Stefan K Stefanov

List of Publications by Year
in descending order

88	1,379	304368 22	360668 35
papers	citations	h-index	g-index

92	92	92	521
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Collision partner selection schemes in DSMC: From micro/nano flows to hypersonic flows. Physics Reports, 2016, 656, 1-38.	10.3	96
2	On DSMC Calculations of Rarefied Gas Flows with Small Number of Particles in Cells. SIAM Journal of Scientific Computing, 2011, 33, 677-702.	1.3	90
3	Rayleighâ€“Bèˆnard flow of a rarefied gas and its attractors. I. Convection regime. Physics of Fluids, 2002, 14, 2255.	1.6	64
4	Thermal and second-law analysis of a micro- or nanocavity using direct-simulation Monte Carlo. Physical Review E, 2012, 85, 056310.	0.8	60
5	Monte Carlo simulation of the Taylorâ€“Couette flow of a rarefied gas. Journal of Fluid Mechanics, 1993, 256, 199-213.	1.4	58
6	Monte Carlo simulation and Navierâ€“Stokes finite difference calculation of unsteady-state rarefied gas flows. Physics of Fluids, 1998, 10, 289-300.	1.6	54
7	A new iterative wall heat flux specifying technique in DSMC for heating/cooling simulations of MEMS/NEMS. International Journal of Thermal Sciences, 2012, 59, 111-125.	2.6	53
8	A generalized form of the Bernoulli Trial collision scheme in DSMC: Derivation and evaluation. Journal of Computational Physics, 2018, 354, 476-492.	1.9	52
9	Nonplanar oscillatory shear flow: From the continuum to the free-molecular regime. Physics of Fluids, 2007, 19, .	1.6	49
10	DSMC simulation of hypersonic flows using an improved SBT-TAS technique. Journal of Computational Physics, 2015, 303, 28-44.	1.9	43
11	Investigation of aerodynamic characteristics of rarefied flow around NACA 0012 airfoil using DSMC and NS solvers. European Journal of Mechanics, B/Fluids, 2014, 48, 59-74.	1.2	40
12	DSMC Simulation of Low Knudsen Micro/Nanoflows Using Small Number of Particles per Cells. Journal of Heat Transfer, 2013, 135, .	1.2	36
13	Pressure based finite volume method for calculation of compressible viscous gas flows. Journal of Computational Physics, 2010, 229, 461-480.	1.9	34
14	A novel simplified Bernoulli trials collision scheme in the direct simulation Monte Carlo with intelligence over particle distances. Physics of Fluids, 2015, 27, .	1.6	34
15	Analysis of flow induced by temperature fields in ratchet-like microchannels by Direct Simulation Monte Carlo. International Journal of Heat and Mass Transfer, 2016, 99, 672-680.	2.5	34
16	Effects of Rarefaction on Cavity Flow in the Slip Regime. Journal of Computational and Theoretical Nanoscience, 2007, 4, 817-822.	0.4	33
17	Rarefied gas flow in a rectangular enclosure induced by non-isothermal walls. Physics of Fluids, 2014, 26, .	1.6	31
18	Monte Carlo analysis of macroscopic fluctuations in a rarefied hypersonic flow around a cylinder. Physics of Fluids, 2000, 12, 1226-1239.	1.6	29

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19	Rayleighâ€“Beì›nard flow of a rarefied gas and its attractors. II. Chaotic and periodic convective regimes. Physics of Fluids, 2002, 14, 2270.	1.6	25
20	The effect of Knudsen layers on rarefied cylindrical Couette gas flows. Microfluidics and Nanofluidics, 2013, 14, 31-43.	1.0	25
21	Assessment of composition and biological activity of Arctium lappa leaves extracts obtained with pressurized liquid and supercritical CO2 extraction. Journal of Supercritical Fluids, 2019, 152, 104573.	1.6	24
22	A symmetrized and simplified Bernoulli trial collision scheme in direct simulation Monte Carlo. Physics of Fluids, 2022, 34, .	1.6	24
23	Nonisothermal oscillatory cylindrical Couette gas flow in the slip regime: A computational study. European Journal of Mechanics, B/Fluids, 2012, 33, 14-24.	1.2	23
24	On the convergence of the simplified Bernoulli trial collision scheme in rarefied Fourier flow. Physics of Fluids, 2017, 29, .	1.6	22
25	On the basic concepts of the direct simulation Monte Carlo method. Physics of Fluids, 2019, 31, .	1.6	22
26	DSMC simulation of micro/nano flows using SBTâ€“TAS technique. Computers and Fluids, 2014, 102, 266-276.	1.3	21
27	Ballistic and Collisional Flow Contributions to Anti-Fourier Heat Transfer in Rarefied Cavity Flow. Scientific Reports, 2018, 8, 13533.	1.6	17
28	Predicting the Knudsen paradox in long capillaries by decomposing the flow into ballistic and collision parts. Physical Review E, 2015, 91, 061001.	0.8	16
29	On the consequences of successively repeated collisions in no-time-counter collision scheme in DSMC. Computers and Fluids, 2018, 161, 23-32.	1.3	16
30	Rayleighâ€“BÃ©nard flow of a rarefied gas and its attractors. III. Three-dimensional computer simulations. Physics of Fluids, 2007, 19, .	1.6	15
31	Particle Monte Carlo Algorithms with Small Number of Particles in Grid Cells. Lecture Notes in Computer Science, 2011, , 110-117.	1.0	15
32	A dusty gas model-direct simulation Monte Carlo algorithm to simulate flow in micro-porous media. Physics of Fluids, 2019, 31, .	1.6	15
33	Homogeneous relaxation and shock wave problems: Assessment of the simplified and generalized Bernoulli trial collision schemes. Physics of Fluids, 2021, 33, .	1.6	15
34	Transient heat transfer flow through a binary gaseous mixture confined between coaxial cylinders. International Journal of Heat and Mass Transfer, 2013, 59, 302-315.	2.5	14
35	A kinetic model for gas adsorption-desorption at solid surfaces under non-equilibrium conditions. Vacuum, 2020, 174, 109166.	1.6	13
36	Gas Mixing and Final Mixture Composition Control in Simple Geometry Micro-mixers via DSMC Analysis. Micromachines, 2019, 10, 178.	1.4	11

