Mahmoud M El-Halwagi

List of Publications by Year
in descending order

472 papers	14,818 citations	18465 62 h-index	36008 97 g-index
517 all docs	517 docs citations	517 times ranked	6760 citing authors

#	Article	IF	Citations
1	Synthesis of mass exchange networks. AICHE Journal, 1989, 35, 1233-1244.	1.8	622
2	Rigorous Graphical Targeting for Resource Conservation via Material Recycle/Reuse Networks. Industrial & Engineering Chemistry Research, 2003, 42, 4319-4328.	1.8	456
3	Optimal planning and site selection for distributed multiproduct biorefineries involving economic, environmental and social objectives. Journal of Cleaner Production, 2014, 65, 270-294.	4.6	239
4	Green hydrogen as an alternative fuel for the shipping industry. Current Opinion in Chemical Engineering, 2021, 31, 100668.	3.8	228
5	Automatic synthesis of mass-exchange networks with single-component targets. Chemical Engineering Science, 1990, 45, 2813-2831.	1.9	224
6	A novel framework for simultaneous separation process and product design. Chemical Engineering and Processing: Process Intensification, 2004, 43, 595-608.	1.8	168
7	Component-less design of recovery and allocation systems: a functionality-based clustering approach. Computers and Chemical Engineering, 2000, 24, 2081-2091.	2.0	162
8	Simultaneous synthesis of mass-exchange and regeneration networks. AICHE Journal, 1990, 36, 1209-1219.	1.8	156
9	Facility Location and Supply Chain Optimization for a Biorefinery. Industrial & Engineering Chemistry Research, 2011, 50, 6276-6286.	1.8	155
10	Optimal Planning of a Biomass Conversion System Considering Economic and Environmental Aspects. Industrial & Engineering Chemistry Research, 2011, 50, 8558-8570.	1.8	155
11	A comparison of pretreatment methods for bioethanol production from lignocellulosic materials. Chemical Engineering Research and Design, 2012, 90, 189-202.	2.7	154
12	Design and analysis of biodiesel production from algae grown through carbon sequestration. Clean Technologies and Environmental Policy, 2010, 12, 239-254.	2.1	151
13	Simulation, integration, and economic analysis of gas-to-liquid processes. Fuel Processing Technology, 2010, 91, 703-713.	3.7	150
14	Optimal planning for the sustainable utilization of municipal solid waste. Waste Management, 2013, 33, 2607-2622.	3.7	149
15	Synthesis of reverse-osmosis networks for waste reduction. AICHE Journal, 1992, 38, 1185-1198.	1.8	141
16	Process integration technology review: background and applications in the chemical process industry. Journal of Chemical Technology and Biotechnology, 2003, 78, 1011-1021.	1.6	138
17	Design and integration of ecoâ€industrial parks for managing water resources. Environmental Progress and Sustainable Energy, 2009, 28, 265-272.	1.3	138
18	Technology review and data analysis for cost assessment of water treatment systems. Science of the Total Environment, 2019, 651, 2749-2761.	3.9	135

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19	Process intensification: New understanding and systematic approach. Chemical Engineering and Processing: Process Intensification, 2012, 53, 63-75.	1.8	134
20	Surplus diagram and cascade analysis technique for targeting property-based material reuse network. Chemical Engineering Science, 2006, 61, 2626-2642.	1.9	131
21	Techno-economic analysis for a sugarcane biorefinery: Colombian case. Bioresource Technology, 2013, 135, 533-543.	4.8	130
22	A review of biodiesel production from microalgae. Clean Technologies and Environmental Policy, 2017, 19, 637-668.	2.1	130
23	Process synthesis and optimization of biorefinery configurations. AICHE Journal, 2012, 58, 1212-1221.	1.8	123
24	Shale gas monetization â€“ A review of downstream processing to chemicals and fuels. Journal of Natural Gas Science and Engineering, 2017, 45, 436-455.	2.1	122
