Arkady Krasheninnikov

List of Publications by Citations

239 papers	22,256 citations	68 h-index	147 g-index
259 ext. papers	24,702 ext. citations	7.3 avg, IF	7.28 L-index

#	Paper	IF	Citations
239	Structural defects in graphene. *ACS Nano*, **2011**, 5, 26-41	16.7	2388
238	Embedding transition-metal atoms in graphene: structure, bonding, and magnetism. *Physical Review Letters*, **2009**, 102, 126807	7.4	915
237	Engineering of nanostructured carbon materials with electron or ion beams. *Nature Materials*, **2007**, 6, 723-33	27	829
236	Two-dimensional transition metal dichalcogenides under electron irradiation: defect production and doping. *Physical Review Letters*, **2012**, 109, 035503	7.4	768
235	Ion and electron irradiation-induced effects in nanostructured materials. *Journal of Applied Physics*, **2010**, 107, 071301	2.5	759
234	van der Waals bonding in layered compounds from advanced density-functional first-principles calculations. *Physical Review Letters*, **2012**, 108, 235502	7.4	665
233	Spin-half paramagnetism in graphene induced by point defects. *Nature Physics*, **2012**, 8, 199-202	16.2	638
232	From point defects in graphene to two-dimensional amorphous carbon. *Physical Review Letters*, **2011**, 106, 105505	7.4	582
231	Irradiation-induced magnetism in graphite: a density functional study. *Physical Review Letters*, **2004**, 93, 187202	7.4	554
230	Effects of confinement and environment on the electronic structure and exciton binding energy of MoS2 from first principles. *Physical Review B*, **2012**, 86,	3.3	474
229	Triazine-based graphitic carbon nitride: a two-dimensional semiconductor. *Angewandte Chemie - International Edition*, **2014**, 53, 7450-5	16.4	412
228	Magnetic properties and diffusion of adatoms on a graphene sheet. *Physical Review Letters*, **2003**, 91, 017202	7.4	391
227	Electronic structures and optical properties of realistic transition metal dichalcogenide heterostructures from first principles. *Physical Review B*, **2013**, 88,	3.3	342
226	Native defects in bulk and monolayer MoS2 from first principles. *Physical Review B*, **2015**, 91,	3.3	339
225	From point to extended defects in two-dimensional MoS2: Evolution of atomic structure under electron irradiation. *Physical Review B*, **2013**, 88,	3.3	334
224	Accurate measurement of electron beam induced displacement cross sections for single-layer graphene. *Physical Review Letters*, **2012**, 108, 196102	7.4	326
223	A novel hybrid carbon material. *Nature Nanotechnology*, **2007**, 2, 156-61	28.7	326

222	Effects of ion bombardment on a two-dimensional target: Atomistic simulations of graphene irradiation. *Physical Review B*, **2010**, 81,	3.3	303
221	Mechanical properties of carbon nanotubes with vacancies and related defects. *Physical Review B*, **2004**, 70,	3.3	303
220	Single-Layer ReS□Two-Dimensional Semiconductor with Tunable In-Plane Anisotropy. *ACS Nano*, **2015**, 9, 11249-57	16.7	286
219	Migration and localization of metal atoms on strained graphene. *Physical Review Letters*, **2010**, 105, 196102	7.4	281
218	Bending the rules: Contrasting vacancy energetics and migration in graphite and carbon nanotubes. *Chemical Physics Letters*, **2006**, 418, 132-136	2.5	272
217	Formation of ion-irradiation-induced atomic-scale defects on walls of carbon nanotubes. *Physical Review B*, **2001**, 63,	3.3	267
216	Carbon nanotubes as high-pressure cylinders and nanoextruders. *Science*, **2006**, 312, 1199-202	33.3	243
215	Two-Dimensional Transition Metal Dichalcogenide Alloys: Stability and Electronic Properties. *Journal of Physical Chemistry Letters*, **2012**, 3, 3652-6	6.4	241
214	Properties of individual dopant atoms in single-layer MoS2: atomic structure, migration, and enhanced reactivity. *Advanced Materials*, **2014**, 26, 2857-61	24	229
213	Electron knock-on damage in hexagonal boron nitride monolayers. *Physical Review B*, **2010**, 82,	3.3	212
212	Direct imaging of a two-dimensional silica glass on graphene. *Nano Letters*, **2012**, 12, 1081-6	11.5	206
211	Stone-Wales-type transformations in carbon nanostructures driven by electron irradiation. *Physical Review B*, **2011**, 83,	3.3	199
210	Dual origin of defect magnetism in graphene and its reversible switching by molecular doping. *Nature Communications*, **2013**, 4, 2010	17.4	189
209	Production of defects in supported carbon nanotubes under ion irradiation. *Physical Review B*, **2002**, 65,	3.3	183
208	Irradiation effects in carbon nanotubes. *Nuclear Instruments & Methods in Physics Research B*, **2004**, 216, 355-366	1.2	181
207	Energetics, structure, and long-range interaction of vacancy-type defects in carbon nanotubes: Atomistic simulations. *Physical Review B*, **2006**, 74,	3.3	178
206	Atomic scale microstructure and properties of Se-deficient two-dimensional MoSe2. *ACS Nano*, **2015**, 9, 3274-83	16.7	176
205	Synergistic electroreduction of carbon dioxide to carbon monoxide on bimetallic layered conjugated metal-organic frameworks. *Nature Communications*, **2020**, 11, 1409	17.4	166

