

Xiaonan Wang

List of Publications by Year in descending order

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Version: 2024-02-01

125
papers

5,424
citations

70961

41
h-index

95083

68
g-index

139
all docs

139
docs citations

139
times ranked

4362
citing authors

#	ARTICLE	IF	CITATIONS
1	Energy Demand Side Management within micro-grid networks enhanced by blockchain. <i>Applied Energy</i> , 2018, 228, 1385-1398.	5.1	308
2	Operational optimization and demand response of hybrid renewable energy systems. <i>Applied Energy</i> , 2015, 143, 324-335.	5.1	230
3	Machine learning prediction of biochar yield and carbon contents in biochar based on biomass characteristics and pyrolysis conditions. <i>Bioresource Technology</i> , 2019, 288, 121527.	4.8	202
4	Sustainable planning of the energy-water-food nexus using decision making tools. <i>Energy Policy</i> , 2018, 113, 584-607.	4.2	182
5	The application of machine learning methods for prediction of metal sorption onto biochars. <i>Journal of Hazardous Materials</i> , 2019, 378, 120727.	6.5	177
6	Design and management of a distributed hybrid energy system through smart contract and blockchain. <i>Applied Energy</i> , 2019, 248, 390-405.	5.1	177
7	Fuel properties of hydrochar and pyrochar: Prediction and exploration with machine learning. <i>Applied Energy</i> , 2020, 269, 115166.	5.1	141
8	Review and outlook on the international renewable energy development. <i>Energy and Built Environment</i> , 2022, 3, 139-157.	2.9	139
9	Prediction of Soil Heavy Metal Immobilization by Biochar Using Machine Learning. <i>Environmental Science & Technology</i> , 2022, 56, 4187-4198.	4.6	138
10	Applied Machine Learning for Prediction of CO ₂ Adsorption on Biomass Waste-Derived Porous Carbons. <i>Environmental Science & Technology</i> , 2021, 55, 11925-11936.	4.6	132
11	Organic waste to biohydrogen: A critical review from technological development and environmental impact analysis perspective. <i>Applied Energy</i> , 2019, 256, 113961.	5.1	111
12	The impact of intelligent cyber-physical systems on the decarbonization of energy. <i>Energy and Environmental Science</i> , 2020, 13, 744-771.	15.6	104
13	Recurrent Neural Network-Based Model Predictive Control for Continuous Pharmaceutical Manufacturing. <i>Mathematics</i> , 2018, 6, 242.	1.1	103
14	Multi-task prediction and optimization of hydrochar properties from high-moisture municipal solid waste: Application of machine learning on waste-to-resource. <i>Journal of Cleaner Production</i> , 2021, 278, 123928.	4.6	98
15	Toward the Shell Biorefinery: Processing Crustacean Shell Waste Using Hot Water and Carbonic Acid. <i>ACS Sustainable Chemistry and Engineering</i> , 2019, 7, 5532-5542.	3.2	96
16	The COVID-19 pandemic necessitates a shift to a plastic circular economy. <i>Nature Reviews Earth & Environment</i> , 2021, 2, 659-660.	12.2	92
17	AI Applications through the Whole Life Cycle of Material Discovery. <i>Matter</i> , 2020, 3, 393-432.	5.0	86
18	Two-step machine learning enables optimized nanoparticle synthesis. <i>Npj Computational Materials</i> , 2021, 7, .	3.5	86

