M M Faruque Hasan

List of Publications by Year
in descending order

74 papers	2,602 citations	201575 27 h-index	197736 49 g-index
76 all docs	76 docs citations	76 times ranked	1921 citing authors

#	Article	IF	Citations
1	A multi-scale framework for CO2 capture, utilization, and sequestration: CCUS and CCU. Computers and Chemical Engineering, 2015, 81, 2-21.	2.0	226
2	An overview of process systems engineering approaches for process intensification: State of the art. Chemical Engineering and Processing: Process Intensification, 2018, 133, 160-210.	1.8	216
3	Modeling, Simulation, and Optimization of Postcombustion CO₂ Capture for Variable Feed Concentration and Flow Rate. 2. Pressure Swing Adsorption and Vacuum Swing Adsorption Processes. Industrial & Engineering Chemistry Research, 2012, 51, 15665-15682.	1.8	161
4	Modeling, Simulation, and Optimization of Postcombustion CO₂ Capture for Variable Feed Concentration and Flow Rate. 1. Chemical Absorption and Membrane Processes. Industrial & Engineering Chemistry Research, 2012, 51, 15642-15664.	1.8	158
5	Nationwide, Regional, and Statewide CO₂ Capture, Utilization, and Sequestration Supply Chain Network Optimization. Industrial & Engineering Chemistry Research, 2014, 53, 7489-7506.	1.8	138
6	Cost-effective CO2 capture based on in silico screening of zeolites and process optimization. Physical Chemistry Chemical Physics, 2013, 15, 17601.	1.3	118
7	Systematic process intensification using building blocks. Computers and Chemical Engineering, 2017, 105, 2-38.	2.0	105
8	Operational modeling of multistream heat exchangers with phase changes. AICHE Journal, 2009, 55, 150-171.	1.8	97
9	Minimizing Boil-Off Losses in Liquefied Natural Gas Transportation. Industrial & Engineering Chemistry Research, 2009, 48, 9571-9580.	1.8	85
10	Discovery of novel zeolites for natural gas purification through combined material screening and process optimization. AICHE Journal, 2014, 60, 1767-1785.	1.8	85
11	Global optimization of general constrained grey-box models: new method and its application to constrained PDEs for pressure swing adsorption. Journal of Global Optimization, 2017, 67, 3-42.	1.1	82
12	Optimization of water-energy nexus: A network representation-based graphical approach. Applied Energy, 2018, 224, 230-250.	5.1	71
13	Piecewise linear relaxation of bilinear programs using bivariate partitioning. AICHE Journal, 2010, 56, 1880-1893.	1.8	64
14	Renewable-integrated flexible carbon capture: a synergistic path forward to clean energy future. Energy and Environmental Science, 2021, 14, 3986-4008.	15.6	57
15	Integrated Carbon Capture and Conversion To Produce Syngas: Novel Process Design, Intensification, and Optimization. Industrial & Engineering Chemistry Research, 2017, 56, 8622-8648.	1.8	42
16	Simulation and optimization of reforming reactors for carbon dioxide utilization using both rigorous and reduced models. Journal of CO2 Utilization, 2018, 23, 80-104.	3.3	42
17	Optimal Methanol Production via Sorption-Enhanced Reaction Process. Industrial & Engineering Chemistry Research, 2018, 57, 14143-14161.	1.8	41
18	Can CO₂ and Renewable Carbon Be Primary Resources for Sustainable Fuels and Chemicals?. ACS Sustainable Chemistry and Engineering, 2021, 9, 12427-12430.	3.2	41

