Dale P Bentz

List of Publications by Year
in descending order

147	12,855	14655 66	25787 108
papers	citations	h-index	g-index

160	160	160	6063
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Threeâ€Dimensional Computer Simulation of Portland Cement Hydration and Microstructure Development. Journal of the American Ceramic Society, 1997, 80, 3-21.	3.8	464
2	Water permeability and chloride ion diffusion in portland cement mortars: Relationship to sand content and critical pore diameter. Cement and Concrete Research, 1995, 25, 790-802.	11.0	365
3	Protected paste volume in concrete. Cement and Concrete Research, 1999, 29, 1863-1867.	11.0	361
4	Percolation of phases in a three-dimensional cement paste microstructural model. Cement and Concrete Research, 1991, 21, 325-344.	11.0	297
5	Potential applications of phase change materials in concrete technology. Cement and Concrete Composites, 2007, 29, 527-532.	10.7	274
6	Effects of cement particle size distribution on performance properties of Portland cement-based materials. Cement and Concrete Research, 1999, 29, 1663-1671.	11.0	271
7	Mitigation strategies for autogenous shrinkage cracking. Cement and Concrete Composites, 2004, 26, 677-685.	10.7	258
8	Percolation and pore structure in mortars and concrete. Cement and Concrete Research, 1994, 24, 25-37.	11.0	252
9	A review of early-age properties of cement-based materials. Cement and Concrete Research, 2008, 38, 196-204.	11.0	236
10	Volume change and cracking in internally cured mixtures made with saturated lightweight aggregate under sealed and unsealed conditions. Cement and Concrete Composites, 2009, 31, 427-437.	10.7	230
11	Shrinkage-reducing admixtures and early-age desiccation in cement pastes and mortars. Cement and Concrete Research, 2001, 31, 1075-1085.	11.0	227
12	Analytical formulas for interfacial transition zone properties. Advanced Cement Based Materials, 1997, 6, 99-108.	0.3	224
13	Influence of particle size distributions on yield stress and viscosity of cementâ€“fly ash pastes. Cement and Concrete Research, 2012, 42, 404-409.	11.0	218
14	Influence of internal curing using lightweight aggregates on interfacial transition zone percolation and chloride ingress in mortars. Cement and Concrete Composites, 2009, 31, 285-289.	10.7	207
15	Effect of sample conditioning on the water absorption of concrete. Cement and Concrete Composites, 2011, 33, 805-813.	10.7	183
16	Influence of silica fume on diffusivity in cement-based materials. Cement and Concrete Research, 2000, 30, 953-962.	11.0	175
17	Multiscale Analytical/Numerical Theory of the Diffusivity of Concrete. Advanced Cement Based Materials, 1998, 8, 77-88.	0.3	173
18	Modelling drying shrinkage in reconstructed porous materials: application to porous Vycor glass. Modelling and Simulation in Materials Science and Engineering, 1998, 6, 211-236.	2.0	173