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19	Exergoeconomic analysis of a novel trigeneration system containing supercritical CO ₂ Brayton cycle, organic Rankine cycle and absorption refrigeration cycle for gas turbine waste heat recovery. <i>Energy Conversion and Management</i> , 2020, 221, 113064.	4.4	79
20	Online prediction of mechanical properties of hot rolled steel plate using machine learning. <i>Materials and Design</i> , 2021, 197, 109201.	3.3	78
21	Multi-objective optimization of a neighborhood-level urban energy network: Considering Game-theory inspired multi-benefit allocation constraints. <i>Applied Energy</i> , 2018, 231, 534-548.	5.1	76
22	Machine learning aided supercritical water gasification for H ₂ -rich syngas production with process optimization and catalyst screening. <i>Chemical Engineering Journal</i> , 2021, 426, 131285.	6.6	72
23	Understanding and optimization of thin film nanocomposite membranes for reverse osmosis with machine learning. <i>Journal of Membrane Science</i> , 2020, 606, 118135.	4.1	71
24	Optimal scheduling of demand responsive industrial production with hybrid renewable energy systems. <i>Renewable Energy</i> , 2017, 100, 53-64.	4.3	69
25	Life cycle assessment of food waste to energy and resources: Centralized and decentralized anaerobic digestion with different downstream biogas utilization. <i>Renewable and Sustainable Energy Reviews</i> , 2021, 150, 111489.	8.2	68
26	An economic receding horizon optimization approach for energy management in the chlor-alkali process with hybrid renewable energy generation. <i>Journal of Process Control</i> , 2014, 24, 1318-1327.	1.7	63
27	A quantitative roadmap for China towards carbon neutrality in 2060 using methanol and ammonia as energy carriers. <i>IScience</i> , 2021, 24, 102513.	1.9	62
28	Pyrolysis of waste surgical masks into liquid fuel and its life-cycle assessment. <i>Bioresource Technology</i> , 2022, 346, 126582.	4.8	62
29	Optimal design of negative emission hybrid renewable energy systems with biochar production. <i>Applied Energy</i> , 2019, 243, 233-249.	5.1	60
30	Blockchain-based smart contract for energy demand management. <i>Energy Procedia</i> , 2019, 158, 2719-2724.	1.8	59
31	A multi-objective optimization approach for selection of energy storage systems. <i>Computers and Chemical Engineering</i> , 2018, 115, 213-225.	2.0	58
32	Distributed or centralized? Designing district-level urban energy systems by a hierarchical approach considering demand uncertainties. <i>Applied Energy</i> , 2019, 252, 113424.	5.1	58
33	A Nexus Approach for Sustainable Urban Energy-Water-Waste Systems Planning and Operation. <i>Environmental Science & Technology</i> , 2018, 52, 3257-3266.	4.6	55
34	Techno-economic-environmental evaluation of a combined cooling heating and power system for gas turbine waste heat recovery. <i>Energy</i> , 2021, 231, 120956.	4.5	51
35	Long-term economic planning of combined cooling heating and power systems considering energy storage and demand response. <i>Applied Energy</i> , 2020, 279, 115819.	5.1	50
36	Deep Learning Accelerated Gold Nanocluster Synthesis. <i>Advanced Intelligent Systems</i> , 2019, 1, 1900029.	3.3	49

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37	Hydrogen value chain and fuel cells within hybrid renewable energy systems: Advanced operation and control strategies. <i>Applied Energy</i> , 2019, 233-234, 321-337.	5.1	49
38	A decision support framework for the design and operation of sustainable urban farming systems. <i>Journal of Cleaner Production</i> , 2020, 268, 121928.	4.6	46
39	Effects of activated carbon on mesophilic and thermophilic anaerobic digestion of food waste: Process performance and life cycle assessment. <i>Chemical Engineering Journal</i> , 2020, 399, 125757.	6.6	44
40	Combining agent-based residential demand modeling with design optimization for integrated energy systems planning and operation. <i>Applied Energy</i> , 2020, 263, 114623.	5.1	44
41	Wet wastes to bioenergy and biochar: A critical review with future perspectives. <i>Science of the Total Environment</i> , 2022, 817, 152921.	3.9	44
42	A Compact Convolutional Neural Network for Surface Defect Inspection. <i>Sensors</i> , 2020, 20, 1974.	2.1	42
43	Data-Driven Based In-Depth Interpretation and Inverse Design of Anaerobic Digestion for CH ₄ -Rich Biogas Production. <i>ACS ES&T Engineering</i> , 2022, 2, 642-652.	3.7	41
44	Improving protein solubility and activity by introducing small peptide tags designed with machine learning models. <i>Metabolic Engineering Communications</i> , 2020, 11, e00138.	1.9	39
45	A three-step machine learning framework for energy profiling, activity state prediction and production estimation in smart process manufacturing. <i>Applied Energy</i> , 2021, 291, 116808.	5.1	39
46	A hybrid data-driven and mechanistic modelling approach for hydrothermal gasification. <i>Applied Energy</i> , 2021, 304, 117674.	5.1	39
47	Machine learning aided bio-oil production with high energy recovery and low nitrogen content from hydrothermal liquefaction of biomass with experiment verification. <i>Chemical Engineering Journal</i> , 2021, 425, 130649.	6.6	38
48	Analysis of biomass polygeneration integrated energy system based on a mixed-integer nonlinear programming optimization method. <i>Journal of Cleaner Production</i> , 2020, 271, 122761.	4.6	37
49	Game theory-based renewable multi-energy system design and subsidy strategy optimization. <i>Advances in Applied Energy</i> , 2021, 2, 100024.	6.6	37
50	Automatic strain sensor design via active learning and data augmentation for soft machines. <i>Nature Machine Intelligence</i> , 2022, 4, 84-94.	8.3	37
51	Application of Life Cycle Assessment and Machine Learning for High-Throughput Screening of Green Chemical Substitutes. <i>ACS Sustainable Chemistry and Engineering</i> , 2020, 8, 11141-11151.	3.2	35
52	ProGAN: Protein solubility generative adversarial nets for data augmentation in DNN framework. <i>Computers and Chemical Engineering</i> , 2019, 131, 106533.	2.0	34
53	Techno-enviro-economic analyses of hydrogen supply chains with an ASEAN case study. <i>International Journal of Hydrogen Energy</i> , 2021, 46, 32914-32928.	3.8	34
54	Develop machine learning-based regression predictive models for engineering protein solubility. <i>Bioinformatics</i> , 2019, 35, 4640-4646.	1.8	32

