

# Zuwei Liao

## List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

116  
papers

1,806  
citations

24  
h-index

35  
g-index

124  
ext. papers

2,126  
ext. citations

5.3  
avg. IF

5.04  
L-index

#	Paper	IF	Citations
116	Kinetic Perspective on Methanol to Propylene Process via HZSM-5 Catalyst: Balancing between Reaction and Diffusion. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2022</b> , 61, 2055-2067	3.9	0
115	Globally optimal design of intensified shell and tube heat exchangers using complete set trimming. <i>Computers and Chemical Engineering</i> , <b>2022</b> , 158, 107644	4	1
114	Globally optimal design of refinery hydrogen networks with pressure discretization. <i>Chemical Engineering Science</i> , <b>2022</b> , 247, 117021	4.4	2
113	Simultaneous design of heat integrated water allocation networks considering all possible splitters and mixers. <i>Energy</i> , <b>2022</b> , 238, 121916	7.9	2
112	Bubble characterization in the gas-solid fluidized bed using an intrusive acoustic emission sensor array. <i>Chemical Engineering Journal</i> , <b>2022</b> , 446, 137168	14.7	1
111	Modeling and Control of COVID-19 Transmission from a Perspective of Polymerization Reaction Dynamics. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2021</b> , 60, 17650-17662	3.9	1
110	Optimal Design of a Subambient Membrane Separation System with Work and Heat Integration for CO <sub>2</sub> Capture. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2021</b> , 60, 15194-15207	3.9	0
109	New superstructure-based model for the globally optimal synthesis of refinery hydrogen networks. <i>Journal of Cleaner Production</i> , <b>2021</b> , 292, 126022	10.3	4
108	Flow regimes in a gas-liquid-solid three-phase moving bed. <i>AIChE Journal</i> , <b>2021</b> , 67, e17374	3.6	0
107	Flow regime transition and liquid distribution in a 3D concurrent downflow three-phase moving bed. <i>Chemical Engineering Journal</i> , <b>2021</b> , 416, 129174	14.7	3
106	Machine learning assisted measurement of solid mass flow rate in horizontal pneumatic conveying by acoustic emission detection. <i>Chemical Engineering Science</i> , <b>2021</b> , 229, 116083	4.4	8
105	The screened waveguide for intrusive acoustic emission detection and its application in circulating fluidized bed. <i>AIChE Journal</i> , <b>2021</b> , 67, e17118	3.6	1
104	Pore plugging effects on the performance of ZSM-5 catalyst in MTP reaction using a discrete model. <i>Chinese Journal of Chemical Engineering</i> , <b>2021</b> , 32, 253-263	3.2	
103	Experimental measurement of bubble breakup in a jet bubbling reactor. <i>AIChE Journal</i> , <b>2021</b> , 67,	3.6	4
102	Efficient Strategy for the Synthesis of Work and Heat Exchange Networks. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2021</b> , 60, 1756-1773	3.9	3
101	Globally optimal synthesis of heat exchanger networks. Part III: Non-isothermal mixing in minimal and non-minimal networks. <i>AIChE Journal</i> , <b>2021</b> , 67, e17393	3.6	1
100	Enhancing Methane Conversion by Modification of Zn States in Co-Reaction of MTA. <i>Catalysts</i> , <b>2021</b> , 11, 1540	4	0

