

Leonid V Zhigilei

List of Publications by Year in descending order

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186
papers

10,795
citations

29994

54
h-index

33814

99
g-index

192
all docs

192
docs citations

192
times ranked

6505
citing authors

#	ARTICLE	IF	CITATIONS
1	Electron-phonon coupling and electron heat capacity of metals under conditions of strong electron-phonon nonequilibrium. <i>Physical Review B</i> , 2008, 77, .	1.1	1,073
2	Combined atomistic-continuum modeling of short-pulse laser melting and disintegration of metal films. <i>Physical Review B</i> , 2003, 68, .	1.1	614
3	Microscopic mechanisms of laser ablation of organic solids in the thermal and stress confinement irradiation regimes. <i>Journal of Applied Physics</i> , 2000, 88, 1281-1298.	1.1	387
4	Atomistic Modeling of Short Pulse Laser Ablation of Metals: Connections between Melting, Spallation, and Phase Explosion. <i>Journal of Physical Chemistry C</i> , 2009, 113, 11892-11906.	1.5	383
5	Effects of temperature and disorder on thermal boundary conductance at solid-solid interfaces: Nonequilibrium molecular dynamics simulations. <i>International Journal of Heat and Mass Transfer</i> , 2007, 50, 3977-3989.	2.5	306
6	Computer Simulations of Laser Ablation of Molecular Substrates. <i>Chemical Reviews</i> , 2003, 103, 321-348.	23.0	278
7	Microscopic mechanisms of laser spallation and ablation of metal targets from large-scale molecular dynamics simulations. <i>Applied Physics A: Materials Science and Processing</i> , 2014, 114, 11-32.	1.1	267
8	Dynamics of the plume formation and parameters of the ejected clusters in short-pulse laser ablation. <i>Applied Physics A: Materials Science and Processing</i> , 2003, 76, 339-350.	1.1	263
9	Metal ablation by picosecond laser pulses: A hybrid simulation. <i>Physical Review B</i> , 2002, 66, .	1.1	236
10	Photomechanical spallation of molecular and metal targets: molecular dynamics study. <i>Applied Physics A: Materials Science and Processing</i> , 2004, 79, 1643-1655.	1.1	202
11	Molecular Dynamics Model for Laser Ablation and Desorption of Organic Solids. <i>Journal of Physical Chemistry B</i> , 1997, 101, 2028-2037.	1.2	193
12	Explosive Boiling of Water Films Adjacent to Heated Surfaces: A Microscopic Description. <i>Journal of Physical Chemistry A</i> , 2001, 105, 2748-2755.	1.1	185
13	Fundamentals of ultrafast laser-material interaction. <i>MRS Bulletin</i> , 2016, 41, 960-968.	1.7	185
14	Two mechanisms of nanoparticle generation in picosecond laser ablation in liquids: the origin of the bimodal size distribution. <i>Nanoscale</i> , 2018, 10, 6900-6910.	2.8	173
15	A Microscopic View of Laser Ablation. <i>Journal of Physical Chemistry B</i> , 1998, 102, 2845-2853.	1.2	170
16	Enhancing and tuning phonon transport at vibrationally mismatched solid-solid interfaces. <i>Physical Review B</i> , 2012, 85, .	1.1	157
17	Molecular dynamics simulation study of the ejection and transport of polymer molecules in matrix-assisted pulsed laser evaporation. <i>Journal of Applied Physics</i> , 2007, 102, .	1.1	135
18	Atomistic modeling of nanoparticle generation in short pulse laser ablation of thin metal films in water. <i>Journal of Colloid and Interface Science</i> , 2017, 489, 3-17.	5.0	114

