Flyura Djurabekova

List of Publications by Year in Descending Order

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	Punching of arbitrary face prismatic loops from hydrogen nanobubbles in copper. *Acta Materialia*, **2022**, 225, 117554	8.4	0
139	Nanorod orientation control by swift heavy ion irradiation. *Applied Physics Letters*, **2022**, 120, 171602	3.4	1
138	Structural evolution and thermal runaway of refractory W and Mo nanotips in the vacuum under high electric field from PIC-ED-MD simulations. *Journal Physics D: Applied Physics*, **2022**, 55, 335201	3	
137	Primary radiation damage in silicon from the viewpoint of a machine learning interatomic potential. *Physical Review Materials*, **2021**, 5,	3.2	1
136	In-situ plasma treatment of Cu surfaces for reducing the generation of vacuum arc breakdowns. *Journal of Applied Physics*, **2021**, 130, 143302	2.5	0
135	Effect of the anode material on the evolution of the vacuum breakdown process. *Journal Physics D: Applied Physics*, **2021**, 54, 035201	3	2
134	Unravelling the secrets of the resistance of GaN to strongly ionising radiation. *Communications Physics*, **2021**, 4,	5.4	15
133	Computational study of crystal defect formation in Mo by a machine learning molecular dynamics potential. *Modelling and Simulation in Materials Science and Engineering*, **2021**, 29, 055001	2	5
132	Ultrafast phase transitions in polyamorphic materials triggered by swift heavy ion impacts. *Physical Review Materials*, **2021**, 5,	3.2	1
131	Machine-learning interatomic potential for W-Mo alloys. *Journal of Physics Condensed Matter*, **2021**, 33,	1.8	5
130	Electron cascades and secondary electron emission in graphene under energetic ion irradiation. *Physical Review B*, **2021**, 103,	3.3	5
129	Gradient-based training and pruning of radial basis function networks with an application in materials physics. *Neural Networks*, **2021**, 133, 123-131	9.1	1
128	Enhancement of vacancy diffusion by C and N interstitials in the equiatomic FeMnNiCoCr high entropy alloy. *Acta Materialia*, **2021**, 215, 117093	8.4	7
127	Temperature effect on irradiation damage in equiatomic multi-component alloys. *Computational Materials Science*, **2021**, 197, 110571	3.2	1
126	Modeling refractory high-entropy alloys with efficient machine-learned interatomic potentials: Defects and segregation. *Physical Review B*, **2021**, 104,	3.3	4
125	The cluster species effect on the noble gas cluster interaction with solid surfaces. *Surfaces and Interfaces*, **2021**, 26, 101397	4.1	0
124	Molecular dynamics simulations of thermal evaporation and critical electric field of copper nanotips. *Journal Physics D: Applied Physics*, **2020**, 53, 365202	3	4

123	Growth mechanism for nanotips in high electric fields. *Nanotechnology*, **2020**, 31, 355301	3.4	9
122	Dynamic coupling between particle-in-cell and atomistic simulations. *Physical Review E*, **2020**, 101, 053307	2.4	10
121	Insights into the primary radiation damage of silicon by a machine learning interatomic potential. *Materials Research Letters*, **2020**, 8, 364-372	7.4	10
120	Application of artificial neural networks for rigid lattice kinetic Monte Carlo studies of Cu surface diffusion. *Computational Materials Science*, **2020**, 183, 109789	3.2	6
119	Segregation of Ni at early stages of radiation damage in NiCoFeCr solid solution alloys. *Acta Materialia*, **2020**, 196, 44-51	8.4	18
118	New developments in the simulation of Rutherford backscattering spectrometry in channeling mode using arbitrary atom structures. *Modelling and Simulation in Materials Science and Engineering* , **2020**, 28, 075005	2	1
117	Direct observation of ion-induced self-organization and ripple propagation processes in atomistic simulations. *Materials Research Letters*, **2020**, 8, 110-116	7.4	6
116	Tungsten migration energy barriers for surface diffusion: a parameterization for KMC simulations. *Modelling and Simulation in Materials Science and Engineering*, **2020**, 28, 035011	2	2
115	Classification of vacuum arc breakdowns in a pulsed dc system. *Physical Review Accelerators and Beams*, **2020**, 23,	1.8	8
114	Vacuum electrical breakdown conditioning study in a parallel plate electrode pulsed dc system. *Physical Review Accelerators and Beams*, **2020**, 23,	1.8	6
113	Defect and density evolution under high-fluence ion irradiation of Si/SiO2 heterostructures. *Physical Review Materials*, **2020**, 4,	3.2	1
112	Gaussian approximation potentials for body-centered-cubic transition metals. *Physical Review Materials*, **2020**, 4,	3.2	10
111	Effect of dc voltage pulsing on high-vacuum electrical breakdowns near Cu surfaces. *Physical Review Accelerators and Beams*, **2020**, 23,	1.8	1
110	Density functional theory calculation of the properties of carbon vacancy defects in silicon carbide. *Nami Jishu Yu Jingmi Gongcheng/Nanotechnology and Precision Engineering*, **2020**, 3, 211-217	2.4	4
109	On the classification and quantification of crystal defects after energetic bombardment by machine learned molecular dynamics simulations. *Nuclear Materials and Energy*, **2020**, 22, 100724	2.1	5
108	Diffusion bonding of Cu atoms with molecular dynamics simulations. *Results in Physics*, **2020**, 16, 102890	3.7	2
107	Spectroscopic study of vacuum arc plasma expansion. *Journal Physics D: Applied Physics*, **2020**, 53, 125501	3	6
106	Core-Satellite Gold Nanoparticle Complexes Grown by Inert Gas-Phase Condensation. *Journal of Physical Chemistry C*, **2020**, 124, 24441-24450	3.8	4