99	Simultaneous Optimization for Organic Rankine Cycle Design and Heat Integration. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2020</b> , 59, 20455-20471	3.9	3
98	Globally optimal synthesis of heat exchanger networks. Part II: Non-minimal networks. <i>AIChE Journal</i> , <b>2020</b> , 66, e16264	3.6	3
97	Targeting and Design of Work and Heat Exchange Networks. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2020</b> , 59, 12471-12486	3.9	7
96	Investigation of pressure drop in a cocurrent downflow three-phase moving bed. <i>AIChE Journal</i> , <b>2020</b> , 66, e16227	3.6	3
95	Kinetic modeling with automatic reaction network generator, an application to naphtha steam cracking. <i>Energy</i> , <b>2020</b> , 207, 118204	7.9	5
94	Simultaneous Design of Hydrogen Allocation Networks and PSA Inside Refineries. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2020</b> , 59, 4712-4720	3.9	16
93	Simultaneous Optimization of a Heat Exchanger Network and Operating Conditions of Organic Rankine Cycle. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2020</b> , 59, 11596-11609	3.9	11
92	On flow regime transition in trickle bed: Development of a novel deep-learning-assisted image analysis method. <i>AIChE Journal</i> , <b>2020</b> , 66, e16833	3.6	7
91	Numerical study of particle injection into a gas-solid fluidized bed. <i>Powder Technology</i> , <b>2020</b> , 360, 835-845	4.5	4
90	Evolution and Interaction Characteristics of Liquid Flow and Bubbles in a Jet Bubbling Column. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2020</b> , 59, 21217-21230	3.9	1
89	Effect of temperature on the synthesis of sodalite by crystal transition process. <i>Microporous and Mesoporous Materials</i> , <b>2020</b> , 292, 109755	5.3	5
88	Enhancing low-temperature methane conversion on Zn/ZSM-5 in the presence of methanol by regulating the methanol-to-aromatics reaction pathway. <i>Catalysis Science and Technology</i> , <b>2020</b> , 10, 6161-6172	5.5	5
87	Flow regime identification in horizontal pneumatic conveying by nonintrusive acoustic emission detection. <i>AIChE Journal</i> , <b>2019</b> , 65, e16552	3.6	9
86	Design optimization and operating pressure effects in the separation of acetonitrile/methanol/water mixture by ternary extractive distillation. <i>Journal of Cleaner Production</i> , <b>2019</b> , 218, 212-224	10.3	65
85	A novel two-step method to design inter-plant hydrogen network. <i>International Journal of Hydrogen Energy</i> , <b>2019</b> , 44, 5686-5695	6.7	25
84	Simulation-Based Multiobjective Optimization of the Product Separation Process within an MTP Plant. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2019</b> , 58, 12166-12178	3.9	3
83	Thermal-Stability Analysis of Ethylene-Polymerization Fluidized-Bed Reactors under Condensed-Mode Operation through a TPM <sup>2</sup> BM Integrated Model. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2019</b> , 58, 9486-9499	3.9	5
82	Balancing between risk and profit in refinery hydrogen networks: A Worst-Case Conditional Value-at-Risk approach. <i>Chemical Engineering Research and Design</i> , <b>2019</b> , 146, 201-210	5.5	17

81	Transshipment type heat exchanger network model for intra- and inter-plant heat integration using process streams. <i>Energy</i> , <b>2019</b> , 178, 853-866	7.9	18
80	Indirect Heat Integration across Plants: Novel Representation of Intermediate Fluid Circles. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2019</b> , 58, 7233-7246	3.9	3
79	Effects of aluminoxane cocatalysts on bis(imino)pyridine iron-catalyzed ethylene oligomerization. <i>Canadian Journal of Chemical Engineering</i> , <b>2019</b> , 97, 903-910	2.3	2
78	Efficient conversion of methane to aromatics in the presence of methanol at low temperature. <i>Molecular Catalysis</i> , <b>2019</b> , 475, 110493	3.3	5
77	Systematic Design and Optimization of a Membrane-Cryogenic Hybrid System for CO <sub>2</sub> Capture. <i>ACS Sustainable Chemistry and Engineering</i> , <b>2019</b> , 7, 17186-17197	8.3	9
76	Molecular Reconstruction of Naphtha via Limited Bulk Properties: Methods and Comparisons. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2019</b> , 58, 18742-18755	3.9	4
75	Ce/MgAl mixed oxides derived from hydrotalcite LDH precursors as highly efficient catalysts for ketonization of carboxylic acid. <i>Catalysis Science and Technology</i> , <b>2019</b> , 9, 6335-6344	5.5	11
74	Molecular reconstruction: Recent progress toward composition modeling of petroleum fractions. <i>Chemical Engineering Journal</i> , <b>2019</b> , 357, 761-775	14.7	30
73	Effects of Methylaluminoxane Modifications on Tuning the Bis(Imino)Pyridyl Iron-Catalyzed Oligomerization of Ethylene. <i>Polymer Engineering and Science</i> , <b>2019</b> , 59, 1010-1016	2.3	1
72	Modelling and simulation of two-bed PSA process for separating H <sub>2</sub> from methane steam reforming. <i>Chinese Journal of Chemical Engineering</i> , <b>2019</b> , 27, 1870-1878	3.2	29
71	Methanol to Propylene over Foam SiC-Supported ZSM-5 Catalyst: Performance of Multiple Reaction-Regeneration Cycles. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2019</b> , 58, 27-33	3.9	13
70	MILP Model for the Nonlinear Problem of Optimal Purifier Placement. <i>Process Integration and Optimization for Sustainability</i> , <b>2018</b> , 2, 85-94	2	2
69	Stability Analysis of Ethylene Polymerization in a Liquid-Containing Gas-Solid Fluidized Bed Reactor. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2018</b> , 57, 5616-5629	3.9	9
68	Dynamic and Steady-State Characterization of the Liquid Spray Zone in an Externally Heated Gas-Solid Fluidized Bed. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2018</b> , 57, 2988-3001	3.9	11
67	Tuning Bis(imino)pyridyl Iron-Catalyzed Ethylene Oligomerization by Modification of MAO with p-BrPhOH. <i>Macromolecular Reaction Engineering</i> , <b>2018</b> , 12, 1700061	1.5	5
66	Optimal design of hybrid cryogenic flash and membrane system. <i>Chemical Engineering Science</i> , <b>2018</b> , 179, 13-31	4.4	7
65	Energy and Water Management for Industrial Large-Scale Water Networks: A Systematic Simultaneous Optimization Approach. <i>ACS Sustainable Chemistry and Engineering</i> , <b>2018</b> , 6, 2269-2282	8.3	28
64	Robust Engineering Strategy for Scheduling Optimization of Refinery Fuel Gas System. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2018</b> , 57, 1547-1559	3.9	3

