

Branko Avija

List of Publications by Year in descending order

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Version: 2024-02-01

96
papers

3,801
citations

101496

36
h-index

133188

59
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100
all docs

100
docs citations

100
times ranked

2501
citing authors

#	ARTICLE	IF	CITATIONS
1	Interpretable Ensemble-Machine-Learning models for predicting creep behavior of concrete. <i>Cement and Concrete Composites</i> , 2022, 125, 104295.	4.6	109
2	Modelling of capillary water absorption in sound and cracked concrete using a dual-lattice approach: Computational aspects. <i>Construction and Building Materials</i> , 2022, 320, 125826.	3.2	11
3	Design and analyses of printable strain hardening cementitious composites with optimized particle size distribution. <i>Construction and Building Materials</i> , 2022, 324, 126411.	3.2	24
4	Stress evolution in restrained GGBFS concrete due to autogenous deformation: bayesian optimization of aging creep. <i>Construction and Building Materials</i> , 2022, 324, 126690.	3.2	8
5	Effect of curing methods during a long time gap between two printing sessions on the interlayer bonding of 3D printed cementitious materials. <i>Construction and Building Materials</i> , 2022, 332, 127394.	3.2	14
6	Mechanical properties and healing efficiency of 3D-printed ABS vascular based self-healing cementitious composite: Experiments and modelling. <i>Engineering Fracture Mechanics</i> , 2022, 267, 108471.	2.0	14
7	Fatigue life and cracking characterization of engineered cementitious composites (ECC) under flexural cyclic load. <i>Construction and Building Materials</i> , 2022, 335, 127465.	3.2	12
8	Statistical mixture design for carbide residue activated blast furnace slag foamed lightweight concrete. <i>Construction and Building Materials</i> , 2022, 342, 127840.	3.2	6
9	Microbiologically Induced Concrete Corrosion: A Concise Review of Assessment Methods, Effects, and Corrosion-Resistant Coating Materials. <i>Materials</i> , 2022, 15, 4279.	1.3	11
10	Convolutional neural network for predicting crack pattern and stress-crack width curve of air-void structure in 3D printed concrete. <i>Engineering Fracture Mechanics</i> , 2022, 271, 108624.	2.0	18
11	Thermomechanical Performance Analysis of Novel Cement-Based Building Envelopes with Enhanced Passive Insulation Properties. <i>Materials</i> , 2022, 15, 4925.	1.3	1
12	Towards understanding deformation and fracture in cementitious lattice materials: Insights from multiscale experiments and simulations. <i>Construction and Building Materials</i> , 2022, 345, 128409.	3.2	4
13	Tunable mechanical behavior of auxetic cementitious cellular composites (CCCs): Experiments and simulations. <i>Construction and Building Materials</i> , 2021, 266, 121388.	3.2	27
14	On the Use of Machine Learning Models for Prediction of Compressive Strength of Concrete: Influence of Dimensionality Reduction on the Model Performance. <i>Materials</i> , 2021, 14, 713.	1.3	38
15	Determination of Loss of Reinforcement Due to Corrosion through X-ray Computer Micro-Tomography. <i>Materials</i> , 2021, 14, 893.	1.3	2
16	Modeling of microstructural effects on the creep of hardened cement paste using an experimentally informed lattice model. <i>Computer-Aided Civil and Infrastructure Engineering</i> , 2021, 36, 560-576.	6.3	20
17	Cementitious composites reinforced with 3D printed functionally graded polymeric lattice structures: Experiments and modelling. <i>Additive Manufacturing</i> , 2021, 39, 101887.	1.7	15
18	Analysis of naturally-generated corrosion products due to chlorides in 20-year old reinforced concrete: An elastic modulus-mineralogy characterization. <i>Corrosion Science</i> , 2021, 184, 109356.	3.0	10