25	Process Design and Integration of Shale Gas to Methanol. ACS Sustainable Chemistry and Engineering, 2014, 2, 30-37.	3.2	116
26	A shortcut method for the preliminary synthesis of process-technology pathways: An optimization approach and application for the conceptual design of integrated biorefineries. Computers and Chemical Engineering, 2011, 35, 1374-1383.	2.0	110
27	A multi-criteria approach to screening alternatives for converting sewage sludge to biodiesel. Journal of Loss Prevention in the Process Industries, 2010, 23, 412-420.	1.7	107
28	Property integration: Componentless design techniques and visualization tools. AICHE Journal, 2004, 50, 1854-1869.	1.8	105
29	Techno-Economic Assessment and Environmental Impact of Shale Gas Alternatives to Methanol. ACS Sustainable Chemistry and Engineering, 2014, 2, 2338-2344.	3.2	100
30	A return on investment metric for incorporating sustainability in process integration and improvement projects. Clean Technologies and Environmental Policy, 2017, 19, 611-617.	2.1	100
31	Synthesis of waste interception and allocation networks. AICHE Journal, 1996, 42, 3087-3101.	1.8	98
32	Multiobjective optimization of biorefineries with economic and safety objectives. AICHE Journal, 2013, 59, 2427-2434.	1.8	96
33	Renewable ammonia as an alternative fuel for the shipping industry. Current Opinion in Chemical Engineering, 2021, 31, 100670.	3.8	95
34	An algebraic approach to targeting waste discharge and impure fresh usage via material recycle/reuse networks. Clean Technologies and Environmental Policy, 2005, 7, 294-305.	2.1	94
35	A propertyâ€based optimization of direct recycle networks and wastewater treatment processes. AICHE Journal, 2009, 55, 2329-2344.	1.8	93
36	Process analysis and optimization of biodiesel production from soybean oil. Clean Technologies and Environmental Policy, 2009, 11, 263-276.	2.1	92

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37	A combined thermo-kinetic analysis of various methane reforming technologies: Comparison with dry reforming. Journal of CO2 Utilization, 2017, 17, 99-111.	3.3	90
38	Optimal design and scheduling of flexible reverse osmosis networks. Journal of Membrane Science, 1997, 129, 161-174.	4.1	86
39	Automated targeting technique for concentration- and property-based total resource conservation network. Computers and Chemical Engineering, 2010, 34, 825-845.	2.0	86
40	Computer-Aided Synthesis of Polymers and Blends with Target Properties. Industrial & Engineering Chemistry Research, 1996, 35, 627-634.	1.8	84
41	Optimization and Selection of Reforming Approaches for Syngas Generation from Natural/Shale Gas. Industrial & Engineering Chemistry Research, 2014, 53, 1841-1855.	1.8	84
42	A review of safety indices for process design. Current Opinion in Chemical Engineering, 2016, 14, 42-48.	3.8	84
43	Switchgrass as an alternate feedstock for power generation: an integrated environmental, energy and economic life-cycle assessment. Clean Technologies and Environmental Policy, 2006, 8, 233-249.	2.1	81
44	Global optimization for the synthesis of property-based recycle and reuse networks including environmental constraints. Computers and Chemical Engineering, 2010, 34, 318-330.	2.0	81
45	Optimal Water Management under Uncertainty for Shale Gas Production. Industrial & Engineering Chemistry Research, 2016, 55, 1322-1335.	1.8	78
46	Green hydrogen for industrial sector decarbonization: Costs and impacts on hydrogen economy in qatar. Computers and Chemical Engineering, 2021, 145, 107144.	2.0	77
47	Techno-economic analysis of biomass to fuel conversion via the MixAlco process. Journal of Industrial Microbiology and Biotechnology, 2010, 37, 1157-1168.	1.4	76
48	Global optimization of mass and property integration networks with in-plant property interceptors. Chemical Engineering Science, 2010, 65, 4363-4377.	1.9	76
