Daoyin Liu

List of Publications by Year in descending order

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111	2,632	172457	233421
papers	citations	29 h-index	45 g-index

112	112	112	1693
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Capturing CO2 in flue gas from fossil fuel-fired power plants using dry regenerable alkali metal-based sorbent. Progress in Energy and Combustion Science, 2013, 39, 515-534.	31.2	179
2	CO₂ Absorption Using Dry Potassium-Based Sorbents with Different Supports. Energy & Fuels, 2009, 23, 4683-4687.	5.1	113
3	Lateral solids dispersion coefficient in large-scale fluidized beds. Combustion and Flame, 2010, 157, 2116-2124.	5.2	95
4	Development and test of CFDâ€“DEM model for complex geometry: A coupling algorithm for Fluent and DEM. Computers and Chemical Engineering, 2013, 58, 260-268.	3.8	91
5	Multiple-Cycles Behavior of K₂CO₃/Al₂O₃ for CO₂ Capture in a Fluidized-Bed Reactor. Energy & Fuels, 2010, 24, 1009-1012.	5.1	82
6	O2/CO2 coal combustion characteristics in a 50 kWth circulating fluidized bed. International Journal of Greenhouse Gas Control, 2011, 5, 770-776.	4.6	79
7	Oxy-fuel combustion of a single fuel particle in a fluidized bed: Char combustion characteristics, an experimental study. Chemical Engineering Journal, 2016, 287, 649-656.	12.7	69
8	Devolatilization of a single fuel particle in a fluidized bed under oxy-combustion conditions. Part A: Experimental results. Combustion and Flame, 2015, 162, 797-808.	5.2	66
9	Ignition behavior of single coal particle in a fluidized bed under O2/CO2 and O2/N2 atmospheres: A combination of visual image and particle temperature. Applied Energy, 2014, 115, 301-308.	10.1	63
10	CFD modeling of oxy-coal combustion in circulating fluidized bed. International Journal of Greenhouse Gas Control, 2011, 5, 1489-1497.	4.6	51
11	Effect of CO2 on oxy-fuel combustion of coal-char particles in a fluidized bed: Modeling and comparison with the conventional mode of combustion. Applied Energy, 2016, 177, 247-259.	10.1	50
12	Investigation on water vapor effect on direct sulfation during wet-recycle oxy-coal combustion. Applied Energy, 2013, 108, 121-127.	10.1	49
13	Carbonation Behavior of K₂CO₃ with Different Microstructure Used as an Active Component of Dry Sorbents for CO₂ Capture. Industrial & Engineering Chemistry Research, 2010, 49, 12212-12216.	3.7	48
14	NO precursors evolution during coal heating process in CO2 atmosphere. Fuel, 2011, 90, 1668-1673.	6.4	47
15	Fluidization of nanoparticle agglomerates assisted by combining vibration and stirring methods. Chemical Engineering Journal, 2020, 388, 124213.	12.7	44
16	Devolatilization of a single fuel particle in a fluidized bed under oxy-combustion conditions. Part B: Modeling and comparison with measurements. Combustion and Flame, 2015, 162, 809-818.	5.2	43
17	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
18	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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19	Na₂CO₃/MgO/Al₂O₃ Solid Sorbents for Low-Temperature CO₂ Capture. Energy & Fuels, 2015, 29, 968-973.	5.1	42
20	An adhesive CFDâ€DEM model for simulating nanoparticle agglomerate fluidization. AICHE Journal, 2016, 62, 2259-2270.	3.6	42
21	Bubble Behaviors of Large Cohesive Particles in a 2D Fluidized Bed. Industrial & Engineering Chemistry Research, 2016, 55, 624-634.	3.7	42
22	Comprehensive assessment of the accuracy of CFD-DEM simulations of bubbling fluidized beds. Powder Technology, 2019, 343, 145-158.	4.2	42
23	HHT analysis of electrostatic fluctuation signals in dense-phase pneumatic conveying of pulverized coal at high pressure. Chemical Engineering Science, 2010, 65, 1334-1344.	3.8	38
24	Fly ash recirculation by bottom feeding on a circulating fluidized bed boiler co-burning coal sludge and coal. Applied Energy, 2012, 95, 295-299.	10.1	37
25	Simulation of char and propane combustion in a fluidized bed by extending DEMâ€“CFD approach. Proceedings of the Combustion Institute, 2011, 33, 2701-2708.	3.9	36
26	K₂CO₃/Al₂O₃ for Capturing CO₂ in Flue Gas from Power Plants. Part 5: Carbonation and Failure Behavior of K₂CO₃/Al₂O₃ in the Continuous CO₂ Sorptionâ€“Desorption System. Energy & Fuels, 2013, 27, 4804-4809.	5.1	35
27	Fundamental study on fuel-staged oxy-fuel fluidized bed combustion. Combustion and Flame, 2019, 206, 227-238.	5.2	35
28	Experimental investigation of ash deposits on convection heating surfaces of a circulating fluidized bed municipal solid waste incinerator. Journal of Environmental Sciences, 2016, 48, 169-178.	6.1	33
29	A simulation study of coal combustion under O2/CO2 and O2/RFG atmospheres in circulating fluidized bed. Chemical Engineering Journal, 2013, 223, 816-823.	12.7	30
30	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
31	Experimental study of oblique impact between dry spheres and liquid layers. Physical Review E, 2013, 88, 033018.	2.1	27
32	Normal and oblique impacts between smooth spheres and liquid layers: Liquid bridge and restitution coefficient. Powder Technology, 2016, 301, 747-759.	4.2	26
33	Fluidization dynamics of cohesive Geldart B particles. Part I: X-ray tomography analysis. Chemical Engineering Journal, 2019, 359, 1024-1034.	12.7	26
34	Agglomeration characteristics during fluidized bed combustion of salty wastewater. Powder Technology, 2014, 253, 537-547.	4.2	25
35	Quantifying lateral solids mixing in a fluidized bed by modeling the thermal tracing method. AICHE Journal, 2012, 58, 745-755.	3.6	24
36	Experimental profiles of lateral mixing of feed particles in a threeâ€dimensional fluidized bed. AICHE Journal, 2011, 57, 1459-1469.	3.6	23