204	Atom-by-atom observation of grain boundary migration in graphene. *Nano Letters*, **2012**, 12, 3168-73	11.5	154
203	Three-fold rotational defects in two-dimensional transition metal dichalcogenides. *Nature Communications*, **2015**, 6, 6736	17.4	149
202	Synthesis of graphene nanoribbons encapsulated in single-walled carbon nanotubes. *Nano Letters*, **2011**, 11, 4352-6	11.5	148
201	MoS2 Quantum Dots as Efficient Catalyst Materials for the Oxygen Evolution Reaction. *ACS Catalysis*, **2018**, 8, 1683-1689	13.1	135
200	Difference in formation of hydrogen and helium clusters in tungsten. *Applied Physics Letters*, **2005**, 87, 163113	3.4	134
199	Atomic scale study of the life cycle of a dislocation in graphene from birth to annihilation. *Nature Communications*, **2013**, 4, 2098	17.4	133
198	Electronic structure of boron nitride sheets doped with carbon from first-principles calculations. *Physical Review B*, **2013**, 87,	3.3	129
197	Stability of carbon nanotubes under electron irradiation: Role of tube diameter and chirality. *Physical Review B*, **2005**, 72,	3.3	129
196	Ion-irradiation-induced welding of carbon nanotubes. *Physical Review B*, **2002**, 66,	3.3	128
195	Improved mechanical load transfer between shells of multiwalled carbon nanotubes. *Physical Review B*, **2004**, 70,	3.3	126
194	Triazine-Based Graphitic Carbon Nitride: a Two-Dimensional Semiconductor. *Angewandte Chemie*, **2014**, 126, 7580-7585	3.6	125
193	Role of electronic excitations in ion collisions with carbon nanostructures. *Physical Review Letters*, **2007**, 99, 016104	7.4	122
192	Reversible superdense ordering of lithium between two graphene sheets. *Nature*, **2018**, 564, 234-239	50.4	121
191	Cutting and controlled modification of graphene with ion beams. *Nanotechnology*, **2011**, 22, 175306	3.4	119
190	Atomistic simulations of the implantation of low-energy boron and nitrogen ions into graphene. *Physical Review B*, **2011**, 83,	3.3	114
189	Nitrogen in graphite and carbon nanotubes: Magnetism and mobility. *Physical Review B*, **2005**, 72,	3.3	114
188	Are we van der Waals ready?. *Journal of Physics Condensed Matter*, **2012**, 24, 424218	1.8	112
187	Carbon nanotubes under electron irradiation: Stability of the tubes and their action as pipes for atom transport. *Physical Review B*, **2005**, 71,	3.3	110

186	Stability of graphene edges under electron beam: equilibrium energetics versus dynamic effects. *ACS Nano*, **2012**, 6, 671-6	16.7	104
185	Adsorption and migration of carbon adatoms on carbon nanotubes: Density-functional ab initio and tight-binding studies. *Physical Review B*, **2004**, 69,	3.3	102
184	Atomistic description of electron beam damage in nitrogen-doped graphene and single-walled carbon nanotubes. *ACS Nano*, **2012**, 6, 8837-46	16.7	101
183	Two-dimensional MoS 2 under ion irradiation: from controlled defect production to electronic structure engineering. *2D Materials*, **2017**, 4, 025078	5.9	99
182	Doped Graphene as a Material for Oxygen Reduction Reaction in Hydrogen Fuel Cells: A Computational Study. *ACS Catalysis*, **2013**, 3, 159-165	13.1	95
181	Ultrafast electronic response of graphene to a strong and localized electric field. *Nature Communications*, **2016**, 7, 13948	17.4	91
180	Attractive interaction between transition-metal atom impurities and vacancies in graphene: a first-principles study. *Theoretical Chemistry Accounts*, **2011**, 129, 625-630	1.9	89
179	Mechanisms of postsynthesis doping of boron nitride nanostructures with carbon from first-principles simulations. *Physical Review Letters*, **2011**, 107, 035501	7.4	84
178	B and N ion implantation into carbon nanotubes: Insight from atomistic simulations. *Physical Review B*, **2005**, 71,	3.3	84
177	Ion-irradiation-induced defects in bundles of carbon nanotubes. *Nuclear Instruments & Methods in Physics Research B*, **2002**, 193, 603-608	1.2	83
176	Electron-Beam Induced Transformations of Layered Tin Dichalcogenides. *Nano Letters*, **2016**, 16, 4410-6	11.5	82
175	Ion impacts on graphene/Ir(111): interface channeling, vacancy funnels, and a nanomesh. *Nano Letters*, **2013**, 13, 1948-55	11.5	73
174	Ion ranges and irradiation-induced defects in multiwalled carbon nanotubes. *Journal of Applied Physics*, **2004**, 96, 2864-2871	2.5	73
173	Defects in bilayer silica and graphene: common trends in diverse hexagonal two-dimensional systems. *Scientific Reports*, **2013**, 3, 3482	4.9	71
172	Structural Transformations in Two-Dimensional Transition-Metal Dichalcogenide MoS under an Electron Beam: Insights from First-Principles Calculations. *Journal of Physical Chemistry Letters*, **2017**, 8, 3061-3067	6.4	68
171	Metallic Twin Boundaries Boost the Hydrogen Evolution Reaction on the Basal Plane of Molybdenum Selenotellurides. *Advanced Energy Materials*, **2018**, 8, 1800031	21.8	66
170	Atomic structure and dynamic behaviour of truly one-dimensional ionic chains inside carbon nanotubes. *Nature Materials*, **2014**, 13, 1050-4	27	66
169	Ion-irradiation-induced defects in isotopically-labeled two layered graphene: enhanced in-situ annealing of the damage. *Advanced Materials*, **2013**, 25, 1004-9	24	66

