Ruiyang Xiao

List of Publications by Year in descending order

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92 papers	5,779 citations	50170 46 h-index	76769 74 g-index
96 all docs	96 docs citations	96 times ranked	5018 citing authors

#	Article	IF	Citations
1	Activation of peroxymonosulfate/persulfate by nanomaterials for sulfate radical-based advanced oxidation technologies. Current Opinion in Chemical Engineering, 2018, 19, 51-58.	3.8	352
2	Mechanistic insight into reactivity of sulfate radical with aromatic contaminants through single-electron transfer pathway. Chemical Engineering Journal, 2017, 327, 1056-1065.	6.6	296
3	Quantitative Structureâ€“Activity Relationship (QSAR) for the Oxidation of Trace Organic Contaminants by Sulfate Radical. Environmental Science & Technology, 2015, 49, 13394-13402.	4.6	228
4	Rethinking wastewater risks and monitoring in light of the COVID-19 pandemic. Nature Sustainability, 2020, 3, 981-990.	11.5	195
5	Biomass segregation between biofilm and flocs improves the control of nitrite-oxidizing bacteria in mainstream partial nitritation and anammox processes. Water Research, 2019, 154, 104-116.	5.3	191
6	Hydroxyl Radical Based Photocatalytic Degradation of Halogenated Organic Contaminants and Paraffin on Silica Gel. Environmental Science & Technology, 2018, 52, 7220-7229.	4.6	171
7	Bioleaching remediation of heavy metal-contaminated soils using Burkholderia sp. Z-90. Journal of Hazardous Materials, 2016, 301, 145-152.	6.5	162
8	Kinetic and mechanistic aspects of hydroxyl radicalâ€'mediated degradation of naproxen and reaction intermediates. Water Research, 2018, 137, 233-241.	5.3	160
9	Metagenomics Reveals the Impact of Wastewater Treatment Plants on the Dispersal of Microorganisms and Genes in Aquatic Sediments. Applied and Environmental Microbiology, 2018, 84, .	1.4	144
10	Understanding Mechanisms of Synergy between Acidification and Ultrasound Treatments for Activated Sludge Dewatering: From Bench to Pilotâ€“Scale Investigation. Environmental Science & Technology, 2018, 52, 4313-4323.	4.6	126
11	Inactivation of pathogenic microorganisms by sulfate radical: Present and future. Chemical Engineering Journal, 2019, 371, 222-232.	6.6	118
12	Mechanistic insight into degradation of endocrine disrupting chemical by hydroxyl radical: An experimental and theoretical approach. Environmental Pollution, 2017, 231, 1446-1452.	3.7	117
13	Limitations and prospects of sulfate-radical based advanced oxidation processes. Journal of Environmental Chemical Engineering, 2020, 8, 103849.	3.3	116
14	Comparison of the reactivity of ibuprofen with sulfate and hydroxyl radicals: An experimental and theoretical study. Science of the Total Environment, 2017, 590-591, 751-760.	3.9	115
15	Chemical structure-based predictive model for the oxidation of trace organic contaminants by sulfate radical. Water Research, 2017, 116, 106-115.	5.3	114
16	UV direct photolysis of sulfamethoxazole and ibuprofen: An experimental and modelling study. Journal of Hazardous Materials, 2018, 343, 132-139.	6.5	114
17	Quantitative structureâ€“activity relationships for reactivities of sulfate and hydroxyl radicals with aromatic contaminants through singleâ€–electron transfer pathway. Journal of Hazardous Materials, 2018, 344, 1165-1173.	6.5	109
18	Thermodynamic and kinetic study of ibuprofen with hydroxyl radical: A density functional theory approach. International Journal of Quantum Chemistry, 2014, 114, 74-83.	1.0	96

