

Mohamad Reza Soltanian

List of Publications by Year in descending order

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84
papers

3,066
citations

126907

33
h-index

175258

52
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86
all docs

86
docs citations

86
times ranked

2258
citing authors

#	ARTICLE	IF	CITATIONS
1	Optimum design of CO ₂ storage and oil recovery under geological uncertainty. <i>Applied Energy</i> , 2017, 195, 80-92.	10.1	173
2	Effectiveness of amino acid salt solutions in capturing CO ₂ : A review. <i>Renewable and Sustainable Energy Reviews</i> , 2018, 98, 179-188.	16.4	167
3	Multiscale hyporheic exchange through strongly heterogeneous sediments. <i>Water Resources Research</i> , 2015, 51, 9127-9140.	4.2	102
4	Water Table Dynamics and Biogeochemical Cycling in a Shallow, Variably-Saturated Floodplain. <i>Environmental Science & Technology</i> , 2017, 51, 3307-3317.	10.0	100
5	Pore structure of transitional shales in the Ordos Basin, NW China: Effects of composition on gas storage capacity. <i>Fuel</i> , 2017, 206, 504-515.	6.4	98
6	Influence of small-scale fluvial architecture on CO ₂ trapping processes in deep brine reservoirs. <i>Water Resources Research</i> , 2015, 51, 8240-8256.	4.2	96
7	Dissolution Trapping of Carbon Dioxide in Heterogeneous Aquifers. <i>Environmental Science & Technology</i> , 2017, 51, 7732-7741.	10.0	95
8	Application of upscaling methods for fluid flow and mass transport in multi-scale heterogeneous media: A critical review. <i>Applied Energy</i> , 2021, 303, 117603.	10.1	95
9	Critical Dynamics of Gravitational Convective Mixing in Geological Carbon Sequestration. <i>Scientific Reports</i> , 2016, 6, 35921.	3.3	89
10	Heterogeneity-assisted carbon dioxide storage in marine sediments. <i>Applied Energy</i> , 2018, 225, 876-883.	10.1	89
11	Reactive chemical transport simulations of geologic carbon sequestration: Methods and applications. <i>Earth-Science Reviews</i> , 2020, 208, 103265.	9.1	86
12	Radionuclide transport in multi-scale fractured rocks: A review. <i>Journal of Hazardous Materials</i> , 2022, 424, 127550.	12.4	81
13	Simulating the Cranfield geological carbon sequestration project with high-resolution static models and an accurate equation of state. <i>International Journal of Greenhouse Gas Control</i> , 2016, 54, 282-296.	4.6	72
14	Modeling CO ₂ Solubility in Water at High Pressure and Temperature Conditions. <i>Energy & Fuels</i> , 2020, 34, 4761-4776.	5.1	63
15	Assessment of CO ₂ Injectivity During Sequestration in Depleted Gas Reservoirs. <i>Geosciences (Switzerland)</i> , 2019, 9, 199.	2.2	60
16	Effect of porous media and its distribution on methane hydrate formation in the presence of surfactant. <i>Applied Energy</i> , 2020, 261, 114373.	10.1	58
17	Multicomponent reactive transport of carbon dioxide in fluvial heterogeneous aquifers. <i>Journal of Natural Gas Science and Engineering</i> , 2019, 65, 212-223.	4.4	53
18	CO ₂ geological sequestration in heterogeneous binary media: Effects of geological and operational conditions. <i>Advances in Geo-Energy Research</i> , 2020, 4, 392-405.	6.0	52

