Zhijie Xu

List of Publications by Year
in descending order

78 papers	1,778 citations	304743 22 h-index	302126 39 g-index
87 all docs	87 docs citations	87 times ranked	2162 citing authors

#	Article	IF	Citations
1	Nonsacrificial Additive for Tuning the Cathode–Electrolyte Interphase of Lithium-Ion Batteries. ACS Applied Materials & Interfaces, 2022, 14, 4111-4118.	8.0	8
2	The influence of random packed column parameters on the liquid holdup and interfacial area. AICHE Journal, 2022, 68, .	3.6	4
3	Prediction of grain structure after thermomechanical processingÂof U-10Mo alloy usingÂsensitivity analysis and machine learning surrogateÂmodel. Scientific Reports, 2022, 12, .	3.3	4
4	Hydrodynamics of countercurrent flow in an additive-manufactured column with triply periodic minimal surfaces for carbon dioxide capture. Chemical Engineering Journal, 2022, 450, 138124.	12.7	6
5	Differentiation of static and dynamic interfacial area in the structured packed column. Chemical Engineering Science, 2022, 260, 117877.	3.8	0
6	Analytical modeling for redox flow battery design. Journal of Power Sources, 2021, 482, 228817.	7.8	23
7	Optimization of Magnesium–Doped Lithium Metal Anode for High Performance Lithium Metal Batteries through Modeling and Experiment. Angewandte Chemie - International Edition, 2021, 60, 16506-16513.	13.8	28
8	A two-dimensional analytical unit cell model for redox flow battery evaluation and optimization. Journal of Power Sources, 2021, 506, 230192.	7.8	15
9	Recrystallization and Grain Growth Simulations for Multiple-Pass Rolling and Annealing of U-10Mo. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2020, 51, 533-544.	2.2	8
10	A discrete element model simulation of structure and bonding at interfaces between cathode and cathode contact paste in solid oxide fuel cells. Renewable Energy, 2020, 157, 998-1007.	8.9	6
11	Real-time mass spectrometric characterization of the solid–electrolyte interphase of a lithium-ion battery. Nature Nanotechnology, 2020, 15, 224-230.	31.5	280
12	Investigation of countercurrent flow profile and liquid holdup in random packed column with local CFD data. Chemical Engineering Science, 2020, 221, 115693.	3.8	12
13	Hydrodynamics of countercurrent flows in a structured packed column: Effects of initial wetting and dynamic contact angle. Chemical Engineering Journal, 2020, 398, 125548.	12.7	15
14	Quantifying and Qualifying Alloys Based on Level of Homogenization: A U-10Mo Alloy Case Study. Journal of Engineering Materials and Technology, Transactions of the ASME, 2020, 142, .	1.4	2
15	Poisson–Boltzmann theory with non-linear ion correlations. Journal of Physics Condensed Matter, 2019, 31, 355101.	1.8	5
16	High–Performance Silicon Anodes Enabled By Nonflammable Localized High–Concentration Electrolytes. Advanced Energy Materials, 2019, 9, 1900784.	19.5	175
17	Direct Effect of Solvent Viscosity on the Physical Mass Transfer for Wavy Film Flow in a Packed Column. Industrial & Engineering Chemistry Research, 2019, 58, 17524-17539.	3.7	11
18	Device-scale computational fluid dynamics modeling of carbon dioxide absorption using encapsulated sorbents. Powder Technology, 2019, 344, 590-597.	4.2	8

