

# Elena A Korznikova

## List of Publications by Year in descending order

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139  
papers

2,959  
citations

159585

30  
h-index

214800

47  
g-index

141  
all docs

141  
docs citations

141  
times ranked

1584  
citing authors

#	ARTICLE	IF	CITATIONS
1	The presence and nature of vacancy type defects in nanometals detained by severe plastic deformation. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2008, 493, 116-122.	5.6	186
2	Rapid and low temperature spark plasma sintering synthesis of novel carbon nanotube reinforced titanium matrix composites. <i>Carbon</i> , 2015, 95, 396-407.	10.3	162
3	Lattice defect investigation of ECAP-Cu by means of X-ray line profile analysis, calorimetry and electrical resistometry. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2005, 410-411, 169-173.	5.6	159
4	Discrete breathers in crystals. <i>Physics-Uspekh</i> , 2016, 59, 446-461.	2.2	117
5	Wear and friction between smooth or rough diamond-like carbon films and diamond tips. <i>Wear</i> , 2017, 372-373, 12-20.	3.1	86
6	Effect of sintering temperature on microstructures and mechanical properties of spark plasma sintered nanocrystalline aluminum. <i>Materials &amp; Design</i> , 2014, 64, 625-630.	5.1	70
7	Effect of strain on gap discrete breathers at the edge of armchair graphene nanoribbons. <i>Europhysics Letters</i> , 2013, 102, 60004.	2.0	55
8	Transverse discrete breathers in unstrained graphene. <i>European Physical Journal B</i> , 2017, 90, 1.	1.5	54
9	Gap discrete breathers in strained boron nitride. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2017, 381, 3553-3557.	2.1	54
10	Localized vibrational modes in diamond. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2017, 381, 1003-1008.	2.1	52
11	Instability of vibrational modes in hexagonal lattice. <i>European Physical Journal B</i> , 2017, 90, 1.	1.5	51
12	Thermal Conductivity and Tensile Response of Phosphorene Nanosheets with Vacancy Defects. <i>Journal of Physical Chemistry C</i> , 2017, 121, 13876-13887.	3.1	50
13	Energy transfer in strained graphene assisted by discrete breathers excited by external ac driving. <i>Physical Review B</i> , 2017, 95, .	3.2	50
14	Dynamics of surface graphene ripplocations on a flat graphite substrate. <i>Physical Review B</i> , 2019, 99, .	3.2	50
15	Surface discrete breathers in Pt3Al intermetallic alloy. <i>Surface Science</i> , 2019, 679, 1-5.	1.9	49
16	Discrete breathers in alpha-uranium. <i>European Physical Journal B</i> , 2016, 89, 1.	1.5	48
17	Scroll configurations of carbon nanoribbons. <i>Physical Review B</i> , 2015, 92, .	3.2	46
18	Highly symmetric discrete breather in a two-dimensional Morse crystal. <i>JETP Letters</i> , 2016, 103, 277-281.	1.4	46

