Matthew D Jackson

List of Publications by Year in descending order

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139 5,340 37 68
papers citations h-index g-index

141 141 141 3818

times ranked

citing authors

docs citations

all docs

#	Article	IF	CITATIONS
1	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
2	Zeta potential of artificial and natural calcite in aqueous solution. Advances in Colloid and Interface Science, 2017, 240, 60-76.	14.7	247
3	Chemical differentiation, cold storage and remobilization of magma in the Earth's crust. Nature, 2018, 564, 405-409.	27.8	211
4	Zeta potential in oil-water-carbonate systems and its impact on oil recovery during controlled salinity water-flooding. Scientific Reports, 2016, 6, 37363.	3.3	210
5	Melt Segregation in Deep Crustal Hot Zones: a Mechanism for Chemical Differentiation, Crustal Assimilation and the Formation of Evolved Magmas. Journal of Petrology, 2012, 53, 1999-2026.	2.8	191
6	Formation and dynamics of magma reservoirs. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2019, 377, 20180019.	3.4	184
7	Evidence, mechanisms and improved understanding of controlled salinity waterflooding part 1: Sandstones. Fuel, 2016, 185, 772-793.	6.4	157
8	Zeta potential of intact natural limestone: Impact of potential-determining ions Ca, Mg and SO4. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2016, 493, 83-98.	4.7	146
9	Magma Plumbing Systems: A Geophysical Perspective. Journal of Petrology, 2018, 59, 1217-1251.	2.8	134
10	Why aqueous alteration in asteroids was isochemical: High porosity ≠high permeability. Earth and Planetary Science Letters, 2009, 287, 559-568.	4.4	122
11	Architecture and dynamics of magma reservoirs. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2019, 377, 20180298.	3.4	116
12	Measurement of streaming potential coupling coefficient in sandstones saturated with natural and artificial brines at high salinity. Journal of Geophysical Research, 2010, 115, .	3.3	109
13	Measurement of streaming potential coupling coefficient in sandstones saturated with high salinity NaCl brine. Geophysical Research Letters, 2009, 36, .	4.0	105
14	Quantitative modeling of granitic melt generation and segregation in the continental crust. Journal of Geophysical Research, 2003, 108, .	3.3	90
15	Three-dimensional modeling of a shoreface-shelf parasequence reservoir analog: Part 1. Surface-based modeling to capture high-resolution facies architecture. AAPG Bulletin, 2009, 93, 1155-1181.	1.5	89
16	Multiphase electrokinetic coupling: Insights into the impact of fluid and charge distribution at the pore scale from a bundle of capillary tubes model. Journal of Geophysical Research, 2010, 115, .	3.3	80
17	Three-dimensional reservoir characterization and flow simulation of heterolithic tidal sandstones. AAPG Bulletin, 2005, 89, 507-528.	1.5	78
18	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

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19	Fluid flow monitoring in oil fields using downhole measurements of electrokinetic potential. Geophysics, 2008, 73, E165-E180.	2.6	7 5
20	Impact of wettability on laboratory measurements of streaming potential in carbonates. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2012, 393, 86-95.	4.7	72
21	Facies model of a fineâ€grained, tideâ€dominated delta: Lower Dir Abu Lifa Member (Eocene), Western Desert, Egypt. Sedimentology, 2013, 60, 1313-1356.	3.1	68
22	Three-dimensional modeling of a shoreface-shelf parasequence reservoir analog: Part 2. Geologic controls on fluid flow and hydrocarbon recovery. AAPG Bulletin, 2009, 93, 1183-1208.	1.5	66
23	Streaming-potential coefficient of reservoir rock: A theoretical model. Geophysics, 2012, 77, D17-D43.	2.6	65
24	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
25	Characterization of multiphase electrokinetic coupling using a bundle of capillary tubes model. Journal of Geophysical Research, 2008, 113, .	3.3	58
26	Evolution of major and trace element composition during melt migration through crystalline mush: Implications for chemical differentiation in the crust. Numerische Mathematik, 2014, 314, 895-939.	1.4	57
27	Multiphase streaming potential in sandstones saturated with gas/brine and oil/brine during drainage and imbibition. Geophysical Research Letters, 2011, 38, n/a-n/a.	4.0	54
28	Characterization of stratigraphic architecture and its impact on fluid flow in a fluvial-dominated deltaic reservoir analog: Upper Cretaceous Ferron Sandstone Member, Utah. AAPG Bulletin, 2011, 95, 693-727.	1.5	51
29	Zeta potential in intact natural sandstones at elevated temperatures. Geophysical Research Letters, 2015, 42, 6287-6294.	4.0	51
30	Upscaling Permeability Measurements Within Complex Heterolithic Tidal Sandstones. Mathematical Geosciences, 2003, 35, 499-520.	0.9	50
31	Bayesian Reservoir History Matching Considering Model and Parameter Uncertainties. Mathematical Geosciences, 2012, 44, 515-543.	2.4	47
32	A new numerical model of electrokinetic potential response during hydrocarbon recovery. Geophysical Research Letters, 2006, 33, .	4.0	46
33	Zeta potential in intact carbonates at reservoir conditions and its impact on oil recovery during controlled salinity waterflooding. Fuel, 2020, 266, 116927.	6.4	46
34	Temperature dependence of the zeta potential in intact natural carbonates. Geophysical Research Letters, 2016, 43, 11,578.	4.0	43
35	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
36	Zeta potential in sandpacks: Effect of temperature, electrolyte pH, ionic strength and divalent cations. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2018, 553, 259-271.	4.7	41

