Flyura Djurabekova

List of Publications by Year
in descending order

149	3,986	126858	143943
papers	citations	33	57
		h-index	g-index

149	149	149	3189
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Mechanism of Radiation Damage Reduction in Equiatomic Multicomponent Single Phase Alloys. Physical Review Letters, 2016, 116, 135504.	2.9	359
2	Fine Structure in Swift Heavy Ion Tracks in Amorphous<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>SiO</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:math>. Physical Review Letters, 2008, 101, 175503.	2.9	242
3	Comparison of empirical interatomic potentials for iron applied to radiation damage studies. Journal of Nuclear Materials, 2010, 406, 19-38.	1.3	217
4	Molecular dynamics of single-particle impacts predicts phase diagrams for large scale pattern formation. Nature Communications, 2011, 2, 276.	5.8	156
5	Formation Mechanism of Fe Nanocubes by Magnetron Sputtering Inert Gas Condensation. ACS Nano, 2016, 10, 4684-4694.	7.3	93
6	Tracks and Voids in Amorphous Ge Induced by Swift Heavy-Ion Irradiation. Physical Review Letters, 2013, 110, 245502.	2.9	82
7	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, .	1.1	80
8	Machine-learning interatomic potential for radiation damage and defects in tungsten. Physical Review B, 2019, 100, .	1.1	79
9	Molecular dynamics simulations of swift heavy ion induced defect recovery in SiC. Computational Materials Science, 2013, 67, 261-265.	1.4	77
10	Large fraction of crystal directions leads to ion channeling. Physical Review B, 2016, 94, .	1.1	77
11	Atomistic simulation of the interface structure of Si nanocrystals embedded in amorphous silica. Physical Review B, 2008, 77, .	1.1	73
12	Radiation damage buildup and dislocation evolution in Ni and equiatomic multicomponent Ni-based alloys. Journal of Nuclear Materials, 2017, 490, 323-332.	1.3	73
13	Thermal runaway of metal nano-tips during intense electron emission. Journal Physics D: Applied Physics, 2018, 51, 225203.	1.3	68
14	Gas-Phase Synthesis of Trimetallic Nanoparticles. Chemistry of Materials, 2019, 31, 2151-2163.	3.2	67
15	Local segregation versus irradiation effects in high-entropy alloys: Steady-state conditions in a driven system. Journal of Applied Physics, 2017, 122, .	1.1	61
16	Gas Phase Synthesis of Multifunctional Feâ€Based Nanocubes. Advanced Functional Materials, 2017, 27, 1605328.	7.8	56
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.	0.8	55
18	Creating nanoporous graphene with swift heavy ions. Carbon, 2017, 114, 511-518.	5.4	52

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19	A Oneâ€Dimensional Particleâ€inâ€Cell Model of Plasma Buildâ€Up in Vacuum Arcs. Contributions To Plasma Physics, 2011, 51, 5-21.	0.5	51
20	A general computational method for electron emission and thermal effects in field emitting nanotips. Computational Materials Science, 2017, 128, 15-21.	1.4	47
21	Defect model for the dependence of breakdown rate on external electric fields. Physical Review Special Topics: Accelerators and Beams, 2012, 15, .	1.8	46
22	Modeling refractory high-entropy alloys with efficient machine-learned interatomic potentials: Defects and segregation. Physical Review B, 2021, 104, .	1.1	46
23	Multiscale modelling of irradiation in nanostructures. Journal of Computational Electronics, 2014, 13, 122-141.	1.3	45
24	From Field Emission to Vacuum Arc Ignition: A New Tool for Simulating Copper Vacuum Arcs. Contributions To Plasma Physics, 2015, 55, 299-314.	0.5	45
25	Comparison of molecular dynamics and binary collision approximation simulations for atom displacement analysis. Nuclear Instruments & Methods in Physics Research B, 2013, 297, 23-28.	0.6	44
26	SAXS investigations of the morphology of swift heavy ion tracks in Î±-quartz. Journal of Physics Condensed Matter, 2013, 25, 045006.	0.7	41
27	Swift Heavy Ion Shape Transformation of Au Nanocrystals Mediated by Molten Material Flow and Recrystallization. Materials Research Letters, 2014, 2, 37-42.	4.1	41
28	Segregation of Ni at early stages of radiation damage in NiCoFeCr solid solution alloys. Acta Materialia, 2020, 196, 44-51.	3.8	39
29	Mechanism of surface modification in the plasma-surface interaction in electrical arcs. Physical Review B, 2010, 81, .	1.1	38
30	Cooperative effect of electronic and nuclear stopping on ion irradiation damage in silica. Journal Physics D: Applied Physics, 2012, 45, 505305.	1.3	38
31	Dislocation nucleation from near surface void under static tensile stress in Cu. Journal of Applied Physics, 2011, 110, 023509.	1.1	37
32	Crystallization of silicon nanoclusters with inert gas temperature control. Physical Review B, 2015, 91, .	1.1	36
33	Siteâ€Specific Wetting of Iron Nanocubes by Gold Atoms in Gasâ€Phase Synthesis. Advanced Science, 2019, 6, 1900447.	5.6	36
34	Simulation of Rutherford backscattering spectrometry from arbitrary atom structures. Physical Review E, 2016, 94, 043319.	0.8	34
35	Directional Sensitivity in Light-Mass Dark Matter Searches with Single-Electron-Resolution Ionization Detectors. Physical Review Letters, 2018, 120, 111301.	2.9	33
36	Latent ion tracks in amorphous silicon. Physical Review B, 2013, 88, .	1.1	31