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19	A discrete lattice model for assessment of buildability performance of 3D printed concrete. <i>Computer-Aided Civil and Infrastructure Engineering</i> , 2021, 36, 638-655.	6.3	24
20	Numerical investigation of external sulfate attack and its effect on chloride binding and diffusion in concrete. <i>Construction and Building Materials</i> , 2021, 285, 122806.	3.2	70
21	Use of fine recycled concrete aggregates in concrete: A critical review. <i>Journal of Building Engineering</i> , 2021, 38, 102196.	1.6	121
22	Prehydration of calcium sulfoaluminate (CSA) clinker at different relative humidities. <i>Cement and Concrete Research</i> , 2021, 144, 106423.	4.6	11
23	Early-age properties of alkali-activated slag and glass wool paste. <i>Construction and Building Materials</i> , 2021, 291, 123326.	3.2	14
24	Fresh and hardened properties of self-compacting concrete containing recycled fine clay brick aggregates. <i>Materials and Structures/Materiaux Et Constructions</i> , 2021, 54, 1.	1.3	12
25	Assessing strain rate sensitivity of cement paste at the micro-scale through micro-cantilever testing. <i>Cement and Concrete Composites</i> , 2021, 121, 104084.	4.6	14
26	Modelling and Simulation for Concrete Durability: Mechanism and Prediction. <i>Modelling and Simulation in Engineering</i> , 2021, 2021, 1-2.	0.4	0
27	An experimental and numerical investigation of coarse aggregate settlement in fresh concrete under vibration. <i>Cement and Concrete Composites</i> , 2021, 122, 104153.	4.6	41
28	The effect of furnace steel slag powder on the performance of cementitious mortar at ambient temperature and after exposure to elevated temperatures. <i>Structures</i> , 2021, 33, 2811-2823.	1.7	19
29	A numerical study of fatigue of hardened cement paste at the microscale. <i>International Journal of Fatigue</i> , 2021, 151, 106401.	2.8	2
30	Experimental study of flexural fatigue behaviour of cement paste at the microscale. <i>International Journal of Fatigue</i> , 2021, 151, 106378.	2.8	8
31	Experimental investigation of the short-term creep recovery of hardened cement paste at micrometre length scale. <i>Cement and Concrete Research</i> , 2021, 149, 106562.	4.6	13
32	Engineering of green cementitious composites modified with siliceous fly ash: Understanding the importance of curing conditions. <i>Construction and Building Materials</i> , 2021, 313, 125209.	3.2	8
33	Mechanical Properties of Lightweight Cementitious Cellular Composites Incorporating Micro-Encapsulated Phase Change Material. <i>Materials</i> , 2021, 14, 7586.	1.3	5
34	The influence of defects at the steel/concrete interface for chloride-induced pitting corrosion of naturally-deteriorated 20-years-old specimens studied through X-ray Computed Tomography. <i>Construction and Building Materials</i> , 2020, 235, 117474.	3.2	39
35	Micromechanical testing and modelling of blast furnace slag cement pastes. <i>Construction and Building Materials</i> , 2020, 239, 117841.	3.2	19
36	Effect of Fibers on Durability of Concrete: A Practical Review. <i>Materials</i> , 2020, 13, 4562.	1.3	58

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37	Discrete lattice fracture modelling of hydrated cement paste under uniaxial compression at micro-scale. Construction and Building Materials, 2020, 263, 120153.	3.2	9
38	Lattice Fracture Model for Concrete Fracture Revisited: Calibration and Validation. Applied Sciences (Switzerland), 2020, 10, 4822.	1.3	23
39	Elucidating the Effect of Accelerated Carbonation on Porosity and Mechanical Properties of Hydrated Portland Cement Paste Using X-Ray Tomography and Advanced Micromechanical Testing. Micromachines, 2020, 11, 471.	1.4	15
40	Micro-cantilever testing on the short-term creep behaviour of cement paste at micro-scale. Cement and Concrete Research, 2020, 134, 106105.	4.6	23
41	Influence of SiO ₂ , TiO ₂ and Fe ₂ O ₃ nanoparticles on the properties of fly ash blended cement mortars. Construction and Building Materials, 2020, 258, 119627.	3.2	77
42	Influence of Micro-Pore Connectivity and Micro-Fractures on Calcium Leaching of Cement Pastes – A Coupled Simulation Approach. Materials, 2020, 13, 2697.	1.3	11
43	Effect of Recycled Iron Powder as Fine Aggregate on the Mechanical, Durability, and High Temperature Behavior of Mortars. Materials, 2020, 13, 1168.	1.3	21
44	Experimentally validated meso-scale fracture modelling of mortar using output from micromechanical models. Cement and Concrete Composites, 2020, 110, 103567.	4.6	28
45	Impact of Chemically Treated Waste Rubber Tire Aggregates on Mechanical, Durability and Thermal Properties of Concrete. Frontiers in Materials, 2020, 7, .	1.2	35
46	Cementitious cellular composites with auxetic behavior. Cement and Concrete Composites, 2020, 111, 103624.	4.6	35
47	Microstructure informed micromechanical modelling of hydrated cement paste: Techniques and challenges. Construction and Building Materials, 2020, 251, 118983.	3.2	41
48	Extended Lattice Model to Simulate the Printing Process of 3D Printed Cementitious Materials. RILEM Bookseries, 2020, , 814-823.	0.2	1
49	Auxetic Behavior of Cementitious Cellular Composites Under Uniaxial Compression and Cyclic Loading. RILEM Bookseries, 2020, , 547-556.	0.2	1
50	Assessing Hydrated Cement Paste Properties Using Experimentally Informed Discrete Models. Journal of Materials in Civil Engineering, 2019, 31, .	1.3	9
51	Thermal Response of Mortar Panels with Different Forms of Macro-Encapsulated Phase Change Materials: A Finite Element Study. Energies, 2019, 12, 2636.	1.6	8
52	The Effect of Material Fresh Properties and Process Parameters on Buildability and Interlayer Adhesion of 3D Printed Concrete. Materials, 2019, 12, 2149.	1.3	156
53	Combined experimental and numerical study of uniaxial compression failure of hardened cement paste at micrometre length scale. Cement and Concrete Research, 2019, 126, 105925.	4.6	55
54	Experimentally informed fracture modelling of interfacial transition zone at micro-scale. Cement and Concrete Composites, 2019, 104, 103383.	4.6	36

