

Ayrat A Nazarov

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99
papers

2,296
citations

23
h-index

45
g-index

103
ext. papers

2,451
ext. citations

2.1
avg, IF

4.79
L-index

#	Paper	IF	Citations
99	Deformation behaviour of ultra-fine-grained copper. <i>Acta Metallurgica Et Materialia</i> , 1994 , 42, 2467-2475		497
98	On the structure, stress fields and energy of nonequilibrium grain boundaries. <i>Acta Metallurgica Et Materialia</i> , 1993 , 41, 1033-1040		239
97	Model for the prediction of the mechanical behaviour of nanocrystalline materials. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 1993 , 172, 23-29	5.3	93
96	Microstructures and hardness of ultrafine-grained Ni3Al. <i>Acta Metallurgica Et Materialia</i> , 1993 , 41, 2953-2962		84
95	On the nature of high internal stresses in ultrafine grained materials. <i>Scripta Materialia</i> , 1994 , 4, 93-101		78
94	Random disclination ensembles in ultrafine-grained materials produced by severe plastic deformation. <i>Scripta Materialia</i> , 1996 , 34, 729-734	5.6	66
93	Disclination-structural unit model of grain boundaries. <i>Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties</i> , 1989 , 59, 1113-1118		60
92	Competing relaxation mechanisms in a disclinated nanowire: temperature and size effects. <i>Physical Review Letters</i> , 2007 , 98, 035501	7.4	54
91	Continuum and atomistic studies of a disclinated crack in a bicrystalline nanowire. <i>Physical Review B</i> , 2006 , 73,	3.3	54
90	Relaxation of a disclinated tricrystalline nanowire. <i>Acta Materialia</i> , 2008 , 56, 5828-5836	8.4	52
89	Effects of carbon nanotube content and annealing temperature on the hardness of CNT reinforced aluminum nanocomposites processed by the high pressure torsion technique. <i>Journal of Alloys and Compounds</i> , 2014 , 613, 68-73	5.7	49
88	Morphology and in-plane thermal conductivity of hybrid graphene sheets. <i>Applied Physics Letters</i> , 2012 , 101, 211909	3.4	47
87	Crack nucleation at disclinated triple junctions. <i>Physical Review B</i> , 2007 , 76,	3.3	45
86	Incorporation model for the spreading of extrinsic grain boundary dislocations. <i>Scripta Metallurgica Et Materialia</i> , 1990 , 24, 1929-1934		45
85	Multiscale modeling approach for calculating grain-boundary energies from first principles. <i>Physical Review B</i> , 1998 , 57, R3181-R3184	3.3	42
84	Kinetics of Grain Boundary Recovery in Deformed Polycrystals. <i>Journal of Materials Science</i> , 2000 , 8, 315-322		35
83	Analysis of substructure evolution during simple shear of polycrystals by means of a combined viscoplastic self-consistent and disclination modeling approach. <i>Acta Materialia</i> , 2006 , 54, 985-995	8.4	31

