Valentin L Popov

List of Publications by Year
in descending order

304 papers	4,994 citations	159525 30 h-index	197736 49 g-index
359 all docs	359 docs citations	359 times ranked	2603 citing authors

#	ARTICLE	IF	CITATIONS
1	Strength of adhesive contact between a rough fibrillar structure and an elastic body: influence of fibrillar stiffness. Journal of Adhesion, 2022, 98, 1820-1833.	1.8	2
2	Study on cutting performance of SiCp/Al composite using textured YG8 carbide tool. International Journal of Advanced Manufacturing Technology, 2022, 119, 2213-2222.	1.5	9
3	An Approximate Solution for the Contact Problem of Profiles Slightly Deviating from Axial Symmetry. Symmetry, 2022, 14, 390.	1.1	7
4	Improving the Endoprosthesis Design and the Postoperative Therapy as a Means of Reducing Complications Risks after Total Hip Arthroplasty. Lubricants, 2022, 10, 38.	1.2	2
5	Adhesive contacts of rough elliptical punches. Mechanics Research Communications, 2022, 122, 103880.	1.0	4
6	Effect of adhesion on sliding friction force between an elastomer and a cylindrical steel indenter. AIP Conference Proceedings, 2022, , .	0.3	0
7	Contact Properties of Gradient Materials with a High Gradient Index. Technical Physics, 2022, 67, 28-33.	0.2	1
8	A hysteretic model of localized frictional contacts with instrumental stiffness. Meccanica, 2022, 57, 1783-1799.	1.2	2
9	The legacy of Coulomb and generalized laws of friction. Proceedings in Applied Mathematics and Mechanics, 2021, 20, e202000062.	0.2	1
10	Adhesion and friction in hard and soft contacts: theory and experiment. Friction, 2021, 9, 1688-1706.	3.4	40
11	Synovial Joints. Tribology, Regeneration, Regenerative Rehabilitation and Arthroplasty. Lubricants, 2021, 9, 15.	1.2	20
12	Editorial: Contact Mechanics Perspective of Tribology. Frontiers in Mechanical Engineering, 2021, 7, .	0.8	5
13	Influence of Chemical Heterogeneity and Third Body on Adhesive Strength: Experiment and Simulation. Frontiers in Mechanical Engineering, 2021, 7, .	0.8	7
14	Influence of Surface Energy Inhomogeneity on Contact Adhesion: Simulation and Experiment. Physical Mesomechanics, 2021, 24, 426-440.	1.0	2
15	A Note by K. L. Johnson on the History of the JKR Theory. Tribology Letters, 2021, 69, 1.	1.2	3
16	Adhesion Hysteresis Due to Chemical Heterogeneity. Springer Tracts in Mechanical Engineering, 2021, , 473-483.	0.1	3
17	SHAPE OF A SLIDING CAPILLARY CONTACT DUE TO THE HYSTERESIS OF CONTACT ANGLE: THEORY AND EXPERIMENT. Facta Universitatis, Series: Mechanical Engineering, 2021, 19, 175.	2.3	5
18	Effect of Roughness on Capillary Contact Shapes in Tangential Shear: Experiments. Physical Mesomechanics, 2021, 24, 561-569.	1.0	1

#	Article	IF	Citations
19	Adhesion of a Thin Soft Matter Layer: The Role of Surface Tension. Springer Tracts in Mechanical Engineering, 2021, , 461-472.	0.1	0
20	Seeing What Lies in Front of Your Eyes: Understanding and Insight in Teaching and Research. Springer Tracts in Mechanical Engineering, 2021, , 549-560.	0.1	0
21	Study of Dynamics of Block-Media in the Framework of Minimalistic Numerical Models. Springer Tracts in Mechanical Engineering, 2021, , 143-168.	0.1	0
22	Hysteresis in an Adhesive Contact upon a Change in the Indenter Direction of Motion: an Experiment and Phenomenological Model. Technical Physics, 2021, 66, 611-629.	0.2	9
23	The History of "Sneddon's" solution in contact mechanics. Proceedings in Applied Mathematics and Mechanics, 2021, 21, .	0.2	1
24	Boundary element method for nonadhesive and adhesive contacts of a coated elastic half-space. Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology, 2020, 234, 73-83.	1.0	29
25	The final NO-WEAR state due to dual-mode fretting: Numerical prediction and experimental validation. Wear, 2020, 458-459, 203402.	1.5	2
26	Non-adhesive Contacts With Different Surface Tension Inside and Outside the Contact Area. Frontiers in Mechanical Engineering, 2020, 6, .	0.8	2
27	Ludwig Föppl and Gerhard Schubert: Unknown classics of contact mechanics. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2020, 100, e202000203.	0.9	10
28	Adhesion between a Rigid Indenter and an Elastic Half-Space for Incompressible Gradient Media with a High Gradientness Index. Technical Physics, 2020, 65, 728-736.	0.2	1
29	Dynamic stiction without static friction: The role of friction vector rotation. Physical Review E, 2020, 102, 063001.	0.8	10
30	The Effect of Contact Duration and Indentation Depth on Adhesion Strength: Experiment and Numerical Simulation. Technical Physics, 2020, 65, 1695-1707.	0.2	14
31	Simulation of Adhesive Contact of Soft Microfibrils. Lubricants, 2020, 8, 94.	1.2	1
32	Stress tensor and gradient of hydrostatic pressure in the contact plane of axisymmetric bodies under normal and tangential loading. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2020, 100, e201900223.	0.9	3
33	A numerical study of JKR-type adhesive contact of ellipsoids. Journal Physics D: Applied Physics, 2020, 53, 335303.	1.3	3
34	Current Trends in Improving of Artificial Joints Design and Technologies for Their Arthroplasty. Frontiers in Mechanical Engineering, 2020, 6, .	0.8	15
35	Contacts With Negative Work of "Adhesion" and Superlubricity. Frontiers in Mechanical Engineering, 2020, 5, .	0.8	1
36	Role of Adhesion Stress in Controlling Transition between Plastic, Grinding and Breakaway Regimes of Adhesive Wear. Scientific Reports, 2020, 10, 1585.	1.6	18