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37	Fluidization dynamics of cohesive Geldart B particles. Part II: Pressure fluctuation analysis. Chemical Engineering Journal, 2019, 368, 627-638.	12.7	22
38	System integration optimization for coal-fired power plant with CO2 capture by Na2CO3 dry sorbents. Energy, 2020, 211, 118554.	8.8	22
39	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
40	Toward Understanding the Kinetics of CO₂ Capture on Sodium Carbonate. ACS Applied Materials & Interfaces, 2019, 11, 9033-9041.	8.0	21
41	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
42	Investigation on Dynamic Calibration for an Optical-Fiber Solids Concentration Probe in Gas-Solid Two-Phase Flows. Sensors, 2013, 13, 9201-9222.	3.8	20
43	Inexpensive calcium-modified potassium carbonate sorbent for CO2 capture from flue gas: Improved SO2 resistance, enhanced capacity and stability. Fuel, 2014, 125, 50-56.	6.4	20
44	Effect of elevated pressure on bubble properties in a two-dimensional gasâ€“solid fluidized bed. Chemical Engineering Research and Design, 2018, 138, 21-31.	5.6	20
45	Numerical simulation of circulating fluidized bed oxy-fuel combustion with Dense Discrete Phase Model. Fuel Processing Technology, 2019, 195, 106129.	7.2	20
46	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
47	System integration for coal-fired power plant with post combustion CO2 capture: Comparative study for different solid dry sorbents. Fuel, 2020, 280, 118561.	6.4	19
48	K₂CO₃/Al₂O₃ for Capturing CO₂ in Flue Gas from Power Plants. Part 4: Abrasion Characteristics of the K₂CO₃/Al₂O₃ Sorbent. Energy & Fuels, 2012, 26, 1395-1400.	5.1	18
49	Characterization of fluidized nanoparticle agglomerates by using adhesive CFD-DEM simulation. Powder Technology, 2016, 304, 198-207.	4.2	18
50	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
51	Experimental and modeling study on mechanisms of sliding and rolling electrification. Powder Technology, 2018, 340, 484-494.	4.2	16
52	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
53	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
54	Study on the failure mechanism of potassium-based sorbent for CO2 capture and the improving measure. International Journal of Greenhouse Gas Control, 2011, 5, 1184-1189.	4.6	15