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55	Township-based bioenergy systems for distributed energy supply and efficient household waste re-utilisation: Techno-economic and environmental feasibility. <i>Energy</i> , 2019, 181, 455-467.	4.5	31
56	Machine Learning Modeling and Predictive Control of the Batch Crystallization Process. <i>Industrial & Engineering Chemistry Research</i> , 2022, 61, 5578-5592.	1.8	31
57	Machine Vision Automated Chiral Molecule Detection and Classification in Molecular Imaging. <i>Journal of the American Chemical Society</i> , 2021, 143, 10177-10188.	6.6	30
58	Cyber-Physical Production Systems for Data-Driven, Decentralized, and Secure Manufacturing: A Perspective. <i>Engineering</i> , 2021, 7, 1212-1223.	3.2	30
59	Planning urban energy systems adapting to extreme weather. <i>Advances in Applied Energy</i> , 2021, 3, 100053.	6.6	30
60	Combined multi-objective optimization and agent-based modeling for a 100% renewable island energy system considering power-to-gas technology and extreme weather conditions. <i>Applied Energy</i> , 2022, 308, 118376.	5.1	30
61	Recent advancements in sustainable upcycling of solid waste into porous carbons for carbon dioxide capture. <i>Renewable and Sustainable Energy Reviews</i> , 2022, 162, 112413.	8.2	30
62	Energy-water nexus design and operation towards the sustainable development goals. <i>Computers and Chemical Engineering</i> , 2019, 124, 162-171.	2.0	29
63	Smart Manufacturing for Smart Cities: Overview, Insights, and Future Directions. <i>Advanced Intelligent Systems</i> , 2020, 2, 2000043.	3.3	29
64	Design and prediction of metal organic framework-based mixed matrix membranes for CO2 capture via machine learning. <i>Cell Reports Physical Science</i> , 2022, 3, 100864.	2.8	29
65	An integrated optimisation platform for sustainable resource and infrastructure planning. <i>Environmental Modelling and Software</i> , 2018, 101, 146-168.	1.9	26
66	Multigenerational Crumpling of 2D Materials for Anticounterfeiting Patterns with Deep Learning Authentication. <i>Matter</i> , 2020, 3, 2160-2180.	5.0	26
67	Understanding and optimizing the gasification of biomass waste with machine learning. <i>Green Chemical Engineering</i> , 2023, 4, 123-133.	3.3	26
68	Optimization and control of offshore wind systems with energy storage. <i>Energy Conversion and Management</i> , 2018, 173, 426-437.	4.4	25
69	Meta-analysis of the strategies for self-healing and resilience in power systems. <i>Advances in Applied Energy</i> , 2021, 4, 100036.	6.6	23
70	Design and operation of hybrid renewable energy systems: current status and future perspectives. <i>Current Opinion in Chemical Engineering</i> , 2021, 31, 100669.	3.8	22
71	Online learning-based predictive control of crystallization processes under batch-to-batch parametric drift. <i>AIChE Journal</i> , 2022, 68, .	1.8	22
72	A review of computational modeling techniques for wet waste valorization: Research trends and future perspectives. <i>Journal of Cleaner Production</i> , 2022, 367, 133025.	4.6	21