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19	Discrete breather on the edge of the graphene sheet with the armchair orientation. JETP Letters, 2012, 96, 222-226.	1.4	43
20	Ab initio simulation of gap discrete breathers in strained graphene. Physics of the Solid State, 2016, 58, 633-639.	0.6	43
21	A First-Principles Study on the Adsorption of Small Molecules on Arsenene: Comparison of Oxidation Kinetics in Arsenene, Antimonene, Phosphorene, and InSe. ChemPhysChem, 2019, 20, 575-580.	2.1	42
22	Microstructural evolution and electro-resistivity in HPT nickel. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2012, 556, 437-445.	5.6	41
23	Simulation of folded and scrolled packings of carbon nanoribbons. Physics of the Solid State, 2015, 57, 2348-2355.	0.6	41
24	Supersonic N-Crowdions in a Two-Dimensional Morse Crystal. Journal of Experimental and Theoretical Physics, 2018, 126, 347-352.	0.9	40
25	Environmental stability of bismuthene: oxidation mechanism and structural stability of 2D pnictogens. Journal of Materials Chemistry C, 2019, 7, 9195-9202.	5.5	40
26	Moving wrinkle in graphene nanoribbons. Journal Physics D: Applied Physics, 2014, 47, 345307.	2.8	39
27	Shock waves in graphene and boron nitride. Computational Materials Science, 2020, 177, 109549.	3.0	39
28	Electronic structure of graphene- and BN-supported phosphorene. Physica B: Condensed Matter, 2018, 534, 63-67.	2.7	36
29	Breathing subsonic crowdion in Morse lattices. Computational Condensed Matter, 2017, 13, 59-64.	2.1	34
30	Low-energy channel for mass transfer in Pt crystal initiated by molecule impact. Computational Materials Science, 2019, 163, 248-255.	3.0	34
31	Effect of oxygen doping on the stability and band structure of borophene nanoribbons. Chemical Physics Letters, 2019, 728, 53-56.	2.6	32
32	Two-Dimensional Black Phosphorus Carbide: Rippling and Formation of Nanotubes. Journal of Physical Chemistry C, 2020, 124, 10235-10243.	3.1	32
33	ELASTIC DAMPER BASED ON THE CARBON NANOTUBE BUNDLE. Facta Universitatis, Series: Mechanical Engineering, 2020, 18, 001.	4.6	32
34	Delocalized Nonlinear Vibrational Modes in Graphene: Second Harmonic Generation and Negative Pressure. Physica Status Solidi (B): Basic Research, 2019, 256, 1800061.	1.5	30
35	Supersonic voidions in 2D Morse lattice. Chaos, Solitons and Fractals, 2020, 140, 110217.	5.1	30
36	Graphene nanoribbon winding around carbon nanotube. Computational Materials Science, 2017, 135, 99-108.	3.0	29

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37	Mass transfer in the Frenkel-Kontorova chain initiated by molecule impact. <i>Physical Review E</i> , 2018, 98, 023003.	2.1	29
38	Characterization of two carbon allotropes, cyclicgraphene and graphenylene, as semi-permeable materials for membranes. <i>Materials Science and Engineering B: Solid-State Materials for Advanced Technology</i> , 2020, 259, 114569.	3.5	29
39	Microstructure and mechanical properties of Cu-graphene composites produced by two high pressure torsion procedures. <i>Materials Characterization</i> , 2020, 161, 110122.	4.4	28
40	Effect of discrete breathers on macroscopic properties of the Fermi-Pasta-Ulam chain. <i>European Physical Journal B</i> , 2020, 93, 1.	1.5	25
41	Properties of Moving Discrete Breathers in Beryllium. <i>Physics of the Solid State</i> , 2018, 60, 989-994.	0.6	24
42	Chain Model for Carbon Nanotube Bundle under Plane Strain Conditions. <i>Materials</i> , 2019, 12, 3951.	2.9	24
43	Influence of Constrained High-Pressure Torsion on Microstructure and Mechanical Properties of an Aluminum-Based Metal Matrix Composite. <i>Jom</i> , 2020, 72, 2898-2911.	1.9	24
44	Supersonic crowdion clusters in 2D Morse lattice. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2020, 384, 126032.	2.1	23
45	Effect of Discrete Breathers on the Specific Heat of a Nonlinear Chain. <i>Journal of Nonlinear Science</i> , 2021, 31, 1.	2.1	23
46	Effect of grain size on compressive behaviour of titanium at different strain rates. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2015, 645, 311-317.	5.6	22
47	EVOLUTION OF THE CARBON NANOTUBE BUNDLE STRUCTURE UNDER BIAxIAL AND SHEAR STRAINS. <i>Facta Universitatis, Series: Mechanical Engineering</i> , 0, , 525.	4.6	22
48	Dynamics and Stability of Subsonic Crowdion Clusters in 2D Morse Crystal. <i>Journal of Experimental and Theoretical Physics</i> , 2018, 127, 1009-1015.	0.9	21
49	Graphene nanoribbon as an elastic damper. <i>Nanotechnology</i> , 2018, 29, 215704.	2.6	20
50	Microstructure and texture evolution in ultrafine-grained pure Ti processed by equal-channel angular pressing with subsequent dynamic compression. <i>Scripta Materialia</i> , 2014, 77, 33-36.	5.2	19
51	Improving bending rigidity of graphene nanoribbons by twisting. <i>Mechanics of Materials</i> , 2019, 137, 103123.	3.2	19
52	Dynamics of a Three-Component Delocalized Nonlinear Vibrational Mode in Graphene. <i>Physics of the Solid State</i> , 2019, 61, 2139-2144.	0.6	19
53	Delocalized nonlinear vibrational modes of triangular lattices. <i>Nonlinear Dynamics</i> , 2020, 102, 2793-2810.	5.2	19
54	Mechanical Response of Carbon Nanotube Bundle to Lateral Compression. <i>Computation</i> , 2020, 8, 27.	2.0	18

