Zongyan Zhou

List of Publications by Year
in descending order

123 papers	7,210 citations	109321 35 h-index	56724 83 g-index
123 all docs	123 docs citations	123 times ranked	3066 citing authors

#	Article	IF	Citations
1	Discrete particle simulation of particulate systems: Theoretical developments. Chemical Engineering Science, 2007, 62, 3378-3396.	3.8	1,516
2	Discrete particle simulation of particulate systems: A review of major applications and findings. Chemical Engineering Science, 2008, 63, 5728-5770.	3.8	1,172
3	Discrete particle simulation of particle–fluid flow: model formulations and their applicability. Journal of Fluid Mechanics, 2010, 661, 482-510.	3.4	605
4	Particle scale study of heat transfer in packed and bubbling fluidized beds. AICHE Journal, 2009, 55, 868-884.	3.6	261
5	Discrete particle simulation of gas fluidization of ellipsoidal particles. Chemical Engineering Science, 2011, 66, 6128-6145.	3.8	198
6	Dynamic Simulation of the Packing of Ellipsoidal Particles. Industrial & Engineering Chemistry Research, 2011, 50, 9787-9798.	3.7	178
7	Flow characteristics and discharge rate of ellipsoidal particles in a flat bottom hopper. Powder Technology, 2014, 253, 70-79.	4.2	144
8	A new computational method for studying heat transfer in fluid bed reactors. Powder Technology, 2010, 197, 102-110.	4.2	120
9	Computational study of heat transfer in a bubbling fluidized bed with a horizontal tube. AICHE Journal, 2012, 58, 1422-1434.	3.6	113
10	A GPU-based DEM approach for modelling of particulate systems. Powder Technology, 2016, 301, 1172-1182.	4.2	111
11	Micromechanical modeling and analysis of different flow regimes in gas fluidization. Chemical Engineering Science, 2012, 84, 449-468.	3.8	106
12	Discrete Particle Simulation of Solid Flow in a Model Blast Furnace. ISIJ International, 2005, 45, 1828-1837.	1.4	93
13	Discrete particle simulation of gas–solid flow in a blast furnace. Computers and Chemical Engineering, 2008, 32, 1760-1772.	3.8	85
14	Lattice–Boltzmann simulation of fluid flow through packed beds of uniform ellipsoids. Powder Technology, 2015, 285, 146-156.	4.2	81
15	CFD-DEM simulation of raceway formation in an ironmaking blast furnace. Powder Technology, 2017, 314, 542-549.	4.2	80
16	Particle scale study of heat transfer in packed and fluidized beds of ellipsoidal particles. Chemical Engineering Science, 2016, 144, 201-215.	3.8	79
17	Gas–solid flow in an ironmaking blast furnace-II: Discrete particle simulation. Powder Technology, 2011, 208, 72-85.	4.2	78
18	Contact forces between viscoelastic ellipsoidal particles. Powder Technology, 2013, 248, 25-33.	4.2	75

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19	DEM simulation on the packing of fine ellipsoids. Chemical Engineering Science, 2016, 156, 64-76.	3.8	72
20	CFD–DEM modeling of gas fluidization of fine ellipsoidal particles. AICHE Journal, 2016, 62, 62-77.	3.6	67
21	Angle of repose and stress distribution of sandpiles formed with ellipsoidal particles. Granular Matter, 2014, 16, 695-709.	2.2	66
22	Adhesion effects on spreading of metal powders in selective laser melting. Powder Technology, 2020, 363, 602-610.	4.2	65
23	Effect of particle shape and size on effective thermal conductivity of packed beds. Powder Technology, 2017, 311, 157-166.	4.2	64
24	Gas–solid flow and heat transfer in fluidized beds with tubes: Effects of material properties and tube array settings. Powder Technology, 2016, 296, 59-71.	4.2	58
25	Discrete particle simulation of solid flow in a three-dimensional blast furnace sector model. Chemical Engineering Journal, 2015, 278, 339-352.	12.7	57
26	Effects of spreader geometry on powder spreading process in powder bed additive manufacturing. Powder Technology, 2021, 384, 211-222.	4.2	57
27	Numerical Investigation of the Transient Multiphase Flow in an Ironmaking Blast Furnace. ISIJ International, 2010, 50, 515-523.	1.4	56
28	Gas–solid flow in an ironmaking blast furnace – I: Physical modelling. Powder Technology, 2011, 208, 86-97.	4.2	55
29	Computational Study of the Effects of Material Properties on Heat Transfer in Gas Fluidization. Industrial & Engineering Chemistry Research, 2012, 51, 11572-11586.	3.7	53
30	Particle scale studies of heat transfer in a moving bed. Powder Technology, 2015, 281, 99-111.	4.2	53
31	Influence of particle shape on mixing rate in rotating drums based on super-quadric DEM simulations. Advanced Powder Technology, 2020, 31, 3540-3550.	4.1	52
32	Particle shape-induced radial segregation of binary mixtures in a rotating drum. Powder Technology, 2019, 341, 157-166.	4.2	48
33	Periodic Boundary Conditions for Discrete Element Method Simulation of Particle Flow in Cylindrical Vessels. Industrial & Engineering Chemistry Research, 2014, 53, 8245-8256.	3.7	44
34	Numerical Investigation of Burden Distribution in a Blast Furnace. Steel Research International, 2015, 86, 651-661.	1.8	44
35	Particle shape effect on bubble dynamics in central air jet pseudo-2D fluidized beds: A CFD-DEM study. Chemical Engineering Science, 2019, 201, 448-466.	3.8	44
36	Numerical simulation of particle motion characteristics in quantitative seed feeding system. Powder Technology, 2020, 367, 643-658.	4.2	37