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19	Influence of Small Scale Heterogeneity on CO ₂ Trapping Processes in Deep Saline Aquifers. <i>Energy Procedia</i> , 2014, 59, 166-173.	1.8	51
20	Hydrothermodynamic mixing of fluids across phases in porous media. <i>Geophysical Research Letters</i> , 2017, 44, 3624-3634.	4.0	48
21	Relating reactive solute transport to hierarchical and multiscale sedimentary architecture in a <sc>L</sc>-based transport model: 1. Time-dependent effective retardation factor. <i>Water Resources Research</i> , 2015, 51, 1586-1600.	4.2	47
22	Relating reactive solute transport to hierarchical and multiscale sedimentary architecture in a <sc>L</sc>-based transport model: 2. Particle displacement variance. <i>Water Resources Research</i> , 2015, 51, 1601-1618.	4.2	47
23	Prediction of groundwater level in seashore reclaimed land using wavelet and artificial neural network-based hybrid model. <i>Journal of Hydrology</i> , 2019, 577, 123948.	5.4	47
24	The Influence of Streambed Heterogeneity on Hyporheic Flow in Gravelly Rivers. <i>Ground Water</i> , 2014, 52, 206-216.	1.3	45
25	A new method for analysis of variance of the hydraulic and reactive attributes of aquifers as linked to hierarchical and multiscale sedimentary architecture. <i>Water Resources Research</i> , 2014, 50, 9766-9776.	4.2	43
26	Reactive solute transport in physically and chemically heterogeneous porous media with multimodal reactive mineral facies: The Lagrangian approach. <i>Chemosphere</i> , 2015, 122, 235-244.	8.2	43
27	Solutal convection in porous media: Comparison between boundary conditions of constant concentration and constant flux. <i>Physical Review E</i> , 2018, 98, .	2.1	41
28	Data-driven modeling of interfacial tension in impure CO ₂ -brine systems with implications for geological carbon storage. <i>International Journal of Greenhouse Gas Control</i> , 2019, 90, 102811.	4.6	40
29	Stage-wise Stochastic Deep Learning Inversion Framework for Subsurface Sedimentary Structure Identification. <i>Geophysical Research Letters</i> , 2022, 49, .	4.0	40
30	Identification of rock pore structures and permeabilities using electron microscopy experiments and deep learning interpretations. <i>Fuel</i> , 2020, 268, 117416.	6.4	35
31	Assessment of CO ₂ trapping mechanisms in partially depleted oil-bearing sands. <i>Fuel</i> , 2020, 278, 118356.	6.4	34
32	Transport of kinetically sorbing solutes in heterogeneous sediments with multimodal conductivity and hierarchical organization across scales. <i>Stochastic Environmental Research and Risk Assessment</i> , 2015, 29, 709-726.	4.0	33
33	Modeling Influence of Sediment Heterogeneity on Nutrient Cycling in Streambeds. <i>Water Resources Research</i> , 2019, 55, 4082-4095.	4.2	33
34	Mixing and spreading of multiphase fluids in heterogeneous bimodal porous media. <i>Geomechanics and Geophysics for Geo-Energy and Geo-Resources</i> , 2017, 3, 225-244.	2.9	32
35	Non-Newtonian fluid flow dynamics in rotating annular media: Physics-based and data-driven modeling. <i>Journal of Petroleum Science and Engineering</i> , 2020, 185, 106641.	4.2	32
36	CO ₂ geological sequestration in multiscale heterogeneous aquifers: Effects of heterogeneity, connectivity, impurity, and hysteresis. <i>Advances in Water Resources</i> , 2021, 151, 103895.	3.8	32