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37	Radiation damage buildup by athermal defect reactions in nickel and concentrated nickel alloys. Materials Research Letters, 2017, 5, 433-439.	4.1	30
38	Amorphization of Ge and Si nanocrystals embedded in amorphous<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>SiO</mml:mtext></mml:mrow><mml:mn>2</mml:mn></mml:msu ion irradiation. Physical Review B, 2009, 80, .	1.1	29
39	Statistics of vacuum breakdown in the high-gradient and low-rate regime. Physical Review Accelerators and Beams, 2017, 20, .	0.6	29
40	Tuning the onset of ferromagnetism in heterogeneous bimetallic nanoparticles by gas phase doping. Physical Review Materials, 2017, 1, .	0.9	29
41	Controlled softening of Cu64Zr36 metallic glass by ion irradiation. Applied Physics Letters, 2013, 102, .	1.5	28
42	Electronic processes in molecular dynamics simulations of nanoscale metal tips under electric fields. Computational Materials Science, 2011, 50, 2075-2079.	1.4	27
43	Nanoscale density fluctuations in swift heavy ion irradiated amorphous SiO2. Journal of Applied Physics, 2011, 110, .	1.1	27
44	Atomistic two-temperature modelling of ion track formation in silicon dioxide. Europhysics Letters, 2015, 110, 16004.	0.7	27
45	Au nanowire junction breakup through surface atom diffusion. Nanotechnology, 2018, 29, 015704.	1.3	27
46	Dislocation nucleation on a near surface void leading to surface protrusion growth under an external electric field. Journal of Applied Physics, 2013, 114, .	1.1	26
47	Long-term stability of Cu surface nanotips. Nanotechnology, 2016, 27, 265708.	1.3	26
48	Nanoscale density variations induced by high energy heavy ions in amorphous silicon nitride and silicon dioxide. Nanotechnology, 2018, 29, 144004.	1.3	26
49	Pattern formation on ion-irradiated Si surface at energies where sputtering is negligible. Journal of Applied Physics, 2018, 123, .	1.1	26
50	Unravelling the secrets of the resistance of GaN to strongly ionising radiation. Communications Physics, 2021, 4, .	2.0	26
51	Thermal Oxidation of Size-Selected Pd Nanoparticles Supported on CuO Nanowires: The Role of the CuOâ€“Pd Interface. Chemistry of Materials, 2017, 29, 6153-6160.	3.2	25
52	Kinetics versus thermodynamics in materials modeling: The case of the di-vacancy in iron. Philosophical Magazine, 2010, 90, 2585-2595.	0.7	24
53	Direct observation of vacuum arc evolution with nanosecond resolution. Scientific Reports, 2019, 9, 7814.	1.6	24
54	Gaussian approximation potentials for body-centered-cubic transition metals. Physical Review Materials, 2020, 4, .	0.9	24