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37	Influence of satellite and agglomeration of powder on the processability of AlSi10Mg powder in Laser Powder Bed Fusion. Journal of Materials Research and Technology, 2021, 11, 2059-2073.	5.8	35
38	DEM study of particle motion in novel high-speed seed metering device. Advanced Powder Technology, 2021, 32, 1438-1449.	4.1	35
39	Numerical simulation of the liquid-induced erosion in a weakly bonded sand assembly. Powder Technology, 2011, 211, 237-249.	4.2	32
40	Process optimization of metallurgical dust recycling by direct reduction in rotary hearth furnace. Powder Technology, 2018, 326, 101-113.	4.2	32
41	A three-phase model for simulation of heat transfer and melt pool behaviour in laser powder bed fusion process. Powder Technology, 2021, 381, 298-312.	4.2	32
42	Particle scale simulation of softeningâ€"melting behaviour of multiple layers of particles in a blast furnace cohesive zone. Powder Technology, 2015, 279, 134-145.	4.2	31
43	Linking discrete particle simulation to continuum process modelling for granular matter: Theory and application. Particuology, 2011, 9, 342-357.	3.6	29
44	Interparticle force analysis on the packing of fine ellipsoids. Powder Technology, 2017, 320, 610-624.	4.2	28
45	Deformation of 3D printed agglomerates: Multiscale experimental tests and DEM simulation. Chemical Engineering Science, 2020, 217, 115526.	3.8	28
46	A New Approach for Studying Softening and Melting Behavior of Particles in a Blast Furnace Cohesive Zone. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2015, 46, 977-992.	2.1	26
47	Flow regimes of cohesionless ellipsoidal particles in a rotating drum. Powder Technology, 2019, 354, 174-187.	4.2	26
48	Bubble dynamics in bubbling fluidized beds of ellipsoidal particles. AICHE Journal, 2019, 65, e16736.	3.6	25
49	Micromechanical analysis of flow behaviour of fine ellipsoids in gas fluidization. Chemical Engineering Science, 2017, 163, 11-26.	3.8	24
50	Model A vs. Model B in the modelling of particle-fluid flow. Powder Technology, 2018, 329, 47-54.	4.2	24
51	A Discrete Element Method Study of Monodisperse Mixing of Ellipsoidal Particles in a Rotating Drum. Industrial & Engineering Chemistry Research, 2020, 59, 12458-12470.	3.7	24
52	Segregation of granular binary mixtures with large particle size ratios during hopper discharging process. Powder Technology, 2020, 361, 435-445.	4.2	23
53	Size-induced segregation of granular materials during filling a conical hopper. Powder Technology, 2018, 340, 331-343.	4.2	22
54	Particle scale modelling of mixing of ellipsoids and spheres in gas-fluidized beds by a modified drag correlation. Powder Technology, 2019, 343, 619-628.	4.2	22

