

# Xi Chen

## List of Publications by Year in descending order

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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	Can Deep Learning Solve Parametric Mathematical Programming? An Application to 0-1 Linear Programming Through Image Representation. IEEE Transactions on Systems, Man, and Cybernetics: Systems, 2022, 52, 5656-5667.	9.3	1
2	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
3	Identification-based real-time optimization and its application to power plants. Control Engineering Practice, 2022, 123, 105160.	5.5	7
4	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
5	Generalized initialization for the dynamic simulation and optimization of grade transition processes using two-dimensional collocation. AIChE Journal, 2021, 67, .	3.6	5
6	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
7	Flexibility index and design of chemical systems by cylindrical algebraic decomposition. Computers and Chemical Engineering, 2021, 144, 107142.	3.8	2
8	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
9	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
10	Analytical solution of volumetric flexibility through symbolic computation. Chemical Engineering Science, 2021, 239, 116643.	3.8	4
11	Projection-based robust optimization with symbolic computation. Computers and Chemical Engineering, 2021, 152, 107380.	3.8	2
12	Modeling of sequence length distribution for olefin copolymerization with vanadium-based catalyst. AIChE Journal, 2020, 66, e16784.	3.6	11
13	Flexibility Analysis of High-dimensional Systems via Cylindrical Algebraic Decomposition. Computer Aided Chemical Engineering, 2020, 48, 1195-1200.	0.5	0
14	ProCADC: A computer-aided versatile tool for process control. Computers and Chemical Engineering, 2020, 136, 106771.	3.8	10
15	Operational Flexibility Analysis of High-Dimensional Systems via Cylindrical Algebraic Decomposition. Industrial & Engineering Chemistry Research, 2020, 59, 4670-4687.	3.7	13
16	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
17	Fast cooperative distributed model predictive control based on parametric sensitivity. IFAC-PapersOnLine, 2020, 53, 6019-6024.	0.9	0
18	Quantification of process flexibility via space projection. AIChE Journal, 2019, 65, e16706.	3.6	9

#	ARTICLE	IF	CITATIONS
19	Sensitivity-based hierarchical distributed model predictive control of nonlinear processes. <i>Journal of Process Control</i> , 2019, 84, 146-167.	3.3	8
20	Reduced order models for dynamic molecular weight distribution in polymerization processes. <i>Computers and Chemical Engineering</i> , 2019, 126, 280-291.	3.8	4
21	Optimal Scheduling of the Multigrade Parallel Distillation Column System with a Continuous-Time Formulation. <i>Industrial &amp; Engineering Chemistry Research</i> , 2019, 58, 23225-23237.	3.7	1
22	Dynamic optimization for grade transition processes using orthogonal collocation on molecular weight distribution. <i>AIChE Journal</i> , 2019, 65, 1198-1210.	3.6	10
23	Combustion optimization of ultra supercritical boiler based on artificial intelligence. <i>Energy</i> , 2019, 170, 804-817.	8.8	82
24	Process Intensification of Polymerization Processes with Embedded Molecular Weight Distributions Models: An Advanced Optimization Approach. <i>Industrial &amp; Engineering Chemistry Research</i> , 2019, 58, 6133-6145.	3.7	14
25	Dynamic optimization of batch free radical polymerization with conditional modeling formulation through the adaptive smoothing strategy. <i>Computers and Chemical Engineering</i> , 2019, 120, 15-29.	3.8	3
26	Equation-Oriented Approach for Handling the Perturbed-Chain SAFT Equation of State in Simulation and Optimization of Polymerization Processes. <i>Industrial &amp; Engineering Chemistry Research</i> , 2018, 57, 4607-4622.	3.7	8
27	Simultaneous design of pump network and cooling tower allocations for cooling water system synthesis. <i>Energy</i> , 2018, 150, 653-669.	8.8	20
28	A Novel Method To Find All Physical Solutions of Constrained Chemical Engineering Models in Polynomial Equations. <i>Industrial &amp; Engineering Chemistry Research</i> , 2018, 57, 6377-6390.	3.7	2
29	Optimal operation of parallel distillation systems with multiple product grades: An industrial case study. <i>Computers and Chemical Engineering</i> , 2018, 111, 210-224.	3.8	2
30	An efficient strategy for the activation of MIP relaxations in a multicore global MINLP solver. <i>Journal of Global Optimization</i> , 2018, 70, 497-516.	1.8	18
31	Monte-Carlo-simulation-based optimization for copolymerization processes with embedded chemical composition distribution. <i>Computers and Chemical Engineering</i> , 2018, 109, 261-275.	3.8	15
32	Dynamic Reduced Order Models for Polymerization Process Based on Molecular Weight Distribution. <i>Computer Aided Chemical Engineering</i> , 2018, 44, 559-564.	0.5	1
33	A Simultaneous Parameter and State Estimator for Polymerization Process Based on Molecular Weight Distribution. <i>Computer Aided Chemical Engineering</i> , 2018, 43, 1117-1122.	0.5	1
34	Analytical and triangular solutions to operational flexibility analysis using quantifier elimination. <i>AIChE Journal</i> , 2018, 64, 3894-3911.	3.6	22
35	Simulation and optimization of polymer molecular weight distribution with nonideal reactors. <i>Computers and Chemical Engineering</i> , 2017, 106, 744-757.	3.8	10
36	A hybrid numerical-symbolic solving strategy for equation-oriented process simulation and optimization. <i>AIChE Journal</i> , 2017, 63, 2764-2780.	3.6	8