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55	Numerical investigation of crack self-sealing in cement-based composites with superabsorbent polymers. <i>Cement and Concrete Composites</i> , 2019, 104, 103395.	4.6	26
56	The influence of defects at the steel/concrete interface for pitting corrosion initiation studied through X-ray Computed Tomography and image analysis. <i>MATEC Web of Conferences</i> , 2019, 289, 10011.	0.1	1
57	Development of Nano-SiO ₂ and Bentonite-Based Mortars for Corrosion Protection of Reinforcing Steel. <i>Materials</i> , 2019, 12, 2622.	1.3	18
58	Development of strain hardening cementitious composite (SHCC) reinforced with 3D printed polymeric reinforcement: Mechanical properties. <i>Composites Part B: Engineering</i> , 2019, 174, 107011.	5.9	41
59	Agricultural Solid Waste as Source of Supplementary Cementitious Materials in Developing Countries. <i>Materials</i> , 2019, 12, 1112.	1.3	75
60	Experimentally informed micromechanical modelling of cement paste: An approach coupling X-ray computed tomography and statistical nanoindentation. <i>Composites Part B: Engineering</i> , 2019, 157, 109-122.	5.9	54
61	Modelling of deformation and fracture for a model quasi-brittle material with controlled porosity: Synthetic versus real microstructure. <i>Engineering Fracture Mechanics</i> , 2019, 205, 399-417.	2.0	15
62	Deformation and fracture of 3D printed disordered lattice materials: Experiments and modeling. <i>Materials and Design</i> , 2019, 162, 143-153.	3.3	66
63	Combined experimental and numerical study on micro-cube indentation splitting test of cement paste. <i>Engineering Fracture Mechanics</i> , 2018, 199, 773-786.	2.0	39
64	Effect of natural carbonation on the pore structure and elastic modulus of the alkali-activated fly ash and slag pastes. <i>Construction and Building Materials</i> , 2018, 161, 687-704.	3.2	70
65	Modelling deformation and fracture of Gilsocarbon graphite subject to service environments. <i>Journal of Nuclear Materials</i> , 2018, 499, 18-28.	1.3	12
66	Static and Fatigue Tests on Cementitious Cantilever Beams Using Nanoindenter. <i>Micromachines</i> , 2018, 9, 630.	1.4	22
67	Size effect on splitting strength of hardened cement paste: Experimental and numerical study. <i>Cement and Concrete Composites</i> , 2018, 94, 264-276.	4.6	60
68	Engineering Properties of Concrete with Waste Recycled Plastic: A Review. <i>Sustainability</i> , 2018, 10, 3875.	1.6	129
69	Smart Crack Control in Concrete through Use of Phase Change Materials (PCMs): A Review. <i>Materials</i> , 2018, 11, 654.	1.3	53
70	Towards understanding stochastic fracture performance of cement paste at micro length scale based on numerical simulation. <i>Construction and Building Materials</i> , 2018, 183, 189-201.	3.2	45
71	A comprehensive review on mechanical and durability properties of cement-based materials containing waste recycled glass. <i>Journal of Cleaner Production</i> , 2018, 198, 891-906.	4.6	109
72	Piezoresistive Properties of Cementitious Composites Reinforced by PVA Fibres. <i>RILEM Bookseries</i> , 2018, 709-717.	0.2	0

