Varvara A Romanova

List of Publications by Year
in descending order

125	1,385	331670 21	395702 33
papers	citations	h-index	g-index

125	125	125	746
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Evolution of grain structure during laser additive manufacturing. Simulation by a cellular automata method. Materials and Design, 2016, 106, 321-329.	7.0	167
2	The influence of the reinforcing particle shape and interface strength on the fracture behavior of a metal matrix composite. Acta Materialia, 2009, 57, 97-107.	7.9	92
3	Numerical study of mesoscale surface roughening in aluminum polycrystals under tension. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2013, 564, 255-263.	5.6	48
4	Simulation of elasticâ€“plastic deformation and fracture of materials at micro-, meso- and macrolevels. Theoretical and Applied Fracture Mechanics, 2001, 37, 183-244.	4.7	42
5	A numerical study of plastic strain localization and fracture across multiple spatial scales in materials with metal-matrix composite coatings. Theoretical and Applied Fracture Mechanics, 2019, 101, 342-355.	4.7	38
6	Microstructure-based analysis of deformation and fracture in metal-matrix composite materials. Engineering Failure Analysis, 2020, 110, 104412.	4.0	38
7	A method of step-by-step packing and its application in generating 3D microstructures of polycrystalline and composite materials. Engineering With Computers, 2021, 37, 241-250.	6.1	38
8	The effect of ultrasonic impact treatment on the deformation behavior of commercially pure titanium under uniaxial tension. Materials and Design, 2017, 117, 371-381.	7.0	36
9	Micro- and mesomechanical aspects of deformation-induced surface roughening in polycrystalline titanium. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2017, 697, 248-258.	5.6	34
10	Simulation of elasto-plastic behaviour of an artificial 3D-structure under dynamic loading. Computational Materials Science, 2003, 28, 518-528.	3.0	33
11	The computational micromechanics of materials with porous ceramic coatings. Meccanica, 2016, 51, 415-428.	2.0	32
12	The effect of the irregular interface geometry in deformation and fracture of a steel substrateâ€“boride coating composite. International Journal of Plasticity, 2009, 25, 2025-2044.	8.8	30
13	On the role of internal interfaces in the development of mesoscale surface roughness in loaded materials. Physical Mesomechanics, 2011, 14, 159-166.	1.9	30
14	A computational study of the microstructural effect on the deformation and fracture of friction stir welded aluminum. Computational Materials Science, 2016, 116, 2-10.	3.0	30
15	Strain Localization in Titanium with a Modified Surface Layer. Physical Mesomechanics, 2018, 21, 32-42.	1.9	26
16	Early prediction of macroscale plastic strain localization in titanium from observation of mesoscale surface roughening. International Journal of Mechanical Sciences, 2019, 161-162, 105047.	6.7	24
17	On the Solution of Quasi-Static Micro- and Mesomechanical Problems in a Dynamic Formulation. Physical Mesomechanics, 2019, 22, 296-306.	1.9	24
18	Computational analysis of deformation and fracture in a composite material on the mesoscale level. Computational Materials Science, 2006, 37, 110-118.	3.0	23