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37	Convective Dissolution of Carbon Dioxide in Deep Saline Aquifers: Insights from Engineering a High-Pressure Porous Visual Cell. <i>Physical Review Applied</i> , 2019, 12, .	3.8	31
38	An integrated inversion framework for heterogeneous aquifer structure identification with single-sample generative adversarial network. <i>Journal of Hydrology</i> , 2022, 610, 127844.	5.4	31
39	Implicit finite volume and discontinuous Galerkin methods for multicomponent flow in unstructured 3D fractured porous media. <i>Advances in Water Resources</i> , 2016, 96, 389-404.	3.8	30
40	An Improved Tandem Neural Network Architecture for Inverse Modeling of Multicomponent Reactive Transport in Porous Media. <i>Water Resources Research</i> , 2021, 57, .	4.2	30
41	Numerical simulation of mineral precipitation in hydrocarbon reservoirs and wellbores. <i>Fuel</i> , 2019, 238, 462-472.	6.4	29
42	Geologic CO2 sequestration: progress and challenges. <i>Geomechanics and Geophysics for Geo-Energy and Geo-Resources</i> , 2017, 3, 221-223.	2.9	28
43	Nitrate Removal Within Heterogeneous Riparian Aquifers Under Tidal Influence. <i>Geophysical Research Letters</i> , 2020, 47, e2019GL085699.	4.0	28
44	Effect of brine composition on the onset of convection during CO2 dissolution in brine. <i>Computers and Geosciences</i> , 2019, 124, 1-13.	4.2	26
45	Reactive transport in the complex heterogeneous alluvial aquifer of Fortymile Wash, Nevada. <i>Chemosphere</i> , 2017, 179, 379-386.	8.2	25
46	Adsorption model identification for chromium (VI) transport in unconsolidated sediments. <i>Journal of Hydrology</i> , 2021, 598, 126228.	5.4	25
47	Estimation of Sandstone Permeability with SEM Images Based on Fractal Theory. <i>Transport in Porous Media</i> , 2019, 126, 701-712.	2.6	24
48	How does the connectivity of open-framework conglomerates within multi-scale hierarchical fluvial architecture affect oil-sweep efficiency in waterflooding?. , 2015, 11, 2049-2066.		20
49	What have we learned from deterministic geostatistics at highly resolved field sites, as relevant to mass transport processes in sedimentary aquifers?. <i>Journal of Hydrology</i> , 2015, 531, 31-39.	5.4	20
50	Modeling natural gas compressibility factor using a hybrid group method of data handling. <i>Engineering Applications of Computational Fluid Mechanics</i> , 2020, 14, 27-37.	3.1	20
51	How does resolution of sedimentary architecture data affect plume dispersion in multiscale and hierarchical systems?. <i>Journal of Hydrology</i> , 2020, 582, 124516.	5.4	20
52	Identifying spatial correlation structure of multimodal permeability in hierarchical media with Markov chain approach. <i>Journal of Hydrology</i> , 2019, 568, 703-715.	5.4	19
53	Influence of Streambed Heterogeneity on Hyporheic Flow and Sorptive Solute Transport. <i>Water (Switzerland)</i> , 2020, 12, 1547.	2.7	18
54	Coupled multiphase flow and transport simulation to model CO2 dissolution and local capillary trapping in permeability and capillary heterogeneous reservoir. <i>International Journal of Greenhouse Gas Control</i> , 2021, 108, 103329.	4.6	16