168	The Role of Stable and Mobile Carbon Adspecies in Copper-Promoted Graphene Growth. *Journal of Physical Chemistry C*, **2012**, 116, 5802-5809	3.8	64
167	Tailoring the optical properties of atomically-thin WSvia ion irradiation. *Nanoscale*, **2017**, 9, 11027-11034	7.7	62
166	Carbon nanotube mats and fibers with irradiation-improved mechanical characteristics: a theoretical model. *Physical Review Letters*, **2004**, 93, 215503	7.4	60
165	Engineering the Electronic Properties of Two-Dimensional Transition Metal Dichalcogenides by Introducing Mirror Twin Boundaries. *Advanced Electronic Materials*, **2017**, 3, 1600468	6.4	59
164	Electronic stopping power from first-principles calculations with account for core electron excitations and projectile ionization. *Physical Review B*, **2014**, 89,	3.3	59
163	Plastic deformation of single nanometer-sized crystals. *Physical Review Letters*, **2008**, 101, 156101	7.4	59
162	Experimental observation of boron nitride chains. *ACS Nano*, **2014**, 8, 11950-7	16.7	57
161	Interatomic Coulombic Decay: The Mechanism for Rapid Deexcitation of Hollow Atoms. *Physical Review Letters*, **2017**, 119, 103401	7.4	53
160	Supported Two-Dimensional Materials under Ion Irradiation: The Substrate Governs Defect Production. *ACS Applied Materials & Interfaces*, **2018**, 10, 30827-30836	9.5	50
159	Charged Point Defects in the Flatland: Accurate Formation Energy Calculations in Two-Dimensional Materials. *Physical Review X*, **2014**, 4,	9.1	49
158	Stability of irradiation-induced point defects on walls of carbon nanotubes. *Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena*, **2002**, 20, 728		49
157	Revealing the Atomic Defects of WS2 Governing Its Distinct Optical Emissions. *Advanced Functional Materials*, **2018**, 28, 1704210	15.6	49
156	Engineering and modifying two-dimensional materials by electron beams. *MRS Bulletin*, **2017**, 42, 667-676	3.2	48
155	Atomic Defects and Doping of Monolayer NbSe. *ACS Nano*, **2017**, 11, 2894-2904	16.7	46
154	Multiwalled carbon nanotubes as apertures and conduits for energetic ions. *Physical Review B*, **2005** , 71,	3.3	46
153	Adsorption and migration of carbon adatoms on zigzag carbon nanotubes. *Carbon*, **2004**, 42, 1021-1025	10.4	45
152	Creating nanoporous graphene with swift heavy ions. *Carbon*, **2017**, 114, 511-518	10.4	43
151	Strains induced by point defects in graphene on a metal. *Physical Review Letters*, **2013**, 111, 085501	7.4	43