#	Article	IF	Citations
37	Dissipation of Mechanical Energy in an Oscillating Adhesive Contact between a Hard Indenter and an Elastomer. Technical Physics Letters, 2020, 46, 1092-1095.	0.2	9
38	DYNAMICAL MODEL OF THE ASYMMETRIC ACTUATOR OF DIRECTIONAL MOTION BASED ON POWER-LAW GRADED MATERIALS. Facta Universitatis, Series: Mechanical Engineering, 2020, 18, 245.	2.3	6
39	Cluster of the Kendall-type adhesive microcontacts as a simple model for load sharing in bioinspired fibrillar adhesives. Archive of Applied Mechanics, 2019, 89, 1447-1472.	1.2	10
40	Editorial: Friction and Wear: From Elementary Mechanisms to Macroscopic Behavior. Frontiers in Mechanical Engineering, 2019, 5, .	0.8	4
41	Annular Contacts. , 2019, , 295-318.		0
42	Dynamical model of asymmetric actuator of directional motion. Meccanica, 2019, 54, 1681-1687.	1.2	2
43	Investigation on Dynamic Response of Rubber in Frictional Contact. Frontiers in Mechanical Engineering, 2019, 5, .	0.8	5
44	Effect of elastic grading on fretting wear. Scientific Reports, 2019, 9, 7791.	1.6	10
45	Transition between Modes of Adhesion and Sliding Friction in Contacts of Axially Symmetric Bodies. Journal of Friction and Wear, 2019, 40, 39-45.	0.1	4
46	Contact Problems of Functionally Graded Materials. , 2019, , 251-293.		2
47	Adhesive Strength of Contacts of Rough Spheres. Frontiers in Mechanical Engineering, 2019, 5, .	0.8	31
48	Handbook of Contact Mechanics. , 2019, , .		93
49	Gradient Theory of Adhesion and Tabor Parameter. Advanced Structured Materials, 2019, , 403-410.	0.3	0
50	Adhesive contact between a rigid body of arbitrary shape and a thin elastic coating. Acta Mechanica, 2019, 230, 2447-2453.	1.1	12
51	Particle-based modeling of the mechanical behavior of porous fluid-saturated viscoelastic solids. Journal of Physics: Conference Series, 2019, 1391, 012116.	0.3	1
52	Regimes of adhesive wear in dry contact: Conditions of realization and determining parameters. AIP Conference Proceedings, 2019, , .	0.3	0
53	Active bio contact mechanics: Concepts of active control of wear and growth of the cartilage in natural joints. AIP Conference Proceedings, 2019, , .	0.3	5
54	Science Thriller: The dramatic destiny of Alexander Mohrenstein†Ertel and the history of elastohydrodynamics. Proceedings in Applied Mathematics and Mechanics, 2019, 19, e201900097.	0.2	0

#	Article	IF	Citations
55	Theoretical Estimation of The Influence of Plastic Deformation on Average Coefficient of Friction in the Process of Nanostructuring Burnishing of Metal Samples. Journal of Friction and Wear, 2019, 40, 384-391.	0.1	1
56	Mechanics of adhesive contacts: Experiment and theory. AIP Conference Proceedings, 2019, , .	0.3	6
57	Adhesive contribution to friction. AIP Conference Proceedings, 2019, , .	0.3	9
58	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.	0.2	6
59	Voltage-Induced Friction with Application to Electrovibration. Lubricants, 2019, 7, 102.	1.2	11
60	Active control of friction by transverse oscillations. Friction, 2019, 7, 74-85.	3.4	14
61	Normal Contact Without Adhesion. , 2019, , 5-66.		4
62	Viscoelastic Materials. , 2019, , 213-249.		4
63	GENERALIZED ARCHARD LAW OF WEAR BASED ON RABINOWICZ CRITERION OF WEAR PARTICLE FORMATION. Facta Universitatis, Series: Mechanical Engineering, 2019, 17, 39.	2.3	20
64	Tangential Contact. , 2019, , 125-173.		0
65	Normal Contact with Adhesion. , 2019, , 67-124.		0
66	Wear. , 2019, , 187-204.		0
67	Transversely Isotropic Problems. , 2019, , 205-212.		1
68	Model of Nanostructuring Burnishing by a Spherical Indenter Taking into Consideration Plastic Deformations. Technical Physics, 2018, 63, 51-56.	0.2	0
69	Dynamic Model of Elastoplastic Normal Collision of Spherical Particles under Nonlocal Plasticity. Physics of the Solid State, 2018, 60, 566-570.	0.2	6
70	Onset of detachment in adhesive contact of an elastic half-space and flat-ended punches with non-circular shape: analytic estimates and comparison with numeric analysis. Journal Physics D: Applied Physics, 2018, 51, 145601.	1.3	11
71	Handbuch der Kontaktmechanik. , 2018, , .		14
72	Generalized master curve procedure for elastomer friction taking into account dependencies on velocity, temperature and normal force. Tribology International, 2018, 120, 376-380.	3.0	16

