Martin J Blunt

List of Publications by Year in descending order

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389 papers	30,701 citations	3531 90 h-index	6131 159 g-index
399 all docs	399 docs citations	399 times ranked	12053 citing authors

#	Article	IF	Citations
1	Carbon capture and storage update. Energy and Environmental Science, 2014, 7, 130-189.	30.8	1,765
2	Pore-scale imaging and modelling. Advances in Water Resources, 2013, 51, 197-216.	3.8	1,407
3	Pore-network extraction from micro-computerized-tomography images. Physical Review E, 2009, 80, 036307.	2.1	808
4	Flow in porous media â€" pore-network models and multiphase flow. Current Opinion in Colloid and Interface Science, 2001, 6, 197-207.	7.4	724
5	Impact of relative permeability hysteresis on geological CO2storage. Water Resources Research, 2006, 42, .	4.2	669
6	Tenth SPE Comparative Solution Project: A Comparison of Upscaling Techniques. SPE Reservoir Evaluation and Engineering, 2001, 4, 308-317.	1.8	609
7	Predictive pore-scale modeling of two-phase flow in mixed wet media. Water Resources Research, 2004, 40, .	4.2	597
8	Detailed physics, predictive capabilities and macroscopic consequences for pore-network models of multiphase flow. Advances in Water Resources, 2002, 25, 1069-1089.	3.8	583
9	Prediction of relative permeability in simple porous media. Physical Review A, 1992, 46, 2004-2011.	2.5	435
10	Modelling two-phase flow in porous media at the pore scale using the volume-of-fluid method. Journal of Computational Physics, 2012, 231, 5653-5668.	3.8	393
11	Computations of Absolute Permeability on Micro-CT Images. Mathematical Geosciences, 2013, 45, 103-125.	2.4	338
12	Capillary trapping for geologic carbon dioxide storage â€" From pore scale physics to field scale implications. International Journal of Greenhouse Gas Control, 2015, 40, 221-237.	4.6	329
13	Carbon dioxide in enhanced oil recovery. Energy Conversion and Management, 1993, 34, 1197-1204.	9.2	319
14	Pore-scale contact angle measurements at reservoir conditions using X-ray microtomography. Advances in Water Resources, 2014, 68, 24-31.	3.8	317
15	Reconstruction of three-dimensional porous media using generative adversarial neural networks. Physical Review E, 2017, 96, 043309.	2.1	294
16	Prediction of permeability for porous media reconstructed using multiple-point statistics. Physical Review E, 2004, 70, 066135.	2.1	282
17	Residual CO₂imaged with X-ray micro-tomography. Geophysical Research Letters, 2011, 38, n/a-n/a.	4.0	280
18	Pore-level modeling of wetting. Physical Review E, 1995, 52, 6387-6403.	2.1	278

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19	Pore space reconstruction using multiple-point statistics. Journal of Petroleum Science and Engineering, 2005, 46, 121-137.	4.2	270
20	Measurements of the capillary trapping of super-critical carbon dioxide in Berea sandstone. Geophysical Research Letters, 2011, 38, n/a-n/a.	4.0	257
21	A 3D Field-Scale Streamline-Based Reservoir Simulator. SPE Reservoir Engineering, 1997, 12, 246-254.	0.5	254
22	Direct simulations of two-phase flow on micro-CT images of porous media and upscaling of pore-scale forces. Advances in Water Resources, 2014, 74, 116-126.	3.8	254
23	Relative permeabilities from two- and three-dimensional pore-scale network modelling. Transport in Porous Media, 1991, 6, 407.	2.6	233
24	Simulation and theory of two-phase flow in porous media. Physical Review A, 1992, 46, 7680-7699.	2.5	233
25	Network extraction from sandstone and carbonate pore space images. Journal of Petroleum Science and Engineering, 2007, 56, 219-231.	4.2	220
26	Multi-scale multi-dimensional microstructure imaging of oil shale pyrolysis using X-ray micro-tomography, automated ultra-high resolution SEM, MAPS Mineralogy and FIB-SEM. Applied Energy, 2017, 202, 628-647.	10.1	219
27	Generalized network modeling: Network extraction as a coarse-scale discretization of the void space of porous media. Physical Review E, 2017, 96, 013312.	2.1	213
28	Signature of Non-Fickian Solute Transport in Complex Heterogeneous Porous Media. Physical Review Letters, 2011, 107, 204502.	7.8	199
29	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.	2.1	199
30	Comparison of residual oil cluster size distribution, morphology and saturation in oil-wet and water-wet sandstone. Journal of Colloid and Interface Science, 2012, 375, 187-192.	9.4	198
31	A New Model of Trapping and Relative Permeability Hysteresis for All Wettability Characteristics. SPE Journal, 2008, 13, 277-288.	3.1	197
32	Three-dimensional mixed-wet random pore-scale network modeling of two- and three-phase flow in porous media. I. Model description. Physical Review E, 2005, 71, 026301.	2.1	195
33	Pore-scale imaging of trapped supercritical carbon dioxide in sandstones and carbonates. International Journal of Greenhouse Gas Control, 2014, 22, 1-14.	4.6	191
34	Three-dimensional modeling of three phase imbibition and drainage. Advances in Water Resources, 1998, 21, 121-143.	3.8	189
35	Pore-scale modeling and continuous time random walk analysis of dispersion in porous media. Water Resources Research, 2006, 42, .	4.2	188
36	Effects of Wettability on Three-Phase Flow in Porous Mediaâ€. Journal of Physical Chemistry B, 2000, 104, 3833-3845.	2.6	184