49	Multi-objective optimization of process cogeneration systems with economic, environmental, and social tradeoffs. Clean Technologies and Environmental Policy, 2013, 15, 185-197.	2.1	76
50	Synthesis of reactive mass-exchange networks. Chemical Engineering Science, 1992, 47, 2113-2119.	1.9	75
51	Incorporation of Safety and Sustainability in Conceptual Design via a Return on Investment Metric. ACS Sustainable Chemistry and Engineering, 2018, 6, 1411-1416.	3.2	75
52	Simultaneous process and molecular designâ€"A property based approach. AICHE Journal, 2007, 53, 1232-1239.	1.8	74
53	Exergy analysis and process integration of bioethanol production from acid pre-treated biomass: Comparison of SHF, SSF and SSCF pathways. Chemical Engineering Journal, 2011, 176-177, 195-201.	6.6	73
54	Synthesis of combined heat and reactive mass-exchange networks. Chemical Engineering Science, 1994, 49, 2059-2074.	1.9	71

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55	Simultaneous synthesis of waste interception and material reuse networks: Problem reformulation for global optimization. Environmental Progress, 2005, 24, 171-180.	0.8	71
56	Sustainable Integration of Algal Biodiesel Production with Steam Electric Power Plants for Greenhouse Gas Mitigation. ACS Sustainable Chemistry and Engineering, 2014, 2, 1388-1403.	3.2	71
57	Algebraic Techniques for Property Integration via Componentless Design. Industrial & Engineering Chemistry Research, 2004, 43, 3792-3798.	1.8	68
58	Optimal integration of organic Rankine cycles with industrial processes. Energy Conversion and Management, 2013, 73, 285-302.	4.4	67
59	Water Integration of Eco-Industrial Parks Using a Global Optimization Approach. Industrial & Engineering Chemistry Research, 2010, 49, 9945-9960.	1.8	66
60	A Techno-Economic Comparison between Two Methanol-to-Propylene Processes. Processes, 2015, 3, 684-698.	1.3	66
61	Optimization Approach to the Reduction of CO₂ Emissions for Syngas Production Involving Dry Reforming. ACS Sustainable Chemistry and Engineering, 2018, 6, 7532-7544.	3.2	66
62	Synthesis of cooling water systems with multiple cooling towers. Applied Thermal Engineering, 2013, 50, 957-974.	3.0	63
63	Incorporating inherent safety during the conceptual process design stage: A literature review. Journal of Loss Prevention in the Process Industries, 2020, 63, 104040.	1.7	61
64	Optimal design of pervaporation systems for waste reduction. Computers and Chemical Engineering, 1993, 17, 957-970.	2.0	60
65	Targeting cogeneration and waste utilization through process integration. Applied Energy, 2009, 86, 880-887.	5.1	60
66	A Disjunctive Programming Formulation for the Optimal Design of Biorefinery Configurations. Industrial & Engineering Chemistry Research, 2012, 51, 3381-3400.	1.8	60
67	Optimal planning and infrastructure development for shale gas production. Energy Conversion and Management, 2016, 119, 91-100.	4.4	60
68	Incorporation of process integration into life cycle analysis for the production of biofuels. Clean Technologies and Environmental Policy, 2011, 13, 673-685.	2.1	58
69	A Process Integration Approach to the Assessment of CO₂ Fixation through Dry Reforming. ACS Sustainable Chemistry and Engineering, 2015, 3, 625-636.	3.2	58
70	Sustainable Process Design Approach for On-Purpose Propylene Production and Intensification. ACS Sustainable Chemistry and Engineering, 2018, 6, 2407-2421.	3.2	58
71	Optimization of the production of syngas from shale gas with economic and safety considerations. Applied Thermal Engineering, 2017, 110, 678-685.	3.0	57
72	Optimal reconfiguration of multi-plant water networks into an eco-industrial park. Computers and Chemical Engineering, 2012, 44, 58-83.	2.0	56

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73	Optimal design of rainwater collecting systems for domestic use into a residential development. Resources, Conservation and Recycling, 2014, 84, 44-56.	5.3	56
