N M Anoop Krishnan

List of Publications by Year
in descending order

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Version: 2024-02-01

106	2,634	185998	243296
papers	citations	28 h-index	44 g-index

108	108	108	1764
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	The influence of microencapsulated phase change material (PCM) characteristics on the microstructure and strength of cementitious composites: Experiments and finite element simulations. Cement and Concrete Composites, 2016, 73, 29-41.	4.6	128
2	A new transferable interatomic potential for molecular dynamics simulations of borosilicate glasses. Journal of Non-Crystalline Solids, 2018, 498, 294-304.	1.5	121
3	Effective properties of a fly ash geopolymer: Synergistic application of X-ray synchrotron tomography, nanoindentation, and homogenization models. Cement and Concrete Research, 2015, 78, 252-262.	4.6	107
4	Cooling rate effects in sodium silicate glasses: Bridging the gap between molecular dynamics simulations and experiments. Journal of Chemical Physics, 2017, 147, 074501.	1.2	107
5	Predicting the dissolution kinetics of silicate glasses using machine learning. Journal of Non-Crystalline Solids, 2018, 487, 37-45.	1.5	100
6	Predicting the Youngâ€™s Modulus of Silicate Glasses using High-Throughput Molecular Dynamics Simulations and Machine Learning. Scientific Reports, 2019, 9, 8739.	1.6	86
7	Predicting the dissolution kinetics of silicate glasses by topology-informed machine learning. Npj Materials Degradation, 2019, 3, .	2.6	59
8	Predicting Young's modulus of oxide glasses with sparse datasets using machine learning. Journal of Non-Crystalline Solids, 2019, 524, 119643.	1.5	58
9	Prediction of concrete strengths enabled by missing data imputation and interpretable machine learning. Cement and Concrete Composites, 2022, 128, 104414.	4.6	55
10	The fracture response of blended formulations containing limestone powder: Evaluations using two-parameter fracture model and digital image correlation. Cement and Concrete Composites, 2014, 53, 316-326.	4.6	54
11	Deep learning aided rational design of oxide glasses. Materials Horizons, 2020, 7, 1819-1827.	6.4	54
12	Crack Healing in Cementitious Mortars Using Enzyme-Induced Carbonate Precipitation: Quantification Based on Fracture Response. Journal of Materials in Civil Engineering, 2018, 30, .	1.3	53
13	Topological Control on the Structural Relaxation of Atomic Networks under Stress. Physical Review Letters, 2017, 119, 035502.	2.9	51
14	MatSciBERT: A materials domain language model for text mining and information extraction. Npj Computational Materials, 2022, 8, .	3.5	50
15	Confined Water in Layered Silicates: The Origin of Anomalous Thermal Expansion Behavior in Calcium-Silicate-Hydrates. ACS Applied Materials & Interfaces, 2016, 8, 35621-35627.	4.0	43
16	Irradiation-induced topological transition in SiO2: Structural signature of networks' rigidity. Journal of Non-Crystalline Solids, 2017, 463, 25-30.	1.5	43
17	Microstructure-guided numerical simulation to evaluate the influence of phase change materials (PCMs) on the freeze-thaw response of concrete pavements. Construction and Building Materials, 2019, 201, 246-256.	3.2	41
18	Revealing the Effect of Irradiation on Cement Hydrates: Evidence of a Topological Self-Organization. ACS Applied Materials & Interfaces, 2017, 9, 32377-32385.	4.0	40