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19	Micromechanical simulations of additively manufactured aluminum alloys. Computers and Structures, 2021, 244, 106412.	4.4	23
20	Mesomechanical analysis of the ELASTO-PLASTIC behavior of a 3D composite-structure under tension. Computational Mechanics, 2005, 36, 475-483.	4.0	22
21	Mesoscopic surface folding in EK-181 steel polycrystals under uniaxial tension. Physical Mesomechanics, 2012, 15, 94-103.	1.9	21
22	A solution to the problem of the mesh anisotropy in cellular automata simulations of grain growth. Computational Materials Science, 2015, 108, 168-176.	3.0	21
23	Simulation of crystal plasticity under dynamic loading. Computational Materials Science, 1999, 16, 355-361.	3.0	20
24	Finite-element and finite-difference simulations of the mechanical behavior of austenitic steels at different strain rates and temperatures. Mechanics of Materials, 2009, 41, 1277-1287.	3.2	20
25	A mesomechanical analysis of plastic strain and fracture localization in a material with a bilayer coating. Composites Part B: Engineering, 2014, 66, 276-286.	12.0	20
26	Simulation of mesoâ€“macro dynamic behavior using steel as an example. Computational Materials Science, 2003, 28, 505-511.	3.0	19
27	MICROSTRUCTURE-BASED SIMULATIONS OF QUASISTATIC DEFORMATION USING AN EXPLICIT DYNAMIC APPROACH. Facta Universitatis, Series: Mechanical Engineering, 2019, 17, 243.	4.6	19
28	Three-dimensional analysis of mesoscale deformation phenomena in welded low-carbon steel. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2011, 528, 5271-5277.	5.6	18
29	Mesoscale analysis of deformation and fracture in coated materials. Computational Materials Science, 2012, 64, 306-311.	3.0	18
30	Three-dimensional analysis of grain structure and texture of additively manufactured 316L austenitic stainless steel. Additive Manufacturing, 2020, 36, 101521.	3.0	18
31	Formation of Bulk Tensile Regions in Metal Matrix Composites and Coatings under Uniaxial and Multiaxial Compression. Physical Mesomechanics, 2020, 23, 135-146.	1.9	18
32	Strategy of computational predictions for mechanical behaviour of additively manufactured materials. Materials Science and Technology, 2018, 34, 1591-1605.	1.6	17
33	COMPUTATIONAL MICROSTRUCTURE-BASED ANALYSIS OF RESIDUAL STRESS EVOLUTION IN METAL-MATRIX COMPOSITE MATERIALS DURING THERMOMECHANICAL LOADING. Facta Universitatis, Series: Mechanical Engineering, 2021, 19, 241.	4.6	17
34	Micromechanical model of deformation-induced surface roughening in polycrystalline materials. Physical Mesomechanics, 2017, 20, 324-333.	1.9	16
35	Mesoscale plastic flow generation and development for polycrystals. Theoretical and Applied Fracture Mechanics, 2000, 33, 1-7.	4.7	14
36	A micromechanical analysis of deformation-induced surface roughening in surface-modified polycrystalline materials. Meccanica, 2016, 51, 359-370.	2.0	14

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37	The effects of surface-layer grain size and texture on deformation-induced surface roughening in polycrystalline titanium hardened by ultrasonic impact treatment. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2020, 793, 139896.	5.6	14
38	Numerical study of the texture effect on deformation-induced surface roughening in titanium polycrystals. Engineering Failure Analysis, 2020, 110, 104437.	4.0	14
39	Numerical analysis of mesoscale surface roughening in a coated plate. Computational Materials Science, 2012, 61, 71-75.	3.0	13
40	A NUMERICAL STUDY OF THE MICROSCALE PLASTIC STRAIN LOCALIZATION IN FRICTION STIR WELD ZONES. Facta Universitatis, Series: Mechanical Engineering, 2018, 16, 77.	4.6	13
41	Plastic deformation behavior of mild steel subjected to ultrasonic treatment. Theoretical and Applied Fracture Mechanics, 1997, 28, 141-146.	4.7	12
42	A Numerical Study of the Contribution of Different Slip Systems to the Deformation Response of Polycrystalline Titanium. Physical Mesomechanics, 2021, 24, 166-177.	1.9	12
43	A physically-based computational approach for processing-microstructure-property linkage of materials additively manufactured by laser powder bed fusion. International Journal of Mechanical Sciences, 2022, 219, 107103.	6.7	12
44	Simulation of deformation and fracture of coated material with account for propagation of a LÃ¼ders-Chernov band in the steel substrate. Physical Mesomechanics, 2013, 16, 133-140.	1.9	11
45	A mesomechanical analysis of the stressâ€“strain localisation in friction stir welds of polycrystalline aluminium alloys. Meccanica, 2016, 51, 319-328.	2.0	10
46	Numerical simulation of intermittent yielding at the macro and mesolevels. Computational Materials Science, 2005, 32, 261-267.	3.0	9
47	Comparative analysis of two- and three-dimensional simulations of Al/Al2O3 behavior on the meso-scale level. Computational Materials Science, 2007, 39, 274-281.	3.0	9
48	Numerical study of the surface hardening effect on the deformation-induced roughening in titanium polycrystals. Computational Materials Science, 2016, 116, 96-102.	3.0	9
49	The deformation and fracture of composite materials with different coating thickness. Numerical simulation. Physical Mesomechanics, 2010, 13, 28-37.	1.9	8
50	Numerical simulation of surface and bulk deformation in three-dimensional polycrystals. Physical Mesomechanics, 2009, 12, 130-140.	1.9	7
51	Numerical simulation of deformation and fracture of a material with a polysilazane-based coating. Physical Mesomechanics, 2016, 19, 430-440.	1.9	7
52	Mesomechanics of interface in surface-hardened and coated materials. Russian Physics Journal, 1999, 42, 247-263.	0.4	6
53	A comparative analysis of the mesoscale stress-strain state in two- and three-dimensional polycrystalline specimens. Physical Mesomechanics, 2010, 13, 178-183.	1.9	6
54	Impact of 3D-model thickness on FE-simulations of microstructure. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2010, 527, 802-811.	5.6	6

