

# Daoyin Liu

## List of Publications by Year in descending order

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111  
papers

2,632  
citations

172457

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112  
docs citations

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times ranked

1693  
citing authors

#	ARTICLE	IF	CITATIONS
1	Numerical analysis of frictional charging and electrostatic interaction of particles. AICHE Journal, 2022, 68, e17444.	3.6	7
2	Normal collision between partially wetted particles by using direct numerical simulation. Chemical Engineering Science, 2022, 247, 117090.	3.8	4
3	Simulation of a Wurster fluidized bed by CFDâ€“DEM with a cohesive contact model. Chemical Engineering Research and Design, 2022, 177, 157-166.	5.6	12
4	Theoretical and experimental insight into the homogeneous expansion of wet particles in a fluidized bed. Powder Technology, 2022, 397, 117016.	4.2	4
5	Coal combustion emissions and ash formation characteristics during oxy-fuel combustion in a 100 kWth pressurized circulating fluidized bed. Fuel Processing Technology, 2022, 228, 107140.	7.2	10
6	Effect of electrostatic interactions on particle dispersion in a rotating spherical container. Powder Technology, 2022, 398, 117063.	4.2	2
7	Elutriation and agglomerate size distribution in a silica nanoparticle vibro-fluidized bed. Chemical Engineering Journal, 2022, 434, 134654.	12.7	6
8	Flow profile and wall normal stress characteristics in pattern-transformable flow silos. Chemical Engineering Research and Design, 2022, 182, 381-394.	5.6	1
9	Gas-Particle Flows in a Two-Stage Integrated Bubbling-Transport Fluidized Bed for CO <sub>2</sub> Capture. Industrial & Engineering Chemistry Research, 2022, 61, 8973-8981.	3.7	3
10	Experimental investigation of temperature distribution and hydrodynamics characterization in a high-temperature gasâ€“solid fluidized bed with sidewall liquid injection. Fuel, 2022, 327, 125087.	6.4	5
11	Comparative study of two fluid model and dense discrete phase model for simulations of gasâ€“solid hydrodynamics in circulating fluidized beds. Particuology, 2021, 55, 108-117.	3.6	21
12	Continuous CO <sub>2</sub> capture performance of K <sub>2</sub> CO <sub>3</sub> /Al <sub>2</sub> O <sub>3</sub> sorbents in a novel two-stage integrated bubbling-transport fluidized reactor. Chemical Engineering Journal, 2021, 404, 126465.	12.7	13
13	Modeling of single coal particle combustion in O <sub>2</sub> /N <sub>2</sub> and O <sub>2</sub> /CO <sub>2</sub> atmospheres under fluidized bed condition. Frontiers in Energy, 2021, 15, 99-111.	2.3	1
14	Effect of particle segregation on non-uniform electrostatic charge distribution in cylindrical silo during loading binary particles with size ratio of 2.5:1 centrally. Powder Technology, 2021, 378, 772-784.	4.2	11
15	Experimental study of the solid circulation rate in a pressurized circulating fluidized bed. Particuology, 2021, 56, 207-214.	3.6	3
16	Insight into High Temperature Gas-Phase Arsenic Capture by a CaOâ€“Ca <sub>12</sub> Al <sub>14</sub> O <sub>33</sub> Synthetic Sorbent. Energy & Fuels, 2021, 35, 2425-2433.	5.1	13
17	The Gas Interchange between Bubble and Emulsion Phases in a Pressurized Fluidized Bed by Computational Fluid Dynamics Simulations. Industrial & Engineering Chemistry Research, 2021, 60, 4142-4152.	3.7	7
18	Numerical simulation of electric field in cylindrical silo based on non-uniform electrostatic charge distribution caused by particle segregation. Powder Technology, 2021, 383, 336-347.	4.2	5

