

# Xiaonan Wang

## List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

115  
papers

2,284  
citations

27  
h-index

44  
g-index

139  
ext. papers

3,650  
ext. citations

8  
avg, IF

6.12  
L-index

#	Paper	IF	Citations
115	Energy Demand Side Management within micro-grid networks enhanced by blockchain. <i>Applied Energy</i> , <b>2018</b> , 228, 1385-1398	10.7	195
114	Operational optimization and demand response of hybrid renewable energy systems. <i>Applied Energy</i> , <b>2015</b> , 143, 324-335	10.7	187
113	Sustainable planning of the energy-water-food nexus using decision making tools. <i>Energy Policy</i> , <b>2018</b> , 113, 584-607	7.2	122
112	Design and management of a distributed hybrid energy system through smart contract and blockchain. <i>Applied Energy</i> , <b>2019</b> , 248, 390-405	10.7	112
111	Machine learning prediction of biochar yield and carbon contents in biochar based on biomass characteristics and pyrolysis conditions. <i>Bioresource Technology</i> , <b>2019</b> , 288, 121527	11	78
110	The application of machine learning methods for prediction of metal sorption onto biochars. <i>Journal of Hazardous Materials</i> , <b>2019</b> , 378, 120727	12.8	72
109	Organic waste to biohydrogen: A critical review from technological development and environmental impact analysis perspective. <i>Applied Energy</i> , <b>2019</b> , 256, 113961	10.7	60
108	Toward the Shell Biorefinery: Processing Crustacean Shell Waste Using Hot Water and Carbonic Acid. <i>ACS Sustainable Chemistry and Engineering</i> , <b>2019</b> , 7, 5532-5542	8.3	56
107	Optimal scheduling of demand responsive industrial production with hybrid renewable energy systems. <i>Renewable Energy</i> , <b>2017</b> , 100, 53-64	8.1	55
106	Recurrent Neural Network-Based Model Predictive Control for Continuous Pharmaceutical Manufacturing. <i>Mathematics</i> , <b>2018</b> , 6, 242	2.3	54
105	Multi-objective optimization of a neighborhood-level urban energy network: Considering Game-theory inspired multi-benefit allocation constraints. <i>Applied Energy</i> , <b>2018</b> , 231, 534-548	10.7	54
104	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> , <b>2014</b> , 24, 1318-1327	3.9	52
103	Fuel properties of hydrochar and pyrochar: Prediction and exploration with machine learning. <i>Applied Energy</i> , <b>2020</b> , 269, 115166	10.7	42
102	The impact of intelligent cyber-physical systems on the decarbonization of energy. <i>Energy and Environmental Science</i> , <b>2020</b> , 13, 744-771	35.4	39
101	A multi-objective optimization approach for selection of energy storage systems. <i>Computers and Chemical Engineering</i> , <b>2018</b> , 115, 213-225	4	37
100	Distributed or centralized? Designing district-level urban energy systems by a hierarchical approach considering demand uncertainties. <i>Applied Energy</i> , <b>2019</b> , 252, 113424	10.7	36
99	A Nexus Approach for Sustainable Urban Energy-Water-Waste Systems Planning and Operation. <i>Environmental Science &amp; Technology</i> , <b>2018</b> , 52, 3257-3266	10.3	36

