Zhenxue Dai

List of Publications by Year
in descending order

142 papers	5,556 citations	71102 41 h-index	102487 66 g-index
147 all docs	147 docs citations	147 times ranked	3102 citing authors

#	Article	IF	Citations
1	An Integrated Framework for Optimizing CO₂ Sequestration and Enhanced Oil Recovery. Environmental Science and Technology Letters, 2014, 1, 49-54.	8.7	280
2	CO₂ Accounting and Risk Analysis for CO₂ Sequestration at Enhanced Oil Recovery Sites. Environmental Science & Technology, 2016, 50, 7546-7554.	10.0	228
3	Land subsidence due to groundwater withdrawal in the northern Beijing plain, China. Engineering Geology, 2015, 193, 243-255.	6.3	220
4	Optimum design of CO2 storage and oil recovery under geological uncertainty. Applied Energy, 2017, 195, 80-92.	10.1	173
5	Evaluation of CO₂ Storage Mechanisms in CO₂ Enhanced Oil Recovery Sites: Application to Morrow Sandstone Reservoir. Energy & Fuels, 2016, 30, 8545-8555.	5.1	163
6	Simulation of industrial-scale CO2 storage: Multi-scale heterogeneity and its impacts on storage capacity, injectivity and leakage. International Journal of Greenhouse Gas Control, 2012, 10, 397-418.	4.6	142
7	Inverse problem of multicomponent reactive chemical transport in porous media: Formulation and applications. Water Resources Research, 2004, 40, .	4.2	114
8	Key factors for determining groundwater impacts due to leakage from geologic carbon sequestration reservoirs. International Journal of Greenhouse Gas Control, 2014, 29, 153-168.	4.6	107
9	Spatial correlation of permeability in cross-stratified sediment with hierarchical architecture. Water Resources Research, 2004, 40, .	4.2	98
10	Dissolution Trapping of Carbon Dioxide in Heterogeneous Aquifers. Environmental Science & Technology, 2017, 51, 7732-7741.	10.0	95
11	Application of upscaling methods for fluid flow and mass transport in multi-scale heterogeneous media: A critical review. Applied Energy, 2021, 303, 117603.	10.1	95
12	Pre-site Characterization Risk Analysis for Commercial-Scale Carbon Sequestration. Environmental Science & Technology, 2014, 48, 3908-3915.	10.0	90
13	Permeability prediction of shale matrix reconstructed using the elementary building block model. Fuel, 2015, 160, 346-356.	6.4	89
14	Critical Dynamics of Gravito-Convective Mixing in Geological Carbon Sequestration. Scientific Reports, 2016, 6, 35921.	3.3	89
15	Heterogeneity-assisted carbon dioxide storage in marine sediments. Applied Energy, 2018, 225, 876-883.	10.1	89
16	Reactive chemical transport simulations of geologic carbon sequestration: Methods and applications. Earth-Science Reviews, 2020, 208, 103265.	9.1	86
17	Uncertainty analysis of carbon sequestration in an active CO2-EOR field. International Journal of Greenhouse Gas Control, 2016, 51, 18-28.	4.6	81
18	Coâ€optimization of CO₂â€EOR and storage processes in mature oil reservoirs. , 2017, 7, 128-142.		81

#	Article	IF	Citations
19	Radionuclide transport in multi-scale fractured rocks: A review. Journal of Hazardous Materials, 2022, 424, 127550.	12.4	81
20	Probabilistic evaluation of shallow groundwater resources at a hypothetical carbon sequestration site. Scientific Reports, 2014, 4, 4006.	3.3	74
21	Developing a robust geochemical and reactive transport model to evaluate possible sources of arsenic at the CO2 sequestration natural analog site in Chimayo, New Mexico. International Journal of Greenhouse Gas Control, 2012, 10, 199-214.	4.6	69
22	Inverse Modeling of Water-Rock-CO₂ Batch Experiments: Potential Impacts on Groundwater Resources at Carbon Sequestration Sites. Environmental Science & Technology, 2014, 48, 2798-2806.	10.0	69
23	Uncertainty Quantification for CO2 Sequestration and Enhanced Oil Recovery. Energy Procedia, 2014, 63, 7685-7693.	1.8	69