82	Models of the defect structure and analysis of the mechanical behavior of nanocrystals. <i>Scripta Materialia</i> , 1995 , 6, 775-778		31
81	Production, properties and application prospects of bulk nanostructured materials. <i>Journal of Materials Science</i> , 2008 , 43, 7257-7263	4.3	28
80	Effect of Stone-Thrower-Wales defect on structural stability of graphene at zero and finite temperatures. <i>Europhysics Letters</i> , 2013 , 103, 46001	1.6	25
79	On the pile-up model of the grain size-yield stress relation for nanocrystals. <i>Scripta Materialia</i> , 1996 , 34, 697-701	5.6	24
78	Microstructure changes in ultrafine-grained nickel processed by high pressure torsion under ultrasonic treatment. <i>Ultrasonics</i> , 2018 , 82, 313-321	3.5	23
77	Stability and relaxation mechanisms of a wedge disclination in an HCP bicrystalline nanowire. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2006 , 14, 647-661	2	23
76	Misorientation dependence of the energy of symmetrical tilt boundaries in hcp metals: prediction by the disclination-structural unit model. <i>Philosophical Magazine</i> , 2004 , 84, 785-806	1.6	23
75	Atomistic simulations of the tensile strength of a disclinated bicrystalline nanofilm. <i>Philosophical Magazine</i> , 2008 , 88, 3181-3191	1.6	22
74	On the average misorientation angle of general tilt boundaries. <i>Philosophical Magazine Letters</i> , 1989 , 60, 187-193	1	21
73	On the role of non-equilibrium grain-boundary structure in the yield and flow stress of polycrystals. <i>Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties</i> , 1994 , 69, 327-340		20
72	Microstructure and mechanical behavior of UFG copper processed by ECAP following different processing regimes. <i>Philosophical Magazine</i> , 2012 , 92, 690-704	1.6	19
71	Grain-boundary diffusion in nanocrystals with a time-dependent diffusion coefficient. <i>Physics of the Solid State</i> , 2003 , 45, 1166-1169	0.8	18
70	Computer simulation of the effect of ultrasound and annealing on the structure of a two-dimensional severely deformed nanocrystalline material. <i>Physics of Metals and Metallography</i> , 2011 , 111, 513-519	1.2	17
69	Elastic models of symmetrical <001> and <011> tilt grain boundaries in diamond. <i>Physical Review B</i> , 2000 , 61, 928-936	3.3	17
68	Drift of dislocation triplets under ultrasound influence. <i>Ultrasonics</i> , 2016 , 64, 77-82	3.5	16
67	Softening and hardening of ECAP nickel under ultrasonic treatment. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2017 , 698, 136-142	5.3	15
66	Ensembles of gliding grain boundary dislocations in ultrafine grained materials produced by severe plastic deformation. <i>Scripta Materialia</i> , 1997 , 37, 1155-1161	5.6	15
65	Modelling grain refinement in fcc metals during equal-channel angular pressing by route $\alpha\alpha$ <i>International Journal of Materials Research</i> , 2007 , 98, 167-171	0.5	15

64	Nonequilibrium grain boundaries and their relaxation under oscillating stresses in columnar nickel nanocrystals studied by molecular dynamics. <i>Computational Materials Science</i> , 2018 , 151, 204-213	3.2	14
63	Grain rotation by dislocation climb in a finite-size grain boundary. <i>Acta Materialia</i> , 2012 , 60, 7064-7077	8.4	14
62	High strength state in low carbon steel with submicron fibrous structure. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 1996 , 206, 39-44	5.3	14
61	Nonequilibrium grain boundaries in bulk nanostructured metals and their recovery under the influences of heating and cyclic deformation. Review. <i>Letters on Materials</i> , 2018 , 8, 372-381	0.9	14
60	Relaxation of the residual defect structure in deformed polycrystals under ultrasonic action. <i>Physics of Metals and Metallography</i> , 2017 , 118, 621-629	1.2	13
59	Grain size refinement due to relaxation of disclination junction configurations in the course of plastic deformation of polycrystals. <i>Physics of the Solid State</i> , 2005 , 47, 845	0.8	13
58	Internal stress effect on grain-boundary diffusion in submicrocrystalline metals. <i>Philosophical Magazine Letters</i> , 2000 , 80, 221-227	1	12
57	Long-range stress fields of disordered dislocation arrays: Two types of disorder, and two decay laws. <i>Philosophical Magazine Letters</i> , 1993 , 68, 303-307	1	11
56	Effect of ultrasonic treatment on the structure and microhardness of ultrafine grained nickel processed by high pressure torsion. <i>Letters on Materials</i> , 2017 , 7, 85-90	0.9	11
55	Molecular dynamics simulation of the relaxation of a grain boundary disclination dipole under ultrasonic stresses. <i>Letters on Materials</i> , 2016 , 6, 179-182	0.9	10
54	Changes in the microstructure and mechanical properties of nanomaterials under an ultrasonic wave effect. <i>Journal of Machinery Manufacture and Reliability</i> , 2014 , 43, 153-159	0.6	9
53	Ultrasonic influence on evolution of disordered dislocation structures. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2017 , 25, 085010	2	9
52	On the Origin and Energy of Triple Junction Defects Due to the Finite Length of Grain Boundaries. <i>Journal of Materials Science</i> , 2003 , 11, 417-424		9
51	Structure evolution in coarse-grained nickel under ultrasonic treatment. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2018 , 731, 231-238	5.3	8
50	Interaction of dislocation triplets with a standing sound wave. <i>Physics of Metals and Metallography</i> , 2015 , 116, 1057-1065	1.2	8
49	Disclinations in bulk nanostructured materials: their origin, relaxation and role in material properties. <i>Advances in Natural Sciences: Nanoscience and Nanotechnology</i> , 2013 , 4, 033002	1.6	8
48	Dynamic long-period nanosized states in lattice structure. <i>Russian Physics Journal</i> , 2009 , 52, 132-137	0.7	8
47	The use of nanostructured materials and nanotechnologies for the elaboration of hollow structures. <i>Nanotechnologies in Russia</i> , 2010 , 5, 108-122	0.6	8