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19	X-ray tomography analysis of bubbles and slugs in a fluidized bed with inter-particle force. International Journal of Multiphase Flow, 2021, 145, 103835.	3.4	2
20	Unraveling the disparity of CO <sub>2</sub> sorption on alkali carbonates under high humidity. Journal of CO <sub>2</sub> Utilization, 2021, 53, 101737.	6.8	5
21	Release and migration characteristics of sodium and potassium in high alkali coal under oxy-fuel fluidized bed combustion condition. Fuel, 2020, 262, 116413.	6.4	16
22	Study on electric field distribution in cylindrical metal silo considering particle segregation. Advanced Powder Technology, 2020, 31, 241-251.	4.1	9
23	Effect of external electric field on particle impact charging process. Powder Technology, 2020, 360, 1355-1367.	4.2	7
24	Static pressure distribution characteristics of powders stored in silos. Chemical Engineering Research and Design, 2020, 154, 1-10.	5.6	9
25	System integration optimization for coal-fired power plant with CO <sub>2</sub> capture by Na <sub>2</sub> CO <sub>3</sub> dry sorbents. Energy, 2020, 211, 118554.	8.8	22
26	System integration for coal-fired power plant with post combustion CO <sub>2</sub> capture: Comparative study for different solid dry sorbents. Fuel, 2020, 280, 118561.	6.4	19
27	Understanding and Improving the Kinetics of Bulk Carbonation on Sodium Carbonate. Journal of Physical Chemistry C, 2020, 124, 23106-23115.	3.1	5
28	Distinguishing Liquid Transport Patterns during the Fluidization of Wet Particles with Bed Expansion Behaviors. Industrial & Engineering Chemistry Research, 2020, 59, 19600-19606.	3.7	5
29	CFD-DEM simulation of gas-solid flow of wet particles in a fluidized bed with immersed tubes. Chemical Engineering and Processing: Process Intensification, 2020, 156, 108098.	3.6	10
30	Movement and mixing behavior of a single biomass particle during combustion in a hot fluidized bed combustor. Powder Technology, 2020, 370, 88-95.	4.2	15
31	Characteristics of a Methane Jet Flame in Elevated Pressure and Oxy-Fuel Atmosphere Using Large Eddy Simulation with Tabulated Chemistry. Combustion Science and Technology, 2020, , 1-21.	2.3	0
32	Two-dimensional full-loop simulation of CO <sub>2</sub> capture process in a novel dual fluidized bed system. Fuel Processing Technology, 2020, 205, 106429.	7.2	4
33	Gas flow distribution and solid dynamics in a thin rectangular pressurized fluidized bed using CFD-DEM simulation. Powder Technology, 2020, 373, 369-383.	4.2	17
34	Experimental Study of NO <sub>x</sub> Formation in a High-Steam Atmosphere During a Pressurized Oxygen-Fuel Combustion Process. ACS Omega, 2020, 5, 16037-16044.	3.5	13
35	Experimental study on the dynamic characteristics of wall normal stresses during silo discharge. Powder Technology, 2020, 363, 509-518.	4.2	13
36	Fluidization of nanoparticle agglomerates assisted by combining vibration and stirring methods. Chemical Engineering Journal, 2020, 388, 124213.	12.7	44

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37	Effect of elevated pressure on gas-solid flow characteristics in a circulating fluidized bed. Powder Technology, 2020, 366, 470-476.	4.2	9
38	Understanding the morphology of supported Na <sub>2</sub> CO <sub>3</sub> / $\gamma$ -AlOOH solid sorbent and its CO <sub>2</sub> sorption performance. Chemical Engineering Journal, 2020, 395, 124139.	12.7	12
39	A molding method of Na <sub>2</sub> CO <sub>3</sub> /Al <sub>2</sub> O <sub>3</sub> sorbents with high sphericity and low roughness for enhanced attrition resistance in CO <sub>2</sub> sorption/desorption process via extrusion-spheronization method. Powder Technology, 2020, 366, 520-526.	4.2	9
40	The effect of Kaolinite's structure on migration and release characteristics of sodium under oxy-fuel combustion condition. Fuel, 2020, 277, 118154.	6.4	11
41	Heat Transfer Characteristics in the Dense Phase Region of a Pressurized Fluidized Bed. Journal of Chemical Engineering of Japan, 2020, 53, 516-525.	0.6	0
42	Numerical simulation of circulating fluidized bed oxy-fuel combustion with Dense Discrete Phase Model. Fuel Processing Technology, 2019, 195, 106129.	7.2	20
43	Energy analyses and process integration of coal-fired power plant with CO <sub>2</sub> capture using sodium-based dry sorbents. Applied Energy, 2019, 252, 113434.	10.1	15
44	Continuous CO <sub>2</sub> Capture Performance of K <sub>2</sub> CO <sub>3</sub> /Al <sub>2</sub> O <sub>3</sub> Sorbents in a Novel Integrated Bubbling-Transport Fluidized Reactor. Industrial & Engineering Chemistry Research, 2019, 58, 19733-19740.	3.7	13
45	Dehydrozingerone Inspired Discovery of Potential Broad-Spectrum Fungicidal Agents as Ergosterol Biosynthesis Inhibitors. Journal of Agricultural and Food Chemistry, 2019, 67, 11354-11363.	5.2	20
46	Study on electric field distribution in cylindrical metal silo containing charged polyethylene powder. Powder Technology, 2019, 353, 145-155.	4.2	12
47	Fundamental study on fuel-staged oxy-fuel fluidized bed combustion. Combustion and Flame, 2019, 206, 227-238.	5.2	35
48	Comparisons of TFM and DEM-CFD simulation analyses on the influence mechanism of electrostatics on single bubble in gas-solid fluidized bed. Powder Technology, 2019, 351, 238-258.	4.2	8
49	Toward Understanding the Kinetics of CO <sub>2</sub> Capture on Sodium Carbonate. ACS Applied Materials & Interfaces, 2019, 11, 9033-9041.	8.0	21
50	Fluidization dynamics of cohesive Geldart B particles. Part II: Pressure fluctuation analysis. Chemical Engineering Journal, 2019, 368, 627-638.	12.7	22
51	Comprehensive assessment of the accuracy of CFD-DEM simulations of bubbling fluidized beds. Powder Technology, 2019, 343, 145-158.	4.2	42
52	Triboelectric charging behavior of a rough surface sliding on a flat plane. Journal of Electrostatics, 2019, 97, 85-94.	1.9	10
53	Fluidization dynamics of cohesive Geldart B particles. Part I: X-ray tomography analysis. Chemical Engineering Journal, 2019, 359, 1024-1034.	12.7	26
54	Three-dimensional CFD simulation of oxy-fuel combustion in a circulating fluidized bed with warm flue gas recycle. Fuel, 2018, 216, 596-611.	6.4	43