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55	A Numerical Study of the Stress-Strain Behavior of Additively Manufactured Aluminum-Silicon Alloy at the Scale of Dendritic Structure. Physical Mesomechanics, 2021, 24, 32-39.	1.9	6
56	Numerical simulation of deformation and fracture in low-carbon steel coated by diffusion borating. Theoretical and Applied Fracture Mechanics, 2004, 41, 9-14.	4.7	5
57	Three_Dimensional Simulation of Fracture Behavior of Elastic-Brittle Material with Initial Crack Pattern. International Journal of Fracture, 2006, 139, 537-544.	2.2	5
58	The effect of plastic flow in the neck on the scale levels of fracture in polycrystals. Experiment and modeling. Physical Mesomechanics, 2011, 14, 16-23.	1.9	5
59	Special features of strain-induced surface roughness formed in specimens with curvilinear geometry of the hardened surface layer-substrate interface. Physical Mesomechanics, 2015, 18, 81-87.	1.9	5
60	Strain-Induced Surface Roughening in Polycrystalline VT1-0 Titanium Specimens under Uniaxial Tension. Physical Mesomechanics, 2018, 21, 249-257.	1.9	5
61	Numerical modeling of the thermomechanical behavior of steels with allowance for the propagation of Luders bands. Journal of Applied Mechanics and Technical Physics, 2007, 48, 743-750.	0.5	4
62	Plastic Strain Localization in Polycrystalline Titanium. Numerical Simulation. Russian Physics Journal, 2020, 62, 1539-1551.	0.4	4
63	Numerical modeling of multi-scale shear stability loss in polycrystals under shock wave loading. European Physical Journal Special Topics, 2000, 10, Pr9-515-Pr9-520.	0.2	4
64	ON THE PROBLEM OF STRAIN LOCALIZATION AND FRACTURE SITE PREDICTION IN MATERIALS WITH IRREGULAR GEOMETRY OF INTERFACES. Facta Universitatis, Series: Mechanical Engineering, 2019, 17, 169.	4.6	4
65	A review of microstructure and mechanical properties of additively manufactured aluminum alloys. AIP Conference Proceedings, 2020, , .	0.4	4
66	A numerical simulation of the nucleation and evolution of localized plastic deformation in welded low-carbon steel specimens. Physical Mesomechanics, 2009, 12, 66-73.	1.9	3
67	On the numerical simulation of the microstructural evolution induced by laser additive manufacturing of steel products. AIP Conference Proceedings, 2016, , .	0.4	3
68	Computational mesomechanics of titanium surface-hardened by ultrasonic treatment. Physical Mesomechanics, 2017, 20, 334-342.	1.9	3
69	Modeling of 3D microstructures produced by additive manufacturing. AIP Conference Proceedings, 2018, , .	0.4	3
70	MESOSCALE DEFORMATION-INDUCED SURFACE PHENOMENA IN LOADED POLYCRYSTALS. Facta Universitatis, Series: Mechanical Engineering, 2021, 19, 187.	4.6	3
71	Effect of hatch distance on the microstructure of additively manufactured 316â€…L steel. AIP Conference Proceedings, 2020, , .	0.4	3
72	A microstructure-based mechanical model of deformation-induced surface roughening in polycrystalline Î±-titanium at the mesoscale. Mechanics of Advanced Materials and Structures, 2022, 29, 7364-7374.	2.6	3

