

Dawei Wang

List of Publications by Year in descending order

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118
papers

6,937
citations

57681

46
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71088

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124
all docs

124
docs citations

124
times ranked

4689
citing authors

#	ARTICLE	IF	CITATIONS
1	State of Scale-Up Development in Chemical Looping Technology for Biomass Conversions: A Review and Perspectives. <i>Waste and Biomass Valorization</i> , 2022, 13, 1363-1383.	1.8	13
2	Three-dimensional dynamic characterization of square-nosed slugging phenomena in a fluidized bed. <i>Particuology</i> , 2022, 67, 35-46.	2.0	5
3	A machine learning-based particle-particle collision model for non-spherical particles with arbitrary shape. <i>Chemical Engineering Science</i> , 2022, 251, 117439.	1.9	6
4	Characteristics of Gas-Solid Mixture Flows through a Packed Moving Bed of Coarse Particles. <i>Industrial & Engineering Chemistry Research</i> , 2022, 61, 2615-2622.	1.8	3
5	Holey reduced graphene oxide-assisted oxide-derived Bi for efficient nitrogen electroreduction. <i>Journal of Materials Chemistry A</i> , 2022, 10, 8245-8251.	5.2	4
6	Applications of electrical capacitance tomography in industrial systems. , 2022, , 799-821.		0
7	Velocity Profiling of a Gas-Solid Fluidized Bed Using Electrical Capacitance Volume Tomography. <i>IEEE Transactions on Instrumentation and Measurement</i> , 2022, 71, 1-16.	2.4	3
8	Driving Towards Highly Selective and Coking-Resistant Natural Gas Reforming Through a Hybrid Oxygen Carrier Design. <i>ChemCatChem</i> , 2021, 13, 617-626.	1.8	7
9	Simulation of a moving bed chemical looping system for electricity production from coal via chemical looping water splitting. <i>Canadian Journal of Chemical Engineering</i> , 2021, 99, 1520-1534.	0.9	1
10	Codoping Mg-Mn Based Oxygen Carrier with Lithium and Tungsten for Enhanced C ₂ Yield in a Chemical Looping Oxidative Coupling of Methane System. <i>ACS Sustainable Chemistry and Engineering</i> , 2021, 9, 2651-2660.	3.2	22
11	Coal-Direct Chemical Looping Process with <i>In Situ</i> Sulfur Capture for Energy Generation Using Ca-Cu Oxygen Carriers. <i>Industrial & Engineering Chemistry Research</i> , 2021, 60, 11231-11240.	1.8	11
12	Mo-Doped FeS Mediated H ₂ Production from H ₂ S via an In Situ Cyclic Sulfur Looping Scheme. <i>ACS Sustainable Chemistry and Engineering</i> , 2021, 9, 11204-11211.	3.2	11
13	A machine learning-based interaction force model for non-spherical and irregular particles in low Reynolds number incompressible flows. <i>Powder Technology</i> , 2021, 392, 632-638.	2.1	13
14	Enhanced methane conversion using Ni-doped calcium ferrite oxygen carriers in chemical looping partial oxidation systems with CO ₂ utilization. <i>Reaction Chemistry and Engineering</i> , 2021, 6, 1928-1939.	1.9	11
15	Hydrogen Production from Natural Gas Using an Iron-Based Chemical Looping Technology: Process Modeling, Heat Integration, and Exergy Analysis. <i>Energy Technology</i> , 2020, 8, 1900377.	1.8	24
16	Design and Operations of a 15 kW _{th} Subpilot Unit for the Methane-to-Syngas Chemical Looping Process with CO ₂ Utilization. <i>Industrial & Engineering Chemistry Research</i> , 2020, 59, 6886-6899.	1.8	26
17	Cyclic redox scheme towards shale gas reforming: a review and perspectives. <i>Reaction Chemistry and Engineering</i> , 2020, 5, 2204-2220.	1.9	17
18	Mechanistic Insight into Hydrogen-Assisted Carbon Dioxide Reduction with Ilmenite. <i>Energy & Fuels</i> , 2020, 34, 15370-15378.	2.5	7