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55	Experimental investigation on electrostatic characteristics of a single grain in the sliding process. Powder Technology, 2018, 334, 132-142.	4.2	10
56	Effects of gas-solid drag model on Eulerian-Eulerian CFD simulation of coal combustion in a circulating fluidized bed. Powder Technology, 2018, 324, 48-61.	4.2	28
57	The effect of electrostatics on single bubble in fluidized bed and its mechanism analysis. Powder Technology, 2018, 325, 545-556.	4.2	10
58	Experimental and modeling study on mechanisms of sliding and rolling electrification. Powder Technology, 2018, 340, 484-494.	4.2	16
59	Statistic model for predicting cluster movement in circulating fluidized bed (CFB) risers. Journal of the Taiwan Institute of Chemical Engineers, 2018, 91, 200-212.	5.3	1
60	Effect of elevated pressure on bubble properties in a two-dimensional gas-solid fluidized bed. Chemical Engineering Research and Design, 2018, 138, 21-31.	5.6	20
61	Simulation of agglomerate breakage and restructuring in shear flows: Coupled effects of shear gradient, surface energy and initial structure. Powder Technology, 2018, 336, 102-111.	4.2	16
62	Bubbling behavior of cohesive particles in a two-dimensional fluidized bed with immersed tubes. Particuology, 2017, 31, 152-160.	3.6	11
63	Three-Dimensional Eulerian-Eulerian Simulation of Coal Combustion under Air Atmosphere in a Circulating Fluidized Bed Combustor. Energy & Fuels, 2017, 31, 7952-7966.	5.1	15
64	Oxy-fuel conversion of sub-bituminous coal particles in fluidized bed and pulverized combustors. Proceedings of the Combustion Institute, 2017, 36, 3331-3339.	3.9	21
65	CFD-DEM simulation of flow pattern and particle velocity in a fluidized bed with wet particles. Powder Technology, 2017, 314, 346-354.	4.2	43
66	Investigation of Electrostatic Characteristics of Anthracite and Biomass Powders in Fluidized-Type Feeding Hopper. Journal of Chemical Engineering of Japan, 2017, 50, 669-676.	0.6	3
67	A novel aerogel sodium-based sorbent for low temperature CO <sub>2</sub> capture. , 2016, 6, 561-573.		13
68	Characterization of fluidized nanoparticle agglomerates by using adhesive CFD-DEM simulation. Powder Technology, 2016, 304, 198-207.	4.2	18
69	CFD-DEM Modeling of O <sub>2</sub> /CO <sub>2</sub> Char Combustion in a Fluidized Bed. , 2016, , 287-293.		2
70	Normal and oblique impacts between smooth spheres and liquid layers: Liquid bridge and restitution coefficient. Powder Technology, 2016, 301, 747-759.	4.2	26
71	Solid Circulation Rate in a Continuous CO <sub>2</sub> Absorption Fluidized Bed Reactor. Journal of Chemical Engineering of Japan, 2016, 49, 831-835.	0.6	2
72	An adhesive CFD-DEM model for simulating nanoparticle agglomerate fluidization. AIChE Journal, 2016, 62, 2259-2270.	3.6	42