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55	Particle scale modelling of melt pool dynamics and pore formation in selective laser melting additive manufacturing. Powder Technology, 2022, 397, 117012.	4.2	22
56	How to generate valid local quantities of particle–fluid flows for establishing constitutive relations. AICHE Journal, 2019, 65, e16690.	3.6	21
57	Particle scale modelling of bubble properties in central air jet gas-solid fluidized beds. Powder Technology, 2018, 339, 70-80.	4.2	20
58	Discrete particle simulation of solid flow in a melter-gasifier in smelting reduction process. Powder Technology, 2017, 314, 641-648.	4.2	19
59	DEM analysis of compression breakage of 3D printed agglomerates with different structures. Powder Technology, 2019, 356, 1045-1058.	4.2	19
60	DEM simulation of the local ordering of tetrahedral granular matter. Soft Matter, 2019, 15, 2260-2268.	2.7	19
61	Effect of van der Waals force on bubble dynamics in bubbling fluidized beds of ellipsoidal particles. Chemical Engineering Science, 2020, 212, 115343.	3.8	19
62	A simplified mathematical model for gas?solid flow in a blast furnace. Progress in Computational Fluid Dynamics, 2004, 4, 39.	0.2	18
63	Experimental study of the deformation and breakage of 3D printed agglomerates: Effects of packing density and inter-particle bond strength. Powder Technology, 2018, 340, 299-310.	4.2	18
64	CFD-DEM modelling of mixing of granular materials in multiple jets fluidized beds. Powder Technology, 2020, 361, 315-325.	4.2	18
65	The role of geometric constraints in random packing of non-spherical particles. Europhysics Letters, 2010, 92, 68005.	2.0	16
66	Powder deposition mechanism during powder spreading with different spreader geometries in powder bed fusion additive manufacturing. Powder Technology, 2022, 395, 802-810.	4.2	16
67	Modelling of keyhole dynamics and melt pool flow in laser powder bed fusion process. Powder Technology, 2022, 400, 117262.	4.2	16
68	Simulation of the Flow and Segregation of Particle Mixtures in Liquid Fluidization. , 2009, , .		15
69	Stress fields of solid flow in a model blast furnace. Granular Matter, 2009, 11, 269-280.	2.2	15
70	Radial segregation of binary-sized ellipsoids in a rotating drum. Powder Technology, 2019, 357, 322-330.	4.2	14
71	Orientation of spheroidal particles in single jet bubbling fluidized beds. Powder Technology, 2020, 361, 363-373.	4.2	14
72	Particle shape-induced axial segregation of binary mixtures of spheres and ellipsoids in a rotating drum. Chemical Engineering Science, 2021, 235, 116491.	3.8	14

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73	Radial segregation of a gaussian-dispersed mixture of superquadric particles in a horizontal rotating drum. Powder Technology, 2021, 394, 813-824.	4.2	14
74	Effect of Contact Resistance on Bulk Resistivity of Dry Coke Beds. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2009, 40, 388-396.	2.1	13
75	Equivalent packing size of spheroidal particles: A microscopic test. Powder Technology, 2018, 333, 286-292.	4.2	13
76	The demagnetization factor for randomly packed spheroidal particles. Journal of Magnetism and Magnetic Materials, 2019, 476, 417-422.	2.3	13
77	Comparative investigation on the reduction behavior of blast furnace dust particles during in-flight process in hydrogen-rich and carbon monoxide atmospheres. Powder Technology, 2020, 366, 709-721.	4.2	13
78	CFD-DEM modelling of mixing and segregation of binary mixtures of ellipsoidal particles in liquid fluidizations. Journal of Hydrodynamics, 2019, 31, 1190-1203.	3.2	12
79	Experimental and numerical investigation on the packing of binary mixtures of spheres and ellipsoids. Powder Technology, 2020, 360, 1210-1219.	4.2	11
80	Averaging method of particulate systems and its application to particle-fluid flow in a fluidized bed. Science Bulletin, 2009, 54, 4309-4317.	9.0	10
81	Particle velocity distribution function around a single bubble in gas-solid fluidized beds. Powder Technology, 2020, 361, 33-44.	4.2	10
82	An experimental study of packing of ellipsoids under vibrations. Powder Technology, 2020, 361, 45-51.	4.2	10
83	Flow and wall stress analysis of granular materials around blocks attached to a wall. Powder Technology, 2018, 330, 431-444.	4.2	9
84	Structure analysis on the packing of ellipsoids under one-dimensional vibration and periodic boundary conditions. Powder Technology, 2018, 335, 327-333.	4.2	9
85	Investigation of causes of layer inversion and prediction of inversion velocity in liquid fluidizations of binary particle mixtures. Powder Technology, 2019, 342, 418-432.	4.2	9
86	Experimental and numerical studies of the gas-molten reduction behavior of blast furnace dust particles during in-flight process. Powder Technology, 2020, 361, 226-237.	4.2	9
87	Wall stress analysis in an unsteady hopper flow with ellipsoidal particles. Powder Technology, 2020, 361, 1-9.	4.2	9
88	Numerical studies of mixing of ellipsoidal particles in a bladed mixer. Powder Technology, 2022, 398, 117065.	4.2	9
89	Melt pool dynamics and pores formation in multi-track studies in laser powder bed fusion process. Powder Technology, 2022, 405, 117533.	4.2	9
90	Numerical studies of melt pool and gas bubble dynamics in laser powder bed fusion process. Additive Manufacturing, 2022, 56, 102913.	3.0	9