150	Production of defects in hexagonal boron nitride monolayer under ion irradiation. *Nuclear Instruments & Methods in Physics Research B*, **2011**, 269, 1327-1331	1.2	43
149	Characterization of ion-irradiation-induced defects in multi-walled carbon nanotubes. *New Journal of Physics*, **2011**, 13, 073004	2.9	41
148	Modifying the electronic structure of semiconducting single-walled carbon nanotubes by Ar+ ion irradiation. *Physical Review B*, **2009**, 79,	3.3	41
147	Relative abundance of single and double vacancies in irradiated single-walled carbon nanotubes. *Applied Physics Letters*, **2007**, 91, 173109	3.4	41
146	Solubility of Boron, Carbon, and Nitrogen in Transition Metals: Getting Insight into Trends from First-Principles Calculations. *Journal of Physical Chemistry Letters*, **2015**, 6, 3263-3268	6.4	40
145	Formation of Defects in Two-Dimensional MoS in the Transmission Electron Microscope at Electron Energies below the Knock-on Threshold: The Role of Electronic Excitations. *Nano Letters*, **2020**, 20, 2865-2870	11.5	40
144	Irradiation-induced stiffening of carbon nanotube bundles. *Nuclear Instruments & Methods in Physics Research B*, **2005**, 228, 142-145	1.2	40
143	Post-Synthesis Modifications of Two-Dimensional MoSe or MoTe by Incorporation of Excess Metal Atoms into the Crystal Structure. *ACS Nano*, **2018**, 12, 3975-3984	16.7	39
142	Migration of gold atoms in graphene ribbons: Role of the edges. *Physical Review B*, **2010**, 81,	3.3	39
141	Ion irradiation tolerance of graphene as studied by atomistic simulations. *Applied Physics Letters*, **2012**, 100, 233108	3.4	39
140	Room-Temperature Ferromagnetism in MoTe2 by Post-Growth Incorporation of Vanadium Impurities. *Advanced Electronic Materials*, **2019**, 5, 1900044	6.4	38
139	Gold-embedded zigzag graphene nanoribbons as spin gapless semiconductors. *Physical Review B*, **2012**, 86,	3.3	38
138	The diffusion of carbon atoms inside carbon nanotubes. *New Journal of Physics*, **2008**, 10, 023022	2.9	38
137	Which Transition Metal Atoms Can Be Embedded into Two-Dimensional Molybdenum Dichalcogenides and Add Magnetism?. *Nano Letters*, **2019**, 19, 4581-4587	11.5	36
136	Vibrational Properties of Metal Phosphorus Trichalcogenides from First-Principles Calculations. *Journal of Physical Chemistry C*, **2017**, 121, 27207-27217	3.8	36
135	Predicted scanning tunneling microscopy images of carbon nanotubes with atomic vacancies. *Solid State Communications*, **2001**, 118, 361-365	1.6	36
134	Carbon nanotubes as masks against ion irradiation: An insight from atomistic simulations. *Applied Physics Letters*, **2002**, 81, 1101-1103	3.4	36
133	Widely tunable GaAs bandgap via strain engineering in core/shell nanowires with large lattice mismatch. *Nature Communications*, **2019**, 10, 2793	17.4	34

132	Structural Distortions and Charge Density Waves in Iodine Chains Encapsulated inside Carbon Nanotubes. *Nano Letters*, **2017**, 17, 3694-3700	11.5	33
131	Phosphorene under electron beam: from monolayer to one-dimensional chains. *Nanoscale*, **2016**, 8, 7949-57	7.7	33
130	Fabrication and atomic structure of size-selected, layered MoS2 clusters for catalysis. *Nanoscale*, **2014**, 6, 12463-9	7.7	33
129	Chirality-dependent reactivity of individual single-walled carbon nanotubes. *Small*, **2013**, 9, 1379-86	11	33
128	Enhanced Ferromagnetism and Tunable Magnetism in FeGeTe Monolayer by Strain Engineering. *ACS Applied Materials & Interfaces*, **2020**, 12, 26367-26373	9.5	32
127	Thermal transport in MoS2 from molecular dynamics using different empirical potentials. *Physical Review B*, **2019**, 99,	3.3	31
126	Bound and free self-interstitial defects in graphite and bilayer graphene: A computational study. *Physical Review B*, **2011**, 84,	3.3	31
125	Creation of paired electron states in the gap of semiconducting carbon nanotubes by correlated hydrogen adsorption. *New Journal of Physics*, **2007**, 9, 275-275	2.9	31
124	A first-principles study on magnetic coupling between carbon adatoms on graphene. *New Journal of Physics*, **2010**, 12, 113021	2.9	29
123	In situ growth of cellular two-dimensional silicon oxide on metal substrates. *ACS Nano*, **2013**, 7, 5175-80	16.7	28
122	Perforating Freestanding Molybdenum Disulfide Monolayers with Highly Charged Ions. *Journal of Physical Chemistry Letters*, **2019**, 10, 904-910	6.4	28
121	Irradiation-assisted substitution of carbon atoms with nitrogen and boron in single-walled carbon nanotubes. *Nuclear Instruments & Methods in Physics Research B*, **2005**, 228, 31-36	1.2	27
120	Response of mechanically strained nanomaterials to irradiation: Insight from atomistic simulations. *Physical Review B*, **2010**, 82,	3.3	26
119	Nanostructuring few-layer graphene films with swift heavy ions for electronic application: tuning of electronic and transport properties. *Nanoscale*, **2018**, 10, 14499-14509	7.7	26
118	Swift chemical sputtering of covalently bonded materials. *Pure and Applied Chemistry*, **2006**, 78, 1203-1211	1.1	25
117	Channeling of heavy ions through multi-walled carbon nanotubes. *Nuclear Instruments & Methods in Physics Research B*, **2005**, 228, 21-25	1.2	25
116	The effect of interstitial clusters and vacancies on the scanning tunneling microscopy image of graphite. *Surface Science*, **2000**, 454-456, 519-524	1.8	25
115	Coronene encapsulation in single-walled carbon nanotubes: stacked columns, peapods, and nanoribbons. *ChemPhysChem*, **2014**, 15, 1660-5	3.2	24