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73	Effect of CO <sub>2</sub> on oxy-fuel combustion of coal-char particles in a fluidized bed: Modeling and comparison with the conventional mode of combustion. <i>Applied Energy</i> , 2016, 177, 247-259.	10.1	50
74	Experimental investigation of ash deposits on convection heating surfaces of a circulating fluidized bed municipal solid waste incinerator. <i>Journal of Environmental Sciences</i> , 2016, 48, 169-178.	6.1	33
75	Bubble Behaviors of Large Cohesive Particles in a 2D Fluidized Bed. <i>Industrial &amp; Engineering Chemistry Research</i> , 2016, 55, 624-634.	3.7	42
76	Oxy-fuel combustion of a single fuel particle in a fluidized bed: Char combustion characteristics, an experimental study. <i>Chemical Engineering Journal</i> , 2016, 287, 649-656.	12.7	69
77	Comparison of CFD Simulation and Simplified Modeling of a Fluidized Bed CO <sub>2</sub> Capture Reactor. <i>International Journal of Chemical Reactor Engineering</i> , 2016, 14, 133-141.	1.1	3
78	Stochastic bubble developing model combined with Markov process of particles for bubbling fluidized beds. <i>Chemical Engineering Journal</i> , 2016, 291, 206-214.	12.7	14
79	Theoretical Model for Normal Impact between Dry Sphere and Liquid Layer with Considerable Thickness. <i>Aerosol and Air Quality Research</i> , 2016, 16, 1533-1540.	2.1	5
80	Devolatilization of a single fuel particle in a fluidized bed under oxy-combustion conditions. Part A: Experimental results. <i>Combustion and Flame</i> , 2015, 162, 797-808.	5.2	66
81	Devolatilization of a single fuel particle in a fluidized bed under oxy-combustion conditions. Part B: Modeling and comparison with measurements. <i>Combustion and Flame</i> , 2015, 162, 809-818.	5.2	43
82	Na <sub>2</sub> CO <sub>3</sub> /MgO/Al <sub>2</sub> O <sub>3</sub> Solid Sorbents for Low-Temperature CO <sub>2</sub> Capture. <i>Energy &amp; Fuels</i> , 2015, 29, 968-973.	5.1	42
83	Rotational behavior of dry spheres obliquely impacting on liquid layers. <i>Powder Technology</i> , 2015, 270, 418-423.	4.2	10
84	Development of K and N based composite CO <sub>2</sub> sorbents (KN) dried with a supercritical fluid. <i>Chemical Engineering Journal</i> , 2015, 262, 1192-1198.	12.7	15
85	Inexpensive calcium-modified potassium carbonate sorbent for CO <sub>2</sub> capture from flue gas: Improved SO <sub>2</sub> resistance, enhanced capacity and stability. <i>Fuel</i> , 2014, 125, 50-56.	6.4	20
86	CFD-DEM Modeling of CO <sub>2</sub> Capture using Alkali Metal-Based Sorbents in a Bubbling Fluidized Bed. <i>International Journal of Chemical Reactor Engineering</i> , 2014, 12, 441-449.	1.1	6
87	Agglomeration characteristics during fluidized bed combustion of salty wastewater. <i>Powder Technology</i> , 2014, 253, 537-547.	4.2	25
88	Ignition behavior of single coal particle in a fluidized bed under O <sub>2</sub> /CO <sub>2</sub> and O <sub>2</sub> /N <sub>2</sub> atmospheres: A combination of visual image and particle temperature. <i>Applied Energy</i> , 2014, 115, 301-308.	10.1	63
89	A simulation study of coal combustion under O <sub>2</sub> /CO <sub>2</sub> and O <sub>2</sub> /RFG atmospheres in circulating fluidized bed. <i>Chemical Engineering Journal</i> , 2013, 223, 816-823.	12.7	30
90	Development and test of CFD-DEM model for complex geometry: A coupling algorithm for Fluent and DEM. <i>Computers and Chemical Engineering</i> , 2013, 58, 260-268.	3.8	91

