

Xiaonan Wang

List of Publications by Year in Descending Order

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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 | Automatic strain sensor design via active learning and data augmentation for soft machines. <i>Nature Machine Intelligence</i> , 2022 , 4, 84-94 | 22.5 | 2 |
| 114 | Learning-based scheduling of industrial hybrid renewable energy systems. <i>Computers and Chemical Engineering</i> , 2022 , 159, 107665 | 4 | 1 |
| 113 | Wet wastes to bioenergy and biochar: A critical review with future perspectives.. <i>Science of the Total Environment</i> , 2022 , 817, 152921 | 10.2 | 4 |
| 112 | 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 | 11.9 | 0 |
| 111 | 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 | 10.7 | 2 |
| 110 | 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 | | 3 |
| 109 | Prediction of Soil Heavy Metal Immobilization by Biochar Using Machine Learning.. <i>Environmental Science & Technology</i> , 2022 , | 10.3 | 8 |
| 108 | Household waste management in Singapore and Shanghai: Experiences, challenges and opportunities from the perspective of emerging megacities.. <i>Waste Management</i> , 2022 , 144, 221-232 | 8.6 | 1 |
| 107 | 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 | 16.2 | 3 |
| 106 | The World Avatar: A World Model for Facilitating Interoperability. <i>Lecture Notes in Energy</i> , 2022 , 39-53 | 0.4 | 1 |
| 105 | Design and prediction of metal organic framework-based mixed matrix membranes for CO2 capture via machine learning. <i>Cell Reports Physical Science</i> , 2022 , 100864 | 6.1 | 0 |
| 104 | Self-Improving Photosensitizer Discovery System via Bayesian Search with First-Principle Simulations. <i>Journal of the American Chemical Society</i> , 2021 , 143, 19769-19777 | 16.4 | 2 |
| 103 | Machine-Learning-Assisted Accurate Prediction of Molecular Optical Properties upon Aggregation. <i>Advanced Science</i> , 2021 , 9, e2101074 | 13.6 | 4 |
| 102 | Pyrolysis of waste surgical masks into liquid fuel and its life-cycle assessment.. <i>Bioresource Technology</i> , 2021 , 126582 | 11 | 11 |
| 101 | Design and operation of hybrid renewable energy systems: current status and future perspectives. <i>Current Opinion in Chemical Engineering</i> , 2021 , 31, 100669 | 5.4 | 8 |
| 100 | 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 | 4.6 | 1 |
| 99 | Two-step machine learning enables optimized nanoparticle synthesis. <i>Npj Computational Materials</i> , 2021 , 7, | 10.9 | 27 |

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| 98 | Game theory-based renewable multi-energy system design and subsidy strategy optimization. <i>Advances in Applied Energy</i> , 2021 , 2, 100024 | | 14 |
| 97 | A quantitative roadmap for China towards carbon neutrality in 2060 using methanol and ammonia as energy carriers. <i>IScience</i> , 2021 , 24, 102513 | 6.1 | 26 |
| 96 | 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 | 10.7 | 14 |
| 95 | Machine Vision Automated Chiral Molecule Detection and Classification in Molecular Imaging. <i>Journal of the American Chemical Society</i> , 2021 , 143, 10177-10188 | 16.4 | 6 |
| 94 | A robust low data solution: Dimension prediction of semiconductor nanorods. <i>Computers and Chemical Engineering</i> , 2021 , 150, 107315 | 4 | 2 |
| 93 | Preference Ranking on the Basis of Ideal-Average Distance Method for Multi-Criteria Decision-Making. <i>Industrial & Engineering Chemistry Research</i> , 2021 , 60, 11216-11230 | 3.9 | 1 |
| 92 | CyberPhysical Production Systems for Data-Driven, Decentralized, and Secure Manufacturing: A Perspective. <i>Engineering</i> , 2021 , 7, 1212-1212 | 9.7 | 8 |
| 91 | 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 | 10.3 | 34 |
| 90 | Online prediction of mechanical properties of hot rolled steel plate using machine learning. <i>Materials and Design</i> , 2021 , 197, 109201 | 8.1 | 13 |
| 89 | Applied Machine Learning for Prediction of CO Adsorption on Biomass Waste-Derived Porous Carbons. <i>Environmental Science & Technology</i> , 2021 , 55, 11925-11936 | 10.3 | 19 |
| 88 | Planning urban energy systems adapting to extreme weather. <i>Advances in Applied Energy</i> , 2021 , 3, 100053 | | 5 |
| 87 | Techno-economic-environmental evaluation of a combined cooling heating and power system for gas turbine waste heat recovery. <i>Energy</i> , 2021 , 231, 120956 | 7.9 | 13 |
| 86 | The COVID-19 pandemic necessitates a shift to a plastic circular economy. <i>Nature Reviews Earth & Environment</i> , 2021 , 1-2 | 30.2 | 21 |
| 85 | Techno-enviro-economic analyses of hydrogen supply chains with an ASEAN case study. <i>International Journal of Hydrogen Energy</i> , 2021 , 46, 32914-32928 | 6.7 | 0 |
| 84 | 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 | 16.2 | 10 |
| 83 | Meta-analysis of the strategies for self-healing and resilience in power systems. <i>Advances in Applied Energy</i> , 2021 , 4, 100036 | | 9 |
| 82 | Relative optimization potential: A novel perspective to address trade-off challenges in urban energy system planning. <i>Applied Energy</i> , 2021 , 304, 117741 | 10.7 | 3 |
| 81 | 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 | 14.7 | 13 |

