Irina Graur

List of Publications by Year
in descending order

70 papers	1,572 citations	304743 22 h-index	330143 37 g-index
71 all docs	71 docs citations	71 times ranked	779 citing authors

#	Article	IF	Citations
1	Mass flow rate measurements in a microchannel, from hydrodynamic to near free molecular regimes. Journal of Fluid Mechanics, 2007, 584, 337-356.	3.4	185
2	Mass flow rate measurements in gas micro flows. Experiments in Fluids, 2006, 41, 487-498.	2.4	95
3	Tangential momemtum accommodation in microtube. Microfluidics and Nanofluidics, 2007, 3, 689-695.	2.2	88
4	Gas flow through an elliptical tube over the whole range of the gas rarefaction. European Journal of Mechanics, B/Fluids, 2008, 27, 335-345.	2.5	78
5	Experimental and numerical investigation of an axisymmetric supersonic jet. Journal of Fluid Mechanics, 2001, 426, 177-197.	3.4	71
6	The temperature jump at water â€" air interface during evaporation. International Journal of Heat and Mass Transfer, 2017, 104, 800-812.	4.8	61
7	Analytical and numerical description for isothermal gas flows in microchannels. Microfluidics and Nanofluidics, 2006, 2, 64-77.	2.2	56
8	Thermal transpiration flow: A circular cross-section microtube submitted to a temperature gradient. Physics of Fluids, 2011, 23, .	4.0	45
9	Non-isothermal flow of rarefied gas through a long pipe with elliptic cross section. Microfluidics and Nanofluidics, 2009, 6, 267-275.	2.2	43
10	Rarefied gas flow through a long rectangular channel of variable cross section. Vacuum, 2014, 101, 328-332.	3.5	43
11	Numerical simulation of shock wave propagation in microchannels using continuum and kinetic approaches. Shock Waves, 2009, 19, 307-316.	1.9	37
12	Time-dependent experimental analysis of a thermal transpiration rarefied gas flow. Physics of Fluids, 2013, 25, .	4.0	35
13	Mass flow rate measurement of thermal creep flow from transitional to slip flow regime. Journal of Fluid Mechanics, 2016, 795, 690-707.	3.4	34
14	General approach to transient flows of rarefied gases through long capillaries. Vacuum, 2014, 100, 22-25.	3.5	32
15	Investigation of Self-Heating Effects in a 10-nm SOI-MOSFET With an Insulator Region Using Electrothermal Modeling. IEEE Transactions on Electron Devices, 2015, 62, 2410-2415.	3.0	29
16	Numerical modeling of rarefied gas flow through a slit into vacuum based on the kinetic equation. Computers and Fluids, 2011, 49, 87-92.	2.5	28
17	Investigation on heat transfer between two coaxial cylinders for measurement of thermal accommodation coefficient. Physics of Fluids, 2012, 24, .	4.0	27
18	A study of shock waves in expanding flows on the basis of spectroscopic experiments and quasi-gasdynamic equations. Journal of Fluid Mechanics, 2004, 504, 239-270.	3.4	24

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19	Rarefied gas flow through a zigzag channel. Vacuum, 2012, 86, 1778-1782.	3.5	24
20	The temperature and pressure jumps at the vaporâ€“liquid interface: Application to a two-phase cooling system. International Journal of Heat and Mass Transfer, 2015, 83, 235-243.	4.8	24
21	The gas flow diode effect: theoretical and experimental analysis of moderately rarefied gas flows through a microchannel with varying cross section. Microfluidics and Nanofluidics, 2015, 18, 391-402.	2.2	24
22	Thermal transpiration flow through a single rectangular channel. Journal of Fluid Mechanics, 2014, 744, 169-182.	3.4	22
23	Kinetic simulation of the non-equilibrium effects at the liquid-vapor interface. International Journal of Heat and Mass Transfer, 2019, 136, 449-456.	4.8	22
24	Numerical investigation of micro shock waves generation. Microfluidics and Nanofluidics, 2009, 6, 699-709.	2.2	19
25	Microfluidic gas sensor with integrated pumping system. Sensors and Actuators B: Chemical, 2012, 170, 45-50.	7.8	19
26	Comparative study of the Boltzmann and McCormack equations for Couette and Fourier flows of binary gaseous mixtures. International Journal of Heat and Mass Transfer, 2016, 96, 29-41.	4.8	19
27	Rarefied gas flow simulation based on quasigasdynamic equations. AIAA Journal, 1995, 33, 2316-2324.	2.6	18
28	Simulation of the transient heat transfer between two coaxial cylinders. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2013, 31, .	2.1	18
29	Experimental investigation of the temperature field in the gas-liquid two-layer system. Thermophysics and Aeromechanics, 2015, 22, 701-706.	0.5	18
30	Heat transfer through rarefied gas confined between two concentric spheres. International Journal of Heat and Mass Transfer, 2015, 90, 58-71.	4.8	18
31	Gas flow through microtubes with different internal surface coatings. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2014, 32, 021601.	2.1	17
32	Numerical modelling of rarefied gas flow through a slit at arbitrary pressure ratio based on the kinetic equation. Zeitschrift Fur Angewandte Mathematik Und Physik, 2012, 63, 503-520.	1.4	16
33	Effects of two transversal finite dimensions in long microchannel: Analytical approach in slip regime. Physics of Fluids, 2012, 24, 112005.	4.0	15
34	Variational derivation of thermal slip coefficients on the basis of the Boltzmann equation for hard-sphere molecules and Cercignaniâ€“Lampis boundary conditions: Comparison with experimental results. Physics of Fluids, 2020, 32, .	4.0	15
35	Conductive heat transfer in a gas confined between two concentric spheres: From free-molecular to continuum flow regime. International Journal of Heat and Mass Transfer, 2017, 108, 1527-1534.	4.8	14
36	Unsteady rarefied gas flow through a slit. Vacuum, 2014, 101, 79-85.	3.5	13