24	Transport in heterogeneous sediments with multimodal conductivity and hierarchical organization across scales. Journal of Hydrology, 2004, 294, 68-86.	5.4	64
25	Improving permeability semivariograms with transition probability models of hierarchical sedimentary architecture derived from outcrop analog studies. Water Resources Research, 2005, 41, .	4.2	63
26	Modeling CO₂ Solubility in Water at High Pressure and Temperature Conditions. Energy & Fuels, 2020, 34, 4761-4776.	5.1	63
27	Modeling Multiscale Heterogeneity and Aquifer Interconnectivity. Ground Water, 2004, 42, 658-670.	1.3	60
28	Modeling the impact of carbon dioxide leakage into an unconfined, oxidizing carbonate aquifer. International Journal of Greenhouse Gas Control, 2016, 44, 290-299.	4.6	56
29	Inverse modeling of water flow and multicomponent reactive transport in coastal aquifer systems. Journal of Hydrology, 2006, 327, 447-461.	5.4	55
30	Aquifer structure identification using stochastic inversion. Geophysical Research Letters, 2008, 35, .	4.0	53
31	Inverse modeling of tracer experiments in FEBEX compacted Ca-bentonite. Physics and Chemistry of the Earth, 2006, 31, 640-648.	2.9	52
32	An integrated assessment of the impact of precipitation and groundwater on vegetation growth in arid and semiarid areas. Environmental Earth Sciences, 2015, 74, 5009-5021.	2.7	51
33	Identifying geochemical processes by inverse modeling of multicomponent reactive transport in the Aquia aquifer. , 2006, 2, 210.		50
34	Solute transport properties of compacted Ca-bentonite used in FEBEX project. Journal of Contaminant Hydrology, 2001, 47, 127-137.	3.3	49
35	Machine learning based co-optimization of carbon dioxide sequestration and oil recovery in CO2-EOR project. Journal of Cleaner Production, 2020, 260, 120866.	9.3	49
36	Representing aquifer architecture in macrodispersivity models with an analytical solution of the transition probability matrix. Geophysical Research Letters, 2007, 34, .	4.0	47

#	Article	IF	Citations
37	Relating reactive solute transport to hierarchical and multiscale sedimentary architecture in a <scp>L</scp>agrangianâ€based transport model: 1. Timeâ€dependent effective retardation factor. Water Resources Research, 2015, 51, 1586-1600.	4.2	47
38	Relating reactive solute transport to hierarchical and multiscale sedimentary architecture in a <scp>L</scp>agrangianâ€based transport model: 2. Particle displacement variance. Water Resources Research, 2015, 51, 1601-1618.	4.2	47
39	Identification of sorption processes and parameters for radionuclide transport in fractured rock. Journal of Hydrology, 2012, 414-415, 220-230.	5.4	46
40	Scale dependence of sorption coefficients for contaminant transport in saturated fractured rock. Geophysical Research Letters, 2009, 36, .	4.0	44
41	Colloid-Facilitated Plutonium Transport in Fractured Tuffaceous Rock. Environmental Science & Technology, 2017, 51, 5582-5590.	10.0	44
42	Reactive solute transport in physically and chemically heterogeneous porous media with multimodal reactive mineral facies: The Lagrangian approach. Chemosphere, 2015, 122, 235-244.	8.2	43
43	Identification of relative conductivity models for water flow and solute transport in unsaturated bentonite. Physics and Chemistry of the Earth, 2008, 33, S177-S185.	2.9	42
44	Reduced order models for assessing CO2 impacts in shallow unconfined aquifers. International Journal of Greenhouse Gas Control, 2016, 46, 187-196.	4.6	42
45	Upscaling matrix diffusion coefficients for heterogeneous fractured rocks. Geophysical Research Letters, 2007, 34, .	4.0	41
46	An ecology-oriented exploitation mode of groundwater resources in the northern Tianshan Mountains, China. Journal of Hydrology, 2016, 543, 386-394.	5.4	41
47	Upscaling of reactive mass transport in fractured rocks with multimodal reactive mineral facies. Water Resources Research, 2010, 46, .	4.2	40