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19	Evaluation of sustainable high-volume fly ash concretes. Cement and Concrete Composites, 2011, 33, 39-45.	10.7	169
20	Estimation of the degree of hydration of blended cement pastes by a scanning electron microscope point-counting procedure. Cement and Concrete Research, 2004, 34, 1787-1793.	11.0	168
21	Modeling the influence of limestone filler on cement hydration using CEMHYD3D. Cement and Concrete Composites, 2006, 28, 124-129.	10.7	165
22	Fine limestone additions to regulate setting in high volume fly ash mixtures. Cement and Concrete Composites, 2012, 34, 11-17.	10.7	164
23	Influence of water-to-cement ratio on hydration kinetics: Simple models based on spatial considerations. Cement and Concrete Research, 2006, 36, 238-244.	11.0	160
24	Multi-scale investigation of the performance of limestone in concrete. Construction and Building Materials, 2015, 75, 1-10.	7.2	160
25	Limestone and silica powder replacements for cement: Early-age performance. Cement and Concrete Composites, 2017, 78, 43-56.	10.7	160
26	Transient plane source measurements of the thermal properties of hydrating cement pastes. Materials and Structures/Materiaux Et Constructions, 2007, 40, 1073-1080.	3.1	151
27	Water absorption in internally cured mortar made with water-filled lightweight aggregate. Cement and Concrete Research, 2009, 39, 883-892.	11.0	151
28	The reaction between metakaolin and limestone and its effect in porosity refinement and mechanical properties. Cement and Concrete Research, 2021, 140, 106307.	11.0	148
29	Incorporation of phase change materials in cementitious systems via fine lightweight aggregate. Construction and Building Materials, 2012, 35, 483-490.	7.2	146
30	The effect of statistical fluctuation, finite size error, and digital resolution on the phase percolation and transport properties of the NIST cement hydration model. Cement and Concrete Research, 2001, 31, 1501-1514.	11.0	143
31	The influence of the filler effect on the sulfate requirement of blended cements. Cement and Concrete Research, 2019, 126, 105918.	11.0	136
32	Modelling of the microstructure and transport properties of concrete. Construction and Building Materials, 1996, 10, 293-300.	7.2	135
33	The influence of calcium chloride deicing salt on phase changes and damage development in cementitious materials. Cement and Concrete Composites, 2015, 64, 1-15.	10.7	132
34	Thermal properties of high-volume fly ash mortars and concretes. Journal of Building Physics, 2011, 34, 263-275.	2.4	129
35	Application of internal curing for mixtures containing high volumes of fly ash. Cement and Concrete Composites, 2012, 34, 1001-1008.	10.7	124
36	Digital simulation of the aggregateâ€“cement paste interfacial zone in concrete. Journal of Materials Research, 1991, 6, 196-201.	2.6	121

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37	Rheology and setting of high volume fly ash mixtures. Cement and Concrete Composites, 2010, 32, 265-270.	10.7	118
38	Early-Age Properties of Cement-Based Materials. II: Influence of Water-to-Cement Ratio. Journal of Materials in Civil Engineering, 2009, 21, 512-517.	2.9	117
39	Acoustic emission waveform characterization of crack origin and mode in fractured and ASR damaged concrete. Cement and Concrete Composites, 2015, 60, 135-145.	10.7	108
40	Influence of Cement Particleâ€Size Distribution on Early Age Autogenous Strains and Stresses in Cementâ€Based Materials. Journal of the American Ceramic Society, 2001, 84, 129-135.	3.8	107
41	Factors that Influence Electrical Resistivity Measurements in Cementitious Systems. Transportation Research Record, 2013, 2342, 90-98.	1.9	106
42	Interfacial transport in porous media: Application to dc electrical conductivity of mortars. Journal of Applied Physics, 1995, 78, 5898-5908.	2.5	104
43	The Visible Cement Data Set. Journal of Research of the National Institute of Standards and Technology, 2002, 107, 137.	1.2	104
44	Optimization of cement and fly ash particle sizes to produce sustainable concretes. Cement and Concrete Composites, 2011, 33, 824-831.	10.7	104
45	Prediction of Adiabatic Temperature Rise in Conventional and High-Performance Concretes Using a 3-D Microstructural Model. Cement and Concrete Research, 1998, 28, 285-297.	11.0	103
46	Effects of the incorporation of Municipal Solid Waste Incineration fly ash in cement pastes and mortars. Cement and Concrete Research, 2002, 32, 303-311.	11.0	101
47	Modeling of the influence of transverse cracking on chloride penetration into concrete. Cement and Concrete Composites, 2013, 38, 65-74.	10.7	101
48	A comparison study of Portland cement hydration kinetics as measured by chemical shrinkage and isothermal calorimetry. Cement and Concrete Composites, 2013, 39, 23-32.	10.7	101
49	Using a Saturation Function to Interpret the Electrical Properties of Partially Saturated Concrete. Journal of Materials in Civil Engineering, 2013, 25, 1097-1106.	2.9	99
50	Influence of silica fume on diffusivity in cement-based materials. Cement and Concrete Research, 2000, 30, 1121-1129.	11.0	97
51	Mitigation of autogenous shrinkage in alkali activated slag mortars by internal curing. Materials and Structures/Materiaux Et Constructions, 2013, 46, 1355-1367.	3.1	94
52	Damage development in cementitious materials exposed to magnesium chloride deicing salt. Construction and Building Materials, 2015, 93, 384-392.	7.2	93
53	Activation energies of high-volume fly ash ternary blends: Hydration and setting. Cement and Concrete Composites, 2014, 53, 214-223.	10.7	92
54	Early-Age Properties of Cement-Based Materials. I: Influence of Cement Fineness. Journal of Materials in Civil Engineering, 2008, 20, 502-508.	2.9	91