74	Optimization of multi-effect distillation with brine treatment via membrane distillation and process heat integration. Desalination, 2017, 408, 110-118.	4.0	56
75	Simultaneous Process and Molecular Design through Property Clustering Techniques:Â A Visualization Tool. Industrial & Engineering Chemistry Research, 2007, 46, 3400-3409.	1.8	55
76	Optimal design of integrated CHP systems for housing complexes. Energy Conversion and Management, 2015, 99, 252-263.	4.4	55
77	The integration of Dow's fire and explosion index (F&EI) into process design and optimization to achieve inherently safer design. Journal of Loss Prevention in the Process Industries, 2007, 20, 79-90.	1.7	54
78	Convex Hull Discretization Approach to the Global Optimization of Pooling Problems. Industrial & Engineering Chemistry Research, 2009, 48, 1973-1979.	1.8	54
79	A global optimal formulation for the water integration in eco-industrial parks considering multiple pollutants. Computers and Chemical Engineering, 2011, 35, 1558-1574.	2.0	54
80	Synthesis of Câ€Hâ€O Symbiosis Networks. AICHE Journal, 2015, 61, 1242-1262.	1.8	54
81	Safety and techno-economic analysis of ethylene technologies. Journal of Loss Prevention in the Process Industries, 2016, 39, 74-84.	1.7	54
82	Global optimization of nonconvex nonlinear programs via interval analysis. Computers and Chemical Engineering, 1994, 18, 889-897.	2.0	53
83	An algebraic targeting approach for effective utilization of biomass in combined heat and power systems through process integration. Clean Technologies and Environmental Policy, 2007, 9, 13-25.	2.1	53
84	Synthesis of an integrated biorefinery via the Câ€“Hâ€“O ternary diagram. Clean Technologies and Environmental Policy, 2011, 13, 567-579.	2.1	53
85	Optimization across the Waterâ€“Energy Nexus for Integrating Heat, Power, and Water for Industrial Processes, Coupled with Hybrid Thermal-Membrane Desalination. Industrial & Engineering Chemistry Research, 2016, 55, 3442-3466.	1.8	53
86	Synthesis of reactive mass-exchange networks with general nonlinear equilibrium functions. AICHE Journal, 1994, 40, 463-472.	1.8	52
87	Optimization of Pathways for Biorefineries Involving the Selection of Feedstocks, Products, and Processing Steps. Industrial & Engineering Chemistry Research, 2013, 52, 5177-5190.	1.8	52
88	A synthesis approach for industrial city water reuse networks considering central and distributed treatment systems. Journal of Cleaner Production, 2015, 89, 231-250.	4.6	52
89	Simultaneous synthesis of propertyâ€based water reuse/recycle and interception networks for batch processes. AICHE Journal, 2008, 54, 2624-2632.	1.8	49
90	Environmental and economic analysis for the optimal reuse of water in a residential complex. Journal of Cleaner Production, 2016, 130, 82-91.	4.6	49

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91	Global optimization in propertyâ€based interplant water integration. AICHE Journal, 2013, 59, 813-833.	1.8	47
92	Synthesis of optimal heat-induced separation networks. Chemical Engineering Science, 1995, 50, 81-97.	1.9	46
93	An integrated approach to the optimisation of water usage and discharge in pulp and paper plants. International Journal of Environment and Pollution, 2007, 29, 274.	0.2	46
94	An algebraic targeting approach to resource conservation via material recycle/reuse. International Journal of Environment and Pollution, 2007, 29, 4.	0.2	46
95	Computer-Aided Design of High Performance Polymers. Journal of Elastomers and Plastics, 1994, 26, 277-293.	0.7	45
96	Optimal design of inter-plant waste energy integration. Applied Thermal Engineering, 2014, 62, 633-652.	3.0	45
97	Fuzzy mixed integer non-linear programming model for the design of an algae-based eco-industrial park with prospective selection of support tenants under product price variability. Journal of Cleaner Production, 2016, 136, 183-196.	4.6	45
