

Dorthe Wildenschild

List of Publications by Year in descending order

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Version: 2024-02-01

69
papers

5,441
citations

101384

36
h-index

118652

62
g-index

70
all docs

70
docs citations

70
times ranked

3887
citing authors

#	ARTICLE	IF	CITATIONS
1	X-ray imaging and analysis techniques for quantifying pore-scale structure and processes in subsurface porous medium systems. <i>Advances in Water Resources</i> , 2013, 51, 217-246.	1.7	939
2	Image processing of multiphase images obtained via X-ray microtomography: A review. <i>Water Resources Research</i> , 2014, 50, 3615-3639.	1.7	472
3	Using X-ray computed tomography in hydrology: systems, resolutions, and limitations. <i>Journal of Hydrology</i> , 2002, 267, 285-297.	2.3	450
4	Interfacial area measurements for unsaturated flow through a porous medium. <i>Water Resources Research</i> , 2004, 40, .	1.7	187
5	Lattice-Boltzmann simulations of the capillary pressure-saturation-interfacial area relationship for porous media. <i>Advances in Water Resources</i> , 2009, 32, 1632-1640.	1.7	187
6	Effect of fluid topology on residual nonwetting phase trapping: Implications for geologic CO ₂ sequestration. <i>Advances in Water Resources</i> , 2013, 62, 47-58.	1.7	185
7	Pore-scale characteristics of multiphase flow in porous media: A comparison of air-water and oil-water experiments. <i>Advances in Water Resources</i> , 2006, 29, 227-238.	1.7	171
8	Linking pore-scale interfacial curvature to column-scale capillary pressure. <i>Advances in Water Resources</i> , 2012, 46, 55-62.	1.7	169
9	Flow Rate Dependence of Soil Hydraulic Characteristics. <i>Soil Science Society of America Journal</i> , 2001, 65, 35-48.	1.2	156
10	Pore-scale displacement mechanisms as a source of hysteresis for two-phase flow in porous media. <i>Water Resources Research</i> , 2016, 52, 2194-2205.	1.7	145
11	Linking air and water transport in intact soils to macropore characteristics inferred from X-ray computed tomography. <i>Geoderma</i> , 2015, 237-238, 9-20.	2.3	140
12	Quantitative Analysis of Flow Processes in a Sand Using Synchrotron-Based X-ray Microtomography. <i>Vadose Zone Journal</i> , 2005, 4, 112-126.	1.3	117
13	Measurement and prediction of the relationship between capillary pressure, saturation, and interfacial area in a NAPL-water-glass bead system. <i>Water Resources Research</i> , 2010, 46, .	1.7	114
14	Comparison of pressure-saturation characteristics derived from computed tomography and lattice Boltzmann simulations. <i>Water Resources Research</i> , 2007, 43, .	1.7	112
15	Network model investigation of interfacial area, capillary pressure and saturation relationships in granular porous media. <i>Water Resources Research</i> , 2010, 46, .	1.7	105
16	Efficiently engineering pore-scale processes: The role of force dominance and topology during nonwetting phase trapping in porous media. <i>Advances in Water Resources</i> , 2015, 79, 91-102.	1.7	84
17	Impact of long-term fertilization practice on soil structure evolution. <i>Geoderma</i> , 2014, 217-218, 181-189.	2.3	83
18	Image analysis algorithms for estimating porous media multiphase flow variables from computed microtomography data: a validation study. <i>Computational Geosciences</i> , 2010, 14, 15-30.	1.2	82