105	Data sets and trained neural networks for Cu migration barriers. *Data in Brief*, **2020**, 32, 106094	1.2	1
104	Modeling of high-fluence irradiation of amorphous Si and crystalline Al by linearly focused Ar ions. *Journal of Physics Condensed Matter*, **2019**, 31, 075302	1.8	3
103	Direct observation of vacuum arc evolution with nanosecond resolution. *Scientific Reports*, **2019**, 9, 7814	4.9	16
102	Defect-Induced Effects in Nanomaterials. *Physica Status Solidi (B): Basic Research*, **2019**, 256, 1900181	1.3	
101	Atomistic behavior of metal surfaces under high electric fields. *Physical Review B*, **2019**, 99,	3.3	9
100	Site-Specific Wetting of Iron Nanocubes by Gold Atoms in Gas-Phase Synthesis. *Advanced Science*, **2019**, 6, 1900447	13.6	28
99	Gas-Phase Synthesis of Trimetallic Nanoparticles. *Chemistry of Materials*, **2019**, 31, 2151-2163	9.6	44
98	Radiation stability of nanocrystalline single-phase multicomponent alloys. *Journal of Materials Research*, **2019**, 34, 854-866	2.5	5
97	Machine-learning interatomic potential for radiation damage and defects in tungsten. *Physical Review B*, **2019**, 100,	3.3	39
96	Angular dependence of nanoparticle generation in the matrix assembly cluster source. *Nano Research*, **2019**, 12, 3069-3074	10	5
95	Ab initio calculation of field emission from metal surfaces with atomic-scale defects. *Physical Review B*, **2019**, 100,	3.3	2
94	Graphitization of amorphous carbon by swift heavy ion impacts: Molecular dynamics simulation. *Diamond and Related Materials*, **2018**, 83, 134-140	3.5	10
93	Nanoscale density variations induced by high energy heavy ions in amorphous silicon nitride and silicon dioxide. *Nanotechnology*, **2018**, 29, 144004	3.4	19
92	Simulations of surface stress effects in nanoscale single crystals. *Modelling and Simulation in Materials Science and Engineering*, **2018**, 26, 035006	2	2
91	Effects of crystallographic and geometric orientation on ion beam sputtering of gold nanorods. *Scientific Reports*, **2018**, 8, 512	4.9	5
90	Migration barriers for surface diffusion on a rigid lattice: Challenges and solutions. *Computational Materials Science*, **2018**, 146, 287-302	3.2	17
89	Data sets of migration barriers for atomistic Kinetic Monte Carlo simulations of Fe self-diffusion. *Data in Brief*, **2018**, 19, 564-569	1.2	
88	Data sets of migration barriers for atomistic Kinetic Monte Carlo simulations of Cu self-diffusion via first nearest neighbour atomic jumps. *Data in Brief*, **2018**, 17, 739-743	1.2	2