98	Design, simulation and techno-economic analysis of two processes for the conversion of shale gas to ethylene. Computers and Chemical Engineering, 2017, 107, 237-246.	2.0	45
99	Industrial waste heat recovery and cogeneration involving organic Rankine cycles. Clean Technologies and Environmental Policy, 2015, 17, 767-779.	2.1	44
100	Optimal reuse of flowback wastewater in hydraulic fracturing including seasonal and environmental constraints. AICHE Journal, 2016, 62, 1634-1645.	1.8	44
101	Including Inherent Safety in the Design of Chemical Processes. Industrial & Engineering Chemistry Research, 2017, 56, 14507-14517.	1.8	44
102	Optimization of biofuels production via a waterâ€“energyâ€“food nexus framework. Clean Technologies and Environmental Policy, 2018, 20, 1443-1466.	2.1	44
103	A hierarchical approach for the synthesis of batch water network. Computers and Chemical Engineering, 2008, 32, 530-539.	2.0	43
104	Biodiesel from microalgae oil production in two sequential esterification/transesterification reactors: Pinch analysis of heat integration. Chemical Engineering Journal, 2011, 176-177, 211-216.	6.6	43
105	Integration of Thermal Membrane Distillation Networks with Processing Facilities. Industrial & Engineering Chemistry Research, 2014, 53, 5284-5298.	1.8	43
106	Optimal design of multicomponent VOC condensation systems. Journal of Hazardous Materials, 1994, 38, 187-206.	6.5	42
107	A Superstructure Optimization Approach for Membrane Separation-Based Water Regeneration Network Synthesis with Detailed Nonlinear Mechanistic Reverse Osmosis Model. Industrial & Engineering Chemistry Research, 2011, 50, 13444-13456.	1.8	42
108	Water integration in industrial zones: a spatial representation with direct recycle applications. Clean Technologies and Environmental Policy, 2014, 16, 1637-1659.	2.1	42

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109	Sustainable water management for macroscopic systems. Journal of Cleaner Production, 2013, 47, 102-117.	4.6	40
110	Simultaneous synthesis of utility system and heat exchanger network incorporating steam condensate and boiler feedwater. Energy, 2016, 113, 875-893.	4.5	40
111	Optimization of Direct Recycle Networks with the Simultaneous Consideration of Property, Mass, and Thermal Effects. Industrial & Engineering Chemistry Research, 2011, 50, 3754-3762.	1.8	39
112	Selection of optimal VOC-condensation systems. Waste Management, 1994, 14, 103-113.	3.7	38
113	Synthesis of integrated absorption refrigeration systems involving economic and environmental objectives and quantifying social benefits. Applied Thermal Engineering, 2013, 52, 402-419.	3.0	38
114	Simulation study on biodiesel production by reactive distillation with methanol at high pressure and temperature: Impact on costs and pollutant emissions. Computers and Chemical Engineering, 2013, 52, 204-215.	2.0	38
115	Synthesis of Distributed Biorefining Networks for the Value-Added Processing of Water Hyacinth. ACS Sustainable Chemistry and Engineering, 2013, 1, 284-305.	3.2	38
116	Assessment of Combinations between Pretreatment and Conversion Configurations for Bioethanol Production. ACS Sustainable Chemistry and Engineering, 2013, 1, 956-965.	3.2	37
117	Optimal retrofit of water conservation networks. Journal of Cleaner Production, 2011, 19, 1560-1581.	4.6	36
118	Optimal interplant water networks for industrial zones: Addressing interconnectivity options through pipeline merging. AICHE Journal, 2014, 60, 2853-2874.	1.8	36
119	Disjunctive fuzzy optimisation for planning and synthesis of bioenergy-based industrial symbiosis system. Journal of Environmental Chemical Engineering, 2014, 2, 652-664.	3.3	36
