

Evgeny V Shilko

List of Publications by Year in descending order

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#	ARTICLE	IF	CITATIONS
1	Structure, Properties, and Phase Transformations of Water Nanoconfined between Brucite-like Layers: The Role of Wall Surface Polarity. <i>Materials</i> , 2022, 15, 3043.	2.9	1
2	A DISCRETE ELEMENT FORMALISM FOR MODELLING WEAR PARTICLE FORMATION IN CONTACT BETWEEN SLIDING METALS. <i>Facta Universitatis, Series: Mechanical Engineering</i> , 2021, 19, 007.	4.6	10
3	FRICITION BEHAVIOR OF ALUMINUM BRONZE REINFORCED BY BORON CARBIDE PARTICLES. <i>Facta Universitatis, Series: Mechanical Engineering</i> , 2021, 19, 051.	4.6	3
4	Nonlinear Mechanical Effect of Free Water on the Dynamic Compressive Strength and Fracture of High-Strength Concrete. <i>Materials</i> , 2021, 14, 4011.	2.9	5
5	Particle-Based Approach for Simulation of Nonlinear Material Behavior in Contact Zones. <i>Springer Tracts in Mechanical Engineering</i> , 2021, , 67-89.	0.3	5
6	Theoretical Study of Physico-mechanical Response of Permeable Fluid-Saturated Materials Under Complex Loading Based on the Hybrid Cellular Automaton Method. <i>Springer Tracts in Mechanical Engineering</i> , 2021, , 485-501.	0.3	0
7	A New Method for Seismically Safe Managing of Seismotectonic Deformations in Fault Zones. <i>Springer Tracts in Mechanical Engineering</i> , 2021, , 45-66.	0.3	1
8	A Tool for Studying the Mechanical Behavior of the Bone–Endoprosthesis System Based on Multi-scale Simulation. <i>Springer Tracts in Mechanical Engineering</i> , 2021, , 91-126.	0.3	2
9	Analysis of the Quasi-Static and Dynamic Fracture of the Silica Refractory Using the Mesoscale Discrete Element Modelling. <i>Materials</i> , 2021, 14, 7376.	2.9	12
10	Estimation of the Diffusion Coefficient of Doxorubicin Molecules in a Water Solution in the Volume of a Porous Carrier Medium. <i>Russian Physics Journal</i> , 2020, 62, 2319-2323.	0.4	1
11	Computer-Aided Design of Boron Nitride-Based Membranes with Armchair and Zigzag Nanopores for Efficient Water Desalination. <i>Materials</i> , 2020, 13, 5256.	2.9	3
12	The nonlinear relationship between local and macroscopic parameters of dynamic fracture in brittle composite materials. <i>Journal of Physics: Conference Series</i> , 2020, 1666, 012016.	0.4	0
13	Study of the pattern of fluid flow in the pore space of kerogen-clay-carbonate-siliceous rocks of Bazhenov Suite. <i>Journal of Physics: Conference Series</i> , 2020, 1666, 012063.	0.4	0
14	Suppression of wear in dry sliding friction induced by negative thermal expansion. <i>Physical Review E</i> , 2020, 102, 042801.	2.1	6
15	Role of Adhesion Stress in Controlling Transition between Plastic, Grinding and Breakaway Regimes of Adhesive Wear. <i>Scientific Reports</i> , 2020, 10, 1585.	3.3	18
16	The Numerical study of the influence of a two-scale pore structure on the dynamic strength of water-saturated concrete. <i>PNRPU Mechanics Bulletin</i> , 2020, , 37-51.	0.4	2
17	Theoretical analysis of the mechanical characteristics of bimetallic composites manufactured by electron-beam additive technology with metal filaments. <i>AIP Conference Proceedings</i> , 2020, , .	0.4	0
18	On the control of slip modes and seismic activity of faults using drilling fluid injection. <i>AIP Conference Proceedings</i> , 2020, , .	0.4	0

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19	Influence of pore fluid on the compressive strength of high-strength concrete under dynamic loading. Journal of Physics: Conference Series, 2020, 1666, 012022.	0.4	0
20	Microscopic mechanical model of the main structural element of Bazhenov Suite reservoir rocks. Journal of Physics: Conference Series, 2019, 1268, 012019.	0.4	1