#	Article	IF	Citations
73	Note on the History of Contact Mechanics and Friction: Interplay of Electrostatics, Theory of Gravitation and Elasticity from Coulomb to Johnson-Kendall-Roberts Theory of Adhesion. Physical Mesomechanics, 2018, 21, 1-5.	1.0	19
74	Contact Properties and Adhesion of Incompressible Power-Law Gradient Media with High Gradients. Physical Mesomechanics, 2018, 21, 76-79.	1.0	3
75	Mapping of Two-Dimensional Contact Problems on a Problem with a One-Dimensional Parametrization. Physical Mesomechanics, 2018, 21, 80-84.	1.0	2
76	On the Possibility of Frictional Damping with Reduced Wear: A Note on the Applicability of Archard's Law of Adhesive Wear under Conditions of Fretting. Physical Mesomechanics, 2018, 21, 94-98.	1.0	12
77	Short note: Method of Dimensionality Reduction for compressible viscoelastic media. I. Frictionless normal contact of a Kelvin–Voigt solid. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2018, 98, 306-311.	0.9	1
78	The extension of the method of dimensionality reduction to layered elastic media. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2018, 98, 622-634.	0.9	15
79	Influence of the Tabor parameter on the adhesive normal impact of spheres in Maugis–Dugdale approximation. Computational Particle Mechanics, 2018, 5, 313-318.	1.5	9
80	Boundary element method for normal non-adhesive and adhesive contacts of power-law graded elastic materials. Computational Mechanics, 2018, 61, 319-329.	2.2	26
81	Wear Analysis of a Heterogeneous Annular Cylinder. Lubricants, 2018, 6, 28.	1.2	4
82	Force-displacement relation in a tangential frictional contact with adhesion. AIP Conference Proceedings, 2018, , .	0.3	1
83	Heterogeneity of material structure determines the stationary surface topography and friction. Scientific Reports, 2018, 8, 14168.	1.6	2
84	Identification and Space-Time Evolution of Vortex-Like Motion of Atoms in a Loaded Solid. Physical Mesomechanics, 2018, 21, 419-429.	1.0	13
85	Is Tribology Approaching Its Golden Age? Grand Challenges in Engineering Education and Tribological Research. Frontiers in Mechanical Engineering, 2018, 4, .	0.8	20
86	Stiff and soft active control of friction by vibrations and their energy efficiency. Forschung Im Ingenieurwesen/Engineering Research, 2018, 82, 331-339.	1.0	3
87	Adhesive contact of rough brushes. Beilstein Journal of Nanotechnology, 2018, 9, 2405-2412.	1.5	3
88	Guest editorial: Special Issue on Science of Wear. Friction, 2018, 6, 243-244.	3.4	0
89	Adhesive wear and particle emission: Numerical approach based on asperity-free formulation of Rabinowicz criterion. Friction, 2018, 6, 260-273.	3.4	38
90	60 years of Rabinowicz' criterion for adhesive wear. Friction, 2018, 6, 341-348.	3.4	14

#	Article	IF	Citations
91	ADHESIVE FORCE OF FLAT INDENTERS WITH BRUSH-STRUCTURE. Facta Universitatis, Series: Mechanical Engineering, 2018, 16, 1.	2.3	11
92	ADHESIVE WEAR: GENERALIZED RABINOWICZâ€™ CRITERIA. Facta Universitatis, Series: Mechanical Engineering, 2018, 16, 29.	2.3	11
93	SIMULATION OF FRACTURE USING A MESH-DEPENDENT FRACTURE CRITERION IN THE DISCRETE ELEMENT METHOD. Facta Universitatis, Series: Mechanical Engineering, 2018, 16, 41.	2.3	6
94	SOLUTION OF ADHESIVE CONTACT PROBLEM ON THE BASIS OF THE KNOWN SOLUTION FOR NON-ADHESIVE ONE. Facta Universitatis, Series: Mechanical Engineering, 2018, 16, 93.	2.3	7
95	METHOD OF DIMENSIONALITY REDUCTION IN CONTACT MECHANICS AND FRICTION: A USERâ€™S HANDBOOK. III. VISCOELASTIC CONTACTS. Facta Universitatis, Series: Mechanical Engineering, 2018, 16, 99.	2.3	6
96	VerschleiÃŸ. , 2018, , 185-202.		0
97	MECHANICS OF COLLISIONS OF SOLIDS: INFLUENCE OF FRICTION AND ADHESION. I. REVIEW OF EXPERIMENTAL AND THEORETICAL WORKS. PNRPU Mechanics Bulletin, 2018, , .	0.1	1
98	Transversal isotrope Probleme. , 2018, , 203-211.		0
99	Normalkontakt mit AdhÃ¤sion. , 2018, , 67-123.		0
100	Kontakte ohne kompaktes Kontaktgebiet. , 2018, , 293-315.		0
101	Contact Mechanics and Friction. , 2017, , .		99
102	Reduction of friction by normal oscillations. I. Influence of contact stiffness. Friction, 2017, 5, 45-55.	3.4	25
103	Reduction of friction by normal oscillations. II. In-plane system dynamics. Friction, 2017, 5, 194-206.	3.4	21
104	The oblique impact of a rigid sphere on a power-law graded elastic half-space. Mechanics of Materials, 2017, 109, 82-87.	1.7	12
105	Adhesive tangential impact without slip of a rigid sphere and a powerâ€law graded elastic halfâ€space. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2017, 97, 872-878.	0.9	4
106	Influence of tangential displacement on the adhesion strength of a contact between a parabolic profile and an elastic half-space. Royal Society Open Science, 2017, 4, 161010.	1.1	13
107	Biological Microstructures with Enhanced Adhesion and Friction: A Numerical Approach. Biologically-inspired Systems, 2017, , 141-177.	0.4	1
108	Dynamics of the coefficient of friction between a rigid conical indenter and a viscoelastic foundation under step-wise change of sliding velocity. Physical Mesomechanics, 2017, 20, 432-437.	1.0	1

