Qi Dai

List of Publications by Year in descending order

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120	1,565	361413	414414
papers	citations	20 h-index	32 g-index

122	122	122	1025
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Particleâ€resolved direct numerical simulation of gasâ€“solid dynamics in experimental fluidized beds. AICHE Journal, 2016, 62, 1917-1932.	3.6	74
2	Particleâ€scale investigation of the solid dispersion and residence properties in a 3â€D spoutâ€fluid bed. AICHE Journal, 2014, 60, 2788-2804.	3.6	65
3	Computational Fluid Dynamics-Discrete Element Method Investigation of Solid Mixing Characteristics in an Internally Circulating Fluidized Bed. Industrial & Engineering Chemistry Research, 2013, 52, 7556-7568.	3.7	57
4	Numerical simulation of two-phase non-Newtonian blood flow with fluid-structure interaction in aortic dissection. Computer Methods in Biomechanics and Biomedical Engineering, 2019, 22, 620-630.	1.6	55
5	Estimating biomass major chemical constituents from ultimate analysis using a random forest model. Bioresource Technology, 2019, 288, 121541.	9.6	49
6	Multi-objective optimization of the coal combustion performance with artificial neural networks and genetic algorithms. International Journal of Energy Research, 2005, 29, 499-510.	4.5	45
7	Evaluation of flamelet/progress variable model for laminar pulverized coal combustion. Physics of Fluids, 2017, 29, .	4.0	45
8	Particle Dispersion and Circulation Patterns in a 3D Spouted Bed with or without Draft Tube. Industrial & Engineering Chemistry Research, 2013, 52, 9620-9631.	3.7	44
9	Large eddy simulation of piloted pulverised coal combustion using extended flamelet/progress variable model. Combustion Theory and Modelling, 2017, 21, 925-953.	1.9	44
10	Direct Numerical Simulation of Subsonic Round Turbulent Jet. Flow, Turbulence and Combustion, 2010, 84, 669-686.	2.6	40
11	Modulation of turbulence by dispersed solid particles in a spatially developing flat-plate boundary layer. Journal of Fluid Mechanics, 2016, 802, 359-394.	3.4	39
12	DNS analysis of a three-dimensional supersonic turbulent lifted jet flame. Fuel, 2013, 108, 691-698.	6.4	35
13	Direct numerical simulation of a particle-laden low Reynolds number turbulent round jet. International Journal of Multiphase Flow, 2011, 37, 539-554.	3.4	33
14	Direct numerical simulation of a near-field particle-laden plane turbulent jet. Physical Review E, 2004, 70, 026303.	2.1	31
15	Direct numerical simulation of heat transfer in a spatially developing turbulent boundary layer. Physics of Fluids, 2016, 28, .	4.0	26
16	Direct numerical simulation of turbulenceÂmodulation by particles in compressibleÂisotropic turbulence. Journal of Fluid Mechanics, 2017, 832, 438-482.	3.4	26
17	Numerical Simulation of Particle Dispersion in the Wake of a Circular Cylinder. Aerosol Science and Technology, 2009, 43, 174-187.	3.1	24
18	A Primary Computational Fluid Dynamics Study of Pre- and Post-TEVAR With Intentional Left Subclavian Artery Coverage in a Type B Aortic Dissection. Journal of Biomechanical Engineering, 2019, 141, .	1.3	23