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19	Kinetic Limit of Heterogeneous Melting in Metals. <i>Physical Review Letters</i> , 2007, 98, 195701.	2.9	110
20	Effect of Pressure Relaxation on the Mechanisms of Short-Pulse Laser Melting. <i>Physical Review Letters</i> , 2003, 91, 105701.	2.9	108
21	Limit of overheating and the threshold behavior in laser ablation. <i>Physical Review E</i> , 2003, 68, 041501.	0.8	106
22	Scaling Laws and Mesoscopic Modeling of Thermal Conductivity in Carbon Nanotube Materials. <i>Physical Review Letters</i> , 2010, 104, 215902.	2.9	105
23	Molecular dynamics simulation study of the fluence dependence of particle yield and plume composition in laser desorption and ablation of organic solids. <i>Applied Physics Letters</i> , 1999, 74, 1341-1343.	1.5	103
24	Numerical modeling of short pulse laser interaction with Au nanoparticle surrounded by water. <i>Applied Surface Science</i> , 2007, 253, 6394-6399.	3.1	101
25	Generation of subsurface voids and a nanocrystalline surface layer in femtosecond laser irradiation of a single-crystal Ag target. <i>Physical Review B</i> , 2015, 91, .	1.1	101
26	Velocity distributions of molecules ejected in laser ablation. <i>Applied Physics Letters</i> , 1997, 71, 551-553.	1.5	98
27	Molecular dynamics simulations of thermal conductivity of carbon nanotubes: Resolving the effects of computational parameters. <i>International Journal of Heat and Mass Transfer</i> , 2014, 70, 954-964.	2.5	96
28	Time-resolved diffraction profiles and atomic dynamics in short-pulse laser-induced structural transformations: Molecular dynamics study. <i>Physical Review B</i> , 2006, 73, .	1.1	95
29	The mechanism of nanobump formation in femtosecond pulse laser nanostructuring of thin metal films. <i>Applied Physics A: Materials Science and Processing</i> , 2008, 92, 791-796.	1.1	95
30	Computational study of the generation of crystal defects in a bcc metal target irradiated by short laser pulses. <i>Physical Review B</i> , 2008, 77, .	1.1	95
31	Growth Twinning and Generation of High-Frequency Surface Nanostructures in Ultrafast Laser-Induced Transient Melting and Resolidification. <i>ACS Nano</i> , 2016, 10, 6995-7007.	7.3	90
32	Temperature dependences of the electron-phonon coupling, electron heat capacity and thermal conductivity in Ni under femtosecond laser irradiation. <i>Applied Surface Science</i> , 2007, 253, 6295-6300.	3.1	87
33	Graphene reinforced carbon fibers. <i>Science Advances</i> , 2020, 6, eaaz4191.	4.7	87
34	Pressure-transmitting boundary conditions for molecular-dynamics simulations. <i>Computational Materials Science</i> , 2002, 24, 421-429.	1.4	85
35	Mechanisms of small clusters production by short and ultra-short laser ablation. <i>Applied Surface Science</i> , 2007, 253, 7656-7661.	3.1	83
36	On the threshold behavior in laser ablation of organic solids. <i>Chemical Physics Letters</i> , 1997, 276, 269-273.	1.2	82

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37	Materials science under extreme conditions of pressure and strain rate. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2004, 35, 2587-2607.	1.1	82
38	Molecular Dynamics Model of Ultraviolet Matrix-Assisted Laser Desorption/Ionization Including Ionization Processes. Journal of Physical Chemistry B, 2005, 109, 22947-22957.	1.2	82
39	Structural Stability of Carbon Nanotube Films: The Role of Bending Buckling. ACS Nano, 2010, 4, 6187-6195.	7.3	80
40	Molecular Dynamics Simulation of Laser Melting of Nanocrystalline Au. Journal of Physical Chemistry C, 2010, 114, 5686-5699.	1.5	80
41	The effect of pulse duration on nanoparticle generation in pulsed laser ablation in liquids: insights from large-scale atomistic simulations. Physical Chemistry Chemical Physics, 2020, 22, 7077-7099.	1.3	79
42	Generation of Subsurface Voids, Incubation Effect, and Formation of Nanoparticles in Short Pulse Laser Interactions with Bulk Metal Targets in Liquid: Molecular Dynamics Study. Journal of Physical Chemistry C, 2017, 121, 16549-16567.	1.5	75
43	Mechanisms of laser ablation from molecular dynamics simulations: dependence on the initial temperature and pulse duration. Applied Physics A: Materials Science and Processing, 1999, 69, S75-S80.	1.1	74
44	Mechanism of single-pulse ablative generation of laser-induced periodic surface structures. Physical Review B, 2017, 96, .	1.1	69
45	Molecular dynamics simulations of matrix-assisted laser desorption/ionization connections to experiment. International Journal of Mass Spectrometry, 2003, 226, 85-106.	0.7	68
46	A combined molecular dynamics and finite element method technique applied to laser induced pressure wave propagation. Computer Physics Communications, 1999, 118, 11-16.	3.0	65
47	Mesoscopic model for dynamic simulations of carbon nanotubes. Physical Review B, 2005, 71, .	1.1	65
48	Mesoscopic Interaction Potential for Carbon Nanotubes of Arbitrary Length and Orientation. Journal of Physical Chemistry C, 2010, 114, 5513-5531.	1.5	64
49	Heat conduction in carbon nanotube materials: Strong effect of intrinsic thermal conductivity of carbon nanotubes. Applied Physics Letters, 2012, 101, 043113.	1.5	64
50	Velocity distributions of analyte molecules in matrix-assisted laser desorption from computer simulations. Rapid Communications in Mass Spectrometry, 1998, 12, 1273-1277.	0.7	62
51	Implications of cross-species interactions on the temperature dependence of Kapitza conductance. Physical Review B, 2011, 84, .	1.1	62
52	Nanocrystalline structure of nanobump generated by localized photoexcitation of metal film. Journal of Applied Physics, 2010, 107, .	1.1	59
53	Molecular dynamics simulations of MALDI: laser fluence and pulse width dependence of plume characteristics and consequences for matrix and analyte ionization. Journal of Mass Spectrometry, 2010, 45, 333-346.	0.7	58
54	Combined atomistic-continuum model for simulation of laser interaction with metals: application in the calculation of melting thresholds in Ni targets of varying thickness. Applied Physics A: Materials Science and Processing, 2004, 79, 977-981.	1.1	57