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19	Trapping and hysteresis in two-phase flow in porous media: A pore-network study. <i>Water Resources Research</i> , 2013, 49, 4244-4256.	1.7	77
20	Imaging biofilm in porous media using X-ray computed microtomography. <i>Journal of Microscopy</i> , 2011, 242, 15-25.	0.8	72
21	Biofilm growth in porous media: Experiments, computational modeling at the porescale, and upscaling. <i>Advances in Water Resources</i> , 2016, 95, 288-301.	1.7	72
22	Revealing Soil Structure and Functional Macroporosity along a Clay Gradient Using X-ray Computed Tomography. <i>Soil Science Society of America Journal</i> , 2013, 77, 403-411.	1.2	71
23	Imaging biofilm architecture within porous media using synchrotron-based X-ray computed microtomography. <i>Water Resources Research</i> , 2011, 47, .	1.7	68
24	Exploring capillary trapping efficiency as a function of interfacial tension, viscosity, and flow rate. <i>Energy Procedia</i> , 2011, 4, 4945-4952.	1.8	67
25	Laboratory investigations of effective flow behavior in unsaturated heterogeneous sands. <i>Water Resources Research</i> , 1999, 35, 17-27.	1.7	65
26	A Laboratory Analysis of the Effect of Macropores on Solute Transport. <i>Ground Water</i> , 1994, 32, 381-389.	0.7	58
27	On the relationship between microstructure and electrical and hydraulic properties of sand-clay mixtures. <i>Geophysical Research Letters</i> , 2000, 27, 3085-3088.	1.5	57
28	Enhancing residual trapping of supercritical CO ₂ via cyclic injections. <i>Geophysical Research Letters</i> , 2016, 43, 9677-9685.	1.5	57
29	Investigating the pore-scale mechanisms of microbial enhanced oil recovery. <i>Journal of Petroleum Science and Engineering</i> , 2012, 94-95, 155-164.	2.1	55
30	Impact of wettability alteration on 3D nonwetting phase trapping and transport. <i>International Journal of Greenhouse Gas Control</i> , 2016, 46, 175-186.	2.3	54
31	Time scales of relaxation dynamics during transient conditions in two-phase flow. <i>Water Resources Research</i> , 2017, 53, 4709-4724.	1.7	50
32	A Two-Stage Procedure for Determining Unsaturated Hydraulic Characteristics using a Syringe Pump and Outflow Observations. <i>Soil Science Society of America Journal</i> , 1997, 61, 347-359.	1.2	49
33	Characterization of wetting using topological principles. <i>Journal of Colloid and Interface Science</i> , 2020, 578, 106-115.	5.0	45
34	Numerical modeling of observed effective flow behavior in unsaturated heterogeneous sands. <i>Water Resources Research</i> , 1999, 35, 29-42.	1.7	43
35	Pore-scale observations of supercritical CO ₂ drainage in Bentheimer sandstone by synchrotron x-ray imaging. <i>International Journal of Greenhouse Gas Control</i> , 2014, 25, 93-101.	2.3	42
36	On the challenges of measuring interfacial characteristics of three-phase fluid flow with x-ray microtomography. <i>Journal of Microscopy</i> , 2014, 253, 171-182.	0.8	38

