

Flyura Djurabekova

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140
papers

2,915
citations

28
h-index

48
g-index

149
ext. papers

3,459
ext. citations

3.7
avg, IF

5.31
L-index

#	Paper	IF	Citations
140	Mechanism of Radiation Damage Reduction in Equiatomic Multicomponent Single Phase Alloys. <i>Physical Review Letters</i> , 2016 , 116, 135504	7.4	250
139	Fine structure in swift heavy ion tracks in amorphous SiO ₂ . <i>Physical Review Letters</i> , 2008 , 101, 175503	7.4	220
138	Comparison of empirical interatomic potentials for iron applied to radiation damage studies. <i>Journal of Nuclear Materials</i> , 2010 , 406, 19-38	3.3	179
137	Molecular dynamics of single-particle impacts predicts phase diagrams for large scale pattern formation. <i>Nature Communications</i> , 2011 , 2, 276	17.4	149
136	Formation Mechanism of Fe Nanocubes by Magnetron Sputtering Inert Gas Condensation. <i>ACS Nano</i> , 2016 , 10, 4684-94	16.7	81
135	Tracks and voids in amorphous Ge induced by swift heavy-ion irradiation. <i>Physical Review Letters</i> , 2013 , 110, 245502	7.4	76
134	Molecular dynamics simulations of swift heavy ion induced defect recovery in SiC. <i>Computational Materials Science</i> , 2013 , 67, 261-265	3.2	71
133	Atomistic simulation of the interface structure of Si nanocrystals embedded in amorphous silica. <i>Physical Review B</i> , 2008 , 77,	3.3	70
132	Combined experimental and computational study of the recrystallization process induced by electronic interactions of swift heavy ions with silicon carbide crystals. <i>Physical Review B</i> , 2012 , 86,	3.3	69
131	Large fraction of crystal directions leads to ion channeling. <i>Physical Review B</i> , 2016 , 94,	3.3	58
130	Radiation damage buildup and dislocation evolution in Ni and equiatomic multicomponent Ni-based alloys. <i>Journal of Nuclear Materials</i> , 2017 , 490, 323-332	3.3	49
129	Gas-Phase Synthesis of Trimetallic Nanoparticles. <i>Chemistry of Materials</i> , 2019 , 31, 2151-2163	9.6	44
128	Gas Phase Synthesis of Multifunctional Fe-Based Nanocubes. <i>Advanced Functional Materials</i> , 2017 , 27, 1605328	15.6	43
127	Creating nanoporous graphene with swift heavy ions. <i>Carbon</i> , 2017 , 114, 511-518	10.4	43
126	Atomistic modeling of metal surfaces under electric fields: direct coupling of electric fields to a molecular dynamics algorithm. <i>Physical Review E</i> , 2011 , 83, 026704	2.4	41
125	Machine-learning interatomic potential for radiation damage and defects in tungsten. <i>Physical Review B</i> , 2019 , 100,	3.3	39
124	Comparison of molecular dynamics and binary collision approximation simulations for atom displacement analysis. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2013 , 297, 23-28	1.2	38