63	Heat Transfer Blocks Diagram: A Novel Tool for Targeting and Design of Heat Exchanger Networks Inside Heat Integrated Water Allocation Networks. <i>ACS Sustainable Chemistry and Engineering</i> , <b>2018</b> , 6, 2704-2715	8.3	20
62	Solvents Molecular Mobility in Coked Catalyst ZSM-5 Studied by NMR Relaxation and Pulsed Field Gradient Techniques. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2018</b> , 57, 6647-6653	3.9	4
61	Experimental investigation on mechanisms of fine particles generation for the Borealis Borstar multistage olefin polymerization process. <i>Journal of Applied Polymer Science</i> , <b>2018</b> , 135, 46589	2.9	4
60	Investigating Agglomeration Behaviors in High Temperature GasSolid Fluidized Beds with Liquid Injection. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2018</b> , 57, 5482-5494	3.9	15
59	Insights into the improvement effect of Fe doping into the CeO <sub>2</sub> catalyst for vapor phase ketonization of carboxylic acids. <i>Molecular Catalysis</i> , <b>2018</b> , 444, 22-33	3.3	15
58	Effects of DC electric fields on meso-scale structures in electrostatic gas-solid fluidized beds. <i>Chemical Engineering Journal</i> , <b>2018</b> , 332, 293-302	14.7	11
57	Enhanced Reaction Performances for Light Olefin Production from Butene through Cofeeding Reaction with Methanol. <i>Energy &amp; Fuels</i> , <b>2018</b> , 32, 787-795	4.1	1
56	Synthesis of Hydrogen Network. <i>Process Integration and Optimization for Sustainability</i> , <b>2018</b> , 2, 73-74	2	
55	New Insights into T <sub>H</sub> /H <sub>B</sub> Diagrams for Synthesis of Heat Exchanger Networks inside Heat Integrated Water Allocation Networks. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2018</b> , 57, 9323-9328	3.9	6
54	Monitoring of particle motions in gas-solid fluidized beds by electrostatic sensors. <i>Powder Technology</i> , <b>2017</b> , 308, 461-471	5.2	15
53	CFD-DEM investigation of particle elutriation with electrostatic effects in gas-solid fluidized beds. <i>Powder Technology</i> , <b>2017</b> , 308, 422-433	5.2	40
52	Modeling Agglomeration Behavior in High Temperature GasSolid Fluidized Beds via Monte Carlo Method. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2017</b> , 56, 1112-1121	3.9	3
51	Optimal process design for recovering effluent gas at subambient temperature. <i>Journal of Cleaner Production</i> , <b>2017</b> , 144, 130-141	10.3	9
50	Effect of metal on the methanol to aromatics conversion over modified ZSM-5 in the presence of carbon dioxide. <i>RSC Advances</i> , <b>2017</b> , 7, 10729-10736	3.7	24
49	Targeting of heat integrated water allocation networks by one-step MILP formulation. <i>Applied Energy</i> , <b>2017</b> , 197, 254-269	10.7	23
48	Promotional effect of Ti doping on the ketonization of acetic acid over a CeO <sub>2</sub> catalyst. <i>RSC Advances</i> , <b>2017</b> , 7, 22017-22026	3.7	19
47	Kinetic and regenerator modeling of the coke combustion in the moving bed MTP process. <i>Chemical Engineering Research and Design</i> , <b>2017</b> , 122, 52-62	5.5	9
46	Automatic Design of Multi-Impurity Refinery Hydrogen Networks Using Mixing Potential Concept. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2017</b> , 56, 6703-6710	3.9	15