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37	Design of carbon dioxide storage in aquifers. International Journal of Greenhouse Gas Control, 2009, 3, 195-205.	4.6	178
38	Physically-based network modeling of multiphase flow in intermediate-wet porous media. Journal of Petroleum Science and Engineering, 1998, 20, 117-125.	4.2	168
39	Pore-scale modeling of longitudinal dispersion. Water Resources Research, 2004, 40, .	4.2	166
40	Micromodel Observation of the Role of Oil Layers in Three-Phase Flow. Transport in Porous Media, 1997, 26, 277-297.	2.6	160
41	Predictive network modeling of single-phase non-Newtonian flow in porous media. Journal of Colloid and Interface Science, 2003, 264, 256-265.	9.4	155
42	Pore-scale modeling: Effects of wettability on waterflood oil recovery. Journal of Petroleum Science and Engineering, 2010, 71, 169-178.	4.2	155
43	The Imaging of Dynamic Multiphase Fluid Flow Using Synchrotron-Based X-ray Microtomography at Reservoir Conditions. Transport in Porous Media, 2015, 110, 1-24.	2.6	153
44	Dynamic Three-Dimensional Pore-Scale Imaging of Reaction in a Carbonate at Reservoir Conditions. Environmental Science & Technology, 2015, 49, 4407-4414.	10.0	153
45	Automatic measurement of contact angle in pore-space images. Advances in Water Resources, 2017, 109, 158-169.	3.8	153
46	Wettability in complex porous materials, the mixed-wet state, and its relationship to surface roughness. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 8901-8906.	7.1	153
47	Pore space reconstruction of vuggy carbonates using microtomography and multipleâ€point statistics. Water Resources Research, 2007, 43, .	4.2	149
48	An Empirical Model for Three-Phase Relative Permeability. SPE Journal, 2000, 5, 435-445.	3.1	148
49	Measurement of aperture distribution, capillary pressure, relative permeability, and in situ saturation in a rock fracture using computed tomography scanning. Water Resources Research, 2001, 37, 649-662.	4.2	147
50	Modelling stress-dependent permeability in fractured rock including effects of propagating and bending fractures. International Journal of Rock Mechanics and Minings Sciences, 2013, 57, 100-112.	5.8	147
51	In situ characterization of mixed-wettability in aÂreservoir rock at subsurface conditions. Scientific Reports, 2017, 7, 10753.	3.3	147
52	Poreâ€scale imaging of geological carbon dioxide storage under in situ conditions. Geophysical Research Letters, 2013, 40, 3915-3918.	4.0	142
53	The impact of porous media heterogeneity on non-Darcy flow behaviour from pore-scale simulation. Advances in Water Resources, 2016, 95, 329-340.	3.8	137
54	Dynamics of snap-off and pore-filling events during two-phase fluid flow in permeable media. Scientific Reports, 2017, 7, 5192.	3.3	135

