Branko Bijeljic

List of Publications by Year in descending order

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138	10,191	54 h-index	98
papers	citations		g-index
139	139	139	4518
all docs	docs citations	times ranked	citing authors

#	Article	IF	CITATIONS
1	Pore-scale imaging and modelling. Advances in Water Resources, 2013, 51, 197-216.	1.7	1,407
2	Mixing, spreading and reaction in heterogeneous media: A brief review. Journal of Contaminant Hydrology, 2011, 120-121, 1-17.	1.6	407
3	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.	1.9	393
4	Computations of Absolute Permeability on Micro-CT Images. Mathematical Geosciences, 2013, 45, 103-125.	1.4	338
5	Pore-scale contact angle measurements at reservoir conditions using X-ray microtomography. Advances in Water Resources, 2014, 68, 24-31.	1.7	317
6	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.	1.7	254
7	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.	5.1	219
8	Generalized network modeling: Network extraction as a coarse-scale discretization of the void space of porous media. Physical Review E, 2017, 96, 013312.	0.8	213
9	Signature of Non-Fickian Solute Transport in Complex Heterogeneous Porous Media. Physical Review Letters, 2011, 107, 204502.	2.9	199
10	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
11	Pore-scale imaging of trapped supercritical carbon dioxide in sandstones and carbonates. International Journal of Greenhouse Gas Control, 2014, 22, 1-14.	2.3	191
12	Pore-scale modeling and continuous time random walk analysis of dispersion in porous media. Water Resources Research, 2006, 42, .	1.7	188
13	Pore-scale modeling of longitudinal dispersion. Water Resources Research, 2004, 40, .	1.7	166
14	The Imaging of Dynamic Multiphase Fluid Flow Using Synchrotron-Based X-ray Microtomography at Reservoir Conditions. Transport in Porous Media, 2015, 110, 1-24.	1,2	153
15	Dynamic Three-Dimensional Pore-Scale Imaging of Reaction in a Carbonate at Reservoir Conditions. Environmental Science & Envir	4.6	153
16	Automatic measurement of contact angle in pore-space images. Advances in Water Resources, 2017, 109, 158-169.	1.7	153
17	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.	3.3	153
18	In situ characterization of mixed-wettability in aÂreservoir rock at subsurface conditions. Scientific Reports, 2017, 7, 10753.	1.6	147

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19	Poreâ€scale imaging of geological carbon dioxide storage under in situ conditions. Geophysical Research Letters, 2013, 40, 3915-3918.	1.5	142
20	The impact of porous media heterogeneity on non-Darcy flow behaviour from pore-scale simulation. Advances in Water Resources, 2016, 95, 329-340.	1.7	137
21	Dynamics of snap-off and pore-filling events during two-phase fluid flow in permeable media. Scientific Reports, 2017, 7, 5192.	1.6	135
22	Poreâ€scale intermittent velocity structure underpinning anomalous transport through 3â€D porous media. Geophysical Research Letters, 2014, 41, 6184-6190.	1.5	131
23	Insights into nonâ€Fickian solute transport in carbonates. Water Resources Research, 2013, 49, 2714-2728.	1.7	126
24	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.	1.7	124
25	Microstructural imaging and characterization of oil shale before and after pyrolysis. Fuel, 2017, 197, 562-574.	3.4	123
26	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.	1.7	119
27	Reservoir condition imaging of reactive transport in heterogeneous carbonates using fast synchrotron tomography — Effect of initial pore structure and flow conditions. Chemical Geology, 2016, 428, 15-26.	1.4	114
28	Poreâ€scale modeling of transverse dispersion in porous media. Water Resources Research, 2007, 43, .	1.7	111
29	Minimal surfaces in porous media: Pore-scale imaging of multiphase flow in an altered-wettability Bentheimer sandstone. Physical Review E, 2019, 99, 063105.	0.8	98
30	Modelling capillary trapping using finite-volume simulation of two-phase flow directly on micro-CT images. Advances in Water Resources, 2015, 83, 102-110.	1.7	97
31	Simulation of Flow and Dispersion on Pore-Space Images. SPE Journal, 2012, 17, 1131-1141.	1.7	96
32	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.	1.7	92
33	Numerical Modelling of Sub-pore Scale Events in Two-Phase Flow Through Porous Media. Transport in Porous Media, 2014, 101, 191-213.	1.2	87
34	Imaging and Measurement of Poreâ€Scale Interfacial Curvature to Determine Capillary Pressure Simultaneously With Relative Permeability. Water Resources Research, 2018, 54, 7046-7060.	1.7	87
35	Measurement of Nonwetting-Phase Trapping in Sandpacks. SPE Journal, 2010, 15, 274-281.	1.7	86
36	Wetting boundary condition for the color-gradient lattice Boltzmann method: Validation with analytical and experimental data. Advances in Water Resources, 2018, 116, 56-66.	1.7	84