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37	Benard's instability in kinetic theory. Transport Theory and Statistical Physics, 1992, 21, 371-381.	0.4	10
38	Continuum and Kinetic Simulations of Heat Transfer Trough Rarefied Gas in Annular and Planar Geometries in the Slip Regime. Journal of Heat Transfer, 2017, 139, .	1.2	10
39	Comparison between Navier-Stokes and DSMC Calculations for Low Reynolds Number Slip Flow Past a Confined Microsphere. AIP Conference Proceedings, 2005, , .	0.3	9
40	Reconsideration of the implicit boundary conditions in pressure driven rarefied gas flows through capillaries. Vacuum, 2019, 160, 114-122.	1.6	9
41	Stationary Cylindrical Couette Flow at Different Temperature of Cylinders: the Local Knudsen Number Effect. , 2011, , .		8
42	Evaluation of the generalized bernoulli trial-transient adaptive subcell (GBT-TAS) collision scheme in treating rarefied gas flows. Computers and Fluids, 2020, 213, 104740.	1.3	8
43	A phenomenological and extended continuum approach for modelling non-equilibrium flows. Continuum Mechanics and Thermodynamics, 2007, 19, 273-283.	1.4	7
44	Nonequilibrium Gas Flow and Heat Transfer in a Heated Square Microcavity. Heat Transfer Engineering, 2016, 37, 1085-1095.	1.2	7
45	Kinetics of intense evaporative mass transfer through a porous layer. International Journal of Heat and Mass Transfer, 1993, 36, 3369-3374.	2.5	6
46	Direct statistical simulation of gas mixture mass transfer in a porous layer with condensation of one of the components and absorption of another. International Journal of Heat and Mass Transfer, 1999, 42, 2063-2069.	2.5	6
47	Low speed/low rarefaction flow simulation in micro/nano cavity using DSMC method with small number of particles per cell. Journal of Physics: Conference Series, 2012, 362, 012007.	0.3	6
48	On the degree of boundary slip over nonplanar surfaces. Microfluidics and Nanofluidics, 2013, 15, 807-816.	1.0	6
49	Effects of finite distance between a pair of opposite transversal dimensions in microchannel configurations: DSMC analysis in transitional regime. International Journal of Heat and Mass Transfer, 2015, 85, 568-576.	2.5	6
50	Kinetic theory description of gas adsorption-desorption on a solid surface. AIP Conference Proceedings, 2019, , .	0.3	6
51	Role of surface shape on boundary slip and velocity defect. Physical Review E, 2012, 86, 016314.	0.8	5
52	DSMC collision algorithms based on Kac stochastic model. , 2012, , .		4
53	Hybrid numerical approach to study the interaction of the rarefied gas flow in a microchannel with a cantilever. International Journal of Non-Linear Mechanics, 2019, 117, 103239.	1.4	4
54	Monte Carlo simulation of molecular beams in a hot-wall epitaxy system. Vacuum, 1994, 45, 857-865.	1.6	3