#	Article	IF	Citations
109	Generalized rabinowiczâ€™ criterion for adhesive wear for elliptic micro contacts. AIP Conference Proceedings, 2017, , .	0.3	5
110	Exact oneâ€dimensional mapping of axially symmetric elastic contacts with superimposed normal and torsional loading. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2017, 97, 173-182.	0.9	2
111	Friction in an adhesive tangential contact in the Coulomb-Dugdale approximation. Journal of Adhesion, 2017, 93, 1131-1145.	1.8	20
112	Strength of adhesive contacts: Influence of contact geometry and material gradients. Friction, 2017, 5, 308-325.	3.4	100
113	Stickâ€"slip boundary friction mode as a second-order phase transition with an inhomogeneous distribution of elastic stress in the contact area. Beilstein Journal of Nanotechnology, 2017, 8, 1889-1896.	1.5	2
114	Oscillation-based methods for actuation and manipulation of nano-objects. AIP Conference Proceedings, 2017, , .	0.3	3
115	NORMAL LINE CONTACT OF FINITE-LENGTH CYLINDERS. Facta Universitatis, Series: Mechanical Engineering, 2017, 15, 63.	2.3	5
116	THE INFLUENCE OF VISCOELASTICITY ON VELOCITY-DEPENDENT RESTITUTIONS IN THE OBLIQUE IMPACT OF SPHERES. Facta Universitatis, Series: Mechanical Engineering, 2017, 15, 269.	2.3	7
117	SIMULATION OF FRICTIONAL DISSIPATION UNDER BIAXIAL TANGENTIAL LOADING WITH THE METHOD OF DIMENSIONALITY REDUCTION. Facta Universitatis, Series: Mechanical Engineering, 2017, 15, 295.	2.3	0
118	Rebound indentation problem for a viscoelastic halfâ€space and axisymmetric indenter â€" Solution by the method of dimensionality reduction. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2016, 96, 956-967.	0.9	17
119	The extension of the method of dimensionality reduction to nonâ€compact and nonâ€axisymmetric contacts. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2016, 96, 1144-1155.	0.9	7
120	Impact of an elastic sphere with an elastic half space with a constant coefficient of friction: Numerical analysis based on the method of dimensionality reduction. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2016, 96, 1089-1095.	0.9	5
121	Limiting shape due to fretting wear in an adhesive contact in Dugdale approximation. Physical Mesomechanics, 2016, 19, 378-381.	1.0	4
122	Biological microstructures with high adhesion and friction. Numerical approach. Physics-Uspekhi, 2016, 59, 829-845.	0.8	12
123	Asymptotic modelling of the JKR adhesion contact for a thin elastic layer. Quarterly Journal of Mechanics and Applied Mathematics, 2016, 69, 161-179.	0.5	22
124	An Approximate JKR Model of Elliptical Contact Between Thin Incompressible Elastic Coatings Covering Rigid Cylinders. Tribology Letters, 2016, 64, 1.	1.2	2
125	Numerical analysis of the geometrical and material criteria of acceleration of shear crack to supershear velocity in brittle nanoporous solids. Procedia Structural Integrity, 2016, 2, 409-416.	0.3	3
126	Johnsonâ€"Kendallâ€"Roberts adhesive contact for a toroidal indenter. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2016, 472, 20160218.	1.0	30

#	Article	IF	Citations
127	Universal limiting shape of worn profile under multiple-mode fretting conditions: theory and experimental evidence. Scientific Reports, 2016, 6, 23231.	1.6	12
128	Nonlinear effect of elastic vortexlike motion on the dynamic stress state of solids. Physical Review E, 2016, 93, 053005.	0.8	6
129	Effect of stress nonhomogeneity on the shear melting of a thin boundary lubrication layer. Physical Review E, 2016, 94, 053002.	0.8	5
130	What does friction really depend on? Robust governing parameters in contact mechanics and friction. Physical Mesomechanics, 2016, 19, 115-122.	1.0	9
131	An influence of normal stress and pore pressure on the conditions and dynamics of shear crack propagation in brittle solids. AIP Conference Proceedings, 2016, , .	0.3	0
132	Dynamics of a coefficient of friction during non-stationary sliding of a parabolic indenter on visco-elastic foundation. AIP Conference Proceedings, 2016, , .	0.3	0
133	A wear-reduced nanodrive based on oscillating rolling. Physical Mesomechanics, 2016, 19, 167-172.	1.0	1
134	Relaxation damping in contacts under superimposed normal and torsional oscillation. Physical Mesomechanics, 2016, 19, 178-181.	1.0	1
135	Limiting shape of profile due to dual-mode fretting wear in contact with an elastomer. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 2016, 230, 1417-1423.	1.1	7
136	General procedure for solution of contact problems under dynamic normal and tangential loading based on the known solution of normal contact problem. Journal of Strain Analysis for Engineering Design, 2016, 51, 247-255.	1.0	10
137	The Influence of System Dynamics on the Frictional Resistance: Insights from a Discrete Model. Tribology Letters, 2016, 61, 1.	1.2	5
138	JKR adhesive contact for a transversely isotropic layer of finite thickness. Journal Physics D: Applied Physics, 2016, 49, 045307.	1.3	24
139	Adhesive impact of an elastic sphere with an elastic half space: Numerical analysis based on the method of dimensionality reduction. Mechanics of Materials, 2016, 92, 155-163.	1.7	11
140	Fast High-Resolution Simulation of the Gross Slip Wear of Axially Symmetric Contacts. Tribology Transactions, 2016, 59, 189-194.	1.1	31
141	Modeling and waveform optimization of stickâ€"slip micro-drives using the method of dimensionality reduction. Archive of Applied Mechanics, 2016, 86, 1771-1785.	1.2	20
142	INDENTATION OF FLAT-ENDED AND TAPERED INDENTERS WITH POLYGONAL CROSS-SECTIONS. Facta Universitatis, Series: Mechanical Engineering, 2016, 14, 241.	2.3	9
143	METHOD OF DIMENSIONALITY REDUCTION IN CONTACT MECHANICS AND FRICTION: A USER'S HANDBOOK. II. POWER-LAW GRADED MATERIALS. Facta Universitatis, Series: Mechanical Engineering, 2016, 14, 251.	2.3	23
144	THE JKR-ADHESIVE NORMAL CONTACT PROBLEM OF AXISYMMETRIC RIGID PUNCHES WITH A FLAT ANNULAR SHAPE OR CONCAVE PROFILES. Facta Universitatis, Series: Mechanical Engineering, 2016, 14, 281.	2.3	8

