Brian D Wood

List of Publications by Year
in descending order

80 papers	2,962 citations	136950 32 h-index	175258 52 g-index
85 all docs	85 docs citations	85 times ranked	2364 citing authors

#	Article	IF	Citations
1	Explicit physics-informed neural networks for nonlinear closure: The case of transport in tissues. Journal of Computational Physics, 2022, 449, 110781.	3.8	5
2	Editorial: Recent developments in upscaling and characterization of flow and transport in porous media. Advances in Water Resources, 2021, 150, 103886.	3.8	6
3	Increasing the performance of an anion-exchange membrane electrolyzer operating in pure water with a nickel-based microporous layer. Joule, 2021, 5, 1776-1799.	24.0	85
4	Transport of chemotactic bacteria in granular media with randomly distributed chemoattractant-containing NAPL ganglia: Modeling and simulation. Advances in Water Resources, 2021, , 104065.	3.8	3
5	Modeling Turbulent Flows in Porous Media. Annual Review of Fluid Mechanics, 2020, 52, 171-203.	25.0	75
6	A primer on information processing in upscaling. Advances in Water Resources, 2020, 146, 103760.	3.8	3
7	Preasymptotic Taylor dispersion: evolution from the initial condition. Journal of Fluid Mechanics, 2020, 889, .	3.4	21
8	Characteristics of turbulence in a face-centred cubic porous unit cell. Journal of Fluid Mechanics, 2019, 873, 608-645.	3.4	19
9	Theory and Applications of Macroscale Models in Porous Media. Transport in Porous Media, 2019, 130, 5-76.	2.6	58
10	A hierarchy of models for simulating experimental results from a 3D heterogeneous porous medium. Advances in Water Resources, 2018, 114, 149-163.	3.8	6
11	A Priori Parameter Estimation for the Thermodynamically Constrained Averaging Theory: Species Transport in a Saturated Porous Medium. Transport in Porous Media, 2018, 122, 611-632.	2.6	9
12	A multiscale model for carbon adsorption of BTX compounds: Comparison of volume averaging theory and experimental measurements. Chemical Engineering Science, 2018, 184, 285-308.	3.8	18
13	Investigating the influence of flow rate on biofilm growth in three dimensions using microimaging. Advances in Water Resources, 2018, 117, 1-13.	3.8	16
14	A Pedagogical Approach to the Thermodynamically Constrained Averaging Theory. Transport in Porous Media, 2017, 119, 585-609.	2.6	8
15	Modeling Transport of Chemotactic Bacteria in Granular Media with Distributed Contaminant Sources. Environmental Science & Technology, 2017, 51, 14192-14198.	10.0	11
16	A non-scale-invariant form for coarse-grained diffusion-reaction equations. Journal of Chemical Physics, 2016, 145, 114105.	3.0	6
17	Multiscale Model Describing Bacterial Adhesion and Detachment. Langmuir, 2016, 32, 5213-5222.	3.5	19
18	Kinetic parameter estimation in <i>N. europaea</i> biofilms using a 2â€Ð reactive transport model. Biotechnology and Bioengineering, 2015, 112, 1122-1131.	3.3	2