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55	Fractal Structures in Fullerene Layers: Simulation of the Growth Process. <i>Journal of Physical Chemistry C</i> , 2008, 112, 4687-4695.	1.5	57
56	Computer simulation study of damage and ablation of submicron particles from short-pulse laser irradiation. <i>Applied Surface Science</i> , 1998, 127-129, 142-150.	3.1	54
57	Combined molecular dynamics direct simulation Monte Carlo computational study of laser ablation plume evolution. <i>Journal of Applied Physics</i> , 2002, 92, 2181-2193.	1.1	54
58	Pulsed laser ablation and incubation of nickel, iron and tungsten in liquids and air. <i>Applied Surface Science</i> , 2018, 433, 772-779.	3.1	53
59	Computer modeling of laser melting and spallation of metal targets. , 2004, 5448, 505.		51
60	Thermal excitation of d band electrons in Au: implications for laser-induced phase transformations. , 2006, , .		51
61	Nanocrystalline and Polyicosahedral Structure of a Nanospike Generated on Metal Surface Irradiated by a Single Femtosecond Laser Pulse. <i>Journal of Physical Chemistry C</i> , 2016, 120, 4438-4447.	1.5	51
62	Generation and characterization of carbon fiber microstructures by atomistic simulations. <i>Carbon</i> , 2019, 152, 396-408.	5.4	49
63	Computational and experimental study of the cluster size distribution in MAPLE. <i>Applied Surface Science</i> , 2007, 253, 6456-6460.	3.1	48
64	Molecular Dynamics Simulation of the Laser Disintegration of Aerosol Particles. <i>Analytical Chemistry</i> , 2000, 72, 5143-5150.	3.2	46
65	Simulation of shock-induced melting of Ni using molecular dynamics coupled to a two-temperature model. <i>Physical Review B</i> , 2006, 74, .	1.1	46
66	Channels of energy redistribution in short-pulse laser interactions with metal targets. <i>Applied Surface Science</i> , 2005, 248, 433-439.	3.1	45
67	Making Molecular Balloons in Laser-Induced Explosive Boiling of Polymer Solutions. <i>Physical Review Letters</i> , 2007, 98, 216101.	2.9	45
68	What determines MALDI ion yields? A molecular dynamics study of ion loss mechanisms. <i>Analytical and Bioanalytical Chemistry</i> , 2012, 402, 2511-2519.	1.9	45
69	Microscopic Mechanisms of Matrix Assisted Laser Desorption of Analyte Molecules: Insights from Molecular Dynamics Simulation. <i>Journal of Physical Chemistry B</i> , 2002, 106, 303-310.	1.2	42
70	Nanoparticle generation and transport resulting from femtosecond laser ablation of ultrathin metal films: Time-resolved measurements and molecular dynamics simulations. <i>Applied Physics Letters</i> , 2014, 104, .	1.5	42
71	The role of the photochemical fragmentation in laser ablation: a molecular dynamics study. <i>Journal of Photochemistry and Photobiology A: Chemistry</i> , 2001, 145, 173-181.	2.0	40
72	Melt dynamics and melt-through time in continuous wave laser heating of metal films: Contributions of the recoil vapor pressure and Marangoni effects. <i>International Journal of Heat and Mass Transfer</i> , 2017, 112, 300-317.	2.5	40

