R Sh Abiev

List of Publications by Year
in descending order

90 papers	1,276 citations	361045 20 h-index	454577 30 g-index
90 all docs	90 docs citations	90 times ranked	529 citing authors

#	Article	IF	Citations
1	Bubbles velocity, Taylor circulation rate and mass transfer model for slug flow in milli- and microchannels. Chemical Engineering Journal, 2013, 227, 66-79.	6.6	76
2	Simulation of the slug flow of a gas-liquid system in capillaries. Theoretical Foundations of Chemical Engineering, 2008, 42, 105-117.	0.2	50
3	Mass transfer characteristics and concentration field evolution for gas-liquid Taylor flow in milli channels. Chemical Engineering Science, 2019, 207, 1331-1340.	1.9	47
4	Numerical and experimental analysis of local flow phenomena in laminar Taylor flow in a square mini-channel. Physics of Fluids, 2016, 28, .	1.6	44
5	Intensification of mass transfer from liquid to capillary wall by Taylor vortices in minichannels, bubble velocity and pressure drop. Chemical Engineering Science, 2012, 74, 59-68.	1.9	43
6	Hydrodynamics and Mass Transfer of Gasâ€Liquid and Liquidâ€Liquid Taylor Flow in Microchannels. Chemical Engineering and Technology, 2017, 40, 1985-1998.	0.9	42
7	Non-Thermal Plasma for Process and Energy Intensification in Dry Reforming of Methane. Catalysts, 2020, 10, 1358.	1.6	42
8	Formation mechanisms and lengths of the bubbles and liquid slugs in a coaxial-spherical micro mixer in Taylor flow regime. Chemical Engineering Journal, 2018, 354, 269-284.	6.6	40
9	Effect of microchannel heat sink configuration on the thermal performance and pumping power. International Journal of Heat and Mass Transfer, 2019, 141, 845-854.	2.5	38
10	Modeling of pressure losses for the slug flow of a gasâ€“liquid mixture in mini- and microchannels. Theoretical Foundations of Chemical Engineering, 2011, 45, 156-163.	0.2	36
11	Formation of nanocrystalline BiFeO3 during heat treatment of hydroxides co-precipitated in an impinging-jets microreactor. Chemical Engineering and Processing: Process Intensification, 2019, 143, 107598.	1.8	34
12	Gas-liquid and gas-liquid-solid mass transfer model for Taylor flow in micro (milli) channels: A theoretical approach and experimental proof. Chemical Engineering Journal Advances, 2020, 4, 100065.	2.4	29
13	Effect of circular pin-fins geometry and their arrangement on heat transfer performance for laminar flow in microchannel heat sink. International Journal of Thermal Sciences, 2021, 170, 107177.	2.6	29
14	Analysis of local pressure gradient inversion and form of bubbles in Taylor flow in microchannels. Chemical Engineering Science, 2017, 174, 403-412.	1.9	26
15	Theory and Practice of Mixing: A Review. Theoretical Foundations of Chemical Engineering, 2018, 52, 473-487.	0.2	25
16	Performance Augmentation of Single-Phase Heat Transfer in Open-Type Microchannel Heat Sink. Journal of Thermophysics and Heat Transfer, 2019, 33, 416-424.	0.9	25
17	Circulation and bypass modes of the slug flow of a gas-liquid mixture in capillaries. Theoretical Foundations of Chemical Engineering, 2009, 43, 298-306.	0.2	23
18	Formation of BiFeO3 Nanoparticles Using Impinging Jets Microreactor. Russian Journal of General Chemistry, 2018, 88, 2139-2143.	0.3	23