114	Xe irradiation of graphene on Ir(111): From trapping to blistering. *Physical Review B*, **2015**, 92,	3.3	24
113	Growth of single-walled carbon nanotubes from sharp metal tips. *Small*, **2009**, 5, 2710-5	11	24
112	Stopping of energetic ions in carbon nanotubes. *Nuclear Instruments & Methods in Physics Research B*, **2003**, 206, 18-21	1.2	24
111	Sputtering of amorphous hydrogenated carbon by hyperthermal ions as studied by tight-binding molecular dynamics. *Computational Materials Science*, **2002**, 25, 427-434	3.2	24
110	Electron-Beam-Driven Structure Evolution of Single-Layer MoTe2 for Quantum Devices. *ACS Applied Nano Materials*, **2019**, 2, 3262-3270	5.6	23
109	Revealing the defect-dominated oxygen evolution activity of hematene. *Journal of Materials Chemistry A*, **2020**, 8, 6709-6716	13	23
108	Interfacial carbon nanoplatelet formation by ion irradiation of graphene on iridium(111). *ACS Nano*, **2014**, 8, 12208-18	16.7	23
107	Tomonaga-Luttinger Liquid in a Box: Electrons Confined within MoS2 Mirror-Twin Boundaries. *Physical Review X*, **2019**, 9,	9.1	21
106	Toward Stronger Al/BN Nanotube Composite Materials: Insights into Bonding at the Al/BN Interface from First-Principles Calculations. *Journal of Physical Chemistry C*, **2014**, 118, 26894-26901	3.8	21
105	Silicon and silicon-nitrogen impurities in graphene: Structure, energetics, and effects on electronic transport. *Physical Review B*, **2015**, 92,	3.3	21
104	Making junctions between carbon nanotubes using an ion beam. *Nuclear Instruments & Methods in Physics Research B*, **2003**, 202, 224-229	1.2	20
103	Electrical properties of C4+ irradiated single-walled carbon nanotube paper. *Physica Status Solidi (B): Basic Research*, **2008**, 245, 2280-2283	1.3	19
102	Boosting the Electrocatalytic Conversion of Nitrogen to Ammonia on Metal-Phthalocyanine-Based Two-Dimensional Conjugated Covalent Organic Frameworks. *Journal of the American Chemical Society*, **2021**, 143, 19992-20000	16.4	19
101	1T phase as an efficient hole injection layer to TMDs transistors: a universal approach to achieve p-type contacts. *2D Materials*, **2018**, 5, 031012	5.9	19
100	Defect-induced junctions between single- or double-wall carbon nanotubes and metal crystals. *Nanoscale*, **2010**, 2, 901-5	7.7	18
99	Layer Rotation-Angle-Dependent Excitonic Absorption in van der Waals Heterostructures Revealed by Electron Energy Loss Spectroscopy. *ACS Nano*, **2019**, 13, 9541-9550	16.7	17
98	Submonolayers of carbon on □Fe facets: An ab initio study. *Physical Review B*, **2010**, 82,	3.3	17
97	Structure and stability of non-molecular nitrogen at ambient pressure. *Europhysics Letters*, **2004**, 65, 400-406	1.6	17

96	Molecular dynamics simulations of CH3 sticking on carbon surfaces. *Journal of Applied Physics*, **2003**, 93, 1826-1831	2.5	17
95	Kinetic Monte Carlo Simulations of the Response of Carbon Nanotubes to Electron Irradiation. *Journal of Computational and Theoretical Nanoscience*, **2007**, 4, 1153-1159	0.3	17
94	Alkali metals inside bi-layer graphene and MoS2: Insights from first-principles calculations. *Nano Energy*, **2020**, 75, 104927	17.1	16
93	Local vibrational modes of Si vacancy spin qubits in SiC. *Physical Review B*, **2020**, 101,	3.3	16
92	Enhanced sensitivity of MoSe monolayer for gas adsorption induced by electric field. *Journal of Physics Condensed Matter*, **2019**, 31, 445301	1.8	16
91	Semiconductor to Metal to Half-Metal Transition in Pt-Embedded Zigzag Graphene Nanoribbons. *Journal of Physical Chemistry C*, **2014**, 118, 16133-16139	3.8	16
90	Computational study of boron nitride nanotube synthesis: How catalyst morphology stabilizes the boron nitride bond. *Physical Review B*, **2009**, 80,	3.3	16
89	Nitrogen-doped carbon nanotubes under electron irradiation simulated with a tight-binding model. *Physical Review B*, **2006**, 74,	3.3	16
88	Engineering the atomic structure of carbon nanotubes by a focused electron beam: new morphologies at the sub-nanometer scale. *ChemPhysChem*, **2012**, 13, 2596-600	3.2	15
87	From Permeation to Cluster Arrays: Graphene on Ir(111) Exposed to Carbon Vapor. *Nano Letters*, **2017**, 17, 3105-3112	11.5	14
86	Mechanical properties and current-carrying capacity of Al reinforced with graphene/BN nanoribbons: a computational study. *Nanoscale*, **2016**, 8, 20080-20089	7.7	14
85	When defects are not defects. *Nature Materials*, **2018**, 17, 757-758	27	14
84	Luminescence of defects in the structural transformation of layered tin dichalcogenides. *Applied Physics Letters*, **2017**, 111, 262102	3.4	14
83	Atomistic simulations of irradiation effects in carbon nanotubes: an overview. *Radiation Effects and Defects in Solids*, **2007**, 162, 157-169	0.9	14
82	A molecular dynamics study of the clustering of implanted potassium in multiwalled carbon nanotubes. *Nuclear Instruments & Methods in Physics Research B*, **2005**, 240, 810-818	1.2	14
81	Observation of charge density waves in free-standing 1T-TaSe2 monolayers by transmission electron microscopy. *Applied Physics Letters*, **2018**, 113, 173103	3.4	14
80	Vibrational Properties of a Two-Dimensional Silica Kagome Lattice. *ACS Nano*, **2016**, 10, 10929-10935	16.7	12
79	Nonstoichiometric Phases of Two-Dimensional Transition-Metal Dichalcogenides: From Chalcogen Vacancies to Pure Metal Membranes. *Journal of Physical Chemistry Letters*, **2019**, 10, 6492-6498	6.4	12