#	Article	IF	Citations
19	A trust region-based two phase algorithm for constrained black-box and grey-box optimization with infeasible initial point. Computers and Chemical Engineering, 2018, 116, 306-321.	2.0	39
20	Process synthesis using block superstructure with automated flowsheet generation and optimization. AICHE Journal, 2018, 64, 3082-3100.	1.8	36
21	Systematic process intensification. Current Opinion in Chemical Engineering, 2019, 25, 108-113.	3.8	36
22	Highly Permeable Polyanilineâ€“Graphene Oxide Nanocomposite Membranes for CO₂ Separations. ACS Applied Polymer Materials, 2019, 1, 3233-3241.	2.0	33
23	Operational power plant scheduling with flexible carbon capture: A multistage stochastic optimization approach. Computers and Chemical Engineering, 2019, 130, 106544.	2.0	31
24	A General Framework for Process Synthesis, Integration, and Intensification. Industrial & Engineering Chemistry Research, 2019, 58, 5950-5967.	1.8	31
25	Process Integration Using Block Superstructure. Industrial & Engineering Chemistry Research, 2018, 57, 4377-4398.	1.8	30
26	Optimal synthesis of periodic sorption enhanced reaction processes with application to hydrogen production. Computers and Chemical Engineering, 2018, 115, 89-111.	2.0	30
27	Synthesis of heat exchanger networks with nonisothermal phase changes. AICHE Journal, 2010, 56, 930-945.	1.8	28
28	A multi-scale approach for the discovery of zeolites for hydrogen sulfide removal. Computers and Chemical Engineering, 2016, 91, 206-218.	2.0	26
29	Discovery of novel zeolites and multi-zeolite processes for p-xylene separation using simulated moving bed (SMB) chromatography. Chemical Engineering Science, 2017, 159, 3-17.	1.9	26
30	GRAMS: A general framework describing adsorption, reaction and sorption-enhanced reaction processes. Chemical Engineering Science, 2018, 192, 335-358.	1.9	25
31	Sustainable Process Intensification Using Building Blocks. ACS Sustainable Chemistry and Engineering, 2020, 8, 17664-17679.	3.2	24
32	Preliminary Synthesis of Fuel Gas Networks to Conserve Energy and Preserve the Environment. Industrial & Engineering Chemistry Research, 2011, 50, 7414-7427.	1.8	23
33	Membrane Separation Process Design and Intensification. Industrial & Engineering Chemistry Research, 2021, 60, 7197-7217.	1.8	22
34	Minimize Flaring through Integration with Fuel Gas Networks. Industrial & Engineering Chemistry Research, 2012, 51, 12630-12641.	1.8	21
35	Separation Process Synthesis for High-GWP Refrigerant Mixtures: Extractive Distillation using Ionic Liquids. Industrial & Engineering Chemistry Research, 2022, 61, 4390-4406.	1.8	19
36	Fuel Gas Network Synthesis Using Block Superstructure. Processes, 2018, 6, 23.	1.3	17

#	Article	IF	Citations
37	Flexible oxygen concentrators for medical applications. Scientific Reports, 2021, 11, 14317.	1.6	17
38	Optimizing Compressor Operations in an LNG Plant. , 2009, , 179-184.		16
39	Computational Material Screening Using Artificial Neural Networks for Adsorption Gas Separation. Journal of Physical Chemistry C, 2020, 124, 21446-21460.	1.5	16
40	Building Block-Based Synthesis and Intensification of Work-Heat Exchanger Networks (WHENS). Processes, 2019, 7, 23.	1.3	14
41	Design standardization of unit operations for reducing the capital intensity and cost of smallâ€scale chemical processes. AICHE Journal, 2020, 66, e16802.	1.8	14
42	Can Artificial Intelligence and Machine Learning Be Used to Accelerate Sustainable Chemistry and Engineering?. ACS Sustainable Chemistry and Engineering, 2021, 9, 6126-6129.	3.2	14
43	Machine learning for the design and discovery of zeolites and porous crystalline materials. Current Opinion in Chemical Engineering, 2022, 35, 100739.	3.8	14
44	Simultaneous Process Synthesis and Process Intensification using Building Blocks. Computer Aided Chemical Engineering, 2017, , 1171-1176.	0.3	12
45	Sustainable hydrogen manufacturing via renewable-integrated intensified process for refueling stations. Applied Energy, 2022, 311, 118667.	5.1	12
46	An edge-concave underestimator for the global optimization of twice-differentiable nonconvex problems. Journal of Global Optimization, 2018, 71, 735-752.	1.1	10
47	SPICE_MARS: A Process Synthesis Framework for Membrane-Assisted Reactive Separations. Industrial & Engineering Chemistry Research, 2021, 60, 7635-7655.	1.8	10
48	A graph theoretic representation and analysis of zeolite frameworks. Computers and Chemical Engineering, 2021, 155, 107548.	2.0	10
49	A General Framework for Process Synthesis, Integration and Intensification. Computer Aided Chemical Engineering, 2018, 44, 445-450.	0.3	9
50	Black-Box Optimization: Methods and Applications. Springer Optimization and Its Applications, 2021, , 35-65.	0.6	8
51	Cryogenic energy storage: Standalone design, rigorous optimization and techno-economic analysis. Applied Energy, 2022, 322, 119413.	5.1	8
52	Combined Natural Gas Separation and Storage Based on in Silico Material Screening and Process Optimization. Industrial & Engineering Chemistry Research, 2018, 57, 16727-16750.	1.8	7
53	Systematic Process Intensification involving Zeotropic Distillation. Computer Aided Chemical Engineering, 2019, 47, 421-426.	0.3	7
54	RD-toolbox: A computer aided toolbox for integrated design and control of reactive distillation processes. Computers and Chemical Engineering, 2022, 164, 107869.	2.0	7