#	Article	IF	Citations
19	Method for calculating the void fraction and relative length of bubbles under slug flow conditions in capillaries. Theoretical Foundations of Chemical Engineering, 2010, 44, 86-101.	0.2	22
20	Intensification of heterogeneous catalytic gas-fluid interactions in reactors with a multichannel monolithic catalyst. Russian Journal of Applied Chemistry, 2006, 79, 1047-1056.	0.1	21
21	Title is missing!. Theoretical Foundations of Chemical Engineering, 2001, 35, 254-259.	0.2	19
22	Hydrodynamics of gasâ€"liquid Taylor flow and liquidâ€"solid mass transfer in mini channels: Theory and experiment. Chemical Engineering Journal, 2011, 176-177, 57-64.	6.6	19
23	Modeling mass transfer in a Taylor flow regime through microchannels using a three-layer model. Theoretical Foundations of Chemical Engineering, 2016, 50, 975-989.	0.2	19
24	Synthesis of superparamagnetic GdFeO3 nanoparticles using a free impinging-jets microreactor. Russian Chemical Bulletin, 2020, 69, 1290-1295.	0.4	18
25	Hydrodynamics of pulsating flow type apparatus: Simulation and experiments. Chemical Engineering Journal, 2013, 229, 285-295.	6.6	17
26	Effect of contact-angle hysteresis on the pressure drop under slug flow conditions in minichannels and microchannels. Theoretical Foundations of Chemical Engineering, 2015, 49, 414-421.	0.2	17
27	Turbulent droplets dispersion in a pulsating flow type apparatus â€" New type of static disperser. Chemical Engineering Journal, 2018, 349, 646-661.	6.6	17
28	Synthesis of Calcium Fluoride Nanoparticles in a Microreactor with Intensely Swirling Flows. Russian Journal of Inorganic Chemistry, 2021, 66, 1047-1052.	0.3	16
29	Pulsating flow type apparatus: Energy dissipation rate and droplets dispersion. Chemical Engineering Research and Design, 2016, 108, 101-108.	2.7	15
30	Mass transfer intensification of 2-methyl-5-nitrotetrazole synthesis in two-phase liquidâ€"liquid Taylor flow in microreactor. Chemical Engineering Research and Design, 2019, 144, 444-458.	2.7	15
31	Hydrodynamics and Heat Transfer of Circulating Two-Phase Taylor Flow in Microchannel Heat Pipe: Experimental Study and Mathematical Model. Industrial & Engineering Chemistry Research, 2020, 59, 3687-3701.	1.8	15
32	Influence of Hydrodynamic Conditions on Micromixing in Microreactors with Free Impinging Jets. Fluids, 2020, 5, 179.	0.8	15
33	Preparation of Photocatalizers Based on Titanium Dioxide Synthesized Using a Microreactor with Colliding Jets. Glass Physics and Chemistry, 2020, 46, 335-340.	0.2	14
34	Role of Hydroxide Precipitation Conditions in the Formation of Nanocrystalline BiFeO3. Russian Journal of Inorganic Chemistry, 2021, 66, 163-169.	0.3	14
35	The Influence of Co-Precipitation Technique on the Structure, Morphology and Dual-Modal Proton Relaxivity of GdFeO3 Nanoparticles. Inorganics, 2021, 9, 39.	1.2	13
36	Formation of rhabdophane-structured lanthanum orthophosphate nanoparticles in an impinging-jets microreactor and rheological properties of sols based on them. Nanosystems: Physics, Chemistry, Mathematics, 2019, 10, 206-214.	0.2	13

#	Article	IF	Citations
37	Modern state and perspectives of microtechnique application in chemical industry. Russian Journal of General Chemistry, 2012, 82, 2019-2024.	0.3	12
38	Synthesis of 5-phenyltetrazole and its N-methyl Derivatives in a Microreactor. Chemical and Biochemical Engineering Quarterly, 2014, 28, 241-246.	0.5	12
39	Simultaneous Detection of Hydrodynamics, Mass Transfer and Reaction Rates in a Three-Phase Microreactor. Theoretical Foundations of Chemical Engineering, 2020, 54, 48-63.	0.2	12
40	Mathematical modeling of the droplet formation process in a microfluidic device. Chemical Engineering Science, 2021, 235, 116493.	1.9	12
41	Dispersion of carbon nanotubes clusters in pulsating and vortex in-line apparatuses. Chemical Engineering Science, 2017, 171, 204-217.	1.9	11
42	Microreactor synthesis of nanosized particles: The role of micromixing, aggregation, and separation processes in heterogeneous nucleation. Chemical Engineering Research and Design, 2022, 178, 73-94.	2.7	11
43	Hydrodynamics of gas-liquid slug flow in capillaries: Comparing theory and experiment. Theoretical Foundations of Chemical Engineering, 2011, 45, 235-247.	0.2	10
44	Process Intensification by Pulsations in Chemical Engineering: Some General Principles and Implementation. Industrial & Engineering Chemistry Research, 2017, 56, 13497-13507.	1.8	10
45	Synthesis of Titanium Oxide Doped with Neodymium Oxide in a Confined Impinging-Jets Reactor. Russian Journal of General Chemistry, 2020, 90, 1677-1680.	0.3	10
46	New Approach of Triumphing Temperature Nonuniformity and Heat Transfer Performance Augmentation in Micro Pin Fin Heat Sinks. Journal of Heat Transfer, 2020, 142, .	1.2	10
47	Simulation of Extraction from a Capillary-Porous Particle with Bidisperse Structure. Russian Journal of Applied Chemistry, 2001, 74, 777-783.	0.1	9
48	Intensity and efficiency of droplet dispersion: Pulsating flow type apparatus vs. static mixers. Chemical Engineering Research and Design, 2018, 137, 329-349.	2.7	9
49	Physicochemical and hydrodynamic aspects of GdFeO3 production using a free impinging-jets method. Chemical Engineering and Processing: Process Intensification, 2021, 166, 108473.	1.8	9
50	Mathematical model of two-phase Taylor flow hydrodynamics for four combinations of non-Newtonian and Newtonian fluids in microchannels. Chemical Engineering Science, 2022, 247, 116930.	1.9	9
51	Comparative study of zirconia based powders prepared by co-precipitation and in a microreactor with impinging swirled flows. Ceramics International, 2022, 48, 13006-13013.	2.3	9
52	Microfluidic synthesis of monodisperse porous polystyrene microspheres for sorption of bovine serum albumin. Journal of Microencapsulation, 2020, 37, 457-465.	1.2	8
53	Concurrent Removal of Heat Transfer and Mass Flow Rate Nonuniformities in Parallel Channels of Microchannel Heat Sink. Theoretical Foundations of Chemical Engineering, 2020, 54, 77-90.	0.2	8
54	Synthesis of Yttriumâ€"Aluminum Garnet Using a Microreactor with Impinging Jets. Glass Physics and Chemistry, 2021, 47, 260-264.	0.2	8

