

Jeffrey W Bullard

List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

84
papers

3,701
citations

30
h-index

59
g-index

86
ext. papers

4,406
ext. citations

5.7
avg, IF

5.7
L-index

#	Paper	IF	Citations
84	Mechanisms of cement hydration. <i>Cement and Concrete Research</i> , 2011 , 41, 1208-1223	10.3	1012
83	Modeling and simulation of cement hydration kinetics and microstructure development. <i>Cement and Concrete Research</i> , 2011 , 41, 1257-1278	10.3	230
82	The Filler Effect: The Influence of Filler Content and Surface Area on Cementitious Reaction Rates. <i>Journal of the American Ceramic Society</i> , 2013 , 96, 1978-1990	3.8	213
81	Characterization and Modeling of Pores and Surfaces in Cement Paste. <i>Journal of Advanced Concrete Technology</i> , 2008 , 6, 5-29	2.3	145
80	A Determination of Hydration Mechanisms for Tricalcium Silicate Using a Kinetic Cellular Automaton Model. <i>Journal of the American Ceramic Society</i> , 2008 , 91, 2088-2097	3.8	107
79	Cements in the 21 Century: Challenges, Perspectives, and Opportunities. <i>Journal of the American Ceramic Society</i> , 2017 , 100, 2746-2773	3.8	104
78	Defining shape measures for 3D star-shaped particles: Sphericity, roundness, and dimensions. <i>Powder Technology</i> , 2013 , 249, 241-252	5.2	86
77	Shape analysis of a reference cement. <i>Cement and Concrete Research</i> , 2004 , 34, 1933-1937	10.3	82
76	3D analytical mathematical models of random star-shape particles via a combination of X-ray computed microtomography and spherical harmonic analysis. <i>Advanced Powder Technology</i> , 2017 , 28, 325-339	4.6	70
75	Factors that Influence Electrical Resistivity Measurements in Cementitious Systems. <i>Transportation Research Record</i> , 2013 , 2342, 90-98	1.7	69
74	A model investigation of the influence of particle shape on portland cement hydration. <i>Cement and Concrete Research</i> , 2006 , 36, 1007-1015	10.3	68
73	New Insights Into the Effect of Calcium Hydroxide Precipitation on the Kinetics of Tricalcium Silicate Hydration. <i>Journal of the American Ceramic Society</i> , 2010 , 93, 1894	3.8	66
72	Time dependent driving forces and the kinetics of tricalcium silicate hydration. <i>Cement and Concrete Research</i> , 2015 , 74, 26-34	10.3	65
71	Contact function, uniform-thickness shell volume, and convexity measure for 3D star-shaped random particles. <i>Powder Technology</i> , 2013 , 237, 191-201	5.2	63
70	Why alite stops hydrating below 80% relative humidity. <i>Cement and Concrete Research</i> , 2011 , 41, 987-992	10.3	60
69	A parallel reaction-transport model applied to cement hydration and microstructure development. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2010 , 18, 025007	2	54
68	Microstructural Origins of Cement Paste Degradation by External Sulfate Attack. <i>Construction and Building Materials</i> , 2015 , 96, 391-403	6.7	50

67	In-situ observations of classical grain growth mechanisms during sintering of copper nanoparticles on (001) copper. <i>Applied Physics Letters</i> , 1997 , 71, 1631-1633	3.4	48
66	A comparison of viscosity-concentration relationships for emulsions. <i>Journal of Colloid and Interface Science</i> , 2009 , 330, 186-93	9.3	47
65	The filler effect: The influence of filler content and type on the hydration rate of tricalcium silicate. <i>Journal of the American Ceramic Society</i> , 2017 , 100, 3316-3328	3.8	45
64	A three-dimensional microstructural model of reactions and transport in aqueous mineral systems. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2007 , 15, 711-738	2	45
63	A model of phase stability, microstructure and properties during leaching of portland cement binders. <i>Cement and Concrete Composites</i> , 2014 , 49, 9-19	8.6	42
62	Direct three-dimensional observation of the microstructure and chemistry of CS hydration. <i>Cement and Concrete Research</i> , 2016 , 88, 157-169	10.3	38
61	From electrons to infrastructure: Engineering concrete from the bottom up. <i>Cement and Concrete Research</i> , 2011 , 41, 727-735	10.3	37
60	Coupling thermodynamics and digital image models to simulate hydration and microstructure development of portland cement pastes. <i>Journal of Materials Research</i> , 2011 , 26, 609-622	2.5	36
59	Phase Analysis of Portland Cement by Combined Quantitative X-Ray Powder Diffraction and Scanning Electron Microscopy. <i>Journal of Research of the National Institute of Standards and Technology</i> , 2016 , 121, 47-107	1.3	36
58	Topological controls on the dissolution kinetics of glassy aluminosilicates. <i>Journal of the American Ceramic Society</i> , 2017 , 100, 5521-5527	3.8	34
57	Calcite dissolution rate spectra measured by digital holographic microscopy. <i>Geochimica Et Cosmochimica Acta</i> , 2017 , 213, 317-329	5.5	33
56	nanoscale observations of gypsum dissolution by digital holographic microscopy. <i>Chemical Geology</i> , 2017 , 460, 25-36	4.2	30
55	Direct Measurements of 3D Structure, Chemistry and Mass Density During the Induction Period of CS Hydration. <i>Cement and Concrete Research</i> , 2016 , 89, 14-26	10.3	30
54	New insights into the prehydration of cement and its mitigation. <i>Cement and Concrete Research</i> , 2015 , 70, 94-103	10.3	28
53	Sintering of silver and copper nanoparticles on (001) copper observed by in-situ ultrahigh vacuum transmission electron microscopy. <i>Scripta Materialia</i> , 1998 , 10, 731-739		28
52	Approximate rate constants for nonideal diffusion and their application in a stochastic model. <i>Journal of Physical Chemistry A</i> , 2007 , 111, 2084-92	2.8	28
51	An improved basis for characterizing the suitability of fly ash as a cement replacement agent. <i>Journal of the American Ceramic Society</i> , 2017 , 100, 4785-4800	3.8	27
50	Capillary rise between planar surfaces. <i>Physical Review E</i> , 2009 , 79, 011604	2.4	27

