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	THERMALLY DRIVEN ATMOSPHERIC ESCAPE: TRANSITION FROM HYDRODYNAMIC TO JEANS ESCAPE. Astrophysical Journal Letters, 2011, 729, L24.	8.3	113
2	Scaling Laws and Mesoscopic Modeling of Thermal Conductivity in Carbon Nanotube Materials. Physical Review Letters, 2010, 104, 215902.	7.8	105
3	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
4	Structural Stability of Carbon Nanotube Films: The Role of Bending Buckling. ACS Nano, 2010, 4, 6187-6195.	14.6	80
5	Mesoscopic Interaction Potential for Carbon Nanotubes of Arbitrary Length and Orientation. Journal of Physical Chemistry C, 2010, 114, 5513-5531.	3.1	64
6	Heat conduction in carbon nanotube materials: Strong effect of intrinsic thermal conductivity of carbon nanotubes. Applied Physics Letters, 2012, 101, 043113.	3.3	64
7	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
8	Effect of bending buckling of carbon nanotubes on thermal conductivity of carbon nanotube materials. Journal of Applied Physics, 2012, 111, .	2.5	37
9	Kinetic simulations of thermal escape from a single component atmosphere. Physics of Fluids, 2011, 23, .	4.0	32
10	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
11	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
12	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
13	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
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	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
16	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
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	Transitional flow of a rarefied gas over a spinning sphere. Journal of Fluid Mechanics, 2011, 683, 320-345.	3.4	12

#	Article	IF	Citations
19	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
20	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
21	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
22	Chirality-Dependent Mechanical Properties of Bundles and Thin Films Composed of Covalently Cross-Linked Carbon Nanotubes. Langmuir, 2022, 38, 1977-1994.	3.5	10
23	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
24	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
25	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
26	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
27	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
28	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
29	Mesoscopic Model for Simulation of CNT-Based Materials. , 2008, , .		6
30	Mesoscopic Simulation of Self-assembly of Carbon Nanotubes into a Network of Bundles. , 2009, , .		6
31	Computational Studies of Thermal Transport Properties of Carbon Nanotube Materials. , 2017, , 129-161.		6
32	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
33	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
34	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
35	Combined Smoothed Particle Hydrodynamics - Ray Tracing Method for Simulations of Keyhole Formation in Laser Melting of Bulk and Powder Metal Targets. , 2019, , .		4
36	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

#	Article	IF	Citations
37	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
38	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
39	Hydrodynamic splitting of laser-induced plasma plumes: two-dimensional kinetic simulations. Applied Physics A: Materials Science and Processing, 2022, 128, .	2.3	2
40	Fluidâˆ•Kinetic Hybrid Simulation of Atmospheric Escape: Pluto. , 2011, , .		1