98	Optimal design of negative emission hybrid renewable energy systems with biochar production. <i>Applied Energy</i> , <b>2019</b> , 243, 233-249	10.7	35
97	Review and outlook on the international renewable energy development. <i>Energy and Built Environment</i> , <b>2020</b> ,	6.3	34
96	Hydrogen value chain and fuel cells within hybrid renewable energy systems: Advanced operation and control strategies. <i>Applied Energy</i> , <b>2019</b> , 233-234, 321-337	10.7	34
95	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> , <b>2021</b> , 278, 123928	10.3	34
94	Blockchain-based smart contract for energy demand management. <i>Energy Procedia</i> , <b>2019</b> , 158, 2719-2724	3	33
93	Understanding and optimization of thin film nanocomposite membranes for reverse osmosis with machine learning. <i>Journal of Membrane Science</i> , <b>2020</b> , 606, 118135	9.6	31
92	Deep Learning Accelerated Gold Nanocluster Synthesis. <i>Advanced Intelligent Systems</i> , <b>2019</b> , 1, 1900029	6	30
91	Exergoeconomic analysis of a novel trigeneration system containing supercritical CO2 Brayton cycle, organic Rankine cycle and absorption refrigeration cycle for gas turbine waste heat recovery. <i>Energy Conversion and Management</i> , <b>2020</b> , 221, 113064	10.6	29
90	AI Applications through the Whole Life Cycle of Material Discovery. <i>Matter</i> , <b>2020</b> , 3, 393-432	12.7	28
89	Two-step machine learning enables optimized nanoparticle synthesis. <i>Npj Computational Materials</i> , <b>2021</b> , 7,	10.9	27
88	A quantitative roadmap for China towards carbon neutrality in 2060 using methanol and ammonia as energy carriers. <i>IScience</i> , <b>2021</b> , 24, 102513	6.1	26
87	Energy-water nexus design and operation towards the sustainable development goals. <i>Computers and Chemical Engineering</i> , <b>2019</b> , 124, 162-171	4	22
86	Long-term economic planning of combined cooling heating and power systems considering energy storage and demand response. <i>Applied Energy</i> , <b>2020</b> , 279, 115819	10.7	21
85	Effects of activated carbon on mesophilic and thermophilic anaerobic digestion of food waste: Process performance and life cycle assessment. <i>Chemical Engineering Journal</i> , <b>2020</b> , 399, 125757	14.7	21
84	A Compact Convolutional Neural Network for Surface Defect Inspection. <i>Sensors</i> , <b>2020</b> , 20,	3.8	21
83	An integrated optimisation platform for sustainable resource and infrastructure planning. <i>Environmental Modelling and Software</i> , <b>2018</b> , 101, 146-168	5.2	21
82	The COVID-19 pandemic necessitates a shift to a plastic circular economy. <i>Nature Reviews Earth &amp; Environment</i> , <b>2021</b> , 1-2	30.2	21
81	Applied Machine Learning for Prediction of CO Adsorption on Biomass Waste-Derived Porous Carbons. <i>Environmental Science &amp; Technology</i> , <b>2021</b> , 55, 11925-11936	10.3	19