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19	Removal of nitrogen from wastewaters by anaerobic ammonium oxidation (ANAMMOX) using granules in upflow reactors. Environmental Chemistry Letters, 2017, 15, 311-328.	8.3	93
20	Polyethylenimine-modified chitosan materials for the recovery of La(III) from leachates of bauxite residue. Chemical Engineering Journal, 2020, 388, 124307.	6.6	86
21	Improving dewaterability and filterability of waste activated sludge by electrochemical Fenton pretreatment. Chemical Engineering Journal, 2019, 362, 525-536.	6.6	85
22	Kinetics and Mechanism of the Oxidation of Cyclic Methylsiloxanes by Hydroxyl Radical in the Gas Phase: An Experimental and Theoretical Study. Environmental Science & Technology, 2015, 49, 13322-13330.	4.6	84
23	Electrophilicity index as a critical indicator for the biodegradation of the pharmaceuticals in aerobic activated sludge processes. Water Research, 2019, 160, 10-17.	5.3	84
24	Mechanistic Study on the Role of Soluble Microbial Products in Sulfate Radical-Mediated Degradation of Pharmaceuticals. Environmental Science & Technology, 2019, 53, 342-353.	4.6	83
25	Sorption and biodegradation of pharmaceuticals in aerobic activated sludge system: A combined experimental and theoretical mechanistic study. Chemical Engineering Journal, 2018, 342, 211-219.	6.6	80
26	An experimental and theoretical study on the degradation of clonidine by hydroxyl and sulfate radicals. Science of the Total Environment, 2020, 710, 136333.	3.9	79
27	Genome-centric metagenomics resolves microbial diversity and prevalent truncated denitrification pathways in a denitrifying PAO-enriched bioprocess. Water Research, 2019, 155, 275-287.	5.3	77
28	Strong synergistic effect of Co3O4 encapsulated in nitrogen-doped carbon nanotubes on the nonradical-dominated persulfate activation. Carbon, 2020, 158, 172-183.	5.4	77
29	Sonochemical degradation of ciprofloxacin and ibuprofen in the presence of matrix organic compounds. Ultrasonics Sonochemistry, 2014, 21, 428-435.	3.8	73
30	Experimental and theoretical insight into hydroxyl and sulfate radicals-mediated degradation of carbamazepine. Environmental Pollution, 2020, 257, 113498.	3.7	73
31	Nitrous oxide emissions from biofilm processes for wastewater treatment. Applied Microbiology and Biotechnology, 2018, 102, 9815-9829.	1.7	71
32	Kinetics and Mechanism of Sonochemical Degradation of Pharmaceuticals in Municipal Wastewater. Environmental Science & Technology, 2014, 48, 9675-9683.	4.6	70
33	Rate constants of hydroxyl radical oxidation of polychlorinated biphenyls in the gas phase: A singleâ"descriptor based QSAR and DFT study. Environmental Pollution, 2016, 211, 157-164.	3.7	70
34	Quantitative structureâ€"activity relationship for the apparent rate constants of aromatic contaminants oxidized by ferrate (VI). Chemical Engineering Journal, 2017, 317, 258-266.	6.6	66
35	Enhanced activation of persulfate by nitric acid/annealing modified multi-walled carbon nanotubes via non-radical process. Chemosphere, 2019, 220, 514-522.	4.2	66
36	Determination and Environmental Implications of Aqueous-Phase Rate Constants in Radical Reactions. Water Research, 2021, 190, 116746.	5.3	65