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55	Damage buildup and edge dislocation mobility in equiatomic multicomponent alloys. Nuclear Instruments & Methods in Physics Research B, 2017, 393, 114-117.	0.6	23
56	Migration barriers for surface diffusion on a rigid lattice: Challenges and solutions. Computational Materials Science, 2018, 146, 287-302.	1.4	21
57	Dynamic coupling between particle-in-cell and atomistic simulations. Physical Review E, 2020, 101, 053307.	0.8	20
58	Enhancement of vacancy diffusion by C and N interstitials in the equiatomic FeMnNiCoCr high entropy alloy. Acta Materialia, 2021, 215, 117093.	3.8	20
59	Electrodynamicsâ€"molecular dynamics simulations of the stability of Cu nanotips under high electric field. Journal Physics D: Applied Physics, 2016, 49, 215301.	1.3	19
60	Growth mechanism for nanotips in high electric fields. Nanotechnology, 2020, 31, 355301.	1.3	19
61	Atomistic simulation of damage production by atomic and molecular ion irradiation in GaN. Journal of Applied Physics, 2012, 112, .	1.1	18
62	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.	0.6	18
63	Application of the general thermal field model to simulate the behaviour of nanoscale Cu field emitters. Journal of Applied Physics, 2015, 118, .	1.1	18
64	Ru/Al Multilayers Integrate Maximum Energy Density and Ductility for Reactive Materials. Scientific Reports, 2016, 6, 19535.	1.6	18
65	Dynamic coupling of a finite element solver to large-scale atomistic simulations. Journal of Computational Physics, 2018, 367, 279-294.	1.9	18
66	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.	1.5	17
67	Classification of vacuum arc breakdowns in a pulsed dc system. Physical Review Accelerators and Beams, 2020, 23, .	0.6	17
68	Crater formation by single ions, cluster ions and ion â€œshowersâ€• Nuclear Instruments & Methods in Physics Research B, 2012, 272, 374-376.	0.6	16
69	Radiation effects in nanoclusters embedded in solids. European Physical Journal B, 2014, 87, 1.	0.6	16
70	Electrostatic-elastoplastic simulations of copper surface under high electric fields. Physical Review Special Topics: Accelerators and Beams, 2014, 17, .	1.8	16
71	Investigation of the thermal stability of Cu nanowires using atomistic simulations. Journal of Applied Physics, 2014, 115, .	1.1	16
72	Atomistic behavior of metal surfaces under high electric fields. Physical Review B, 2019, 99, .	1.1	15

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73	Insights into the primary radiation damage of silicon by a machine learning interatomic potential. Materials Research Letters, 2020, 8, 364-372.	4.1	15
74	Electron cascades and secondary electron emission in graphene under energetic ion irradiation. Physical Review B, 2021, 103, .	1.1	15
75	Molecular dynamics simulations of thermal evaporation and critical electric field of copper nanotips. Journal Physics D: Applied Physics, 2020, 53, 365202.	1.3	14
76	Suboxide interface in disproportionating<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>a</mml:mi></mml:math>-SiO studied by x-ray Raman scattering. Physical Review B, 2010, 81, .	1.1	13
77	Analytical model of dislocation nucleation on a near-surface void under tensile surface stress. Philosophical Magazine, 2012, 92, 3994-4010.	0.7	13
78	Local changes of work function near rough features on Cu surfaces operated under high external electric field. Journal of Applied Physics, 2013, 114, .	1.1	13
79	Sputtering and redeposition of ion irradiated Au nanoparticle arrays: direct comparison of simulations to experiments. New Journal of Physics, 2017, 19, 013023.	1.2	13
80	Simulation of redistributive and erosive effects in a-Si under Ar+ irradiation. Nuclear Instruments & Methods in Physics Research B, 2018, 414, 133-140.	0.6	13
81	Molecular dynamics simulations of nanoscale metal tips under electric fields. Nuclear Instruments & Methods in Physics Research B, 2011, 269, 1748-1751.	0.6	12
82	Atomistic simulation of Er irradiation induced defects in GaN nanowires. Journal of Applied Physics, 2014, 116, .	1.1	12
83	Molecular Dynamics Simulations of Heavy Ion Induced Defects in SiC Schottky Diodes. IEEE Transactions on Device and Materials Reliability, 2018, 18, 481-483.	1.5	12
84	Ab initio calculation of field emission from metal surfaces with atomic-scale defects. Physical Review B, 2019, 100, .	1.1	12
85	Direct observation of ion-induced self-organization and ripple propagation processes in atomistic simulations. Materials Research Letters, 2020, 8, 110-116.	4.1	12
86	Defect clustering in irradiation of GaN by single and molecular ions. Vacuum, 2014, 105, 88-90.	1.6	11
87	Graphitization of amorphous carbon by swift heavy ion impacts: Molecular dynamics simulation. Diamond and Related Materials, 2018, 83, 134-140.	1.8	11
88	Spectroscopic study of vacuum arc plasma expansion. Journal Physics D: Applied Physics, 2020, 53, 125501.	1.3	11
89	Machine-learning interatomic potential for Wâ€“Mo alloys. Journal of Physics Condensed Matter, 2021, 33, 315403.	0.7	11
90	Gradient-based training and pruning of radial basis function networks with an application in materials physics. Neural Networks, 2021, 133, 123-131.	3.3	10