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55	Advances in carbon capture, utilization and storage. Applied Energy, 2020, 278, 115627.	10.1	135
56	Pore Scale Modeling of Rate Effects in Imbibition. Transport in Porous Media, 2000, 40, 295-322.	2.6	134
57	Capillary trapping in sandstones and carbonates: Dependence on pore structure. Water Resources Research, 2012, 48, .	4.2	133
58	Poreâ€scale intermittent velocity structure underpinning anomalous transport through 3â€D porous media. Geophysical Research Letters, 2014, 41, 6184-6190.	4.0	131
59	Stochastic Seismic Waveform Inversion Using Generative Adversarial Networks as a Geological Prior. Mathematical Geosciences, 2020, 52, 53-79.	2.4	127
60	Insights into nonâ€Fickian solute transport in carbonates. Water Resources Research, 2013, 49, 2714-2728.	4.2	126
61	Imaging of oil layers, curvature and contact angle in a mixedâ€wet and a waterâ€wet carbonate rock. Water Resources Research, 2016, 52, 1716-1728.	4.2	124
62	Macroscopic parameters from simulations of pore scale flow. Physical Review A, 1990, 42, 4780-4787.	2.5	123
63	Automatic method for estimation of in situ effective contact angle from X-ray micro tomography images of two-phase flow in porous media. Journal of Colloid and Interface Science, 2017, 496, 51-59.	9.4	123
64	Microstructural imaging and characterization of oil shale before and after pyrolysis. Fuel, 2017, 197, 562-574.	6.4	123
65	Three-phase flow and gravity drainage in porous media. Transport in Porous Media, 1995, 20, 77-103.	2.6	122
66	CO2 injection impairment due to halite precipitation. Energy Procedia, 2009, 1, 3507-3514.	1.8	122
67	Simultaneous oil recovery and residual gas storage: A pore-level analysis using in situ X-ray micro-tomography. Fuel, 2013, 103, 905-914.	6.4	122
68	Dynamic fluid connectivity during steady-state multiphase flow in a sandstone. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 8187-8192.	7.1	121
69	X-ray tomography measurements of power-law cluster size distributions for the nonwetting phase in sandstones. Physical Review E, 2010, 82, 056315.	2.1	119
70	Poreâ€byâ€pore capillary pressure measurements using <scp>X</scp>â€ray microtomography at reservoir conditions: Curvature, snapâ€off, and remobilization of residual <scp>CO</scp>₂. Water Resources Research, 2014, 50, 8760-8774.	4.2	119
71	Effects of Heterogeneity and Wetting on Relative Permeability Using Pore Level Modeling. SPE Journal, 1997, 2, 70-87.	3.1	115
72	Hydrocarbon Drainage along Corners of Noncircular Capillaries. Journal of Colloid and Interface Science, 1997, 187, 11-21.	9.4	114

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73	Reservoir condition imaging of reactive transport in heterogeneous carbonates using fast synchrotron tomography â€" Effect of initial pore structure and flow conditions. Chemical Geology, 2016, 428, 15-26.	3.3	114
74	Stochastic Reconstruction of an Oolitic Limestone by Generative Adversarial Networks. Transport in Porous Media, 2018, 125, 81-103.	2.6	112
75	Poreâ€scale modeling of transverse dispersion in porous media. Water Resources Research, 2007, 43, .	4.2	111
76	Development of a pore network simulation model to study nonaqueous phase liquid dissolution. Water Resources Research, 2000, 36, 439-454.	4.2	110
77	Capillary-Dominated Fluid Displacement in Porous Media. Annual Review of Fluid Mechanics, 2019, 51, 429-449.	25.0	109
78	Pore Level Modeling of the Effects of Wettability. SPE Journal, 1997, 2, 494-510.	3.1	104
79	Simulating Flow in Heterogeneous Systems Using Streamtubes and Streamlines. SPE Reservoir Engineering, 1996, 11, 5-12.	0.5	103
80	Numerical study of the effects of particle shape and polydispersity on permeability. Physical Review E, 2009, 80, 021304.	2.1	103
81	Pore-scale modelling and sensitivity analyses of hydrogen-brine multiphase flow in geological porous media. Scientific Reports, 2021, 11, 8348.	3.3	103
82	Effect of fracture aperture variations on the dispersion of contaminants. Water Resources Research, 1999, 35, 55-63.	4.2	99
83	Simulation of counter-current imbibition in water-wet fractured reservoirs. Journal of Petroleum Science and Engineering, 2006, 50, 21-39.	4.2	99
84	Minimal surfaces in porous media: Pore-scale imaging of multiphase flow in an altered-wettability Bentheimer sandstone. Physical Review E, 2019, 99, 063105.	2.1	98
85	Three-Phase Relative Permeability of Water-Wet, Oil-Wet, and Mixed-Wet Sandpacks. SPE Journal, 2000, 5, 82-91.	3.1	97
86	Modelling capillary trapping using finite-volume simulation of two-phase flow directly on micro-CT images. Advances in Water Resources, 2015, 83, 102-110.	3.8	97
87	Effect of spreading coefficient on the distribution of light non-aqueous phase liquid in the subsurface. Journal of Contaminant Hydrology, 1997, 25, 1-19.	3.3	96
88	Dynamic network modeling of two-phase drainage in porous media. Physical Review E, 2005, 71, 016308.	2.1	96
89	Simulation of Flow and Dispersion on Pore-Space Images. SPE Journal, 2012, 17, 1131-1141.	3.1	96
90	Multiscale Description of Shale Pore Systems by Scanning SAXS and WAXS Microscopy. Energy & Fuels, 2016, 30, 10282-10297.	5.1	92