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37	Microbial Enhanced Oil Recovery in Fractional-Wet Systems: A Pore-Scale Investigation. <i>Transport in Porous Media</i> , 2012, 92, 819-835.	1.2	37
38	Three-Dimensional Multiphase Segmentation of X-Ray CT Data of Porous Materials Using a Bayesian Markov Random Field Framework. <i>Vadose Zone Journal</i> , 2012, 11, .	1.3	36
39	X-ray CT and Laboratory Measurements on Glacial Till Subsoil Cores. <i>Soil Science</i> , 2013, 178, 359-368.	0.9	35
40	X-ray microtomography analysis of lime application effects on soil porous system. <i>Geoderma</i> , 2018, 324, 119-130.	2.3	34
41	The effect of pore morphology on microbial enhanced oil recovery. <i>Journal of Petroleum Science and Engineering</i> , 2015, 130, 16-25.	2.1	33
42	An improved method for estimating capillary pressure from 3D microtomography images and its application to the study of disconnected nonwetting phase. <i>Advances in Water Resources</i> , 2018, 114, 249-260.	1.7	33
43	Lime application effects on soil aggregate properties: Use of the mean weight diameter and synchrotron-based X-ray μ CT techniques. <i>Geoderma</i> , 2019, 338, 585-596.	2.3	33
44	Experimental characterization of nonwetting phase trapping and implications for geologic CO ₂ sequestration. <i>International Journal of Greenhouse Gas Control</i> , 2015, 42, 1-15.	2.3	32
45	Defining a novel pore-body to pore-throat "Morphological Aspect Ratio" that scales with residual non-wetting phase capillary trapping in porous media. <i>Advances in Water Resources</i> , 2018, 122, 251-262.	1.7	27
46	Soil Water Retention Measurements Using a Combined Tensiometer-Coiled Time Domain Reflectometry Probe. <i>Soil Science Society of America Journal</i> , 2002, 66, 1752-1759.	1.2	25
47	Electrolyte Management for Effective Long-Term Electro-Osmotic Transport in Low-Permeability Soils. <i>Environmental Science & Technology</i> , 2003, 37, 3024-3030.	4.6	25
48	Correlating Gas Transport Parameters and X-Ray Computed Tomography Measurements in Porous Media. <i>Soil Science</i> , 2013, 178, 60-68.	0.9	23
49	Investigating the influence of flow rate on biofilm growth in three dimensions using microimaging. <i>Advances in Water Resources</i> , 2018, 117, 1-13.	1.7	16
50	Application of x-ray microtomography to environmental fluid flow problems. , 2004, , .		15
51	Exploring the effect of flow condition on the constitutive relationships for two-phase flow. <i>Advances in Water Resources</i> , 2020, 137, 103506.	1.7	15
52	Quantification of synthesized hydration products using synchrotron microtomography and spectral analysis. <i>Construction and Building Materials</i> , 2017, 157, 476-488.	3.2	9
53	On the relationship between capillary pressure, saturation, and interfacial area for three-phase flow in water-wet porous media. <i>Advances in Water Resources</i> , 2021, 151, 103905.	1.7	8
54	Experimental Tests of Enhancement of Vapor Diffusion in Topopah Spring Tuff. <i>Journal of Porous Media</i> , 2001, 4, 13.	1.0	8

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55	Soil Architecture and Physicochemical Functions: An Introduction. <i>Vadose Zone Journal</i> , 2012, 11, .	1.3	7
56	Use of iodine for improving phase quantification using x-ray tomography. <i>Cement and Concrete Research</i> , 2019, 116, 102-112.	4.6	7
57	Optimizing beam fast X-ray microtomography for multiphase flow in 3D porous media. <i>Journal of Microscopy</i> , 2020, 277, 100-106.	0.8	7
58	Compressional and shear wave velocities for artificial granular media under simulated near surface conditions. , 2001, , .		6
59	Flow Processes in the Dry Regime: The Effect on Capillary Barrier Performance. <i>Vadose Zone Journal</i> , 2011, 10, 1173-1184.	1.3	6
60	Comparison of thresholding techniques for quantifying portland cement hydrates using synchrotron microtomography. <i>Construction and Building Materials</i> , 2021, 266, 121109.	3.2	6
61	Electrical Properties of Sand-Clay Mixtures Containing Trichloroethylene and Ethanol. <i>Journal of Environmental and Engineering Geophysics</i> , 2004, 9, 1-10.	1.0	5
62	Contact angle hysteresis: A new paradigm?. <i>Advances in Water Resources</i> , 2022, 161, 104138.	1.7	5
63	Using Synchrotron-Based X-Ray Microtomography and Functional Contrast Agents in Environmental Applications. <i>SSSA Special Publication Series</i> , 0, , 1-22.	0.2	3
64	A proximity-based image processing algorithm for colloid assignment in segmented multiphase flow datasets. <i>Journal of Microscopy</i> , 2020, 277, 118-129.	0.8	3
65	Comparing Geophysical Measurements to Theoretical Estimates for Soil Mixtures at Low Pressures. , 1999, , .		2
66	Decoupling the Mechanisms of Microbial Enhanced Oil Recovery. , 2011, , .		1
67	Predicting the Effect of Relaxation on Interfacial Area Development in Multiphase Flow. <i>Water Resources Research</i> , 2021, 57, e2020WR028770.	1.7	1
68	Linear and Nonlinear Ultrasonic Properties of Granular Soils. <i>Materials Research Society Symposia Proceedings</i> , 2000, 627, 1.	0.1	0
69	Influence Of Microstructural Properties On Geophysical Measurements In Sand-Clay Mixtures. , 1999, , .		0