78	Molecular dynamics simulations of CH3 sticking on carbon first wall structures. *Journal of Nuclear Materials*, **2003**, 313-316, 52-55	3.3	12
77	Controlled generation of luminescent centers in hexagonal boron nitride by irradiation engineering. *Science Advances*, **2021**, 7,	14.3	12
76	Tuning electronic and magnetic properties of zigzag graphene nanoribbons by large-scale bending. *Applied Physics Letters*, **2012**, 100, 263115	3.4	11
75	Signatures of irradiation-induced defects in scanning-tunneling microscopy images of carbon nanotubes. *Physics of the Solid State*, **2002**, 44, 470-472	0.8	11
74	Data-Driven Quest for Two-Dimensional Non-van der Waals Materials.. *Nano Letters*, **2022**,	11.5	11
73	Hydrogen-assisted post-growth substitution of tellurium into molybdenum disulfide monolayers with tunable compositions. *Nanotechnology*, **2018**, 29, 145603	3.4	10
72	Study of acoustic emission signals during fracture shear deformation. *Acoustical Physics*, **2016**, 62, 505-513	1.1	10
71	Nanostructured BN-Mg composites: features of interface bonding and mechanical properties. *Physical Chemistry Chemical Physics*, **2016**, 18, 965-9	3.6	10
70	Ion irradiation of multi-walled boron nitride nanotubes. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2010**, 7, NA-NA		10
69	Atomistic Computer Simulations of Irradiation-Induced Effects in Nanostructured Carbon Materials. *Journal of Computational and Theoretical Nanoscience*, **2008**, 5, 1828-1851	0.3	10
68	Ion irradiation of carbon nanotubes encapsulating cobalt crystals. *Physica E: Low-Dimensional Systems and Nanostructures*, **2008**, 40, 2618-2621	3	10
67	Freestanding and Supported MoS Monolayers under Cluster Irradiation: Insights from Molecular Dynamics Simulations. *ACS Applied Materials & Interfaces*, **2020**, 12, 37454-37463	9.5	10
66	Are two-dimensional materials radiation tolerant?. *Nanoscale Horizons*, **2020**, 5, 1447-1452	10.8	10
65	Simulating Raman spectra by combining first-principles and empirical potential approaches with application to defective MoS2. *Npj Computational Materials*, **2020**, 6,	10.9	9
64	Efficient method for calculating Raman spectra of solids with impurities and alloys and its application to two-dimensional transition metal dichalcogenides. *Physical Review Materials*, **2019**, 3,	3.2	9
63	Reversible crystalline-to-amorphous phase transformation in monolayer MoS2 under grazing ion irradiation. *2D Materials*, **2020**, 7, 025005	5.9	9
62	Layer-Dependent Band Gaps of Platinum Dichalcogenides. *ACS Nano*, **2021**, 15, 13249-13259	16.7	9
61	Band Bending and Valence Band Quantization at Line Defects in MoS. *ACS Nano*, **2020**, 14, 9176-9187	16.7	8