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73	Two dimensional cellular automata simulation of grain growth during solidification and recrystallization. IOP Conference Series: Materials Science and Engineering, 2015, 71, 012073.	0.6	2
74	Mechanical Aspects of Deformation-Induced Surface Roughening in the Presence of Inclusions in a Subsurface Layer. Numerical Modeling. Frontiers in Mechanical Engineering, 2020, 6, .	1.8	2
75	NUMERICAL STUDY OF STRESS-STRAIN LOCALIZATION IN THE TITANIUM SURFACE MODIFIED BY AN ELECTRON BEAM TREATMENT. Facta Universitatis, Series: Mechanical Engineering, 2016, 14, 329.	4.6	2
76	Computational parametric study for plastic strain localization and fracture in a polycrystalline material with a porous ceramic coating. Mechanics of Advanced Materials and Structures, 2022, 29, 2390-2403.	2.6	2
77	Numerical study of the surface-hardening effect on surface phenomena in 3D polycrystalline specimens. , 2014, , .		1
78	A numerical analysis of formation of the surface relief: A single inclusion model. , 2014, , .		1
79	A numerical investigation of grain shape and crystallographic texture effects on the plastic strain localization in friction stir weld zones. AIP Conference Proceedings, 2015, , .	0.4	1
80	Numerical simulation of deformation and fracture in a coated material using curvilinear regular meshes. IOP Conference Series: Materials Science and Engineering, 2015, 71, 012072.	0.6	1
81	A mesomechanical analysis of the deformation and fracture in polycrystalline materials with ceramic porous coatings. AIP Conference Proceedings, 2015, , .	0.4	1
82	Computational study of the mechanical behavior of steel produced by selective laser melting. AIP Conference Proceedings, 2016, , .	0.4	1
83	Numerical Simulation of Ultrasonic Surface Treatment. European Physical Journal Special Topics, 1997, 07, C3-55-C3-60.	0.2	1
84	THE INFLUENCE OF THE STRAIN RATE ON THE STRENGTH OF THE COATING-SUBSTRATE COMPOSITION. NUMERICAL MODELING. International Journal of Nanomechanics Science and Technology, 2011, 2, 231-253.	0.5	0
85	A computational analysis of the interfacial curvature effect on the strength of a material with a modified surface layer. , 2014, , .		0
86	Mesomechanical numerical modeling of the stress-strain localization and fracture in an aluminum alloy with a composite coating. , 2014, , .		0
87	A numerical simulation of the deformation and fracture of a material with a porous polysilazane coating. , 2014, , .		0
88	Numerical analysis of strain-induced surface phenomena in aluminum alloys. , 2014, , .		0
89	A numerical investigation of the crystallographic texture effect on the surface roughening in aluminum polycrystals. AIP Conference Proceedings, 2015, , .	0.4	0
90	Evolution of stress concentration along curvilinear modified surface layerâ€"base material interface. Numerical simulation. AIP Conference Proceedings, 2015, , .	0.4	0

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91	Modeling of the mechanical behavior of aluminum alloys with friction stir welds. AIP Conference Proceedings, 2015, , .	0.4	0
92	A micromechanical model for the deformation behavior of titanium polycrystals. AIP Conference Proceedings, 2015, , .	0.4	0
93	A computational study of the dynamic deformation and fracture in a coated material. AIP Conference Proceedings, 2016, , .	0.4	0
94	A crystal plasticity model for the deformation behavior of aluminum single crystals. AIP Conference Proceedings, 2016, , .	0.4	0
95	Strain-induced surface roughening in polycrystalline aluminum alloys. Experiment and simulation. AIP Conference Proceedings, 2016, , .	0.4	0
96	Computational mesomechanics of surface-modified titanium. AIP Conference Proceedings, 2016, , .	0.4	0
97	Mesoscale plastic strain localization in a titanium alloy with a modified surface layer. AIP Conference Proceedings, 2016, , .	0.4	0
98	The influence of the mechanical properties of a steel substrate on the macroscopic strength of a coated material. AIP Conference Proceedings, 2016, , .	0.4	0
99	The effect of ultrasonic impact treatment on surface roughening of commercially pure titanium during tensile test. AIP Conference Proceedings, 2016, , .	0.4	0
100	Strain localization of commercially pure titanium subjected to ultrasonic impact treatment followed by uniaxial tension. AIP Conference Proceedings, 2016, , .	0.4	0
101	Crystal plasticity-based simulations of polycrystalline titanium deformation behavior. AIP Conference Proceedings, 2016, , .	0.4	0
102	Mesomechanical response of microstructure formed on the advancing side of friction stir welded aluminum. AIP Conference Proceedings, 2016, , .	0.4	0
103	Microstructure-based mechanical model of metal-matrix composite materials and coatings. AIP Conference Proceedings, 2018, , .	0.4	0
104	Microstructure-based numerical analysis of the dynamic deformation of polycrystalline aluminum. AIP Conference Proceedings, 2018, , .	0.4	0
105	Modeling the deformation behavior of titanium single crystals. AIP Conference Proceedings, 2019, , .	0.4	0
106	Strain rate effect on the deformation and fracture in different zones of friction stir welded aluminum. AIP Conference Proceedings, 2019, , .	0.4	0
107	Microstructure and mechanical properties of the aluminum-zirconium tungstate composite. AIP Conference Proceedings, 2019, , .	0.4	0
108	Numerical study of plastic strain localization in aluminum single crystals compressed along [001]-axis. AIP Conference Proceedings, 2019, , .	0.4	0