#	Article	IF	Citations
55	UNIPOPT: Univariate projection-based optimization without derivatives. Computers and Chemical Engineering, 2019, 127, 71-87.	2.0	6
56	Systematic incorporation of inherent safety in hazardous chemicals supply chain optimization. Journal of Loss Prevention in the Process Industries, 2020, 68, 104262.	1.7	6
57	Performance of convex underestimators in a branch-and-bound framework. Optimization Letters, 2016, 10, 283-308.	0.9	5
58	Mapping the Material-Property Space for Feasible Process Operation: Application to Combined Natural-Gas Separation and Storage. Industrial & Engineering Chemistry Research, 2019, 58, 10455-10465.	1.8	5
59	Deterministic global derivative-free optimization of black-box problems with bounded Hessian. Optimization Letters, 2020, 14, 1011-1026.	0.9	5
60	<scp>Computerâ€aided</scp> process intensification of natural gas to methanol process. AICHE Journal, 2022, 68, .	1.8	5
61	Dynamic modeling of heat exchanger tube rupture. BMC Chemical Engineering, 2020, 2, .	3.4	4
62	Optimal Integration of Renewables, Flexible Carbon Capture, and Energy Storage for Reducing CO2 emissions from Fossil Power Plants. Computer Aided Chemical Engineering, 2021, 50, 1535-1540.	0.3	4
63	Synthesis of Heat Exchanger Networks Involving Phase Changes. , 2009, , 185-192.		4
64	Effective Sampling, Modeling and Optimization of Constrained Black-box Problems. Computer Aided Chemical Engineering, 2016, , 553-558.	0.3	3
65	Resilience and Survivability-aware Optimal Design and Operation of Interconnected Supply Chains. Computer Aided Chemical Engineering, 2021, 50, 549-554.	0.3	3
66	A Computer-Aided Platform for Simultaneous Process Synthesis and Intensification. Computer Aided Chemical Engineering, 2021, , 287-293.	0.3	3
67	<scp>Survivabilityâ€aware</scp> design and optimization of distributed supply chain networks in the post <scp>COVID</scp>â€19 era. Journal of Advanced Manufacturing and Processing, 2021, 3, e10098.	1.4	3
68	Dataâ€driven approximation of thermodynamic phase equilibria. AICHE Journal, 0, , .	1.8	3
69	Heat exchanger network synthesis with process safety compliance under tube rupture scenarios. Computers and Chemical Engineering, 2022, 162, 107817.	2.0	3
70	<scp>Resilienceâ€aware</scp> design of interconnected supply chain networks with application to <scp>waterâ€energy</scp> nexus. AICHE Journal, 2021, 67, e17386.	1.8	2
71	A Projection-based, Data-Driven Method for High-Dimensional Black-Box Optimization. Computer Aided Chemical Engineering, 2018, 44, 973-978.	0.3	1
72	Preface for Special Issue on Frameworks for Process Intensification and Modularization. Industrial & Engineering Chemistry Research, 2019, 58, 5747-5749.	1.8	1

#	Article	IF	Citations
73	Process systems engineering applications, challenges and opportunities in the toll manufacturing industry. Journal of Advanced Manufacturing and Processing, 2020, 2, .	1.4	1
74	Global dynamic optimization using edge-concave underestimator. Journal of Global Optimization, 2020, 77, 487-512.	1.1	1