Peyman Mostaghimi

List of Publications by Year
in descending order

119 papers	5,864 citations	81743 39 h-index	79541 73 g-index
119 all docs	119 docs citations	119 times ranked	3306 citing authors

#	Article	IF	Citations
1	Automatic fracture detection and characterization from unwrapped drill-core images using mask Râ€"CNN. Journal of Petroleum Science and Engineering, 2022, 208, 109471.	2.1	10
2	Dynamic X-ray micotomography of microfibrous cellulose liquid foams using deep learning. Chemical Engineering Science, 2022, 248, 117173.	1.9	2
3	Universal description of wetting on multiscale surfaces using integral geometry. Journal of Colloid and Interface Science, 2022, 608, 2330-2338.	5.0	20
4	Prediction of local diffusion coefficient based on images of fractured coal cores. Journal of Natural Gas Science and Engineering, 2022, 100, 104427.	2.1	4
5	Application of microfluidics in chemical enhanced oil recovery: A review. Fuel, 2022, 315, 123225.	3.4	37
6	Inclusion of Microporosity in Numerical Simulation of Relative Permeability Curves. , 2022, , .		2
7	Automated Rock Quality Designation Using Convolutional Neural Networks. Rock Mechanics and Rock Engineering, 2022, 55, 3719-3734.	2.6	14
8	In-situ hydrogen wettability characterisation for underground hydrogen storage. International Journal of Hydrogen Energy, 2022, 47, 13062-13075.	3.8	66
9	Generalizable Framework of Unpaired Domain Transfer and Deep Learning for the Processing of Real-Time Synchrotron-Based X-Ray Microcomputed Tomography Images of Complex Structures. Physical Review Applied, 2022, 17, .	1.5	12
10	Deep learning for full-feature X-ray microcomputed tomography segmentation of proton electron membrane fuel cells. Computers and Chemical Engineering, 2022, 161, 107768.	2.0	15
11	Coupling of pore network modelling and volume of fluid methods for multiphase flow in fractured media. Fuel, 2022, 319, 123563.	3.4	7
12	Super-Resolved Segmentation of X-ray Images of Carbonate Rocks Using Deep Learning. Transport in Porous Media, 2022, 143, 497-525.	1.2	10
13	Deep convolutional neural network for 3D mineral identification and liberation analysis. Minerals Engineering, 2022, 183, 107592.	1.8	10
14	Deep Learning of Multiresolution X-Ray Micro-Computed-Tomography Images for Multiscale Modeling. Physical Review Applied, 2022, 17, .	1.5	14
15	Computer vision and unsupervised machine learning for pore-scale structural analysis of fractured porous media. Advances in Water Resources, 2021, 147, 103801.	1.7	4
16	Automated lithology classification from drill core images using convolutional neural networks. Journal of Petroleum Science and Engineering, 2021, 197, 107933.	2.1	62
17	Coupling of transient matrix diffusion and pore network models for gas flow in coal. Journal of Natural Gas Science and Engineering, 2021, 88, 103741.	2.1	19
18	Flow-Based Characterization of Digital Rock Images Using Deep Learning. SPE Journal, 2021, 26, 1800-1811.	1.7	27

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19	Fast direct flow simulation in porous media by coupling with pore network and Laplace models. Advances in Water Resources, 2021, 150, 103883.	1.7	11
20	Deep learning in pore scale imaging and modeling. Earth-Science Reviews, 2021, 215, 103555.	4.0	90
21	ML-LBM: Predicting and Accelerating Steady State Flow Simulation in Porous Media with Convolutional Neural Networks. Transport in Porous Media, 2021, 138, 49-75.	1.2	31
22	Correspondence of max-flow to the absolute permeability of porous systems. Physical Review Fluids, 2021, 6, .	1.0	5
23	Multiscale Characterization of Wettability in Porous Media. Transport in Porous Media, 2021, 140, 215-240.	1.2	42
24	Geometrical-Based Generative Adversarial Network to Enhance Digital Rock Image Quality. Physical Review Applied, 2021, 15, .	1.5	11
25	Deep neural networks for improving physical accuracy of 2D and 3D multi-mineral segmentation of rock micro-CT images. Applied Soft Computing Journal, 2021, 104, 107185.	4.1	57
26	Coupling of pipe network modelling and domain decomposition for flow in mineralised coal cores. International Journal of Coal Geology, 2021, 245, 103819.	1.9	5
27	Review of Data Science Trends and Issues in Porous Media Research With a Focus on Imageâ€Based Techniques. Water Resources Research, 2021, 57, e2020WR029472.	1.7	19
28	Minimising the impact of sub-resolution features on fluid flow simulation in porous media. Journal of Petroleum Science and Engineering, 2021, 207, 109055.	2.1	3
29	Machine learning for predicting properties of porous media from 2d X-ray images. Journal of Petroleum Science and Engineering, 2020, 184, 106514.	2.1	83
30	Unsteady-State Coreflooding Monitored by Positron Emission Tomography and X-ray Computed Tomography. SPE Journal, 2020, 25, 242-252.	1.7	7
31	Analysis of gas diffusivity in coal using micro-computed tomography. Fuel, 2020, 261, 116384.	3.4	16
32	Accelerated Computation of Relative Permeability by Coupled Morphological and Direct Multiphase Flow Simulation. Journal of Computational Physics, 2020, 401, 108966.	1.9	31
33	Voxel agglomeration for accelerated estimation of permeability from micro-CT images. Journal of Petroleum Science and Engineering, 2020, 184, 106577.	2.1	17
34	Boosting Resolution and Recovering Texture of 2D and 3D Microâ€CT Images with Deep Learning. Water Resources Research, 2020, 56, e2019WR026052.	1.7	57
35	Linking continuum-scale state of wetting to pore-scale contact angles in porous media. Journal of Colloid and Interface Science, 2020, 561, 173-180.	5.0	37
36	On Representative Elementary Volumes of Grayscale Microâ€CT Images of Porous Media. Geophysical Research Letters, 2020, 47, e2020GL088594.	1.5	28