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19	Upscaling Diffusion and Nonlinear Reactive Mass Transport in Homogeneous Porous Media. Transport in Porous Media, 2015, 107, 683-716.	2.6	30
20	A comparison of measured and modeled velocity fields for a laminar flow in a porous medium. Advances in Water Resources, 2015, 85, 45-63.	3.8	36
21	An Analysis Platform for Multiscale Hydrogeologic Modeling with Emphasis on Hybrid Multiscale Methods. Ground Water, 2015, 53, 38-56.	1.3	62
22	Experimental Versus Computational Methods in the Study of Flow in Porous Media. , 2014, , .		0
23	Skew Disperson and Continuity of Local Time. Journal of Statistical Physics, 2014, 156, 384-394.	1.2	3
24	Technical note: Revisiting the geometric theorems for volume averaging. Advances in Water Resources, 2013, 62, 340-352.	3.8	21
25	Editorial: A tribute to Stephen Whitaker. Advances in Water Resources, 2013, 62, 173-177.	3.8	3
26	Flow and axial dispersion in a sinusoidal-walled tube: Effects of inertial and unsteady flows. Advances in Water Resources, 2013, 62, 215-226.	3.8	18
27	Homogenization via formal multiscale asymptotics and volume averaging: How do the two techniques compare?. Advances in Water Resources, 2013, 62, 178-206.	3.8	123
28	Volume averaging: Local and nonlocal closures using a Greenâ€™s function approach. Advances in Water Resources, 2013, 51, 139-167.	3.8	56
29	Correspondence Between One- and Two-Equation Models for Solute Transport in Two-Region Heterogeneous Porous Media. Transport in Porous Media, 2012, 95, 213-238.	2.6	24
30	Characteristics of Porescale Vortical Structures in Random and Arranged Packed Beds of Spheres. , 2012, , .		5
31	Imaging biofilm architecture within porous media using synchrotronâ€based Xâ€ray computed microtomography. Water Resources Research, 2011, 47, .	4.2	68
32	Multiscale modeling of chemotaxis in homogeneous porous media. Water Resources Research, 2011, 47, .	4.2	8
33	Dispersive transport in porous media with biofilms: local mass equilibrium in simple unit cells. International Journal of Environment and Waste Management, 2011, 7, 24.	0.3	10
34	Corrections: Occupation and local times for skew Brownian motion with applications to dispersion across an interface. Annals of Applied Probability, 2011, 21, .	1.3	5
35	The Role of Tortuosity in Upscaling. Transport in Porous Media, 2011, 88, 1-30.	2.6	36
36	Comparison of theory and experiment for solute transport in weakly heterogeneous bimodal porous media. Advances in Water Resources, 2011, 34, 899-914.	3.8	16

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37	Occupation and local times for skew Brownian motion with applications to dispersion across an interface. Annals of Applied Probability, 2011, 21, .	1.3	60
38	Implications of Growth and Starvation Conditions in Bacterial Adhesion and Transport. Journal of Adhesion Science and Technology, 2011, 25, 2281-2297.	2.6	8
39	Application of Salting-Out Agent to Enhance the Hydrophobicity of Weakly Hydrophobic Bacterial Strains. Journal of Adhesion Science and Technology, 2011, 25, 2169-2182.	2.6	5
40	Modeling non-equilibrium mass transport in biologically reactive porous media. Advances in Water Resources, 2010, 33, 1075-1093.	3.8	32
41	Reply to comment by Philippe Baveye onâ€œThe role of scaling laws in upscalingâ€ Advances in Water Resources, 2010, 33, 125-127.	3.8	4
42	Comparison of theory and experiments for dispersion in homogeneous porous media. Advances in Water Resources, 2010, 33, 1043-1052.	3.8	19
43	Bacterial Chemotaxis in Porous Media: Theory Derivation and Comparison with Experiments. , 2010, , .		1
44	Solute transport across an interface: A Fickian theory for skewness in breakthrough curves. Water Resources Research, 2010, 46, .	4.2	30
45	The role of scaling laws in upscaling. Advances in Water Resources, 2009, 32, 723-736.	3.8	93
46	Biofilms in porous media: Development of macroscopic transport equations via volume averaging with closure for local mass equilibrium conditions. Advances in Water Resources, 2009, 32, 463-485.	3.8	65
47	Upscaling microbial chemotaxis in porous media. Advances in Water Resources, 2009, 32, 1413-1428.	3.8	40
48	Metabolic uncoupling of <i>Shewanella oneidensis</i> MRâ€1, under the influence of excess substrate and 3, 3â€², 4â€², 5â€tetrachlorosalicylanilide (TCS). Biotechnology and Bioengineering, 2008, 99, 1352-1360.	3.3	23
49	Mass transfer process in a twoâ€region medium. Water Resources Research, 2008, 44, .	4.2	20
50	A note on the theoretical foundations of particle tracking methods in heterogeneous porous media. Water Resources Research, 2008, 44, .	4.2	32
51	A smoothed particle hydrodynamics model for reactive transport and mineral precipitation in porous and fractured porous media. Water Resources Research, 2007, 43, .	4.2	128
52	Inertial effects in dispersion in porous media. Water Resources Research, 2007, 43, .	4.2	49
53	Effective reaction at a fluidâ€“solid interface: Applications to biotransformation in porous media. Advances in Water Resources, 2007, 30, 1630-1647.	3.8	62
54	Comparison of theory and experiment for solute transport in highly heterogeneous porous medium. Advances in Water Resources, 2007, 30, 2235-2261.	3.8	28