60	Mechanism of swift chemical sputtering: Comparison of Be/C/W dimer bond breaking. *Nuclear Instruments & Methods in Physics Research B*, **2011**, 269, 1257-1261	1.2	8
59	Effects of ion beam heating on Raman spectra of single-walled carbon nanotubes. *Applied Physics Letters*, **2009**, 94, 071907	3.4	8
58	Is the gap anisotropy in high-Tc superconductors really as high as it is commonly believed?. *Physica C: Superconductivity and Its Applications*, **1996**, 257, 53-60	1.3	8
57	Chlorine doping of MoSe flakes by ion implantation. *Nanoscale*, **2021**, 13, 5834-5846	7.7	8
56	Comment on "Interfacial carbon nanoplatelet formation by ion irradiation of graphene on iridium(111)". *ACS Nano*, **2015**, 9, 4664-5	16.7	7
55	Elementary quantum-dot gates for single-electron computing. *JETP Letters*, **1996**, 64, 231-236	1.2	7
54	Photoluminescence line shapes for color centers in silicon carbide from density functional theory calculations. *Physical Review B*, **2021**, 103,	3.3	7
53	Channeling effects in gold nanoclusters under He ion irradiation: insights from molecular dynamics simulations. *Nanotechnology*, **2020**, 31, 035302	3.4	7
52	Line and rotational defects in boron-nitrene: Structure, energetics, and dependence on mechanical strain from first-principles calculations. *Physica Status Solidi (B): Basic Research*, **2015**, 252, 1725-1730	1.3	6
51	Solid-State Growth of One- and Two-Dimensional Silica Structures on Metal Surfaces. *Journal of Physical Chemistry C*, **2014**, 118, 21001-21005	3.8	6
50	Enhancing Ferromagnetism and Tuning Electronic Properties of CrI Monolayers by Adsorption of Transition-Metal Atoms. *ACS Applied Materials & Interfaces*, **2021**, 13, 21593-21601	9.5	6
49	Robust Magnetoelectric Effect in the Decorated Graphene/InSe Heterostructure. *ACS Applied Materials & Interfaces*, **2021**, 13, 3033-3039	9.5	6
48	Boron nitride formation on magnesium studied by ab initio calculations. *Physical Review B*, **2010**, 81,	3.3	5
47	Berseneva, Krasheninnikov, and Nieminen Reply:. *Physical Review Letters*, **2011**, 107,	7.4	5
46	Polymorphic Phases of Metal Chlorides in the Confined 2D Space of Bilayer Graphene. *Advanced Materials*, **2021**, 33, e2105898	24	5
45	Mirror twin boundaries in MoSe monolayers as one dimensional nanotemplates for selective water adsorption. *Nanoscale*, **2021**, 13, 1038-1047	7.7	5
44	Acoustic gravity waves and the atmospheric electric field perturbations accompanying them. *Geomagnetism and Aeronomy*, **2017**, 57, 335-346	0.9	4
43	Revisiting Hollandites: Channels Filling by Main-Group Elements Together with Transition Metals in Bi2□VyV8O16. *Chemistry of Materials*, **2017**, 29, 5558-5565	9.6	4

42	Strain robust spin gapless semiconductors/half-metals in transition metal embedded MoSe monolayer. *Journal of Physics Condensed Matter*, **2020**, 32, 365305	1.8	4
41	Substitutional carbon doping of free-standing and Ru-supported BN sheets: a first-principles study. *Journal of Physics Condensed Matter*, **2017**, 29, 415301	1.8	4
40	Quantum and Classical Molecular Dynamics Studies of the Threshold Displacement Energy in Si Bulk and Nanowire. *Materials Research Society Symposia Proceedings*, **2009**, 1181, 72		4
39	Tight-Binding Atomistic Simulations of Hydrocarbon Sputtering by Hyperthermal Ions in Tokamak Divertors. *Contributions To Plasma Physics*, **2002**, 42, 451-457	1.4	4
38	Metal-insulator transition in Emery-Anderson model. Density of states calculations. *Physica C: Superconductivity and Its Applications*, **1994**, 222, 127-132	1.3	4
37	Kinetic theory of semiconductor cascade laser based on quantum wells and wires. *Journal of Experimental and Theoretical Physics*, **1997**, 84, 375-382	1	3
36	Generation of one-photon states by a quantum dot. *Journal of Experimental and Theoretical Physics*, **1997**, 85, 682-689	1	3
35	Edge and Point-Defect Induced Electronic and Magnetic Properties in Monolayer PtSe 2. *Advanced Functional Materials*,2110428	15.6	3
34	Gas Permeability and Selectivity of a Porous WS2 Monolayer. *Journal of Physical Chemistry C*, **2021**, 125, 25055-25066	3.8	3
33	Tailoring the Electronic and Magnetic Properties of Hematene by Surface Passivation: Insights from First-Principles Calculations. *Journal of Physical Chemistry C*, **2020**, 124, 22784-22792	3.8	3
32	Atomistic Simulations of Defect Production in Monolayer and Bulk Hexagonal Boron Nitride under Low- and High-Fluence Ion Irradiation. *Nanomaterials*, **2021**, 11,	5.4	3
31	Defect Agglomeration and Electron-Beam-Induced Local-Phase Transformations in Single-Layer MoTe2. *Journal of Physical Chemistry C*, **2021**, 125, 13601-13609	3.8	3
30	Effects of electron beam generated lattice defects on the periodic lattice distortion structure in 1T□aS2 and 1T□aSe2 thin layers. *Physical Review B*, **2019**, 99,	3.3	3
29	Formation of Highly Doped Nanostripes in 2D Transition Metal Dichalcogenides via a Dislocation Climb Mechanism. *Advanced Materials*, **2021**, 33, e2007819	24	3
28	Simulations of electromechanical shape transformations of Au nanoparticles. *Physica Status Solidi (B): Basic Research*, **2015**, 252, 144-148	1.3	2
27	Atomic scale interface design and characterisation. *Beilstein Journal of Nanotechnology*, **2015**, 6, 1708-11	3	2
26	Comment on "paired gap states in a semiconducting carbon nanotube: deep and shallow levels". *Physical Review Letters*, **2007**, 99, 179703; author reply 179704	7.4	2
25	Efficient Calculation of the Lattice Thermal Conductivity by Atomistic Simulations with Ab Initio Accuracy. *Advanced Theory and Simulations*,2100217	3.5	2