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55	Effect of temperature on microstructural stabilization and mechanical properties in the dynamic testing of nanocrystalline pure Ti. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2015, 634, 64-70.	5.6	17
56	Symmetric scrolled packings of multilayered carbon nanoribbons. <i>Physics of the Solid State</i> , 2016, 58, 1278-1284.	0.6	16
57	Mechanisms of plastic deformation in microcrystalline and nanocrystalline TiNi-based alloys. <i>Physics of Metals and Metallography</i> , 2010, 110, 269-278.	1.0	15
58	Auxeticity from nonlinear vibrational modes. <i>Physica Status Solidi (B): Basic Research</i> , 2016, 253, 1310-1317.	1.5	15
59	Linking tracks in mica crystals with phase transitions in a bistable lattice. <i>European Physical Journal B</i> , 2020, 93, 1.	1.5	15
60	Structure and Mechanical Behavior of Al-Nb Hybrids Obtained by High-Pressure-Torsion-Induced Diffusion Bonding and Subsequent Annealing. <i>Advanced Engineering Materials</i> , 2021, 23, 2000757.	3.5	15
61	Annealing-induced phase transformations and hardness evolution in Al-Cu-Al composites obtained by high-pressure torsion. <i>Acta Mechanica</i> , 2021, 232, 1815-1828.	2.1	15
62	Microstructural evolution of nickel under high-pressure torsion. <i>Physical Mesomechanics</i> , 2013, 16, 239-247.	1.9	14
63	Dynamic compressive behavior of ultrafine-grained pure Ti at elevated temperatures after processing by ECAP. <i>Journal of Materials Science</i> , 2014, 49, 6640-6647.	3.7	14
64	Stability of delocalized nonlinear vibrational modes in graphene lattice. <i>European Physical Journal B</i> , 2019, 92, 1.	1.5	14
65	Mechanical Properties of Two-Dimensional sp <sup>2</sup> -Carbon Nanomaterials. <i>Journal of Experimental and Theoretical Physics</i> , 2019, 129, 66-71.	0.9	14
66	Longitudinal stiffness and thermal conductivity of twisted carbon nanoribbons. <i>European Journal of Mechanics, A/Solids</i> , 2020, 80, 103920.	3.7	13
67	Temperature and strain rate dependence of microstructural evolution and dynamic mechanical behavior in nanocrystalline Ti. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2015, 641, 29-36.	5.6	12
68	Excitation of gap discrete breathers in an A3B crystal with a flux of particles. <i>Physics of the Solid State</i> , 2017, 59, 223-228.	0.6	12
69	First-Principles Study of Interaction of Bismuthene with Small Gas Molecules. <i>ChemistrySelect</i> , 2019, 4, 10928-10933.	1.5	12
70	Equilibration of sinusoidal modulation of temperature in linear and nonlinear chains. <i>Physical Review E</i> , 2020, 102, 062148.	2.1	12
71	Negative Thermal Expansion of Carbon Nanotube Bundles. <i>Physica Status Solidi - Rapid Research Letters</i> , 2022, 16, 2100415.	2.4	12
72	Nanodipoles of partial disclinations as carriers of non-crystallographic shear and crystal-lattice reorientation in nanocrystalline nickel and vanadium. <i>Russian Physics Journal</i> , 2011, 53, 1295-1304.	0.4	11