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19	A consistent spatially adaptive smoothed particle hydrodynamics method for fluid–structure interactions. Computer Methods in Applied Mechanics and Engineering, 2019, 347, 402-424.	6.6	29
20	A NUMERICAL STUDY OF TWO-PHASE FLOW AND INTERFACIAL MASS TRANSFER IN A WETTED WALL COLUMN FOR COUNTER-CURRENT GAS ABSORPTION. , 2019, 46, 395-406.		2
21	Investigation of Ion–Solvent Interactions in Nonaqueous Electrolytes Using in Situ Liquid SIMS. Analytical Chemistry, 2018, 90, 3341-3348.	6.5	41
22	Device–scale CFD modeling of gas–liquid multiphase flow and amine absorption for CO_2 capture. , 2018, 8, 603-620.		7
23	Beyond the standard two-film theory: Computational fluid dynamics simulations for carbon dioxide capture in a wetted wall column. Chemical Engineering Science, 2018, 184, 103-110.	3.8	35
24	Hierarchical calibration and validation framework of bench–scale computational fluid dynamics simulations for solvent–based carbon capture. Part 2: Chemical absorption across a wetted wall column. , 2018, 8, 150-160.		8
25	Residence time distribution in a structured packing unit for monitoring aerosol emissions. International Journal of Greenhouse Gas Control, 2018, 79, 181-192.	4.6	6
26	Atomic origins of water-vapour-promoted alloy oxidation. Nature Materials, 2018, 17, 514-518.	27.5	106
27	Hierarchical calibration and validation for modeling bench–scale solvent–based carbon capture. Part 1: Non–reactive physical mass transfer across the wetted wall column. , 2017, 7, 706-720.		7
28	Predicting the performance uncertainty of a 1-MW pilot-scale carbon capture system after hierarchical laboratory-scale calibration and validation. Powder Technology, 2017, 312, 58-66.	4.2	11
29	Modeling Early-Stage Processes of U-10 Wt.%Mo Alloy Using Integrated Computational Materials Engineering Concepts. Jom, 2017, 69, 2532-2537.	1.9	5
30	Method of model reduction and multifidelity models for solute transport in random layered porous media. Physical Review E, 2017, 96, 033314.	2.1	1
31	Effects of heat exchanger tubes on hydrodynamics and CO_2 capture of a sorbent-based fluidized bed reactor. Powder Technology, 2017, 322, 202-213.	4.2	9
32	Mechanical reliability and life prediction of coated metallic interconnects within solid oxide fuel cells. Renewable Energy, 2017, 113, 1472-1479.	8.9	18
33	Formation mechanism of gas bubble superlattice in UMo metal fuels: Phase-field modeling investigation. Journal of Nuclear Materials, 2016, 479, 202-215.	2.7	54
34	Discerning the Location and Nature of Coke Deposition from Surface to Bulk of Spent Zeolite Catalysts. Scientific Reports, 2016, 6, 37586.	3.3	49
35	A coupled thermal-hydro-mechanical simulation for carbon dioxide sequestration. Environmental Geotechnics, 2016, 3, 312-324.	2.3	12
36	Modeling the homogenization kinetics of as-cast U-10wt% Mo alloys. Journal of Nuclear Materials, 2016, 471, 154-164.	2.7	24

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37	Analytical approximation and numerical studies of one-dimensional elliptic equation with random coefficients. Applied Mathematical Modelling, 2016, 40, 5542-5559.	4.2	6
38	Hierarchical calibration and validation of computational fluid dynamics models for solid sorbent-based carbon capture. Powder Technology, 2016, 288, 388-406.	4.2	17
39	Impact of dynamic specimen shape evolution on the atom probe tomography results of doped epitaxial oxide multilayers: Comparison of experiment and simulation. Applied Physics Letters, 2015, 107, 091601.	3.3	5
40	A coupled discrete element and finite element model for multiscale simulation of geological carbon sequestration. , 2015, 5, 474-486.		2
41	Level Set Method for Tip Shape Evolution Simulation for Atom Probe Tomography. Microscopy and Microanalysis, 2015, 21, 841-842.	0.4	1
42	Phonon Excitation and Energy Redistribution in Phonon Space for Energy Dissipation and Transport in Lattice Structure with Nonlinear Dispersion. Communications in Theoretical Physics, 2015, 63, 101-108.	2.5	0
43	Uncertainty quantification for the reliability of the analytical analysis for the simplified model of CO_2 geological sequestration. , 2015, 5, 141-151.		1
44	Simulation of heterogeneous atom probe tip shapes evolution during field evaporation using a level set method and different evaporation models. Computer Physics Communications, 2015, 189, 106-113.	7.5	20
45	Modeling selective intergranular oxidation of binary alloys. Journal of Chemical Physics, 2015, 142, 014704.	3.0	3
46	A Phase-Field Model Coupled with Lattice Kinetics Solver for Modeling Crystal Growth in Furnaces. Communications in Computational Physics, 2014, 15, 76-92.	1.7	3
47	Modeling of Electric Water Heaters for Demand Response: A Baseline PDE Model. IEEE Transactions on Smart Grid, 2014, 5, 2203-2210.	9.0	89
48	A three-dimensional phase field model coupled with a lattice kinetics solver for modeling crystal growth in furnaces with accelerated crucible rotation and traveling magnetic field. Computers and Fluids, 2014, 103, 204-214.	2.5	10
49	Uncertainty quantification for the impact of injection rate fluctuation on the geomechanical response of geological carbon sequestration. International Journal of Greenhouse Gas Control, 2014, 20, 160-167.	4.6	9
50	A stochastic analysis of steady and transient heat conduction in random media using a homogenization approach. Applied Mathematical Modelling, 2014, 38, 3233-3243.	4.2	4
51	A finite–element model for simulation of carbon dioxide sequestration. Environmental Geotechnics, 2014, 1, 152-160.	2.3	8
52	Development of a coupled thermo-hydro-mechanical model in discontinuous media for carbon sequestration. International Journal of Rock Mechanics and Minings Sciences, 2013, 62, 138-147.	5.8	22
53	Evaluating the impact of aquifer layer properties on geomechanical response during CO2 geological sequestration. Computers and Geosciences, 2013, 54, 28-37.	4.2	15
54	Upscaling of solute transport in heterogeneous media with non-uniform flow and dispersion fields. Applied Mathematical Modelling, 2013, 37, 8533-8542.	4.2	8

