Xi Chen

List of Publications by Year
in descending order

55 papers	2,852 citations	687363 13 h-index	197818 49 g-index
55 all docs	55 docs citations	55 times ranked	5164 citing authors

#	Article	IF	Citations
1	Integration of External Signaling Pathways with the Core Transcriptional Network in Embryonic Stem Cells. Cell, 2008, 133, 1106-1117.	28.9	2,279
2	Combustion optimization of ultra supercritical boiler based on artificial intelligence. Energy, 2019, 170, 804-817.	8.8	82
3	Simulation and optimization of cryogenic air separation units using a homotopy-based backtracking method. Separation and Purification Technology, 2009, 67, 262-270.	7.9	38
4	Complete Equation-Oriented Approach for Process Analysis and Optimization of a Cryogenic Air Separation Unit. Industrial & Engineering Chemistry Research, 2015, 54, 12096-12107.	3.7	28
5	Analytical and triangular solutions to operational flexibility analysis using quantifier elimination. AICHE Journal, 2018, 64, 3894-3911.	3.6	22
6	Simultaneous design of pump network and cooling tower allocations for cooling water system synthesis. Energy, 2018, 150, 653-669.	8.8	20
7	Equation-Oriented Optimization on an Industrial High-Density Polyethylene Slurry Process with Target Molecular Weight Distribution. Industrial & Engineering Chemistry Research, 2013, 52, 7240-7251.	3.7	19
8	Kinetic parameter estimation of HDPE slurry process from molecular weight distribution: Estimability analysis and multistep methodology. AICHE Journal, 2014, 60, 3442-3459.	3.6	19
9	An efficient strategy for the activation of MIP relaxations in a multicore global MINLP solver. Journal of Global Optimization, 2018, 70, 497-516.	1.8	18
10	Parallel calculation methods for molecular weight distribution of batch free radical polymerization. Computers and Chemical Engineering, 2013, 48, 175-186.	3.8	17
11	A novel strategy for dynamic optimization of grade transition processes based on molecular weight distribution. AICHE Journal, 2014, 60, 2498-2512.	3.6	16
12	Optimal flowsheet configuration of a polymerization process with embedded molecular weight distributions. AICHE Journal, 2016, 62, 131-145.	3.6	16
13	Monte-Carlo-simulation-based optimization for copolymerization processes with embedded chemical composition distribution. Computers and Chemical Engineering, 2018, 109, 261-275.	3.8	15
14	Process Intensification of Polymerization Processes with Embedded Molecular Weight Distributions Models: An Advanced Optimization Approach. Industrial & Engineering Chemistry Research, 2019, 58, 6133-6145.	3.7	14
15	Parallel Monte Carlo Simulation of Molecular Weight Distribution and Chemical Composition Distribution for Copolymerization on a Graphics Processing Unit Platform. Macromolecular Theory and Simulations, 2015, 24, 521-536.	1.4	13
16	Fast and reliable computational strategy for developing a rigorous model-driven soft sensor of dynamic molecular weight distribution. Journal of Process Control, 2017, 56, 79-99.	3.3	13
17	Operational Flexibility Analysis of High-Dimensional Systems via Cylindrical Algebraic Decomposition. Industrial & Engineering Chemistry Research, 2020, 59, 4670-4687.	3.7	13
18	Solving Optimization Problems Through Fully Convolutional Networks: An Application to the Traveling Salesman Problem. IEEE Transactions on Systems, Man, and Cybernetics: Systems, 2021, 51, 7475-7485.	9.3	12