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55	Cellular automaton simulations of cement hydration and microstructure development. Modelling and Simulation in Materials Science and Engineering, 1994, 2, 783-808.	2.0	90
56	A virtual rapid chloride permeability test. Cement and Concrete Composites, 2007, 29, 723-731.	10.7	90
57	Experimental and simulation studies of the interfacial zone in concrete. Cement and Concrete Research, 1992, 22, 891-902.	11.0	88
58	Influence of Shrinkage-Reducing Admixtures on Early-Age Properties of Cement Pastes. Journal of Advanced Concrete Technology, 2006, 4, 423-429.	1.8	84
59	Capillary porosity depercolation in cement-based materials: Measurement techniques and factors which influence their interpretation. Cement and Concrete Research, 2011, 41, 854-864.	11.0	83
60	Evolution of porosity and calcium hydroxide in laboratory concretes containing silica fume. Cement and Concrete Research, 1994, 24, 1044-1050.	11.0	79
61	Modeling the influence of the interfacial zone on the DC electrical conductivity of mortar. Advanced Cement Based Materials, 1995, 2, 169-181.	0.3	74
62	In situ measurement of water at the organic coating/substrate interface. Progress in Organic Coatings, 1996, 27, 181-193.	3.9	74
63	Increasing the Service Life of Bridge Decks by Incorporating Phase-Change Materials to Reduce Freeze-Thaw Cycles. Journal of Materials in Civil Engineering, 2012, 24, 1034-1042.	2.9	74
64	Multi-Scale Microstructural Modeling of Concrete Diffusivity: Identification of Significant Varibles. Cement, Concrete and Aggregates, 1998, 20, 129-139.	0.1	73
65	Transport and diffusion in three-dimensional composite media. Physica A: Statistical Mechanics and Its Applications, 1994, 207, 28-36.	2.6	70
66	Hydraulic radius and transport in reconstructed model three-dimensional porous media. Transport in Porous Media, 1994, 17, 221-238.	2.6	69
67	Influence of substrate moisture state and roughness on interface microstructure and bond strength: Slant shear vs. pull-off testing. Cement and Concrete Composites, 2018, 87, 63-72.	10.7	67
68	Suspended hydration and loss of freezable water in cement pastes exposed to 90% relative humidity. Cement and Concrete Research, 2004, 34, 2045-2056.	11.0	65
69	An argument for using coarse cements in high-performance concretes. Cement and Concrete Research, 1999, 29, 615-618.	11.0	62
70	Evaluating the hydration of high volume fly ash mixtures using chemically inert fillers. Construction and Building Materials, 2018, 161, 221-228.	7.2	60
71	Computer modeling of the replacement of â€œcoarseâ€•cement particles by inert fillers in low w/c ratio concretes. Cement and Concrete Research, 2001, 31, 503-506.	11.0	58
72	Cement hydration: building bridges and dams at the microstructure level. Materials and Structures/Materiaux Et Constructions, 2007, 40, 397-404.	3.1	56