120	Optimal design of macroscopic water networks under parametric uncertainty. Journal of Cleaner Production, 2015, 88, 172-184.	4.6	36
121	Synthesis of industrial park water reuse networks considering treatment systems and merged connectivity options. Computers and Chemical Engineering, 2016, 91, 289-306.	2.0	36
122	Accounting for central and distributed zero liquid discharge options in interplant water network design. Journal of Cleaner Production, 2018, 171, 644-661.	4.6	36
123	The effect of greenhouse gas policy on the design and scheduling of biodiesel plants with multiple feedstocks. Clean Technologies and Environmental Policy, 2010, 12, 547-560.	2.1	35
124	Integrated conceptual design of solar-assisted trigeneration systems. Computers and Chemical Engineering, 2011, 35, 1807-1814.	2.0	35
125	An MINLP model for the simultaneous integration of energy, mass and properties in water networks. Computers and Chemical Engineering, 2014, 71, 52-66.	2.0	35
126	Optimal location of biorefineries considering sustainable integration with the environment. Renewable Energy, 2017, 100, 65-77.	4.3	35

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127	Process integration of Calcium Looping with industrial plants for monetizing CO2 into value-added products. Carbon Resources Conversion, 2018, 1, 191-199.	3.2	35
128	Capacity Planning for Modular and Transportable Infrastructure for Shale Gas Production and Processing. Industrial & Engineering Chemistry Research, 2019, 58, 5887-5897.	1.8	35
129	Interval-based targeting for pollution prevention via mass integration. Computers and Chemical Engineering, 1999, 23, 1527-1543.	2.0	34
130	A propertyâ€based approach to the synthesis of material conservation networks with economic and environmental objectives. AICHE Journal, 2011, 57, 2369-2387.	1.8	34
131	Multi-objective optimization of steam power plants for sustainable generation of electricity. Clean Technologies and Environmental Policy, 2013, 15, 551-566.	2.1	34
132	Multiperiod Planning of Optimal Industrial City Direct Water Reuse Networks. Industrial & Engineering Chemistry Research, 2014, 53, 8844-8865.	1.8	34
133	Optimum mass integration strategies for condensation and allocation of multicomponent VOCs. Chemical Engineering Science, 2000, 55, 881-895.	1.9	33
134	Targeting optimum resource allocation using reverse problem formulations and property clustering techniques. Computers and Chemical Engineering, 2005, 29, 2304-2317.	2.0	33
135	Conceptual Synthesis of Gasification-Based Biorefineries Using Thermodynamic Equilibrium Optimization Models. Industrial & Engineering Chemistry Research, 2011, 50, 10681-10695.	1.8	33
136	A systems-integration approach to the optimization of macroscopic water desalination and distribution networks: a general framework applied to Qatarâ€™s water resources. Clean Technologies and Environmental Policy, 2012, 14, 161-171.	2.1	33
137	Targeting of the Water-Energy Nexus in Gas-to-Liquid Processes: A Comparison of Syngas Technologies. Industrial & Engineering Chemistry Research, 2014, 53, 7087-7102.	1.8	33
138	Investigating the effect of inherent safety principles on system reliability in process design. Chemical Engineering Research and Design, 2018, 117, 100-110.	2.7	33
139	Application of Computer-Aided Process Engineering and Exergy Analysis to Evaluate Different Routes of Biofuels Production from Lignocellulosic Biomass. Industrial & Engineering Chemistry Research, 2011, 50, 2768-2772.	1.8	32
140	Optimal planning for the reuse of municipal solid waste considering economic, environmental, and safety objectives. AICHE Journal, 2015, 61, 1881-1899.	1.8	32
141	Managing abnormal operation through process integration and cogeneration systems. Clean Technologies and Environmental Policy, 2015, 17, 119-128.	2.1	32