46	On the Hierarchy of Dislocation Descriptions of Grain Boundary Structures. <i>Physica Status Solidi A</i> , 1990 , 122, 495-502		8
45	Dynamics of edge dislocations in a two-dimensional crystal at finite temperatures. <i>Physics of the Solid State</i> , 2009 , 51, 1809-1813	0.8	7
44	Diffusion-accomodated rigid-body translations along grain boundaries in nanostructured materials. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2003 , 359, 247-252	5.3	7
43	A Revision of the Models for the Accommodation of Extrinsic Grain Boundary Dislocations. <i>Journal of Materials Science</i> , 2000 , 8, 71-76		7
42	A method for the construction of initial structures for molecular dynamics simulations of nanocrystals with nonequilibrium grain boundaries containing extrinsic dislocations. <i>Letters on Materials</i> , 2018 , 8, 5-10	0.9	7
41	Current achievements on superplasticity and related phenomena at the Institute for Metals Superplasticity Problems. <i>Letters on Materials</i> , 2018 , 8, 510-516	0.9	7
40	Simulation of the Effect of Ultrasound on the Dislocation Structure of Deformed Polycrystals. <i>Physics of Metals and Metallography</i> , 2018 , 119, 993-1003	1.2	7
39	Bulk Nanostructured Materials by SPD Processing: Techniques, Microstructures and Properties		21-48 7
38	Fabrication, microstructure, and microhardness of copper composites reinforced by carbon nanotubes. <i>Physics of the Solid State</i> , 2015 , 57, 1206-1212	0.8	6
37	Relaxation of dislocation structures under ultrasonic influence. <i>International Journal of Solids and Structures</i> , 2019 , 156-157, 1-13	3.1	6
36	Scientific fundamentals of high-efficiency roll forming technology for axially symmetrical parts of a gas-turbine engine rotor of high-temperature alloy. <i>Journal of Machinery Manufacture and Reliability</i> , 2013 , 42, 419-426	0.6	6
35	Principles of Fabrication of Bulk Ultrafine-Grained and Nanostructured Materials by Multiple Isothermal Forging. <i>Materials Science Forum</i> , 2010 , 638-642, 1702-1707	0.4	6
34	Effect of Ultrasonic Treatment on the Microstructure and Properties of Nanostructured Nickel Processed by High Pressure Torsion. <i>Materials Science Forum</i> , 2010 , 667-669, 605-609	0.4	6
33	Low-temperature plasticity in nanocrystalline titanium and copper. <i>Physics of the Solid State</i> , 2007 , 49, 678-683	0.8	6
32	On the annealing of junction disclinations in deformed polycrystals. <i>Philosophical Magazine</i> , 2003 , 83, 2653-2667	1.6	6
31	A mechanism of grain nucleation during relaxation of the latent energy of junction disclinations in the course of plastic deformation. <i>Technical Physics Letters</i> , 2005 , 31, 1015-1018	0.7	6
30	Effect of Ultrasonic Treatment on the Characteristics of Superplasticity of Titanium Alloy Ti-6Al-4V. <i>Defect and Diffusion Forum</i> , 2018 , 385, 53-58	0.7	5
29	Computer simulation of crack formation in a nickel bicrystal nanowire containing a wedge disclination. <i>Physics of Metals and Metallography</i> , 2007 , 104, 274-280	1.2	5