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19	Random Sampling-Based Automatic Parameter Tuning for Nonlinear Programming Solvers. Industrial & Engineering Chemistry Research, 2011, 50, 3907-3918.	3.7	11
20	A variable selection method for soft sensor development through mixed integer quadratic programming. Chemometrics and Intelligent Laboratory Systems, 2017, 167, 85-95.	3.5	11
21	Modeling of sequence length distribution for olefin copolymerization with vanadiumâ€based catalyst. AICHE Journal, 2020, 66, e16784.	3.6	11
22	A multi-thread parallel computation method for dynamic simulation of molecular weight distribution of multisite polymerization. Computers and Chemical Engineering, 2015, 82, 55-67.	3.8	10
23	Simulation and optimization of polymer molecular weight distribution with nonideal reactors. Computers and Chemical Engineering, 2017, 106, 744-757.	3.8	10
24	Dynamic optimization for grade transition processes using orthogonal collocation on molecular weight distribution. AICHE Journal, 2019, 65, 1198-1210.	3.6	10
25	ProCACD: A computer-aided versatile tool for process control. Computers and Chemical Engineering, 2020, 136, 106771.	3.8	10
26	A hierarchical and categorized algorithm for efficient and robust simulation of thermal systems based on the heat current method. Energy, 2021, 215, 119105.	8.8	10
27	Heterogeneous parallel method for mixed integer nonlinear programming. Computers and Chemical Engineering, 2014, 66, 290-300.	3.8	9
28	Quantification of process flexibility via space projection. AICHE Journal, 2019, 65, e16706.	3.6	9
29	Toward Polymer Product Design. I. Dynamic Optimization of Average Molecular Weights and Polydispersity Index in Batch Free Radical Polymerization. Industrial & Engineering Chemistry Research, 2009, 48, 6739-6748.	3.7	8
30	A hybrid numericalâ€symbolic solving strategy for equationâ€oriented process simulation and optimization. AICHE Journal, 2017, 63, 2764-2780.	3.6	8
31	Equation-Oriented Approach for Handling the Perturbed-Chain SAFT Equation of State in Simulation and Optimization of Polymerization Processes. Industrial & Engineering Chemistry Research, 2018, 57, 4607-4622.	3.7	8
32	Sensitivity-based hierarchical distributed model predictive control of nonlinear processes. Journal of Process Control, 2019, 84, 146-167.	3.3	8
33	Operational Optimization of Polymerization Reactors with Computational Fluid Dynamics and Embedded Molecular Weight Distribution Using the Iterative Surrogate Model Method. Industrial & Engineering Chemistry Research, 2020, 59, 9165-9179.	3.7	7
34	Identification-based real-time optimization and its application to power plants. Control Engineering Practice, 2022, 123, 105160.	5.5	7
35	A Sequential Variable Decoupling Method for Rigorous Calculation of Molecular Weight Distribution of Batch Free Radical Polymerization. Computer Aided Chemical Engineering, 2009, 27, 873-878.	0.5	5
36	Generalized initialization for the dynamic simulation and optimization of grade transition processes using twoâ€dimensional collocation. AICHE Journal, 2021, 67, .	3.6	5

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37	Adaptable Parallel Acceleration Strategy for Dynamic Monte Carlo Simulations of Polymerization with Microscopic Resolution. Industrial & Engineering Chemistry Research, 2021, 60, 6173-6187.	3.7	5
38	Reduced order models for dynamic molecular weight distribution in polymerization processes. Computers and Chemical Engineering, 2019, 126, 280-291.	3.8	4
39	A modified collocation modeling framework for dynamic evolution of molecular weight distributions in general polymer kinetic systems. Chemical Engineering Science, 2021, 237, 116519.	3.8	4
40	Analytical solution of volumetric flexibility through symbolic computation. Chemical Engineering Science, 2021, 239, 116643.	3.8	4
41	Dynamic optimization of batch free radical polymerization with conditional modeling formulation through the adaptive smoothing strategy. Computers and Chemical Engineering, 2019, 120, 15-29.	3.8	3
42	A segment probability method for calculating the molecular weight distributions of linear polycondensates in a continuous reactor. AICHE Journal, 0, , .	3.6	3
43	A Novel Method To Find All Physical Solutions of Constrained Chemical Engineering Models in Polynomial Equations. Industrial & Engineering Chemistry Research, 2018, 57, 6377-6390.	3.7	2
44	Optimal operation of parallel distillation systems with multiple product grades: An industrial case study. Computers and Chemical Engineering, 2018, 111, 210-224.	3.8	2
45	Flexibility index and design of chemical systems by cylindrical algebraic decomposition. Computers and Chemical Engineering, 2021, 144, 107142.	3.8	2
46	Projection-based robust optimization with symbolic computation. Computers and Chemical Engineering, 2021, 152, 107380.	3.8	2
47	SyPSE: A Symbolic Computation Toolbox for Process Systems Engineering Part IIâ”€Design for PSE Applications. Industrial & Engineering Chemistry Research, 0, , .	3.7	2
48	SyPSE: A Symbolic Computation Toolbox for Process Systems Engineering Part Iâ”€Architecture and Algorithm Development. Industrial & Engineering Chemistry Research, 0, , .	3.7	2
49	A fast, fully distributed nonlinear model predictive control algorithm with parametric sensitivity through Jacobi iteration. Journal of Process Control, 2022, 110, 133-153.	3.3	2
50	Dynamic Reduced Order Models for Polymerization Process Based on Molecular Weight Distribution. Computer Aided Chemical Engineering, 2018, 44, 559-564.	0.5	1
51	A Simultaneous Parameter and State Estimator for Polymerization Process Based on Molecular Weight Distribution. Computer Aided Chemical Engineering, 2018, 43, 1117-1122.	0.5	1
52	Optimal Scheduling of the Multigrade Parallel Distillation Column System with a Continuous-Time Formulation. Industrial & Engineering Chemistry Research, 2019, 58, 23225-23237.	3.7	1
53	Can Deep Learning Solve Parametric Mathematical Programming? An Application to 0â€“1 Linear Programming Through Image Representation. IEEE Transactions on Systems, Man, and Cybernetics: Systems, 2022, 52, 5656-5667.	9.3	1
54	Flexibility Analysis of High-dimensional Systems via Cylindrical Algebraic Decomposition. Computer Aided Chemical Engineering, 2020, 48, 1195-1200.	0.5	0

#	Article	IF	Citations
55	Fast cooperative distributed model predictive control based on parametric sensitivity. IFAC-PapersOnLine, 2020, 53, 6019-6024.	0.9	0