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37	Anisotropic Mesh Adaptivity and Control Volume Finite Element Methods for Numerical Simulation of Multiphase Flow in Porous Media. Mathematical Geosciences, 2015, 47, 417-440.	2.4	39
38	Prediction of Wettability Variation Within an Oil/Water Transition Zone and Its Impact on Production. SPE Journal, 2005, 10, 185-195.	3.1	36
39	Towards a coupled physical and chemical model for tonalite–trondhjemite–granodiorite magma formation. Lithos, 2005, 79, 43-60.	1.4	33
40	New criteria for the validity of steady-state upscaling. Transport in Porous Media, 2008, 71, 53-73.	2.6	33
41	Surface-Based Geological Reservoir Modelling Using Grid-Free NURBS Curves and Surfaces. Mathematical Geosciences, 2019, 51, 1-28.	2.4	33
42	Effect of Discontinuous Shales on Reservoir Performance During Horizontal Waterflooding. SPE Journal, 2000, 5, 446-455.	3.1	32
43	Borehole electrokinetics. The Leading Edge, 2010, 29, 724-728.	0.7	32
44	A comparative study of reservoir modeling techniques and their impact on predicted performance of fluvial-dominated deltaic reservoirs. AAPG Bulletin, 2014, 98, 729-763.	1.5	31
45	Elliptic Regions and Stable Solutions for Three-Phase flow in Porous Media. Transport in Porous Media, 2002, 48, 249-269.	2.6	30
46	Scaling analysis of the In-Situ Upgrading of heavy oil and oil shale. Fuel, 2017, 195, 299-313.	6.4	29
47	Viscous Crossflow in Layered Porous Media. Transport in Porous Media, 2017, 117, 281-309.	2.6	29
48	Generating High Mg-numbers and Chemical Diversity in Tonalite-Trondhjemite-Granodiorite (TTG) Magmas during Melting and Melt Segregation in the Continental Crust. Journal of Petrology, 2009, 50, 1935-1954.	2.8	27
49	Streaming potentials at hydrocarbon reservoir conditions. Geophysics, 2012, 77, E77-E90.	2.6	27
50	Three-dimensional modeling of clinoforms in shallow-marine reservoirs: Part 1. Concepts and application. AAPG Bulletin, 2015, 99, 1013-1047.	1.5	27
51	Remote Detection of Saline Intrusion in a Coastal Aquifer Using Borehole Measurements of Selfâ€Potential. Water Resources Research, 2018, 54, 1669-1687.	4.2	27
52	A discontinuous control volume finite element method for multi-phase flow in heterogeneous porous media. Journal of Computational Physics, 2018, 352, 602-614.	3.8	27
53	Self-potential anomalies induced by water injection into hydrocarbon reservoirs. Geophysics, 2011, 76, F283-F292.	2.6	26
54	Measurements of spontaneous potential in chalk with application to aquifer characterization in the southern UK. Quarterly Journal of Engineering Geology and Hydrogeology, 2012, 45, 457-471.	1.4	26

