Alexey N Volkov

List of Publications by Year
in descending order

40	942	623734	477307
papers	citations	14 h-index	29 g-index

41	41	41	915
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Chirality-Dependent Mechanical Properties of Bundles and Thin Films Composed of Covalently Cross-Linked Carbon Nanotubes. Langmuir, 2022, 38, 1977-1994.	3.5	10
2	Fundamental physics effects of background gas species and pressure on vapor plume structure and spatter entrainment in laser melting. Additive Manufacturing, 2022, 55, 102819.	3.0	6
3	Aerothermodynamics of a sphere in a monatomic gas based onab initiointeratomic potentials over a wide range of gas rarefaction: transonic, supersonic and hypersonic flows. Journal of Fluid Mechanics, 2022, 942, .	3.4	3
4	Hydrodynamic splitting of laser-induced plasma plumes: two-dimensional kinetic simulations. Applied Physics A: Materials Science and Processing, 2022, 128, .	2.3	2
5	Expansion dynamics and radiation absorption in plumes induced by irradiation of a copper target by single and multiple nanosecond laser pulses in the doughnut beam mode. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2021, 177, 106046.	2.9	7
6	Effects of the nanotube length and network morphology on the deformation mechanisms and mechanical properties of cross-linked carbon nanotube films. Journal of Applied Physics, 2021, 129, .	2.5	8
7	Mechanical properties, phase transitions, and fragmentation mechanisms of 6H, 3C, and amorphous SiC nanoparticles under compression. Applied Physics A: Materials Science and Processing, 2021, 127, 1.	2.3	6
8	Kinetic simulations of laser-induced plume expansion from a copper target into a vacuum or argon background gas based on ab initio calculation of Cuâ€“Cu, Arâ€“Ar, and Arâ€“Cu interactions. Physics of Fluids, 2020, 32, .	4.0	14
9	Plume accumulation effect and interaction of plumes induced by irradiation of a copper target with a burst of nanosecond laser pulses near the ionization threshold. Journal of Applied Physics, 2020, 127, 223105.	2.5	9
10	Thermal conductivity of two-dimensional disordered fibrous materials defined by interfiber thermal contact conductance and intrinsic conductivity of fibers. Journal of Applied Physics, 2020, 127, .	2.5	8
11	Mesoscopic computational model of covalent cross-links and mechanisms of load transfer in cross-linked carbon nanotube films with continuous networks of bundles. Computational Materials Science, 2020, 176, 109410.	3.0	4
12	Simulations of deep drilling of metals by continuous wave lasers using combined smoothed particle hydrodynamics and ray-tracing methods. Applied Physics A: Materials Science and Processing, 2020, 126, 1.	2.3	7
13	Effect of the spot size on ionization and degree of plasma shielding in plumes induced by irradiation of a copper target by multiple short laser pulses. Applied Physics A: Materials Science and Processing, 2020, 126, 1.	2.3	12
14	Kinetic simulations of laser-induced plume expansion into a background gas under conditions of spatial confinement. International Journal of Heat and Mass Transfer, 2019, 132, 1029-1052.	4.8	21
15	Combined Smoothed Particle Hydrodynamics - Ray Tracing Method for Simulations of Keyhole Formation in Laser Melting of Bulk and Powder Metal Targets. , 2019, , .		4
16	Effect of the background gas pressure on the effectiveness of laser-induced material removal from deep cavities in irradiated targets. Applied Physics A: Materials Science and Processing, 2018, 124, 1.	2.3	10
17	Mesoscopic modeling of structural self-organization of carbon nanotubes into vertically aligned networks of nanotube bundles. Carbon, 2018, 130, 69-86.	10.3	13
18	One-dimensional kinetic simulations of plume expansion induced by multi-pulse laser irradiation in the burst mode at 266â€¯nm wavelength. Vacuum, 2018, 157, 361-375.	3.5	21

#	Article	IF	Citations
19	Melt dynamics and melt-through time in continuous wave laser heating of metal films: Contributions of the recoil vapor pressure and Marangoni effects. International Journal of Heat and Mass Transfer, 2017, 112, 300-317.	4.8	40
20	Exobase properties of hydrodynamic and kinetic models of thermal escape from planetary atmospheres and notion of slow hydrodynamic escape. Monthly Notices of the Royal Astronomical Society, 2017, 472, 1825-1841.	4.4	22
21	Computational Studies of Thermal Transport Properties of Carbon Nanotube Materials. , 2017, , 129-161.		6
22	Effects of exit boundary conditions on results of kinetic simulations of spherical expansion of mon- and diatomic gases in a gravitational field. Vacuum, 2014, 109, 308-318.	3.5	3
23	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.	2.3	7
24	THERMAL ESCAPE IN THE HYDRODYNAMIC REGIME: RECONSIDERATION OF PARKER's ISENTROPIC THEORY BASED ON RESULTS OF KINETIC SIMULATIONS. Astrophysical Journal, 2013, 765, 90.	4.5	19
25	Heat conduction in carbon nanotube materials: Strong effect of intrinsic thermal conductivity of carbon nanotubes. Applied Physics Letters, 2012, 101, 043113.	3.3	64
26	Effect of bending buckling of carbon nanotubes on thermal conductivity of carbon nanotube materials. Journal of Applied Physics, 2012, 111, .	2.5	37
27	THERMALLY DRIVEN ATMOSPHERIC ESCAPE: TRANSITION FROM HYDRODYNAMIC TO JEANS ESCAPE. Astrophysical Journal Letters, 2011, 729, L24.	8.3	113
28	Transitional flow of a rarefied gas over a spinning sphere. Journal of Fluid Mechanics, 2011, 683, 320-345.	3.4	12
29	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. Applied Physics A: Materials Science and Processing, 2011, 105, 529-546.	2.3	31
30	Fluidâˆ•Kinetic Hybrid Simulation of Atmospheric Escape: Pluto. , 2011, , .		1
31	Kinetic simulations of thermal escape from a single component atmosphere. Physics of Fluids, 2011, 23, .	4.0	32
32	Parallel Direct Simulation Monte Carlo of Two-Phase Gas-Droplet Laser Plume Expansion from the Bottom of a Cylindrical Cavity into an Ambient Gas. , 2011, , 105-112.		2
33	Structural Stability of Carbon Nanotube Films: The Role of Bending Buckling. ACS Nano, 2010, 4, 6187-6195.	14.6	80
34	Scaling Laws and Mesoscopic Modeling of Thermal Conductivity in Carbon Nanotube Materials. Physical Review Letters, 2010, 104, 215902.	7.8	105
35	Mesoscopic Interaction Potential for Carbon Nanotubes of Arbitrary Length and Orientation. Journal of Physical Chemistry C, 2010, 114, 5513-5531.	3.1	64
36	Mesoscopic Simulation of Self-assembly of Carbon Nanotubes into a Network of Bundles. , 2009, , .		6

#	Article	IF	Citations
37	Expansion of a laser plume from a silicon wafer in a wide range of ambient gas pressures. Applied Physics A: Materials Science and Processing, 2008, 92, 927-932.	2.3	22
38	The mechanism of nanobump formation in femtosecond pulse laser nanostructuring of thin metal films. Applied Physics A: Materials Science and Processing, 2008, 92, 791-796.	2.3	95
39	Mesoscopic Model for Simulation of CNT-Based Materials. , 2008, , .		6
40	Splitting of laser-induced neutral and plasma plumes: Hydrodynamic origin of bimodal distributions of vapor density and plasma emission intensity. Journal Physics D: Applied Physics, 0, , .	2.8	10