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91	Quantification of sub-resolution porosity in carbonate rocks by applying high-salinity contrast brine using X-ray microtomography differential imaging. Advances in Water Resources, 2016, 96, 306-322.	3.8	92
92	Streamline-based simulation of solute transport. Water Resources Research, 1999, 35, 3061-3078.	4.2	91
93	Thermally Induced Wettability Alteration To Improve Oil Recovery in Fractured Reservoirs. SPE Reservoir Evaluation and Engineering, 2001, 4, 179-186.	1.8	90
94	Streamline-based simulation of carbon dioxide storage in a North Sea aquifer. Water Resources Research, 2006, 42, .	4.2	90
95	Capillary-Trapping Capacity of Sandstones and Sandpacks. SPE Journal, 2011, 16, 778-783.	3.1	90
96	Deep learning in pore scale imaging and modeling. Earth-Science Reviews, 2021, 215, 103555.	9.1	90
97	Network modeling of multiphase flow in fractures. Advances in Water Resources, 2001, 24, 409-421.	3.8	89
98	Three-dimensional mixed-wet random pore-scale network modeling of two- and three-phase flow in porous media. II. Results. Physical Review E, 2005, 71, 026302.	2.1	89
99	Experimental measurement of air-water interfacial area during gravity drainage and secondary imbibition in porous media. Water Resources Research, 2000, 36, 885-890.	4.2	87
100	Numerical Modelling of Sub-pore Scale Events in Two-Phase Flow Through Porous Media. Transport in Porous Media, 2014, 101, 191-213.	2.6	87
101	Imaging and Measurement of Poreâ€Scale Interfacial Curvature to Determine Capillary Pressure Simultaneously With Relative Permeability. Water Resources Research, 2018, 54, 7046-7060.	4.2	87
102	A Streamline-Based 3D Field-Scale Compositional Reservoir Simulator. , 1997, , .		86
103	Measurement of Nonwetting-Phase Trapping in Sandpacks. SPE Journal, 2010, 15, 274-281.	3.1	86
104	Wetting boundary condition for the color-gradient lattice Boltzmann method: Validation with analytical and experimental data. Advances in Water Resources, 2018, 116, 56-66.	3.8	84
105	Xâ€ray Microtomography of Intermittency in Multiphase Flow at Steady State Using a Differential Imaging Method. Water Resources Research, 2017, 53, 10274-10292.	4.2	83
106	Analytic Analysis for Oil Recovery During Counter-Current Imbibition in Strongly Water-Wet Systems. Transport in Porous Media, 2005, 58, 173-189.	2.6	82
107	Poreâ€scale simulation of carbonate dissolution in microâ€CT images. Journal of Geophysical Research: Solid Earth, 2016, 121, 558-576.	3.4	81
108	Pore-scale simulation of NMR response. Journal of Petroleum Science and Engineering, 2009, 67, 168-178.	4.2	80