123	A One-Dimensional Particle-in-Cell Model of Plasma Build-Up in Vacuum Arcs. <i>Contributions To Plasma Physics</i> , 2011 , 51, 5-21	1.4	38
122	Thermal runaway of metal nano-tips during intense electron emission. <i>Journal Physics D: Applied Physics</i> , 2018 , 51, 225203	3	37
121	Local segregation versus irradiation effects in high-entropy alloys: Steady-state conditions in a driven system. <i>Journal of Applied Physics</i> , 2017 , 122, 105106	2.5	36
120	Swift Heavy Ion Shape Transformation of Au Nanocrystals Mediated by Molten Material Flow and Recrystallization. <i>Materials Research Letters</i> , 2014 , 2, 37-42	7.4	35
119	Cooperative effect of electronic and nuclear stopping on ion irradiation damage in silica. <i>Journal Physics D: Applied Physics</i> , 2012 , 45, 505305	3	34
118	SAXS investigations of the morphology of swift heavy ion tracks in Quartz. <i>Journal of Physics Condensed Matter</i> , 2013 , 25, 045006	1.8	34
117	From Field Emission to Vacuum Arc Ignition: A New Tool for Simulating Copper Vacuum Arcs. <i>Contributions To Plasma Physics</i> , 2015 , 55, 299-314	1.4	32
116	Dislocation nucleation from near surface void under static tensile stress in Cu. <i>Journal of Applied Physics</i> , 2011 , 110, 023509	2.5	32
115	Crystallization of silicon nanoclusters with inert gas temperature control. <i>Physical Review B</i> , 2015 , 91,	3.3	31
114	Multiscale modelling of irradiation in nanostructures. <i>Journal of Computational Electronics</i> , 2014 , 13, 122-141	1.8	30
113	Mechanism of surface modification in the plasma-surface interaction in electrical arcs. <i>Physical Review B</i> , 2010 , 81,	3.3	30
112	Site-Specific Wetting of Iron Nanocubes by Gold Atoms in Gas-Phase Synthesis. <i>Advanced Science</i> , 2019 , 6, 1900447	13.6	28
111	Latent ion tracks in amorphous silicon. <i>Physical Review B</i> , 2013 , 88,	3.3	28
110	Amorphization of Ge and Si nanocrystals embedded in amorphous SiO ₂ by ion irradiation. <i>Physical Review B</i> , 2009 , 80,	3.3	28
109	A general computational method for electron emission and thermal effects in field emitting nanotips. <i>Computational Materials Science</i> , 2017 , 128, 15-21	3.2	25
108	Defect model for the dependence of breakdown rate on external electric fields. <i>Physical Review Special Topics: Accelerators and Beams</i> , 2012 , 15,		25
107	Nanoscale density fluctuations in swift heavy ion irradiated amorphous SiO ₂ . <i>Journal of Applied Physics</i> , 2011 , 110, 123520	2.5	25
106	Atomistic two-temperature modelling of ion track formation in silicon dioxide. <i>Europhysics Letters</i> , 2015 , 110, 16004	1.6	24

105	Simulation of Rutherford backscattering spectrometry from arbitrary atom structures. <i>Physical Review E</i> , 2016 , 94, 043319	2.4	24
104	Controlled softening of Cu ₆₄ Zr ₃₆ metallic glass by ion irradiation. <i>Applied Physics Letters</i> , 2013 , 102, 181910	3.4	23
103	Long-term stability of Cu surface nanotips. <i>Nanotechnology</i> , 2016 , 27, 265708	3.4	23
102	Kinetics versus thermodynamics in materials modeling: The case of the di-vacancy in iron. <i>Philosophical Magazine</i> , 2010 , 90, 2585-2595	1.6	22
101	Radiation damage buildup by athermal defect reactions in nickel and concentrated nickel alloys. <i>Materials Research Letters</i> , 2017 , 5, 433-439	7.4	21
100	Directional Sensitivity in Light-Mass Dark Matter Searches with Single-Electron-Resolution Ionization Detectors. <i>Physical Review Letters</i> , 2018 , 120, 111301	7.4	20
99	Electronic processes in molecular dynamics simulations of nanoscale metal tips under electric fields. <i>Computational Materials Science</i> , 2011 , 50, 2075-2079	3.2	20
98	Statistics of vacuum breakdown in the high-gradient and low-rate regime. <i>Physical Review Accelerators and Beams</i> , 2017 , 20,	1.8	20
97	Nanoscale density variations induced by high energy heavy ions in amorphous silicon nitride and silicon dioxide. <i>Nanotechnology</i> , 2018 , 29, 144004	3.4	19
96	Thermal Oxidation of Size-Selected Pd Nanoparticles Supported on CuO Nanowires: The Role of the CuO/Pd Interface. <i>Chemistry of Materials</i> , 2017 , 29, 6153-6160	9.6	19
95	Tuning the onset of ferromagnetism in heterogeneous bimetallic nanoparticles by gas phase doping. <i>Physical Review Materials</i> , 2017 , 1,	3.2	19
94	Segregation of Ni at early stages of radiation damage in NiCoFeCr solid solution alloys. <i>Acta Materialia</i> , 2020 , 196, 44-51	8.4	18
93	Dislocation nucleation on a near surface void leading to surface protrusion growth under an external electric field. <i>Journal of Applied Physics</i> , 2013 , 114, 033519	2.5	18
92	Damage buildup and edge dislocation mobility in equiatomic multicomponent alloys. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2017 , 393, 114-117	1.2	17
91	Migration barriers for surface diffusion on a rigid lattice: Challenges and solutions. <i>Computational Materials Science</i> , 2018 , 146, 287-302	3.2	17
90	Pattern formation on ion-irradiated Si surface at energies where sputtering is negligible. <i>Journal of Applied Physics</i> , 2018 , 123, 235108	2.5	17
89	Direct observation of vacuum arc evolution with nanosecond resolution. <i>Scientific Reports</i> , 2019 , 9, 78144.9		16
88	A study on the elongation of embedded Au nanoclusters in SiO ₂ by swift heavy ion irradiation using MD simulations. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2012 , 282, 76-80	1.2	16

