Robert J Flatt

List of Publications by Year
in descending order

121 papers	9,471 citations	44444 50 h-index	49824 91 g-index
126 all docs	126 docs citations	126 times ranked	6075 citing authors

#	Article	IF	Citations
1	Eco-Friendly, Set-on-Demand Digital Concrete. 3D Printing and Additive Manufacturing, 2022, 9, 3-11.	1.4	12
2	Overcoming Environmental Stress Cracking of FDM 3D Printed Formwork for Counter-Pressure Casting of Concrete. 3D Printing and Additive Manufacturing, 2022, 9, 122-131.	1.4	3
3	Experimental method and thermodynamic model for competitive adsorption between polycarboxylate comb copolymers. Cement and Concrete Research, 2022, 151, 106523.	4.6	13
4	A chemical process engineering look at digital concrete processes: critical step design, inline mixing, and scaleup. Cement and Concrete Research, 2022, 155, 106782.	4.6	31
5	Effect of processing on the air void system of 3D printed concrete. Cement and Concrete Research, 2022, 156, 106789.	4.6	13
6	Molecular modeling of chemical admixtures; opportunities and challenges. Cement and Concrete Research, 2022, 156, 106783.	4.6	16
7	Slow penetration for characterizing concrete for digital fabrication. Cement and Concrete Research, 2022, 157, 106802.	4.6	9
8	Additive Digital Casting: From Lab to Industry. Materials, 2022, 15, 3468.	1.3	6
9	On sustainability and digital fabrication with concrete. Cement and Concrete Research, 2022, 158, 106837.	4.6	38
10	A 3D Printing Platform for Reinforced Printed-Sprayed Concrete Composites. RILEM Bookseries, 2022, , 249-254.	0.2	1
11	Editorial for the special issue on â€œChemical admixtures and recent advances in Concrete Technology and Sustainabilityâ€• Cement and Concrete Research, 2022, 159, 106898.	4.6	0
12	Environmental stress cracking of 3D-printed polymers exposed to concrete. Additive Manufacturing, 2022, 58, 103026.	1.7	1
13	Structural design, digital fabrication and construction of the cable-net and knitted formwork of the KnitCandela concrete shell. Structures, 2021, 31, 1287-1299.	1.7	51
14	A 3D concrete printing prefabrication platform for bespoke columns. Automation in Construction, 2021, 122, 103467.	4.8	102
15	Force field for calcium sulfate minerals to predict structural, hydration, and interfacial properties. Cement and Concrete Research, 2021, 139, 106262.	4.6	35
16	Polycarboxylate ester adsorption on cement grains: Influence of polydispersity. Cement and Concrete Research, 2021, 143, 106383.	4.6	11
17	A Method for Characterizing the Chemical Heterogeneity of Comb-Copolymers and Its Dependence on Synthesis Routes. Polymers, 2021, 13, 1921.	2.0	4
18	Formulation of low clinker blended cements and concrete with enhanced fresh and hardened properties. Cement and Concrete Research, 2021, 150, 106605.	4.6	21

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19	Mastering Yield Stress Evolution and Formwork Friction for Smart Dynamic Casting. Materials, 2020, 13, 2084.	1.3	12
20	Post-fire restoration of historic buildings and implications for Notre-Dame de Paris. Nature Materials, 2020, 19, 817-820.	13.3	22
21	Setting on demand for digital concrete â€“ Principles, measurements, chemistry, validation. Cement and Concrete Research, 2020, 132, 106047.	4.6	124
22	Shifting factorâ€”A new paradigm for studying the rheology of cementitious suspensions. Journal of the American Ceramic Society, 2020, 103, 3562-3574.	1.9	16
23	Structural stay-in-place formwork for robotic in situ fabrication of non-standard concrete structures: A real scale architectural demonstrator. Automation in Construction, 2020, 115, 103197.	4.8	63
24	Eggshell: Ultra-Thin Three-Dimensional Printed Formwork for Concrete Structures. 3D Printing and Additive Manufacturing, 2020, 7, 48-59.	1.4	54
25	Design and Fabrication of a Non-standard, Structural Concrete Column Using Eggshell: Ultra-Thin, 3D Printed Formwork. RILEM Bookseries, 2020, , 1104-1115.	0.2	8
26	Influence of Pumping/Extrusion on the Air-Void System of 3D Printed Concrete. RILEM Bookseries, 2020, , 417-427.	0.2	4
27	Aligned Interlayer Fibre Reinforcement and Post-tensioning as a Reinforcement Strategy for Digital Fabrication. RILEM Bookseries, 2020, , 622-631.	0.2	9
28	From Smart Dynamic Casting to a growing family of Digital Casting Systems. Cement and Concrete Research, 2020, 134, 106071.	4.6	62
29	Processing of Set on Demand Solutions for Digital Fabrication in Architecture. RILEM Bookseries, 2020, , 440-447.	0.2	3
30	Residence Time Distributions in Continuous Processing of Concrete. RILEM Bookseries, 2020, , 448-456.	0.2	2
31	Digital Concrete: A Review. Cement and Concrete Research, 2019, 123, 105780.	4.6	310
32	Formwork fabrication freedom for a concrete canoe. GestÃ£o & Tecnologia De Projetos, 2019, 14, 25-44.	0.1	11
33	Relating early hydration, specific surface and flow loss of cement pastes. Materials and Structures/Materiaux Et Constructions, 2019, 52, 1.	1.3	42
34	First steps to the molecular structure optimization of polycarboxylate ether superplasticizers: Mastering fluidity and retardation. Cement and Concrete Research, 2019, 115, 116-123.	4.6	53
35	Building in Concrete with an Ultra-lightweight Knitted Stay-in-place Formwork: Prototype of a Concrete Shell Bridge. Structures, 2018, 14, 322-332.	1.7	63
36	Non-adsorbing polymers and yield stress of cement paste: Effect of depletion forces. Cement and Concrete Research, 2018, 111, 209-217.	4.6	51