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73	Effects of substrate and environmental adsorbates on the electronic properties and structural stability of antimonene. <i>Journal of Materials Science</i> , 2018, 53, 15559-15568.	3.7	11
74	Effect of interatomic potentials on mass transfer by supersonic 2-crowdions. <i>Letters on Materials</i> , 2019, 9, 386-390.	0.7	11
75	Excitation of Soliton-Type Waves in Crystals of the A3B Stoichiometry. <i>Physics of the Solid State</i> , 2019, 61, 2160-2166.	0.6	10
76	Mechanism of remote vacancy emergence by a supersonic crowdion cluster in a 2D Morse lattice. <i>Chinese Journal of Physics</i> , 2021, 70, 355-362.	3.9	10
77	Energy exchange in M-crowdion clusters in 2D Morse lattice. <i>European Physical Journal B</i> , 2020, 93, 1.	1.5	9
78	Partial Auxeticity of Laterally Compressed Carbon Nanotube Bundles. <i>Physica Status Solidi - Rapid Research Letters</i> , 2022, 16, 2100189.	2.4	9
79	Plane vibrational modes and localized nonlinear excitations in carbon nanotube bundle. <i>Journal of Sound and Vibration</i> , 2022, 520, 116627.	3.9	9
80	Ab initio study of the propagation of a supersonic 2-crowdion in fcc Al. <i>Computational Materials Science</i> , 2022, 204, 111125.	3.0	9
81	Highly efficient energy and mass transfer in bcc metals by supersonic 2-crowdions. <i>Journal of Nuclear Materials</i> , 2022, 568, 153841.	2.7	9
82	Impact of various dopant elements on the electronic structure of $\text{Cu}_2\text{ZnSnS}_4$ (CZTS) thin films: a DFT study. <i>CrystEngComm</i> , 2020, 22, 5786-5791.	2.6	8
83	Features of mass transfer by N-crowdions in fcc $\text{Ni}_3\text{Al}$ lattice. <i>IOP Conference Series: Materials Science and Engineering</i> , 2019, 672, 012033.	0.6	7
84	Twistons in graphene nanoribbons on a substrate. <i>Physical Review B</i> , 2020, 102, .	3.2	7
85	Effect of the configuration of a wrinkl on the distributions of the energy and elastic strain in a graphene nanoribbon. <i>JETP Letters</i> , 2014, 100, 181-186.	1.4	6
86	Scenarios of mass transfer in fcc copper: the role of point defects. <i>IOP Conference Series: Materials Science and Engineering</i> , 2018, 447, 012040.	0.6	6
87	Monte Carlo Simulation of Diffusion Processes in Three-Component Alloys. <i>Russian Physics Journal</i> , 2019, 62, 691-697.	0.4	6
88	The interaction of two-dimensional $\hat{1}\pm$ - and $\hat{1}^2$ -phosphorus carbide with environmental molecules: a DFT study. <i>Physical Chemistry Chemical Physics</i> , 2020, 22, 11307-11313.	2.8	6
89	Evolution of supersonic 2-crowdion clusters in a 3D Morse lattice. <i>European Physical Journal B</i> , 2021, 94, 1.	1.5	6
90	Modeling of supersonic crowdion clusters in FCC lattice: Effect of the interatomic potential. <i>Journal of Micromechanics and Molecular Physics</i> , 2021, 06, 2050019.	1.2	6