87	Au nanowire junction breakup through surface atom diffusion. <i>Nanotechnology</i> , 2018 , 29, 015704	3.4	16
86	Application of the general thermal field model to simulate the behaviour of nanoscale Cu field emitters. <i>Journal of Applied Physics</i> , 2015 , 118, 033303	2.5	15
85	Unravelling the secrets of the resistance of GaN to strongly ionising radiation. <i>Communications Physics</i> , 2021 , 4,	5.4	15
84	Investigation of the thermal stability of Cu nanowires using atomistic simulations. <i>Journal of Applied Physics</i> , 2014 , 115, 213518	2.5	14
83	Dependence of short and intermediate-range order on preparation in experimental and modeled pure a-Si. <i>Journal of Non-Crystalline Solids</i> , 2016 , 438, 26-36	3.9	14
82	Ru/Al Multilayers Integrate Maximum Energy Density and Ductility for Reactive Materials. <i>Scientific Reports</i> , 2016 , 6, 19535	4.9	13
81	Crater formation by single ions, cluster ions and ion showers. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2012 , 272, 374-376	1.2	13
80	Radiation effects in nanoclusters embedded in solids. <i>European Physical Journal B</i> , 2014 , 87, 1	1.2	13
79	Suboxide interface in disproportionating a-SiO studied by x-ray Raman scattering. <i>Physical Review B</i> , 2010 , 81,	3.3	13
78	Electrodynamics. Molecular dynamics simulations of the stability of Cu nanotips under high electric field. <i>Journal Physics D: Applied Physics</i> , 2016 , 49, 215301	3	13
77	Atomistic simulation of damage production by atomic and molecular ion irradiation in GaN. <i>Journal of Applied Physics</i> , 2012 , 112, 043517	2.5	12
76	Electrostatic-elastoplastic simulations of copper surface under high electric fields. <i>Physical Review Special Topics: Accelerators and Beams</i> , 2014 , 17,		11
75	Analytical model of dislocation nucleation on a near-surface void under tensile surface stress. <i>Philosophical Magazine</i> , 2012 , 92, 3994-4010	1.6	11
74	Dynamic coupling of a finite element solver to large-scale atomistic simulations. <i>Journal of Computational Physics</i> , 2018 , 367, 279-294	4.1	11
73	Dynamic coupling between particle-in-cell and atomistic simulations. <i>Physical Review E</i> , 2020 , 101, 053307	7.4	10
72	Insights into the primary radiation damage of silicon by a machine learning interatomic potential. <i>Materials Research Letters</i> , 2020 , 8, 364-372	7.4	10
71	Graphitization of amorphous carbon by swift heavy ion impacts: Molecular dynamics simulation. <i>Diamond and Related Materials</i> , 2018 , 83, 134-140	3.5	10
70	Gaussian approximation potentials for body-centered-cubic transition metals. <i>Physical Review Materials</i> , 2020 , 4,	3.2	10