80	Analysis of biomass polygeneration integrated energy system based on a mixed-integer nonlinear programming optimization method. <i>Journal of Cleaner Production</i> , <b>2020</b> , 271, 122761	10.3	18
79	Township-based bioenergy systems for distributed energy supply and efficient household waste re-utilisation: Techno-economic and environmental feasibility. <i>Energy</i> , <b>2019</b> , 181, 455-467	7.9	17
78	Develop machine learning-based regression predictive models for engineering protein solubility. <i>Bioinformatics</i> , <b>2019</b> , 35, 4640-4646	7.2	17
77	Combining agent-based residential demand modeling with design optimization for integrated energy systems planning and operation. <i>Applied Energy</i> , <b>2020</b> , 263, 114623	10.7	17
76	Optimization and control of offshore wind systems with energy storage. <i>Energy Conversion and Management</i> , <b>2018</b> , 173, 426-437	10.6	16
75	Application of Life Cycle Assessment and Machine Learning for High-Throughput Screening of Green Chemical Substitutes. <i>ACS Sustainable Chemistry and Engineering</i> , <b>2020</b> , 8, 11141-11151	8.3	16
74	Improving protein solubility and activity by introducing small peptide tags designed with machine learning models. <i>Metabolic Engineering Communications</i> , <b>2020</b> , 11, e00138	6.5	15
73	Biocatalytic Continuous Manufacturing of Diabetes Drug: Plantwide Process Modeling, Optimization, and Environmental and Economic Analysis. <i>ACS Sustainable Chemistry and Engineering</i> , <b>2019</b> , 7, 1038-1051	8.3	15
72	A decision support framework for the design and operation of sustainable urban farming systems. <i>Journal of Cleaner Production</i> , <b>2020</b> , 268, 121928	10.3	14
71	Game theory-based renewable multi-energy system design and subsidy strategy optimization. <i>Advances in Applied Energy</i> , <b>2021</b> , 2, 100024		14
70	A three-step machine learning framework for energy profiling, activity state prediction and production estimation in smart process manufacturing. <i>Applied Energy</i> , <b>2021</b> , 291, 116808	10.7	14
69	Smart Manufacturing for Smart Cities Overview, Insights, and Future Directions. <i>Advanced Intelligent Systems</i> , <b>2020</b> , 2, 2000043	6	13
68	Online prediction of mechanical properties of hot rolled steel plate using machine learning. <i>Materials and Design</i> , <b>2021</b> , 197, 109201	8.1	13
67	Techno-economic-environmental evaluation of a combined cooling heating and power system for gas turbine waste heat recovery. <i>Energy</i> , <b>2021</b> , 231, 120956	7.9	13
66	Machine learning aided supercritical water gasification for H <sub>2</sub> -rich syngas production with process optimization and catalyst screening. <i>Chemical Engineering Journal</i> , <b>2021</b> , 426, 131285	14.7	13
65	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> , <b>2021</b> , 425, 130649	14.7	12
64	Planning of Food-Energy-Water-Waste (FEW <sub>2</sub> ) nexus for sustainable development. <i>BMC Chemical Engineering</i> , <b>2020</b> , 2,	3.5	11
63	ProGAN: Protein solubility generative adversarial nets for data augmentation in DNN framework. <i>Computers and Chemical Engineering</i> , <b>2019</b> , 131, 106533	4	11

62	Energy management for the chlor-alkali process with hybrid renewable energy generation using receding horizon optimization <b>2014</b> ,		11
61	Pyrolysis of waste surgical masks into liquid fuel and its life-cycle assessment.. <i>Bioresource Technology</i> , <b>2021</b> , 126582	11	11
60	Optimal allocation of energy storage and solar photovoltaic systems with residential demand scheduling. <i>Applied Energy</i> , <b>2020</b> , 269, 115116	10.7	11
59	Operation of residential hybrid renewable energy systems: Integrating forecasting, optimization and demand response <b>2014</b> ,		10
58	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> , <b>2021</b> , 150, 111489	16.2	10
57	Meta-analysis of the strategies for self-healing and resilience in power systems. <i>Advances in Applied Energy</i> , <b>2021</b> , 4, 100036		9
56	A load-complementarity combined flexible clustering approach for large-scale urban energy-water nexus optimization. <i>Applied Energy</i> , <b>2020</b> , 270, 115163	10.7	8
55	Design and operation of hybrid renewable energy systems: current status and future perspectives. <i>Current Opinion in Chemical Engineering</i> , <b>2021</b> , 31, 100669	5.4	8
54	CyberPhysical Production Systems for Data-Driven, Decentralized, and Secure Manufacturing: A Perspective. <i>Engineering</i> , <b>2021</b> , 7, 1212-1212	9.7	8
53	A hybrid data-driven and mechanistic modelling approach for hydrothermal gasification. <i>Applied Energy</i> , <b>2021</b> , 304, 117674	10.7	8
52	Prediction of Soil Heavy Metal Immobilization by Biochar Using Machine Learning.. <i>Environmental Science &amp; Technology</i> , <b>2022</b> ,	10.3	8
51	Proactive Reconfiguration of Heat-Exchanger Supernetworks. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2015</b> , 54, 9178-9190	3.9	7
50	Waste-to-hydrogen: Recycling HCl to produce H <sub>2</sub> and Cl <sub>2</sub> . <i>Applied Energy</i> , <b>2020</b> , 259, 114184	10.7	7
49	Energy Demand Side Management with supply constraints: Game theoretic Approach. <i>Energy Procedia</i> , <b>2018</b> , 145, 368-373	2.3	7
48	Optimal Design of Standalone Hybrid Renewable Energy Systems with Biochar Production in Remote Rural Areas: A Case Study. <i>Energy Procedia</i> , <b>2019</b> , 158, 688-693	2.3	6
47	Precision healthcare supply chain design through multi-objective stochastic programming. <i>Computer Aided Chemical Engineering</i> , <b>2018</b> , 2137-2142	0.6	6
46	Water and Energy Systems in Sustainable City Development: A Case of Sub-saharan Africa. <i>Procedia Engineering</i> , <b>2017</b> , 198, 948-957		6
45	Evaluation of potential feedstocks for sustainable biogas production in Ghana: Quantification, energy generation, and CO <sub>2</sub> abatement. <i>Cogent Environmental Science</i> , <b>2020</b> , 6, 1868162	1.6	6