87	Directional Sensitivity in Light-Mass Dark Matter Searches with Single-Electron-Resolution Ionization Detectors. *Physical Review Letters*, **2018**, 120, 111301	7.4	20
86	Molecular Dynamics Simulations of Heavy Ion Induced Defects in SiC Schottky Diodes. *IEEE Transactions on Device and Materials Reliability*, **2018**, 18, 481-483	1.6	6
85	Vaporlike phase of amorphous SiO2 is not a prerequisite for the core/shell ion tracks or ion shaping. *Physical Review Materials*, **2018**, 2,	3.2	7
84	Simulation of redistributive and erosive effects in a-Si under Ar+ irradiation. *Nuclear Instruments & Methods in Physics Research B*, **2018**, 414, 133-140	1.2	9
83	Absence of single critical dose for the amorphization of quartz under ion irradiation. *Journal of Physics Condensed Matter*, **2018**, 30, 015403	1.8	5
82	Au nanowire junction breakup through surface atom diffusion. *Nanotechnology*, **2018**, 29, 015704	3.4	16
81	Defect Creation in Crystals: A Portal to Directional Dark Matter Searches. *Journal of Low Temperature Physics*, **2018**, 193, 1146-1150	1.3	
80	Dynamic coupling of a finite element solver to large-scale atomistic simulations. *Journal of Computational Physics*, **2018**, 367, 279-294	4.1	11
79	Thermal runaway of metal nano-tips during intense electron emission. *Journal Physics D: Applied Physics*, **2018**, 51, 225203	3	37
78	Pattern formation on ion-irradiated Si surface at energies where sputtering is negligible. *Journal of Applied Physics*, **2018**, 123, 235108	2.5	17
77	A general computational method for electron emission and thermal effects in field emitting nanotips. *Computational Materials Science*, **2017**, 128, 15-21	3.2	25
76	Gas Phase Synthesis of Multifunctional Fe-Based Nanocubes. *Advanced Functional Materials*, **2017**, 27, 1605328	15.6	43
75	Probing electron beam effects with chemoresistive nanosensors during in situ environmental transmission electron microscopy. *Applied Physics Letters*, **2017**, 110, 094103	3.4	7
74	Radiation damage buildup and dislocation evolution in Ni and equiatomic multicomponent Ni-based alloys. *Journal of Nuclear Materials*, **2017**, 490, 323-332	3.3	49
73	Atomistic simulation of ion irradiation of semiconductor heterostructures. *Nuclear Instruments & Methods in Physics Research B*, **2017**, 409, 14-18	1.2	6
72	Radiation damage buildup by athermal defect reactions in nickel and concentrated nickel alloys. *Materials Research Letters*, **2017**, 5, 433-439	7.4	21
71	Sputtering and redeposition of ion irradiated Au nanoparticle arrays: direct comparison of simulations to experiments. *New Journal of Physics*, **2017**, 19, 013023	2.9	9
70	Creating nanoporous graphene with swift heavy ions. *Carbon*, **2017**, 114, 511-518	10.4	43

69	Damage buildup and edge dislocation mobility in equiatomic multicomponent alloys. *Nuclear Instruments & Methods in Physics Research B*, **2017**, 393, 114-117	1.2	17
68	Local segregation versus irradiation effects in high-entropy alloys: Steady-state conditions in a driven system. *Journal of Applied Physics*, **2017**, 122, 105106	2.5	36
67	Single and molecular ion irradiation-induced effects in GaN: experiment and cumulative MD simulations. *Journal Physics D: Applied Physics*, **2017**, 50, 505110	3	4
66	Thermal Oxidation of Size-Selected Pd Nanoparticles Supported on CuO Nanowires: The Role of the CuO–Pd Interface. *Chemistry of Materials*, **2017**, 29, 6153-6160	9.6	19
65	Nanotip evaporation under high electric fiele **2017**,		1
64	Adatom diffusion in high electric fields **2017**,		1
63	Tuning the onset of ferromagnetism in heterogeneous bimetallic nanoparticles by gas phase doping. *Physical Review Materials*, **2017**, 1,	3.2	19
62	Formation and emission mechanisms of Ag nanoclusters in the Ar matrix assembly cluster source. *Physical Review Materials*, **2017**, 1,	3.2	8
61	Statistics of vacuum breakdown in the high-gradient and low-rate regime. *Physical Review Accelerators and Beams*, **2017**, 20,	1.8	20
60	Mechanism of Radiation Damage Reduction in Equiatomic Multicomponent Single Phase Alloys. *Physical Review Letters*, **2016**, 116, 135504	7.4	250
59	Simulation of Rutherford backscattering spectrometry from arbitrary atom structures. *Physical Review E*, **2016**, 94, 043319	2.4	24
58	Ru/Al Multilayers Integrate Maximum Energy Density and Ductility for Reactive Materials. *Scientific Reports*, **2016**, 6, 19535	4.9	13
57	Laser-induced asymmetric faceting and growth of a nano-protrusion on a tungsten tip. *APL Photonics*, **2016**, 1, 091305	5.2	7
56	Formation Mechanism of Fe Nanocubes by Magnetron Sputtering Inert Gas Condensation. *ACS Nano*, **2016**, 10, 4684-94	16.7	81
55	Electrodynamics–molecular dynamics simulations of the stability of Cu nanotips under high electric field. *Journal Physics D: Applied Physics*, **2016**, 49, 215301	3	13
54	Atomistic modeling of metal surfaces under high electric fields: Direct coupling of electric fields to the atomistic simulations **2016**,		3
53	Large fraction of crystal directions leads to ion channeling. *Physical Review B*, **2016**, 94,	3.3	58
52	Experimental study and MD simulation of damage formation in GaN under atomic and molecular ion irradiation. *Vacuum*, **2016**, 129, 166-169	3.7	5