21	Coupling of Discrete and Continuum Approaches in Modeling the Behavior of Materials. , 2019, , 1675-1714.		1
22	Particle-based modeling of the mechanical behavior of porous fluid-saturated viscoelastic solids. Journal of Physics: Conference Series, 2019, 1391, 012116.	0.4	1
23	Regimes of adhesive wear in dry contact: Conditions of realization and determining parameters. AIP Conference Proceedings, 2019, , .	0.4	0
24	On combined quantized and mechanical descriptions of the Chernov-Luders macroband of localized deformation. AIP Conference Proceedings, 2019, , .	0.4	0
25	Finite-element analysis of the mechanical characteristics of materials manufactured by electron-beam additive technology with metal wire. AIP Conference Proceedings, 2019, , .	0.4	1
26	Influence of fracture incubation time on dynamic crack propagation in brittle solids. EPJ Web of Conferences, 2019, 221, 01013.	0.3	1
27	The development of the formalism of movable cellular automata for modeling the nonlinear mechanical behavior of viscoelastic materials. EPJ Web of Conferences, 2019, 221, 01052.	0.3	2
28	The study of the dependence of mechanical properties and fracture of water-saturated high-strength concrete on the parameters of pore structure. EPJ Web of Conferences, 2019, 221, 01020.	0.3	1
29	The numerical study of the influence of material parameters on the regime of adhesive wear of surface asperities. EPJ Web of Conferences, 2019, 221, 01015.	0.3	0
30	Fracture incubation time and scale invariance of dynamic crack propagation in brittle solids. AIP Conference Proceedings, 2019, , .	0.4	1
31	Physical mesomechanics based interdisciplinary approach to the development of new methods for managing deformation process in fault zones. AIP Conference Proceedings, 2019, , .	0.4	2
32	Influence of the Adhesion Force and Strain Hardening Coefficient of the Material on the Rate of Adhesive Wear in a Dry Tangential Frictional Contact. Russian Physics Journal, 2019, 62, 1398-1408.	0.4	6
33	Molecular dynamics of water and ions filtration through rectangular nanopores in boron nitride nanosheets. AIP Conference Proceedings, 2019, , .	0.4	1
34	Kinetic approach to the development of computational dynamic models for brittle solids. International Journal of Impact Engineering, 2019, 123, 14-25.	5.0	11
35	Modelling the Behavior of Complex Media by Jointly Using Discrete and Continuum Approaches. , 2019, , 1311-1345.		1
36	Investigation of Structural Factors that Increase the Mechanical Properties of Surface Layers Modified by Pulsed Electro-Beam Irradiation. Metal Working and Material Science, 2019, 21, 93-107.	0.3	0

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37	Simulation of mechanical behaviour of the proximal femur as a poroelastic solid using particles. Journal of Physics: Conference Series, 2019, 1391, 012005.	0.4	5
38	Development of the formalism of the discrete element method for the study of the mechanical behavior of liquid-saturated porous materials on a pore scale. Journal of Physics: Conference Series, 2019, 1391, 012023.	0.4	0
39	Strength of shear bands in fluid-saturated rocks: a nonlinear effect of competition between dilation and fluid flow. Scientific Reports, 2018, 8, 1428.	3.3	24
40	On the possibility of development of the technology for managing seismotectonic displacements in fault zones. AIP Conference Proceedings, 2018, , .	0.4	5
41	Computer-aided study of the mechanical behavior of the porous ceramic based composite with plastic pore filler. AIP Conference Proceedings, 2018, , .	0.4	1
42	Bionic structural design as a promising way of increasing the mechanical characteristics of the surface layers of metal-ceramic composites. AIP Conference Proceedings, 2018, , .	0.4	1