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55	Development of K and N based composite CO2 sorbents (KN) dried with a supercritical fluid. Chemical Engineering Journal, 2015, 262, 1192-1198.	12.7	15
56	Three-Dimensional Eulerianâ€“Eulerian Simulation of Coal Combustion under Air Atmosphere in a Circulating Fluidized Bed Combustor. Energy & Fuels, 2017, 31, 7952-7966.	5.1	15
57	Energy analyses and process integration of coal-fired power plant with CO2 capture using sodium-based dry sorbents. Applied Energy, 2019, 252, 113434.	10.1	15
58	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
59	Investigation of solid mixing mechanisms in a bubbling fluidized bed using a DEMâ€”CFD approach. Asia-Pacific Journal of Chemical Engineering, 2012, 7, S237.	1.5	14
60	Stochastic bubble developing model combined with Markov process of particles for bubbling fluidized beds. Chemical Engineering Journal, 2016, 291, 206-214.	12.7	14
61	A novel aerogel sodiumâ€based sorbent for low temperature CO₂ capture. , 2016, 6, 561-573.		13
62	Continuous CO₂ Capture Performance of K₂CO₃/Al₂O₃ Sorbents in a Novel Integrated Bubbling-Transport Fluidized Reactor. Industrial & Engineering Chemistry Research, 2019, 58, 19733-19740.	3.7	13
63	Experimental Study of NOx Formation in a High-Steam Atmosphere During a Pressurized Oxygen-Fuel Combustion Process. ACS Omega, 2020, 5, 16037-16044.	3.5	13
64	Experimental study on the dynamic characteristics of wall normal stresses during silo discharge. Powder Technology, 2020, 363, 509-518.	4.2	13
65	Continuous CO2 capture performance of K2CO3/Al2O3 sorbents in a novel two-stage integrated bubbling-transport fluidized reactor. Chemical Engineering Journal, 2021, 404, 126465.	12.7	13
66	Insight into High Temperature Gas-Phase Arsenic Capture by a CaOâ€“Ca₁₂Al₁₄O₃₃ Synthetic Sorbent. Energy & Fuels, 2021, 35, 2425-2433.	5.1	13
67	Study on electric field distribution in cylindrical metal silo containing charged polyethylene powder. Powder Technology, 2019, 353, 145-155.	4.2	12
68	Understanding the morphology of supported Na2CO3/Î³-AlOOH solid sorbent and its CO2 sorption performance. Chemical Engineering Journal, 2020, 395, 124139.	12.7	12
69	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
70	Bubbling behavior of cohesive particles in a two-dimensional fluidized bed with immersed tubes. Particuology, 2017, 31, 152-160.	3.6	11
71	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
72	The effect of Kaoliniteâ€™s structure on migration and release characteristics of sodium under oxy-fuel combustion condition. Fuel, 2020, 277, 118154.	6.4	11