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37	Fast and reliable computational strategy for developing a rigorous model-driven soft sensor of dynamic molecular weight distribution. <i>Journal of Process Control</i> , 2017, 56, 79-99.	3.3	13
38	A variable selection method for soft sensor development through mixed integer quadratic programming. <i>Chemometrics and Intelligent Laboratory Systems</i> , 2017, 167, 85-95.	3.5	11
39	Optimal flowsheet configuration of a polymerization process with embedded molecular weight distributions. <i>AIChE Journal</i> , 2016, 62, 131-145.	3.6	16
40	Parallel Monte Carlo Simulation of Molecular Weight Distribution and Chemical Composition Distribution for Copolymerization on a Graphics Processing Unit Platform. <i>Macromolecular Theory and Simulations</i> , 2015, 24, 521-536.	1.4	13
41	Complete Equation-Oriented Approach for Process Analysis and Optimization of a Cryogenic Air Separation Unit. <i>Industrial &amp; Engineering Chemistry Research</i> , 2015, 54, 12096-12107.	3.7	28
42	A multi-thread parallel computation method for dynamic simulation of molecular weight distribution of multisite polymerization. <i>Computers and Chemical Engineering</i> , 2015, 82, 55-67.	3.8	10
43	A novel strategy for dynamic optimization of grade transition processes based on molecular weight distribution. <i>AIChE Journal</i> , 2014, 60, 2498-2512.	3.6	16
44	Kinetic parameter estimation of HDPE slurry process from molecular weight distribution: Estimability analysis and multistep methodology. <i>AIChE Journal</i> , 2014, 60, 3442-3459.	3.6	19
45	Heterogeneous parallel method for mixed integer nonlinear programming. <i>Computers and Chemical Engineering</i> , 2014, 66, 290-300.	3.8	9
46	Equation-Oriented Optimization on an Industrial High-Density Polyethylene Slurry Process with Target Molecular Weight Distribution. <i>Industrial &amp; Engineering Chemistry Research</i> , 2013, 52, 7240-7251.	3.7	19
47	Parallel calculation methods for molecular weight distribution of batch free radical polymerization. <i>Computers and Chemical Engineering</i> , 2013, 48, 175-186.	3.8	17
48	Random Sampling-Based Automatic Parameter Tuning for Nonlinear Programming Solvers. <i>Industrial &amp; Engineering Chemistry Research</i> , 2011, 50, 3907-3918.	3.7	11
49	Simulation and optimization of cryogenic air separation units using a homotopy-based backtracking method. <i>Separation and Purification Technology</i> , 2009, 67, 262-270.	7.9	38
50	Toward Polymer Product Design. I. Dynamic Optimization of Average Molecular Weights and Polydispersity Index in Batch Free Radical Polymerization. <i>Industrial &amp; Engineering Chemistry Research</i> , 2009, 48, 6739-6748.	3.7	8
51	A Sequential Variable Decoupling Method for Rigorous Calculation of Molecular Weight Distribution of Batch Free Radical Polymerization. <i>Computer Aided Chemical Engineering</i> , 2009, 27, 873-878.	0.5	5
52	Integration of External Signaling Pathways with the Core Transcriptional Network in Embryonic Stem Cells. <i>Cell</i> , 2008, 133, 1106-1117.	28.9	2,279
53	SyPSE: A Symbolic Computation Toolbox for Process Systems Engineering Part II – Design for PSE Applications. <i>Industrial &amp; Engineering Chemistry Research</i> , 0, , .	3.7	2
54	SyPSE: A Symbolic Computation Toolbox for Process Systems Engineering Part I – Architecture and Algorithm Development. <i>Industrial &amp; Engineering Chemistry Research</i> , 0, , .	3.7	2

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55	A segment probability method for calculating the molecular weight distributions of linear polycondensates in a continuous reactor. <i>AIChE Journal</i> , 0, , .	3.6	3