43	The Continuum Approach to the Description of Semi-Crystalline Polymers Deformation Regimes: The Role of Dynamic and Translational Defects. Polymers, 2018, 10, 1155.	4.5	5
44	The model of dynamic mechanical behaviour of brittle solids based on kinetic theory of strength. Journal of Physics: Conference Series, 2018, 1141, 012076.	0.4	0
45	Selective Filtration of Fluids in Materials with Slit-Shaped Nanopores. Physical Mesomechanics, 2018, 21, 538-545.	1.9	4
46	The model of dynamic inelastic behavior of brittle solids based on the concept of finite fracture time. AIP Conference Proceedings, 2018, , .	0.4	0
47	Numerical study of the limitations of the energy-based criterion for the formation of wear debris. AIP Conference Proceedings, 2018, , .	0.4	1
48	Multiscale model of mechanical behavior of ceramics composite with soft matter filling based on movable cellular automaton. Procedia Structural Integrity, 2018, 13, 680-685.	0.8	0
49	The determining influence of the competition between pore volume change and fluid filtration on the strength of permeable brittle solids. Procedia Structural Integrity, 2018, 13, 1508-1513.	0.8	10
50	Numerical analysis of the applicability of engineering linear models of inelastic behavior and fracture for the description of porous rocks under confined conditions. Journal of Physics: Conference Series, 2018, 1141, 012077.	0.4	0
51	Coupling of Discrete and Continuum Approaches in Modeling the Behavior of Materials. , 2018, , 1-40.		0
52	Modelling the Behavior of Complex Media by Jointly Using Discrete and Continuum Approaches. , 2018, , 1-35.		0
53	Baikal Ice Cover as a Representative Block Medium for Research in Lithospheric Geodynamics. Physical Mesomechanics, 2018, 21, 223-233.	1.9	3
54	Understanding the mechanisms of friction stir welding based on computer simulation using particles. Defence Technology, 2018, 14, 643-656.	4.2	36

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55	The Fundamental Regularities of the Evolution of Elastic Vortices Generated in the Surface Layers of Solids under Tangential Contact Loading. <i>Lubricants</i> , 2018, 6, 51.	2.9	2
56	Acoustic emission characterization of sliding wear under condition of direct and inverse transformations in low-temperature degradation aged Y-TZP and Y-TZP-AL ₂ O ₃ . <i>Friction</i> , 2018, 6, 323-340.	6.4	17
57	SIMULATION OF FRACTURE USING A MESH-DEPENDENT FRACTURE CRITERION IN THE DISCRETE ELEMENT METHOD. <i>Facta Universitatis, Series: Mechanical Engineering</i> , 2018, 16, 41.	4.6	6
58	Study of the influence of volume fraction of ceramic inclusions in NiCr-TiC composite with columnar structure on its mechanical behavior. <i>AIP Conference Proceedings</i> , 2017, , .	0.4	1
59	An approach to determining the parameters of kinetic strength theory based dynamic model of brittle solids mechanical behavior. <i>AIP Conference Proceedings</i> , 2017, , .	0.4	3
60	Computer-aided study of key factors determining high mechanical properties of nanostructured surface layers in metal-ceramic composites. <i>AIP Conference Proceedings</i> , 2017, , .	0.4	1
61	The influence of the mutual relationship between dilatancy and fluid flow on the strength of localized shear bands in permeable rocks. <i>AIP Conference Proceedings</i> , 2017, , .	0.4	0
62	Use of controlled dynamic impacts on hierarchically structured seismically hazardous faults for seismically safe relaxation of shear stresses. <i>AIP Conference Proceedings</i> , 2017, , .	0.4	4
63	Metal ceramic alloy structure and surface layer modification during electron-ion-plasma irradiation of its surface. <i>AIP Conference Proceedings</i> , 2016, , .	0.4	0
64	A coupled discrete elementâ€¢finite difference approach for modeling mechanical response of fluidâ€¢saturated porous materials. <i>International Journal for Numerical Methods in Engineering</i> , 2016, 106, 623-643.	2.8	44