51	Long-term stability of Cu surface nanotips. *Nanotechnology*, **2016**, 27, 265708	3.4	23
50	Dependence of short and intermediate-range order on preparation in experimental and modeled pure a-Si. *Journal of Non-Crystalline Solids*, **2016**, 438, 26-36	3.9	14
49	Crystallization of silicon nanoclusters with inert gas temperature control. *Physical Review B*, **2015**, 91,	3.3	31
48	Atomistic two-temperature modelling of ion track formation in silicon dioxide. *Europhysics Letters*, **2015**, 110, 16004	1.6	24
47	Verification of a multiscale surface stress model near voids in copper under the load induced by external high electric field. *Applied Mathematics and Computation*, **2015**, 267, 476-486	2.7	4
46	Application of the general thermal field model to simulate the behaviour of nanoscale Cu field emitters. *Journal of Applied Physics*, **2015**, 118, 033303	2.5	15
45	Orientation dependent annealing kinetics of ion tracks in c-SiO2. *Journal of Applied Physics*, **2015**, 118, 224305	2.5	5
44	From Field Emission to Vacuum Arc Ignition: A New Tool for Simulating Copper Vacuum Arcs. *Contributions To Plasma Physics*, **2015**, 55, 299-314	1.4	32
43	Simulations of electromechanical shape transformations of Au nanoparticles. *Physica Status Solidi (B): Basic Research*, **2015**, 252, 144-148	1.3	2
42	Multiscale modelling of irradiation in nanostructures. *Journal of Computational Electronics*, **2014**, 13, 122-141	1.8	30
41	Swift Heavy Ion Shape Transformation of Au Nanocrystals Mediated by Molten Material Flow and Recrystallization. *Materials Research Letters*, **2014**, 2, 37-42	7.4	35
40	Investigation of the thermal stability of Cu nanowires using atomistic simulations. *Journal of Applied Physics*, **2014**, 115, 213518	2.5	14
39	Defect clustering in irradiation of GaN by single and molecular ions. *Vacuum*, **2014**, 105, 88-90	3.7	7
38	Radiation effects in nanoclusters embedded in solids. *European Physical Journal B*, **2014**, 87, 1	1.2	13
37	Atomistic simulation of Er irradiation induced defects in GaN nanowires. *Journal of Applied Physics*, **2014**, 116, 124313	2.5	9
36	Electrostatic-elastoplastic simulations of copper surface under high electric fields. *Physical Review Special Topics: Accelerators and Beams*, **2014**, 17,		11
35	Latent ion tracks in amorphous silicon. *Physical Review B*, **2013**, 88,	3.3	28
34	Dislocation nucleation on a near surface void leading to surface protrusion growth under an external electric field. *Journal of Applied Physics*, **2013**, 114, 033519	2.5	18