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37	Xâ€ray Microtomography of Intermittency in Multiphase Flow at Steady State Using a Differential Imaging Method. Water Resources Research, 2017, 53, 10274-10292.	1.7	83
38	Poreâ€scale simulation of carbonate dissolution in micro T images. Journal of Geophysical Research: Solid Earth, 2016, 121, 558-576.	1.4	81
39	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.	1.9	77
40	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.	1.7	72
41	Validation of model predictions of pore-scale fluid distributions during two-phase flow. Physical Review E, 2018, 97, 053104.	0.8	72
42	A thermodynamically consistent characterization of wettability in porous media using high-resolution imaging. Journal of Colloid and Interface Science, 2019, 552, 59-65.	5.0	69
43	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.	1.6	66
44	4D in situ synchrotron X-ray tomographic microscopy and laser-based heating study of oil shale pyrolysis. Applied Energy, 2019, 235, 1468-1475.	5.1	66
45	Modeling Oil Recovery in Mixed-Wet Rocks: Pore-Scale Comparison Between Experiment and Simulation. Transport in Porous Media, 2019, 127, 393-414.	1.2	64
46	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.	3.4	64
47	Enhanced gas recovery with CO2 sequestration: The effect of medium heterogeneity on the dispersion of supercritical CO2–CH4. International Journal of Greenhouse Gas Control, 2015, 39, 39-50.	2.3	63
48	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.	1.6	63
49	Dynamic imaging of oil shale pyrolysis using synchrotron Xâ€ray microtomography. Geophysical Research Letters, 2016, 43, 6799-6807.	1.5	63
50	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.	1.4	60
51	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
52	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.	1.7	58
53	Generalized network modeling of capillary-dominated two-phase flow. Physical Review E, 2018, 97, 023308.	0.8	57
54	Reaction Rates in Chemically Heterogeneous Rock: Coupled Impact of Structure and Flow Properties Studied by X-ray Microtomography. Environmental Science & Environmental Science & 2017, 51, 4108-4116.	4.6	55

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55	Measurements of non-wetting phase trapping applied to carbon dioxide storage. International Journal of Greenhouse Gas Control, 2010, 4, 283-288.	2.3	52
56	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.	2.3	52
57	Pore-scale numerical simulation of low salinity water flooding using the lattice Boltzmann method. Journal of Colloid and Interface Science, 2020, 566, 444-453.	5.0	51
58	Pore-to-field simulation of single-phase transport using continuous time random walks. Advances in Water Resources, 2008, 31, 1527-1539.	1.7	50
59	Poreâ€Scale Dissolution by CO ₂ Saturated Brine in a Multimineral Carbonate at Reservoir Conditions: Impact of Physical and Chemical Heterogeneity. Water Resources Research, 2019, 55, 3171-3193.	1.7	49
60	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.	5.1	46
61	Pore-scale dynamics and the multiphase Darcy law. Physical Review Fluids, 2020, 5, .	1.0	46
62	The impact of residual water on CH4-CO2 dispersion in consolidated rock cores. International Journal of Greenhouse Gas Control, 2016, 50, 100-111.	2.3	40
63	Dipping open aquifersâ€"The effect of top-surface topography and heterogeneity on CO2 storage efficiency. International Journal of Greenhouse Gas Control, 2013, 17, 318-331.	2.3	37
64	Pore-scale imaging with measurement of relative permeability and capillary pressure on the same reservoir sandstone sample under water-wet and mixed-wet conditions. Advances in Water Resources, 2020, 146, 103786.	1.7	37
65	Multicomponent mass transfer across water films during hydrocarbon gas injection. Chemical Engineering Science, 2003, 58, 2377-2388.	1.9	36
66	Non-Fickian transport in porous media with bimodal structural heterogeneity. Journal of Contaminant Hydrology, 2011, 120-121, 213-221.	1.6	36
67	Spatial Correlation of Contact Angle and Curvature in Poreâ€Space Images. Water Resources Research, 2018, 54, 6133-6152.	1.7	36
68	Validating the Generalized Pore Network Model Using Micro-CT Images of Two-Phase Flow. Transport in Porous Media, 2019, 130, 405-424.	1.2	36
69	A Rigorous Pore-to-Field-Scale Simulation Method for Single-Phase Flow Based on Continuous-Time Random Walks. SPE Journal, 2009, 14, 88-94.	1.7	33
70	Continuumâ€scale characterization of solute transport based on poreâ€scale velocity distributions. Geophysical Research Letters, 2015, 42, 7537-7545.	1.5	33
71	The Impact of Pore Structure Heterogeneity, Transport, and Reaction Conditions on Fluid–Fluid Reaction Rate Studied on Images of Pore Space. Transport in Porous Media, 2016, 115, 215-237.	1.2	33
72	Intermittent fluid connectivity during two-phase flow in a heterogeneous carbonate rock. Physical Review E, 2019, 100, 043103.	0.8	33