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73	Biocatalytic Continuous Manufacturing of Diabetes Drug: Plantwide Process Modeling, Optimization, and Environmental and Economic Analysis. ACS Sustainable Chemistry and Engineering, 2019, 7, 1038-1051.	3.2	20
74	Optimal allocation of energy storage and solar photovoltaic systems with residential demand scheduling. Applied Energy, 2020, 269, 115116.	5.1	20
75	Household waste management in Singapore and Shanghai: Experiences, challenges and opportunities from the perspective of emerging megacities. Waste Management, 2022, 144, 221-232.	3.7	20
76	Planning of Food-Energy-Water-Waste (FEW2) nexus for sustainable development. BMC Chemical Engineering, 2020, 2, .	3.4	19
77	Preference Ranking on the Basis of Ideal-Average Distance Method for Multi-Criteria Decision-Making. Industrial & Engineering Chemistry Research, 2021, 60, 11216-11230.	1.8	18
78	Self-Improving Photosensitizer Discovery System via Bayesian Search with First-Principle Simulations. Journal of the American Chemical Society, 2021, 143, 19769-19777.	6.6	17
79	Machine Learning-Assisted Accurate Prediction of Molecular Optical Properties upon Aggregation. Advanced Science, 2022, 9, e2101074.	5.6	17
80	Waste-to-hydrogen: Recycling HCl to produce H ₂ and Cl ₂ . Applied Energy, 2020, 259, 114184.	5.1	16
81	A load-complementarity combined flexible clustering approach for large-scale urban energy-water nexus optimization. Applied Energy, 2020, 270, 115163.	5.1	16
82	AI-enhanced soil management and smart farming. Soil Use and Management, 2022, 38, 7-13.	2.6	16
83	Operation of residential hybrid renewable energy systems: Integrating forecasting, optimization and demand response. , 2014, , .		15
84	Energy management for the chlor-alkali process with hybrid renewable energy generation using receding horizon optimization. , 2014, , .		14
85	Evaluation of potential feedstocks for sustainable biogas production in Ghana: Quantification, energy generation, and CO ₂ abatement. Cogent Environmental Science, 2020, 6, .	1.6	14
86	Simultaneous design and operation optimization of renewable combined cooling heating and power systems. AIChE Journal, 2020, 66, e17039.	1.8	13
87	Assessing the environmental performance of NADH regeneration methods: A cleaner process using recyclable Pt/Fe ₃ O ₄ and hydrogen. Catalysis Today, 2020, 339, 281-288.	2.2	12
88	An integrated approach for machine-learning-based system identification of dynamical systems under control: application towards the model predictive control of a highly nonlinear reactor system. Frontiers of Chemical Science and Engineering, 2022, 16, 237-250.	2.3	12
89	Proactive Reconfiguration of Heat-Exchanger Supernetworks. Industrial & Engineering Chemistry Research, 2015, 54, 9178-9190.	1.8	11
90	Optimal Design of Standalone Hybrid Renewable Energy Systems with Biochar Production in Remote Rural Areas: A Case Study. Energy Procedia, 2019, 158, 688-693.	1.8	11