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|----|---|------|----|
| 80 | 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 | 14.7 | 12 |
| 79 | A hybrid data-driven and mechanistic modelling approach for hydrothermal gasification. <i>Applied Energy</i> , 2021 , 304, 117674 | 10.7 | 8 |
| 78 | Comparative life cycle assessment of NAD(P)H regeneration technologies. <i>Green Chemistry</i> , 2021 , 23, 7162-7169 | 10 | 0 |
| 77 | Review and outlook on the international renewable energy development. <i>Energy and Built Environment</i> , 2020 , | 6.3 | 34 |
| 76 | Long-term economic planning of combined cooling heating and power systems considering energy storage and demand response. <i>Applied Energy</i> , 2020 , 279, 115819 | 10.7 | 21 |
| 75 | A decision support framework for the design and operation of sustainable urban farming systems. <i>Journal of Cleaner Production</i> , 2020 , 268, 121928 | 10.3 | 14 |
| 74 | Fuel properties of hydrochar and pyrochar: Prediction and exploration with machine learning. <i>Applied Energy</i> , 2020 , 269, 115166 | 10.7 | 42 |
| 73 | A load-complementarity combined flexible clustering approach for large-scale urban energy-water nexus optimization. <i>Applied Energy</i> , 2020 , 270, 115163 | 10.7 | 8 |
| 72 | 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 | 14.7 | 21 |
| 71 | Sustainability assessment: focusing on different technologies recovering energy from waste 2020 , 235-264 | | 2 |
| 70 | Planning of Food-Energy-Water-Waste (FEW2) nexus for sustainable development. <i>BMC Chemical Engineering</i> , 2020 , 2, | 3.5 | 11 |
| 69 | 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 | 10.3 | 18 |
| 68 | Smart Manufacturing for Smart Cities Overview, Insights, and Future Directions. <i>Advanced Intelligent Systems</i> , 2020 , 2, 2000043 | 6 | 13 |
| 67 | 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> , 2020 , 221, 113064 | 10.6 | 29 |
| 66 | The impact of intelligent cyber-physical systems on the decarbonization of energy. <i>Energy and Environmental Science</i> , 2020 , 13, 744-771 | 35.4 | 39 |
| 65 | Combining agent-based residential demand modeling with design optimization for integrated energy systems planning and operation. <i>Applied Energy</i> , 2020 , 263, 114623 | 10.7 | 17 |
| 64 | A Compact Convolutional Neural Network for Surface Defect Inspection. <i>Sensors</i> , 2020 , 20, | 3.8 | 21 |
| 63 | Understanding and optimization of thin film nanocomposite membranes for reverse osmosis with machine learning. <i>Journal of Membrane Science</i> , 2020 , 606, 118135 | 9.6 | 31 |