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19	Enhancing Nitrogen Electroreduction to Ammonia by Doping Chlorine on Reduced Graphene Oxide. ACS Catalysis, 2020, 10, 14928-14935.	5.5	34
20	SBA-16-Mediated Nanoparticles Enabling Accelerated Kinetics in Cyclic Methane Conversion to Syngas at Low Temperatures. ACS Applied Energy Materials, 2020, 3, 9833-9840.	2.5	12
21	Thermodynamic Investigation of Process Enhancement in Chemical Looping Reforming of Methane through Modified Ca ²⁺ /Fe Oxygen Carrier Utilization. Industrial & Engineering Chemistry Research, 2020, 59, 15531-15541.	1.8	15
22	Acetic Acid Production Using Calcium Ferrite-Assisted Chemical Looping Gasification of Petroleum Coke With In Situ Sulfur Capture. Energy & Fuels, 2020, 34, 16560-16571.	2.5	20
23	Process Analysis of Chemical Looping Systems for Dimethyl Ether Synthesis from Coal. , 2020, 5, 17-26.		2
24	CO ₂ mineralization and utilization by alkaline solid wastes for potential carbon reduction. Nature Sustainability, 2020, 3, 399-405.	11.5	182
25	Recurrent neural network based detection of faults caused by particle attrition in chemical looping systems. Powder Technology, 2020, 367, 266-276.	2.1	22
26	Thermodynamic and Process Analyses of Syngas Production Using Chemical Looping Reforming Assisted by Flexible Dicalcium Ferrite-Based Oxygen Carrier Regeneration. Energy & Fuels, 2020, 34, 6490-6500.	2.5	22
27	External Electric Field Induced Reaction Chemistry: A Review and Perspectives. ACS Symposium Series, 2020, , 207-227.	0.5	2
28	Slurry bubble column measurements using advanced electrical capacitance volume tomography sensors. Powder Technology, 2019, 355, 474-480.	2.1	26
29	Modulating Lattice Oxygen in Dual-Functional Mo ⁶⁺ /V ⁵⁺ /O Mixed Oxides for Chemical Looping Oxidative Dehydrogenation. Journal of the American Chemical Society, 2019, 141, 18653-18657.	6.6	133
30	Operating Strategy of Chemical Looping Systems with Varied Reducer and Combustor Pressures. Industrial & Engineering Chemistry Research, 2019, 58, 5228-5235.	1.8	14
31	Near 100% CO selectivity in nanoscaled iron-based oxygen carriers for chemical looping methane partial oxidation. Nature Communications, 2019, 10, 5503.	5.8	98
32	Chemical Looping Gasification for Producing High Purity, H ₂ -Rich Syngas in a Cocurrent Moving Bed Reducer with Coal and Methane Cofeeds. Industrial & Engineering Chemistry Research, 2018, 57, 2461-2475.	1.8	29
33	Electrical Capacitance Volume Tomography for Characterization of Gas-Solid Slugging Fluidization with Geldart Group D Particles under High Temperatures. Industrial & Engineering Chemistry Research, 2018, 57, 2687-2697.	1.8	24
34	Metal oxide redox chemistry for chemical looping processes. Nature Reviews Chemistry, 2018, 2, 349-364.	13.8	352
35	High-Pressure Chemical Looping Reforming Processes: System Analysis for Syngas Generation from Natural Gas and Reducing Tail Gases. Energy & Fuels, 2018, 32, 10408-10420.	2.5	13
36	C ₂ Selectivity Enhancement in Chemical Looping Oxidative Coupling of Methane over a Mg ²⁺ /Mn Composite Oxygen Carrier by Li-Doping-Induced Oxygen Vacancies. ACS Energy Letters, 2018, 3, 1730-1736.	8.8	75