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109	Pore-scale network modeling of Ellis and Herschelâ€“Bulkley fluids. Journal of Petroleum Science and Engineering, 2008, 60, 105-124.	4.2	77
110	A numerical model of two-phase flow at the micro-scale using the volume-of-fluid method. Journal of Computational Physics, 2018, 357, 159-182.	3.8	77
111	The Effect of Wettability on Three-Phase Relative Permeability. Transport in Porous Media, 2000, 39, 347-366.	2.6	76
112	Prediction of wettability variation and its impact on flow using pore- to reservoir-scale simulations. Journal of Petroleum Science and Engineering, 2003, 39, 231-246.	4.2	76
113	Streamline-based dual-porosity simulation of reactive transport and flow in fractured reservoirs. Water Resources Research, 2004, 40, .	4.2	76
114	Predictive Pore-Scale Modeling of Single and Multiphase Flow. Transport in Porous Media, 2005, 58, 23-41.	2.6	76
115	The Effect of Mixed Wettability on Poreâ€Scale Flow Regimes Based on a Flooding Experiment in Ketton Limestone. Geophysical Research Letters, 2019, 46, 3225-3234.	4.0	76
116	Network Modeling of Three-Phase Flow in Porous Media. SPE Journal, 1998, 3, 86-97.	3.1	75
117	Implicit flux limiting schemes for petroleum reservoir simulation. Journal of Computational Physics, 1992, 102, 194-210.	3.8	74
118	A fast method to equilibrate carbon dioxide with brine at high pressure and elevated temperature including solubility measurements. Journal of Supercritical Fluids, 2012, 62, 55-59.	3.2	73
119	Pore-Scale Modelling of Rate Effects in Waterflooding. Transport in Porous Media, 2010, 83, 151-169.	2.6	72
120	In situ characterization of immiscible three-phase flow at the pore scale for a water-wet carbonate rock. Advances in Water Resources, 2018, 121, 446-455.	3.8	72
121	Validation of model predictions of pore-scale fluid distributions during two-phase flow. Physical Review E, 2018, 97, 053104.	2.1	72
122	The impact of wettability and connectivity on relative permeability in carbonates: A pore network modeling analysis. Water Resources Research, 2012, 48, .	4.2	71
123	Residual CO₂ Trapping in Indiana Limestone. Environmental Science & Technology, 2013, 47, 227-233.	10.0	71
124	A thermodynamically consistent characterization of wettability in porous media using high-resolution imaging. Journal of Colloid and Interface Science, 2019, 552, 59-65.	9.4	69
125	Development of artificial neural network models for predicting water saturation and fluid distribution. Journal of Petroleum Science and Engineering, 2009, 68, 197-208.	4.2	68
126	A review of the phenomenon of counter-current spontaneous imbibition: Analysis and data interpretation. Journal of Petroleum Science and Engineering, 2019, 180, 456-470.	4.2	68