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55	Dilution enhancement in hierarchical and multiscale heterogeneous sediments. <i>Journal of Hydrology</i> , 2020, 587, 125025.	5.4	15
56	A Model Analysis of the Tidal Engine That Drives Nitrogen Cycling in Coastal Riparian Aquifers. <i>Water Resources Research</i> , 2020, 56, e2019WR025662.	4.2	15
57	A Note on Upscaling Retardation Factor in Hierarchical Porous Media with Multimodal Reactive Mineral Facies. <i>Transport in Porous Media</i> , 2015, 108, 355-366.	2.6	13
58	Multicomponent competitive monovalent cation exchange in hierarchical porous media with multimodal reactive mineral facies. <i>Stochastic Environmental Research and Risk Assessment</i> , 2018, 32, 295-310.	4.0	13
59	Underlying riparian lithology controls redox dynamics during stage-driven mixing. <i>Journal of Hydrology</i> , 2021, 595, 126035.	5.4	13
60	Uncertainty quantification of radionuclide migration in fractured granite. <i>Journal of Cleaner Production</i> , 2022, 366, 132944.	9.3	13
61	Capillary Heterogeneity Linked to Methane Lateral Migration in Shallow Unconfined Aquifers. <i>Geophysical Research Letters</i> , 2021, 48, .	4.0	12
62	Mass Wasting Inferred Dramatic Variability of 130,000 Year Indian Summer Monsoon Intensity From Deposits in the Southeast Tibetan Plateau. <i>Geophysical Research Letters</i> , 2022, 49, .	4.0	12
63	Transport of perfluorocarbon tracers in the Cranfield Geological Carbon Sequestration Project. , 2018, 8, 650-671.		11
64	Reactive transport modeling in heterogeneous porous media with dynamic mesh optimization. <i>Computational Geosciences</i> , 2021, 25, 357-372.	2.4	11
65	Injectivity Evaluation for Offshore CO ₂ Sequestration in Marine Sediments. <i>Energy Procedia</i> , 2017, 114, 2921-2932.	1.8	10
66	Quantitative Analysis and Evaluation of Coal Mine Geological Structures Based on Fractal Theory. <i>Energies</i> , 2021, 14, 1925.	3.1	10
67	Influence of lunar semidiurnal tides on groundwater dynamics in estuarine aquifers. <i>Hydrogeology Journal</i> , 2020, 28, 1419-1429.	2.1	9
68	Surface water-groundwater exchange dynamics in buried valley aquifer systems. <i>Hydrological Processes</i> , 2021, 35, e14066.	2.6	9
69	Geophysical mapping of hyporheic processes controlled by sedimentary architecture within compound bar deposits. <i>Hydrological Processes</i> , 2021, 35, e14358.	2.6	9
70	Spatiotemporal Dynamics of Nitrous Oxide Emission Hotspots in Heterogeneous Riparian Sediments. <i>Water Resources Research</i> , 2021, 57, e2021WR030496.	4.2	9
71	Hydro-thermo-chemo-mechanical modeling of carbon dioxide injection in fluvial heterogeneous aquifers. <i>Chemical Engineering Journal</i> , 2022, 431, 133451.	12.7	8
72	Geological carbon sequestration: Modeling mafic rock carbonation using point-source flue gases. <i>International Journal of Greenhouse Gas Control</i> , 2020, 99, 103106.	4.6	6

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73	Experimental investigations on scale-dependent dispersivity in three-dimensional heterogeneous porous media. <i>Environmental Science and Pollution Research</i> , 2021, 28, 23336-23348.	5.3	6
74	Dispersivity variations of solute transport in heterogeneous sediments: numerical and experimental study. <i>Stochastic Environmental Research and Risk Assessment</i> , 2022, 36, 661-677.	4.0	6
75	Bed form-induced hyporheic exchange and geochemical hotspots. <i>Advances in Water Resources</i> , 2021, 156, 104025.	3.8	6
76	Aging effects on the swelling behavior of compacted bentonite. <i>Bulletin of Engineering Geology and the Environment</i> , 2020, 79, 2341-2352.	3.5	5
77	Application of risk assessment in determination of soil remediation targets. <i>Stochastic Environmental Research and Risk Assessment</i> , 2020, 34, 1659-1673.	4.0	5
78	The geochemical behavior of molybdenum in the modern Yangtze Estuary and East China Sea shelf. <i>Journal of Hydrology</i> , 2021, 595, 125997.	5.4	5
79	Analysis of Asymmetric Stress Ratio in Shallow Buried Tunnels. <i>KSCE Journal of Civil Engineering</i> , 2020, 24, 1924-1931.	1.9	4
80	Impact of Tunnel Temperature Variations on Surrounding Rocks in Cold Regions. <i>Periodica Polytechnica: Civil Engineering</i> , 0, , .	0.6	2
81	Effects of surface loading on groundwater flow and skeletal deformation. <i>Water Science and Technology: Water Supply</i> , 2020, 20, 287-295.	2.1	2
82	Numerical Investigation of Stress Distributions in Stope Backfills. <i>Periodica Polytechnica: Civil Engineering</i> , 2018, , .	0.6	0
83	Numerical analysis of rock joints in tunnel construction during blasting. <i>Arabian Journal of Geosciences</i> , 2022, 15, 1.	1.3	0
84	Introduction to special section: CO ₂ geologic storage and utilization: Recent advances and future perspectives. <i>Interpretation</i> , 0, , 1-2.	1.1	0