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37	Utilization of CO ₂ as a partial substitute for methane feedstock in chemical looping methane steam redox processes for syngas production. Energy and Environmental Science, 2017, 10, 1345-1349.	15.6	79
38	Biomass-based chemical looping technologies: the good, the bad and the future. Energy and Environmental Science, 2017, 10, 1885-1910.	15.6	382
39	Modularization strategy for syngas generation in chemical looping methane reforming systems with CO ₂ as feedstock. AIChE Journal, 2017, 63, 3343-3360.	1.8	38
40	Impact of 1% Lanthanum Dopant on Carbonaceous Fuel Redox Reactions with an Iron-Based Oxygen Carrier in Chemical Looping Processes. ACS Energy Letters, 2017, 2, 70-74.	8.8	77
41	Chemically and physically robust, commercially-viable iron-based composite oxygen carriers sustainable over 3000 redox cycles at high temperatures for chemical looping applications. Energy and Environmental Science, 2017, 10, 2318-2323.	15.6	88
42	Improved cyclic redox reactivity of lanthanum modified iron-based oxygen carriers in carbon monoxide chemical looping combustion. Journal of Materials Chemistry A, 2017, 5, 20153-20160.	5.2	38
43	Chemical looping technology for energy and chemical production. Wiley Interdisciplinary Reviews: Energy and Environment, 2016, 5, 216-241.	1.9	32
44	Oxygen vacancy promoted methane partial oxidation over iron oxide oxygen carriers in the chemical looping process. Physical Chemistry Chemical Physics, 2016, 18, 32418-32428.	1.3	88
45	ECVT imaging and model analysis of the liquid distribution inside a horizontally installed passive cyclonic gas-liquid separator. Chemical Engineering Science, 2016, 141, 231-239.	1.9	24
46	Chemical looping technology platform. AIChE Journal, 2015, 61, 2-22.	1.8	173
47	Solid oxide fuel cells fueled with reduced Fe/Ti oxide. Journal of Materials Chemistry A, 2015, 3, 2242-2250.	5.2	7
48	Nanostructure formation mechanism and ion diffusion in iron-titanium composite materials with chemical looping redox reactions. Journal of Materials Chemistry A, 2015, 3, 11302-11312.	5.2	68
49	Direct numerical simulation of low-Reynolds-number flow past arrays of rotating spheres. Journal of Fluid Mechanics, 2015, 765, 396-423.	1.4	62
50	ECVT imaging of 3D spiral bubble plume structures in gas-liquid bubble columns. Canadian Journal of Chemical Engineering, 2014, 92, 2078-2087.	0.9	22
51	Adaptive Electrical Capacitance Volume Tomography. IEEE Sensors Journal, 2014, 14, 1253-1259.	2.4	69
52	Bulk coarse particle arching phenomena in a moving bed with fine particle presence. AIChE Journal, 2014, 60, 881-892.	1.8	17
53	Evolution of nanoscale morphology in single and binary metal oxide microparticles during reduction and oxidation processes. Journal of Materials Chemistry A, 2014, 2, 17511-17520.	5.2	56
54	Shale gas-to-syngas chemical looping process for stable shale gas conversion to high purity syngas with a H ₂ :CO ratio of 2:1. Energy and Environmental Science, 2014, 7, 4104-4117.	15.6	145

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55	Electrical capacitance volume tomography for imaging of pulsating flows in a trickle bed. <i>Chemical Engineering Science</i> , 2014, 119, 77-87.	1.9	58
56	Syngas chemical looping process: Dynamic modeling of a moving-bed reducer. <i>AIChE Journal</i> , 2013, 59, 3432-3443.	1.8	14
57	Application of the Moving-Bed Chemical Looping Process for High Methane Conversion. <i>Energy & Fuels</i> , 2013, 27, 4119-4128.	2.5	62
58	Chemical looping processes – particle characterization, ionic diffusion-reaction mechanism and reactor engineering. <i>Reviews in Chemical Engineering</i> , 2012, 28, 1-42.	2.3	38
59	Coal-Direct Chemical Looping Gasification for Hydrogen Production: Reactor Modeling and Process Simulation. <i>Energy & Fuels</i> , 2012, 26, 3680-3690.	2.5	114
60	Chemical looping processes for CO ₂ capture and carbonaceous fuel conversion – prospect and opportunity. <i>Energy and Environmental Science</i> , 2012, 5, 7254.	15.6	319
61	Activation Strategies for Calcium-Based Sorbents for CO ₂ Capture: A Perspective. <i>Industrial & Engineering Chemistry Research</i> , 2012, 51, 2133-2142.	1.8	117
62	Electrical Capacitance Volume Tomography Imaging of Three-Dimensional Flow Structures and Solids Concentration Distributions in a Riser and a Bend of a Gas-Solid Circulating Fluidized Bed. <i>Industrial & Engineering Chemistry Research</i> , 2012, 51, 10968-10976.	1.8	30
63	Ionic transfer mechanism of COS reaction with CaO: Inert marker experiment and density functional theory (DFT) calculation. <i>AIChE Journal</i> , 2012, 58, 2617-2620.	1.8	7
64	Gas-Solid Fluidization in Mini- and Micro-channels. <i>Industrial & Engineering Chemistry Research</i> , 2011, 50, 4741-4751.	1.8	46
65	Calcium Looping Process for Enhanced Catalytic Hydrogen Production with Integrated Carbon Dioxide and Sulfur Capture. <i>Industrial & Engineering Chemistry Research</i> , 2011, 50, 1716-1729.	1.8	20
66	Role of metal oxide support in redox reactions of iron oxide for chemical looping applications: experiments and density functional theory calculations. <i>Energy and Environmental Science</i> , 2011, 4, 3661.	15.6	138
67	Ionic diffusion in the oxidation of iron – effect of support and its implications to chemical looping applications. <i>Energy and Environmental Science</i> , 2011, 4, 876.	15.6	140
68	Kinetic Study of High-Pressure Carbonation Reaction of Calcium-Based Sorbents in the Calcium Looping Process (CLP). <i>Industrial & Engineering Chemistry Research</i> , 2011, 50, 11528-11536.	1.8	29
69	Syngas chemical looping gasification process: Bench-scale studies and reactor simulations. <i>AIChE Journal</i> , 2010, 56, 2186-2199.	1.8	128
70	Electrical Capacitance Volume Tomography: Design and Applications. <i>Sensors</i> , 2010, 10, 1890-1917.	2.1	161
71	Calcium Looping Process (CLP) for Enhanced Noncatalytic Hydrogen Production with Integrated Carbon Dioxide Capture. <i>Energy & Fuels</i> , 2010, 24, 4408-4418.	2.5	67
72	Chemical Looping Technology and Its Fossil Energy Conversion Applications. <i>Industrial & Engineering Chemistry Research</i> , 2010, 49, 10200-10211.	1.8	181