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37	Microbial activity balance in size fractionated suspended growth biomass from full-scale sidestream combined nitritation-anammox reactors. Bioresource Technology, 2016, 218, 38-45.	4.8	63
38	Elucidating sulfate radical-mediated disinfection profiles and mechanisms of Escherichia coli and Enterococcus faecalis in municipal wastewater. Water Research, 2020, 173, 115552.	5.3	63
39	The long-term effects of hexavalent chromium on anaerobic ammonium oxidation process: Performance inhibition, hexavalent chromium reduction and unexpected nitrite oxidation. Bioresource Technology, 2019, 283, 138-147.	4.8	59
40	Effect of pH on the sonochemical degradation of organic pollutants. Environmental Chemistry Letters, 2016, 14, 163-182.	8.3	56
41	Arsenic immobilization in the contaminated soil using poorly crystalline Fe-oxyhydroxy sulfate. Environmental Science and Pollution Research, 2015, 22, 12624-12632.	2.7	55
42	Physicochemical and microbial properties of settled and floating anammox granules in upflow reactor. Biochemical Engineering Journal, 2017, 123, 75-85.	1.8	54
43	Kinetics and mechanisms of the formation of chlorinated and oxygenated polycyclic aromatic hydrocarbons during chlorination. Chemical Engineering Journal, 2018, 351, 248-257.	6.6	54
44	Synergetic pretreatment of waste activated sludge by hydrodynamic cavitation combined with Fenton reaction for enhanced dewatering. Ultrasonics Sonochemistry, 2018, 42, 609-618.	3.8	49
45	Polycyclic aromatic hydrocarbons in urban soils of China: Distribution, influencing factors, health risk and regression prediction. Environmental Pollution, 2019, 254, 112930.	3.7	49
46	Mechanistic insight into superoxide radical-mediated degradation of carbon tetrachloride in aqueous solution: An in situ spectroscopic and computational study. Chemical Engineering Journal, 2021, 410, 128181.	6.6	49
47	Applications of computational chemistry, artificial intelligence, and machine learning in aquatic chemistry research. Chemical Engineering Journal, 2021, 426, 131810.	6.6	49
48	Mechanistic Understanding of Superoxide Radical-Mediated Degradation of Perfluorocarboxylic Acids. Environmental Science & Technology, 2022, 56, 624-633.	4.6	45
49	Designing and characterizing a multi-stepped ultrasonic horn for enhanced sonochemical performance. Ultrasonics Sonochemistry, 2015, 27, 325-333.	3.8	43
50	A novel model to predict gasâ€“phase hydroxyl radical oxidation kinetics of polychlorinated compounds. Chemosphere, 2017, 172, 333-340.	4.2	43
51	Phototransformation of estrogens mediated by Mn(III), not by reactive oxygen species, in the presence of humic acids. Chemosphere, 2018, 201, 224-233.	4.2	41
52	Simultaneous disinfection of E.Âfaecalis and degradation of carbamazepine by sulfate radicals: An experimental and modelling study. Environmental Pollution, 2020, 263, 114558.	3.7	41
53	Antibiotic resistance genes show enhanced mobilization through suspended growth and biofilm-based wastewater treatment processes. FEMS Microbiology Ecology, 2018, 94, .	1.3	39
54	Factors Influencing Pharmaceutical and Personal Care Product Degradation in Aqueous Solution Using Pulsed Wave Ultrasound. Industrial & Engineering Chemistry Research, 2013, 52, 2824-2831.	1.8	38

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55	Influence of ZnO nanoparticles on anammox granules: The inhibition kinetics and mechanism analysis by batch assays. Biochemical Engineering Journal, 2018, 133, 122-129.	1.8	38
56	Sulfidation behavior and mechanism of zinc silicate roasted with pyrite. Applied Surface Science, 2018, 435, 1011-1019.	3.1	37
57	Microbial immigration in wastewater treatment systems: analytical considerations and process implications. Current Opinion in Biotechnology, 2019, 57, 151-159.	3.3	36
58	Stabilization of Cd-, Pb-, Cu- and Zn-contaminated calcareous agricultural soil using red mud: a field experiment. Environmental Geochemistry and Health, 2018, 40, 2143-2153.	1.8	34
59	Using pulsed wave ultrasound to evaluate the suitability of hydroxyl radical scavengers in sonochemical systems. Ultrasonics Sonochemistry, 2013, 20, 990-996.	3.8	30
60	Inhibition kinetics of ammonium oxidizing bacteria under Cu(II) and As(III) stresses during the nitritation process. Chemical Engineering Journal, 2018, 352, 811-817.	6.6	30
61	Reduction of orthophosphates loss in agricultural soil by nano calcium sulfate. Science of the Total Environment, 2016, 539, 381-387.	3.9	29
62	Characterization and quantification of chromate adsorption by layered porous iron oxyhydroxide: An experimental and theoretical study. Journal of Hazardous Materials, 2017, 338, 472-481.	6.5	29
63	Kinetics and mechanistic aspects of removal of heavy metal through gas-liquid sulfide precipitation: A computational and experimental study. Journal of Hazardous Materials, 2021, 408, 124868.	6.5	25
64	Transformation of phenol and nitrobenzene by superoxide radicals: Kinetics and mechanisms. Chemical Engineering Journal, 2022, 442, 136134.	6.6	25
65	Profiling wines in China for the biogenic amines: A nationwide survey and pharmacokinetic fate modelling. Food Chemistry, 2018, 250, 268-275.	4.2	23
66	Rational construction of covalent organic frameworks with multi-site functional groups for highly efficient removal of low-concentration U(<scp>vi</scp>) from water. Environmental Science: Nano, 2021, 8, 1469-1480.	2.2	23
67	Tracking changes in composition and amount of dissolved organic matter throughout drinking water treatment plants by comprehensive two-dimensional gas chromatographyâ€“quadrupole mass spectrometry. Science of the Total Environment, 2017, 609, 123-131.	3.9	20
68	Reevaluation of the Reactivity of Superoxide Radicals with a Sulfonamide Antibiotic, Sulfacetamide: An Experimental and Theoretical Study. ACS ES&T Water, 2021, 1, 2339-2347.	2.3	17
69	Nondestructive characterization of soft materials and biofilms by measurement of guided elastic wave propagation using optical coherence elastography. Soft Matter, 2019, 15, 575-586.	1.2	16
70	Making waves: Defining advanced reduction technologies from the perspective of water treatment. Water Research, 2022, 212, 118101.	5.3	16
71	Structural substitution for SO4 group in tooeleite crystal by As(V) and As(III) oxoanions and the environmental implications. Chemosphere, 2018, 213, 305-313.	4.2	13
72	Reactivity and reaction mechanisms of sulfate radicals with lindane: An experimental and theoretical study. Environmental Research, 2021, 201, 111523.	3.7	13

