effects of Mechanical Load on Transmural Differences in Mechano-Electric Feedback in Single Cardiomyocytes. Biophysical Journal, 2019, 116, 97a.	0.5	0
15	Further analysis of rat myocardium contractility changes associated with a subchronic lead intoxication. Food and Chemical Toxicology, 2019, 125, 233-241.	3.6	12
16	The effects of load on transmural differences in contraction of isolated mouse ventricular cardiomyocytes. Journal of Molecular and Cellular Cardiology, 2018, 114, 276-287.	1.9	9
17	Transmural cellular heterogeneity in myocardial electromechanics. Journal of Physiological Sciences, 2018, 68, 387-413.	2.1	14
18	New Mathematical Model of Electromechanical Coupling in Rat Cardiomyocytes. , 2018, , .		0

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19	Combined mathematical model of the electrical and mechanical activity of the human cardiomyocyte. , 2018, , .		1
20	Effects of subchronic lead intoxication of rats on the myocardium contractility. Food and Chemical Toxicology, 2018, 120, 378-389.	3.6	20
21	EFFECTS OF SUBCHRONIC LEAD INTOXICATION ON THE MYOCARDIUM CONTRACTILITY OF RATS. Toxicological Review, 2018, , 22-32.	0.2	1
22	Effects of cellular electromechanical coupling on functional heterogeneity in a one-dimensional tissue model of the myocardium. Computers in Biology and Medicine, 2017, 84, 147-155.	7.0	2
23	Cooperativity in mechano-calcium feedbacks in the myocardium: Some conceptual discrepancies and overcoming inconsistency within the framework of a mathematical model. Biophysics (Russian) Tj ETQq1 1 0.7843 rgBT /Overlock 10	0.7	1
24	A modified mathematical model of the anatomy of the cardiac left ventricle. Biophysics (Russian) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 5	0.7	3
25	Effect of the architecture of the left ventricle on the speed of the excitation wave in muscle fibers. JETP Letters, 2016, 104, 124-129.	1.4	1
26	Mechano-electric heterogeneity of the myocardium as a paradigm of its function. Progress in Biophysics and Molecular Biology, 2016, 120, 249-254.	2.9	19
27	Mechano-electric feedback in one-dimensional model of myocardium. Journal of Mathematical Biology, 2016, 73, 335-366.	1.9	14
28	Mathematical modeling of the role of cooperativity between contractile and regulatory proteins in the mechano-calcium feedbacks in myocardium. , 2015, , .		1
29	Effects of enhanced sodium currents in mathematical model of heterogeneous myocardium. , 2015, , .		1
30	Role of Mechanics in Rhythm Disturbances in 1D Mathematical Model of Myocardial Tissue with Local Ca2+-Overload. , 2015, , .		2
31	ÐÑƒÐ½ÐºÑ†Ð¸Ð¾Ð½Ð°Ð»ÑŒÐ½Ð°Ñ•Ð½ÐµÐ´Ð½Ð¾Ñ€Ð¾Ð´Ð½Ð¾ÑÑ‚ÑŒ Ð²Ð¾Ð·Ð½Ð¸ÐºÐ°ÑŽÑ‰Ð°Ñ•Ð²Ñ€ÐµÐ´ÑƒÐ»ÑŒ	0.6	
32	Electro-Mechanical Coupling in a One-Dimensional Model of Heart Muscle fiber. Russian Journal of Numerical Analysis and Mathematical Modelling, 2014, 29, .	0.6	12
33	The cardiac muscle duplex as a method to study myocardial heterogeneity. Progress in Biophysics and Molecular Biology, 2014, 115, 115-128.	2.9	19
34	Electrical Wave Propagation in an Anisotropic Model of the Left Ventricle Based on Analytical Description of Cardiac Architecture. PLoS ONE, 2014, 9, e93617.	2.5	30
35	Mathematical model of the anatomy and fibre orientation field of the left ventricle of the heart. BioMedical Engineering OnLine, 2013, 12, 54.	2.7	58
36	Slow force response and auto-regulation of contractility in heterogeneous myocardium. Progress in Biophysics and Molecular Biology, 2012, 110, 305-318.	2.9	22