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73	Quantification of Nonlinear Multiphase Flow in Porous Media. Geophysical Research Letters, 2021, 48, e2020GL090477.	1.5	33
74	Observations of the impact of rock heterogeneity on solute spreading and mixing. Water Resources Research, 2017, 53, 4624-4642.	1.7	32
75	In situ pore-scale analysis of oil recovery during three-phase near-miscible CO2 injection in a water-wet carbonate rock. Advances in Water Resources, 2019, 134, 103432.	1.7	32
76	Pore-Scale Imaging and Analysis of Wettability Order, Trapping and Displacement in Three-Phase Flow in Porous Media with Various Wettabilities. Transport in Porous Media, 2021, 140, 59-84.	1.2	32
77	Time-of-Flight Distributions and Breakthrough Curves in Heterogeneous Porous Media Using a Pore-Scale Streamline Tracing Algorithm. Transport in Porous Media, 2015, 109, 317-336.	1.2	31
78	Pore-scale mechanisms of CO2 storage in oilfields. Scientific Reports, 2020, 10, 8534.	1.6	31
79	Pore-scale dispersion: Bridging the gap between microscopic pore structure and the emerging macroscopic transport behavior. Physical Review E, 2016, 94, 013107.	0.8	29
80	Visualization and quantification of capillary drainage in the pore space of laminated sandstone by a porous plate method using differential imaging Xâ€ray microtomography. Water Resources Research, 2017, 53, 7457-7468.	1.7	29
81	Poreâ€space structure and average dissolution rates: A simulation study. Water Resources Research, 2016, 52, 7198-7212.	1.7	28
82	Direct Numerical Simulation of Pore-Scale Trapping Events During Capillary-Dominated Two-Phase Flow in Porous Media. Transport in Porous Media, 2021, 138, 443-458.	1.2	28
83	Measurements of Non-Wetting Phase Trapping Applied to Carbon Dioxide Storage. Energy Procedia, 2009, 1, 3173-3180.	1.8	27
84	Pore-by-pore modeling, analysis, and prediction of two-phase flow in mixed-wet rocks. Physical Review E, 2020, 102, 023302.	0.8	27
85	Verifying Pore Network Models of Imbibition in Rocks Using Timeâ€Resolved Synchrotron Imaging. Water Resources Research, 2020, 56, e2019WR026587.	1.7	27
86	Pore-scale imaging of displacement patterns in an altered-wettability carbonate. Chemical Engineering Science, 2021, 235, 116464.	1.9	26
87	Dynamics of fluid displacement in mixed-wet porous media. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2020, 476, 20200040.	1.0	25
88	Pore-scale characterization of carbon dioxide storage at immiscible and near-miscible conditions in altered-wettability reservoir rocks. International Journal of Greenhouse Gas Control, 2021, 105, 103232.	2.3	25
89	Pore-scale imaging and analysis of low salinity waterflooding in a heterogeneous carbonate rock at reservoir conditions. Scientific Reports, 2021, 11, 15063.	1.6	25
90	Investigation of longitudinal and transverse dispersion in stable displacements with a high viscosity and density contrast between the fluids. Journal of Contaminant Hydrology, 2011, 120-121, 170-183.	1.6	24