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| 62 | Evaluation of potential feedstocks for sustainable biogas production in Ghana: Quantification, energy generation, and CO ₂ abatement. <i>Cogent Environmental Science</i> , 2020 , 6, 1868162 | 1.6 | 6 |
| 61 | Optimal allocation of energy storage and solar photovoltaic systems with residential demand scheduling. <i>Applied Energy</i> , 2020 , 269, 115116 | 10.7 | 11 |
| 60 | Waste-to-hydrogen: Recycling HCl to produce H ₂ and Cl ₂ . <i>Applied Energy</i> , 2020 , 259, 114184 | 10.7 | 7 |
| 59 | Increasing metabolic pathway flux by using machine learning models. <i>Current Opinion in Biotechnology</i> , 2020 , 66, 179-185 | 11.4 | 3 |
| 58 | Achieving a low-carbon future through the energy-chemical nexus in China. <i>Sustainable Energy and Fuels</i> , 2020 , 4, 6141-6155 | 5.8 | 4 |
| 57 | The research and development of waste-to-hydrogen technologies and systems. <i>Applied Energy</i> , 2020 , 268, 115015 | 10.7 | 1 |
| 56 | Multigenerational Crumpling of 2D Materials for Anticounterfeiting Patterns with Deep Learning Authentication. <i>Matter</i> , 2020 , 3, 2160-2180 | 12.7 | 6 |
| 55 | Improving protein solubility and activity by introducing small peptide tags designed with machine learning models. <i>Metabolic Engineering Communications</i> , 2020 , 11, e00138 | 6.5 | 15 |
| 54 | AI Applications through the Whole Life Cycle of Material Discovery. <i>Matter</i> , 2020 , 3, 393-432 | 12.7 | 28 |
| 53 | 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 | 8.3 | 16 |
| 52 | Simultaneous design and operation optimization of renewable combined cooling heating and power systems. <i>AIChE Journal</i> , 2020 , 66, e17039 | 3.6 | 5 |
| 51 | Assessing the environmental performance of NADH regeneration methods: A cleaner process using recyclable Pt/Fe ₃ O ₄ and hydrogen. <i>Catalysis Today</i> , 2020 , 339, 281-288 | 5.3 | 6 |
| 50 | Blockchain-based smart contract for energy demand management. <i>Energy Procedia</i> , 2019 , 158, 2719-2724 | 2.3 | 33 |
| 49 | Optimal Design of Standalone Hybrid Renewable Energy Systems with Biochar Production in Remote Rural Areas: A Case Study. <i>Energy Procedia</i> , 2019 , 158, 688-693 | 2.3 | 6 |
| 48 | 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 | 8.3 | 56 |
| 47 | High-Purity V ₂ O ₅ Nanosheets Synthesized from Gasification Waste: Flexible Energy Storage Devices and Environmental Assessment. <i>ACS Sustainable Chemistry and Engineering</i> , 2019 , | 8.3 | 3 |
| 46 | Deep Learning Accelerated Gold Nanocluster Synthesis. <i>Advanced Intelligent Systems</i> , 2019 , 1, 1900029 | 6 | 30 |
| 45 | 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 | 7.9 | 17 |

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| 44 | The application of machine learning methods for prediction of metal sorption onto biochars. <i>Journal of Hazardous Materials</i> , 2019 , 378, 120727 | 12.8 | 72 |
| 43 | Distributed or centralized? Designing district-level urban energy systems by a hierarchical approach considering demand uncertainties. <i>Applied Energy</i> , 2019 , 252, 113424 | 10.7 | 36 |
| 42 | 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 | 11 | 78 |
| 41 | Develop machine learning-based regression predictive models for engineering protein solubility. <i>Bioinformatics</i> , 2019 , 35, 4640-4646 | 7.2 | 17 |
| 40 | Design and management of a distributed hybrid energy system through smart contract and blockchain. <i>Applied Energy</i> , 2019 , 248, 390-405 | 10.7 | 112 |
| 39 | Optimal design of negative emission hybrid renewable energy systems with biochar production. <i>Applied Energy</i> , 2019 , 243, 233-249 | 10.7 | 35 |
| 38 | Organic waste to biohydrogen: A critical review from technological development and environmental impact analysis perspective. <i>Applied Energy</i> , 2019 , 256, 113961 | 10.7 | 60 |
| 37 | ProGAN: Protein solubility generative adversarial nets for data augmentation in DNN framework. <i>Computers and Chemical Engineering</i> , 2019 , 131, 106533 | 4 | 11 |
| 36 | Energy-water nexus design and operation towards the sustainable development goals. <i>Computers and Chemical Engineering</i> , 2019 , 124, 162-171 | 4 | 22 |
| 35 | Model-based decision-support for waste-to-energy pathways in New South Wales, Australia. <i>Computer Aided Chemical Engineering</i> , 2019 , 1765-1770 | 0.6 | 2 |
| 34 | 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 | 10.7 | 34 |
| 33 | On the Carbon Abatement Potential and Economic Viability of Biochar Production Systems 2019 , 385-408 | | 2 |
| 32 | Biocatalytic Continuous Manufacturing of Diabetes Drug: Plantwide Process Modeling, Optimization, and Environmental and Economic Analysis. <i>ACS Sustainable Chemistry and Engineering</i> , 2019 , 7, 1038-1051 | 8.3 | 15 |
| 31 | A multi-objective optimization approach for selection of energy storage systems. <i>Computers and Chemical Engineering</i> , 2018 , 115, 213-225 | 4 | 37 |
| 30 | A Nexus Approach for Sustainable Urban Energy-Water-Waste Systems Planning and Operation. <i>Environmental Science & Technology</i> , 2018 , 52, 3257-3266 | 10.3 | 36 |
| 29 | Sustainable planning of the energy-water-food nexus using decision making tools. <i>Energy Policy</i> , 2018 , 113, 584-607 | 7.2 | 122 |
| 28 | An integrated optimisation platform for sustainable resource and infrastructure planning. <i>Environmental Modelling and Software</i> , 2018 , 101, 146-168 | 5.2 | 21 |
| 27 | Optimization and control of offshore wind systems with energy storage. <i>Energy Conversion and Management</i> , 2018 , 173, 426-437 | 10.6 | 16 |