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37	Contribution of mechanical factors to arrhythmogenesis in calcium overloaded cardiomyocytes: Model predictions and experiments. Progress in Biophysics and Molecular Biology, 2011, 107, 81-89.	2.9	18
38	Role of myocardial viscoelasticity in disturbances of electrical and mechanical activity in calcium overloaded cardiomyocytes: Mathematical modeling. Journal of Theoretical Biology, 2011, 272, 83-95.	1.7	18
39	Effects of cardiac myosin binding protein-C on the regulation of interaction of cardiac myosin with thin filament in an in vitro motility assay. Biochemical and Biophysical Research Communications, 2010, 401, 159-163.	2.1	16
40	Cooperative mechanisms of thin filament activation and their contribution to the myocardial contractile function: Assessment in a mathematical model. Biophysics (Russian Federation), 2009, 54, 39-46.	0.7	7
41	Mathematical Modeling of Mechanically Modulated Rhythm Disturbances in Homogeneous and Heterogeneous Myocardium with Attenuated Activity of Na+â€“K+ Pump. Bulletin of Mathematical Biology, 2008, 70, 910-949.	1.9	42
42	Study of the interaction between rabbit cardiac contractile and regulatory proteins. An in vitro motility assay. Biochemistry (Moscow), 2008, 73, 178-184.	1.5	14
43	Assessment of the mechanical activity of cardiac isomyosins V1 and V3 by the in vitro motility assay with regulated thin filament. Biophysics (Russian Federation), 2008, 53, 510-514.	0.7	3
44	Mathematical Modeling of Electromechanical Function Disturbances and Recovery in Calcium-Overloaded Cardiomyocytes. , 2007, , 383-392.		0
45	Activation sequence as a key factor in spatio-temporal optimization of myocardial function. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2006, 364, 1367-1383.	3.4	27
46	Application of in vitro motility assay to studying the calcium-mechanical relationship in skeletal and cardiac muscles. Biophysics (Russian Federation), 2006, 51, 687-691.	0.7	3
47	Simulation of mechanoelectrical coupling in cardiomyocytes under normal and abnormal conditions. Biophysics (Russian Federation), 2006, 51, 917-926.	0.7	2
48	Hybrid duplex: a novel method to study the contractile function of heterogeneous myocardium. American Journal of Physiology - Heart and Circulatory Physiology, 2005, 289, H2733-H2746.	3.2	14
49	Influence of viscosity on myocardium mechanical activity: a mathematical model. Journal of Theoretical Biology, 2004, 230, 385-405.	1.7	33
50	Mechano-electric interactions in heterogeneous myocardium: development of fundamental experimental and theoretical models. Progress in Biophysics and Molecular Biology, 2003, 82, 207-220.	2.9	81
51	MECHANICAL INTERACTION OF HETEROGENEOUS CARDIAC MUSCLE SEGMENTS IN SILICO: EFFECTS ON Ca2+ HANDLING AND ACTION POTENTIAL. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2003, 13, 3757-3782.	1.7	43
52	Mechanical inhomogeneity of myocardium studied in parallel and serial cardiac muscle duplexes: experiments and models. Chaos, Solitons and Fractals, 2002, 13, 1685-1711.	5.1	30
53	Effects of mechanical interaction between two rabbit cardiac muscles connected in parallel. General Physiology and Biophysics, 2002, 21, 277-301.	0.9	3
54	Mathematical modeling of the effect of the sarcoplasmic reticulum calcium pump function on load dependent myocardial relaxation. General Physiology and Biophysics, 2000, 19, 137-70.	0.9	5

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55	Mathematical modelling of the contribution of mechanical inhomogeneity in the myocardium to contractile function. General Physiology and Biophysics, 1997, 16, 101-37.	0.9	4
56	Mathematical Modeling of Relations Between the Kinetics of Free Intracellular Calcium and Mechanical Function of Myocardium. Journal of Molecular and Cellular Cardiology, 1996, 28, 475-486.	1.9	24
57	Cooperative effects due to calcium binding by troponin and their consequences for contraction and relaxation of cardiac muscle under various conditions of mechanical loading.. Circulation Research, 1991, 69, 1171-1184.	4.5	59
58	Heart muscle: mathematical modelling of the mechanical activity and modelling of mechanochemical uncoupling. General Physiology and Biophysics, 1990, 9, 219-43.	0.9	8
59	Detailed Electromechanical Model of Ventricular Wedge. , 0, , .		0
60	Mechano-Electric Feedbacks in a New Model of the Excitation-Contraction Coupling in Human Cardiomyocytes. , 0, , .		1