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73	Atomistic modeling of femtosecond laser-induced melting and atomic mixing in Au film on Cu substrate system. <i>Applied Surface Science</i> , 2009, 255, 9605-9612.	3.1	39
74	Substrate-Assisted Laser-Initiated Ejection of Proteins Embedded in Water Films. <i>Journal of Physical Chemistry B</i> , 2003, 107, 2362-2365.	1.2	38
75	Generation of surface features in films deposited by matrix-assisted pulsed laser evaporation: the effects of stress confinement and droplet landing velocity. <i>Applied Physics A: Materials Science and Processing</i> , 2008, 92, 821-829.	1.1	37
76	Runaway lattice-mismatched interface in an atomistic simulation of femtosecond laser irradiation of Ag film on Cu substrate system. <i>Applied Physics A: Materials Science and Processing</i> , 2011, 104, 781-792.	1.1	37
77	Effect of bending buckling of carbon nanotubes on thermal conductivity of carbon nanotube materials. <i>Journal of Applied Physics</i> , 2012, 111, .	1.1	37
78	Spallation-induced roughness promoting high spatial frequency nanostructure formation on Cr. <i>Applied Physics A: Materials Science and Processing</i> , 2018, 124, 1.	1.1	37
79	Matrix-assisted pulsed laser evaporation of polymeric materials: a molecular dynamics study. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2001, 180, 238-244.	0.6	36
80	Laser ablation of bicomponent systems: A probe of molecular ejection mechanisms. <i>Applied Physics Letters</i> , 2001, 78, 1631-1633.	1.5	36
81	Unveiling Carbon Ring Structure Formation Mechanisms in Polyacrylonitrile-Derived Carbon Fibers. <i>ACS Applied Materials & Interfaces</i> , 2019, 11, 42288-42297.	4.0	36
82	Angular-dependent embedded atom method potential for atomistic simulations of metal-covalent systems. <i>Physical Review B</i> , 2009, 80, .	1.1	35
83	Thickness effects of water overlayer on its explosive evaporation at heated metal surfaces. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2001, 180, 105-111.	0.6	34
84	Effect of a liquid environment on single-pulse generation of laser induced periodic surface structures and nanoparticles. <i>Nanoscale</i> , 2020, 12, 7674-7687.	2.8	34
85	Atomistic simulations, mesoscopic modeling, and theoretical analysis of thermal conductivity of bundles composed of carbon nanotubes. <i>Journal of Applied Physics</i> , 2013, 114, 104301.	1.1	33
86	Laser processing of polymer nanocomposite thin films. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2006, 24, 1618-1622.	0.9	32
87	Atomistic simulation study of short pulse laser interactions with a metal target under conditions of spatial confinement by a transparent overlayer. <i>Journal of Applied Physics</i> , 2014, 115, .	1.1	32
88	Laser-Rewritable Ferromagnetism at Thin-Film Surfaces. <i>ACS Applied Materials & Interfaces</i> , 2018, 10, 15232-15239.	4.0	32
89	The effect of the target structure and composition on the ejection and transport of polymer molecules and carbon nanotubes in matrix-assisted pulsed laser evaporation. <i>Applied Physics A: Materials Science and Processing</i> , 2011, 105, 529-546.	1.1	31
90	Thermal conductance of carbon nanotube contacts: Molecular dynamics simulations and general description of the contact conductance. <i>Physical Review B</i> , 2016, 94, .	1.1	31