#	Article	IF	Citations
145	Key role of elastic vortices in the initiation of intersonic shear cracks. Physical Review E, 2015, 91, 063302.	0.8	28
146	Relaxation damping in oscillating contacts. Scientific Reports, 2015, 5, 16189.	1.6	19
147	On the role of scales in contact mechanics and friction between elastomers and randomly rough self-affine surfaces. Scientific Reports, 2015, 5, 11139.	1.6	24
148	Kinetics of the coefficient of friction of elastomers. Scientific Reports, 2015, 4, 5795.	1.6	15
149	A model of fretting wear in the contact of an axisymmetric indenter and a visco-elastic half-space. AIP Conference Proceedings, 2015, , .	0.3	1
150	Analytic solution for the limiting shape of profiles due to fretting wear. Scientific Reports, 2015, 4, 3749.	1.6	38
151	Guest editorial: Special issue on science of friction. Friction, 2015, 3, 83-84.	3.4	0
152	Parametric study of the conditions of supershear crack propagation in brittle materials. AIP Conference Proceedings, 2015, , .	0.3	3
153	The research works of Coulomb and Amontons and generalized laws of friction. Friction, 2015, 3, 183-190.	3.4	107
154	Oscillation-based methods for fixation and manipulation of nano-objects. , 2015, , .		0
155	On the history of elastohydrodynamics: The dramatic destiny of Alexander Mohrenstein–Ertel and his contribution to the theory and practice of lubrication. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2015, 95, 652-663.	0.9	10
156	Kontaktmechanik und Reibung. , 2015, , .		23
157	Plastic properties of polytetrafluoroethylene (PTFE) under conditions of high pressure and shear. Wear, 2015, 326-327, 84-87.	1.5	3
158	A model of a breathing crack with relaxation damping. International Journal of Engineering Science, 2015, 93, 46-50.	2.7	2
159	Impact of an elastic sphere with an elastic half space revisited: Numerical analysis based on the method of dimensionality reduction. Scientific Reports, 2015, 5, 8479.	1.6	10
160	Coefficient of friction between a rigid conical indenter and a model elastomer: Influence of local frictional heating. Physical Mesomechanics, 2015, 18, 75-80.	1.0	3
161	Overcoming the limitations of distinct element method for multiscale modeling of materials with multimodal internal structure. Computational Materials Science, 2015, 102, 267-285.	1.4	92
162	The functional significance of density and distribution of outgrowths on co-opted contact pairs in biological arresting systems. Philosophical Transactions of the Royal Society B: Biological Sciences, 2015, 370, 20140032.	1.8	3

#	Article	IF	Citations
163	Comment on "Contact Mechanics for Randomly Rough Surfaces: On the Validity of the Method of Reduction of Dimensionality" by Bo Persson in Tribology Letters. Tribology Letters, 2015, 60, 1.	1.2	1
164	Method of Dimensionality Reduction in Contact Mechanics and Friction. , 2015, , .		115
165	Appendix 3: Replacing the Material Properties with Radok's Method of Functional Equations. , 2015, , 245-253.		0
166	Frictional Force. , 2015, , 165-188.		0
167	Rolling Contact. , 2015, , 87-97.		0
168	Dynamic tangential contact of rough surfaces in stick-slip microdrives: Modeling and validation using the method of dimensionality Reduction. Physical Mesomechanics, 2014, 17, 304-310.	1.0	4
169	Dynamic tangential contacts: Numerical description of nano-positioning devices. , 2014, , .		0
170	On the role of scales in elastomer friction. , 2014, , .		0
171	Plastic and tribological properties of polytetrafluoroethylene (PTFE) under conditions of high pressure and shear. , 2014, , .		0
172	Prandtl-Tomlinson Model: A Simple Model Which Made History. Lecture Notes in Applied Mathematics and Mechanics, 2014, , 153-168.	1.1	12
173	Influence of the alignment of load and oscillation on the frictional shakedown of an elastic rolling contact with Coulomb friction. Physical Mesomechanics, 2014, 17, 265-273.	1.0	2
174	Method of dimensionality reduction in contact mechanics and tribology. Heterogeneous media. Physical Mesomechanics, 2014, 17, 50-57.	1.0	6
175	Shakedown limits for an oscillating, elastic rolling contact with Coulomb friction. International Journal of Solids and Structures, 2014, 51, 930-935.	1.3	10
176	Maximum micro-slip in tangential contact of randomly rough self-affine surfaces. Wear, 2014, 309, 256-258.	1.5	30
177	Experimental investigation of the adhesive contact of an elastomer. Physical Mesomechanics, 2014, 17, 232-235.	1.0	3
178	Simplified simulation of fretting wear using the method of dimensionality reduction. Physical Mesomechanics, 2014, 17, 236-241.	1.0	7
179	Rapid simulation procedure for fretting wear on the basis of the method of dimensionality reduction. International Journal of Solids and Structures, 2014, 51, 4215-4220.	1.3	24
180	Generalized law of friction between elastomers and differently shaped rough bodies. Scientific Reports, 2014, 4, 3750.	1.6	25