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55	Detailed Investigation of Thermal and Hydrodynamic Flow Behaviour in Micro/Nano Cavity Using DSMC and NSF Equations. , 2011, , .		3
56	A two-dimensional computational study of gas flow regimes past of square cylinder confined in a long microchannel. European Journal of Mechanics, B/Fluids, 2017, 64, 47-54.	1.2	3
57	Antioxidant properties and color characteristics of sponge cakes containing functional components. Ukrainian Food Journal, 2019, 8, 260-270.	0.1	3
58	The Monte Carlo Simulation of a Model Microactuator Driven by Rarefied Gas Thermal Effects. , 2008, , .		2
59	Cylindrical Couette Flow of Rarefied Gas: Comparison between Navier-Stokes and DSMC Computations. AIP Conference Proceedings, 2010, , .	0.3	2
60	Particle Collision Algorithms Based on Kac Stohastic Model. , 2011, , .		2
61	On the Effect of the Boundary Conditions and the Collision Model on Rarefied Gas Flows. AIP Conference Proceedings, 2011, , .	0.3	2
62	Modeling of gas flows through microchannel configurations. AIP Conference Proceedings, 2013, , .	0.3	2
63	Extension of the SBT-TAS algorithm to curved boundary geometries. , 2014, , .		2
64	A Parallel Algorithm with Improved Performance of Finite Volume Method (SIMPLE-TS). Lecture Notes in Computer Science, 2012, , 351-358.	1.0	2
65	Statistical simulation of the recondensation processes in the presence of a neutral gas. USSR Computational Mathematics and Mathematical Physics, 1985, 25, 168-175.	0.0	1
66	Three-Dimensional Rayleigh-Bèınard Convection of a Rarefied Gas: DSMC and Navier-Stokes Calculations. AIP Conference Proceedings, 2005, , .	0.3	1
67	Modeling of Cylindrical Couette Flow of Rarefied Gas. The Case of Rotating Outer Cylinder. , 2009, , .		1
68	Direct Simulation Monte Carlo Algorithms for Simulation of Non-equilibrium Gas Flows. , 2010, , .		1
69	DSMC simulation of the gas flow through a bend and a short microchannel. Journal of Physics: Conference Series, 2012, 362, 012014.	0.3	1
70	Monte Carlo analysis of thermal transpiration effects in capacitance diaphragm gauges with helicoidal baffle system. Journal of Physics: Conference Series, 2012, 362, 012013.	0.3	1
71	Strouhal number analysis for a Karman vortex gas flow past a square in a microchannel at low Mach number. , 2014, , .		1
72	On the accuracy of the simplified Bernoulli trials collision algorithm in treating flows at nano scale and hypersonic regime. AIP Conference Proceedings, 2016, , .	0.3	1

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73	Curvature dependence of heat transfer at a fluid-solid interface. Physical Review E, 2018, 98, .	0.8	1
74	Direct statistical simulation of the evaporation into a vacuum from an aperture with axial symmetry. Journal of Engineering Physics, 1987, 52, 658-662.	0.0	0
75	Influence of Boundary Conditions and Chemical Reactions on the Rayleigh-Bèlnard Convection of a Rarefied Gas Mixture. AIP Conference Proceedings, 2005, , .	0.3	0
76	Carbon Deposition on Blade Surfaces of Laser Microactuator for Optical MEMS. AIP Conference Proceedings, 2005, , .	0.3	0
77	Effects of carbon fiber gas pressure, temperature and deposition distance on thermo fluids phenomena in vacuum deposition machine. Journal of Thermal Science, 2008, 17, 253-260.	0.9	0
78	Unsteady State Gaseous Flow past a Square Confined in a Micro-channel. , 2010, , .		0
79	Influence of Reservoirs on Pressure Driven Gas Flow in a Microchannel. , 2011, , .		0
80	Statistical Simulation of Gas Flows through Short Rough Microchannels. AIP Conference Proceedings, 2011, , .	0.3	0
81	Velocity inversion and predicting velocity slip on curved surfaces. , 2012, , .		0
82	The Effects of the S-Layer on Nonplanar Microflows: A Critical View on the Accuracy of Slip Models. Journal of Computational and Theoretical Nanoscience, 2013, 10, 1990-1998.	0.4	0
83	DSMC simulation of micro/nano flows using SBT-TAS technique. , 2014, , .		0
84	Comparison of DSMC and CFD Models of Heat Transfer in a Rarefied Two-Dimensional Geometry. , 2018, , .		0
85	Periodically patterned radiometric pumps: Novel configurations and further applications. AIP Conference Proceedings, 2019, , .	0.3	0
86	DSMC calculations of binary gas mixing in simple micro-sized configurations. AIP Conference Proceedings, 2019, , .	0.3	0
87	A Generalized Form of the Simplified Bernoulli Trial Collision Scheme Applied to Shock Waves. , 2019, , 895-902.		0
88	Determination of Zone of Flow Instability in a Gas Flow Past a Square Particle in a Narrow Microchannel. Modeling and Optimization in Science and Technologies, 2014, , 43-50.	0.7	0