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73	Fluid transport in high volume fly ash mixtures with and without internal curing. Cement and Concrete Composites, 2014, 45, 102-110.	10.7	56
74	Modelling drying shrinkage of cement paste and mortar Part 1. Structural models from nanometres to millimetres. Materiaux Et Constructions, 1995, 28, 450-458.	0.3	55
75	Replacement of â€œcoarseâ€•cement particles by inert fillers in low w/c ratio concretes. Cement and Concrete Research, 2005, 35, 185-188.	11.0	54
76	Acoustic Emission and Low-Temperature Calorimetry Study of Freeze and Thaw Behavior in Cementitious Materials Exposed to Sodium Chloride Salt. Transportation Research Record, 2014, 2441, 81-90.	1.9	54
77	On the relation of setting and early-age strength development to porosity and hydration in cement-based materials. Cement and Concrete Composites, 2016, 68, 9-14.	10.7	54
78	Blending different fineness cements to engineer the properties of cement-based materials. Magazine of Concrete Research, 2010, 62, 327-338.	2.0	53
79	Preliminary observations of water movement in cement pastes during curing using X-ray absorption. Cement and Concrete Research, 2000, 30, 1157-1168.	11.0	52
80	Reducing Set Retardation in High-Volume Fly Ash Mixtures with the Use of Limestone. Transportation Research Record, 2012, 2290, 139-146.	1.9	52
81	Quantitative comparison of real and CEMHYD3D model microstructures using correlation functions. Cement and Concrete Research, 2006, 36, 259-263.	11.0	50
82	Numerical simulation of the freezeâ€“thaw behavior of mortar containing deicing salt solution. Materials and Structures/Materiaux Et Constructions, 2017, 50, 1.	3.1	49
83	Recycling of hydrated cement pastes by synthesis of Î±â€²H-C2S. Cement and Concrete Research, 2017, 100, 398-412.	11.0	49
84	Effects of the incorporation of Municipal Solid Waste Incineration fly ash in cement pastes and mortars. Cement and Concrete Research, 2002, 32, 565-576.	11.0	48
85	Improved mesoscale segmentation of concrete from 3D X-ray images using contrast enhancers. Cement and Concrete Composites, 2018, 93, 30-42.	10.7	48
86	Decoupling the physical and chemical effects of supplementary cementitious materials on strength and permeability: A multi-level approach. Cement and Concrete Composites, 2016, 65, 19-28.	10.7	47
87	Doubling the service life of concrete structures. I: Reducing ion mobility using nanoscale viscosity modifiers. Cement and Concrete Composites, 2008, 30, 674-678.	10.7	45
88	Measurement of water transport from saturated pumice aggregates to hardening cement paste. Materials and Structures/Materiaux Et Constructions, 2006, 39, 861-868.	3.1	44
89	Influence of Shrinkage-Reducing Admixtures on Moisture Absorption in Cementitious Materials at Early Ages. Journal of Materials in Civil Engineering, 2010, 22, 277-286.	2.9	44
90	Quantifying Water at the Organic Film/Hydroxylated Substrate Interface. Journal of Adhesion, 1995, 48, 169-194.	3.0	42

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91	1. Digital Images and Computer Modeling. Experimental Methods in the Physical Sciences, 1999, , 1-41.	0.1	39
92	Influence of alkalis on porosity percolation in hydrating cement pastes. Cement and Concrete Composites, 2006, 28, 427-431.	10.7	39
93	Reducing setting time of blended cement paste containing high-SO3 fly ash (HSFA) using chemical/physical accelerators and by fly ash pre-washing. Cement and Concrete Composites, 2018, 90, 14-26.	10.7	36
94	Thermo-mechanical assessment of concrete microcracking damage due to early-age temperature rise. Construction and Building Materials, 2015, 81, 140-153.	7.2	35
95	Microstructure and Thermal Conductivity of Hydrated Calcium Silicate Board Materials. Journal of Building Physics, 2007, 31, 55-67.	2.4	34
96	Low-temperature curing strength enhancement in cement-based materials containing limestone powder. Materials and Structures/Materiaux Et Constructions, 2017, 50, 1.	3.1	34
97	The ONIX model: a parameter-free multiscale framework for the prediction of self-desiccation in concrete. Cement and Concrete Composites, 2019, 103, 36-48.	10.7	33
98	Analytical Formulas for Interfacial Transition Zone Properties. Advanced Cement Based Materials, 1997, 6, 99-108.	0.3	33
99	Numerical simulation of heat and mass transport during hydration of Portland cement mortar in semi-adiabatic and steam curing conditions. Cement and Concrete Composites, 2016, 69, 38-48.	10.7	32
100	Towards the formulation of robust and sustainable cementitious binders for 3-D additive construction by extrusion. Construction and Building Materials, 2018, 175, 215-224.	7.2	32
101	Using Neutron Radiography to Quantify Water Transport and the Degree of Saturation in Entrained Air Cement Based Mortar. Physics Procedia, 2015, 69, 542-550.	1.2	31
102	Simulation studies of methods to delay corrosion and increase service life for cracked concrete exposed to chlorides. Cement and Concrete Composites, 2015, 58, 59-69.	10.7	31
103	Capillary Porosity Depercolation/Repercolation in Hydrating Cement Pastes Via Low-Temperature Calorimetry Measurements and CEMHYD3D Modeling. Journal of the American Ceramic Society, 2006, 89, 2606-2611.	3.8	30
104	Continuous strength measurements of cement pastes and concretes by the ultrasonic wave reflection method. Construction and Building Materials, 2020, 242, 117902.	7.2	30
105	Determining thermal properties of gypsum board at elevated temperatures. Fire and Materials, 2010, 34, 237-250.	2.0	29
106	D90: The Strongest Contributor to Setting Time in Mineral Trioxide Aggregate and Portland Cement. Journal of Endodontics, 2015, 41, 1146-1150.	3.1	27
107	Relating Compressive Strength to Heat Release in Mortars. Advances in Civil Engineering Materials, 2012, 1, 20120002.	0.6	27
108	In Situ Spectroscopic Study of Water at the Asphalt/Siliceous Substrate Interface and Its Implication in Stripping. Journal of Adhesion, 2005, 81, 1-28.	3.0	26