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55	A REDUCED-BOUNDARY-FUNCTION METHOD FOR LONGITUDINAL SOLUTION DISPERSION IN SYMMETRIC CONFINED FLOWS. Chemical Engineering Communications, 2013, 200, 853-862.	2.6	2
56	Dynamic composition determination in heterogeneous ensembles using angular autocorrelation functions as signatures. Applied Physics Letters, 2013, 102, 223701.	3.3	0
57	Homogenization and Upscaling for Diffusion, Heat Conduction, and Wave Propagation in Heterogeneous Materials. Communications in Theoretical Physics, 2012, 57, 348-354.	2.5	8
58	Discrete-element model for the interaction between ocean waves and sea ice. Physical Review E, 2012, 85, 016703.	2.1	19
59	Homogenization for Periodic Heterogeneous Materials with Arbitrary Position-Dependent Material Properties. Communications in Theoretical Physics, 2012, 58, 189-194.	2.5	4
60	A fluid pressure and deformation analysis for geological sequestration of carbon dioxide. Computers and Geosciences, 2012, 46, 31-37.	4.2	19
61	Metal oxidation kinetics and the transition from thin to thick films. Physical Chemistry Chemical Physics, 2012, 14, 14534.	2.8	58
62	A generalized kinetic model for heterogeneous gas-solid reactions. Journal of Chemical Physics, 2012, 137, 074702.	3.0	17
63	A Reduced-Boundary-Function Method for Convective Heat Transfer With Axial Heat Conduction and Viscous Dissipation. Journal of Heat Transfer, 2012, 134, .	2.1	11
64	Phase field and level set methods for modeling solute precipitation and/or dissolution. Computer Physics Communications, 2012, 183, 15-19.	7.5	40
65	Phase-field modeling of two-dimensional solute precipitation/dissolution: Solid fingers and diffusion-limited precipitation. Journal of Chemical Physics, 2011, 134, 044137.	3.0	38
66	Dissipative-particle-dynamics model of biofilm growth. Physical Review E, 2011, 83, 066702.	2.1	23
67	A generalized mathematical framework for thermal oxidation kinetics. Journal of Chemical Physics, 2011, 135, 024108.	3.0	23
68	A phase-field approach to no-slip boundary conditions in dissipative particle dynamics and other particle models for fluid flow in geometrically complex confined systems. Journal of Chemical Physics, 2009, 130, 234103.	3.0	24
69	Dissipative Particle Dynamics and other particle methods for multiphase fluid flow in fractured and porous media. Progress in Computational Fluid Dynamics, 2009, 9, 399.	0.2	18
70	Strain rate sensitivity of thermally activated dislocation motion across fields of obstacles of different kind. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2009, 502, 164-171.	5.6	34
71	Diffuse-interface model for smoothed particle hydrodynamics. Physical Review E, 2009, 79, 036702.	2.1	27
72	Phase-field modeling of solute precipitation and dissolution. Journal of Chemical Physics, 2008, 129, 014705.	3.0	72

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73	Thermally activated motion of dislocations in fields of obstacles: The effect of obstacle distribution. Physical Review B, 2007, 76, .	3.2	23
74	Effect of residual and pre-existing solute clusters on dynamic strain ageing in dilute solid solutions. Modelling and Simulation in Materials Science and Engineering, 2007, 15, 385-396.	2.0	5
75	Particle methods for simulation of subsurface multiphase fluid flow and biogeochemical processes. Journal of Physics: Conference Series, 2007, 78, 012047.	0.4	4
76	Vacancy concentration in Al–Mg solid solutions. Scripta Materialia, 2007, 57, 45-48.	5.2	13
77	Dislocation–solute cluster interaction in Al–Mg binary alloys. Modelling and Simulation in Materials Science and Engineering, 2006, 14, 195-206.	2.0	21
78	A Study of Interaction between EmbeddedSMAFibers and Host Material. Mechanics of Advanced Materials and Structures, 2006, 13, 33-42.	2.6	5