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37	Time-dependent methodology for non-stationary mass flow rate measurements in a long micro-tube. Microfluidics and Nanofluidics, 2017, 21, 1.	2.2	13
38	A kinetic model for gas adsorption-desorption at solid surfaces under non-equilibrium conditions. Vacuum, 2020, 174, 109166.	3.5	13
39	An Experimental and Numerical Study of the Final Zero-Flow Thermal Transpiration Stage. Journal of Thermal Science and Technology, 2012, 7, 437-452.	1.1	12
40	Viscous slip coefficients for binary gas mixtures measured from mass flow rates through a single microtube. Physics of Fluids, 2016, 28, 092001.	4.0	12
41	Measurements and modeling of the gas flow in a microchannel: influence of aspect ratios, surface nature, and roughnesses. Microfluidics and Nanofluidics, 2019, 23, 1.	2.2	12
42	Comparison of kinetic and continuum approaches for simulation of shock wave/boundary layer interaction. Shock Waves, 2003, 12, 343-350.	1.9	11
43	Leak rate of water into vacuum through microtubes. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2010, 28, 443-448.	2.1	11
44	Numerical study of unsteady rarefied gas flow through an orifice. Vacuum, 2014, 109, 253-265.	3.5	11
45	Mass flow rate and permeability measurements in microporous media. Vacuum, 2018, 158, 75-85.	3.5	11
46	Ammonia detection by a novel Pyrex microsystem based on thermal creep phenomenon. Sensors and Actuators B: Chemical, 2014, 192, 714-719.	7.8	10
47	A new method to measure the thermal slip coefficient. International Journal of Heat and Mass Transfer, 2015, 88, 766-774.	4.8	10
48	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, .	2.1	10
49	Determination of an effective pore dimension for microporous media. International Journal of Heat and Mass Transfer, 2019, 142, 118412.	4.8	10
50	Comparison of the numerical solutions of the full Boltzmann and S-model kinetic equations for gas flow through a slit. Computers and Fluids, 2013, 80, 71-78.	2.5	9
51	Transient heat transfer in a rarefied binary gas mixture confined between parallel plates due to a sudden small change of wall temperatures. International Journal of Heat and Mass Transfer, 2016, 101, 1292-1303.	4.8	9
52	A physical explanation of the gas flow diode effect. Microfluidics and Nanofluidics, 2016, 20, 1.	2.2	9
53	Mass flow measurement through rectangular microchannel from hydrodynamic to near free molecular regimes. Houille Blanche, 2011, 97, 49-54.	0.3	7
54	Heat and mass transfer in a rarefied gas confined between its two parallel condensed phases. International Journal of Heat and Mass Transfer, 2018, 124, 967-979.	4.8	6

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55	Kinetic theory description of gas adsorption-desorption on a solid surface. AIP Conference Proceedings, 2019, , .	0.4	6
56	Experimental study of the gas flows through channels with circular cross sections. Journal of Physics: Conference Series, 2012, 362, 012025.	0.4	5
57	Effects of Gas Rarefaction on Used Nuclear Fuel Cladding Temperatures during Vacuum Drying. Nuclear Technology, 2016, 194, 387-399.	1.2	5
58	Fabrication and characterization of gas detection microfluidic system. Procedia Engineering, 2010, 5, 1188-1191.	1.2	4
59	Sublimation and deposition in gaseous mixtures. International Journal of Heat and Mass Transfer, 2020, 160, 120213.	4.8	4
60	Measurements of pressure gradient and temperature gradient driven flows in a rectangular channel. Journal of Fluid Mechanics, 2021, 923, .	3.4	4
61	Gas permeability in rarefied flow conditions for characterization of mineral membrane support. European Journal of Mechanics, B/Fluids, 2020, 79, 44-53.	2.5	3
62	Kinetic modelling of evaporation and condensation phenomena around a spherical droplet. International Journal of Heat and Mass Transfer, 2021, 166, 120719.	4.8	3
63	Experimentally-Benchmarked kinetic simulations of heat transfer through rarefied gas with constant heat flux at the boundary. International Journal of Heat and Mass Transfer, 2021, 176, 121378.	4.8	3
64	Extraction of Tangential Momentum and Normal Energy Accommodation Coefficients by Comparing Variational Solutions of the Boltzmann Equation with Experiments on Thermal Creep Gas Flow in Microchannels. Fluids, 2021, 6, 445.	1.7	2
65	Low-pressure gas flow properties of sintered stainless steel microporous media. Physics of Fluids, 2022, 34, .	4.0	1
66	Mass Flow Rate Measurement Through Rectangular Microchannels for Large Knudsen Number Range. , 2011, , .		0
67	Unsteady Heat Transfer In a Gas Mixture. MATEC Web of Conferences, 2016, 84, 00031.	0.2	0
68	Numerical simulation of the sorption phenomena during the transport of VOCs inside a capillary GC column. Chemical Engineering Science, 2021, 234, 116445.	3.8	0
69	Numerical simulation of shock waves at microscales using continuum and kinetic approaches. , 2009, , 1443-1448.		0
70	Modeling of Flow for Radiative Transport Problems. , 1996, , 239-245.		0