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37	Standard and sample preparation for the micro XRF quantification of chlorides in hardened cement pastes. Microchemical Journal, 2018, 141, 382-387.	2.3	8
38	Easy Illustration of Salt Damage in Stone. Journal of Chemical Education, 2018, 95, 1615-1620.	1.1	10
39	The role of early age structural build-up in digital fabrication with concrete. Cement and Concrete Research, 2018, 112, 86-95.	4.6	275
40	Nanoparticle decoration with surfactants: Molecular interactions, assembly, and applications. Surface Science Reports, 2017, 72, 1-58.	3.8	419
41	Molecular and submolecular scale effects of combâ€copolymers on triâ€calcium silicate reactivity: Toward molecular design. Journal of the American Ceramic Society, 2017, 100, 817-841.	1.9	115
42	: A force field database for cementitious materials including validations, applications and opportunities. Cement and Concrete Research, 2017, 102, 68-89.	4.6	186
43	Influence of aluminates on the hydration kinetics of tricalcium silicate. Cement and Concrete Research, 2017, 100, 245-262.	4.6	146
44	ICP-OES method for the characterization of cement pore solutions and their modification by polycarboxylate-based superplasticizers. Cement and Concrete Research, 2017, 91, 52-60.	4.6	72
45	Characterization of Comb-Shaped Copolymers by Multidetection SEC, DLS and SANS. Polymers, 2017, 9, 61.	2.0	22
46	Energy-effective Grinding of Inorganic Solids Using Organic Additives. Chimia, 2017, 71, 451.	0.3	19
47	A Powerful Tool to Better Understand Cement Hydration. Chimia, 2017, 71, 131.	0.3	1
48	Adsorption of chemical admixtures. , 2016, , 219-256.		27
49	Chemistry of chemical admixtures. , 2016, , 149-218.		46
50	Mechanisms of cement hydration. , 2016, , 129-145.		54
51	Thermo-Mechanical Compatibility of Viscoelastic Mortars for Stone Repair. Materials, 2016, 9, 56.	1.3	2
52	Lime as an Anti-Plasticizer for Self-Compacting Clay Concrete. Materials, 2016, 9, 330.	1.3	44
53	Concrete rheology. , 2016, , 97-127.		31
54	Impact of chemical admixtures onÂcement hydration. , 2016, , 279-304.		39