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109	The effect of a textured surface layer on the deformation behavior of polycrystalline titanium. AIP Conference Proceedings, 2019, , .	0.4	0
110	A comparative analysis of plastic strain localization in aluminum single crystals and polycrystalline grains. AIP Conference Proceedings, 2019, , .	0.4	0
111	Numerical simulation of deformation and fracture in polycrystalline aluminum at different strain rates. AIP Conference Proceedings, 2019, , .	0.4	0
112	Numerical study of the texture effect on plastic strain localization in polycrystalline titanium. AIP Conference Proceedings, 2019, , .	0.4	0
113	Plastic strain localization in surface-hardened titanium polycrystals. Journal of Physics: Conference Series, 2020, 1459, 012011.	0.4	0
114	Influence of Polycrystalline Structure on Dynamic Strength and Fracture Character of an Aluminum Alloy in Different Welding Joint Zones. Russian Physics Journal, 2020, 63, 721-730.	0.4	0
115	INFLUENCE OF THE COATING THICKNESS ON STRENGTH OF THE COATING-BASE MATERIAL COMPOSITE. NUMERICAL SIMULATION. Composites: Mechanics, Computations, Applications, 2010, 1, 81-93.	0.3	0
116	THE INFLUENCE OF LUDERS FRONT PROPAGATION ON THE STRENGTH OF THE "COATING-SUBSTRATE" COMPOSITE. NUMERICAL SIMULATION. Composites: Mechanics, Computations, Applications, 2012, 3, 283-305.	0.3	0
117	Step-by-step generation of aluminum grain structure produced by selective laser melting. AIP Conference Proceedings, 2020, , .	0.4	0
118	A comparative analysis of grain-scale stress and strain fields in two- and three-dimensional polycrystals. AIP Conference Proceedings, 2020, , .	0.4	0
119	Contribution of different slip systems to the deformation behavior of polycrystalline titanium. Numerical study. AIP Conference Proceedings, 2020, , .	0.4	0
120	On the importance of three-dimensional analysis of additively manufactured microstructures. AIP Conference Proceedings, 2020, , .	0.4	0
121	Stress concentration and plastic strain localization in metal-matrix composites: Comparative computational analysis for 3D and 2D. AIP Conference Proceedings, 2020, , .	0.4	0
122	Simulation of deformation and fracture of metal-matrix composites with consideration of residual stresses. AIP Conference Proceedings, 2020, , .	0.4	0
123	Simulation of quasistatic deformation of polycrystals in terms of dynamics. AIP Conference Proceedings, 2020, , .	0.4	0
124	Microstructure-Based Computational Analysis of Deformation and Fracture in Composite and Coated Materials Across Multiple Spatial Scales. Springer Tracts in Mechanical Engineering, 2021, , 377-419.	0.3	0
125	Mechanical Aspects of Nonhomogeneous Deformation of Aluminum Single Crystals under Compression along [100] and [110] Directions. Metals, 2022, 12, 397.	2.3	0