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91	Formation and emission mechanisms of Ag nanoclusters in the Ar matrix assembly cluster source. Physical Review Materials, 2017, 1, .	0.9	10
92	Effects of defect clustering on optical properties of GaN by single and molecular ion irradiation. Journal of Applied Physics, 2013, 114, .	1.1	9
93	Probing electron beam effects with chemoresistive nanosensors during in situ environmental transmission electron microscopy. Applied Physics Letters, 2017, 110, .	1.5	9
94	Atomistic simulation of ion irradiation of semiconductor heterostructures. Nuclear Instruments & Methods in Physics Research B, 2017, 409, 14-18.	0.6	9
95	Effects of crystallographic and geometric orientation on ion beam sputtering of gold nanorods. Scientific Reports, 2018, 8, 512.	1.6	9
96	Radiation stability of nanocrystalline single-phase multicomponent alloys. Journal of Materials Research, 2019, 34, 854-866.	1.2	9
97	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.	0.8	9
98	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.	1.7	9
99	Vacuum electrical breakdown conditioning study in a parallel plate electrode pulsed dc system. Physical Review Accelerators and Beams, 2020, 23, .	0.6	9
100	Vaporlike phase of amorphous <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>Si</mml:mi><mml:msub><mml:mi mathvariant="normal">O</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:mrow></mml:math> is not a prerequisite for the core/shell ion tracks or ion shaping. Physical Review Materials, 2018, 2, .	0.9	9
101	Fundamental processes of radiation modification of semiconductor nanostructures. Physica Status Solidi C: Current Topics in Solid State Physics, 2013, 10, 685-688.	0.8	8
102	Experimental study and MD simulation of damage formation in GaN under atomic and molecular ion irradiation. Vacuum, 2016, 129, 166-169.	1.6	8
103	Laser-induced asymmetric faceting and growth of a nano-protrusion on a tungsten tip. APL Photonics, 2016, 1, 091305.	3.0	8
104	Coreâ€“Satellite Gold Nanoparticle Complexes Grown by Inert Gas-Phase Condensation. Journal of Physical Chemistry C, 2020, 124, 24441-24450.	1.5	8
105	Application of artificial neural networks for rigid lattice kinetic Monte Carlo studies of Cu surface diffusion. Computational Materials Science, 2020, 183, 109789.	1.4	8
106	On the classification and quantification of crystal defects after energetic bombardment by machine learned molecular dynamics simulations. Nuclear Materials and Energy, 2020, 22, 100724.	0.6	7
107	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.	0.8	7
108	Effect of the anode material on the evolution of the vacuum breakdown process. Journal Physics D: Applied Physics, 2021, 54, 035201.	1.3	7

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109	Modeling of high-fluence irradiation of amorphous Si and crystalline Al by linearly focused Ar ions. Journal of Physics Condensed Matter, 2019, 31, 075302.	0.7	6
110	General scaling laws of space charge effects in field emission. New Journal of Physics, 2021, 23, 063003.	1.2	6
111	Phase transition of two-dimensional ferroelectric and paraelectric <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>Ga</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:msub><mml:mi mathvariant="normal">O</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:mrow></mml:math> monolayers: A density functional theory and machine learning study. Physical Review B, 2021, 104, .	1.1	6
112	Punching of arbitrary face prismatic loops from hydrogen nanobubbles in copper. Acta Materialia, 2022, 225, 117554.	3.8	6
113	Orientation dependent annealing kinetics of ion tracks in c-SiO2. Journal of Applied Physics, 2015, 118, 224305.	1.1	5
114	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.	1.4	5
115	Absence of single critical dose for the amorphization of quartz under ion irradiation. Journal of Physics Condensed Matter, 2018, 30, 015403.	0.7	5
116	Angular dependence of nanoparticle generation in the matrix assembly cluster source. Nano Research, 2019, 12, 3069-3074.	5.8	5
117	Temperature effect on irradiation damage in equiatomic multi-component alloys. Computational Materials Science, 2021, 197, 110571.	1.4	5
118	Nanorod orientation control by swift heavy ion irradiation. Applied Physics Letters, 2022, 120, .	1.5	5
119	Multiscale machine-learning interatomic potentials for ferromagnetic and liquid iron. Journal of Physics Condensed Matter, 2022, 34, 305402.	0.7	5
120	Single and molecular ion irradiation-induced effects in GaN: experiment and cumulative MD simulations. Journal Physics D: Applied Physics, 2017, 50, 505110.	1.3	4
121	Diffusion bonding of Cu atoms with molecular dynamics simulations. Results in Physics, 2020, 16, 102890.	2.0	4
122	Tungsten migration energy barriers for surface diffusion: a parameterization for KMC simulations. Modelling and Simulation in Materials Science and Engineering, 2020, 28, 035011.	0.8	4
123	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.	1.3	4
124	Atomistic modeling of metal surfaces under high electric fields: Direct coupling of electric fields to the atomistic simulations. , 2016, , .		3
125	Simulations of surface stress effects in nanoscale single crystals. Modelling and Simulation in Materials Science and Engineering, 2018, 26, 035006.	0.8	3
126	In-situ plasma treatment of Cu surfaces for reducing the generation of vacuum arc breakdowns. Journal of Applied Physics, 2021, 130, .	1.1	3