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37	A hybrid fracture-micropore network model for multiphysics gas flow in coal. Fuel, 2020, 281, 118687.	3.4	28
38	Real-time synchrotron-based X-ray computed microtomography during in situ emulsification. Journal of Petroleum Science and Engineering, 2020, 195, 107885.	2.1	4
39	An Innovative Application of Generative Adversarial Networks for Physically Accurate Rock Images With an Unprecedented Field of View. Geophysical Research Letters, 2020, 47, e2020GL089029.	1.5	36
40	Segmentation of X-Ray Images of Rocks Using Deep Learning. , 2020, , .		5
41	CNN-PFVS: Integrating Neural Network and Finite Volume Models to Accelerate Flow Simulation on Pore Space Images. Transport in Porous Media, 2020, 135, 25-37.	1.2	13
42	Characterization of wetting using topological principles. Journal of Colloid and Interface Science, 2020, 578, 106-115.	5.0	45
43	Image-based fracture pipe network modelling for prediction of coal permeability. Fuel, 2020, 270, 117447.	3.4	22
44	Probing Effective Wetting in Subsurface Systems. Geophysical Research Letters, 2020, 47, no.	1.5	41
45	Digital Rock Segmentation for Petrophysical Analysis With Reduced User Bias Using Convolutional Neural Networks. Water Resources Research, 2020, 56, e2019WR026597.	1.7	55
46	Multiscale characterization of shale diffusivity using time-lapsed X-ray computed tomography and pore-level simulations. Journal of Petroleum Science and Engineering, 2019, 182, 106271.	2.1	8
47	Enhancing Resolution of Digital Rock Images with Super Resolution Convolutional Neural Networks. Journal of Petroleum Science and Engineering, 2019, 182, 106261.	2.1	71
48	Oil mobilization and solubilization in porous media by in situ emulsification. Journal of Colloid and Interface Science, 2019, 554, 554-564.	5.0	26
49	DigiCoal: A computational package for characterisation of coal cores. Journal of Petroleum Science and Engineering, 2019, 176, 775-791.	2.1	18
50	Insights, Trends and Challenges Associated with Measuring Coal Relative Permeability. E3S Web of Conferences, 2019, 89, 01004.	0.2	1
51	On the challenges of greyscaleâ€based quantifications using Xâ€ray computed microtomography. Journal of Microscopy, 2019, 275, 82-96.	0.8	15
52	The dynamic behaviour of coal relative permeability curves. Fuel, 2019, 253, 293-304.	3.4	31
53	Approximating Permeability of Microcomputed-Tomography Images Using Elliptic Flow Equations. SPE Journal, 2019, 24, 1154-1163.	1.7	40
54	Geochemical Modeling and Microfluidic Experiments To Analyze Impact of Clay Type and Cations on Low-Salinity Water Flooding. Energy & Fuels, 2019, 33, 2888-2896.	2.5	10