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73	Dual imaging modality of granular flow based on ECT sensors. Granular Matter, 2008, 10, 75-80.	1.1	30
74	Direct simulation of the buoyant rise of bubbles in infinite liquid using level set method. Canadian Journal of Chemical Engineering, 2008, 86, 267-275.	0.9	25
75	Heterogeneous structure in gas-solid riser flows. AIChE Journal, 2008, 54, 1459-1469.	1.8	14
76	Clean coal conversion processes - progress and challenges. Energy and Environmental Science, 2008, 1, 248.	15.6	236
77	A Multimodal Tomography System Based on ECT Sensors. IEEE Sensors Journal, 2007, 7, 426-433.	2.4	72
78	Electrical Capacitance Volume Tomography. IEEE Sensors Journal, 2007, 7, 525-535.	2.4	188
79	Kinetics and Structural Characterization of Calcium-Based Sorbents Calcined under Subatmospheric Conditions for the High-Temperature CO ₂ Capture Process. Industrial & Engineering Chemistry Research, 2007, 46, 35-42.	1.8	60
80	Syngas Redox (SGR) Process to Produce Hydrogen from Coal Derived Syngas. Energy & Fuels, 2007, 21, 2900-2908.	2.5	163
81	Nonlinear forward problem solution for electrical capacitance tomography using feed-forward neural network. IEEE Sensors Journal, 2006, 6, 441-449.	2.4	64
82	Three-dimensional direct numerical simulation for film-boiling contact of moving particle and liquid droplet. Physics of Fluids, 2006, 18, 117104.	1.6	11
83	Liquid Entrainment in High-Pressure Bubble Columns. Industrial & Engineering Chemistry Research, 2005, 44, 3776-3782.	1.8	10
84	Discrete simulation of gas-liquid bubble columns and gas-liquid-solid fluidized beds. AIChE Journal, 2004, 50, 288-301.	1.8	70
85	ECT studies of the choking phenomenon in a gas-solid circulating fluidized bed. AIChE Journal, 2004, 50, 1386-1406.	1.8	44
86	Synthesis of High-Surface-Area SiC through a Modified Sol-Gel Route: Control of the Pore Structure. Industrial & Engineering Chemistry Research, 2004, 43, 4732-4739.	1.8	22
87	Characteristics of Choking Behavior in Circulating Fluidized Beds for Group B Particles. Industrial & Engineering Chemistry Research, 2004, 43, 5507-5520.	1.8	22
88	Bed nonhomogeneity in turbulent gas-solid fluidization. AIChE Journal, 2003, 49, 1109-1126.	1.8	91
89	3D ECT Velocimetry for Flow Structure Quantification of Gas-Liquid-Solid Fluidized Beds. Canadian Journal of Chemical Engineering, 2003, 81, 875-884.	0.9	33
90	Experimental Studies of Liquid Weeping and Bubbling Phenomena at Submerged Orifices. Industrial & Engineering Chemistry Research, 2002, 41, 1666-1677.	1.8	9