65	Comparative analysis of different models of interphase boundaries in metal-ceramic composites. <i>AIP Conference Proceedings</i> , 2016, , .	0.4	0
66	Study of the influence of morphology and strength of interphase boundaries on the integral mechanical properties of NiCr-TiC composite. <i>AIP Conference Proceedings</i> , 2016, , .	0.4	1
67	Theoretical study of strength of elastic-plastic water-saturated interface under constrained shear. <i>AIP Conference Proceedings</i> , 2016, , .	0.4	1
68	Determination of the parameters of plasticity models of geological media on the base of computer simulation. <i>AIP Conference Proceedings</i> , 2016, , .	0.4	0
69	Effect of dynamic stress state perturbation on irreversible strain accumulation at interfaces in block-structured media. <i>Physical Mesomechanics</i> , 2016, 19, 136-148.	1.9	26
70	Numerical analysis of the geometrical and material criteria of acceleration of shear crack to supershear velocity in brittle nanoporous solids. <i>Procedia Structural Integrity</i> , 2016, 2, 409-416.	0.8	3
71	Role of vortex-like motion in fracture of coating-substrate system under contact loading. <i>Procedia Structural Integrity</i> , 2016, 2, 1781-1788.	0.8	3
72	Strength of water-filled permeable elastic-plastic medium under shear accompanied by compression: A theoretical study. <i>Procedia Structural Integrity</i> , 2016, 2, 2606-2613.	0.8	0

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73	Molecular Dynamics Simulation Of Electric Pulse Explosion Of Metal Wires. Procedia Structural Integrity, 2016, 2, 1421-1426.	0.8	1
74	Theoretical investigation of influence of peculiarities of internal structure on deformation and fracture of metal-ceramic composites using discrete element approach. Procedia Structural Integrity, 2016, 2, 2214-2221.	0.8	0
75	Nonlinear effect of elastic vortexlike motion on the dynamic stress state of solids. Physical Review E, 2016, 93, 053005.	2.1	6
76	An influence of normal stress and pore pressure on the conditions and dynamics of shear crack propagation in brittle solids. AIP Conference Proceedings, 2016, , .	0.4	0
77	Effect of the features of functionalized structure on elastic properties and strength of partially-filled brittle porous materials. AIP Conference Proceedings, 2016, , .	0.4	0
78	Elastic vortex displacements as precursors of mechanical stress relaxation in heterogeneous materials. AIP Conference Proceedings, 2016, , .	0.4	1
79	Investigation of regularities of formation and propagation of elastic vortices in surface layers of materials under dynamic contact loading. AIP Conference Proceedings, 2016, , .	0.4	1
80	Development of DEM formalism to modeling the dynamic response of brittle solids. AIP Conference Proceedings, 2016, , .	0.4	2
81	Key role of elastic vortices in the initiation of intersonic shear cracks. Physical Review E, 2015, 91, 063302.	2.1	28
82	Development of numerical models of interfaces for multiscale simulation of heterogeneous materials. AIP Conference Proceedings, 2015, , .	0.4	0
83	A theoretical study of the influence of technological friction stir welding parameters on weld structures. AIP Conference Proceedings, 2015, , .	0.4	1
84	Study of the role of vortex displacement in contact loading of strengthening coatings based on movable cellular automaton modeling. AIP Conference Proceedings, 2015, , .	0.4	3
85	Investigation of influence of friction stir welding regimes on the features of mass transfer and temperature distribution in forming welds. AIP Conference Proceedings, 2015, , .	0.4	0
86	On the influence of dynamic stress variations on strain accumulation in fault zones. AIP Conference Proceedings, 2015, , .	0.4	0