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55	A forceâ€balanced control volume finite element method for multiâ€phase porous media flow modelling. International Journal for Numerical Methods in Fluids, 2017, 83, 431-445.	1.6	26
56	Salinity dependence of the thermoelectric coupling coefficient in brineâ€saturated sandstones. Geophysical Research Letters, 2010, 37, .	4.0	25
57	Spontaneous Potentials in Hydrocarbon Reservoirs During Waterflooding: Application to Water-Front Monitoring. SPE Journal, 2012, 17, 53-69.	3.1	24
58	Multiphase flow simulation through porous media with explicitly resolved fractures. Geofluids, 2015, 15, 592-607.	0.7	24
59	Three-dimensional modeling of clinoforms in shallow-marine reservoirs: Part 2. Impact on fluid flow and hydrocarbon recovery in fluvial-dominated deltaic reservoirs. AAPG Bulletin, 2015, 99, 1049-1080.	1.5	24
60	Improving the robustness of the control volume finite element method with application to multiphase porous media flow. International Journal for Numerical Methods in Fluids, 2017, 85, 235-246.	1.6	24
61	Selfâ€Potential as a Predictor of Seawater Intrusion in Coastal Groundwater Boreholes. Water Resources Research, 2018, 54, 6055-6071.	4.2	24
62	Experimental measurements of the SP response to concentration and temperature gradients in sandstones with application to subsurface geophysical monitoring. Journal of Geophysical Research: Solid Earth, 2014, 119, 6855-6876.	3.4	23
63	Capillary Heterogeneity Trapping and Crossflow in Layered Porous Media. Transport in Porous Media, 2017, 120, 183-206.	2.6	23
64	On the Validity of the "Thin―and "Thick―Double-Layer Assumptions When Calculating Streaming Currents in Porous Media. International Journal of Geophysics, 2012, 2012, 1-12.	1.1	22
65	Surface-based reservoir modelling for flow simulation. Geological Society Special Publication, 2014, 387, 271-292.	1.3	22
66	Predicting the impact of sedimentological heterogeneity on gas–oil and water–oil displacements: fluvio-deltaic Pereriv Suite Reservoir, Azeri–Chirag–Gunashli Oilfield, South Caspian Basin. Petroleum Geoscience, 2011, 17, 143-163.	1.5	21
67	Reservoir Modeling for Flow Simulation Using Surfaces, Adaptive Unstructured Meshes and Control-Volume-Finite-Element Methods. , 2013, , .		19
68	Adaptive Mesh Optimization for Simulation of Immiscible Viscous Fingering. SPE Journal, 2016, 21, 2250-2259.	3.1	19
69	Closed-Loop Feedback Control for Production Optimization of Intelligent Wells Under Uncertainty. SPE Production and Operations, 2013, 28, 345-357.	0.6	18
70	A continuum model for the transport of heat, mass and momentum in a deformable, multicomponent mush, undergoing solid-liquid phase change. International Journal of Heat and Mass Transfer, 1998, 41, 1035-1048.	4.8	17
71	Prediction of wettability variation and its impact on waterflooding using pore-to reservoir-scale simulation., 2002,,.		17
72	Closed-Loop Feedback Control in Intelligent Wells: Application to a Heterogeneous, Thin Oil-Rim Reservoir in the North Sea. SPE Reservoir Evaluation and Engineering, 2015, 18, 69-83.	1.8	17

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73	Higher-order conservative interpolation between control-volume meshes: Application to advection and multiphase flow problems with dynamic mesh adaptivity. Journal of Computational Physics, 2016, 321, 512-531.	3.8	17
74	Outcrop studies of tidal sandstones for reservoir characterization (Lower Cretaceous vectis) Tj ETQq0 0 0 rgBT /010, 233-257.	Overlock 1 0.1	0 Tf 50 707 ⁻ 16
75	Improving the convergence behaviour of a fixedâ€pointâ€iteration solver for multiphase flow in porous media. International Journal for Numerical Methods in Fluids, 2017, 84, 466-476.	1.6	16
76	Interaction of stratigraphic and sedimentological heterogeneities with flow in carbonate ramp reservoirs: impact of fluid properties and production strategy. Petroleum Geoscience, 2014, 20, 7-26.	1.5	15
77	Effective flow properties heterolithic, cross-bedded tidal sandstones: Part 1. Surface-based modeling. AAPG Bulletin, 2016, 100, 697-721.	1.5	15
78	Role of the calcite-water interface in wettability alteration during low salinity waterflooding. Fuel, 2020, 276, 118097.	6.4	15
79	Validity of Steady-State Upscaling Techniques. SPE Reservoir Evaluation and Engineering, 2008, 11, 405-416.	1.8	14
80	Streaming potential during drainage and imbibition. Journal of Geophysical Research: Solid Earth, 2017, 122, 4413-4435.	3.4	14
81	Dynamic adaptive mesh optimisation for immiscible viscous fingering. Computational Geosciences, 2020, 24, 1221-1237.	2.4	14
82	Relationship Between Zeta Potential and Wettability in Porous Media: Insights From a Simple Bundle of Capillary Tubes Model. Journal of Colloid and Interface Science, 2022, 608, 605-621.	9.4	14
83	High-resolution stratigraphic architecture and lithological heterogeneity within marginal aeolian reservoir analogues. Sedimentology, 2010, 57, 1246.	3.1	13
84	Geometry, spatial arrangement and origin of carbonate grainâ€dominated, scourâ€fill and eventâ€bed deposits: Late Jurassic Jubaila Formation and Arabâ€Ð Member, Saudi Arabia. Sedimentology, 2018, 65, 1043-1066.	3.1	13
85	Effective flow properties heterolithic, cross-bedded tidal sandstones: Part 2. Flow simulation. AAPG Bulletin, 2016, 100, 723-742.	1.5	12
86	Tidal influence on selfâ€potential measurements. Journal of Geophysical Research: Solid Earth, 2016, 121, 8432-8452.	3.4	12
87	Anomalous Zeta Potential Trends in Natural Sandstones. Geophysical Research Letters, 2018, 45, 11,068.	4.0	12
88	Laboratory Measurements and Numerical Modeling of Streaming Potential for Downhole Monitoring in Intelligent Wells. SPE Journal, 2011, 16, 625-636.	3.1	11
89	Reactive transport modeling in heterogeneous porous media with dynamic mesh optimization. Computational Geosciences, 2021, 25, 357-372.	2.4	11
90	Impact of melt segregation on tonalite-trondhjemite-granodiorite (TTG) petrogenesis. Transactions of the Royal Society of Edinburgh: Earth Sciences, 2008, 97, 325-336.	0.7	10