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127	Primary radiation damage in silicon from the viewpoint of a machine learning interatomic potential. Physical Review Materials, 2021, 5, .	0.9	3
128	Effect of dc voltage pulsing on high-vacuum electrical breakdowns near Cu surfaces. Physical Review Accelerators and Beams, 2020, 23, .	0.6	3
129	Interface effects on heat dynamics in embedded metal nanoparticles during swift heavy ion irradiation. Journal Physics D: Applied Physics, 2022, 55, 275301.	1.3	3
130	Simulations of electromechanical shape transformations of Au nanoparticles. Physica Status Solidi (B): Basic Research, 2015, 252, 144-148.	0.7	2
131	Nanotip evaporation under high electric fiele. , 2017, , .		2
132	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.	0.5	2
133	Ultrafast phase transitions in polyamorphic materials triggered by swift heavy ion impacts. Physical Review Materials, 2021, 5, .	0.9	2
134	The cluster species effect on the noble gas cluster interaction with solid surfaces. Surfaces and Interfaces, 2021, 26, 101397.	1.5	2
135	Defect and density evolution under high-fluence ion irradiation of Si/SiO2 heterostructures. Physical Review Materials, 2020, 4, .	0.9	2
136	A general computational method for electron emission and thermal effects in field emitting nanotips. , 2017, , .		1
137	Adatom diffusion in high electric fields. , 2017, , .		1
138	Data sets and trained neural networks for Cu migration barriers. Data in Brief, 2020, 32, 106094.	0.5	1
139	Deformations related to atom mixing in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>Si</mml:mi><mml:mo>/</mml:mo><mml:msub><mml:mi nanopillars under high-fluence broad-beam irradiation. Physical Review Materials, 2021, 5, .	0.9	1
140	Mechanism of Spontaneous Surface Modifications on Polycrystalline Cu Due to Electric Fields. Micromachines, 2021, 12, 1178.	1.4	1
141	Linear voltage recovery after a breakdown in a pulsed dc system. Physical Review Accelerators and Beams, 2021, 24, .	0.6	1
142	Contribution of Electronic Energy Deposition to the Atomic Cascade Damage in Nanocrystals. Materials Research Society Symposia Proceedings, 2010, 1264, 1.	0.1	0
143	MD simulations of near surface void in copper under thermal compression. Materials Research Society Symposia Proceedings, 2012, 1411, 50.	0.1	0
144	Simulations of electromechanical shape transformations of Au nanoparticles (Phys. Status Solidi B) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50	0.7	0

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145	Stability of field-emitters a Kinetic Monte Carlo study. , 2015, , .		0
146	Iron Nanocubes: Gas Phase Synthesis of Multifunctional Feâ€Based Nanocubes (Adv. Funct. Mater.) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 5	7.8	0
147	Data sets of migration barriers for atomistic Kinetic Monte Carlo simulations of Fe self-diffusion. Data in Brief, 2018, 19, 564-569.	0.5	0
148	Defect Creation in Crystals: A Portal to Directional Dark Matter Searches. Journal of Low Temperature Physics, 2018, 193, 1146-1150.	0.6	0
149	Defectâ€Induced Effects in Nanomaterials. Physica Status Solidi (B): Basic Research, 2019, 256, 1900181.	0.7	0