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List of Publications by Year
in descending order

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98 papers	4,570 citations	101543 36 h-index	102487 66 g-index
101 all docs	101 docs citations	101 times ranked	1909 citing authors

#	Article	IF	Citations
1	CFD simulation of concurrent-up gasâ€“solid flow in circulating fluidized beds with structure-dependent drag coefficient. Chemical Engineering Journal, 2003, 96, 71-80.	12.7	496
2	The Sunway TaihuLight supercomputer: system and applications. Science China Information Sciences, 2016, 59, 1.	4.3	340
3	Eulerian simulation of heterogeneous gasâ€“solid flows in CFB risers: EMMS-based sub-grid scale model with a revised cluster description. Chemical Engineering Science, 2008, 63, 1553-1571.	3.8	249
4	Simulation of Heterogeneous Structure in a Circulating Fluidized-Bed Riser by Combining the Two-Fluid Model with the EMMS Approach. Industrial & Engineering Chemistry Research, 2004, 43, 5548-5561.	3.7	228
5	EMMS-based discrete particle method (EMMSâ€“DPM) for simulation of gasâ€“solid flows. Chemical Engineering Science, 2014, 120, 67-87.	3.8	169
6	Multi-scale methodology for complex systems. Chemical Engineering Science, 2004, 59, 1687-1700.	3.8	159
7	Quasi-real-time simulation of rotating drum using discrete element method with parallel GPU computing. Particuology, 2011, 9, 446-450.	3.6	147
8	Meso-scale oriented simulation towards virtual process engineering (VPE)â€”The EMMS Paradigm. Chemical Engineering Science, 2011, 66, 4426-4458.	3.8	130
9	Large-scale DNS of gasâ€“solid flows on Mole-8.5. Chemical Engineering Science, 2012, 71, 422-430.	3.8	120
10	Physical mapping of fluidization regimesâ€”the EMMS approach. Chemical Engineering Science, 2002, 57, 3993-4004.	3.8	118
11	Explorations on the multi-scale flow structure and stability condition in bubble columns. Chemical Engineering Science, 2007, 62, 6978-6991.	3.8	103
12	Computer virtual experiment on fluidized beds using a coarse-grained discrete particle methodâ€”EMMS-DPM. Chemical Engineering Science, 2016, 155, 314-337.	3.8	93
13	Analytical multi-scale method for multi-phase complex systems in process engineeringâ€”Bridging reductionism and holism. Chemical Engineering Science, 2007, 62, 3346-3377.	3.8	88
14	Multiscale structures in particleâ€“fluid systems: Characterization, modeling, and simulation. Chemical Engineering Science, 2019, 198, 198-223.	3.8	85
15	Macro-scale phenomena reproduced in microscopic systemsâ€”pseudo-particle modeling of fluidization. Chemical Engineering Science, 2003, 58, 1565-1585.	3.8	77
16	SPH method for two-fluid modeling of particleâ€“fluid fluidization. Chemical Engineering Science, 2011, 66, 1859-1865.	3.8	75
17	Discrete simulation of granular and particle-fluid flows: from fundamental study to engineering application. Reviews in Chemical Engineering, 2017, 33, .	4.4	73
18	Direct numerical simulation of sub-grid structures in gasâ€“solid flowâ€”GPU implementation of macro-scale pseudo-particle modeling. Chemical Engineering Science, 2010, 65, 5356-5365.	3.8	70