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91	Quantification of Uncertainty and Best Practice in Computing Interfacial Curvature from Complex Pore Space Images. Materials, 2019, 12, 2138.	1.3	24
92	Dynamics of water injection in an oil-wet reservoir rock at subsurface conditions: Invasion patterns and pore-filling events. Physical Review E, 2020, 102, 023110.	0.8	23
93	Time-resolved synchrotron X-ray micro-tomography datasets of drainage and imbibition in carbonate rocks. Scientific Data, 2018, 5, 180265.	2.4	23
94	A study to investigate viscous coupling effects on the hydraulic conductance of fluid layers in two-phase flow at the pore level. Journal of Colloid and Interface Science, 2018, 522, 299-310.	5.0	22
95	Pore-scale imaging of asphaltene-induced pore clogging in carbonate rocks. Fuel, 2021, 283, 118871.	3.4	22
96	NONWETTING PHASE RESIDUAL SATURATION IN SAND PACKS. Journal of Porous Media, 2010, 13, 591-599.	1.0	22
97	Mechanisms controlling fluid breakup and reconnection during two-phase flow in porous media. Physical Review E, 2019, 100, 043115.	0.8	19
98	Using energy balance to determine pore-scale wettability. Journal of Colloid and Interface Science, 2020, 576, 486-495.	5.0	19
99	Observations of 3-D transverse dispersion and dilution in natural consolidated rock by X-ray tomography. Advances in Water Resources, 2016, 96, 266-281.	1.7	17
100	In Situ Characterization of Threeâ€Phase Flow in Mixedâ€Wet Porous Media Using Synchrotron Imaging. Water Resources Research, 2020, 56, e2020WR027873.	1.7	17
101	Evaluation of methods using topology and integral geometry to assess wettability. Journal of Colloid and Interface Science, 2020, 576, 99-108.	5.0	17
102	Determination of contact angles for three-phase flow in porous media using an energy balance. Journal of Colloid and Interface Science, 2021, 582, 283-290.	5.0	16
103	Modelling of multispecies reactive transport on pore-space images. Advances in Water Resources, 2019, 127, 192-208.	1.7	15
104	An Experimental Study of Three-Phase Trapping in Sand Packs. Transport in Porous Media, 2014, 103, 421-436.	1.2	14
105	Pore-by-Pore Modelling, Validation and Prediction of Waterflooding in Oil-Wet Rocks Using Dynamic Synchrotron Data. Transport in Porous Media, 2021, 138, 285-308.	1.2	14
106	Dynamic fluid configurations in steady-state two-phase flow in Bentheimer sandstone. Physical Review E, 2021, 103, 013110.	0.8	13
107	Minimal Surfaces in Porous Materials: X-Ray Image-Based Measurement of the Contact Angle and Curvature in Gas Diffusion Layers to Design Optimal Performance of Fuel Cells. ACS Applied Energy Materials, 2022, 5, 4613-4621.	2.5	13
108	Dynamic Pore-scale Imaging of Reactive Transport in Heterogeneous Carbonates at Reservoir Conditions. Energy Procedia, 2014, 63, 5503-5511.	1.8	12