49	Modeling the apparent and intrinsic viscoelastic relaxation of hydrating cement paste. <i>Cement and Concrete Composites</i> , 2015 , 55, 322-330	8.6	26
48	Factors influencing the stability of AFm and Aft in the CaAlSOH system at 25 °C. <i>Journal of the American Ceramic Society</i> , 2016 , 99, 1031-1041	3.8	25
47	Cement hydration: the role of adsorption and crystal growth. <i>Crystal Research and Technology</i> , 2013 , 48, 903-918	1.3	24
46	Dissolution Kinetics of Cubic Tricalcium Aluminate Measured by Digital Holographic Microscopy. <i>Langmuir</i> , 2017 , 33, 9645-9656	4	24
45	Digital-image-based models of two-dimensional microstructural evolution by surface diffusion and vapor transport. <i>Journal of Applied Physics</i> , 1997 , 81, 159-168	2.5	23
44	Simulation of the hydration kinetics and elastic moduli of cement mortars by microstructural modelling. <i>Cement and Concrete Composites</i> , 2014 , 52, 54-63	8.6	21
43	Analysis of CCRL proficiency cements 151 and 152 using the Virtual Cement and Concrete Testing Laboratory. <i>Cement and Concrete Research</i> , 2006 , 36, 1548-1555	10.3	21
42	Shape Comparison between 0.4µm and 20µm in Cement Particles. <i>Journal of the American Ceramic Society</i> , 2010 , 93, 1626	3.8	20
41	Computing the time evolution of the apparent viscoelastic/viscoplastic Poisson's ratio of hydrating cement paste. <i>Cement and Concrete Composites</i> , 2015 , 56, 121-133	8.6	19
40	Three-dimensional shape characterization of fine sands and the influence of particle shape on the packing and workability of mortars. <i>Cement and Concrete Composites</i> , 2019 , 97, 125-142	8.6	19
39	Thermodynamics and Kinetics of Surface Area Changes of Faceted Particles. <i>Journal of the American Ceramic Society</i> , 1994 , 77, 2314-2318	3.8	18
38	The Influence of Water Activity on the Hydration Rate of Tricalcium Silicate. <i>Journal of the American Ceramic Society</i> , 2016 , 99, 2481-2492	3.8	17
37	Constrained phase evolution in gel-derived thin films of magnesium oxide. <i>Journal of Materials Chemistry</i> , 1999 , 9, 949-953		16
36	Dissolution rate spectra of Dicalcium silicate in water of varying activity. <i>Cement and Concrete Research</i> , 2019 , 118, 69-83	10.3	15
35	Numerical simulations of transient-stage Ostwald ripening and coalescence in two dimensions. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 1997 , 238, 128-139	5.3	15
34	An Ideal Solid Solution Model for C-S-H. <i>Journal of the American Ceramic Society</i> , 2016 , 99, 4137-4145	3.8	15
33	Machine learning can predict setting behavior and strength evolution of hydrating cement systems. <i>Journal of the American Ceramic Society</i> , 2020 , 103, 480-490	3.8	15
32	Dissolution and initial hydration behavior of tricalcium aluminate in low activity sulfate solutions. <i>Cement and Concrete Research</i> , 2020 , 130, 105989	10.3	11