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19	Dissipative structure in concurrent-up gasâ€“solid flow. Chemical Engineering Science, 1998, 53, 3367-3379.	3.8	69
20	Structure-dependent drag in gasâ€“solid flows studied with direct numerical simulation. Chemical Engineering Science, 2014, 116, 9-22.	3.8	61
21	High-resolution simulation of gasâ€“solid suspension using macro-scale particle methods. Chemical Engineering Science, 2006, 61, 7096-7106.	3.8	59
22	Focusing on mesoscales: from the energy-minimization multiscale model to mesoscience. Current Opinion in Chemical Engineering, 2016, 13, 10-23.	7.8	57
23	Multi-scale HPC system for multi-scale discrete simulationâ€”Development and application of a supercomputer with 1 Petaflops peak performance in single precision. Particuology, 2009, 7, 332-335.	3.6	54
24	A discrete particle model for particleâ€“fluid flow with considerations of sub-grid structures. Chemical Engineering Science, 2007, 62, 2302-2308.	3.8	53
25	Application of the Discrete Approach to the Simulation of Size Segregation in Granular Chute Flow. Industrial & Engineering Chemistry Research, 2004, 43, 5521-5528.	3.7	52
26	Mesoâ€scale statistical properties of gasâ€“solid flowâ€”a direct numerical simulation (DNS) study. AICHE Journal, 2017, 63, 3-14.	3.6	52
27	Choosing structure-dependent drag coefficient in modeling gas-solid two-phase flow. Particuology: Science and Technology of Particles, 2003, 1, 38-41.	0.4	50
28	A simple variational criterion for turbulent flow in pipe. Chemical Engineering Science, 1999, 54, 1151-1154.	3.8	47
29	An approach for drag correction based on the local heterogeneity for gasâ€“solid flows. AICHE Journal, 2017, 63, 1203-1212.	3.6	47
30	Modeling of Regime Transition in Bubble Columns with Stability Condition. Industrial & Engineering Chemistry Research, 2009, 48, 290-301.	3.7	45
31	Simulation of heterogeneous structures and analysis of energy consumption in particleâ€“fluid systems with pseudo-particle modeling. Chemical Engineering Science, 2005, 60, 3091-3099.	3.8	44
32	Lattice Boltzmann based discrete simulation for gasâ€“solid fluidization. Chemical Engineering Science, 2013, 101, 228-239.	3.8	44
33	Efficient parallel implementation of the lattice Boltzmann method on large clusters of graphic processing units. Science Bulletin, 2012, 57, 707-715.	1.7	42
34	Long-time simulation of catalytic MTO reaction in a fluidized bed reactor with a coarse-grained discrete particle method â€” EMMS-DPM. Chemical Engineering Journal, 2020, 389, 124135.	12.7	42
35	Macro-scale pseudo-particle modeling for particle-fluid systems. Science Bulletin, 2001, 46, 1503-1507.	1.7	41
36	Mesoscience based on the EMMS principle of compromise in competition. Chemical Engineering Journal, 2018, 333, 327-335.	12.7	40

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37	Quantifying cluster dynamics to improve EMMS drag law and radial heterogeneity description in coupling with gas-solid two-fluid method. Chemical Engineering Journal, 2017, 307, 326-338.	12.7	38
38	Progress in coal chemical technologies of China. Reviews in Chemical Engineering, 2019, 36, 21-66.	4.4	37
39	A CFD-DEM-IBM method for Cartesian grid simulation of gas-solid flow in complex geometries. Chemical Engineering Journal, 2020, 389, 124343.	12.7	35
40	A computational fluid dynamics-discrete element-immersed boundary method for Cartesian grid simulation of heat transfer in compressible gasâ€“solid flow with complex geometries. Physics of Fluids, 2020, 32, .	4.0	32
41	Direct numerical simulation of particle clustering in gasâ€“solid flow with a macro-scale particle method. Chemical Engineering Science, 2009, 64, 43-51.	3.8	31
42	Scale and structure dependent drag in gasâ€“solid flows. AICHE Journal, 2020, 66, e16883.	3.6	30
43	Numerical investigation of granular flow similarity in rotating drums. Particuology, 2015, 22, 119-127.	3.6	29
44	Assessing the capability of continuum and discrete particle methods to simulate gas-solids flow using DNS predictions as a benchmark. Powder Technology, 2017, 321, 301-309.	4.2	27
45	Multiscale Discrete Supercomputing â€“ A Game Changer for Process Simulation?. Chemical Engineering and Technology, 2015, 38, 575-584.	1.5	26
46	Validation of EMMS-based drag model using lattice Boltzmann simulations on GPUs. Particuology, 2011, 9, 365-373.	3.6	25
47	A two-fluid smoothed particle hydrodynamics (TF-SPH) method for gasâ€“solid fluidization. Chemical Engineering Science, 2013, 99, 89-101.	3.8	24
48	Simulation of dynamic fluidâ€“solid interactions with an improved direct-forcing immersed boundary method. Particuology, 2015, 18, 22-34.	3.6	23
49	Simulation of the effect of coke deposition on the diffusion of methane in zeolite ZSM-5. Chemical Engineering Journal, 2017, 320, 458-467.	12.7	23
50	Geometrically exact discrete-element-method (DEM) simulation on the flow and mixing of sphero-cylinders in horizontal drums. Powder Technology, 2018, 336, 415-425.	4.2	23
51	Mesoscience-based virtual process engineering. Computers and Chemical Engineering, 2019, 126, 68-82.	3.8	23
52	CFD intensification of coal beneficiation process in gas-solid fluidized beds. Chemical Engineering and Processing: Process Intensification, 2020, 148, 107825.	3.6	22
53	Effect of particle clusters on mass transfer between gas and particles in gas-solid flows. Powder Technology, 2017, 319, 221-227.	4.2	19
54	Virtual process engineering on a threeâ€dimensional circulating fluidized bed with multiscale parallel computation. Journal of Advanced Manufacturing and Processing, 2019, 1, .	2.4	19