87	Similarity in seismogeodynamics on different scales. AIP Conference Proceedings, 2015, , .	0.4	1
88	Parametric study of the conditions of supershear crack propagation in brittle materials. AIP Conference Proceedings, 2015, , .	0.4	3
89	Modeling mechanical behaviors of composites with various ratios of matrixâ€“inclusion properties using movable cellular automaton method. Defence Technology, 2015, 11, 18-34.	4.2	39
90	Overcoming the limitations of distinct element method for multiscale modeling of materials with multimodal internal structure. Computational Materials Science, 2015, 102, 267-285.	3.0	92

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91	Theoretical investigation of influence of pore pressure on mechanical response of gas-filled permeable materials. , 2014, , .		0
92	Theoretical study of peculiarities of unstable longitudinal shear crack growth in sub-Rayleigh and supershear regimes. , 2014, , .		2
93	The computer-aided simulation of deformation and fracture of water-saturated elastic porous material with hybrid cellular automaton method. , 2014, , .		0
94	The numerical study of fracture and strength characteristics of heterogeneous brittle materials under dynamic loading. , 2014, , .		1
95	Physical modeling of seismic source generation in failure of fault asperities. Physical Mesomechanics, 2014, 17, 274-281.	1.9	3
96	Three-dimensional movable cellular automata simulation of elastoplastic deformation and fracture of coatings in contact interaction with a rigid indenter. Physical Mesomechanics, 2014, 17, 292-303.	1.9	30
97	Influence of phase interface properties on mechanical characteristics of metal ceramic composites. Physical Mesomechanics, 2014, 17, 282-291.	1.9	22
98	Dynamic vortex defects in deformed material. Physical Mesomechanics, 2014, 17, 15-22.	1.9	34
99	Multiscale Numerical Study of Fracture and Strength Characteristics of Zirconium Alumina Concrete with Use of the Particle-based MCA Method. , 2014, 3, 936-941.		0
100	Simulation of Deformation and Fracture of Fluid-saturated Porous Media with Hybrid Cellular Automaton Method. , 2014, 3, 985-990.		1
101	Development of a Structural and Rheological Model for Investigation of Peculiarities of Deformation and Fracture of Metal-ceramic Composites with Multimodal Internal Structure. , 2014, 3, 568-573.		1
102	Theoretical Study of the Conditions and the Mechanism of Shear Crack Acceleration towards the Longitudinal Wave Velocity. , 2014, 3, 251-256.		1
103	A mathematical model of particleâ€“particle interaction for discrete element based modeling of deformation and fracture of heterogeneous elasticâ€“plastic materials. Engineering Fracture Mechanics, 2014, 130, 96-115.	4.3	77
104	Investigation of influence of stress state parameters of fault zones on peculiarities of their mechanical response under shear loading. PNRPU Mechanics Bulletin, 2014, 2, 76-101.	0.4	1
105	COUPLED MODEL OF FLUID-SATURATED POROUS MATERIALS BASED ON A COMBINATION OF DISCRETE AND CONTINUUM APPROACHES. PNRPU Mechanics Bulletin, 2014, 1, 68-101.	0.4	1
106	Hybrid cellular automata method. Application to research on mechanical response of contrast media. Physical Mesomechanics, 2013, 16, 42-51.	1.9	12
107	Advance in earthquake prediction by physical simulation on the baikal ice cover. Physical Mesomechanics, 2013, 16, 52-61.	1.9	3
108	Influence of Features of Interphase Boundaries on Mechanical Properties and Fracture Pattern in Metalâ€“Ceramic Composites. Journal of Materials Science and Technology, 2013, 29, 1025-1034.	10.7	40

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109	Modeling nanoindentation of TiCCaPON coating on Ti substrate using movable cellular automaton method. <i>Computational Materials Science</i> , 2013, 76, 89-98.	3.0	22