69	Sputtering and redeposition of ion irradiated Au nanoparticle arrays: direct comparison of simulations to experiments. <i>New Journal of Physics</i> , 2017 , 19, 013023	2.9	9
68	Atomistic behavior of metal surfaces under high electric fields. <i>Physical Review B</i> , 2019 , 99,	3.3	9
67	Growth mechanism for nanotips in high electric fields. <i>Nanotechnology</i> , 2020 , 31, 355301	3.4	9
66	Atomistic simulation of Er irradiation induced defects in GaN nanowires. <i>Journal of Applied Physics</i> , 2014 , 116, 124313	2.5	9
65	Simulation of redistributive and erosive effects in a-Si under Ar ⁺ irradiation. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2018 , 414, 133-140	1.2	9
64	Molecular dynamics simulations of nanoscale metal tips under electric fields. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2011 , 269, 1748-1751	1.2	8
63	Classification of vacuum arc breakdowns in a pulsed dc system. <i>Physical Review Accelerators and Beams</i> , 2020 , 23,	1.8	8
62	Formation and emission mechanisms of Ag nanoclusters in the Ar matrix assembly cluster source. <i>Physical Review Materials</i> , 2017 , 1,	3.2	8
61	Probing electron beam effects with chemoresistive nanosensors during in situ environmental transmission electron microscopy. <i>Applied Physics Letters</i> , 2017 , 110, 094103	3.4	7
60	Laser-induced asymmetric faceting and growth of a nano-protrusion on a tungsten tip. <i>APL Photonics</i> , 2016 , 1, 091305	5.2	7
59	Defect clustering in irradiation of GaN by single and molecular ions. <i>Vacuum</i> , 2014 , 105, 88-90	3.7	7
58	Effects of defect clustering on optical properties of GaN by single and molecular ion irradiation. <i>Journal of Applied Physics</i> , 2013 , 114, 183511	2.5	7
57	Vaporlike phase of amorphous SiO ₂ is not a prerequisite for the core/shell ion tracks or ion shaping. <i>Physical Review Materials</i> , 2018 , 2,	3.2	7
56	Enhancement of vacancy diffusion by C and N interstitials in the equiatomic FeMnNiCoCr high entropy alloy. <i>Acta Materialia</i> , 2021 , 215, 117093	8.4	7
55	Atomistic simulation of ion irradiation of semiconductor heterostructures. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2017 , 409, 14-18	1.2	6
54	Application of artificial neural networks for rigid lattice kinetic Monte Carlo studies of Cu surface diffusion. <i>Computational Materials Science</i> , 2020 , 183, 109789	3.2	6
53	Direct observation of ion-induced self-organization and ripple propagation processes in atomistic simulations. <i>Materials Research Letters</i> , 2020 , 8, 110-116	7.4	6
52	Molecular Dynamics Simulations of Heavy Ion Induced Defects in SiC Schottky Diodes. <i>IEEE Transactions on Device and Materials Reliability</i> , 2018 , 18, 481-483	1.6	6