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73	Rotational behavior of dry spheres obliquely impacting on liquid layers. Powder Technology, 2015, 270, 418-423.	4.2	10
74	Experimental investigation on electrostatic characteristics of a single grain in the sliding process. Powder Technology, 2018, 334, 132-142.	4.2	10
75	The effect of electrostatics on single bubble in fluidized bed and its mechanism analysis. Powder Technology, 2018, 325, 545-556.	4.2	10
76	Triboelectric charging behavior of a rough surface sliding on a flat plane. Journal of Electrostatics, 2019, 97, 85-94.	1.9	10
77	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
78	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
79	Study on electric field distribution in cylindrical metal silo considering particle segregation. Advanced Powder Technology, 2020, 31, 241-251.	4.1	9
80	Static pressure distribution characteristics of powders stored in silos. Chemical Engineering Research and Design, 2020, 154, 1-10.	5.6	9
81	Effect of elevated pressure on gas-solid flow characteristics in a circulating fluidized bed. Powder Technology, 2020, 366, 470-476.	4.2	9
82	A molding method of Na2CO3/Al2O3 sorbents with high sphericity and low roughness for enhanced attrition resistance in CO2 sorption/desorption process via extrusion-spheronization method. Powder Technology, 2020, 366, 520-526.	4.2	9
83	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
84	Effect of moisture content on dense-phase conveying of pulverized coal at high pressure. Korean Journal of Chemical Engineering, 2011, 28, 2086-2093.	2.7	7
85	Effect of external electric field on particle impact charging process. Powder Technology, 2020, 360, 1355-1367.	4.2	7
86	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
87	Numerical analysis of frictional charging and electrostatic interaction of particles. AICHE Journal, 2022, 68, e17444.	3.6	7
88	CFD-DEM Modeling of CO2 Capture using Alkali Metal-Based Sorbents in a Bubbling Fluidized Bed. International Journal of Chemical Reactor Engineering, 2014, 12, 441-449.	1.1	6
89	Elutriation and agglomerate size distribution in a silica nanoparticle vibro-fluidized bed. Chemical Engineering Journal, 2022, 434, 134654.	12.7	6
90	Understanding and Improving the Kinetics of Bulk Carbonation on Sodium Carbonate. Journal of Physical Chemistry C, 2020, 124, 23106-23115.	3.1	5

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91	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
92	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
93	Theoretical Model for Normal Impact between Dry Sphere and Liquid Layer with Considerable Thickness. Aerosol and Air Quality Research, 2016, 16, 1533-1540.	2.1	5
94	Unraveling the disparity of CO2 sorption on alkali carbonates under high humidity. Journal of CO2 Utilization, 2021, 53, 101737.	6.8	5
95	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
96	Two-dimensional full-loop simulation of CO2 capture process in a novel dual fluidized bed system. Fuel Processing Technology, 2020, 205, 106429.	7.2	4
97	Normal collision between partially wetted particles by using direct numerical simulation. Chemical Engineering Science, 2022, 247, 117090.	3.8	4
98	Theoretical and experimental insight into the homogeneous expansion of wet particles in a fluidized bed. Powder Technology, 2022, 397, 117016.	4.2	4
99	Comparison of CFD Simulation and Simplified Modeling of a Fluidized Bed CO₂ Capture Reactor. International Journal of Chemical Reactor Engineering, 2016, 14, 133-141.	1.1	3
100	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
101	Experimental study of the solid circulation rate in a pressurized circulating fluidized bed. Particuology, 2021, 56, 207-214.	3.6	3
102	Gas-Particle Flows in a Two-Stage Integrated Bubbling-Transport Fluidized Bed for CO₂ Capture. Industrial & Engineering Chemistry Research, 2022, 61, 8973-8981.	3.7	3
103	CFDâ€“DEM Modeling of O2/CO2 Char Combustion in a Fluidized Bed. , 2016, , 287-293.		2
104	Solid Circulation Rate in a Continuous CO₂ Absorption Fluidized Bed Reactor. Journal of Chemical Engineering of Japan, 2016, 49, 831-835.	0.6	2
105	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
106	Effect of electrostatic interactions on particle dispersion in a rotating spherical container. Powder Technology, 2022, 398, 117063.	4.2	2
107	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
108	Modeling of single coal particle combustion in O2/N2 and O2/CO2 atmospheres under fluidized bed condition. Frontiers in Energy, 2021, 15, 99-111.	2.3	1

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109	Flow profile and wall normal stress characteristics in pattern-transformable flow silos. Chemical Engineering Research and Design, 2022, 182, 381-394.	5.6	1
110	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
111	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