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19	Direct numerical simulation of particle dispersion in a three-dimensional spatially developing compressible mixing layer. Physics of Fluids, 2018, 30, .	4.0	22
20	Effects of tip clearance size on vortical structures and turbulence statistics in tip-leakage flows: A direct numerical simulation study. Physics of Fluids, 2021, 33, .	4.0	22
21	Modeling of Combustion Process in 600 MW Utility Boiler Using Comprehensive Models and Its Experimental Validation. Energy & Fuels, 1999, 13, 1051-1057.	5.1	21
22	Modulation on coherent vortex structures by dispersed solid particles in a three-dimensional mixing layer. Physical Review E, 2003, 68, 036309.	2.1	21
23	Sheet, ligament and droplet formation in swirling primary atomization. AIP Advances, 2018, 8, .	1.3	21
24	Three-Dimensional Modeling of Gasâ€“Solid Motion in a Slot-Rectangular Spouted Bed with the Parallel Framework of the Computational Fluid Dynamicsâ€“Discrete Element Method Coupling Approach. Industrial & Engineering Chemistry Research, 2013, 52, 13222-13231.	3.7	20
25	Biomechanical implications of the fenestration structure after thoracic endovascular aortic repair. Journal of Biomechanics, 2020, 99, 109478.	2.1	20
26	Direct simulation of particle dispersion in a three-dimensional temporal mixing layer. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2001, 457, 2151-2166.	2.1	19
27	Direct numerical simulation on supersonic turbulent reacting and non-reacting spray jet in heated coflow. Fuel, 2016, 164, 267-276.	6.4	19
28	Fully resolved simulations of single char particle combustion using a ghostâ€cell immersed boundary method. AICHE Journal, 2018, 64, 2851-2863.	3.6	19
29	An improved movingâ€leastâ€squares reconstruction for immersed boundary method. International Journal for Numerical Methods in Engineering, 2015, 104, 789-804.	2.8	18
30	Eulerianâ€“Lagrangian direct numerical simulation of preferential accumulation of inertial particles in a compressible turbulent boundary layer. Journal of Fluid Mechanics, 2020, 903, .	3.4	18
31	Fluidâ€structure interaction: Insights into biomechanical implications of endograft after thoracic endovascular aortic repair. Computers in Biology and Medicine, 2021, 138, 104882.	7.0	18
32	Direct numerical simulation of a three-dimensional spatially evolving compressible mixing layer laden with particles. II. Turbulence anisotropy and growth rate. Physics of Fluids, 2019, 31, 083303.	4.0	17
33	Drag enhancement and turbulence attenuation by small solid particles in an unstably stratified turbulent boundary layer. Physics of Fluids, 2019, 31, 063303.	4.0	16
34	Predictive models for flame evolution using machine learning: A priori assessment in turbulent flames without and with mean shear. Physics of Fluids, 2021, 33, .	4.0	16
35	Direct numerical simulation of turbulent boundary layer with fully resolved particles at low volume fraction. Physics of Fluids, 2017, 29, 053301.	4.0	15
36	Direct numerical simulation of turbulent flow and heat transfer in a spatially developing turbulent boundary layer laden with particles. Journal of Fluid Mechanics, 2018, 845, 417-461.	3.4	15

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37	Large eddy simulation of coherent structure of impinging jet. Journal of Thermal Science, 2005, 14, 150-155.	1.9	14
38	Immersed boundary method for multiphase transport phenomena. Reviews in Chemical Engineering, 2022, 38, 363-405.	4.4	14
39	Numerical Simulation of CO Methanation for the Production of Synthetic Natural Gas in a Fluidized Bed Reactor. Energy & Fuels, 2017, 31, 10267-10273.	5.1	13
40	A lower-dimensional approximation model of turbulent flame stretch and its related quantities with machine learning approaches. Physics of Fluids, 2020, 32, .	4.0	13
41	Component quantification of aortic blood flow energy loss using computational fluid-structure interaction hemodynamics. Computer Methods and Programs in Biomedicine, 2022, 221, 106826.	4.7	13
42	Investigation of supersonic turbulent flows over a sphere by fully resolved direct numerical simulation. Physics of Fluids, 2019, 31, .	4.0	12
43	Direct numerical simulation of particle-laden turbulent boundary layers without and with combustion. Physics of Fluids, 2020, 32, 105108.	4.0	12
44	CFDâ€ĐEM simulation of the spoutâ€“annulus interaction in a 3D spouted bed with a conical base. Canadian Journal of Chemical Engineering, 2014, 92, 1130-1138.	1.7	11
45	CFD simulations of flow and dust dispersion in a realistic urban area. Engineering Applications of Computational Fluid Mechanics, 2016, 10, 228-242.	3.1	11
46	Hemodynamic consequences of TEVAR with in situ double fenestrations of left carotid artery and left subclavian artery. Medical Engineering and Physics, 2020, 76, 32-39.	1.7	11
47	2-D and 3-D measurements of flame stretch and turbulenceâ€“flame interactions in turbulent premixed flames using DNS. Journal of Fluid Mechanics, 2021, 913, .	3.4	11
48	NUMERICAL PREDICTION OF TUBE ROW EROSION BY COAL ASH IMPACTION. Chemical Engineering Communications, 1990, 95, 75-88.	2.6	10
49	Numerical Simulation and Experimental Study of Two-Phase Flow in a Vertical Pipe. Aerosol Science and Technology, 1997, 27, 281-292.	3.1	10
50	Effects of in situ fenestration stent-graft of left subclavian artery on the hemodynamics after thoracic endovascular aortic repair. Vascular, 2019, 27, 369-377.	0.9	10
51	Particle-Scale Simulation of Solid Mixing Characteristics of Binary Particles in a Bubbling Fluidized Bed. Energies, 2020, 13, 4442.	3.1	10
52	Direct numerical simulation of hydrogen turbulent lifted jet flame in a vitiated coflow. Science Bulletin, 2007, 52, 2147-2156.	1.7	9
53	Numerical study of the effects of particles on the near wake around a circular cylinder. International Journal of Computational Fluid Dynamics, 2015, 29, 150-160.	1.2	9
54	Buoyancy effects in an unstably stratified turbulent boundary layer flow. Physics of Fluids, 2017, 29, 015104.	4.0	9