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55	Enzyme Enhanced Oil Recovery EEOR: A Microfluidics Approach. , 2019, , .		7
56	Computations of permeability of large rock images by dual grid domain decomposition. Advances in Water Resources, 2019, 126, 1-14.	1.7	44
57	Deterministic Pipe Network Modelling for Fractured Rocks. , 2019, , .		0
58	Synchrotron-Based X-ray Micro-Computed Tomography for Real Time Investigation of Alkaline Surfactant Flooding. , 2019, , .		0
59	Investigating rock micro-structure of sandstones by pattern recognition on their X-ray images. ASEG Extended Abstracts, 2019, 2019, 1-3.	0.1	2
60	Microscale insights into gas recovery from bright and dull bands in coal. Journal of Petroleum Science and Engineering, 2019, 172, 373-382.	2.1	13
61	Rock Characterization Using Grayâ€Level Coâ€Occurrence Matrix: An Objective Perspective of Digital Rock Statistics. Water Resources Research, 2019, 55, 1912-1927.	1.7	20
62	Pore network extraction using geometrical domain decomposition. Advances in Water Resources, 2019, 123, 70-83.	1.7	33
63	Microfluidics for Porous Systems: Fabrication, Microscopy and Applications. Transport in Porous Media, 2019, 130, 277-304.	1.2	43
64	Flow regimes during surfactant flooding: The influence of phase behaviour. Fuel, 2019, 236, 851-860.	3.4	51
65	Time-Lapsed Visualization and Characterization of Shale Diffusion Properties Using 4D X-ray Microcomputed Tomography. Energy & Fuels, 2018, 32, 2889-2900.	2.5	23
66	Coal permeability: Gas slippage linked to permeability rebound. Fuel, 2018, 215, 844-852.	3.4	44
67	High-pressure X-ray imaging to interpret coal permeability. Fuel, 2018, 226, 573-582.	3.4	22
68	Impact of dissolution of syngenetic and epigenetic minerals on coal permeability. Chemical Geology, 2018, 486, 31-39.	1.4	35
69	Numerical simulation of fluid-fluid-solid reactions in porous media. International Journal of Heat and Mass Transfer, 2018, 120, 194-201.	2.5	23
70	Automatic Fracture Identification using X-ray Images. ASEG Extended Abstracts, 2018, 2018, 1-2.	0.1	4
71	Analysis of Diffusion Coefficient and Fracture Aperture in Coal using Micro-Computed Tomography Imaging. , 2018, , .		0
72	Functionalisation of Polydimethylsiloxane (PDMS)- Microfluidic Devices coatedÂwith Rock Minerals. Scientific Reports, 2018, 8, 15518.	1.6	40

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73	Deep Learning Convolutional Neural Networks to Predict Porous Media Properties. , 2018, , .		34
74	Reactive transport modelling in dual porosity media. Chemical Engineering Science, 2018, 190, 436-442.	1.9	17
75	Predictions of permeability, surface area and average dissolution rate during reactive transport in multi-mineral rocks. Journal of Petroleum Science and Engineering, 2018, 170, 130-138.	2.1	42
76	High-resolution pore-scale simulation of dissolution in porous media. Chemical Engineering Science, 2017, 161, 360-369.	1.9	73
77	Cleat-scale characterisation of coal: An overview. Journal of Natural Gas Science and Engineering, 2017, 39, 143-160.	2.1	131
78	Pore-scale simulation of dissolution-induced variations in rock mechanical properties. International Journal of Heat and Mass Transfer, 2017, 111, 842-851.	2.5	59
79	Stochastic modeling of coal fracture network by direct use of micro-computed tomography images. International Journal of Coal Geology, 2017, 179, 153-163.	1.9	44
80	Impact of mineralogical heterogeneity on reactive transport modelling. Computers and Geosciences, 2017, 104, 12-19.	2.0	72
81	Rough-walled discrete fracture network modelling for coal characterisation. Fuel, 2017, 191, 442-453.	3.4	88
82	Pore-scale modelling of CO 2 storage in fractured coal. International Journal of Greenhouse Gas Control, 2017, 66, 246-253.	2.3	26
83	Pore Scale Visualization of Low Salinity Water Flooding as an Enhanced Oil Recovery Method. Energy & Fuels, 2017, 31, 13133-13143.	2.5	51
84	Coal ash content estimation using fuzzy curves and ensemble neural networks for well log analysis. International Journal of Coal Geology, 2017, 181, 11-22.	1.9	18
85	Impact of Mineralization on Digital Coal Properties. Energy & Fuels, 2017, 31, 11558-11568.	2.5	22
86	Topological Characterization of Fractured Coal. Journal of Geophysical Research: Solid Earth, 2017, 122, 9849-9861.	1.4	32
87	DigiCoal: A Numerical Toolbox for Fractured Coal Characterisation. , 2017, , .		1
88	Digital coal: Generation of fractured cores with microscale features. Fuel, 2017, 207, 93-101.	3.4	55
89	Alkaline Surfactant Polymer Flooding: What Happens at the Pore Scale?. , 2017, , .		12
90	Local diffusion coefficient measurements in shale using dynamic micro-computed tomography. Fuel, 2017, 207, 312-322.	3.4	35

