Paulo J M Monteiro

List of Publications by Year
in descending order

78	5,006	87843 38	91828 69
papers	citations	h-index	g-index

78	78	78	3461
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Towards sustainable concrete. Nature Materials, 2017, 16, 698-699.	13.3	683
2	Mechanical properties, durability, and life-cycle assessment of self-consolidating concrete mixtures made with blended portland cements containing fly ash and limestone powder. Cement and Concrete Composites, 2015, 56, 59-72.	4.6	324
3	Readily implementable techniques can cut annual CO ‹sub›2‹/sub› emissions from the production of concrete by over 20%. Environmental Research Letters, 2016, 11, 074029.	2.2	278
4	Impacts of booming concrete production on water resources worldwide. Nature Sustainability, 2018, 1, 69-76.	11.5	247
5	Development of ultra-lightweight cement composites with low thermal conductivity and high specific strength for energy efficient buildings. Construction and Building Materials, 2015, 87, 100-112.	3.2	153
6	Unlocking the secrets of Al-tobermorite in Roman seawater concrete. American Mineralogist, 2013, 98, 1669-1687.	0.9	133
7	Multiscale X-ray tomography of cementitious materials: A review. Cement and Concrete Research, 2020, 128, 105824.	4.6	127
8	Aluminum-induced dreierketten chain cross-links increase the mechanical properties of nanocrystalline calcium aluminosilicate hydrate. Scientific Reports, 2017, 7, 44032.	1.6	122
9	Densification of the interlayer spacing governs the nanomechanical properties of calcium-silicate-hydrate. Scientific Reports, 2017, 7, 10986.	1.6	110
10	Material and Elastic Properties of ‹scp›‹scp›Al‹/scp›‹/scp›â€Tobermorite in Ancient Roman Seawater Concrete. Journal of the American Ceramic Society, 2013, 96, 2598-2606.	1.9	106
11	Interfacial Connection Mechanisms in Calciumâ€“Silicateâ€“Hydrates/Polymer Nanocomposites: A Molecular Dynamics Study. ACS Applied Materials & Interfaces, 2017, 9, 41014-41025.	4.0	106
12	Advances in characterizing and understanding the microstructure of cementitious materials. Cement and Concrete Research, 2019, 124, 105806.	4.6	104
13	The chemistry and structure of calcium (alumino) silicate hydrate: A study by XANES, ptychographic imaging, and wide- and small-angle scattering. Cement and Concrete Research, 2019, 115, 367-378.	4.6	104
14	A comparative study of self-consolidating concretes incorporating high-volume natural pozzolan or high-volume fly ash. Construction and Building Materials, 2014, 67, 14-19.	3.2	102
15	Green concrete containing diatomaceous earth and limestone: Workability, mechanical properties, and life-cycle assessment. Journal of Cleaner Production, 2019, 223, 662-679.	4.6	99
16	A mathematical model of fluid and gas flow in nanoporous media. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 20309-20313.	3.3	98
17	Characterization of photocatalytic TiO2 powder under varied environments using near ambient pressure X-ray photoelectron spectroscopy. Scientific Reports, 2017, 7, 43298.	1.6	94
18	Role of Adsorption Phenomena in Cubic Tricalcium Aluminate Dissolution. Langmuir, 2017, 33, 45-55.	1.6	93