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127	Immiscible Displacements and Capillary Trapping in CO2 Storage. Energy Procedia, 2011, 4, 4969-4976.	1.8	67
128	Streamline Tracing on Curvilinear Structured and Unstructured Grids. SPE Journal, 2002, 7, 139-148.	3.1	66
129	Dynamic reservoir-condition microtomography of reactive transport in complex carbonates: Effect of initial pore structure and initial brine pH. Geochimica Et Cosmochimica Acta, 2017, 204, 267-285.	3.9	66
130	4D in situ synchrotron X-ray tomographic microscopy and laser-based heating study of oil shale pyrolysis. Applied Energy, 2019, 235, 1468-1475.	10.1	66
131	Artificial neural networks workflow and its application in the petroleum industry. Neural Computing and Applications, 2012, 21, 409-421.	5.6	65
132	The Role of Local Instabilities in Fluid Invasion into Permeable Media. Scientific Reports, 2017, 7, 444.	3.3	65
133	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.	1.8	64
134	Modeling Oil Recovery in Mixed-Wet Rocks: Pore-Scale Comparison Between Experiment and Simulation. Transport in Porous Media, 2019, 127, 393-414.	2.6	64
135	Pore-scale X-ray imaging with measurement of relative permeability, capillary pressure and oil recovery in a mixed-wet micro-porous carbonate reservoir rock. Fuel, 2020, 268, 117018.	6.4	64
136	Predictions of dynamic changes in reaction rates as a consequence of incomplete mixing using pore scale reactive transport modeling on images of porous media. Journal of Contaminant Hydrology, 2015, 179, 171-181.	3.3	63
137	Dynamic imaging of oil shale pyrolysis using synchrotron Xâ€ray microtomography. Geophysical Research Letters, 2016, 43, 6799-6807.	4.0	63
138	Analysis of counter-current imbibition with gravity in weakly water-wet systems. Journal of Petroleum Science and Engineering, 2005, 48, 94-104.	4.2	62
139	Multirate-Transfer Dual-Porosity Modeling of Gravity Drainage and Imbibition. SPE Journal, 2007, 12, 77-88.	3.1	62
140	Coupled generative adversarial and auto-encoder neural networks to reconstruct three-dimensional multi-scale porous media. Journal of Petroleum Science and Engineering, 2020, 186, 106794.	4.2	61
141	4D multi-scale imaging of reactive flow in carbonates: Assessing the impact of heterogeneity on dissolution regimes using streamlines at multiple length scales. Chemical Geology, 2018, 481, 27-37.	3.3	60
142	Analytical Solutions for Spontaneous Imbibition: Fractional-Flow Theory and Experimental Analysis. SPE Journal, 2016, 21, 2308-2316.	3.1	59
143	A generalized streamline method to predict reservoir flow. Petroleum Geoscience, 1996, 2, 259-269.	1.5	58
144	Changes in Pore Structure and Connectivity Induced by CO2 Injection in Carbonates: A Combined Pore-Scale Approach. Energy Procedia, 2013, 37, 5367-5378.	1.8	58

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145	Pore occupancy, relative permeability and flow intermittency measurements using X-ray micro-tomography in a complex carbonate. Advances in Water Resources, 2019, 129, 56-69.	3.8	58
146	Pore Scale Observations of Trapped CO₂ in Mixed-Wet Carbonate Rock: Applications to Storage in Oil Fields. Environmental Science & Technology, 2016, 50, 10282-10290.	10.0	57
147	Generalized network modeling of capillary-dominated two-phase flow. Physical Review E, 2018, 97, 023308.	2.1	57
148	The effect of wettability on capillary trapping in carbonates. Advances in Water Resources, 2016, 90, 36-50.	3.8	56
149	Nested gridding and streamline-based simulation for fast reservoir performance prediction. Annals of Software Engineering, 1999, 3, 295-320.	0.5	55
150	General Transfer Functions for Multiphase Flow in Fractured Reservoirs. SPE Journal, 2008, 13, 289-297.	3.1	55
151	Reaction Rates in Chemically Heterogeneous Rock: Coupled Impact of Structure and Flow Properties Studied by X-ray Microtomography. Environmental Science & Technology, 2017, 51, 4108-4116.	10.0	55
152	A Physically Based Model of Dissolution of Nonaqueous Phase Liquids in the Saturated Zone. Transport in Porous Media, 2000, 39, 227-255.	2.6	54
153	Role of geomechanically grown fractures on dispersive transport in heterogeneous geological formations. Physical Review E, 2011, 84, 056301.	2.1	53
154	An improved pore-network model including viscous coupling effects using direct simulation by the lattice Boltzmann method. Advances in Water Resources, 2017, 100, 26-34.	3.8	53
155	Measurements of non-wetting phase trapping applied to carbon dioxide storage. International Journal of Greenhouse Gas Control, 2010, 4, 283-288.	4.6	52
156	Reservoir-condition pore-scale imaging of dolomite reaction with supercritical CO 2 acidified brine: Effect of pore-structure on reaction rate using velocity distribution analysis. International Journal of Greenhouse Gas Control, 2018, 68, 99-111.	4.6	52
157	Efficient chemical equilibrium calculations for geochemical speciation and reactive transport modelling. Geochimica Et Cosmochimica Acta, 2014, 131, 301-322.	3.9	51
158	Pore-scale numerical simulation of low salinity water flooding using the lattice Boltzmann method. Journal of Colloid and Interface Science, 2020, 566, 444-453.	9.4	51
159	Effects of wettability and pore-level displacement on hydrocarbon trapping. Advances in Water Resources, 2008, 31, 503-512.	3.8	50
160	Pore-to-field simulation of single-phase transport using continuous time random walks. Advances in Water Resources, 2008, 31, 1527-1539.	3.8	50
161	Three-phase threshold capillary pressures in noncircular capillary tubes with different wettabilities including contact angle hysteresis. Physical Review E, 2004, 70, 061603.	2.1	49
162	Poreâ€Scale Dissolution by CO₂ Saturated Brine in a Multimineral Carbonate at Reservoir Conditions: Impact of Physical and Chemical Heterogeneity. Water Resources Research, 2019, 55, 3171-3193.	4.2	49