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91	Characterisation of reactive transport in pore-scale correlated porous media. Chemical Engineering Science, 2017, 173, 121-130.	1.9	57
92	Digital rock analysis for accurate prediction of fractured media permeability. Journal of Hydrology, 2017, 554, 817-826.	2.3	66
93	Determination of Local Diffusion Coefficients and Their Directional Anisotropy in Shale, and Relations to Local Mineralogy and Organic Matter Content, From Dynamic Micro-CT Imaging and Microscopy. , 2017, , .		20
94	Coal-on-a-Chip: Visualizing Flow in Coal Fractures. Energy & Fuels, 2017, 31, 10393-10403.	2.5	27
95	Numerical Simulation of Reactive Transport on Micro-CT Images. Mathematical Geosciences, 2016, 48, 963-983.	1.4	67
96	Coal cleat reconstruction using micro-computed tomography imaging. Fuel, 2016, 181, 286-299.	3.4	109
97	A microfluidic framework for studying relative permeability in coal. International Journal of Coal Geology, 2016, 159, 183-193.	1.9	70
98	Hydrodynamics of fingering instability in the presence of a magnetic field. Fluid Dynamics Research, 2016, 48, 055504.	0.6	6
99	Adaptive Mesh Optimization for Simulation of Immiscible Viscous Fingering. SPE Journal, 2016, 21, 2250-2259.	1.7	19
100	Pore Scale Characterisation of Coal: An Unconventional Challenge. , 2016, , .		6
101	Micro-CT image calibration to improve fracture aperture measurement. Case Studies in Nondestructive Testing and Evaluation, 2016, 6, 4-13.	1.7	50
102	Porosity and permeability characterization of coal: a micro-computed tomography study. International Journal of Coal Geology, 2016, 154-155, 57-68.	1.9	182
103	Viscous fingering in yield stress fluids: a numerical study. Journal of Engineering Mathematics, 2016, 97, 161-176.	0.6	17
104	X-Ray Micro-Computed Tomography Imaging for Coal Characterization. , 2015, , .		8
105	Multiphase flow simulation through porous media with explicitly resolved fractures. Geofluids, 2015, 15, 592-607.	0.3	24
106	A Dynamic Mesh Approach for Simulation of Immiscible Viscous Fingering. , 2015, , .		9
107	Reservoir Modeling for Flow Simulation by Use of Surfaces, Adaptive Unstructured Meshes, and an Overlapping-Control-Volume Finite-Element Method. SPE Reservoir Evaluation and Engineering, 2015, 18, 115-132.	1.1	64
108	Anisotropic Mesh Adaptivity and Control Volume Finite Element Methods for Numerical Simulation of Multiphase Flow in Porous Media. Mathematical Geosciences, 2015, 47, 417-440.	1.4	39

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109	A control volume finite element method for adaptive mesh simulation of flow in heap leaching. Journal of Engineering Mathematics, 2014, 87, 111-121.	0.6	29
110	Use of mesh adaptivity in simulation of flow in packed beds â€" A case study. Minerals Engineering, 2014, 63, 157-163.	1.8	4
111	Computations of Absolute Permeability on Micro-CT Images. Mathematical Geosciences, 2013, 45, 103-125.	1.4	338
112	Pore-scale imaging and modelling. Advances in Water Resources, 2013, 51, 197-216.	1.7	1,407
113	Predictions of non-Fickian solute transport in different classes of porous media using direct simulation on pore-scale images. Physical Review E, 2013, 87, 013011.	0.8	199
114	Insights into nonâ€Fickian solute transport in carbonates. Water Resources Research, 2013, 49, 2714-2728.	1.7	126
115	Reservoir Modeling for Flow Simulation Using Surfaces, Adaptive Unstructured Meshes and Control-Volume-Finite-Element Methods. , 2013, , .		19
116	Simulation of Flow and Dispersion on Pore-Space Images. SPE Journal, 2012, 17, 1131-1141.	1.7	96
117	Signature of Non-Fickian Solute Transport in Complex Heterogeneous Porous Media. Physical Review Letters, 2011, 107, 204502.	2.9	199
118	A Quantitative and Qualitative Comparison of Coarse-Grid-Generation Techniques for Modeling Fluid Displacement in Heterogeneous Porous Media. SPE Reservoir Evaluation and Engineering, 2010, 13, 24-36.	1.1	29
119	Simulation of Flow and Dispersion on Pore-Space Images. , 2010, , .		8