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19	Compositional Evolution of Calcium Silicate Hydrate (<scp><scp>Câ€“Sâ€“H</scp></scp>) Structures by Total<scp>X</scp>â€Ray Scattering. Journal of the American Ceramic Society, 2012, 95, 793-798.	1.9	86
20	Synchrotron X-ray nanotomographic and spectromicroscopic study of the tricalcium aluminate hydration in the presence of gypsum. Cement and Concrete Research, 2018, 111, 130-137.	4.6	79
21	Fibrillar calcium silicate hydrate seeds from hydrated tricalcium silicate lower cement demand. Cement and Concrete Research, 2020, 137, 106195.	4.6	75
22	Effects of CO₂ and temperature on the structure and chemistry of Câ€“(Aâ€“)Sâ€“H investigated by Raman spectroscopy. RSC Advances, 2017, 7, 48925-48933.	1.7	70
23	Experimental determination of bulk modulus of 14Ã... tobermorite using high pressure synchrotron X-ray diffraction. Cement and Concrete Research, 2012, 42, 397-403.	4.6	67
24	Morphological quantification of hierarchical geomaterials by X-ray nano-CT bridges the gap from nano to micro length scales. American Mineralogist, 2012, 97, 480-483.	0.9	66
25	Preferred orientation of calcium aluminosilicate hydrate induced by confined compression. Cement and Concrete Research, 2018, 113, 186-196.	4.6	63
26	Multi-scale study of high-strength low-thermal-conductivity cement composites containing cenospheres. Cement and Concrete Composites, 2017, 80, 91-103.	4.6	59
27	Influences of cross-linking and Al incorporation on the intrinsic mechanical properties of tobermorite. Cement and Concrete Research, 2020, 136, 106170.	4.6	58
28	Structure and Intrinsic Mechanical Properties of Nanocrystalline Calcium Silicate Hydrate. ACS Sustainable Chemistry and Engineering, 2020, 8, 12453-12461.	3.2	57
29	Modification of poly(ethylene glycol) on the microstructure and mechanical properties of calcium silicate hydrates. Cement and Concrete Research, 2019, 115, 20-30.	4.6	55
30	Comparison indices for design and proportioning of concrete mixtures taking environmental impacts into account. Cement and Concrete Composites, 2016, 68, 131-143.	4.6	54
31	XPS Study on the Stability and Transformation of Hydrate and Carbonate Phases within MgO Systems. Materials, 2017, 10, 75.	1.3	53
32	Advanced Nanoscale Characterization of Cement Based Materials Using X-Ray Synchrotron Radiation: A Review. International Journal of Concrete Structures and Materials, 2013, 7, 95-110.	1.4	51
33	Greenhouse gas emissions from concrete can be reduced by using mix proportions, geometric aspects, and age as design factors. Environmental Research Letters, 2015, 10, 114017.	2.2	49
34	Permeability of Concrete with Recycled Concrete Aggregate and Pozzolanic Materials under Stress. Materials, 2016, 9, 252.	1.3	45
35	Nanometer-Resolved Spectroscopic Study Reveals the Conversion Mechanism of CaOÂ·Al₂O₃Â·10H₂O to 2CaOÂ·Al₂O₃Â·8H₂O and 3CaOÂ·Al₂O₃Â·6H₂O at an Elevated Temperature. Crystal Growth and Design, 2017, 17, 4246-4253.	1.4	44
36	Preferred orientation of calcium aluminosilicate hydrate compacts: Implications for creep and indentation. Cement and Concrete Research, 2021, 143, 106371.	4.6	44

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37	Atomic and nano-scale characterization of a 50-year-old hydrated C3S paste. Cement and Concrete Research, 2015, 77, 36-46.	4.6	42
38	The Hydration of Î²- and Î±â€²_H-Dicalcium Silicates: An X-ray Spectromicroscopic Study. ACS Sustainable Chemistry and Engineering, 2019, 7, 2316-2326.	3.2	42
39	Soft Xâ€ray Ptychographic Imaging and Morphological Quantification of Calcium Silicate Hydrates (Câ€“Sâ€“H). Journal of the American Ceramic Society, 2015, 98, 4090-4095.	1.9	38
40	Pressure induced reactions amongst calcium aluminate hydrate phases. Cement and Concrete Research, 2011, 41, 571-578.	4.6	37
41	Phase Changes of Monosulfoaluminate in NaCl Aqueous Solution. Materials, 2016, 9, 401.	1.3	37
42	Calcium Sulfoaluminate Sodalite (<scp><scp>Ca₄Al₆O₁₂SO₄</scp></scp>) Crystal Structure Evaluation and Bulk Modulus Determination. Journal of the American Ceramic Society, 2014, 97, 892-898.	1.9	36
43	Effect of Lithium Nitrate on the Alkali-Silica Reaction Gel. Journal of the American Ceramic Society, 2008, 91, 3370-3374.	1.9	32
44	Elastic Properties of Tricalcium Aluminate from Highâ€Pressure Experiments and Firstâ€Principles Calculations. Journal of the American Ceramic Society, 2012, 95, 2972-2978.	1.9	32
45	Mechanical properties of struvite-K: A high-pressure X-ray diffraction study. Cement and Concrete Research, 2020, 136, 106171.	4.6	28
46	Coordination environment of Si in calcium silicate hydrates, silicate minerals, and blast furnace slags: A XANES database. Cement and Concrete Research, 2021, 143, 106376.	4.6	27
47	Scaling and saturation laws for the expansion of concrete exposed to sulfate attack. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 11467-11472.	3.3	25
48	Characterization of the Bonds Developed between Calcium Silicate Hydrate and Polycarboxylate-Based Superplasticizers with Silyl Functionalities. Langmuir, 2017, 33, 3404-3412.	1.6	24
49	A high-pressure X-ray diffraction study of the crystalline phases in calcium aluminate cement paste. Cement and Concrete Research, 2018, 108, 38-45.	4.6	24
50	Synchrotron X-ray Raman scattering shows the changes of the Ca environment in C-S-H exposed to high pressure. Cement and Concrete Research, 2020, 132, 106066.	4.6	24
51	Microstructure and water absorption of ancient concrete from Pompeii: An integrated synchrotron microtomography and neutron radiography characterization. Cement and Concrete Research, 2021, 139, 106282.	4.6	24
52	Multiscale characterization of chemicalâ€“mechanical interactions between polymer fibers and cementitious matrix. Cement and Concrete Composites, 2014, 48, 9-18.	4.6	23
53	First-principles elasticity of monocarboaluminate hydrates. American Mineralogist, 2014, 99, 1360-1368.	0.9	21
54	Effect of Gypsum on the Early Hydration of Cubic and Na-Doped Orthorhombic Tricalcium Aluminate. Materials, 2018, 11, 568.	1.3	21