44	Multigenerational Crumpling of 2D Materials for Anticounterfeiting Patterns with Deep Learning Authentication. <i>Matter</i> , <b>2020</b> , 3, 2160-2180	12.7	6
43	Machine Vision Automated Chiral Molecule Detection and Classification in Molecular Imaging. <i>Journal of the American Chemical Society</i> , <b>2021</b> , 143, 10177-10188	16.4	6
42	Assessing the environmental performance of NADH regeneration methods: A cleaner process using recyclable Pt/Fe <sub>3</sub> O <sub>4</sub> and hydrogen. <i>Catalysis Today</i> , <b>2020</b> , 339, 281-288	5.3	6
41	Simultaneous design and operation optimization of renewable combined cooling heating and power systems. <i>AIChE Journal</i> , <b>2020</b> , 66, e17039	3.6	5
40	Planning urban energy systems adapting to extreme weather. <i>Advances in Applied Energy</i> , <b>2021</b> , 3, 100053		5
39	Waste-Energy-Water systems in sustainable city development using the resilience.io platform. <i>Computer Aided Chemical Engineering</i> , <b>2017</b> , 2377-2382	0.6	4
38	Wet wastes to bioenergy and biochar: A critical review with future perspectives.. <i>Science of the Total Environment</i> , <b>2022</b> , 817, 152921	10.2	4
37	Machine-Learning-Assisted Accurate Prediction of Molecular Optical Properties upon Aggregation. <i>Advanced Science</i> , <b>2021</b> , 9, e2101074	13.6	4
36	Achieving a low-carbon future through the energy-chemical nexus in China. <i>Sustainable Energy and Fuels</i> , <b>2020</b> , 4, 6141-6155	5.8	4
35	Optimization and control of offshore wind farms with energy storage systems. <i>IFAC-PapersOnLine</i> , <b>2018</b> , 51, 862-867	0.7	4
34	High-Purity V <sub>2</sub> O <sub>5</sub> Nanosheets Synthesized from Gasification Waste: Flexible Energy Storage Devices and Environmental Assessment. <i>ACS Sustainable Chemistry and Engineering</i> , <b>2019</b> ,	8.3	3
33	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> , <b>2022</b> , 5, 100078		3
32	Increasing metabolic pathway flux by using machine learning models. <i>Current Opinion in Biotechnology</i> , <b>2020</b> , 66, 179-185	11.4	3
31	Relative optimization potential: A novel perspective to address trade-off challenges in urban energy system planning. <i>Applied Energy</i> , <b>2021</b> , 304, 117741	10.7	3
30	Recent advancements in sustainable upcycling of solid waste into porous carbons for carbon dioxide capture. <i>Renewable and Sustainable Energy Reviews</i> , <b>2022</b> , 162, 112413	16.2	3
29	Sustainability assessment: focusing on different technologies recovering energy from waste <b>2020</b> , 235-264		2
28	Proactive Optimization and Control of Heat-Exchanger Super Networks. <i>IFAC-PapersOnLine</i> , <b>2015</b> , 48, 592-597	0.7	2
27	Data-Driven Based In-Depth Interpretation and Inverse Design of Anaerobic Digestion for CH <sub>4</sub> -Rich Biogas Production. <i>ACS ES&amp;T Engineering</i> ,		2