#	Article	IF	Citations
181	Partial-slip frictional response of rough surfaces. Scientific Reports, 2014, 4, 5178.	1.6	49
182	Method of reduction of dimensionality in contact and friction mechanics: A linkage between micro and macro scales. Friction, 2013, 1, 41-62.	3.4	56
183	Using acoustic emission for the analysis of wear processes during sliding friction. Technical Physics Letters, 2013, 39, 223-225.	0.2	31
184	Friction Between a Viscoelastic Body and a Rigid Surface with Random Self-Affine Roughness. Physical Review Letters, 2013, 111, 034301.	2.9	39
185	Contact stiffness of randomly rough surfaces. Scientific Reports, 2013, 3, 3293.	1.6	34
186	Contact Mechanics of Rough Spheres: Crossover from Fractal to Hertzian Behavior. Advances in Tribology, 2013, 2013, 1-4.	2.1	17
187	Liet Âal.Reply:. Physical Review Letters, 2013, 111, 189402.	2.9	7
188	Penetration of self-affine fractal rough rigid bodies into a model elastomer having a linear viscous rheology. Physical Review E, 2013, 87, 042802.	0.8	15
189	Methode der Dimensionsreduktion in Kontaktmechanik und Reibung. , 2013, , .		27
190	Kopplung an eine makroskopische Dynamik. , 2013, , 197-206.		1
191	Kontakt mit Elastomeren. , 2013, , 99-113.		1
192	Kopplung an Mikroskala. , 2013, , 215-219.		0
193	Rollkontakt. , 2013, , 87-98.		0
194	Was weiter?. , 2013, , 221-226.		0
195	Anlage 2: Exakte Lösungen in drei Dimensionen für den Tangentialkontakt rotationssymmetrischer Körper. , 2013, , 241-245.		0
196	Anlage 3: Ersetzung der Materialeigenschaften mit Radoks Methode der Funktionalgleichungen. , 2013, , 247-256.		0
197	Normalkontakt mit Adhäsion. , 2013, , 39-65.		0
198	Reibungsdämpfung. , 2013, , 189-195.		0

#	Article	IF	Citations
199	Anlage 1: Exakte Lösungen in drei Dimensionen für den Normalkontakt rotationssymmetrischer Körper. , 2013, , 227-239.		0
200	Tangentialkontakt. , 2013, , 67-85.		0
201	Separation der elastischen und der Trägheitseigenschaften in drei-dimensionalen Systemen. , 2013, , 7-18.		0
202	Normal contact stiffness of elastic solids with fractal rough surfaces for one- and three-dimensional systems. Physical Review E, 2012, 86, 026710.	0.8	64
203	Normal Contact Stiffness of Elastic Solids with Fractal Rough Surfaces. Physical Review Letters, 2012, 108, 104301.	2.9	137
204	Influence of Ultrasonic Oscillation on Static and Sliding Friction. Tribology Letters, 2012, 48, 51-62.	1.2	75
205	Mesoscopic nature of friction and numerical simulation methods in tribology. Physical Mesomechanics, 2012, 15, 251-253.	1.0	3
206	Basic ideas and applications of the method of reduction of dimensionality in contact mechanics. Physical Mesomechanics, 2012, 15, 254-263.	1.0	21
207	Investigation of the dry normal contact between fractal rough surfaces using the reduction method, comparison to 3D simulations. Physical Mesomechanics, 2012, 15, 275-279.	1.0	9
208	Modeling of the dynamic contact in stick-slip microdrives using the method of reduction of dimensionality. Physical Mesomechanics, 2012, 15, 287-292.	1.0	16
209	The method of reduction of dimensionality and its application to simulation of elastomer friction under complex dynamic loads. Physical Mesomechanics, 2012, 15, 319-323.	1.0	5
210	Adhesive properties of contacts between elastic bodies with randomly rough self-affine surfaces: A simulation with the method of reduction of dimensionality. Physical Mesomechanics, 2012, 15, 324-329.	1.0	6
211	Prandtl–Tomlinson model: History and applications in friction, plasticity, and nanotechnologies. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2012, 92, 683-708.	0.9	89
212	Rate and state dependent friction laws and the prediction of earthquakes: What can we learn from laboratory models?. Tectonophysics, 2012, 532-535, 291-300.	0.9	21
213	Using hierarchical memory to calculate friction force between fractal rough solid surface and elastomer with arbitrary linear rheological properties. Technical Physics Letters, 2011, 37, 8-11.	0.2	20
214	Shear induced adhesion: Contact mechanics of biological spatula-like attachment devices. Journal of Theoretical Biology, 2011, 276, 126-131.	0.8	72
215	Mechanism of Wear and Ripple Formation Induced by the Mechanical Action of an Atomic Force Microscope Tip. Physical Review Letters, 2011, 106, 025502.	2.9	14
216	Force of friction between fractal rough surface and elastomer. Technical Physics Letters, 2010, 36, 525-527.	0.2	21