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91	Achieving a low-carbon future through the energy-chemical nexus in China. <i>Sustainable Energy and Fuels</i> , 2020, 4, 6141-6155.	2.5	11
92	A machine learning framework to quantify and assess the impact of COVID-19 on the power sector: An Indian context. <i>Advances in Applied Energy</i> , 2022, 5, 100078.	6.6	11
93	Precision healthcare supply chain design through multi-objective stochastic programming. <i>Computer Aided Chemical Engineering</i> , 2018, , 2137-2142.	0.3	10
94	Environmental and techno-economic analyses of bio-jet fuel produced from jatropha and castor oilseeds in China. <i>International Journal of Life Cycle Assessment</i> , 2021, 26, 1071-1084.	2.2	10
95	Relative optimization potential: A novel perspective to address trade-off challenges in urban energy system planning. <i>Applied Energy</i> , 2021, 304, 117741.	5.1	10
96	Learning-based scheduling of industrial hybrid renewable energy systems. <i>Computers and Chemical Engineering</i> , 2022, 159, 107665.	2.0	10
97	Energy Demand Side Management with supply constraints: Game theoretic Approach. <i>Energy Procedia</i> , 2018, 145, 368-373.	1.8	9
98	Thermodynamic analysis of operating strategies for waste heat recovery of combined heating and power systems. <i>Energy</i> , 2022, 258, 124803.	4.5	9
99	Water and Energy Systems in Sustainable City Development: A Case of Sub-saharan Africa. <i>Procedia Engineering</i> , 2017, 198, 948-957.	1.2	8
100	Optimization and control of offshore wind farms with energy storage systems. <i>IFAC-PapersOnLine</i> , 2018, 51, 862-867.	0.5	8
101	Comparative life cycle assessment of NAD(P)H regeneration technologies. <i>Green Chemistry</i> , 2021, 23, 7162-7169.	4.6	8
102	Online-learning-aided optimization and interpretation of sugar production from oil palm mesocarp fibers with analytics for industrial applications. <i>Resources, Conservation and Recycling</i> , 2022, 180, 106206.	5.3	8
103	A robust low data solution: Dimension prediction of semiconductor nanorods. <i>Computers and Chemical Engineering</i> , 2021, 150, 107315.	2.0	7
104	The World Avatar—A World Model for Facilitating Interoperability. <i>Lecture Notes in Energy</i> , 2022, , 39-53.	0.2	7
105	Optimal design of low-carbon energy systems towards sustainable cities under climate change scenarios. <i>Journal of Cleaner Production</i> , 2022, 366, 132933.	4.6	7
106	Increasing metabolic pathway flux by using machine learning models. <i>Current Opinion in Biotechnology</i> , 2020, 66, 179-185.	3.3	6
107	Hydrogen Economy Assessment & Resource Tool (HEART): A python-based tool for ASEAN H2 roadmap study. <i>International Journal of Hydrogen Energy</i> , 2022, 47, 21897-21907.	3.8	6
108	Waste-Energy-Water systems in sustainable city development using the resilience.io platform. <i>Computer Aided Chemical Engineering</i> , 2017, , 2377-2382.	0.3	5

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109	High-Purity V ₂ O ₅ Nanosheets Synthesized from Gasification Waste: Flexible Energy Storage Devices and Environmental Assessment. ACS Sustainable Chemistry and Engineering, 0, , .	3.2	5
110	Framework for WASH Sector Data Improvements in Data-Poor Environments, Applied to Accra, Ghana. Water (Switzerland), 2018, 10, 1278.	1.2	4
111	Sustainability assessment: focusing on different technologies recovering energy from waste. , 2020, , 235-264.		4
112	Embedding Energy Storage Systems into a Dynamic Knowledge Graph. Industrial & Engineering Chemistry Research, 2022, 61, 8390-8398.	1.8	4
113	Local control of fuel cell systems within hybrid renewable energy generation using model predictive control. Energy Procedia, 2018, 145, 333-338.	1.8	3
114	A Data-Driven Approach for Design and Optimization of Energy Storage Systems. Computer Aided Chemical Engineering, 2018, 44, 1759-1764.	0.3	3
115	On the Carbon Abatement Potential and Economic Viability of Biochar Production Systems. , 2019, , 385-408.		3
116	A machine learning-based decision support framework for energy storage selection. Chemical Engineering Research and Design, 2022, 181, 412-422.	2.7	3
117	Mining Maximum Length Frequent Itemsets: A Summary of Results. , 2006, , .		2
118	Proactive Optimization and Control of Heat-Exchanger Super Networks. IFAC-PapersOnLine, 2015, 48, 592-597.	0.5	2
119	Energy Demand Response of Process Systems through Production Scheduling and Control. IFAC-PapersOnLine, 2015, 48, 385-390.	0.5	2
120	Model-based decision-support for waste-to-energy pathways in New South Wales, Australia. Computer Aided Chemical Engineering, 2019, , 1765-1770.	0.3	2
121	The research and development of waste-to-hydrogen technologies and systems. Applied Energy, 2020, 268, 115015.	5.1	2
122	Model predictive control of fuel cells system within hybrid renewable energy generation. IFAC-PapersOnLine, 2018, 51, 856-861.	0.5	1
123	Editorial: Special Issue on Selected Papers from CIS-RAM2019 "Cybernetics and Intelligent Systems (CIS) and Robotics, Automation and Mechatronics (RAM). Unmanned Systems, 2020, 08, 191-192.	2.7	1
124	Smart systems engineering contributing to an intelligent carbon-neutral future: opportunities, challenges, and prospects. Frontiers of Chemical Science and Engineering, 2022, 16, 1023-1029.	2.3	1
125	Special Issue on "Design and Control of Sustainable Processes" Processes, 2020, 8, 1046.	1.3	0