28	Stress fields of disordered dislocation arrays: Finite walls. <i>Philosophical Magazine Letters</i> , 1993 , 68, 297-301		5
27	Simulation of the effect of strengthening-phase particles on the plastic deformation of a two-dimensional polycrystal. <i>Physics of Metals and Metallography</i> , 2012 , 113, 302-311	1.2	4
26	Analysis of the Fundamental Mechanisms and Efficiency of the Deformation Methods of Nanostructuring. <i>Materials Science Forum</i> , 2008 , 584-586, 29-34	0.4	4
25	Activation energy for vacancy migration in [001] tilt boundaries in nickel. <i>Physics of Metals and Metallography</i> , 2006 , 101, 86-92	1.2	3
24	Specific features of structural defects in twisted nematic liquid crystals under conditions of electrohydrodynamic instability. <i>Physics of the Solid State</i> , 2005 , 47, 374	0.8	3
23	Structural Model of Ultrafine Grained Materials Produced by Severe Plastic Deformation. <i>Key Engineering Materials</i> , 1995 , 97-98, 59-64	0.4	3
22	Annealing-Induced Grain Rotation In Ultrafine-Grained Aluminum Alloy. <i>Reviews on Advanced Materials Science</i> , 2018 , 55, 69-77	4.8	3
21	Technological features of a process and equipment for superplastic rolling of axially symmetric heat-resistant alloy components of rotors for modern aircraft engines. <i>Journal of Machinery Manufacture and Reliability</i> , 2014 , 43, 311-318	0.6	2
20	Modelling of Grain Boundary Structures by Means of Dislocations. <i>Solid State Phenomena</i> , 2002 , 87, 193-204	0.4	2
19	Properties of Polycrystalline Diamond: Multiscale Modeling Approach. <i>Molecular Simulation</i> , 2000 , 24, 197-207	2	2
18	Field electron emission from a copper-based composite reinforced with carbon nanotubes. <i>Letters on Materials</i> , 2019 , 9, 566-570	0.9	2
17	Effect of ultrasonic treatment on the structure of coarse-grained nickel. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2020 , 772, 138764	5.3	2
16	The Values of Strain Components and Their Role in Formation of Ultrafine-Grained and Nanosized Structure in Materials by Means of Severe Plastic Deformation. <i>Russian Physics Journal</i> , 2015 , 58, 70-78	0.7	1
15	Superplastic Roll Forming of Axial Symmetric Articles from Superalloys. <i>Advanced Materials Research</i> , 2011 , 278, 301-305	0.5	1
14	Energies of formation and activation for migration of grain-boundary vacancies in a nickel bicrystal containing a disclination. <i>Physics of Metals and Metallography</i> , 2006 , 102, 198-204	1.2	1
13	Stress fields of disordered dislocation arrays: A double wall consisting of dislocation dipoles. <i>Philosophical Magazine Letters</i> , 1995 , 72, 49-53	1	1
12	Extrinsic Grain Boundary Dislocations and the Micromechanisms of Superplastic Deformation. <i>Materials Science Forum</i> , 1996 , 243-245, 31-40	0.4	1
11	A double-gaussian waveguide for ultrasonic treatment of metals. <i>Letters on Materials</i> , 2019 , 9, 414-418	0.9	1

10	Strength of copper joints obtained by ultrasonic welding using copper intermediate layers in different structure states. <i>Letters on Materials</i> , 2020 , 10, 322-327	0.9	1
9	Molecular dynamics simulation of the effect of cyclic stresses on nanocrystals with nonequilibrium grain boundaries: the role of the grain size. <i>IOP Conference Series: Materials Science and Engineering</i> , 2018 , 447, 012003	0.4	1
8	Influence of ultrasound on the structure and properties of nickel processed by equal-channel angular pressing. <i>IOP Conference Series: Materials Science and Engineering</i> , 2018 , 447, 012017	0.4	1
7	Ultrasonic Treatment of Ti-5Al-0.5 V Alloy Subjected to Equal-Channel Angular Pressing. <i>Metals and Materials International</i> ,1	2.4	1
6	Molecular Dynamics Study of Nonequilibrium [112] Tilt Grain Boundaries in Ni and their Relaxation under Cyclic Deformation. <i>Journal of Metastable and Nanocrystalline Materials</i> , 2018 , 30, 1-10	0.2	0
5	Ultrasonic Welding of Nickel with Coarse and Ultrafine Grained Structures. <i>Metals</i> , 2021 , 11, 1800	2.3	0
4	Ultrasonic spot welded CP Ti / AA2024 / CP Ti alloy joints. <i>Letters on Materials</i> , 2021 , 11, 508-513	0.9	0
3	Molecular Dynamics Simulation of Nonequilibrium Grain Boundaries in Ultrafine-Grained Nickel and their Relaxation under Cyclic Loading. <i>Defect and Diffusion Forum</i> , 2018 , 385, 163-168	0.7	
2	Current Status of Research and Development on Superplasticity at the Institute for Metals Superplasticity Problems. <i>Materials Science Forum</i> , 2012 , 735, 403-408	0.4	
1	Computer Simulation of the Interaction of Junction Disclinations in Nanomaterials with Grain Boundary Vacancies. <i>Solid State Phenomena</i> , 2008 , 137, 1-8	0.4	