33	Controlled softening of Cu64Zr36 metallic glass by ion irradiation. *Applied Physics Letters*, **2013**, 102, 181910	3.4	23
32	Comparison of molecular dynamics and binary collision approximation simulations for atom displacement analysis. *Nuclear Instruments & Methods in Physics Research B*, **2013**, 297, 23-28	1.2	38
31	Fundamental processes of radiation modification of semiconductor nanostructures. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2013**, 10, 685-688		6
30	Tracks and voids in amorphous Ge induced by swift heavy-ion irradiation. *Physical Review Letters*, **2013**, 110, 245502	7.4	76
29	SAXS investigations of the morphology of swift heavy ion tracks in quartz. *Journal of Physics Condensed Matter*, **2013**, 25, 045006	1.8	34
28	Molecular dynamics simulations of swift heavy ion induced defect recovery in SiC. *Computational Materials Science*, **2013**, 67, 261-265	3.2	71
27	Local changes of work function near rough features on Cu surfaces operated under high external electric field. *Journal of Applied Physics*, **2013**, 114, 243302	2.5	5
26	Effects of defect clustering on optical properties of GaN by single and molecular ion irradiation. *Journal of Applied Physics*, **2013**, 114, 183511	2.5	7
25	Crater formation by single ions, cluster ions and ion showers *Nuclear Instruments & Methods in Physics Research B*, **2012**, 272, 374-376	1.2	13
24	A study on the elongation of embedded Au nanoclusters in SiO2 by swift heavy ion irradiation using MD simulations. *Nuclear Instruments & Methods in Physics Research B*, **2012**, 282, 76-80	1.2	16
23	Cooperative effect of electronic and nuclear stopping on ion irradiation damage in silica. *Journal Physics D: Applied Physics*, **2012**, 45, 505305	3	34
22	Combined experimental and computational study of the recrystallization process induced by electronic interactions of swift heavy ions with silicon carbide crystals. *Physical Review B*, **2012**, 86,	3.3	69
21	Defect model for the dependence of breakdown rate on external electric fields. *Physical Review Special Topics: Accelerators and Beams*, **2012**, 15,		25
20	Analytical model of dislocation nucleation on a near-surface void under tensile surface stress. *Philosophical Magazine*, **2012**, 92, 3994-4010	1.6	11
19	Atomistic simulation of damage production by atomic and molecular ion irradiation in GaN. *Journal of Applied Physics*, **2012**, 112, 043517	2.5	12
18	MD simulations of near surface void in copper under thermal compression. *Materials Research Society Symposia Proceedings*, **2012**, 1411, 50		
17	Atomistic modeling of metal surfaces under electric fields: direct coupling of electric fields to a molecular dynamics algorithm. *Physical Review E*, **2011**, 83, 026704	2.4	41
16	Molecular dynamics of single-particle impacts predicts phase diagrams for large scale pattern formation. *Nature Communications*, **2011**, 2, 276	17.4	149

15	Electronic processes in molecular dynamics simulations of nanoscale metal tips under electric fields. *Computational Materials Science*, **2011**, 50, 2075-2079	3.2	20
14	A One-Dimensional Particle-in-Cell Model of Plasma Build-Up in Vacuum Arcs. *Contributions To Plasma Physics*, **2011**, 51, 5-21	1.4	38
13	Molecular dynamics simulations of nanoscale metal tips under electric fields. *Nuclear Instruments & Methods in Physics Research B*, **2011**, 269, 1748-1751	1.2	8
12	Dislocation nucleation from near surface void under static tensile stress in Cu. *Journal of Applied Physics*, **2011**, 110, 023509	2.5	32
11	Nanoscale density fluctuations in swift heavy ion irradiated amorphous SiO2. *Journal of Applied Physics*, **2011**, 110, 123520	2.5	25
10	Contribution of Electronic Energy Deposition to the Atomic Cascade Damage in Nanocrystals. *Materials Research Society Symposia Proceedings*, **2010**, 1264, 1		
9	Kinetics versus thermodynamics in materials modeling: The case of the di-vacancy in iron. *Philosophical Magazine*, **2010**, 90, 2585-2595	1.6	22
8	Mechanism of surface modification in the plasma-surface interaction in electrical arcs. *Physical Review B*, **2010**, 81,	3.3	30
7	Suboxide interface in disproportionating a-SiO studied by x-ray Raman scattering. *Physical Review B* , **2010**, 81,	3.3	13
6	Comparison of empirical interatomic potentials for iron applied to radiation damage studies. *Journal of Nuclear Materials*, **2010**, 406, 19-38	3.3	179
5	Amorphization of Ge and Si nanocrystals embedded in amorphous SiO2 by ion irradiation. *Physical Review B*, **2009**, 80,	3.3	28
4	Fine structure in swift heavy ion tracks in amorphous SiO2. *Physical Review Letters*, **2008**, 101, 175503	7.4	220
3	Atomistic simulation of the interface structure of Si nanocrystals embedded in amorphous silica. *Physical Review B*, **2008**, 77,	3.3	70
2	General scaling laws of space charge effects in field emission. *New Journal of Physics*,	2.9	3
1	Interface effects on heat dynamics in embedded metal nanoparticles during swift heavy ion irradiation. *Journal Physics D: Applied Physics*,	3	2