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91	Modelling in-situ upgrading of heavy oil using operator splitting method. Computational Geosciences, 2016, 20, 581-594.	2.4	10
92	A Tracing Algorithm for Flow Diagnostics on Fully Unstructured Grids With Multipoint Flux Approximation. SPE Journal, 2017, 22, 1946-1962.	3.1	10
93	A Dynamic Mesh Approach for Simulation of Immiscible Viscous Fingering. , 2015, , .		9
94	Dynamic Mesh Adaptivity for Immiscible Viscous Fingering., 2017,,.		9
95	Geometry, distribution and fill of erosional scours in a heterolithic, distal lower shoreface sandstone reservoir analogue: Grassy Member, Blackhawk Formation, Book Cliffs, Utah, USA. Sedimentology, 2018, 65, 1731-1760.	3.1	9
96	A novel approach to optimising well trajectory in heterogeneous reservoirs based on the fast-marching method. Journal of Natural Gas Science and Engineering, 2021, 88, 103853.	4.4	9
97	Dynamic mesh optimisation for geothermal reservoir modelling. Geothermics, 2021, 94, 102089.	3.4	9
98	Machine learning acceleration for nonlinear solvers applied to multiphase porous media flow. Computer Methods in Applied Mechanics and Engineering, 2021, 384, 113989.	6.6	9
99	A Petroleum Engineering Educational Model Based on the Maureen Field UKCS. , 2000, , .		8
100	Impact of the Buoyancy–Viscous Force Balance on Two-Phase Flow in Layered Porous Media. Transport in Porous Media, 2018, 124, 263-287.	2.6	8
101	The shape and motion of gas bubbles in a liquid flowing through a thin annulus. Journal of Fluid Mechanics, 2018, 855, 1017-1039.	3.4	8
102	An efficient and robust method for parameterized nonintrusive reducedâ€order modeling. International Journal for Numerical Methods in Engineering, 2020, 121, 4674-4688.	2.8	8
103	Positive Zeta Potential in Sandstones Saturated With Natural Saline Brine. Geophysical Research Letters, 2021, 48, e2021GL094306.	4.0	8
104	Management of Water Breakthrough Using Intelligent Well Technology., 2001,,.		7
105	Characterizing the Selfâ€Potential Response to Concentration Gradients in Heterogeneous Subsurface Environments. Journal of Geophysical Research: Solid Earth, 2019, 124, 7918-7933.	3.4	7
106	Impact of truncation error and numerical scheme on the simulation of the early time growth of viscous fingering. International Journal for Numerical Methods in Fluids, 2019, 89, 1-15.	1.6	7
107	Is Cell-to-Cell Scale Variability Necessary in Reservoir Models?. Mathematical Geosciences, 2021, 53, 571-596.	2.4	7
108	Sketch-based interface and modelling of stratigraphy and structure in three dimensions. Journal of the Geological Society, 2021, 178, .	2.1	7