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91	Computational study of cooling rates and recrystallization kinetics in short pulse laser quenching of metal targets. <i>Journal of Physics: Conference Series</i> , 2007, 59, 413-417.	0.3	30
92	The Minimum Amount of "Matrix" Needed for Matrix-Assisted Pulsed Laser Deposition of Biomolecules. <i>Journal of Physical Chemistry B</i> , 2014, 118, 13290-13299.	1.2	30
93	Generation of nanocrystalline surface layer in short pulse laser processing of metal targets under conditions of spatial confinement by solid or liquid overlayer. <i>Applied Surface Science</i> , 2017, 417, 54-63.	3.1	28
94	Vibrational dynamics of the CH stretching mode of H-terminated diamond surfaces. <i>Surface Science</i> , 1997, 374, 333-344.	0.8	27
95	Microscopic mechanisms of short pulse laser spallation of molecular solids. <i>Applied Physics A: Materials Science and Processing</i> , 2004, 79, 753-756.	1.1	27
96	Atomistic View of Laser Fragmentation of Gold Nanoparticles in a Liquid Environment. <i>Journal of Physical Chemistry C</i> , 2021, 125, 13413-13432.	1.5	27
97	Molecular dynamics study of femtosecond laser interactions with Cr targets. <i>AIP Conference Proceedings</i> , 2012, , .	0.3	26
98	Femtosecond laser generation of microbumps and nanojets on single and bilayer Cu/Ag thin films. <i>Physical Chemistry Chemical Physics</i> , 2019, 21, 11846-11860.	1.3	24
99	Computational Study of Short-Pulse Laser-Induced Generation of Crystal Defects in Ni-Based Single-Phase Binary Solid"Solution Alloys. <i>Journal of Physical Chemistry C</i> , 2019, 123, 2202-2215.	1.5	24
100	Limited Elemental Mixing in Nanoparticles Generated by Ultrashort Pulse Laser Ablation of AgCu Bilayer Thin Films in a Liquid Environment: Atomistic Modeling and Experiments. <i>Journal of Physical Chemistry C</i> , 2021, 125, 2132-2155.	1.5	24
101	Molecular dynamics study of medium-range order in metallic glasses. <i>Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties</i> , 1994, 69, 421-436.	0.8	23
102	Mesoscopic modeling of the uniaxial compression and recovery of vertically aligned carbon nanotube forests. <i>Composites Science and Technology</i> , 2018, 166, 66-85.	3.8	23
103	Atomic/Molecular-Level Simulations of Laser"Materials Interactions. <i>Springer Series in Materials Science</i> , 2010, , 43-79.	0.4	23
104	Ejection of matrix-polymer clusters in matrix-assisted laser evaporation: Experimental observations. <i>Journal of Physics: Conference Series</i> , 2007, 59, 314-317.	0.3	21
105	Acoustic Enhancement of Surface Diffusion. <i>Journal of Physical Chemistry C</i> , 2013, 117, 9252-9258.	1.5	21
106	Molecular dynamics simulations of laser disintegration of amorphous aerosol particles with spatially nonuniform absorption. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2001, 180, 245-250.	0.6	20
107	Short-laser-pulse-driven emission of energetic ions into a solid target from a surface layer spalled by a laser prepulse. <i>Applied Physics A: Materials Science and Processing</i> , 2001, 73, 741-747.	1.1	19
108	Molecular dynamics simulation of sputtering from a cylindrical track: EAM versus pair potentials. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2005, 228, 163-169.	0.6	19