110	Development of a formalism of movable cellular automaton method for numerical modeling of fracture of heterogeneous elastic-plastic materials. <i>Frattura Ed Integrita Strutturale</i> , 2013, 7, 26-59.	0.9	28
111	Effect of compression nonequiality on shear-induced dilatation in a block-structured medium. <i>Physical Mesomechanics</i> , 2012, 15, 80-87.	1.9	4
112	Approach to simulation of deformation and fracture of hierarchically organized heterogeneous media, including contrast media. <i>Physical Mesomechanics</i> , 2011, 14, 224-248.	1.9	44
113	Internal stress in block media as a factor responsible for interface strain activity. Estimation of excess tectonic stress. <i>Physical Mesomechanics</i> , 2011, 14, 32-39.	1.9	2
114	On the feasibility of shear stress estimation at interfaces of block-structured medium. <i>Physical Mesomechanics</i> , 2010, 13, 21-27.	1.9	7
115	Influence of constrained conditions on the character of deformation and fracture of block media under shear loads. <i>Physical Mesomechanics</i> , 2010, 13, 164-172.	1.9	3
116	Assessment of nanostructured ceramic coating damage. <i>Nanotribospectroscopy. Russian Physics Journal</i> , 2009, 52, 380-385.	0.4	3
117	Spectral analysis of the behavior and properties of solid surface layers. <i>Nanotribospectroscopy. Physical Mesomechanics</i> , 2009, 12, 221-234.	1.9	24
118	Model study of the formation of deformation-induced structures of subduction type in block-structured media. Ice cover of Lake Baikal as a model medium. <i>Tectonophysics</i> , 2009, 465, 204-211.	2.2	6
119	Effect of local stress on the interface response to dynamic loading in faulted crust. <i>Russian Geology and Geophysics</i> , 2008, 49, 52-58.	0.7	7
120	A new way to manage displacements in zones of active faults. <i>Tribology International</i> , 2007, 40, 995-1003.	5.9	23
121	Multiscale simulation of dry friction in wheel/rail contact. <i>Wear</i> , 2006, 261, 874-884.	3.1	52
122	Converting displacement dynamics into creep in block media. <i>Technical Physics Letters</i> , 2006, 32, 545-549.	0.7	12
123	Influence of the State of Interfaces on the Character of Local Displacements in Fault-Block and Interfacial Media. <i>Technical Physics Letters</i> , 2005, 31, 712.	0.7	11
124	Strength Analysis of Ceramics Under Different Constraints by Movable Cellular Automata Method. <i>Journal of Aircraft</i> , 2004, 41, 641-644.	2.4	1
125	Peculiarities of the mechanical response of heterogeneous materials with highly deformable interfaces. <i>Technical Physics Letters</i> , 2004, 30, 237-239.	0.7	17
126	Quasi-fluid nano-layers at the interface between rubbing bodies: simulations by movable cellular automata. <i>Wear</i> , 2003, 254, 901-906.	3.1	44

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127	Movable cellular automata method for simulating materials with mesostructure. Theoretical and Applied Fracture Mechanics, 2001, 37, 311-334.	4.7	105
128	Computer-aided examination and forecast of strength properties of heterogeneous coal-beds. Computational Materials Science, 2000, 19, 69-76.	3.0	18
129	The features of fracture of heterogeneous materials and frame structures. Potentialities of MCA design. Computational Materials Science, 1999, 16, 333-343.	3.0	31
130	A possible method of computer-aided design of materials with a highly porous matrix structure based on the method of moving cellular automata. Technical Physics Letters, 1998, 24, 154-156.	0.7	3
131	Laws of motion of the exothermic reaction front in a powder medium. Powder Metallurgy and Metal Ceramics, 1995, 34, 288-292.	0.8	1
132	Method of movable cellular automata as a tool for simulation within the framework of mesomechanics. Russian Physics Journal, 1995, 38, 1157-1168.	0.4	45