48	Stageâ€Wise Stochastic Deep Learning Inversion Framework for Subsurface Sedimentary Structure Identification. Geophysical Research Letters, 2022, 49, .	4.0	40
49	Upscaling retardation factor in hierarchical porous media with multimodal reactive mineral facies. Chemosphere, 2013, 91, 248-257.	8.2	36
50	Quantification of CO2-cement-rock interactions at the well-caprock-reservoir interface and implications for geological CO2 storage. International Journal of Greenhouse Gas Control, 2017, 63, 126-140.	4.6	35
51	Identification of rock pore structures and permeabilities using electron microscopy experiments and deep learning interpretations. Fuel, 2020, 268, 117416.	6.4	35
52	Toward smart schemes for modeling CO2 solubility in crude oil: Application to carbon dioxide enhanced oil recovery. Fuel, 2021, 285, 119147.	6.4	35
53	Geochemical Impacts of Carbon Dioxide, Brine, Trace Metal and Organic Leakage into an Unconfined, Oxidizing Limestone Aquifer. Energy Procedia, 2014, 63, 4684-4707.	1.8	34
54	Multi-tracer investigation of river and groundwater interactions: a case study in Nalenggele River basin, northwest China. Hydrogeology Journal, 2017, 25, 2015-2029.	2.1	34

#	Article	IF	Citations
55	Assessment of CO2 trapping mechanisms in partially depleted oil-bearing sands. Fuel, 2020, 278, 118356.	6.4	34
56	Transport of kinetically sorbing solutes in heterogeneous sediments with multimodal conductivity and hierarchical organization across scales. Stochastic Environmental Research and Risk Assessment, 2015, 29, 709-726.	4.0	33
57	Probabilistic assessment of shale gas production and water demand at Xiuwu Basin in China. Applied Energy, 2016, 180, 185-195.	10.1	33
58	Applicability of aquifer impact models to support decisions at CO2 sequestration sites. International Journal of Greenhouse Gas Control, 2016, 52, 319-330.	4.6	33
59	Impact of Threeâ€Phase Relative Permeability and Hysteresis Models on Forecasts of Storage Associated With CO₂â€EOR. Water Resources Research, 2018, 54, 1109-1126.	4.2	33
60	Classification and characterization of bound water in marine mucky silty clay. Journal of Soils and Sediments, 2019, 19, 2509-2519.	3.0	33
61	Mixing and spreading of multiphase fluids in heterogeneous bimodal porous media. Geomechanics and Geophysics for Geo-Energy and Geo-Resources, 2017, 3, 225-244.	2.9	32
62	Experimental investigation on oil migration and accumulation in tight sandstones. Journal of Petroleum Science and Engineering, 2018, 160, 267-275.	4.2	31
63	Spatiotemporal modeling of land subsidence using a geographically weighted deep learning method based on PS-InSAR. Science of the Total Environment, 2021, 799, 149244.	8.0	31
64	An integrated inversion framework for heterogeneous aquifer structure identification with single-sample generative adversarial network. Journal of Hydrology, 2022, 610, 127844.	5.4	31
65	Effectiveness and mechanism of natural attenuation at a petroleum-hydrocarbon contaminated site. Chemosphere, 2018, 206, 293-301.	8.2	30
66	An Improved Tandem Neural Network Architecture for Inverse Modeling of Multicomponent Reactive Transport in Porous Media. Water Resources Research, 2021, 57, .	4.2	30
67	Stepwise inversion of a groundwater flow model with multi-scale observation data. Hydrogeology Journal, 2010, 18, 607-624.	2.1	29
68	Farnsworth Field CO2-EOR Project: Performance Case History. , 2016, , .		29
69	An experimental evaluation of unique CO2 flow behaviour in loosely held fine particles rich sandstone under deep reservoir conditions and influencing factors. Energy, 2017, 119, 121-137.	8.8	29
70	Stretchable Sweatâ€Activated Battery in Skinâ€Integrated Electronics for Continuous Wireless Sweat Monitoring. Advanced Science, 2022, 9, e2104635.	11.2	29