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73	Towards an improved understanding of processes controlling absorption efficiency and biomagnification of organic chemicals by fish. Chemosphere, 2015, 138, 89-95.	4.2	12
74	Pushing the limits of solids retention time for enhanced biological phosphorus removal: process characteristics and Accumulibacter population structure. Water Science and Technology, 2020, 82, 1614-1627.	1.2	11
75	Hybrid Approach for Selective Sulfoxidation via Bioelectrochemically Derived Hydrogen Peroxide over a Niobium(V)â€“Silica Catalyst. ACS Sustainable Chemistry and Engineering, 2018, 6, 7880-7889.	3.2	10
76	Emerging investigator series: could the superoxide radical be implemented in decontamination processes?. Environmental Science: Water Research and Technology, 2021, 7, 1966-1970.	1.2	10
77	Towards mechanical characterization of granular biofilms by optical coherence elastography measurements of circumferential elastic waves. Soft Matter, 2019, 15, 5562-5573.	1.2	9
78	The temporal changes of the concentration level of typical toxic organics in the river sediments around Beijing. Frontiers of Environmental Science and Engineering, 2018, 12, 1.	3.3	8
79	Time to actâ€“assessing variations in qPCR analyses in biological nitrogen removal with examples from partial nitritation/anammox systems. Water Research, 2021, 190, 116604.	5.3	8
80	Layered viscoelastic properties of granular biofilms. Water Research, 2021, 202, 117394.	5.3	8
81	Considering microbial and aggregate heterogeneity in biofilm reactor models: how far do we need to go?. Water Science and Technology, 2015, 72, 1692-1699.	1.2	7
82	New insight to superoxide radical-mediated degradation of pentachlorophenate: Kinetic determination and theoretical calculations. Chemical Communications, 2022, , .	2.2	7
83	Statistical and microbial analysis of bio-electrochemical sensors used for carbon monitoring at water resource recovery facilities. Environmental Science: Water Research and Technology, 2022, 8, 2052-2064.	1.2	6
84	Kinetics and mechanistic aspects of superoxide radical-mediated transformation of ascorbate. Journal of Environmental Chemical Engineering, 2022, 10, 107736.	3.3	5
85	Experimental and simulation studies of metal sulfide precipitates separation in copper smelting waste acid using a gravitation field-flow fractionation method. Journal of Water Process Engineering, 2020, 36, 101330.	2.6	4
86	Quantitative Image Analysis of Mesoscale Biofilm Structure with Optical Coherence Tomography. Proceedings of the Water Environment Federation, 2015, 2015, 4736-4745.	0.0	2
87	Response to Comment on â€œMechanistic Understanding of Superoxide Radical-Mediated Degradation of Perfluorocarboxylic Acidsâ€• Environmental Science & Technology, 2022, 56, 5289-5291.	4.6	2
88	Environmental Matrix Effects on Degradation Kinetics of Ibuprofen in a UV/ Persulfate System. Journal of Advanced Oxidation Technologies, 2018, 21, 138-148.	0.5	1
89	Mechanical Characterization of Biofilms by Optical Coherence Elastography (OCE) Measurements of Elastic Waves. , 2019, , .		1
90	Simulation of dissolved oxygen-and ammonia-based aeration control strategies in a mainstream deammonification biofilm process. Proceedings of the Water Environment Federation, 2018, 2018, 5238-5247.	0.0	1

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91	Mechanical Characterization of Biofilms by Optical Coherence Elastography (OCE) Measurements of Elastic Waves. , 2019, , .		0
92	Control of Pharmaceuticals, Personal Care Products, and Other Micropollutants: Probing the Ability of Restored Riparian Systems to Remove Trace Pollutants. Proceedings of the Water Environment Federation, 2017, 2017, 3537-3550.	0.0	0