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55	Fully resolved simulation of a shockwave interacting with randomly clustered particles via a ghost-cell immersed boundary method. Physics of Fluids, 2020, 32, 066105.	4.0	9
56	Coupled Computational Fluid Dynamics and Discrete Element Method Study of the Solid Dispersion Behavior in an Internally Circulating Fluidized Bed. Industrial & Engineering Chemistry Research, 2014, 53, 6759-6772.	3.7	8
57	Large-eddy simulation and experimental study on the turbulent wake flow characteristics of a two-bladed wind turbine. Science China Technological Sciences, 2017, 60, 1861-1869.	4.0	8
58	Numerical analysis on shock-cylinder interaction using immersed boundary method. Science China Technological Sciences, 2017, 60, 1423-1432.	4.0	8
59	An a priori study of different tabulation methods for turbulent pulverised coal combustion. Combustion Theory and Modelling, 2018, 22, 505-530.	1.9	8
60	Direct numerical simulations of turbulent non-premixed flames: Assessment of turbulence within swirling flows. Physics of Fluids, 2021, 33, 015112.	4.0	8
61	An integrated fluid-chemical model toward modeling the thrombus formation in an idealized model of aortic dissection. Computers in Biology and Medicine, 2021, 136, 104709.	7.0	8
62	Mathematical modeling of shear-activated targeted nanoparticle drug delivery for the treatment of aortic diseases. Biomechanics and Modeling in Mechanobiology, 2022, 21, 221-230.	2.8	8
63	Hemodynamic effects of stent-graft introducer sheath during thoracic endovascular aortic repair. Biomechanics and Modeling in Mechanobiology, 2022, 21, 419-431.	2.8	8
64	Experimental and Kinetic Studies on Tobacco Pyrolysis under a Wide Range of Heating Rates. ACS Omega, 2022, 7, 1420-1427.	3.5	8
65	Evaluation of the spatiotemporal unsteady characteristics of the tip leakage vortex based on a direct numerical simulation database. Physics of Fluids, 2022, 34, .	4.0	8
66	Parallel computing strategy for the simulation of particulate flows with immersed boundary method. Science in China Series D: Earth Sciences, 2008, 51, 1169-1176.	0.9	7
67	LES/FDF simulation of particle dispersion in a gas-particle two phase plane wake flow. Science in China Series D: Earth Sciences, 2009, 52, 2943-2951.	0.9	7
68	Direct numerical simulation of confined swirling jets. International Journal of Computational Fluid Dynamics, 2014, 28, 76-88.	1.2	7
69	Extended HPMâ€“DEM coupled simulation of drainage of square particles in a 2D hopper flow. AICHE Journal, 2016, 62, 1863-1876.	3.6	7
70	Effect of Operating Parameters on Gasâ€Solid Hydrodynamics and Heat Transfer in a Spouted Bed. Chemical Engineering and Technology, 2019, 42, 2310-2320.	1.5	7
71	Direct numerical simulation of a three-dimensional spatially evolving compressible mixing layer laden with particles. I. Turbulent structures and asymmetric properties. Physics of Fluids, 2019, 31, 083302.	4.0	7
72	Large Eddy Simulation of the Layout Effects on Wind Farm Performance Coupling With Wind Turbine Control Strategies. Journal of Energy Resources Technology, Transactions of the ASME, 2022, 144, .	2.3	7