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91	Segregation of binary mixtures of spheres and ellipsoids. AIP Conference Proceedings, 2013, , .	0.4	8
92	Transverse mixing of ellipsoidal particles in a rotating drum. EPJ Web of Conferences, 2017, 140, 06018.	0.3	8
93	DEM Simulation of Particle Stratification and Segregation in Stockpile Formation. EPJ Web of Conferences, 2017, 140, 15018.	0.3	8
94	Evaluation of reduction behavior of blast furnace dust particles during in-flight process with experiment aided mathematical modeling. Applied Mathematical Modelling, 2019, 75, 535-552.	4.2	8
95	Discrete particle simulation for mixing of granular materials in ribbon mixers: A scale-up study. Powder Technology, 2022, 400, 117222.	4.2	8
96	Particle scale modelling of solid flow characteristics in liquid fluidizations of ellipsoidal particles. Powder Technology, 2018, 338, 677-691.	4.2	7
97	Micromechanical analysis of bubbles formed in fluidized beds operated with a continuous single jet. Powder Technology, 2019, 357, 398-407.	4.2	7
98	Scaling up studies for mixing of granular materials in rotating drums. Powder Technology, 2022, 403, 117408.	4.2	7
99	Numerical simulation of fuel layered distribution iron ore sintering technology. Ironmaking and Steelmaking, 2022, 49, 83-100.	2.1	6
100	DEM study of particle segregation in the throat region of a blast furnace. Powder Technology, 2022, 407, 117660.	4.2	6
101	A CFD-DEM study of single bubble formation in gas fluidization of spherical and non-spherical particles. EPJ Web of Conferences, 2017, 140, 15026.	0.3	5
102	Size segregation of granular materials during Paul-Wurth hopper charging and discharging process. Powder Technology, 2021, 378, 497-509.	4.2	5
103	Discrete modelling of the packing of ellipsoidal particles. , 2013, , .		4
104	Particle Scale Study of Heat Transfer in Packed and Fluidized Beds. Advances in Chemical Engineering, 2015, 46, 193-243.	0.9	4
105	Statistical analysis of monodispersed coarse particle motion in a gas-fluidized bed. Powder Technology, 2020, 363, 107-111.	4.2	4
106	Influence of baffles on mixing and heat transfer characteristics in an internally heated rotating drum. Powder Technology, 2022, 398, 117129.	4.2	4
107	Computer simulation of the packing of nanoparticles. Powder Technology, 2022, 401, 117317.	4.2	4
108	Numerical simulation of the interaction forces between turbine meter and particles in a standpipe. Granular Matter, 2004, 5, 193-199.	2.2	3

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109	Flow and force analysis on the formation of expanded beds in gas fluidization of fine ellipsoids. Powder Technology, 2019, 357, 291-304.	4.2	3
110	Effect of particle shape on bubble dynamics in bubbling fluidized bed. EPJ Web of Conferences, 2021, 249, 06012.	0.3	3
111	Dynamic analysis of poured packing process of ellipsoidal particles. Powder Technology, 2021, 385, 444-454.	4.2	3
112	Investigation of Heat Transfer in Bubbling Fluidization with an Immersed Tube. , 2010, , .		2
113	Discrete element modeling of gas fluidization of fine ellipsoidal particles. AIP Conference Proceedings, 2013, , .	0.4	1
114	Contact analysis of different flow regimes in gas fluidization. , 2013, , .		1
115	Impaction of particle streams on a granular bed. , 2013, , .		1
116	Stress distribution in conical sandpiles formed with ellipsoidal particles. EPJ Web of Conferences, 2017, 140, 06023.	0.3	1
117	Computational study of heat transfer in gas fluidization. , 2013, , .		0
118	Microscopic analysis of Hopper flow with ellipsoidal particles. , 2013, , .		0
119	DEM study of granular flow around blocks attached to inclined walls. EPJ Web of Conferences, 2017, 140, 03075.	0.3	0
120	Vibration induced segregation of single large particles. EPJ Web of Conferences, 2021, 249, 14006.	0.3	0
121	Investigation of laser-powder interaction in laser powder bed fusion process in additive manufacturing. EPJ Web of Conferences, 2021, 249, 12002.	0.3	0
122	An improved potential flow model for funnel flow prediction in a central discharging packed bed. Granular Matter, 2021, 23, 1.	2.2	0
123	Preface for the virtual special issue: Computational particle technology. Powder Technology, 2021, 397, 116151-116151.	4.2	0