142	A Shortcut Approach to the Multi-scale Atomic Targeting and Design of Câ€“Hâ€“O Symbiosis Networks. Process Integration and Optimization for Sustainability, 2017, 1, 3-13.	1.4	32
143	Techno-Economic Assessment of Benzene Production from Shale Gas. Processes, 2017, 5, 33.	1.3	32
144	Technoeconomic Analysis of Alternative Pathways of Isopropanol Production. ACS Sustainable Chemistry and Engineering, 2018, 6, 10260-10272.	3.2	32

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145	Conceptual Design of a Kraft Lignin Biorefinery for the Production of Valuable Chemicals via Oxidative Depolymerization. ACS Sustainable Chemistry and Engineering, 2020, 8, 8823-8829.	3.2	32
146	Optimal synthesis and scheduling of hybrid dynamic/steady-state property integration networks. Computers and Chemical Engineering, 2005, 29, 2318-2325.	2.0	31
147	Viscosity Measurements and Data Correlation for Two Synthetic Natural Gas Mixtures. Journal of Chemical & Engineering Data, 2010, 55, 2498-2504.	1.0	31
148	The impact of the development of catalyst and reaction system of the methanol synthesis stage on the overall profitability of the entire plant: A techno-economic study. Catalysis Today, 2020, 343, 191-198.	2.2	31
149	A data-driven study of IMO compliant fuel emissions with consideration of black carbon aerosols. Ocean Engineering, 2020, 218, 108241.	1.9	31
150	Simultaneous Synthesis of Mass Separating Agents and Interception Networks. Chemical Engineering Research and Design, 1998, 76, 376-388.	2.7	30
151	An MINLP Model for the Optimal Location of a New Industrial Plant with Simultaneous Consideration of Economic and Environmental Criteria. Industrial & Engineering Chemistry Research, 2011, 50, 953-964.	1.8	30
152	Integration of Renewable Energy with Industrial Absorption Refrigeration Systems: Systematic Design and Operation with Technical, Economic, and Environmental Objectives. Industrial & Engineering Chemistry Research, 2011, 50, 9667-9684.	1.8	30
153	Multiobjective design of interplant trigeneration systems. AICHE Journal, 2014, 60, 213-236.	1.8	30
154	Synthesis of Eco-Industrial Parks Interacting with a Surrounding Watershed. ACS Sustainable Chemistry and Engineering, 2015, 3, 1564-1578.	3.2	30
155	Optimal design of process energy systems integrating sustainable considerations. Energy, 2014, 76, 139-160.	4.5	29
156	Optimization of multi-effect distillation process using a linear enthalpy model. Desalination, 2015, 365, 261-276.	4.0	29
157	Integration of Energy and Wastewater Treatment Alternatives with Process Facilities To Manage Industrial Flares during Normal and Abnormal Operations: Multiobjective Extendible Optimization Framework. Industrial & Engineering Chemistry Research, 2016, 55, 2020-2034.	1.8	29
158	SYNTHESIS OF FLEXIBLE MASS-EXCHANGE NETWORKS. Chemical Engineering Communications, 1995, 138, 193-211.	1.5	28
159	Synthesis of Water Networks Involving Temperature-Based Property Operators and Thermal Effects. Industrial & Engineering Chemistry Research, 2013, 52, 442-461.	1.8	28
160	Water and Energy Issues in Gas-to-Liquid Processes: Assessment and Integration of Different Gas-Reforming Alternatives. ACS Sustainable Chemistry and Engineering, 2014, 2, 216-225.	3.2	28
161	Strategic Planning for Managing Municipal Solid Wastes with Consideration of Multiple Stakeholders. ACS Sustainable Chemistry and Engineering, 2017, 5, 10744-10762.	3.2	28
162	CO2 footprint reduction via the optimal design of Carbon-Hydrogen-Oxygen SYmbiosis Networks (CHOSYNs). Chemical Engineering Science, 2019, 203, 1-11.	1.9	28

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163	Disaster-Resilient Design of Manufacturing Facilities Through Process Integration: Principal Strategies, Perspectives, and Research Challenges. Frontiers in Sustainability, 2020, 1, .	1.3	28
164	Correct identification of limiting water data for water network synthesis. Clean Technologies and Environmental Policy, 2006, 8, 96-104.	2.1	27