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55	CaL_{2,3}-edge near edge X-ray absorption fine structure of tricalcium aluminate, gypsum, and calcium (sulfo)aluminate hydrates. American Mineralogist, 2017, 102, 900-908.	0.9	21
56	Xâ€ray Diffraction Investigations of Microstructure of Calcium Hydroxide Crystallites in the Interfacial Transition Zone of Concrete. Journal of the American Ceramic Society, 2003, 86, 2162-2166.	1.9	20
57	X-ray spectromicroscopic study of interactions between NaCl and calcium silicate hydrates. Magazine of Concrete Research, 2014, 66, 141-149.	0.9	20
58	Soft Xâ€ray Spectromicroscopic Investigation of Synthetic Câ€Sâ€H and C 3 S Hydration Products. Journal of the American Ceramic Society, 2015, 98, 2914-2920.	1.9	19
59	Silicate Bond Characteristics in Calciumâ€“Silicateâ€“Hydrates Determined by High Pressure Raman Spectroscopy. Journal of Physical Chemistry C, 2020, 124, 18335-18345.	1.5	19
60	Plastic deformation mechanism of calcium-silicate hydrates determined by deviatoric-stress Raman spectroscopy. Cement and Concrete Research, 2021, 146, 106476.	4.6	19
61	Effects of Incorporating High-Volume Fly Ash into Tricalcium Silicate on the Degree of Silicate Polymerization and Aluminum Substitution for Silicon in Calcium Silicate Hydrate. Materials, 2017, 10, 131.	1.3	18
62	In Situ Soft X-ray Spectromicroscopy of Early Tricalcium Silicate Hydration. Materials, 2016, 9, 976.	1.3	17
63	Materials Data Science for Microstructural Characterization of Archaeological Concrete. MRS Advances, 2020, 5, 305-318.	0.5	16
64	Early Formation of Ettringite in Tricalcium Aluminate?Calcium Hydroxide?Gypsum Dispersions. Journal of the American Ceramic Society, 2007, 90, 614-617.	1.9	15
65	Developments in TEM Nanotomography of Calcium Silicate Hydrate. Journal of the American Ceramic Society, 2015, 98, 2307-2312.	1.9	15
66	A combined synchrotron radiation micro computed tomography and micro X-ray diffraction study on deleterious alkali-silica reaction. Journal of Materials Science, 2015, 50, 7985-7997.	1.7	15
67	CaCl₂-Accelerated Hydration of Tricalcium Silicate: A STXM Study Combined with²⁹Si MAS NMR. Journal of Nanomaterials, 2015, 2015, 1-10.	1.5	13
68	Molecular Dynamics Study of Water Molecules in Interlayer of 14 Ã... Tobermorite. Journal of Advanced Concrete Technology, 2013, 11, 180-188.	0.8	12
69	Relationship between Degree of Deformation in Quartz and Silica Dissolution for the Development of Alkali-Silica Reaction in Concrete. Materials, 2017, 10, 1022.	1.3	10
70	Sequestration of solid carbon in concrete: A large-scale enabler of lower-carbon intensity hydrogen from natural gas. MRS Bulletin, 2021, 46, 680-686.	1.7	10
71	The Alkali-Silica Reaction in a Monolithic Opal. Journal of the American Ceramic Society, 1994, 77, 2849-2856.	1.9	9
72	3D Nanotomography of calcium silicate hydrates by transmission electron microscopy. Journal of the American Ceramic Society, 2021, 104, 1852-1862.	1.9	9

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73	Effect of the Transition Zone on the Bulk Modulus of Concrete. Materials Research Society Symposia Proceedings, 1994, 370, 413.	0.1	8
74	Use of Recyclable Materials in Sustainable Civil Engineering Applications. Advances in Civil Engineering, 2011, 2011, 1-2.	0.4	8
75	A Scanning Transmission X-ray Microscopy Study of Cubic and Orthorhombic C3A and Their Hydration Products in the Presence of Gypsum. Materials, 2016, 9, 745.	1.3	8
76	Damage characterization of concrete panels due to impact loading by motionless X-ray laminography. Journal of Materials Science, 2007, 42, 3280-3285.	1.7	6
77	Effect of superplasticisers on the hydration process, products and microstructure of tricalcium aluminate paste in the presence of gypsum. Advances in Cement Research, 2016, 28, 298-309.	0.7	3
78	The effect of calcium salts on air-void structure in air-entrained concrete â€“ a statistical and simulated study. Science and Engineering of Composite Materials, 2017, 24, 591-598.	0.6	1