24	Enhanced Trion Emission in Monolayer MoSe2 by Constructing a Type-I Van Der Waals Heterostructure. *Advanced Functional Materials*, **2021**, 31, 2104960	15.6	2
23	Tunable electronic properties and enhanced ferromagnetism in CrGeTemonolayer by strain engineering. *Nanotechnology*, **2021**, 32,	3.4	2
22	Doping Properties and Phase Transition in Single-Layer MoS2. *Microscopy and Microanalysis*, **2014**, 20, 1750-1751	0.5	1
21	Effect of iron nanoparticle geometry on the energetics of carbon interstititals. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2010**, 7, NA-NA		1
20	Kinetic theory of cascade laser based on quantum wells and wires. *Physica A: Statistical Mechanics and Its Applications*, **1997**, 241, 386-392	3.3	1
19	Towards diluted magnetism in TaAs. *Physical Review Materials*, **2017**, 1,	3.2	1
18	Quasi-two-dimensional NaCl crystals encapsulated between graphene sheets and their decomposition under an electron beam. *Nanoscale*, **2021**, 13, 19626-19633	7.7	1
17	Megacity Aerosol Pollution and Atmospheric Electric Field Disturbances. *Izvestiya - Atmospheric and Oceanic Physics*, **2020**, 56, 759-772	1	1
16	From Point to Line Defects in Two-Dimensional Transition Metal Dichalcogenides: Insights from Transmission Electron Microscopy and First-Principles Calculations. *Carbon Nanostructures*, **2017**, 71-85	0.6	1
15	Electron Irradiation-Induced Defects and Phase Transformations in Two-Dimensional Transition Metal Dichalcogenides. *Microscopy and Microanalysis*, **2018**, 24, 1592-1593	0.5	1
14	Physics and theory of defects in 2D materials: the role of reduced dimensionality **2022**, 7-41		1
13	Extrinsic Localized Excitons in Patterned 2D Semiconductors. *Advanced Functional Materials*,2203060	15.6	1
12	Electron Irradiation of Two-dimensional MoS2: Insights into the Influence of Electronic Excitations from First-principle Calculations. *Microscopy and Microanalysis*, **2020**, 26, 784-785	0.5	0
11	Two-dimensional materials under ion irradiation: from defect production to structure and property engineering **2022**, 259-301		0
10	Polymorphic Phases of Metal Chlorides in the Confined 2D Space of Bilayer Graphene (Adv. Mater. 52/2021). *Advanced Materials*, **2021**, 33, 2170415	24	0
9	Electron-beam-stimulated Atomic Migration Processes in Single-layer MoTe2. *Microscopy and Microanalysis*, **2020**, 26, 534-537	0.5	
8	Inorganic Two-Dimensional Materials under Electron Irradiation: Stability, Evolution of the Atomic Structure, and Beam-Mediated Doping. *Microscopy and Microanalysis*, **2014**, 20, 1756-1757	0.5	
7	Charge equilibration times for slow highly charged ions in single layer graphene. *Journal of Physics: Conference Series*, **2017**, 875, 112001	0.3	

6	Strain Fields and Electronic Structure of Vacancy-Type Defects in Graphene from First-Principles Simulation. *NATO Science for Peace and Security Series B: Physics and Biophysics*, **2012**, 49-59	0.2
5	Atomic-scale simulations of radiation effects in GaN and carbon nanotubes. *Materials Research Society Symposia Proceedings*, **2003**, 792, 440	
4	Effects of Ion Irradiation on Supported Carbon Nanotubes and Nanotube-Substrate Interfaces. *Materials Research Society Symposia Proceedings*, **2001**, 706, 1	
3	Pairing correlations with s* and dx2-y2 symmetry in a disordered Cu4O8 cluster. *Physical Review B*, **1995**, 52, 16187-16191	3.3
2	In-situ electron irradiation studies of metal-carbon nanostructures **2008**, 121-122	
1	Compact Laser Devices for Measuring Airborne Microparticle Concentrations and Their Application at the Geophysical Monitoring Center of the Sadovsky Institute of Dynamics of Geospheres, Russian Academy of Sciences. *Seismic Instruments*, **2022**, 58, 235-243	1.1