#	Article	IF	Citations
55	Impinging-Jets Micromixers and Microreactors: State of the Art and Prospects for Use in the Chemical Technology of Nanomaterials (Review). Theoretical Foundations of Chemical Engineering, 2020, 54, 1131-1147.	0.2	8
56	Modeling the hydrodynamics of slug flow in a minichannel for liquid-liquid two-phase system. Theoretical Foundations of Chemical Engineering, 2013, 47, 299-305.	0.2	7
57	Process intensification in chemical engineering: general trends and Russian contribution. Reviews in Chemical Engineering, 2021, 37, 69-97.	2.3	7
58	Effect of Hydrodynamic Conditions in an Impinging-Jet Microreactor on the Formation of Nanoparticles Based on Complex Oxides. Theoretical Foundations of Chemical Engineering, 2021, 55, 12-29.	0.2	7
59	Taylor vortex center, film thickness, velocity and frequency of circulations in slugs and plugs for non-Newtonian and Newtonian fluids in two-phase Taylor flow in microchannels. Chemical Engineering Science, 2022, 250, 117380.	1.9	7
60	Effect of Macro- and Micromixing on Processes Involved in Solution Synthesis of Oxide Particles in Mocroreactors with Intensively Swirling Flows. Theoretical Foundations of Chemical Engineering, 2022, 56, 141-151.	0.2	7
61	Intensification of Mass Transfer Processes with the Chemical Reaction in Multi-Phase Systems Using the Resonance Pulsating Mixing. Russian Journal of Applied Chemistry, 2019, 92, 1399-1409.	0.1	6
62	Gasâ€"liquid slug flow in microfluidic heat exchanger: Effect of gas hold-up and bubble size on pressure drop and heat transfer. International Journal of Thermal Sciences, 2022, 173, 107395.	2.6	6
63	Effect of Hydrodynamic Conditions on Micromixing in Impinging-Jets Microreactors. Theoretical Foundations of Chemical Engineering, 2022, 56, 9-22.	0.2	6
64	Flow of a Homogenous Incompressible Liquid through a Tube with a Periodically Varying Section. Chemical and Petroleum Engineering (English Translation of Khimicheskoe I Neftyanoe) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 377 Td (M	0.1	5
65	Miniaturization as One of the Paths to Process Intensification in Chemical Engineering. Theoretical Foundations of Chemical Engineering, 2020, 54, 1-2.	0.2	5
66	Gasâ€"Liquid Two-Phase Flow and Heat Transfer without Phase Change in Microfluidic Heat Exchanger. Fluids, 2021, 6, 150.	0.8	5
67	Mathematical model of gas-liquid or liquid-liquid Taylor flow with non-Newtonian continuous liquid in microchannels. Journal of Flow Chemistry, 2021, 11, 525-537.	1.2	5
68	Synthesis of Thin Titania Coatings onto the Inner Surface of Quartz Tubes and Their Photoactivity in Decomposition of Methylene Blue and Rhodamine B. Catalysts, 2021, 11, 1538.	1.6	5
69	Simulating a U-form pulsation extractor. Chemical and Petroleum Engineering (English Translation of) Tj ETQq1 1 0.784314 rgBT /Overlo	0.1	4
70	Simulation of nonlinear liquid oscillations in the pulsation apparatus of variable cross section using a one-dimensional model. Theoretical Foundations of Chemical Engineering, 2017, 51, 52-64.	0.2	4
71	Analytical solution of Taylor circulation in a prolate ellipsoid droplet in the frame of 2D Stokes equations. Chemical Engineering Science, 2019, 207, 145-152.	1.9	4
72	Bubbles size and mass transfer in a pulsating flow type apparatus with gas-liquid mixture. Journal of Flow Chemistry, 2021, 11, 369-391.	1.2	4

