

Leonid B Katsnelson

List of Publications by Year in descending order

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Version: 2024-02-01

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 | Mechano-electric interactions in heterogeneous myocardium: development of fundamental experimental and theoretical models. <i>Progress in Biophysics and Molecular Biology</i> , 2003, 82, 207-220. | 2.9 | 81 |
| 2 | Cooperative effects due to calcium binding by troponin and their consequences for contraction and relaxation of cardiac muscle under various conditions of mechanical loading. <i>Circulation Research</i> , 1991, 69, 1171-1184. | 4.5 | 59 |
| 3 | Mathematical model of the anatomy and fibre orientation field of the left ventricle of the heart. <i>BioMedical Engineering OnLine</i> , 2013, 12, 54. | 2.7 | 58 |
| 4 | MECHANICAL INTERACTION OF HETEROGENEOUS CARDIAC MUSCLE SEGMENTS IN SILICO: EFFECTS ON Ca ²⁺ HANDLING AND ACTION POTENTIAL. <i>International Journal of Bifurcation and Chaos in Applied Sciences and Engineering</i> , 2003, 13, 3757-3782. | 1.7 | 43 |
| 5 | Mathematical Modeling of Mechanically Modulated Rhythm Disturbances in Homogeneous and Heterogeneous Myocardium with Attenuated Activity of Na ⁺ K ⁺ Pump. <i>Bulletin of Mathematical Biology</i> , 2008, 70, 910-949. | 1.9 | 42 |
| 6 | Influence of viscosity on myocardium mechanical activity: a mathematical model. <i>Journal of Theoretical Biology</i> , 2004, 230, 385-405. | 1.7 | 33 |
| 7 | Mechanical inhomogeneity of myocardium studied in parallel and serial cardiac muscle duplexes: experiments and models. <i>Chaos, Solitons and Fractals</i> , 2002, 13, 1685-1711. | 5.1 | 30 |
| 8 | Electrical Wave Propagation in an Anisotropic Model of the Left Ventricle Based on Analytical Description of Cardiac Architecture. <i>PLoS ONE</i> , 2014, 9, e93617. | 2.5 | 30 |
| 9 | Activation sequence as a key factor in spatio-temporal optimization of myocardial function. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2006, 364, 1367-1383. | 3.4 | 27 |
| 10 | Mathematical Modeling of Relations Between the Kinetics of Free Intracellular Calcium and Mechanical Function of Myocardium. <i>Journal of Molecular and Cellular Cardiology</i> , 1996, 28, 475-486. | 1.9 | 24 |
| 11 | Slow force response and auto-regulation of contractility in heterogeneous myocardium. <i>Progress in Biophysics and Molecular Biology</i> , 2012, 110, 305-318. | 2.9 | 22 |
| 12 | Mechano-calcium and mechano-electric feedbacks in the human cardiomyocyte analyzed in a mathematical model. <i>Journal of Physiological Sciences</i> , 2020, 70, 12. | 2.1 | 22 |
| 13 | Effects of subchronic lead intoxication of rats on the myocardium contractility. <i>Food and Chemical Toxicology</i> , 2018, 120, 378-389. | 3.6 | 20 |
| 14 | The cardiac muscle duplex as a method to study myocardial heterogeneity. <i>Progress in Biophysics and Molecular Biology</i> , 2014, 115, 115-128. | 2.9 | 19 |
| 15 | Mechano-electric heterogeneity of the myocardium as a paradigm of its function. <i>Progress in Biophysics and Molecular Biology</i> , 2016, 120, 249-254. | 2.9 | 19 |
| 16 | Changes in rat myocardium contractility under subchronic intoxication with lead and cadmium salts administered alone or in combination. <i>Toxicology Reports</i> , 2020, 7, 433-442. | 3.3 | 19 |
| 17 | Contribution of mechanical factors to arrhythmogenesis in calcium overloaded cardiomyocytes: Model predictions and experiments. <i>Progress in Biophysics and Molecular Biology</i> , 2011, 107, 81-89. | 2.9 | 18 |
| 18 | Role of myocardial viscoelasticity in disturbances of electrical and mechanical activity in calcium overloaded cardiomyocytes: Mathematical modeling. <i>Journal of Theoretical Biology</i> , 2011, 272, 83-95. | 1.7 | 18 |