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109	Closed-loop Feedback Control for Production Optimization of Intelligent Wells under Uncertainty. , 2012, , .		6
110	A Double Control Volume Finite Element Method with Dynamic Unstructured Mesh Optimization. , 2017, , .		6
111	A robust mesh optimisation method for multiphase porous media flows. Computational Geosciences, 2018, 22, 1389-1401.	2.4	6
112	Numerical simulation of aquifer thermal energy storage using surface-based geologic modelling and dynamic mesh optimisation. Hydrogeology Journal, 2022, 30, 1179-1198.	2.1	6
113	Scaling heat and mass flow through porous media during pyrolysis. Heat and Mass Transfer, 2015, 51, 313-334.	2.1	5
114	Fast flow computation methods on unstructured tetrahedral meshes for rapid reservoir modelling. Computational Geosciences, 2020, 24, 641-661.	2.4	5
115	The life span and dynamics of immiscible viscous fingering in rectilinear displacements. Physics of Fluids, 2021, 33, .	4.0	5
116	Conditioning surface-based geological models to well data using artificial neural networks. Computational Geosciences, 0, , 1.	2.4	5
117	Summary of the AAPG–SPE–SEG Hedberg Research Conference on "Fundamental Controls on Flow in Carbonates― AAPG Bulletin, 2013, 97, 533-552.	1.5	4
118	Flow Diagnostics on Fully Unstructured Grids. , 2017, , .		4
119	Vanishing artificial diffusion as a mechanism to accelerate convergence for multiphase porous media flow. Computer Methods in Applied Mechanics and Engineering, 2020, 359, 112535.	6.6	4
120	Numerical modelling of self-potential in subsurface reservoirs. Computers and Geosciences, 2021, 146, 104656.	4.2	4
121	Real-Time Measurements of Spontaneous Potential for Inflow Monitoring in Intelligent Wells. , 2010, ,		3
122	Closed-loop Feedback Control in Intelligent Wells: Application to a Heterogeneous, Thin Oil-Rim Reservoir in the North Sea. , 2012, , .		3
123	Effects of erosional scours on reservoir properties of heterolithic, distal lower-shoreface sandstones. Petroleum Geoscience, 2019, 25, 235-248.	1.5	3
124	Non-Intrusive Reduced Order Modelling for Reconstruction of Saturation Distributions. , 2019, , .		3
125	Modelling saline intrusion using dynamic mesh optimization with parallel processing. Advances in Water Resources, 2022, , 104189.	3.8	3
126	Field Production Optimization Using Closed-Loop Direct Feedback Control of Intelligent Wells: Application to the Brugge Model. , 2013, , .		2

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127	Closed-Loop Feedback Control of Smart Wells for Production Optimization Using Downhole Measurements of Self-Potential. , 2014 , , .		2
128	Modelling and Optimizing Inflow Control Devices. , 2017, , .		2
129	Use of dimensionless scaling groups to interpret reservoir simulation results. Journal of Petroleum Science and Engineering, 2018, 163, 270-282.	4.2	2
130	Characterization of effective permeability in heterolithic, distal lower-shoreface sandstone reservoirs: Rannoch Formation, Brent Group, UK North Sea. Petroleum Geoscience, 2019, 25, 519-531.	1.5	2
131	Nonâ€ntrusive reduced order modeling: Geometrical framework, highâ€order models, and a priori analysis of applicability. International Journal for Numerical Methods in Engineering, 2021, 122, 2545-2565.	2.8	2
132	Optimization of Controlled Salinity Waterflooding in Carbonates. , 2016, , .		1
133	A Parallel Load-Balancing Reservoir Simulator with Dynamic Mesh Optimisation. , 2019, , .		1
134	Modelling the reservoir-to-tubing pressure drop imposed by multiple autonomous inflow control devices installed in a single completion joint in a horizontal well. Journal of Petroleum Science and Engineering, 2020, 189, 106991.	4.2	1
135	A comparative study of reservoir modeling techniques and their impact on predicted performance of fluvial-dominated deltaic reservoirs: Reply. AAPG Bulletin, 2018, 102, 1664-1667.	1.5	0
136	Reservoir Simulation Studies for Planning Monitoring Schemes for CO2 Storage. , 2021, , .		0
137	Surface-Based Reservoir Modelling. , 2011, , .		0
138	DYNAMIC UNSTRUCTURED MESH ADAPTIVITY FOR IMPROVED SIMULATION OF GEOTHERMALWATER EXTRACTION IN RESERVOIR-SCALE MODELS. , $2018,$, .		0
139	Surface-Based Reservoir Modelling: Automatic Assembly for Multiple Stochastic Realizations. , 2019, , .		0