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109	Molecular dynamics investigation of desorption and ion separation following picosecond infrared laser (PIRL) ablation of an ionic aqueous protein solution. <i>Journal of Chemical Physics</i> , 2016, 145, 204202.	1.2	19
110	Phase transformation as the mechanism of mechanical deformation of vertically aligned carbon nanotube arrays: Insights from mesoscopic modeling. <i>Carbon</i> , 2019, 143, 587-597.	5.4	19
111	Experimental and computational study of the effect of 1 atm background gas on nanoparticle generation in femtosecond laser ablation of metals. <i>Applied Surface Science</i> , 2018, 435, 1114-1119.	3.1	18
112	Hydrodynamic multi-phase model for simulation of laser-induced non-equilibrium phase transformations. <i>Journal of Physics: Conference Series</i> , 2007, 59, 640-645.	0.3	17
113	Acoustic energy dissipation and thermalization in carbon nanotubes: Atomistic modeling and mesoscopic description. <i>Physical Review B</i> , 2012, 86, .	1.1	17
114	Phase-Change Magnetic Memory: Rewritable Ferromagnetism by Laser Quenching of Chemical Disorder in $\langle \text{Fe}_{60}\text{Al}_{40} \rangle$ Alloy. <i>Physical Review Applied</i> , 2018, 10, .	1.5	17
115	Photochemical fragmentation processes in laser ablation of organic solids. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2001, 180, 171-175.	0.6	16
116	Ejection of matrix-polymer clusters in matrix-assisted laser evaporation: Coarse-grained molecular dynamics simulations. <i>Journal of Physics: Conference Series</i> , 2007, 59, 126-131.	0.3	16
117	Strong enhancement of surface diffusion by nonlinear surface acoustic waves. <i>Physical Review B</i> , 2015, 91, .	1.1	16
118	Thermodynamic analysis and atomistic modeling of subsurface cavitation in photomechanical spallation. <i>Computational Materials Science</i> , 2019, 166, 311-317.	1.4	16
119	Microscopic simulation of short-pulse laser damage of melanin particles. , 1998, , .		15
120	Laser expulsion of an organic molecular nanojet from a spatially confined domain. <i>Journal of Applied Physics</i> , 2001, 90, 4755-4760.	1.1	15
121	Interatomic potentials for atomic scale modeling of metal matrix ceramic particle reinforced nanocomposites. <i>Composites Part B: Engineering</i> , 2009, 40, 461-467.	5.9	15
122	Intermediate metastable structure of the $C_{(1\bar{1}1)}/(1\bar{1}\bar{1})H-C_{(111)}/(2\bar{1}\bar{1})$ surface phase transition. <i>Physical Review B</i> , 1997, 55, 1838-1843.	1.1	14
123	Computational study of laser fragmentation in liquid: Phase explosion, inverse Leidenfrost effect at the nanoscale, and evaporation in a nanobubble. <i>Science China: Physics, Mechanics and Astronomy</i> , 2022, 65, .	2.0	14
124	Big molecule ejection SIMS vs. MALDI. <i>Applied Surface Science</i> , 2003, 203-204, 69-71.	3.1	13
125	Time-resolved diffraction profiles and structural dynamics of Ni film under short laser pulse irradiation. <i>Journal of Physics: Conference Series</i> , 2007, 59, 11-15.	0.3	13
126	Experimental characterization and atomistic modeling of interfacial void formation and detachment in short pulse laser processing of metal surfaces covered by solid transparent overlayers. <i>Applied Physics A: Materials Science and Processing</i> , 2016, 122, 1.	1.1	13

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127	High energy electron sintering of icy regoliths: Formation of the PacMan thermal anomalies on the icy Saturnian moons. <i>Icarus</i> , 2017, 285, 211-223.	1.1	13
128	Mesoscopic modeling of structural self-organization of carbon nanotubes into vertically aligned networks of nanotube bundles. <i>Carbon</i> , 2018, 130, 69-86.	5.4	13
129	Insights into Laser-Materials Interaction Through Modeling on Atomic and Macroscopic Scales. <i>Springer Series in Materials Science</i> , 2018, , 107-148.	0.4	12
130	Atomistic simulation of the generation of vacancies in rapid crystallization of metals. <i>Acta Materialia</i> , 2021, 203, 116465.	3.8	12
131	Atomic Movies of Laser-Induced Structural and Phase Transformations from Molecular Dynamics Simulations. <i>Springer Series in Materials Science</i> , 2014, , 67-100.	0.4	11
132	Phase transition at low fluences in laser desorption of organic solids: a molecular dynamics study. <i>Nuclear Instruments & Methods in Physics Research B</i> , 1999, 153, 167-171.	0.6	10
133	Computational model for multiscale simulation of laser ablation. <i>Materials Research Society Symposia Proceedings</i> , 2001, 677, 211.	0.1	10
134	Laser ablation in a model two-phase system. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2001, 180, 209-215.	0.6	10
135	Multiscale simulation of laser ablation of organic solids: evolution of the plume. <i>Applied Surface Science</i> , 2002, 197-198, 27-34.	3.1	10
136	Kinetics of solid-liquid interface motion in molecular dynamics and phase-field models: crystallization of chromium and silicon. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2021, 379, 20200320.	1.6	10
137	Laser-Induced Thermal Processes: Heat Transfer, Generation of Stresses, Melting and Solidification, Vaporization, and Phase Explosion. , 2021, , 83-163.		10
138	Molecular Dynamics Study of Thermal Boundary Resistance: Evidence of Strong Inelastic Scattering Transport Channels. , 2004, , 37.		9
139	Molecular dynamics modeling of nonlinear propagation of surface acoustic waves. <i>Journal of Applied Physics</i> , 2020, 128, .	1.1	9
140	Molecular Dynamics Simulations of Laser-Materials Interactions: General and Material-Specific Mechanisms of Material Removal and Generation of Crystal Defects. <i>Springer Series in Materials Science</i> , 2014, , 27-49.	0.4	9
141	Thermoelastic modeling of laser-induced generation of strong surface acoustic waves. <i>Journal of Applied Physics</i> , 2021, 130, .	1.1	9
142	Generation of nanoparticles by laser ablation: Combined MD-DSMC computational study. <i>Journal of Physics: Conference Series</i> , 2007, 59, 44-49.	0.3	8
143	Selective Ablation of Xe from Silicon Surfaces: Molecular Dynamics Simulations and Experimental Laser Patterning. <i>Journal of Physical Chemistry A</i> , 2011, 115, 6250-6259.	1.1	8
144	Thermal conductivity of two-dimensional disordered fibrous materials defined by interfiber thermal contact conductance and intrinsic conductivity of fibers. <i>Journal of Applied Physics</i> , 2020, 127, .	1.1	8