| # | ARTICLE | IF | CITATIONS |
|----|---|-----|-----------|
| 19 | Effects of cardiac myosin binding protein-C on the regulation of interaction of cardiac myosin with thin filament in an in vitro motility assay. <i>Biochemical and Biophysical Research Communications</i> , 2010, 401, 159-163. | 2.1 | 16 |
| 20 | Hybrid duplex: a novel method to study the contractile function of heterogeneous myocardium. <i>American Journal of Physiology - Heart and Circulatory Physiology</i> , 2005, 289, H2733-H2746. | 3.2 | 14 |
| 21 | Study of the interaction between rabbit cardiac contractile and regulatory proteins. An in vitro motility assay. <i>Biochemistry (Moscow)</i> , 2008, 73, 178-184. | 1.5 | 14 |
| 22 | Mechano-electric feedback in one-dimensional model of myocardium. <i>Journal of Mathematical Biology</i> , 2016, 73, 335-366. | 1.9 | 14 |
| 23 | Transmural cellular heterogeneity in myocardial electromechanics. <i>Journal of Physiological Sciences</i> , 2018, 68, 387-413. | 2.1 | 14 |
| 24 | Mathematical modelling of the mechano-electric coupling in the human cardiomyocyte electrically connected with fibroblasts. <i>Progress in Biophysics and Molecular Biology</i> , 2021, 159, 46-57. | 2.9 | 14 |
| 25 | The Effects of Mechanical Preload on Transmural Differences in Mechano-Calcium-Electric Feedback in Single Cardiomyocytes: Experiments and Mathematical Models. <i>Frontiers in Physiology</i> , 2020, 11, 171. | 2.8 | 13 |
| 26 | Electro-Mechanical Coupling in a One-Dimensional Model of Heart Muscle fiber. <i>Russian Journal of Numerical Analysis and Mathematical Modelling</i> , 2014, 29, . | 0.6 | 12 |
| 27 | Further analysis of rat myocardium contractility changes associated with a subchronic lead intoxication. <i>Food and Chemical Toxicology</i> , 2019, 125, 233-241. | 3.6 | 12 |
| 28 | Force-velocity characteristics of isolated myocardium preparations from rats exposed to subchronic intoxication with lead and cadmium acting separately or in combination. <i>Food and Chemical Toxicology</i> , 2020, 144, 111641. | 3.6 | 10 |
| 29 | The effects of load on transmural differences in contraction of isolated mouse ventricular cardiomyocytes. <i>Journal of Molecular and Cellular Cardiology</i> , 2018, 114, 276-287. | 1.9 | 9 |
| 30 | Cardioinotropic Effects in Subchronic Intoxication of Rats with Lead and/or Cadmium Oxide Nanoparticles. <i>International Journal of Molecular Sciences</i> , 2021, 22, 3466. | 4.1 | 8 |
| 31 | Heart muscle: mathematical modelling of the mechanical activity and modelling of mechanochemical uncoupling. <i>General Physiology and Biophysics</i> , 1990, 9, 219-43. | 0.9 | 8 |
| 32 | Cooperative mechanisms of thin filament activation and their contribution to the myocardial contractile function: Assessment in a mathematical model. <i>Biophysics (Russian Federation)</i> , 2009, 54, 39-46. | 0.7 | 7 |
| 33 | Mathematical modeling of the effect of the sarcoplasmic reticulum calcium pump function on load dependent myocardial relaxation. <i>General Physiology and Biophysics</i> , 2000, 19, 137-70. | 0.9 | 5 |
| 34 | Changes in the Cardiotoxic Effects of Lead Intoxication in Rats Induced by Muscular Exercise. <i>International Journal of Molecular Sciences</i> , 2022, 23, 4417. | 4.1 | 5 |
| 35 | Mathematical modelling of the contribution of mechanical inhomogeneity in the myocardium to contractile function. <i>General Physiology and Biophysics</i> , 1997, 16, 101-37. | 0.9 | 4 |
| 36 | Application of in vitro motility assay to studying the calcium-mechanical relationship in skeletal and cardiac muscles. <i>Biophysics (Russian Federation)</i> , 2006, 51, 687-691. | 0.7 | 3 |