71	Geologic CO2 sequestration: progress and challenges. Geomechanics and Geophysics for Geo-Energy and Geo-Resources, 2017, 3, 221-223.	2.9	28
72	The 3â€Ð Facies and Geomechanical Modeling of Land Subsidence in the Chaobai Plain, Beijing. Water Resources Research, 2020, 56, e2019WR027026.	4.2	28

#	Article	IF	Citations
73	A quantitative analysis of hydraulic interaction processes in stream-aquifer systems. Scientific Reports, 2016, 6, 19876.	3.3	27
74	Statistic inversion of multi-zone transition probability models for aquifer characterization in alluvial fans. Stochastic Environmental Research and Risk Assessment, 2016, 30, 1005-1016.	4.0	26
75	Uncertainty quantification of CO2 storage using Bayesian model averaging and polynomial chaos expansion. International Journal of Greenhouse Gas Control, 2018, 71, 104-115.	4.6	26
76	Bacterial community variations with salinity in the saltwater-intruded estuarine aquifer. Science of the Total Environment, 2021, 755, 142423.	8.0	26
77	Reactive transport in the complex heterogeneous alluvial aquifer of Fortymile Wash, Nevada. Chemosphere, 2017, 179, 379-386.	8.2	25
78	Adsorption model identification for chromium (VI) transport in unconsolidated sediments. Journal of Hydrology, 2021, 598, 126228.	5.4	25
79	Effective detection of CO2 leakage: a comparison of groundwater sampling and pressure monitoring. Energy Procedia, 2014, 63, 4163-4171.	1.8	24
80	Estimation of Sandstone Permeability with SEM Images Based on Fractal Theory. Transport in Porous Media, 2019, 126, 701-712.	2.6	24
81	Co-optimization of CO2-EOR and Storage Processes under Geological Uncertainty. Energy Procedia, 2017, 114, 6928-6941.	1.8	23
82	CO2 Sequestration and Enhanced Oil Recovery at Depleted Oil/Gas Reservoirs. Energy Procedia, 2017, 114, 6957-6967.	1.8	23
83	Water Resources Utilization and Protection in the Coal Mining Area of Northern China. Scientific Reports, 2019, 9, 1214.	3.3	23
84	Impact of naturally leaking carbon dioxide on soil properties and ecosystems in the Qinghai-Tibet plateau. Scientific Reports, 2017, 7, 3001.	3.3	22
85	Delineating Facies Spatial Distribution by Integrating Ensemble Data Assimilationand Indicator Geostatistics With Levelâ€Set Transformation. Water Resources Research, 2019, 55, 2652-2671.	4.2	22
86	Compositional Simulation of CO2 Storage Capacity in Depleted Oil Reservoirs. , 2015, , .		21
87	Modeling 3-D permeability distribution in alluvial fans using facies architecture and geophysical acquisitions. Hydrology and Earth System Sciences, 2017, 21, 721-733.	4.9	20
88	How does resolution of sedimentary architecture data affect plume dispersion in multiscale and hierarchical systems?. Journal of Hydrology, 2020, 582, 124516.	5.4	20
89	Identifying spatial correlation structure of multimodal permeability in hierarchical media with Markov chain approach. Journal of Hydrology, 2019, 568, 703-715.	5.4	19
90	Bandage based energy generators activated by sweat in wireless skin electronics for continuous physiological monitoring. Nano Energy, 2022, 92, 106755.	16.0	19

#	Article	IF	Citations
91	A hybrid Laplace transform finite analytic method for solving transport problems with large Peclet and Courant numbers. Computers and Geosciences, 2012, 49, 182-189.	4.2	18
92	Groundwater flow path determination during riverbank filtration affected by groundwater exploitation: a case study of Liao River, Northeast China. Hydrological Sciences Journal, 2017, 62, 2331-2347.	2.6	18
93	Application of Mixed-Integer Nonlinear Optimization Programming Based on Ensemble Surrogate Model for Dense Nonaqueous Phase Liquid Source Identification in Groundwater. Environmental Engineering Science, 2019, 36, 699-709.	1.6	18
94	Spectrophotometric Determination of p-Nitrophenol under ENP Interference. Journal of Analytical Methods in Chemistry, 2021, 2021, 1-9.	1.6	18