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55	Petascale molecular dynamics simulation of crystalline silicon on Tianhe-1A. International Journal of High Performance Computing Applications, 2013, 27, 307-317.	3.7	18
56	Engineering molecular dynamics simulation in chemical engineering. Chemical Engineering Science, 2015, 121, 200-216.	3.8	18
57	EMMS-based solid stress model for the multiphase particle-in-cell method. Powder Technology, 2020, 360, 1377-1387.	4.2	18
58	Euler-Lagrange simulation of dense gas-solid flow with local grid refinement. Powder Technology, 2022, 399, 117199.	4.2	18
59	Molecular dynamics simulation of macromolecules using graphics processing unit. Molecular Simulation, 2010, 36, 1131-1140.	2.0	16
60	Three-dimensional CFD simulation of tapered gas-solid risers by coupling the improved EMMS drag. Powder Technology, 2019, 352, 305-313.	4.2	16
61	Molecular dynamics simulation of complex multiphase flow on a computer cluster with GPUs. Science in China Series B: Chemistry, 2009, 52, 372-380.	0.8	15
62	GPU-accelerated molecular dynamics simulation of solid covalent crystals. Molecular Simulation, 2012, 38, 8-15.	2.0	15
63	Parallelizing of macro-scale pseudo-particle modeling for particle-fluid systems. Science in China Series B: Chemistry, 2004, 47, 434-442.	0.8	13
64	Refining Fuel Composition of RP-3 Chemical Surrogate Models by Reactive Molecular Dynamics and Machine Learning. Energy & Fuels, 2020, 34, 11381-11394.	5.1	12
65	Influence of gravity on narrow input forced drainage in 2D liquid foams. Science Bulletin, 2007, 52, 423-427.	1.7	11
66	SPH simulation of selective withdrawal from microcavity. Microfluidics and Nanofluidics, 2013, 15, 481-490.	2.2	11
67	Hard-sphere/pseudo-particle modelling (HS-PPM) for efficient and scalable molecular simulation of dilute gaseous flow and transport. Molecular Simulation, 2016, 42, 1171-1182.	2.0	11
68	General approach for discrete simulation of complex systems. Science Bulletin, 2002, 47, 1172-1175.	1.7	10
69	Concentration fluctuation due to reaction-diffusion coupling near an isolated active site on catalyst surfaces. Chemical Engineering Journal, 2019, 373, 744-754.	12.7	10
70	Pseudo-particle simulation of multi-scale heterogeneity in fluidization. Science Bulletin, 2003, 48, 634-636.	9.0	9
71	Numerical study on gasâ€“liquid nano-flows with pseudo-particle modeling and soft-particle molecular dynamics simulation. Microfluidics and Nanofluidics, 2008, 5, 639-653.	2.2	9
72	Application of the Mole-8.5 supercomputer: Probing the whole influenza virion at the atomic level. Science Bulletin, 2011, 56, 2114-2118.	1.7	9