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109	Parametric Assessment of Stress Development and Cracking in Internally Cured Restrained Mortars Experiencing Autogenous Deformations and Thermal Loading. Advances in Civil Engineering, 2011, 2011, 1-16.	0.7	26
110	Influence of internal curing and viscosity modifiers on resistance to sulfate attack. Materials and Structures/Materiaux Et Constructions, 2014, 47, 581-589.	3.1	25
111	Design and performance of ternary blend high-volume fly ash concretes of moderate slump. Construction and Building Materials, 2015, 84, 409-415.	7.2	25
112	Computer Simulations of Binder Removal from 2-D and 3-D Model Particulate Bodies. Journal of the American Ceramic Society, 1996, 79, 1377-1388.	3.8	23
113	A methodology for assessing the chemical and physical potential of industrially sourced rice husk ash on strength development and early-age hydration of cement paste. Construction and Building Materials, 2017, 149, 869-881.	7.2	23
114	Accelerated and natural carbonation of concretes with internal curing and shrinkage/viscosity modifiers. Materials and Structures/Materiaux Et Constructions, 2015, 48, 1207-1214.	3.1	22
115	Computational Materials Science of Cement-Based Materials. MRS Bulletin, 1993, 18, 50-54.	3.5	19
116	Calculation of the Thermal Conductivity and Gas Permeability in a Uniaxial Bundle of Fibers. Journal of the American Ceramic Society, 1994, 77, 2669-2680.	3.8	19
117	X-ray absorption studies of drying of cementitious tile adhesive mortars. Cement and Concrete Composites, 2008, 30, 361-373.	10.7	19
118	Relationship Between Engineering Properties, Mineralogy, and Microstructure in Cementâ€Based Hydroceramic Materials Cured at 200Â°â€“350Â°C. Journal of the American Ceramic Society, 2009, 92, 694-701.	3.8	19
119	Doubling the service life of concrete structures. II: Performance of nanoscale viscosity modifiers in mortars. Cement and Concrete Composites, 2010, 32, 187-193.	10.7	19
120	Anticipating the Setting Time of High-Volume Fly Ash Concretes Using Electrical Measurements: Feasibility Studies Using Pastes. Journal of Materials in Civil Engineering, 2015, 27, .	2.9	17
121	Comparative Study of Methods to Measure the Density of Cementitious Powders. Journal of Testing and Evaluation, 2016, 44, 2147-2154.	0.7	17
122	Anion capture and exchange by functional coatings: New routes to mitigate steel corrosion in concrete infrastructure. Cement and Concrete Research, 2017, 101, 82-92.	11.0	17
123	Binder Distribution in Macro-Defect-Free Cements: Relation between Percolative Properties and Moisture Absorption Kinetics. Journal of the American Ceramic Society, 1994, 77, 711-716.	3.8	16
124	Bridging the Micro-to-Macro Gap: A New Application for Micro X-Ray Fluorescence. Microscopy and Microanalysis, 2011, 17, 410-417.	0.4	16
125	A slug calorimeter for evaluating the thermal performance of fire resistive materials. Fire and Materials, 2006, 30, 257-270.	2.0	15
126	Applying a biodeposition layer to increase the bond of a repair mortar on a mortar substrate. Cement and Concrete Composites, 2018, 86, 30-39.	10.7	15