#	Article	IF	Citations
73	Determination of rational geometry of elastic elements in u-shaped plant with liquid. Chemical and Petroleum Engineering (English Translation of Khimicheskoe I Neftyanoe Mashinostroenie), 1998, 34, 12-19.	0.1	3
74	Hydrodynamics and mass exchange in gas-liquid slug flow in microchannels. Russian Journal of General Chemistry, 2012, 82, 2088-2099.	0.3	3
75	Direct Numerical Simulations of Taylor Bubbles in a Square Mini-Channel: Detailed Shape and Flow Analysis with Experimental Validation. Advances in Mathematical Fluid Mechanics, 2017, , 663-679.	0.1	3
76	Process Intensification in Photocatalytic Decomposition of Formic Acid over a TiO2 Catalyst by Forced Periodic Modulation of Concentration, Temperature, Flowrate and Light Intensity. Processes, 2021, 9, 2046.	1.3	3
77	Comparative Characteristics of Xerogels Based on Zirconium Dioxide Obtained by the Method of Joint Deposition of Hydroxides in a Volume and a Microreactor with Counter Swirled Flows. Glass Physics and Chemistry, 2021, 47, 653-656.	0.2	3
78	Study of a dynamically balanced resonant pulsed column. Chemical and Petroleum Engineering (English Translation of Khimicheskoe I Neftyanoe Mashinostroenie), 2000, 36, 176-181.	0.1	2
79	A new form of the heat- and mass-transfer and fluid-flow equations. Theoretical Foundations of Chemical Engineering, 2005, 39, 184-189.	0.2	2
80	The study of methods for intensifying detergency at a superposition of micro- and macro-scale impacts on the cleaning solution. Russian Journal of Applied Chemistry, 2013, 86, 1108-1117.	0.1	1
81	Continuous-flow microfluidic device for synthesis of cationic porous polystyrene microspheres as sorbents of p-xylene from physiological saline. Journal of Flow Chemistry, 2021, 11, 751-762.	1.2	1
82	Formation of cobalt ferrite nanopowders in an impinging-jets microreactor. Nanosystems: Physics, Chemistry, Mathematics, 2021, 12, 303-310.	0.2	1
83	Selecting the type and rotation speed of a mixer for efficient mixing of flocculants in water. Water and Ecology, 2020, 26, 27-36.	0.3	1
84	Mass transfer intensification by means of resonance oscillations in a pulsation apparatus with a central tube with and without nozzles. Chemical Engineering and Processing: Process Intensification, 2022, 180, 108686.	1.8	1
85	Modeling pulse apparatus for processing suspension with periodical unload of concentrated precipitate. Russian Journal of Applied Chemistry, 2007, 80, 2178-2183.	0.1	0
86	The 15th European Conference on Mixing. Chemical Engineering Research and Design, 2016, 108, 1-2.	2.7	0
87	Benchmark solutions for two-component flows in microchannels. AIP Conference Proceedings, 2019, , .	0.3	0
88	Experimental and theoretical study of the flocculants mixing in water. E3S Web of Conferences, 2021, 266, 02012.	0.2	0
89	Analysis of Hydrodynamics and Mass Transfer of Gas-Liquid and Liquid-Liquid Taylor Flows in Microchannels. Advances in Chemical and Materials Engineering Book Series, 2019, , 1-49.	0.2	0
90	Mathematical Model for Axisymmetric Taylor Flows Inside a Drop. Fluids, 2021, 6, 7.	0.8	0