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55	Biological processes in porous media: From the pore scale to the field. Advances in Water Resources, 2007, 30, 1387-1391.	3.8	8
56	A Generalized Taylorâ€"Aris Formula and Skew Diffusion. Multiscale Modeling and Simulation, 2006, 5, 786-801.	1.6	36
57	Oxidative Remobilization of Biogenic Uranium(IV) Precipitates. Journal of Environmental Quality, 2005, 34, 1763-1771.	2.0	59
58	Estimation of adsorption rate coefficients based on the Smoluchowski equation. Chemical Engineering Science, 2004, 59, 1905-1921.	3.8	16
59	Processes in Microbial Transport in the Natural Subsurface. ChemInform, 2003, 34, no.	0.0	2
60	A particle-based model of size or anion exclusion with application to microbial transport in porous media. Water Resources Research, 2003, 39, .	4.2	45
61	Volume averaging for determining the effective dispersion tensor: Closure using periodic unit cells and comparison with ensemble averaging. Water Resources Research, 2003, 39, .	4.2	58
62	Calculation of effective diffusivities for biofilms and tissues. Biotechnology and Bioengineering, 2002, 77, 495-516.	3.3	93
63	Processes in microbial transport in the natural subsurface. Advances in Water Resources, 2002, 25, 1017-1042.	3.8	258
64	Jump conditions at non-uniform boundaries: the catalytic surface. Chemical Engineering Science, 2000, 55, 5231-5245.	3.8	31
65	Multi-species diffusion and reaction in biofilms and cellular media. Chemical Engineering Science, 2000, 55, 3397-3418.	3.8	52
66	Cellular growth in biofilms. , 1999, 64, 656-670.		40
67	Stochastic solute transport under unsteady flow conditions: Comparison of theory, Monte Carlo Simulations, and field data. Water Resources Research, 1999, 35, 2069-2084.	4.2	20
68	Ensemble-averaged equations for reactive transport in porous media under unsteady flow conditions. Water Resources Research, 1999, 35, 2053-2068.	4.2	22
69	Diffusion and reaction in biofilms. Chemical Engineering Science, 1998, 53, 397-425.	3.8	105
70	Multidimensional, multicomponent, subsurface reactive transport in nonuniform velocity fields: code verification using an advective reactive streamtube approach. Journal of Contaminant Hydrology, 1998, 30, 299-331.	3.3	47
71	A connection between the Lagrangian stochasticâ€"convective and cumulant expansion approaches for describing solute transport in heterogeneous porous media. Advances in Water Resources, 1998, 22, 319-332.	3.8	12
72	The use of geochemical mass-balance and mixing models to determine groundwater sources. Applied Geochemistry, 1996, 11, 523-539.	3.0	8

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73	Stochastic-Convective Transport with Nonlinear Reaction: Biodegradation With Microbial Growth. Water Resources Research, 1995, 31, 2689-2700.	4.2	77
74	Stochastic-Convective Transport with Nonlinear Reaction: Mathematical Framework. Water Resources Research, 1995, 31, 2675-2688.	4.2	88
75	Effects of Microbial Metabolic Lag in Contaminant Transport and Biodegradation Modeling. Water Resources Research, 1995, 31, 553-563.	4.2	35
76	Transport and biodegradation of quinoline in horizontally stratified porous media. Journal of Contaminant Hydrology, 1994, 15, 277-304.	3.3	20
77	Modeling contaminant transport and biodegradation in a layered porous media system. Water Resources Research, 1994, 30, 1833-1845.	4.2	58
78	Possibility of chemical weathering before the advent of vascular land plants. Nature, 1993, 364, 223-225.	27.8	60
79	In situ measurement of microbial activity and controls on microbial CO2production in the unsaturated zone. Water Resources Research, 1993, 29, 647-659.	4.2	85
80	Hydrogeologic parameters affecting vadoseâ€zone microbial distributions. Geomicrobiology Journal, 1991, 9, 197-216.	2.0	20