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109	Statistical Scaling of Geometric Characteristics in Millimeter Scale Natural Porous Media. Transport in Porous Media, 2014, 101, 465-475.	1.2	12
110	Reservoir Condition Pore-scale Imaging of Multiple Fluid Phases Using X-ray Microtomography. Journal of Visualized Experiments, $2015, , .$	0.2	12
111	Optimization of image quality and acquisition time for lab-based X-ray microtomography using an iterative reconstruction algorithm. Advances in Water Resources, 2018, 115, 112-124.	1.7	12
112	Mechanisms of Microscopic Displacement During Enhanced Oil Recovery in Mixed-Wet Rocks Revealed Using Direct Numerical Simulation. Transport in Porous Media, 2019, 130, 731-749.	1.2	12
113	Disconnected Gas Transport in Steadyâ€6tate Threeâ€Phase Flow. Water Resources Research, 2021, 57, e2021WR031147.	1.7	11
114	Three-phase flow displacement dynamics and Haines jumps in a hydrophobic porous medium. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2020, 476, 20200671.	1.0	10
115	Slow flow across macroscopically semi-circular fibre lattices and a free-flow region of variable widthâ€"visualisation by magnetic resonance imaging. Chemical Engineering Science, 2004, 59, 2089-2103.	1.9	9
116	Modelling and upscaling of transport in carbonates during dissolution: Validation and calibration with NMR experiments. Journal of Contaminant Hydrology, 2018, 212, 85-95.	1.6	9
117	A New Waterflood Initialization Protocol With Wettability Alteration for Pore-Scale Multiphase Flow Experiments. Petrophysics, 2019, 60, 264-272.	0.2	9
118	Nonlinear multiphase flow in hydrophobic porous media. Journal of Fluid Mechanics, 2022, 934, .	1.4	9
119	Pore-scale imaging of asphaltene deposition with permeability reduction and wettability alteration. Fuel, 2022, 316, 123202.	3.4	9
120	Simulation of Flow and Dispersion on Pore-Space Images. , 2010, , .		8
121	Evolution and persistence of cross-directional statistical dependence during finite-Péclet transport through a real porous medium. Water Resources Research, 2016, 52, 8920-8937.	1.7	8
122	Pore-scale Imaging and Characterization of Hydrocarbon Reservoir Rock Wettability at Subsurface Conditions Using X-ray Microtomography. Journal of Visualized Experiments, 2018, , .	0.2	8
123	Drainage Capillary Pressure Distribution and Fluid Displacement in a Heterogeneous Laminated Sandstone. Geophysical Research Letters, 2021, 48, e2021GL093604.	1.5	7
124	Generalized network modelling of two-phase flow in a water-wet and mixed-wet reservoir sandstone: Uncertainty and validation with experimental data. Advances in Water Resources, 2022, 164, 104194.	1.7	6
125	Pore-scale processes in tertiary low salinity waterflooding in a carbonate rock: Micro-dispersions, water film growth, and wettability change. Journal of Colloid and Interface Science, 2022, 628, 486-498.	5.0	6
126	Trajectories as Training Images to Simulate Advectiveâ€Diffusive, Nonâ€Fickian Transport. Water Resources Research, 2019, 55, 3465-3480.	1.7	5

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127	Multispecies Reactive Transport in a Microporous Rock: Impact of Flow Heterogeneity and Reversibility of Reaction. Water Resources Research, 2020, 56, e2020WR027317.	1.7	5
128	A continuous time random walk method to predict dissolution in porous media based on validation of experimental NMR data. Advances in Water Resources, 2021, 149, 103847.	1.7	5
129	Three-Phase Flow Visualization and Characterization for a Mixed-Wet Carbonate Rock., 2018,,.		4
130	Reservoir Condition Pore Scale Imaging of the Capillary Trapping of CO2. Energy Procedia, 2014, 63, 5427-5434.	1.8	3
131	Dynamic Pore-scale Reservoir-condition Imaging of Reaction in Carbonates Using Synchrotron Fast Tomography. Journal of Visualized Experiments, 2017, , .	0.2	3
132	In situ Wettability Measurement in a Carbonate Reservoir Rock at High Temperature and Pressure. , 2017, , .		3
133	A Rigorous Pore-to-Field-Scale Simulation Methodology for Single-Phase Flow Based on Continuous Time Random Walks. , 2007, , .		2
134	iSCAL for Complete Rock Characterization: Using Pore-Scale Imaging to Determine Relative Permeability and Capillary Pressure. , 2019, , .		2
135	Wettability Characterization from Pore-Scale Images Using Topology and Energy Balance with Implications for Recovery and Storage. , 2021, , .		2
136	Local Capillary Pressure Estimation Based on Curvature of the Fluid Interface – Validation with Two-Phase Direct Numerical Simulations. E3S Web of Conferences, 2020, 146, 04003.	0.2	1
137	Direct Multiphase Numerical Simulation on Mixed-Wet Reservoir Carbonates. , 2018, , .		0
138	Editorial. Journal of Contaminant Hydrology, 2018, 212, 1-2.	1.6	0