#	Article	IF	Citations
217	Influence of Ultrasonic In-Plane Oscillations on Static and Sliding Friction and Intrinsic Length Scale of Dry Friction Processes. Tribology Letters, 2010, 39, 25-30.	1.2	88
218	Adhesive Contribution to the Coefficient of Friction Between Rough Surfaces. Tribology Letters, 2010, 39, 247-250.	1.2	21
219	Accelerated creep as a precursor of friction instability and earthquake prediction. Physical Mesomechanics, 2010, 13, 283-291.	1.0	14
220	Modified Burridge–Knopoff model with state dependent friction. Tribology International, 2010, 43, 1392-1399.	3.0	9
221	Direct modelling of surface topography development in a micro-contact with the movable cellular automata method. Wear, 2010, 268, 877-885.	1.5	7
222	Contact Mechanics and Friction. , 2010, , .		626
223	Wear. , 2010, , 271-284.		1
224	Contact between Rough Surfaces. , 2010, , 81-103.		5
225	Kontaktmechanik und Reibung. , 2010, , .		63
226	Qualitative Treatment of Adhesive Contacts. , 2010, , 25-40.		1
227	Rolling Contact. , 2010, , 119-132.		1
228	Thermal Effects in Contacts. , 2010, , 199-205.		2
229	Capillary Forces. , 2010, , 41-54.		0
230	Tangential Contact Problems. , 2010, , 105-117.		0
231	A Bubble Dynamics Based Approach to the Simulation of Cavitation in Lubricated Contacts. Journal of Tribology, 2009, 131, .	1.0	17
232	Assessment of nanostructured ceramic coating damage. Nanotribospectroscopy. Russian Physics Journal, 2009, 52, 380-385.	0.2	3
233	Cavitation within the framework of reduced description of mixed lubrication. Tribology International, 2009, 42, 93-98.	3.0	15
234	A multilevel computer simulation of friction and wear by numerical methods of discrete mechanics and a phenomenological theory. Physical Mesomechanics, 2009, 12, 11-19.	1.0	38

#	Article	IF	Citations
235	Spectral analysis of the behavior and properties of solid surface layers. Nanotribospectroscopy. Physical Mesomechanics, 2009, 12, 221-234.	1.0	24
236	Numerical modeling of processes of mass transfer in tribological contacts by the method of movable cellular automata. Journal of Friction and Wear, 2009, 30, 12-16.	0.1	5
237	Das Prandtl-Tomlinson-Modell fÃ¼r trockene Reibung. , 2009, , 153-172.		3
238	Computer modeling of local tribological contacts by the example of the automotive brake friction pair. Physical Mesomechanics, 2008, 11, 73-84.	1.0	27
239	Experimental determination of the spatial scale governing dry friction force of a steel specimen. Physical Mesomechanics, 2008, 11, 149-152.	1.0	1
240	Reduced description of mixed lubrication. Tribology International, 2008, 41, 542-548.	3.0	5
241	Statistics of contacts and the dependence of their total length on the normal force for fractal surfaces with different Hirsch indices. Technical Physics Letters, 2008, 34, 792-794.	0.2	5
242	Development of surface topography for the railâ€"wheel contact. Wear, 2008, 265, 1542-1548.	1.5	5
243	Directed molecular transport in an oscillating channel with randomness. Physical Review E, 2008, 77, 021114.	0.8	3
244	Fractal Tomlinson model for mesoscopic friction: From microscopic velocity-dependent damping to macroscopic Coulomb friction. Physical Review E, 2007, 75, 027103.	0.8	43
245	Mapping of three-dimensional contact problems into one dimension. Physical Review E, 2007, 76, 036710.	0.8	55
246	Flexible tissue with fibres interacting with an adhesive surface. Journal of Physics Condensed Matter, 2007, 19, 096012.	0.7	17
247	Reconstruction of potential from dynamic experiments. Physical Review E, 2007, 75, 066104.	0.8	22
248	Method of movable lattice particles. Tribology International, 2007, 40, 930-936.	3.0	3
249	A new constitutive model of rubber. Tribology International, 2007, 40, 1012-1016.	3.0	9
250	Numerical simulation methods in tribology. Tribology International, 2007, 40, 916-923.	3.0	68
251	A new way to manage displacements in zones of active faults. Tribology International, 2007, 40, 995-1003.	3.0	23
252	Reduction of three-dimensional contact problems to one-dimensional ones. Tribology International, 2007, 40, 924-929.	3.0	29

#	Article	IF	Citations
253	Macroscopic isotropy of two- and three-dimensional elastic lattice models. Tribology International, 2007, 40, 937-941.	3.0	6
254	Ice cover of Lake Baikal as a model for studying tectonic processes in the Earth's crust. Doklady Earth Sciences, 2007, 413, 155-159.	0.2	12
255	Dimensional reduction for fast simulations of contact problems. WIT Transactions on Engineering Sciences, 2007, , .	0.0	0
256	Multiscale simulation of dry friction in wheel/rail contact. Wear, 2006, 261, 874-884.	1.5	52
257	To optimal elasticity of adhesives mimicking gecko foot-hairs. Physics Letters, Section A: General, Atomic and Solid State Physics, 2006, 358, 309-312.	0.9	8
258	Spring model of biological attachment pads. Journal of Theoretical Biology, 2006, 243, 48-53.	0.8	71
259	Diffusion as a model of formation and development of surface topography. Tribology International, 2006, 39, 431-436.	3.0	14
260	Tribospectroscopy of randomly rough surfaces. Tribology International, 2006, 39, 456-460.	3.0	6
261	Simulation of surface topography with the method of movable cellular automata. Tribology International, 2006, 39, 444-449.	3.0	24
262	Physical nature and properties of dynamic surface layers in friction. Tribology International, 2006, 39, 426-430.	3.0	3
263	Multi-layer models of friction between solids. Tribology International, 2006, 39, 437-443.	3.0	3
264	Converting displacement dynamics into creep in block media. Technical Physics Letters, 2006, 32, 545-549.	0.2	12
265	Effect of vibrations on the laboratory model "earthquake" statistics. Technical Physics Letters, 2006, 32, 630-633.	0.2	4
266	Tribospectroscopic Study of a Steel–Steel Friction Couple. Technical Physics Letters, 2005, 31, 309.	0.2	11
267	Influence of the State of Interfaces on the Character of Local Displacements in Fault-Block and Interfacial Media. Technical Physics Letters, 2005, 31, 712.	0.2	11
268	A Model of Mechanical Polishing in the Presence of a Lubricant. Technical Physics Letters, 2005, 31, 788.	0.2	7
269	Two Universal Regimes of Adhesive Film Peeling. Technical Physics Letters, 2005, 31, 871.	0.2	1
270	Tribospectroscopy of surfaces with statistically random roughness. Technical Physics Letters, 2004, 30, 148-150.	0.2	1