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55	Working mechanisms of shrinkage-reducing admixtures. , 2016, , 305-320.		9
56	Formulation of commercial products. , 2016, , 343-349.		0
57	Working mechanism of viscosity-modifying admixtures. , 2016, , 415-432.		25
58	Conclusions and outlook on the future of concrete admixtures. , 2016, , 527-530.		2
59	Understanding silicate hydration from quantitative analyses of hydrating tricalcium silicates. Nature Communications, 2016, 7, 10952.	5.8	155
60	Evolution of strength and failure of SCC during early hydration. Cement and Concrete Research, 2016, 89, 288-296.	4.6	83
61	Superplasticizers in practice. , 2016, , 353-377.		31
62	On-site monitoring for better selection of stone repairs: a case study. Heritage Science, 2016, 4, .	1.0	8
63	Working mechanisms of water reducers and superplasticizers. , 2016, , 257-278.		59
64	Impact of sample preparation on the specific surface area of synthetic ettringite. Cement and Concrete Research, 2016, 86, 20-28.	4.6	71
65	Factors affecting the strength of structural lightweight aggregate concrete with and without fibers in the 1,200â€“1,600Âkg/m3 density range. Materials and Structures/Materiaux Et Constructions, 2016, 49, 677-688.	1.3	12
66	New insights into the hydration of slag in alkaline media using a micro-reactor approach. Cement and Concrete Research, 2016, 79, 209-216.	4.6	33
67	Anhydrite/aerogel composites for thermal insulation. Materials and Structures/Materiaux Et Constructions, 2016, 49, 3647-3661.	1.3	18
68	3D Microstructure Effects in Ni-YSZ Anodes: Prediction of Effective Transport Properties and Optimization of Redox Stability. Materials, 2015, 8, 5554-5585.	1.3	40
69	3D Microstructure Effects in Ni-YSZ Anodes: Influence of TPB Lengths on the Electrochemical Performance. Materials, 2015, 8, 7129-7144.	1.3	26
70	En route to multi-model scheme for clinker comminution with chemical grinding aids. Advances in Applied Ceramics, 2015, 114, 393-401.	0.6	15
71	Microâ€reactors to Study Alite Hydration. Journal of the American Ceramic Society, 2015, 98, 1634-1641.	1.9	18
72	Use of micro-reactors to obtain new insights into the factors influencing tricalcium silicate dissolution. Cement and Concrete Research, 2015, 78, 208-215.	4.6	65

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73	Complex concrete structures. CAD Computer Aided Design, 2015, 60, 40-49.	1.4	219
74	Reliable specific surface area measurements on anhydrous cements. Cement and Concrete Research, 2015, 67, 286-291.	4.6	64
75	Influence of strontium-rich pore-filling phase on the performance of La0.6Sr0.4CoO3â˜' thin-film cathodes. Journal of Power Sources, 2015, 274, 295-303.	4.0	9
76	A force field for tricalcium aluminate to characterize surface properties, initial hydration, and organically modified interfaces in atomic resolution. Dalton Transactions, 2014, 43, 10602-10616.	1.6	87
77	Chemo-mechanics of salt damage in stone. Nature Communications, 2014, 5, 4823.	5.8	126
78	Molecular design of comb-shaped polycarboxylate dispersants for environmentally friendly concrete. Soft Matter, 2013, 9, 10719.	1.2	149
79	Demonstration of Atomic Emission from Exploding Hydrogen Balloons for (Almost) Everybody. Journal of Chemical Education, 2013, 90, 1406-1408.	1.1	0
80	Force Field for Tricalcium Silicate and Insight into Nanoscale Properties: Cleavage, Initial Hydration, and Adsorption of Organic Molecules. Journal of Physical Chemistry C, 2013, 117, 10417-10432.	1.5	141
81	Present and future durability challenges for reinforced concrete structures. Materials and Corrosion - Werkstoffe Und Korrosion, 2012, 63, 1047-1051.	0.8	34
82	Climbing robot for corrosion monitoring of reinforced concrete structures. , 2012, , .		23
83	Effect of mixing on the early hydration of alite and OPC systems. Cement and Concrete Research, 2012, 42, 1175-1188.	4.6	98
84	Concrete: An eco material that needs to be improved. Journal of the European Ceramic Society, 2012, 32, 2787-2798.	2.8	285
85	Reply to the discussion by E. Gartner of the paper â€œDissolution theory applied to the induction period in alite hydrationâ€• Cement and Concrete Research, 2011, 41, 563-564.	4.6	9
86	Reply to the discussion by J. Makar, J.J. Beaudoin, T. Sato, R. Alizadeh and L. Raki of â€œDissolution theory applied to the induction period in alite hydrationâ€• Cement and Concrete Research, 2011, 41, 568-569.	4.6	8
87	Why alite stops hydrating below 80% relative humidity. Cement and Concrete Research, 2011, 41, 987-992.	4.6	92
88	Steady state flow of cement suspensions: A micromechanical state of the art. Cement and Concrete Research, 2010, 40, 77-84.	4.6	382
89	Dissolution theory applied to the induction period in alite hydration. Cement and Concrete Research, 2010, 40, 831-844.	4.6	368
90	Shape Comparison between 0.4â€“2.0 and 20â€“60 Î¼m Cement Particles. Journal of the American Ceramic Society, 2010, 93, 1626-1633.	1.9	27