51	Fundamental processes of radiation modification of semiconductor nanostructures. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2013 , 10, 685-688		6
50	Vacuum electrical breakdown conditioning study in a parallel plate electrode pulsed dc system. <i>Physical Review Accelerators and Beams</i> , 2020 , 23,	1.8	6
49	Spectroscopic study of vacuum arc plasma expansion. <i>Journal Physics D: Applied Physics</i> , 2020 , 53, 125503		6
48	Radiation stability of nanocrystalline single-phase multicomponent alloys. <i>Journal of Materials Research</i> , 2019 , 34, 854-866	2.5	5
47	Effects of crystallographic and geometric orientation on ion beam sputtering of gold nanorods. <i>Scientific Reports</i> , 2018 , 8, 512	4.9	5
46	Angular dependence of nanoparticle generation in the matrix assembly cluster source. <i>Nano Research</i> , 2019 , 12, 3069-3074	10	5
45	Orientation dependent annealing kinetics of ion tracks in c-SiO ₂ . <i>Journal of Applied Physics</i> , 2015 , 118, 224305	2.5	5
44	Local changes of work function near rough features on Cu surfaces operated under high external electric field. <i>Journal of Applied Physics</i> , 2013 , 114, 243302	2.5	5
43	On the classification and quantification of crystal defects after energetic bombardment by machine learned molecular dynamics simulations. <i>Nuclear Materials and Energy</i> , 2020 , 22, 100724	2.1	5
42	Computational study of crystal defect formation in Mo by a machine learning molecular dynamics potential. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2021 , 29, 055001	2	5
41	Machine-learning interatomic potential for W-Mo alloys. <i>Journal of Physics Condensed Matter</i> , 2021 , 33,	1.8	5
40	Electron cascades and secondary electron emission in graphene under energetic ion irradiation. <i>Physical Review B</i> , 2021 , 103,	3.3	5
39	Experimental study and MD simulation of damage formation in GaN under atomic and molecular ion irradiation. <i>Vacuum</i> , 2016 , 129, 166-169	3.7	5
38	Absence of single critical dose for the amorphization of quartz under ion irradiation. <i>Journal of Physics Condensed Matter</i> , 2018 , 30, 015403	1.8	5
37	Verification of a multiscale surface stress model near voids in copper under the load induced by external high electric field. <i>Applied Mathematics and Computation</i> , 2015 , 267, 476-486	2.7	4
36	Molecular dynamics simulations of thermal evaporation and critical electric field of copper nanotips. <i>Journal Physics D: Applied Physics</i> , 2020 , 53, 365202	3	4
35	Single and molecular ion irradiation-induced effects in GaN: experiment and cumulative MD simulations. <i>Journal Physics D: Applied Physics</i> , 2017 , 50, 505110	3	4
34	Density functional theory calculation of the properties of carbon vacancy defects in silicon carbide. <i>Nami Jishu Yu Jingmi Gongcheng/Nanotechnology and Precision Engineering</i> , 2020 , 3, 211-217	2.4	4