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145	Computational study of the role of gas-phase oxidation in CW laser ablation of Al target in an external supersonic air flow. Applied Physics A: Materials Science and Processing, 2013, 110, 537-546.	1.1	7
146	Evolution of Dirac Cone in Disclinated Graphene. Reviews on Advanced Materials Science, 2018, 57, 137-142.	1.4	7
147	Computational study of the effect of core-skin structure on the mechanical properties of carbon nanofibers. Journal of Materials Science, 2021, 56, 14598-14610.	1.7	7
148	Laser-Induced Thermal Processes: Heat Transfer, Generation of Stresses, Melting and Solidification, Vaporization, and Phase Explosion. , 2020, , 1-81.		7
149	Mesoscopic Model for Simulation of CNT-Based Materials. , 2008, , .		6
150	Mesoscopic Simulation of Self-assembly of Carbon Nanotubes into a Network of Bundles. , 2009, , .		6
151	Mechanism of acoustically induced diffusional structuring of surface adatoms. Applied Physics Letters, 2013, 103, 221601.	1.5	6
152	Computational Studies of Thermal Transport Properties of Carbon Nanotube Materials. , 2017, , 129-161.		6
153	Molecular dynamics study of nanoparticle evolution in a background gas under laser ablation conditions. Applied Surface Science, 2009, 255, 5116-5119.	3.1	5
154	Ultrashort pulse laser ablation in liquids: probing the first nanoseconds of underwater phase explosion. Light: Science and Applications, 2022, 11, 111.	7.7	5
155	Molecular Dynamics Simulations of Shocks Including Electronic Heat Conduction and Electron-Phonon Coupling. AIP Conference Proceedings, 2004, , .	0.3	4
156	Molecular Dynamics Study of Short-Pulse Laser Melting, Recrystallization, Spallation, and Ablation of Metal Targets. , 2006, , 725.		4
157	Laser interaction with materials: introduction. Applied Optics, 2014, 53, LIM1.	2.1	4
158	Acoustic processes in materials. MRS Bulletin, 2019, 44, 345-349.	1.7	4
159	Molecular dynamics simulation study of the ejection of polymer molecules and generation of molecular balloons in matrix-assisted pulsed laser evaporation. , 2008, , .		3
160	The Role of Thermal Excitation of D Band Electrons in Ultrafast Laser Interaction With Noble (Cu) and Transition (Pt) Metals. , 2007, , .		3
161	Laser interaction with materials: introduction. Journal of the Optical Society of America B: Optical Physics, 2018, 35, LIM1.	0.9	3
162	Computational Study of Nanomaterials: From Large-Scale Atomistic Simulations to Mesoscopic Modeling. , 2016, , 633-645.		3

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163	Direct Simulation Monte Carlo Calculation: Strategies for Using Complex Initial Conditions. Materials Research Society Symposia Proceedings, 2002, 731, 381.	0.1	2
164	A Hybrid MD-DSMC Model of Picosecond Laser Ablation and Desorption. AIP Conference Proceedings, 2003, , .	0.3	2
165	Compression of dry lysozyme targets: The target preparation pressure as a new parameter in protein thin film production by pulsed laser deposition. Applied Surface Science, 2019, 481, 120-124.	3.1	2
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167	Evolution of a Plume in Laser Ablation: Dependence on the Spot Size. , 2003, , .		1
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