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163	Streamline-Based Dual Porosity Simulation of Fractured Reservoirs. , 2003, , .		48
164	Multiphase Flow Characteristics of Heterogeneous Rocks From <scp>CO</scp>₂ Storage Reservoirs in the United Kingdom. Water Resources Research, 2018, 54, 729-745.	4.2	48
165	Predictive Theory for Viscous Fingering in Compositional Displacement. SPE Reservoir Engineering, 1994, 9, 73-80.	0.5	47
166	Determination of Water-Oil Interfacial Area during 3-Phase Gravity Drainage in Porous Media. Journal of Colloid and Interface Science, 2000, 221, 308-312.	9.4	47
167	Anomalous transport in heterogeneous media demonstrated by streamline-based simulation. Geophysical Research Letters, 2003, 30, .	4.0	47
168	Comparison of deterministic with stochastic fracture models in water-flooding numerical simulations. AAPG Bulletin, 2009, 93, 1633-1648.	1.5	47
169	Analysis of Imbibition in Mixed-Wet Rocks Using Pore-Scale Modeling. SPE Journal, 2005, 10, 466-474.	3.1	46
170	Multiphase flow predictions from carbonate pore space images using extracted network models. Water Resources Research, 2008, 44, .	4.2	46
171	Simulation of multiphase flow in fractured reservoirs using a fracture-only model with transfer functions. Computational Geosciences, 2010, 14, 527-538.	2.4	46
172	Dynamics of enhanced gas trapping applied to CO2 storage in the presence of oil using synchrotron X-ray micro tomography. Applied Energy, 2020, 259, 114136.	10.1	46
173	Pore-scale dynamics and the multiphase Darcy law. Physical Review Fluids, 2020, 5, .	2.5	46
174	Field observations of a capillary fringe before and after a rainy season. Journal of Contaminant Hydrology, 2000, 44, 103-118.	3.3	44
175	Reactive transport modelling of geologic CO2 sequestration in saline aquifers: The influence of pure CO2 and of mixtures of CO2 with CH4 on the sealing capacity of cap rock at 37Â°C and 100bar. Chemical Geology, 2014, 367, 39-50.	3.3	43
176	On the Structure and Flow Processes in the Capillary Fringe of Phreatic Aquifers. Transport in Porous Media, 1997, 28, 159-180.	2.6	42
177	Predictive Pore-Scale Network Modeling. , 2003, , .		42
178	Streamline-Based Simulation of Non-Newtonian Polymer Flooding. SPE Journal, 2010, 15, 895-905.	3.1	42
179	Three-dimensional streamline-based simulation of non-isothermal two-phase flow in heterogeneous porous media. Computers and Fluids, 2014, 103, 116-131.	2.5	42
180	Interface control volume finite element method for modelling multi-phase fluid flow in highly heterogeneous and fractured reservoirs. Journal of Computational Physics, 2015, 298, 41-61.	3.8	42

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181	A Sensitivity Study of the Effect of Image Resolution on Predicted Petrophysical Properties. Transport in Porous Media, 2015, 110, 157-169.	2.6	40
182	How to predict viscous fingering in three component flow. Transport in Porous Media, 1993, 12, 207-236.	2.6	39
183	Comparison of streamline-based and grid-based dual porosity simulation. Journal of Petroleum Science and Engineering, 2004, 43, 129-137.	4.2	39
184	Numerical Simulation of Oil Recovery After Cross-Linked Polymer Flooding. Journal of Canadian Petroleum Technology, 2009, 48, 37-41.	2.3	39
185	Pore-scale network simulation of NMR response in two-phase flow. Journal of Petroleum Science and Engineering, 2010, 72, 1-9.	4.2	39
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