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91	New Insights Into the Effect of Calcium Hydroxide Precipitation on the Kinetics of Tricalcium Silicate Hydration. Journal of the American Ceramic Society, 2010, 93, 1894-1903.	1.9	85
92	Smart Polycarboxylate Design for SCC in Precast Applications. , 2010, , 53-63.		2
93	Surface and Intercalation Chemistry of Polycarboxylate Copolymers in Cementitious Systems. Journal of the American Ceramic Society, 2009, 92, 2471-2488.	1.9	95
94	Yield stress during setting of cement pastes from penetration tests. Cement and Concrete Research, 2009, 39, 401-408.	4.6	168
95	Conformation of Adsorbed Comb Copolymer Dispersants. Langmuir, 2009, 25, 845-855.	1.6	190
96	Thermodynamics of crystallization stresses in DEF. Cement and Concrete Research, 2008, 38, 325-336.	4.6	150
97	Design and function of novel superplasticizers for more durable high performance concrete (superplast project). Cement and Concrete Research, 2008, 38, 1197-1209.	4.6	205
98	Yield Stress of Multimodal Powder Suspensions: An Extension of the YODEL (Yield Stress mODEL). Journal of the American Ceramic Society, 2007, 90, 1038-1044.	1.9	100
99	A commented translation of the paper by C.W. Correns and W. Steinborn on crystallization pressure. Environmental Geology, 2007, 52, 187-203.	1.2	118
100	Yodel: A Yield Stress Model for Suspensions. Journal of the American Ceramic Society, 2006, 89, 1244-1256.	1.9	285
101	FIB-Nanotomography of Particulate Systemsâ€"Part I: Particle Shape and Topology of Interfaces. Journal of the American Ceramic Society, 2006, 89, 2577-2585.	1.9	125
102	FIB-Nanotomography of Particulate Systemsâ€"Part II: Particle Recognition and Effect of Boundary Truncation. Journal of the American Ceramic Society, 2006, 89, 2586-2595.	1.9	73
103	Linking yield stress measurements: Spread test versus Viskomat. Cement and Concrete Research, 2006, 36, 99-109.	4.6	63
104	Relating the molecular structure of comb-type superplasticizers to the compression rheology of MgO suspensions. Cement and Concrete Research, 2006, 36, 1231-1239.	4.6	70
105	The Rheology of Cementitious Materials. MRS Bulletin, 2004, 29, 314-318.	1.7	46
106	Towards a prediction of superplasticized concrete rheology. Materials and Structures/Materiaux Et Constructions, 2004, 37, 289-300.	1.3	126
107	Dispersion forces in cement suspensions. Cement and Concrete Research, 2004, 34, 399-408.	4.6	176
108	Reply to the discussion by S. Chatterji of the paper â€œElectrostatic repulsion between particles in cement suspensions: domain of validity of linearized Poissonâ€“Boltzmann equation for nonideal electrolytesâ€• Cement and Concrete Research, 2004, 34, 1955-1957.	4.6	0

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109	Electrostatic repulsion between particles in cement suspensions: Domain of validity of linearized Poissonâ€“Boltzmann equation for nonideal electrolytes. Cement and Concrete Research, 2003, 33, 781-791.	4.6	84
110	Crystallization damage by sodium sulfate. Journal of Cultural Heritage, 2003, 4, 109-115.	1.5	216
111	Hydration and Crystallization Pressure of Sodium Sulfate: a Critical Review. Materials Research Society Symposia Proceedings, 2002, 712, 221.	0.1	22
112	Rheology Optimization of Particle Modified Consolidants. Materials Research Society Symposia Proceedings, 2002, 712, 261.	0.1	11
113	Salt damage in porous materials: how high supersaturations are generated. Journal of Crystal Growth, 2002, 242, 435-454.	0.7	429
114	Acoustophoretic characterization of cement suspensions. Materials and Structures/Materiaux Et Constructions, 2002, 35, 541-549.	1.3	6
115	A simplified view on chemical effects perturbing the action of superplasticizers. Cement and Concrete Research, 2001, 31, 1169-1176.	4.6	338
116	Materials Science Research for the Conservation of Sculpture and Monuments. MRS Bulletin, 2001, 26, 44-50.	1.7	65
117	Synthesis of Microporous Silica Spheres. Journal of Colloid and Interface Science, 2000, 227, 302-315.	5.0	104
118	Digital Concrete: Opportunities and Challenges. RILEM Technical Letters, 0, 1, 67-75.	0.0	429
119	Predicting salt damage in practice: A theoretical insight into laboratory tests.. RILEM Technical Letters, 0, 2, 108-118.	0.0	60
120	Stone consolidation: a critical discussion of theoretical insights and field practice. RILEM Technical Letters, 0, 4, 145-153.	0.0	16
121	Revisiting Folded Forms with Digital Fabrication. , 0, , .		1