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73	Statistical properties of pseudo-particle systems. Particuology, 2010, 8, 332-342.	3.6	8
74	Simulation Study on the Reaction-Diffusion Coupling in Simple Pore Structures. Langmuir, 2017, 33, 11804-11816.	3.5	8
75	Extremum characteristics of energy consumption in fluidization analyzed by using EMMS. Chemical Engineering Journal, 2018, 342, 386-394.	12.7	8
76	Pseudo-particle modeling for gas flow in microchannels. Science Bulletin, 2007, 52, 450-455.	1.7	7
77	Modeling the axial hydrodynamics of gasâ€“solid counter-current downers. Particuology, 2020, 50, 135-143.	3.6	7
78	PR-DNS verification of the stability condition in the EMMS model. Chemical Engineering Journal, 2020, 401, 125999.	12.7	7
79	Coupling DPM with DNS for dynamic interphase force evaluation. Chemical Engineering Science, 2021, 231, 116238.	3.8	7
80	Dynamic Intermediate Profiles of Zeolite Catalyzed Methanol to Olefins Revealed by Reactive Molecular Dynamics. Energy & Fuels, 2021, 35, 1677-1690.	5.1	7
81	Direct numerical simulation of wall-to-liquid heat transfer in turbulent particle-laden channel flow. Chemical Engineering and Processing: Process Intensification, 2020, 157, 108023.	3.6	6
82	Nonequilibrium characteristics and spatiotemporal long-range correlations in dense gas-solid suspensions. International Journal of Multiphase Flow, 2021, 142, 103731.	3.4	6
83	Discrete particle methods for engineering simulation: Reproducing mesoscale structures in multiphase systems. , 2022, 1, 69-79.		6
84	Numerical simulation of commercial MTO fluidized bed reactor with a coarse-grained discrete particle method â€” EMMSâ€“DPM. Powder Technology, 2022, 406, 117576.	4.2	6
85	A NOVEL MODE AND ITS VERIFICATION OF PARALLEL MOLECULAR DYNAMICS SIMULATION WITH THE COUPLING OF GPU AND CPU. International Journal of Modern Physics C, 2012, 23, 1250015.	1.7	5
86	A Study of the Soft-Sphere Model in Eulerian-Lagrangian Simulation of Gas-Liquid Flow. International Journal of Chemical Reactor Engineering, 2017, 15, .	1.1	4
87	Analysis of the energy-minimization multiscale model with multiobjective optimization. Particuology, 2020, 48, 109-115.	3.6	4
88	Theoretical analysis on the applicability of traditional SPH method. Science Bulletin, 2013, 58, 2970-2978.	1.7	3
89	Numerical simulation of stirred tanks using a hybrid immersed-boundary method. Chinese Journal of Chemical Engineering, 2016, 24, 1122-1134.	3.5	3
90	Record Atomistic Simulation of Crystalline Silicon: Bridging Microscale Structures and Macroscale Properties. Journal of Computational Chemistry, 2020, 41, 731-738.	3.3	3

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91	Fluid-particle heat transfer in static assemblies: Effect of particle shape. International Journal of Heat and Mass Transfer, 2021, 166, 120730.	4.8	3
92	Molecular Dynamics Simulations on the Entrance of Methane and p-Xylene into ZSM-5 Zeolite. Industrial & Engineering Chemistry Research, 2021, 60, 13358-13367.	3.7	3
93	Multiscale Modeling of Gasâ€“Solid Surface Interactions Under High-Temperature Gas Effect. Journal of Thermophysics and Heat Transfer, 2022, 36, 951-963.	1.6	3
94	Molecular dynamics simulation of a single polymer in hydrophilic nano-slits. Science Bulletin, 2008, 53, 2599-2606.	9.0	2
95	A study on periodic boundary condition in direct numerical simulation for gasâ€“solid flow. Chinese Journal of Chemical Engineering, 2020, 28, 236-241.	3.5	2
96	Atomistic simulation toward real-scale microprocessor circuits. Chemical Physics Letters, 2022, 791, 139389.	2.6	2
97	A multilevel-skin neighbor list algorithm for molecular dynamics simulation. Computer Physics Communications, 2018, 222, 59-69.	7.5	0
98	Concentration fluctuation caused by reaction-diffusion coupling near catalytic active sites. Chinese Journal of Chemical Engineering, 2022, , .	3.5	0