26	Automatic strain sensor design via active learning and data augmentation for soft machines. <i>Nature Machine Intelligence</i> , <b>2022</b> , 4, 84-94	22.5	2
25	Self-Improving Photosensitizer Discovery System via Bayesian Search with First-Principle Simulations. <i>Journal of the American Chemical Society</i> , <b>2021</b> , 143, 19769-19777	16.4	2
24	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> , <b>2022</b> , 308, 118376	10.7	2
23	Two-Step Machine Learning Enables Optimized Nanoparticle Synthesis		2
22	Improve Protein Solubility and Activity based on Machine Learning Models		2
21	A robust low data solution: Dimension prediction of semiconductor nanorods. <i>Computers and Chemical Engineering</i> , <b>2021</b> , 150, 107315	4	2
20	Model-based decision-support for waste-to-energy pathways in New South Wales, Australia. <i>Computer Aided Chemical Engineering</i> , <b>2019</b> , 1765-1770	0.6	2
19	On the Carbon Abatement Potential and Economic Viability of Biochar Production Systems <b>2019</b> , 385-408		2
18	Local control of fuel cell systems within hybrid renewable energy generation using model predictive control. <i>Energy Procedia</i> , <b>2018</b> , 145, 333-338	2.3	2
17	Framework for WASH Sector Data Improvements in Data-Poor Environments, Applied to Accra, Ghana. <i>Water (Switzerland)</i> , <b>2018</b> , 10, 1278	3	2
16	Energy Demand Response of Process Systems through Production Scheduling and Control. <i>IFAC-PapersOnLine</i> , <b>2015</b> , 48, 385-390	0.7	1
15	Learning-based scheduling of industrial hybrid renewable energy systems. <i>Computers and Chemical Engineering</i> , <b>2022</b> , 159, 107665	4	1
14	AI-enhanced soil management and smart farming. <i>Soil Use and Management</i> ,	3.1	1
13	The research and development of waste-to-hydrogen technologies and systems. <i>Applied Energy</i> , <b>2020</b> , 268, 115015	10.7	1
12	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> , <b>2021</b> , 26, 1071-1084	4.6	1
11	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. <i>Frontiers of Chemical Science and Engineering</i> ,1	4.5	1
10	Preference Ranking on the Basis of Ideal-Average Distance Method for Multi-Criteria Decision-Making. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2021</b> , 60, 11216-11230	3.9	1
9	Household waste management in Singapore and Shanghai: Experiences, challenges and opportunities from the perspective of emerging megacities.. <i>Waste Management</i> , <b>2022</b> , 144, 221-232	8.6	1

8	The World Avatar: A World Model for Facilitating Interoperability. <i>Lecture Notes in Energy</i> , <b>2022</b> , 39-53	0.4	1
7	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> , <b>2022</b> , 180, 106206	11.9	0
6	Model predictive control of fuel cells system within hybrid renewable energy generation. <i>IFAC-PapersOnLine</i> , <b>2018</b> , 51, 856-861	0.7	0
5	A Data-Driven Approach for Design and Optimization of Energy Storage Systems. <i>Computer Aided Chemical Engineering</i> , <b>2018</b> , 44, 1759-1764	0.6	0
4	Techno-enviro-economic analyses of hydrogen supply chains with an ASEAN case study. <i>International Journal of Hydrogen Energy</i> , <b>2021</b> , 46, 32914-32928	6.7	0
3	Comparative life cycle assessment of NAD(P)H regeneration technologies. <i>Green Chemistry</i> , <b>2021</b> , 23, 7162-7169	10	0
2	Design and prediction of metal organic framework-based mixed matrix membranes for CO <sub>2</sub> capture via machine learning. <i>Cell Reports Physical Science</i> , <b>2022</b> , 100864	6.1	0
1	Smart systems engineering contributing to an intelligent carbon-neutral future: opportunities, challenges, and prospects. <i>Frontiers of Chemical Science and Engineering</i> , 1	4.5	