#	Article	IF	Citations
271	Micro- and nanoscale modelling of dry friction with application to the wheel/rail contact. Proceedings in Applied Mathematics and Mechanics, 2004, 4, 254-255.	0.2	0
272	Nanomachines: a general approach to inducing a directed motion at the atomic level. International Journal of Non-Linear Mechanics, 2004, 39, 619-633.	1.4	10
273	Quasi-fluid nano-layers at the interface between rubbing bodies: simulations by movable cellular automata. Wear, 2003, 254, 901-906.	1.5	44
274	Nanomachines: Methods to induce a directed motion at nanoscale. Physical Review E, 2003, 68, 026608.	0.8	25
275	Probabilistic fasteners with parabolic elements: biological system, artificial model and theoretical considerations. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2002, 360, 211-225.	1.6	42
276	Structural Design and Biomechanics of Friction-Based Releasable Attachment Devices in Insects. Integrative and Comparative Biology, 2002, 42, 1127-1139.	0.9	165
277	The theory of quasistatic nanomachines. Technical Physics Letters, 2002, 28, 385-390.	0.2	0
278	Nanomachinery: A general approach to inducing directed motion at the atomic level. Technical Physics, 2002, 47, 1397-1407.	0.2	1
279	Theory of elastoplastic media with mesostructure. Theoretical and Applied Fracture Mechanics, 2001, 37, 299-310.	2.1	16
280	Electronic and phononic friction of solids at low temperatures. Tribology International, 2001, 34, 277-286.	3.0	16
281	Subsurface layer formation during sliding friction. Wear, 2001, 249, 860-867.	1.5	65
282	Thermodynamics and kinetics of shear-induced melting of a thin layer of lubricant confined between solids. Technical Physics, 2001, 46, 605-615.	0.2	30
283	Quantization of the average velocity of motion in a periodic potential under the action of an ultrasonic perturbation. Technical Physics Letters, 2001, 27, 551-553.	0.2	1
284	On the origin of the transition from slip to stick. Solid State Communications, 2000, 114, 261-266.	0.9	17
285	A theory of the transition from static to kinetic friction in boundary lubrication layers. Solid State Communications, 2000, 115, 369-373.	0.9	40
286	Electron and phonon mechanisms of friction in crystalline solids in atomically close contact at low temperatures. Technical Physics, 2000, 45, 574-583.	0.2	1
287	Solid-liquid transition described by the particle method. Technical Physics Letters, 2000, 26, 250-253.	0.2	2
288	Simulation of wear in combustion engines. Computational Materials Science, 2000, 19, 285-291.	1.4	29

#	Article	IF	Citations
289	Superslipperiness at Low Temperatures: Quantum Mechanical Aspects of Solid State Friction. Physical Review Letters, 1999, 83, 1632-1635.	2.9	24
290	Thermomechanical model of crystalline elastoplastic media. Technical Physics Letters, 1999, 25, 815-817.	0.2	6
291	Electronic contribution to sliding friction in normal and superconducting states. JETP Letters, 1999, 69, 558-561.	0.4	10
292	Calculations of temperature conditions in a contact spot of friction with seizure. Russian Physics Journal, 1999, 42, 830-836.	0.2	0
293	On the dynamic theory of elastoplastic medium with microstructure. Computational Materials Science, 1999, 16, 218-236.	1.4	8
294	Formation of a surface-layer substructure due to friction. Russian Physics Journal, 1997, 40, 200-204.	0.2	2
295	Coupling of an elastoplastic continuum and a Cosserat continuum. Russian Physics Journal, 1994, 37, 337-342.	0.2	2
296	Resonances of interband impact ionization in narrow-gap semiconductors in a quantizing magnetic field. Theory and experiment. Semiconductor Science and Technology, 1992, 7, 109-118.	1.0	1
297	Gauge theory of â€œplastically incompressibleâ€•mediumâ€”II. Dispersion relations with dissipation. International Journal of Engineering Science, 1992, 30, 335-340.	2.7	10
298	Gauge theory of â€œplastically incompressibleâ€•medium without dissipationâ€”I. Dispersion relations and propagation of perturbations without dissipation. International Journal of Engineering Science, 1992, 30, 329-334.	2.7	8
299	Moving of flux lines through a random net of pinning centers. Physica C: Superconductivity and Its Applications, 1991, 174, 81-85.	0.6	1
300	Excitation spectrum of anisotropic non-dissipative elastic-plastic medium. Soviet Physics Journal (English Translation of Izvestiia Vysshykh Uchebnykh Zavedenii, Fizika), 1990, 33, 515-519.	0.0	1
301	Avalanche breakdown in narrow gap semiconductors in crossed fields. Solid State Communications, 1985, 53, 947-952.	0.9	2
302	Influence of In-Plane and Out-of-Plane Ultrasonic Oscillations on Sliding Friction. SAE International Journal of Passenger Cars - Mechanical Systems, 0, 4, 1387-1393.	0.4	7
303	CONTACT STIFFNESS OF BODIES WITH FRACTAL ROUGHNESS: COMPARISON OF 3D BEM RESULTS AND REDUCTION METHOD. , 0, , .		0
304	Principios y aplicaciones de la mecÃ¡nica de contacto en tribologÃa, fricciÃ³n y adherencia. , 0, , .		0