45	Online measurement of particle charge density in a gas-solid bubbling fluidized bed through electrostatic and pressure sensing. <i>Powder Technology</i> , <b>2017</b> , 317, 471-480	5.2	5
44	New transshipment type MINLP model for heat exchanger network synthesis. <i>Chemical Engineering Science</i> , <b>2017</b> , 173, 537-559	4.4	16
43	Experimental investigation of bubble and particle motion behaviors in a gas-solid fluidized bed with side wall liquid spray. <i>Advanced Powder Technology</i> , <b>2017</b> , 28, 2306-2316	4.6	8
42	CFD simulation and hydrodynamics characterization of solids oscillation behavior in a circulating fluidized bed with sweeping bend return. <i>Chemical Engineering Journal</i> , <b>2017</b> , 307, 604-620	14.7	12
41	A comparative study of electrostatic current and pressure signals in a MSFC gas-solid fluidized bed. <i>Powder Technology</i> , <b>2016</b> , 287, 292-300	5.2	8
40	Effects of agglomerates on electrostatic behaviors in gas-solid fluidized beds. <i>Powder Technology</i> , <b>2016</b> , 287, 139-151	5.2	12
39	Novel graphical tool for the design of the heat integrated water allocation networks. <i>AIChE Journal</i> , <b>2016</b> , 62, 670-686	3.6	18
38	Multi-scale analysis of acoustic emission signals in dense-phase pneumatic conveying of pulverized coal at high pressure. <i>AIChE Journal</i> , <b>2016</b> , 62, 2635-2648	3.6	16
37	Simultaneous optimization of heat-integrated water allocation networks. <i>Applied Energy</i> , <b>2016</b> , 169, 395-407	10.7	18
36	The influence of purifier models on hydrogen network optimization: Insights from a case study. <i>International Journal of Hydrogen Energy</i> , <b>2016</b> , 41, 5243-5249	6.7	17
35	Improvement of performance of a Au/Cu/AC catalyst using thiol for acetylene hydrochlorination reaction. <i>RSC Advances</i> , <b>2016</b> , 6, 3806-3814	3.7	11
34	Realization and control of multiple temperature zones in liquid-containing gas-solid fluidized bed reactor. <i>AIChE Journal</i> , <b>2016</b> , 62, 1454-1466	3.6	27
33	Design of a water allocation and energy network for multi-contaminant problems using multi-objective optimization. <i>Chemical Engineering Research and Design</i> , <b>2016</b> , 103, 348-364	5.5	18
32	Strategy of effluent recovery technology selection in polyolefin plants. <i>Chemical Engineering Research and Design</i> , <b>2016</b> , 103, 405-412	5.5	4
31	Experimental investigation of electrostatic effect on bubble behaviors in gas-solid fluidized bed. <i>AIChE Journal</i> , <b>2015</b> , 61, 1160-1171	3.6	31
30	Efficient Au/C catalyst synthesized by a new method for acetylene hydrochlorination. <i>RSC Advances</i> , <b>2015</b> , 5, 46366-46371	3.7	15
29	Simultaneous Optimization of Heat-Integrated Water Allocation Networks Using the Mathematical Model with Equilibrium Constraints Strategy. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2015</b> , 54, 3355-3366	3.9	25
28	Energy configuration and operation optimization of refinery fuel gas networks. <i>Applied Energy</i> , <b>2015</b> , 139, 365-375	10.7	10