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73	PARTICLE CONCENTRATION AND SIZE MEASUREMENTS IN TWO-PHASE TURBULENT COAXIAL JETS. Chemical Engineering Communications, 1997, 156, 115-129.	2.6	6
74	Transitional phenomenon of particle dispersion in gas-solid two-phase flows. Science Bulletin, 2007, 52, 408-417.	1.7	6
75	Numerical investigation of the effect of sub-grid scale eddies on the dispersed particles by LES/FDF model. Science China Technological Sciences, 2010, 53, 1304-1308.	4.0	6
76	Population Balance Equation of Cohesive Particle Flow in a Circulating Fluidized Bed. Chemical Engineering and Technology, 2017, 40, 1544-1551.	1.5	6
77	Flame edge structures and dynamics in planar turbulent non-premixed inclined slot-jet flames impinging at a wall. Journal of Fluid Mechanics, 2021, 920, .	3.4	6
78	NUMERICAL MODELING AND EXPERIMENTAL STUDY OF PARTICLE-LADEN COAXIAL JETS. Chemical Engineering Communications, 1989, 86, 55-71.	2.6	5
79	Numerical Investigation of a Syngas-Fueled Chemical Looping Combustion System. Energy & Fuels, 2020, 34, 12800-12809.	5.1	5
80	Fluctuations of thermodynamic variables in compressible isotropic turbulence laden with inertial particles. Physics of Fluids, 2021, 33, .	4.0	5
81	Molecular Dynamic Study of a Pyrolysis Process of a Coal Particle in Different Environments. Journal of Energy Resources Technology, Transactions of the ASME, 2020, 142, .	2.3	5
82	NUMERICAL CALCULATIONS OF TUBE BUNDLES EROSION BY TURBULENT PARTICLE-LADEN GAS FLOWS. Chemical Engineering Communications, 1991, 104, 209-225.	2.6	4
83	On coherent structures in a three-dimensional transitional plane jet. Science in China Series D: Earth Sciences, 2008, 51, 386-396.	0.9	4
84	Numerical prediction of indoor airborne particle concentration in a test chamber with drift-flux model. Journal of Thermal Science, 2011, 20, 161-166.	1.9	4
85	A Method of Tracing Particles in Irregular Unstructured Grid System. Journal of Computational Multiphase Flows, 2013, 5, 231-237.	0.8	4
86	LBE simulation of coherent vortex motion and heat transfer in jets of cross flow. International Journal of Computational Fluid Dynamics, 2014, 28, 383-392.	1.2	4
87	Direct numerical simulation of a supercritical hydrothermal flame in a turbulent jet. Journal of Fluid Mechanics, 2021, 922, .	3.4	4
88	A Priori Modeling of NO Formation with Principal Component Analysis and the Convolutional Neural Network in the Context of Large Eddy Simulation. Energy & Fuels, 2021, 35, 20272-20283.	5.1	4
89	Effects of heat release on turbulence characteristics in a three-dimensional spatially developing supersonic droplet-laden mixing layer. Fuel, 2021, 301, 121030.	6.4	4
90	Computational Prediction of Thrombosis in Food and Drug Administrationâ€™s Benchmark Nozzle. Frontiers in Physiology, 2022, 13, 867613.	2.8	4