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| 26 | Precision healthcare supply chain design through multi-objective stochastic programming. <i>Computer Aided Chemical Engineering</i> , 2018 , 2137-2142 | 0.6 | 6 |
| 25 | Energy Demand Side Management within micro-grid networks enhanced by blockchain. <i>Applied Energy</i> , 2018 , 228, 1385-1398 | 10.7 | 195 |
| 24 | Local control of fuel cell systems within hybrid renewable energy generation using model predictive control. <i>Energy Procedia</i> , 2018 , 145, 333-338 | 2.3 | 2 |
| 23 | Energy Demand Side Management with supply constraints: Game theoretic Approach. <i>Energy Procedia</i> , 2018 , 145, 368-373 | 2.3 | 7 |
| 22 | Model predictive control of fuel cells system within hybrid renewable energy generation. <i>IFAC-PapersOnLine</i> , 2018 , 51, 856-861 | 0.7 | 0 |
| 21 | Optimization and control of offshore wind farms with energy storage systems. <i>IFAC-PapersOnLine</i> , 2018 , 51, 862-867 | 0.7 | 4 |
| 20 | Recurrent Neural Network-Based Model Predictive Control for Continuous Pharmaceutical Manufacturing. <i>Mathematics</i> , 2018 , 6, 242 | 2.3 | 54 |
| 19 | A Data-Driven Approach for Design and Optimization of Energy Storage Systems. <i>Computer Aided Chemical Engineering</i> , 2018 , 44, 1759-1764 | 0.6 | 0 |
| 18 | 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 | 10.7 | 54 |
| 17 | Framework for WASH Sector Data Improvements in Data-Poor Environments, Applied to Accra, Ghana. <i>Water (Switzerland)</i> , 2018 , 10, 1278 | 3 | 2 |
| 16 | Optimal scheduling of demand responsive industrial production with hybrid renewable energy systems. <i>Renewable Energy</i> , 2017 , 100, 53-64 | 8.1 | 55 |
| 15 | Waste-Energy-Water systems in sustainable city development using the resilience.io platform. <i>Computer Aided Chemical Engineering</i> , 2017 , 2377-2382 | 0.6 | 4 |
| 14 | Water and Energy Systems in Sustainable City Development: A Case of Sub-saharan Africa. <i>Procedia Engineering</i> , 2017 , 198, 948-957 | | 6 |
| 13 | Proactive Reconfiguration of Heat-Exchanger Supernetworks. <i>Industrial & Engineering Chemistry Research</i> , 2015 , 54, 9178-9190 | 3.9 | 7 |
| 12 | Proactive Optimization and Control of Heat-Exchanger Super Networks. <i>IFAC-PapersOnLine</i> , 2015 , 48, 592-597 | 0.7 | 2 |
| 11 | Energy Demand Response of Process Systems through Production Scheduling and Control. <i>IFAC-PapersOnLine</i> , 2015 , 48, 385-390 | 0.7 | 1 |
| 10 | Operational optimization and demand response of hybrid renewable energy systems. <i>Applied Energy</i> , 2015 , 143, 324-335 | 10.7 | 187 |
| 9 | 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 | 3.9 | 52 |

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| 8 | Operation of residential hybrid renewable energy systems: Integrating forecasting, optimization and demand response 2014 , | | 10 |
| 7 | Energy management for the chlor-alkali process with hybrid renewable energy generation using receding horizon optimization 2014 , | | 11 |
| 6 | Data-Driven Based In-Depth Interpretation and Inverse Design of Anaerobic Digestion for CH ₄ -Rich Biogas Production. <i>ACS ES&T Engineering</i> , | | 2 |
| 5 | Two-Step Machine Learning Enables Optimized Nanoparticle Synthesis | | 2 |
| 4 | AI-enhanced soil management and smart farming. <i>Soil Use and Management</i> , | 3-1 | 1 |
| 3 | Improve Protein Solubility and Activity based on Machine Learning Models | | 2 |
| 2 | 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 |
| 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 | |