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91	Two-phase tension of a carbon nanotube. Journal of Micromechanics and Molecular Physics, 2020, 05, 2050001.	1.2	6
92	Stationary Modes and Localized Metastable States in a Triangular Lattice of Active Particles. Nelineinaya Dinamika, 2018, 14, 195-207.	0.3	6
93	Wrinkles and Wrinklons in Graphene and Graphene Nanoribbons Under Strain. Current Nanoscience, 2016, 12, 184-191.	1.2	6
94	Properties of discrete breathers in 2D and 3D Morse crystals. Letters on Materials, 2014, 4, 315-318.	0.7	6
95	Effect of the stiffness of interparticle bonds on properties of delocalized nonlinear vibrational modes in an fcc lattice. Physical Review E, 2022, 105, .	2.1	6
96	Composition and Microstructure of the Al-Multilayer Graphene Composites Achieved by the Intensive Deformation. Acta Physica Polonica A, 2014, 126, 921-927.	0.5	5
97	Effect of the Morse Potential Stiffness on the Properties of Discrete Breathers in 2D close Packed Crystal. Materials Science Forum, 2016, 845, 211-214.	0.3	5
98	Subsonic M, N-crowdions in 2D Morse crystal. IOP Conference Series: Materials Science and Engineering, 2018, 447, 012030.	0.6	5
99	Simulation of Diffusion Bonding of Different Heat Resistant Nickel-Base Alloys. Computation, 2020, 8, 102.	2.0	5
100	Discrete breathers of different symmetry in monoatomic 2D Morse crystal. Letters on Materials, 2016, 6, 57-60.	0.7	5
101	Low frequency vibrations of carbon nanoscrolls. Letters on Materials, 2016, 6, 77-81.	0.7	5
102	The reason for existence of discrete breathers in 2D and 3D Morse crystals. Letters on Materials, 2016, 6, 221-226.	0.7	5
103	Al based layered in situ metal-matrix composites fabricated by constrained high pressure torsion. Letters on Materials, 2021, 11, 533-543.	0.7	5
104	Mechanisms of deformation-induced grain growth of a two-dimensional nanocrystal at different deformation temperatures. Physics of Metals and Metallography, 2014, 115, 570-575.	1.0	4
105	Stability of in-plane delocalized vibrational modes in triangular Morse lattice. IOP Conference Series: Materials Science and Engineering, 2018, 447, 012060.	0.6	4
106	Dissipative solitons and crowdions in triangular lattice of active particles. Journal of Micromechanics and Molecular Physics, 2019, 04, 1850005.	1.2	4
107	Adsorption of Common Transition Metal Atoms on Arsenene: A First-Principles Study. Russian Journal of Physical Chemistry A, 2019, 93, 1088-1092.	0.6	3
108	Molecular dynamic analysis of energy transport in a Pt3Al crystal under the impact in the spectrum gap frequency. Letters on Materials, 2021, 11, 338-344.	0.7	3