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91	Laser Diffraction Method Measurements of Particle-Gas Dispersion Effects in a Coaxial Jet. Aerosol Science and Technology, 1997, 26, 447-458.	3.1	3
92	PREDICTION OF DENSE TURBULENT PARTICLE LADEN RISER FLOW WITH A EULERIAN AND LAGRANGIAN COMBINED MODEL. Chemical Engineering Communications, 2000, 179, 201-218.	2.6	3
93	Direct numerical simulation on the particle flow in the wake of circular cylinder*. Progress in Natural Science: Materials International, 2003, 13, 379-384.	4.4	3
94	Visualization of vortex shedding and particle dispersion in two-phase plate wake. Journal of Visualization, 2005, 8, 3-3.	1.8	3
95	Analysis and flamelet modelling for laminar pulverised coal combustion considering the wall effect. Combustion Theory and Modelling, 2019, 23, 353-375.	1.9	3
96	Large eddy simulation of turbulent partially premixed flames with inhomogeneous inlets using the dynamic second-order moment closure model. Combustion Theory and Modelling, 2020, 24, 705-724.	1.9	3
97	An experimental investigation of a new method for protecting bends from erosion in gas-particle flows. Journal of Thermal Science, 2000, 9, 158-162.	1.9	2
98	Transient Growth and Receptivity of Steady Disturbances to Irregular Rough Walls. Journal of Fluids Engineering, Transactions of the ASME, 2017, 139, .	1.5	2
99	Dual-Scale Flamelet/Progress Variable Approach for Prediction of Polycyclic Aromatic Hydrocarbons Formation under the Condition of Coal Combustion. Energy & Fuels, 2020, 34, 10010-10018.	5.1	2
100	Effect of wall boundary conditions on the nonlinear response of turbulent premixed flames. AIP Advances, 2021, 11, .	1.3	2
101	Three-Dimensional Simulation of the Methanation Process in a Circulating Fluidized-Bed Reactor. Industrial & Engineering Chemistry Research, 2021, 60, 16417-16429.	3.7	2
102	Numerical Simulation of a 10 kW Gas-Fueled Chemical Looping Combustion Unit. Energies, 2022, 15, 1973.	3.1	2
103	NUMERICAL SIMULATION OF THE EFFECT OF VELOCITY RATIO ON THE FLOW CHARACTERISTICS IN A COAXIAL JET. Chemical Engineering Communications, 1996, 147, 85-98.	2.6	1
104	Numerical study of solid particle erosion on the tubes near the side walls in a duct with flow past an aligned tube bank. AICHE Journal, 2010, 56, 66-78.	3.6	1
105	Preferential frequency and size effect of the Brownian force acting on a nanoparticle. Journal of Fluid Mechanics, 2017, 828, 648-660.	3.4	1
106	3D Unsteady Simulation of a Scale-Up Methanation Reactor with Interconnected Cooling Unit. Energies, 2021, 14, 7095.	3.1	1
107	Three-Dimensional Computation Fluid Dynamics Simulation of CO Methanation Reactor with Immersed Tubes. Energies, 2022, 15, 321.	3.1	1
108	NUMERICAL PREDICTION OF A RECTANGULAR TURBULENT JET IN A CROSS FLOW. Chemical Engineering Communications, 1992, 117, 293-306.	2.6	0

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109	PREDICTION OF A GAS-PARTICLE TURBULENT JET WITH THE FLUCTUATION-SPECTRUM-RANDOM-TRAJECTORY MODEL. Chemical Engineering Communications, 1995, 135, 101-112.	2.6	0
110	On a eulerian and lagrangian combined model in dense particleâ€laden riser flow. Canadian Journal of Chemical Engineering, 1999, 77, 1113-1120.	1.7	0
111	Numerical simulation of swirling gas-solid two phase flow through a pipe expansion. Journal of Thermal Science, 2001, 10, 38-45.	1.9	0
112	Study on fluid flow characteristics in different load cases in tangentially fired furnaces. Chemical Engineering Communications, 2003, 190, 1348-1370.	2.6	0
113	Flow visualization of the turbulent jet by Direct numerical simulation. Journal of Visualization, 2004, 7, 110-110.	1.8	0
114	Coherent structures of the particle-laden turbulent round jet at different reynolds number. Journal of Visualization, 2004, 7, 177-177.	1.8	0
115	DNS of the turbulence modulation by dispersed particles in compressible spatially developing two-phase jets. Progress in Natural Science: Materials International, 2004, 14, 817-821.	4.4	0
116	Direct numerical simulation of a particle-laden weak-shearing plane jet*. Progress in Natural Science: Materials International, 2004, 14, 247-256.	4.4	0
117	The effect of streamwise vortex structures on the particle distribution in the roll-up. Journal of Visualization, 2005, 8, 198-198.	1.8	0
118	Three-dimensional reconstruction of the human upper airway from computed tomography images. , 2006, , .		0
119	Correlation analysis on the SGS velocity between phases in an isotropic gas-particle two-phase flow with FDF model. Journal of Thermal Science, 2012, 21, 447-451.	1.9	0
120	Hybrid Flamelet/Progress Variable Approach for NO Prediction in Pulverized Coal Flames. Energy & Fuels, 2020, 34, 10000-10009.	5.1	0