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91	A Semianalytical Expression for the Drag Force of an Interactive Particle Due to Wake Effect. <i>Industrial & Engineering Chemistry Research</i> , 2002, 41, 5094-5097.	1.8	18
92	Gas and solids mixing in a turbulent fluidized bed. <i>AIChE Journal</i> , 2002, 48, 1896-1909.	1.8	122
93	Clean coal technologies: OSCAR and CARBONOX commercial demonstrations. <i>AIChE Journal</i> , 2002, 48, 2115-2123.	1.8	18
94	Kinetics of high-pressure removal of hydrogen sulfide using calcium oxide powder. <i>AIChE Journal</i> , 2000, 46, 1157-1167.	1.8	35
95	Mechanism of selenium sorption by activated carbon. <i>Canadian Journal of Chemical Engineering</i> , 2000, 78, 168-174.	0.9	14
96	On the measurements of regime transition in high-pressure bubble columns. <i>Canadian Journal of Chemical Engineering</i> , 1999, 77, 370-374.	0.9	31
97	Maximum stable bubble size and gas holdup in high-pressure slurry bubble columns. <i>AIChE Journal</i> , 1999, 45, 665-680.	1.8	196
98	Influence of Surface Modifiers on the Structure of Precipitated Calcium Carbonate. <i>Industrial & Engineering Chemistry Research</i> , 1999, 38, 2283-2291.	1.8	67
99	High-Pressure Reaction Kinetics of Hydrogen Sulfide and Uncalcined Limestone Powder. <i>Industrial & Engineering Chemistry Research</i> , 1999, 38, 3802-3811.	1.8	12
100	Flow Characteristics of Coal Ash in a Circulating Fluidized Bed. <i>Industrial & Engineering Chemistry Research</i> , 1998, 37, 1499-1509.	1.8	12
101	Characteristics of high-pressure liquid-solid fluidization. <i>AIChE Journal</i> , 1997, 43, 45-57.	1.8	9
102	Pore-structure optimization of calcium carbonate for enhanced sulfation. <i>AIChE Journal</i> , 1997, 43, 2323-2335.	1.8	50
103	Investigation of High-Reactivity Calcium Carbonate Sorbent for Enhanced SO ₂ Capture. <i>Industrial & Engineering Chemistry Research</i> , 1996, 35, 598-606.	1.8	57
104	Electrostatic Characteristics of Hydrated Lime Powder during Transport. <i>Industrial & Engineering Chemistry Research</i> , 1996, 35, 2748-2755.	1.8	28
105	Hydrodynamic behavior of circulating fluidized bed with polymeric particles. <i>AIChE Journal</i> , 1994, 40, 193-206.	1.8	49
106	EFFECT OF STATIC LIQUID HEIGHT ON GAS-LIQUID MASS TRANSFER IN A DRAFT-TUBE BUBBLE COLUMN AND THREE-PHASE FLUIDIZED BED. <i>Chemical Engineering Communications</i> , 1991, 108, 347-364.	1.5	7
107	Biological phenol degradation in a gas-liquid-solid fluidized bed reactor. <i>Biotechnology and Bioengineering</i> , 1989, 33, 1029-1038.	1.7	51
108	Concentration multiplicity in a draft tube fluidized-bed bioreactor involving two limiting substrates. <i>Biotechnology and Bioengineering</i> , 1988, 31, 24-34.	1.7	16

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109	Characteristics of draft tube gas-liquid-solid fluidized-bed bioreactor with immobilized living cells for phenol degradation. <i>Biotechnology and Bioengineering</i> , 1987, 30, 498-504.	1.7	67
110	On the particle terminal velocity in a gas-liquid medium with liquid as the continuous phase. <i>Canadian Journal of Chemical Engineering</i> , 1987, 65, 881-886.	0.9	29
111	Pressure fluctuation measurements and flow regime transitions in gas-liquid-solid fluidized beds. <i>AICHE Journal</i> , 1986, 32, 338-340.	1.8	33
112	Fundamentals of gas-liquid-solid fluidization. <i>AICHE Journal</i> , 1985, 31, 1-34.	1.8	239
113	Characteristics of slugging regime and transition to turbulent regime for fluidized beds of large coarse particles. <i>AICHE Journal</i> , 1985, 31, 1554-1562.	1.8	55
114	Hydrodynamic characteristics of a gas-liquid-solid fluidized bed containing a binary mixture of particles. <i>AICHE Journal</i> , 1985, 31, 1801-1810.	1.8	44
115	EXPERIMENTAL OBSERVATION OF NONHOMOGENEITY IN A LIQUID-SOLID FLUIDIZED BED OF SMALL PARTICLES. <i>Chemical Engineering Communications</i> , 1985, 37, 141-157.	1.5	18
116	Noncatalytic gas-solid reactions in a vertical pneumatic transport reactor. <i>AICHE Journal</i> , 1984, 30, 21-29.	1.8	3
117	Hydrodynamics of cocurrent gas-liquid-solid semifluidization with a liquid as the continuous phase. <i>AICHE Journal</i> , 1984, 30, 288-294.	1.8	48
118	Simulation of particulate removal in gas-solid fluidized beds. <i>AICHE Journal</i> , 1982, 28, 39-49.	1.8	31