95	Arsenic mobilization in shallow aquifers due to CO2 and brine intrusion from storage reservoirs. Scientific Reports, 2017, 7, 2763.	3.3	16
96	Reactive transport modeling of arsenic mobilization in shallow groundwater: impacts of CO2 and brine leakage. Geomechanics and Geophysics for Geo-Energy and Geo-Resources, 2017, 3, 339-350.	2.9	15
97	Impact of Mineral Reactive Surface Area on Forecasting Geological Carbon Sequestration in a CO2-EOR Field. Energies, 2021, 14, 1608.	3.1	15
98	Performance of CO2-EOR and Storage Processes Under Uncertainty. , 2016, , .		14
99	Chemical Impacts of Potential CO2 and Brine Leakage on Groundwater Quality with Quantitative Risk Assessment: A Case Study of the Farnsworth Unit. Energies, 2020, 13, 6574.	3.1	14
100	A NOVEL FRACTAL MODEL FOR ESTIMATING PERMEABILITY IN LOW-PERMEABLE SANDSTONE RESERVOIRS. Fractals, 2020, 28, 2040005.	3.7	14
101	A Note on Upscaling Retardation Factor in Hierarchical Porous Media with Multimodal Reactive Mineral Facies. Transport in Porous Media, 2015, 108, 355-366.	2.6	13
102	Multicomponent competitive monovalent cation exchange in hierarchical porous media with multimodal reactive mineral facies. Stochastic Environmental Research and Risk Assessment, 2018, 32, 295-310.	4.0	13
103	Carbon Mineralization under Different Salineâ€”Alkali Stress Conditions in Paddy Fields of Northeast China. Sustainability, 2020, 12, 2921.	3.2	13
104	Uncertainty quantification of radionuclide migration in fractured granite. Journal of Cleaner Production, 2022, 366, 132944.	9.3	13
105	Land subsidence due to groundwater pumping: hazard probability assessment through the combination of Bayesian model and fuzzy set theory. Natural Hazards and Earth System Sciences, 2021, 21, 823-835.	3.6	12
106	Capillary Heterogeneity Linked to Methane Lateral Migration in Shallow Unconfined Aquifers. Geophysical Research Letters, 2021, 48, .	4.0	12
107	Massâ€Wastingâ€Inferred Dramatic Variability of 130,000â€Year Indian Summer Monsoon Intensity From Deposits in the Southeast Tibetan Plateau. Geophysical Research Letters, 2022, 49, .	4.0	12
108	Probabilistic Risk Assessment of CO2 Trapping Mechanisms in a Sandstone CO2-EOR Field in Northern Texas, USA. Energy Procedia, 2017, 114, 4321-4329.	1.8	11

#	Article	IF	Citations
109	Injectivity Evaluation for Offshore CO2 Sequestration in Marine Sediments. Energy Procedia, 2017, 114, 2921-2932.	1.8	10
110	Biogeochemical zonation of sulfur during the discharge of groundwater to lake in desert plateau (Dakebo Lake, NW China). Environmental Geochemistry and Health, 2018, 40, 1051-1066.	3.4	10
111	A new model for simulating spring discharge recession and estimating effective porosity of karst aquifers. Journal of Hydrology, 2018, 562, 609-622.	5.4	10
112	Quantitative Analysis and Evaluation of Coal Mine Geological Structures Based on Fractal Theory. Energies, 2021, 14, 1925.	3.1	10
113	Quantitative evaluation of groundwater and surface water interaction characteristics during a dry season. Water and Environment Journal, 2021, 35, 1348-1361.	2.2	10
114	CORE2D V4: A Code for Water Flow, Heat and Solute Transport, Geochemical Reactions, and Microbial Processes. , 2012, , 160-185.		10
115	Evaluation of pressure management strategies and impact of simplifications for a post-EOR CO2 storage project. Geomechanics and Geophysics for Geo-Energy and Geo-Resources, 2017, 3, 281-292.	2.9	9
116	The scale dependence of dispersivity in multi-facies heterogeneous formations. Carbonates and Evaporites, 2018, 33, 161-165.	1.0	9
117	Influence of lunar semidiurnal tides on groundwater dynamics in estuarine aquifers. Hydrogeology Journal, 2020, 28, 1419-1429.	2.1	9
118	ESTIMATING PARAMETERS FOR HIERARCHICAL PERMEABILITY CORRELATION MODELS. , 2004, , 41-54.		9