165	An algorithmic approach to the optimization of process cogeneration. Clean Technologies and Environmental Policy, 2009, 11, 329-338.	2.1	27
166	Synthesis of water networks considering the sustainability of the surrounding watershed. Computers and Chemical Engineering, 2011, 35, 2837-2852.	2.0	27
167	Floating pinch method for utility targeting in heat exchanger network (HEN). Chemical Engineering Research and Design, 2014, 92, 119-126.	2.7	27
168	Gas-to-liquid (GTL) technology: Targets for process design and water-energy nexus. Current Opinion in Chemical Engineering, 2014, 5, 49-54.	3.8	27
169	Optimal reconfiguration of a sugar cane industry to yield an integrated biorefinery. Clean Technologies and Environmental Policy, 2016, 18, 553-562.	2.1	27
170	An Integrated Approach to Water-Energy Nexus in Shale-Gas Production. Processes, 2018, 6, 52.	1.3	27
171	Mathematical modeling of catalytic fluidized-bed reactorsâ€”I. The multistage three-phase model. Chemical Engineering Science, 1988, 43, 2477-2486.	1.9	26
172	Optimal Design of Membrane-Hybrid Systems for Waste Reduction. Separation Science and Technology, 1993, 28, 283-307.	1.3	26
173	Incorporating Property-Based Water Networks and Surrounding Watersheds in Site Selection of Industrial Facilities. Industrial & Engineering Chemistry Research, 2013, 52, 91-107.	1.8	26
174	Modeling and optimization of a bioethanol production facility. Clean Technologies and Environmental Policy, 2013, 15, 931-944.	2.1	26
175	Heat integrated resource conservation networks without mixing prior to heat exchanger networks. Journal of Cleaner Production, 2014, 71, 128-138.	4.6	26
176	Integrated Approach of Safety, Sustainability, Reliability, and Resilience Analysis via a Return on Investment Metric. ACS Sustainable Chemistry and Engineering, 2019, 7, 19522-19536.	3.2	26
177	An economic study for the co-generation of liquid fuel and hydrogen from coal and municipal solid waste. Fuel Processing Technology, 1996, 49, 157-166.	3.7	25
178	A systematic approach for synthesizing combined mass and heat exchange networks. Computers and Chemical Engineering, 2013, 53, 1-13.	2.0	25
179	Framework for margins-based planning: Forest biorefinery case study. Computers and Chemical Engineering, 2014, 63, 34-50.	2.0	25
180	An integrated approach for incorporating thermal membrane distillation in treating water in heavy oil recovery using SAGD. Journal of Unconventional Oil and Gas Resources, 2015, 12, 6-14.	3.5	25

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181	Optimal design of thermal membrane distillation systems with heat integration with process plants. Applied Thermal Engineering, 2015, 75, 154-166.	3.0	25
182	Optimal Design of Water Desalination Systems Involving Waste Heat Recovery. Industrial & Engineering Chemistry Research, 2017, 56, 1834-1847.	1.8	25
183	Thermo-economic analysis and optimization of a zoetropic fluid organic Rankine cycle with liquid-vapor separation during condensation. Energy Conversion and Management, 2017, 148, 517-532.	4.4	25
184	Optimization of Microalgae-to-Biodiesel Production Process Using a Metaheuristic Technique. ACS Sustainable Chemistry and Engineering, 2019, 7, 8490-8498.	3.2	25
185	Application of stochastic analytic hierarchy process for evaluating algal cultivation systems for sustainable biofuel production. Clean Technologies and Environmental Policy, 2016, 18, 1281-1294.	2.1	24
186	Sustainable Process Intensification Using Building Blocks. ACS Sustainable Chemistry and Engineering, 2020, 8, 17664-17679.	3.2	24
187	Synthesis and Sustainability Evaluation of a Lignocellulosic Multifeedstock Biorefinery Considering Technical Performance Indicators. ACS Omega, 2020, 5, 9259-9275.	1.6	24
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