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73	Mechanical Properties of Ductile Cementitious Composites Incorporating Microencapsulated Phase Change Materials. RILEM Bookseries, 2018, , 115-122.	0.2	3
74	Development of ductile cementitious composites incorporating microencapsulated phase change materials. International Journal of Advances in Engineering Sciences and Applied Mathematics, 2017, 9, 169-180.	0.7	13
75	Experimentally validated multi-scale modelling scheme of deformation and fracture of cement paste. Cement and Concrete Research, 2017, 102, 175-186.	4.6	63
76	Towards understanding the influence of porosity on mechanical and fracture behaviour of quasi-brittle materials: experiments and modelling. International Journal of Fracture, 2017, 205, 57-72.	1.1	77
77	Influence of Cracking on Moisture Uptake in Strain-Hardening Cementitious Composites. Journal of Nanomechanics & Micromechanics, 2017, 7, .	1.4	19
78	Influence of Microencapsulated Phase Change Material (PCM) Addition on (Micro) Mechanical Properties of Cement Paste. Materials, 2017, 10, 863.	1.3	46
79	Failure Modes in Concrete Repair Systems due to Ongoing Corrosion. Advances in Materials Science and Engineering, 2017, 2017, 1-14.	1.0	5
80	Simulation-Aided Design of Tubular Polymeric Capsules for Self-Healing Concrete. Materials, 2017, 10, 10.	1.3	36
81	A 3D Lattice Modelling Study of Drying Shrinkage Damage in Concrete Repair Systems. Materials, 2016, 9, 575.	1.3	38
82	Microscale Testing and Modelling of Cement Paste as Basis for Multi-Scale Modelling. Materials, 2016, 9, 907.	1.3	76
83	Carbonation of cement paste: Understanding, challenges, and opportunities. Construction and Building Materials, 2016, 117, 285-301.	3.2	455
84	Use of phase change materials (PCMs) to mitigate early age thermal cracking in concrete: Theoretical considerations. Construction and Building Materials, 2016, 126, 332-344.	3.2	78
85	Experimentally informed multi-scale modelling of mechanical properties of quasi-brittle nuclear graphite. Engineering Fracture Mechanics, 2016, 153, 360-377.	2.0	45
86	Multi-scale characterization and modelling of damage evolution in nuclear Gilsocarbon graphite. Materials Research Society Symposia Proceedings, 2015, 1809, 1-6.	0.1	1
87	Corrosion induced cover cracking studied by X-ray computed tomography, nanoindentation, and energy dispersive X-ray spectrometry (EDS). Materials and Structures/Materiaux Et Constructions, 2015, 48, 2043-2062.	1.3	78
88	Chloride ingress in cracked concrete: a laser induced breakdown spectroscopy (LIBS) study. Journal of Advanced Concrete Technology, 2014, 12, 425-442.	0.8	33
89	Micromechanical Study of the Interface Properties in Concrete Repair Systems. Journal of Advanced Concrete Technology, 2014, 12, 320-339.	0.8	40
90	Tailoring strain-hardening cementitious composite repair systems through numerical experimentation. Cement and Concrete Composites, 2014, 53, 200-213.	4.6	41

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91	Lattice modeling of rapid chloride migration in concrete. Cement and Concrete Research, 2014, 61-62, 49-63.	4.6	67
92	Assessment of cracks in reinforced concrete by means of electrical resistance and image analysis. Construction and Building Materials, 2014, 65, 417-426.	3.2	25
93	Lattice modeling of chloride diffusion in sound and cracked concrete. Cement and Concrete Composites, 2013, 42, 30-40.	4.6	159
94	Cracking of the concrete cover due to reinforcement corrosion: A two-dimensional lattice model study. Construction and Building Materials, 2013, 44, 626-638.	3.2	145
95	Traffic-induced vibrations of frame structures. Canadian Journal of Civil Engineering, 2013, 40, 158-171.	0.7	2
96	The Evaluation of Deformation and Fracture of Gilsocarbon Graphite Subject to Service Environments: Experimental and Modelling. Key Engineering Materials, 0, 754, 91-94.	0.4	2