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127	Application of Digital-Image-Based Models to Microstructure, Transport Properties, and Degradation of Cement-Based materials. , 1996, , 167-185.		14
128	Towards a methodology for the characterization of fire resistive materials with respect to thermal performance models. Fire and Materials, 2006, 30, 311-321.	2.0	12
129	Using Viscosity Modifiers to Reduce Effective Diffusivity in Mortars. Journal of Materials in Civil Engineering, 2012, 24, 1017-1024.	2.9	10
130	Effect of a micro-copolymer addition on the thermal conductivity of fly ash mortars. Journal of Building Physics, 2016, 40, 3-16.	2.4	10
131	Critical observations for the evaluation of cement hydration models. International Journal of Advances in Engineering Sciences and Applied Mathematics, 2010, 2, 75-82.	1.1	9
132	Comparison of ASTM C311 Strength Activity Index Testing versus Testing Based on Constant Volumetric Proportions. Journal of ASTM International, 2012, 9, 104138.	0.2	9
133	Rheological Control of 3D Printable Cement Paste and Mortars. RILEM Bookseries, 2019, , 70-80.	0.4	9
134	Effects of Initial Surface Treatment Timing on Chloride Concentrations in Concrete Bridge Decks. Transportation Research Record, 2007, 2028, 103-110.	1.9	8
135	Towards the Formulation of Robust and Sustainable Cementitious Binders for 3D Additive Construction by Extrusion. , 2019, , 307-331.		8
136	Neutron Radiography Measurement of Salt Solution Absorption in Mortar. ACI Materials Journal, 2017, 114, 149-159.	0.2	8
137	Thermal degradation of poly(methyl methacrylate) at 50Â°C to 125Â°C. Journal of Applied Polymer Science, 1987, 34, 377-393.	2.6	7
138	Measurement and modeling of the ability of crack fillers to prevent chloride ingress into mortar. Cement and Concrete Composites, 2017, 81, 109-121.	10.7	6
139	Modeling heat and moisture transport in steam-cured mortar: Application to AASHTO Type VI beams. Construction and Building Materials, 2017, 151, 186-195.	7.2	5
140	Surface and Uniaxial Electrical Measurements on Layered Cementitious Composites having Cylindrical and Prismatic Geometries. , 2014, , .		5
141	A Materials Science-Based Approach to Characterizing Fire Resistive Materials. Journal of ASTM International, 2009, 6, 102203.	0.2	3
142	Effect of Initial Timing of Scarification and Overlay Treatment on Chloride Concentrations in Concrete Bridge Decks. Transportation Research Record, 2011, 2220, 66-74.	1.9	2
143	Characterization of cylindrical holes in metallic substrates via their infrared emission patterns. Wear, 1991, 143, 255-266.	3.1	1
144	A reply to a discussion by S. Chatterji of the paper â€œpercolation of phases in a three-dimensional cement paste microstructural modelâ€• Cement and Concrete Research, 1991, 21, 1187-1188.	11.0	1

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145	A reply to a discussion by S. Chatterji of the paper â€œPercolation and pore structure in mortars and concreteâ€• Cement and Concrete Research, 1994, 24, 1569-1571.	11.0	1
146	"Binder Distribution in Macro-Defect-Free Cements: Relation between Percolative Properties and Moisture Absorption Kinetics". Journal of the American Ceramic Society, 1994, 77, 1407-1407.	3.8	1
147	Thermographic Imaging And Computer Image Processing Of Defects In Building Materials. , 1986, , .		0