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91	Investigation on water vapor effect on direct sulfation during wet-recycle oxy-coal combustion. <i>Applied Energy</i> , 2013, 108, 121-127.	10.1	49
92	Capturing CO <sub>2</sub> in flue gas from fossil fuel-fired power plants using dry regenerable alkali metal-based sorbent. <i>Progress in Energy and Combustion Science</i> , 2013, 39, 515-534.	31.2	179
93	K <sub>2</sub> CO <sub>3</sub> /Al <sub>2</sub> O <sub>3</sub> for Capturing CO <sub>2</sub> in Flue Gas from Power Plants. Part 5: Carbonation and Failure Behavior of K <sub>2</sub> CO <sub>3</sub> /Al <sub>2</sub> O <sub>3</sub> in the Continuous CO <sub>2</sub> Sorption-Desorption System. <i>Energy &amp; Fuels</i> , 2013, 27, 4804-4809.	5.1	35
94	Investigation on Dynamic Calibration for an Optical-Fiber Solids Concentration Probe in Gas-Solid Two-Phase Flows. <i>Sensors</i> , 2013, 13, 9201-9222.	3.8	20
95	Experimental study of oblique impact between dry spheres and liquid layers. <i>Physical Review E</i> , 2013, 88, 033018.	2.1	27
96	K <sub>2</sub> CO <sub>3</sub> /Al <sub>2</sub> O <sub>3</sub> for Capturing CO <sub>2</sub> in Flue Gas from Power Plants. Part 4: Abrasion Characteristics of the K <sub>2</sub> CO <sub>3</sub> /Al <sub>2</sub> O <sub>3</sub> Sorbent. <i>Energy &amp; Fuels</i> , 2012, 26, 1395-1400.	5.1	18
97	Investigation of solid mixing mechanisms in a bubbling fluidized bed using a DEM-CFD approach. <i>Asia-Pacific Journal of Chemical Engineering</i> , 2012, 7, S237.	1.5	14
98	Fly ash recirculation by bottom feeding on a circulating fluidized bed boiler co-burning coal sludge and coal. <i>Applied Energy</i> , 2012, 95, 295-299.	10.1	37
99	Quantifying lateral solids mixing in a fluidized bed by modeling the thermal tracing method. <i>AIChE Journal</i> , 2012, 58, 745-755.	3.6	24
100	O <sub>2</sub> /CO <sub>2</sub> coal combustion characteristics in a 50 kWth circulating fluidized bed. <i>International Journal of Greenhouse Gas Control</i> , 2011, 5, 770-776.	4.6	79
101	Study on the failure mechanism of potassium-based sorbent for CO <sub>2</sub> capture and the improving measure. <i>International Journal of Greenhouse Gas Control</i> , 2011, 5, 1184-1189.	4.6	15
102	CFD modeling of oxy-coal combustion in circulating fluidized bed. <i>International Journal of Greenhouse Gas Control</i> , 2011, 5, 1489-1497.	4.6	51
103	Effect of moisture content on dense-phase conveying of pulverized coal at high pressure. <i>Korean Journal of Chemical Engineering</i> , 2011, 28, 2086-2093.	2.7	7
104	Experimental profiles of lateral mixing of feed particles in a three-dimensional fluidized bed. <i>AIChE Journal</i> , 2011, 57, 1459-1469.	3.6	23
105	NO precursors evolution during coal heating process in CO <sub>2</sub> atmosphere. <i>Fuel</i> , 2011, 90, 1668-1673.	6.4	47
106	Simulation of char and propane combustion in a fluidized bed by extending DEM-CFD approach. <i>Proceedings of the Combustion Institute</i> , 2011, 33, 2701-2708.	3.9	36
107	Lateral solids dispersion coefficient in large-scale fluidized beds. <i>Combustion and Flame</i> , 2010, 157, 2116-2124.	5.2	95
108	HHT analysis of electrostatic fluctuation signals in dense-phase pneumatic conveying of pulverized coal at high pressure. <i>Chemical Engineering Science</i> , 2010, 65, 1334-1344.	3.8	38

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109	Multiple-Cycles Behavior of $K_2CO_3/Al_2O_3$ for $CO_2$ Capture in a Fluidized-Bed Reactor. <i>Energy &amp; Fuels</i> , 2010, 24, 1009-1012.	5.1	82
110	Carbonation Behavior of $K_2CO_3$ with Different Microstructure Used as an Active Component of Dry Sorbents for $CO_2$ Capture. <i>Industrial &amp; Engineering Chemistry Research</i> , 2010, 49, 12212-12216.	3.7	48
111	$CO_2$ Absorption Using Dry Potassium-Based Sorbents with Different Supports. <i>Energy &amp; Fuels</i> , 2009, 23, 4683-4687.	5.1	113