31	A multiscale microstructure model of cement paste sulfate attack by crystallization pressure. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2017 , 25, 065013	2	10
30	Creep and relaxation of cement paste caused by stress-induced dissolution of hydrated solid components. <i>Journal of the American Ceramic Society</i> , 2018 , 101, 4237-4255	3.8	10
29	A Critical Comparison of 3D Experiments and Simulations of Tricalcium Silicate Hydration. <i>Journal of the American Ceramic Society</i> , 2018 , 101, 1453-1470	3.8	10
28	An empirical rate law for gypsum powder dissolution. <i>Chemical Geology</i> , 2018 , 498, 96-105	4.2	10
27	Temperature dependence of gypsum dissolution rates. <i>Cement and Concrete Research</i> , 2020 , 129, 105962	10.3	9
26	Microstructural Development during Sintering of Lithium Fluoride. <i>Journal of the American Ceramic Society</i> , 2005 , 80, 2395-2400	3.8	9
25	Interplay of capillary and elastic driving forces during microstructural evolution: Applications of a digital image model. <i>Journal of Applied Physics</i> , 1998 , 83, 4477-4486	2.5	9
24	In situ nano-scale observation of C3A dissolution in water. <i>Cement and Concrete Research</i> , 2020 , 132, 106044	10.3	8
23	Topological controls on aluminosilicate glass dissolution: Complexities induced in hyperalkaline aqueous environments. <i>Journal of the American Ceramic Society</i> , 2020 , 103, 6198-6207	3.8	8
22	Calcium nitrate: A chemical admixture to inhibit aggregate dissolution and mitigate expansion caused by alkali-silica reaction. <i>Cement and Concrete Composites</i> , 2020 , 110, 103592	8.6	7
21	Irreversible desiccation shrinkage of cement paste caused by cement grain dissolution and hydrate precipitation. <i>Materials and Structures/Materiaux Et Constructions</i> , 2017 , 50, 1	3.4	7
20	Enhancing Silicate Dissolution Kinetics in Hyperalkaline Environments. <i>Journal of Physical Chemistry C</i> , 2019 , 123, 3687-3695	3.8	6
19	Possible Explanations of Transient Neck Formation between Pairs of (100) Faceted Particles. <i>Journal of the American Ceramic Society</i> , 1996 , 79, 2443-2451	3.8	6
18	Shape Changes by {100} Lithium Fluoride Ridge-Channel Arrays and of Lithium Fluoride Particles at Sintering Temperatures. <i>Journal of the American Ceramic Society</i> , 1994 , 77, 2319-2326	3.8	6
17	Dissolution and early hydration of tricalcium aluminate in aqueous sulfate solutions. <i>Cement and Concrete Research</i> , 2020 , 137, 106191	10.3	6
16	Simulation of the Influence of Intrinsic C-S-H Aging on Time-Dependent Relaxation of Hydrating Cement Paste. <i>Construction and Building Materials</i> , 2017 , 157, 1024-1031	6.7	5
15	A new nonlinear formulation-based prediction approach using artificial neural network (ANN) model for rubberized cement composite. <i>Engineering With Computers</i> , 2020 , 1	4.5	5
14	Reactive Sintering and Retrograde Densification of Bulk Bismuth-Based Superconductors. <i>Journal of the American Ceramic Society</i> , 2004 , 83, 2365-2368	3.8	5

13	A novel thin film phase of oriented MgO grown from a liquid solution. <i>Journal of Crystal Growth</i> , 2001 , 233, 389-398	1.6	5
12	Equilibria and kinetics of mass transport between crystal facets: a comparison of two models. <i>Acta Materialia</i> , 1999 , 47, 3057-3061	8.4	5
11	Equilibrium Shapes of Solid Particles on Elastically Mismatched Substrates. <i>Journal of Colloid and Interface Science</i> , 1999 , 219, 320-326	9.3	5
10	Measurement and modeling needs for microstructure and reactivity of next-generation concrete binders. <i>Cement and Concrete Composites</i> , 2019 , 101, 24-31	8.6	5
9	How do specific surface area and particle size distribution change when granular media dissolve?. <i>Chemical Engineering Journal</i> , 2021 , 406, 127098	14.7	5
8	Extending Measurement Science to Interactive Visualisation Environments. <i>Advanced Information and Knowledge Processing</i> , 2009 , 287-302	0.3	3
7	Hydrodynamic factors influencing mineral dissolution rates. <i>Chemical Geology</i> , 2020 , 541, 119578	4.2	2
6	Coarse-graining approximation for simulating surface reaction kinetics in particulate systems. <i>Computational Materials Science</i> , 2006 , 38, 369-373	3.2	2
5	Incorporating D3.js information visualization into immersive virtual environments 2015 ,		1
4	Stability of voids formed in cavities at liquid-solid interfaces. <i>Journal of Colloid and Interface Science</i> , 2004 , 276, 188-96	9.3	1
3	Using Particle Characterization to Study Fly Ash Dissolution and Leaching in Water and KOH Solution. <i>ACI Materials Journal</i> , 2019 , 116,	0.9	1
2	Using fine sand shape metrics determined from X-ray microcomputed tomography to illustrate the influence of particle shape on the properties of dispersed mortars. <i>Cement and Concrete Composites</i> , 2021 , 123, 104176	8.6	1
1	Comment on A lattice model for solid-state sintering: simple particle arrays <i>Computational Materials Science</i> , 1996 , 6, 350-352	3.2	