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|----|--|-----|-----------|
| 37 | 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 |
| 38 | A modified mathematical model of the anatomy of the cardiac left ventricle. Biophysics (Russian) Tj ETQq0 0 0 rgBT /Overlock, 10 Tf 50 7 | 0.7 | 3 |
| 39 | Effects of mechanical interaction between two rabbit cardiac muscles connected in parallel. General Physiology and Biophysics, 2002, 21, 277-301. | 0.9 | 3 |
| 40 | Simulation of mechano-electrical coupling in cardiomyocytes under normal and abnormal conditions. Biophysics (Russian Federation), 2006, 51, 917-926. | 0.7 | 2 |
| 41 | Role of Mechanics in Rhythm Disturbances in 1D Mathematical Model of Myocardial Tissue with Local Ca ²⁺ -Overload. , 2015, , . | | 2 |
| 42 | 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 |
| 43 | Mathematical modeling of the role of cooperativity between contractile and regulatory proteins in the mechano-calcium feedbacks in myocardium. , 2015, , . | | 1 |
| 44 | Effects of enhanced sodium currents in mathematical model of heterogeneous myocardium. , 2015, , . | | 1 |
| 45 | 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 b4rgBT /Overlock | | 1 |
| 46 | 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 |
| 47 | Combined mathematical model of the electrical and mechanical activity of the human cardiomyocyte. , 2018, , . | | 1 |
| 48 | Mathematical Model of Electrotonic Interaction Between Mechanically Active Cardiomyocyte and Fibroblasts. , 2019, , . | | 1 |
| 49 | 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 |
| 50 | EFFECTS OF SUBCHRONIC LEAD INTOXICATION ON THE MYOCARDIUM CONTRACTILITY OF RATS. Toxicological Review, 2018, , 22-32. | 0.2 | 1 |
| 51 | Mechano-Electric Feedbacks in a New Model of the Excitation-Contraction Coupling in Human Cardiomyocytes. , 0, , . | | 1 |
| 52 | Mathematical Modeling of Electromechanical Function Disturbances and Recovery in Calcium-Overloaded Cardiomyocytes. , 2007, , 383-392. | | 0 |
| 53 | New Mathematical Model of Electromechanical Coupling in Rat Cardiomyocytes. , 2018, , . | | 0 |
| 54 | The Effects of Mechanical Load on Transmural Differences in Mechano-Electric Feedback in Single Cardiomyocytes. Biophysical Journal, 2019, 116, 97a. | 0.5 | 0 |

| # | ARTICLE | IF | CITATIONS |
|----|--|-----|-----------|
| 55 | Arrhythmogenesis in calcium-overloaded human cardiomyocytes in isolation and within cardiac tissue. Simulation study. , 2021, , . | | 0 |
| 56 | Work Performance in Failing Myocardium Assessed in a Mathematical Model of the Human Ventricular Myocyte Electromechanical Coupling. , 2021, , . | | 0 |
| 57 | «ÑfĐ ^{1/2} Đ°Ñ†Đ,Đ ^{3/4} Đ ^{1/2} Đ°Đ»ÑCEĐ ^{1/2} Đ°Ñ•Đ ^{1/2} Đ _μ Đ ^{1/2} Đ ^{3/4} Ñ€Đ ^{3/4} Đ ^{1/2} Đ ^{3/4} ÑÑ,ÑCE Đ ² Đ ^{3/4} Đ•Đ ^{1/2} Đ,Đ°Đ°ÑŽÑ%°Ñ•Đ ² Ñ€Đ _μ ĐÑfĐ»ÑCÑ | | 0 |
| 58 | Detailed Electromechanical Model of Ventricular Wedge. , 0, , . | | 0 |
| 59 | Preprocessing Images Algorithm without Gaussian Shaped Particles for PIV Analysis and Imaging Vortices on the Epicardial Surface. , 2021, , . | | 0 |
| 60 | 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 |