119	Pore-scale mechanisms and simulations for gasâ€“water two-phase transport processes in natural gas reservoirs. Journal of Natural Gas Science and Engineering, 2021, 96, 104314.	4.4	9
120	Characteristics and controlling factors of dispersion in bounded heterogeneous porous media. Water Resources Research, 2010, 46, .	4.2	8
121	Hydro-thermo-chemo-mechanical modeling of carbon dioxide injection in fluvial heterogeneous aquifers. Chemical Engineering Journal, 2022, 431, 133451.	12.7	8
122	Modeling Groundwater in Multimodal Porous Media with Localized Decompositions. Mathematical Geosciences, 2008, 40, 689-704.	2.4	7
123	Potential Chemical Impacts of Subsurface CO₂: An Integrated Experimental and Numerical Assessment for a Case Study of the Ogallala Aquifer. Water Resources Research, 2021, 57, e2020WR029274.	4.2	7
124	Experimental investigations on scale-dependent dispersivity in three-dimensional heterogeneous porous media. Environmental Science and Pollution Research, 2021, 28, 23336-23348.	5.3	6
125	Risk Assessment and Management Workflowâ€”An Example of the Southwest Regional Partnership. Energies, 2021, 14, 1908.	3.1	6
126	Dispersivity variations of solute transport in heterogeneous sediments: numerical and experimental study. Stochastic Environmental Research and Risk Assessment, 2022, 36, 661-677.	4.0	6

#	Article	IF	Citations
127	Reply to comment by Shlomo P. Neuman on â€œSpatial correlation of permeability in cross-stratified sediment with hierarchical architectureâ€• Water Resources Research, 2006, 42, .	4.2	5
128	Quantitative assessment of soil CO‹sub›2‹/sub› concentration and stable carbon isotope for leakage detection at geological carbon sequestration sites. , 2017, 7, 680-691.		5
129	Application of risk assessment in determination of soil remediation targets. Stochastic Environmental Research and Risk Assessment, 2020, 34, 1659-1673.	4.0	5
130	Unraveling elastic and inelastic storage of aquifer systems by integrating fast independent component analysis and a variable preconsolidation head decomposition method. Journal of Hydrology, 2022, 606, 127420.	5.4	5
131	Introduction: Modeling groundwater flow and reactive transport in physically and chemically heterogeneous media. , 2006, 2, 73.		4
132	Analysis of Asymmetric Stress Ratio in Shallow Buried Tunnels. KSCE Journal of Civil Engineering, 2020, 24, 1924-1931.	1.9	4
133	Remediation Techniques for Cadmium-Contaminated Dredged River Sediments after Land Disposal. Sustainability, 2021, 13, 6093.	3.2	4
134	Extracellular Polymeric Substances Facilitate the Adsorption and Migration of Cu2+ and Cd2+ in Saturated Porous Media. Biomolecules, 2021, 11, 1715.	4.0	4
135	Reactive Transport Modeling of Geological Carbon Storage Associated With CO2 and Brine Leakage. , 2019, , 89-116.		3
136	Analysis of Crack Initiation and Propagation Thresholds of Inclined Cracks under High-Pressure Grouting in Ordovician Limestone. Energies, 2021, 14, 360.	3.1	3
137	Effects of surface loading on groundwater flow and skeletal deformation. Water Science and Technology: Water Supply, 2020, 20, 287-295.	2.1	2
138	Experimental Investigation on the Mixture Ratio and Diffusion Performance of Grouting Materials for Water Bursting Prevention in Coal Mines. Advances in Materials Science and Engineering, 2021, 2021, 1-11.	1.8	2
139	Improving the Energy Efficiency of Buildings Based on Fluid Dynamics Models: A Critical Review. Energies, 2021, 14, 5384.	3.1	1
140	Estimating Spatial Correlation Structure for Permeability in Sediments with Hierarchical Organization. , 2003, , 83.		0
141	Forward and inverse modelling of multicomponent reactive transport in single and double porosity media. Developments in Water Science, 2004, , 805-816.	0.1	0
142	Numerical analysis of rock joints in tunnel construction during blasting. Arabian Journal of Geosciences, 2022, 15, 1.	1.3	0