27	A thermodynamic irreversibility based design method for multi-contaminant hydrogen networks. <i>International Journal of Hydrogen Energy</i> , <b>2015</b> , 40, 435-443	6.7	19
26	Experimental investigation of electrostatic effect on particle motions in gas-solid fluidized beds. <i>AIChE Journal</i> , <b>2015</b> , 61, 3628-3638	3.6	24
25	Methanol to Propylene Process in a Moving Bed Reactor with Byproducts Recycling: Kinetic Study and Reactor Simulation. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2014</b> , 53, 4623-4632	3.9	34
24	Robust optimization of hydrogen network. <i>International Journal of Hydrogen Energy</i> , <b>2014</b> , 39, 1210-1218	6.7	42
23	Experimental Investigation of Electrostatic Reduction in a Gas-Solid Fluidized Bed by an in Situ Corona Charge Eliminator. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2014</b> , 53, 14217-14224	3.9	14
22	Computational Fluid Dynamics Simulations and Experimental Validation of Macromixing and Flow Characteristics in Low-Density Polyethylene Autoclave Reactors. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2014</b> , 53, 14865-14875	3.9	6
21	Mixing potential: A new concept for optimal design of hydrogen and water networks with higher disturbance resistance. <i>AIChE Journal</i> , <b>2014</b> , 60, 3762-3772	3.6	20
20	MPEC strategies for efficient and stable scheduling of hydrogen pipeline network operation. <i>Applied Energy</i> , <b>2014</b> , 119, 296-305	10.7	22
19	Optimal design of sustainable hydrogen networks. <i>International Journal of Hydrogen Energy</i> , <b>2013</b> , 38, 2937-2950	6.7	56
18	Effects of Interparticle Forces on Fluidization Characteristics in Liquid-Containing and High-Temperature Fluidized Beds. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2013</b> , 52, 16666-16674	3.9	23
17	Pinch Sliding Approach for Targeting Hydrogen and Water Networks with Different Types of Purifier. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2013</b> , 52, 8538-8549	3.9	36
16	A heuristic approach to grade transition strategy of the HDPE slurry process in different operation modes. <i>Clean Technologies and Environmental Policy</i> , <b>2013</b> , 15, 833-849	4.3	0
15	Optimization of refinery hydrogen network based on chance constrained programming. <i>Chemical Engineering Research and Design</i> , <b>2012</b> , 90, 1553-1567	5.5	38
14	A Multiperiod Optimization Model for Hydrogen System Scheduling in Refinery. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2012</b> , 51, 6085-6098	3.9	29
13	Hydrogen sulfide removal process embedded optimization of hydrogen network. <i>International Journal of Hydrogen Energy</i> , <b>2012</b> , 37, 18163-18174	6.7	52
12	Exergy analysis and CO <sub>2</sub> emission evaluation for steam methane reforming. <i>International Journal of Hydrogen Energy</i> , <b>2012</b> , 37, 3191-3200	6.7	40
11	Simultaneous optimization of hydrogen network with desulfurization processes embedded. <i>Computer Aided Chemical Engineering</i> , <b>2012</b> , 31, 215-219	0.6	3
10	Systematic Optimization of Heat-Integrated Water Allocation Networks. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2011</b> , 50, 6713-6727	3.9	47

9	Modeling and Multi-objective Optimization of Refinery Hydrogen Network. <i>Chinese Journal of Chemical Engineering</i> , <b>2011</b> , 19, 990-998	3.2	41
8	Determination of particle size distribution by multi-scale analysis of acoustic emission signals in gas-solid fluidized bed. <i>Journal of Zhejiang University: Science A</i> , <b>2011</b> , 12, 260-267	2.1	14
7	Rigorous algorithmic targeting methods for hydrogen networksPart I: Systems with no hydrogen purification. <i>Chemical Engineering Science</i> , <b>2011</b> , 66, 813-820	4.4	62
6	Rigorous algorithmic targeting methods for hydrogen networksPart II: Systems with one hydrogen purification unit. <i>Chemical Engineering Science</i> , <b>2011</b> , 66, 821-833	4.4	63
5	Hybrid titanium catalyst supported on core-shell silica/poly(styrene-co-acrylic acid) carrier. <i>Journal of Applied Polymer Science</i> , <b>2010</b> , 118, n/a-n/a	2.9	2
4	Integrating purifiers in refinery hydrogen networks: a retrofit case study. <i>Journal of Cleaner Production</i> , <b>2010</b> , 18, 233-241	10.3	102
3	Design Energy Efficient Water Utilization Systems Allowing Operation Split . <i>Chinese Journal of Chemical Engineering</i> , <b>2008</b> , 16, 16-20	3.2	23
2	Design Methodology for Flexible Multiple Plant Water Networks. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2007</b> , 46, 4954-4963	3.9	63
1	Acidity Modification of ZSM-5 for Methane Conversion in Co-feeding Method with MTA Reaction. <i>Chemical Research in Chinese Universities</i> ,1	2.2	2