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109	Nonequilibrium structural states in nickel after large plastic deformation. Letters on Materials, 2014, 4, 100-103.	0.7	3
110	Nonlinear dynamics of DNA with topological constraints. Letters on Materials, 2018, 8, 489-493.	0.7	3
111	Structural fragmentation in TiNi(Fe, Mo) single crystals during intense plastic deformation. Steel in Translation, 2013, 43, 630-634.	0.3	2
112	Effect of small perturbations on the evolution of polycrystalline structure during plastic deformation. Physics of Metals and Metallography, 2014, 115, 918-925.	1.0	2
113	Stationary quasi-breathers in monatomic FCC metals. Journal of Experimental and Theoretical Physics, 2017, 125, 913-919.	0.9	2
114	Nonlinear Excitations in Graphene and Other Carbon Nano-Polymorphs. Understanding Complex Systems, 2018, , 175-195.	0.6	2
115	Two-dimensional discrete breathers in hcp titanium. IOP Conference Series: Materials Science and Engineering, 2018, 447, 012033.	0.6	2
116	Dynamics of supersonic N-crowdions in bcc tungsten. IOP Conference Series: Materials Science and Engineering, 0, 1008, 012067.	0.6	2
117	Estimation of point defects concentrations in nickel subjected to high pressure torsion. Letters on Materials, 2011, 1, 208-212.	0.7	2
118	Plasticity enhancement in 25Cr15Co hard magnetic alloy deformed in bridgman anvils. Physical Mesomechanics, 2014, 17, 216-222.	1.9	1
119	Buckling and Wrinkling of Thin Films and Membranes. Russian Physics Journal, 2015, 58, 1058-1062.	0.4	1
120	Kinetics of dynamic recrystallization in low - and medium carbon steels during warm ECA pressing. Materials Letters, 2021, 285, 128954.	2.6	1
121	Behaviour of carbon nanotube bundle under quasistatic and dynamic transverse compression. IOP Conference Series: Materials Science and Engineering, 0, 1008, 012063.	0.6	1
122	Regimes of mass transfer in a 2D crystal in nonequilibrium states. IOP Conference Series: Materials Science and Engineering, 0, 1008, 012034.	0.6	1
123	Molecular dynamics simulation of high-speed loading of 2D boron nitride. Letters on Materials, 2021, 11, 79-83.	0.7	1
124	Stability of supratransmission waves in a crystal of A3B stoichiometry upon interaction with single dislocations. Journal of Physics: Conference Series, 2021, 2103, 012079.	0.4	1
125	Structure and microhardness of Al-Cu-Ni alloy after severe plastic deformation and high-temperature annealing. AIP Conference Proceedings, 2015, , .	0.4	0
126	Topology of Wrinklons in Graphene Nanoribbons in the Vicinity of Constrained Edge. Russian Physics Journal, 2015, 58, 808-814.	0.4	0



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127	Influence of elastic strain on the possibility of excitation of discrete breathers in the nanofiber crystal with $A_{\infty}B_{\infty}$ stoichiometry. , 2016, , .		0
128	Mobility of soliton-like waves in CuAu crystal. , 2017, , .		0
129	Effect of point defects and functionalization on structural stability and electron properties of borophene as investigated by means of density functional theory. IOP Conference Series: Materials Science and Engineering, 2019, 672, 012032.	0.6	0
130	Analysis of Chemical Activity of Bismuthene in the Presence of Environment Gas Molecules by Means of Ab Initio Calculations. Minerals, Metals and Materials Series, 2020, , 983-991.	0.4	0
131	Behavior of the mechanical system composed of highly deformable structural elements. IOP Conference Series: Materials Science and Engineering, 0, 1008, 012069.	0.6	0
132	Nano-mechanical testing of Al-Nb metal matrix composites consolidated by high pressure torsion after annealing. IOP Conference Series: Materials Science and Engineering, 0, 1008, 012002.	0.6	0
133	Stages of severe plastic deformation in pure nickel as investigated by means of transmission electron microscopy. Letters on Materials, 2012, 2, 202-206.	0.7	0
134	Study of pressure effect on the kinetics of deformation induced grain growth in two-dimensional crystal with nanosized grains. Letters on Materials, 2013, 3, 330-334.	0.7	0
135	Effect of the interatomic potential stiffness on the properties of gap discrete breathers in 2D biatomic Morse crystal. Letters on Materials, 2015, 5, 364-367.	0.7	0
136	Discrete breathers with hard and soft type of nonlinearity in 1D Morse lattices with long-range interactions. Letters on Materials, 2015, 5, 11-14.	0.7	0
137	DNA Breathers and Cell Dynamics. Mathematical Biology and Bioinformatics, 2019, 14, 137-149.	0.6	0
138	Scattering of small-amplitude phonons on discrete breathers in Fermi-Pasta-Ulam-Tsingou chain. Computational Continuum Mechanics, 2021, 14, 444-453.	0.5	0
139	Simulating Nonlinear Dynamics of a 3D Crystal Lattice of Metals. Journal of Physics: Conference Series, 2021, 2131, 032092.	0.4	0