33	Core-Satellite Gold Nanoparticle Complexes Grown by Inert Gas-Phase Condensation. <i>Journal of Physical Chemistry C</i> , 2020 , 124, 24441-24450	3.8	4
32	Modeling refractory high-entropy alloys with efficient machine-learned interatomic potentials: Defects and segregation. <i>Physical Review B</i> , 2021 , 104,	3.3	4
31	Modeling of high-fluence irradiation of amorphous Si and crystalline Al by linearly focused Ar ions. <i>Journal of Physics Condensed Matter</i> , 2019 , 31, 075302	1.8	3
30	General scaling laws of space charge effects in field emission. <i>New Journal of Physics</i> ,	2.9	3
29	Atomistic modeling of metal surfaces under high electric fields: Direct coupling of electric fields to the atomistic simulations 2016 ,		3
28	Tungsten migration energy barriers for surface diffusion: a parameterization for KMC simulations. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2020 , 28, 035011	2	2
27	Simulations of surface stress effects in nanoscale single crystals. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2018 , 26, 035006	2	2
26	Data sets of migration barriers for atomistic Kinetic Monte Carlo simulations of Cu self-diffusion via first nearest neighbour atomic jumps. <i>Data in Brief</i> , 2018 , 17, 739-743	1.2	2
25	Ab initio calculation of field emission from metal surfaces with atomic-scale defects. <i>Physical Review B</i> , 2019 , 100,	3.3	2
24	Simulations of electromechanical shape transformations of Au nanoparticles. <i>Physica Status Solidi (B): Basic Research</i> , 2015 , 252, 144-148	1.3	2
23	Effect of the anode material on the evolution of the vacuum breakdown process. <i>Journal Physics D: Applied Physics</i> , 2021 , 54, 035201	3	2
22	Diffusion bonding of Cu atoms with molecular dynamics simulations. <i>Results in Physics</i> , 2020 , 16, 102890	3.7	2
21	Interface effects on heat dynamics in embedded metal nanoparticles during swift heavy ion irradiation. <i>Journal Physics D: Applied Physics</i> ,	3	2
20	New developments in the simulation of Rutherford backscattering spectrometry in channeling mode using arbitrary atom structures. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2020 , 28, 075005	2	1
19	Nanotip evaporation under high electric field 2017 ,		1
18	Adatom diffusion in high electric fields 2017 ,		1
17	Defect and density evolution under high-fluence ion irradiation of Si/SiO ₂ heterostructures. <i>Physical Review Materials</i> , 2020 , 4,	3.2	1
16	Primary radiation damage in silicon from the viewpoint of a machine learning interatomic potential. <i>Physical Review Materials</i> , 2021 , 5,	3.2	1

15	Effect of dc voltage pulsing on high-vacuum electrical breakdowns near Cu surfaces. <i>Physical Review Accelerators and Beams</i> , 2020 , 23,	1.8	1
14	Data sets and trained neural networks for Cu migration barriers. <i>Data in Brief</i> , 2020 , 32, 106094	1.2	1
13	Ultrafast phase transitions in polyamorphic materials triggered by swift heavy ion impacts. <i>Physical Review Materials</i> , 2021 , 5,	3.2	1
12	Gradient-based training and pruning of radial basis function networks with an application in materials physics. <i>Neural Networks</i> , 2021 , 133, 123-131	9.1	1
11	Temperature effect on irradiation damage in equiatomic multi-component alloys. <i>Computational Materials Science</i> , 2021 , 197, 110571	3.2	1
10	Nanorod orientation control by swift heavy ion irradiation. <i>Applied Physics Letters</i> , 2022 , 120, 171602	3.4	1
9	Punching of arbitrary face prismatic loops from hydrogen nanobubbles in copper. <i>Acta Materialia</i> , 2022 , 225, 117554	8.4	0
8	In-situ plasma treatment of Cu surfaces for reducing the generation of vacuum arc breakdowns. <i>Journal of Applied Physics</i> , 2021 , 130, 143302	2.5	0
7	The cluster species effect on the noble gas cluster interaction with solid surfaces. <i>Surfaces and Interfaces</i> , 2021 , 26, 101397	4.1	0
6	Defect-Induced Effects in Nanomaterials. <i>Physica Status Solidi (B): Basic Research</i> , 2019 , 256, 1900181	1.3	
5	Data sets of migration barriers for atomistic Kinetic Monte Carlo simulations of Fe self-diffusion. <i>Data in Brief</i> , 2018 , 19, 564-569	1.2	
4	Contribution of Electronic Energy Deposition to the Atomic Cascade Damage in Nanocrystals. <i>Materials Research Society Symposia Proceedings</i> , 2010 , 1264, 1		
3	MD simulations of near surface void in copper under thermal compression. <i>Materials Research Society Symposia Proceedings</i> , 2012 , 1411, 50		
2	Defect Creation in Crystals: A Portal to Directional Dark Matter Searches. <i>Journal of Low Temperature Physics</i> , 2018 , 193, 1146-1150	1.3	
1	Structural evolution and thermal runaway of refractory W and Mo nanotips in the vacuum under high electric field from PIC-ED-MD simulations. <i>Journal Physics D: Applied Physics</i> , 2022 , 55, 335201	3	