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19	Synthesis and Properties of a Novel Structural Binder Utilizing the Chemistry of Iron Carbonation. ACS Applied Materials & Interfaces, 2014, 6, 8295-8304.	4.0	39
20	Effects of Irradiation on Albiteâ€™s Chemical Durability. Journal of Physical Chemistry A, 2017, 121, 7835-7845.	1.1	37
21	Fracture process zone and tensile behavior of blended binders containing limestone powder. Cement and Concrete Research, 2015, 73, 51-62.	4.6	36
22	Ion exchange strengthening and thermal expansion of glasses: Common origin and critical role of network connectivity. Journal of Non-Crystalline Solids, 2017, 455, 70-74.	1.5	36
23	Irradiation- vs. vitrification-induced disordering: The case of ?-quartz and glassy silica. Journal of Chemical Physics, 2017, 146, 204502.	1.2	35
24	The hydrophilic-to-hydrophobic transition in glassy silica is driven by the atomic topology of its surface. Journal of Chemical Physics, 2018, 148, 074503.	1.2	35
25	Effects of polydispersity and disorder on the mechanical properties of hydrated silicate gels. Journal of the Mechanics and Physics of Solids, 2019, 122, 555-565.	2.3	35
26	A microstructure-guided constitutive modeling approach for random heterogeneous materials: Application to structural binders. Computational Materials Science, 2016, 119, 52-64.	1.4	31
27	Hardness of silicate glasses: Atomic-scale origin of the mixed modifier effect. Journal of Non-Crystalline Solids, 2018, 489, 16-21.	1.5	31
28	Cooling rate effects on the structure of 45S5 bioglass: Insights from experiments and simulations. Journal of Non-Crystalline Solids, 2020, 534, 119952.	1.5	31
29	Crack propagation and strain localization in metallic particulate-reinforced cementitious mortars. Materials & Design, 2015, 79, 15-25.	5.1	28
30	Scalable Gaussian processes for predicting the optical, physical, thermal, and mechanical properties of inorganic glasses with large datasets. Materials Advances, 2021, 2, 477-487.	2.6	28
31	Artificial intelligence and machine learning in glass science and technology: 21 challenges for the 21st century. International Journal of Applied Glass Science, 2021, 12, 277-292.	1.0	28
32	Enthalpy Landscape Dictates the Irradiation-Induced Disordering of Quartz. Physical Review X, 2017, 7, .	2.8	27
33	Realistic atomic structure of fly ash-based geopolymer gels: Insights from molecular dynamics simulations. Journal of Chemical Physics, 2019, 151, .	1.2	27
34	Irradiation-driven amorphous-to-glassy transition in quartz: The crucial role of the medium-range order in crystallization. Physical Review Materials, 2017, 1, .	0.9	27
35	Atomic picture of structural relaxation in silicate glasses. Applied Physics Letters, 2019, 114, .	1.5	26
36	Pore- and micro-structural characterization of a novel structural binder based on iron carbonation. Materials Characterization, 2014, 98, 168-179.	1.9	25

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37	Looking through glass: Knowledge discovery from materials science literature using natural language processing. Patterns, 2021, 2, 100290.	3.1	25
38	Chirality dependent elastic properties of single-walled boron nitride nanotubes under uniaxial and torsional loading. Journal of Applied Physics, 2014, 115, .	1.1	23
39	Microstructure-guided numerical simulations to predict the thermal performance of a hierarchical cement-based composite material. Cement and Concrete Composites, 2018, 87, 20-28.	4.6	23
40	Densityâ€“stiffness scaling in minerals upon disordering: Irradiation vs. vitrification. Acta Materialia, 2019, 166, 611-617.	3.8	23
41	Flexural fracture response of a novel iron carbonate matrix â€“ Glass fiber composite and its comparison to Portland cement-based composites. Construction and Building Materials, 2015, 93, 360-370.	3.2	22
42	Topological optimization of cementitious binders: Advances and challenges. Cement and Concrete Composites, 2019, 101, 5-14.	4.6	22
43	Fracture toughness of fly ash-based geopolymer gels: Evaluations using nanoindentation experiment and molecular dynamics simulation. Construction and Building Materials, 2020, 262, 120797.	3.2	22
44	Effect of irradiation on silicate aggregatesâ€™ density and stiffness. Journal of Nuclear Materials, 2018, 512, 126-136.	1.3	21
45	A microstructure-guided numerical approach to evaluate strain sensing and damage detection ability of random heterogeneous self-sensing structural materials. Computational Materials Science, 2019, 156, 195-205.	1.4	21
46	Understanding the role of post-indentation recovery on the hardness of glasses: Case of silica, borate, and borosilicate glasses. Journal of Non-Crystalline Solids, 2020, 534, 119955.	1.5	21
47	Effect of nanoscale phase separation on the fracture behavior of glasses: Toward tough, yet transparent glasses. Physical Review Materials, 2018, 2, .	0.9	21
48	Elucidating the formation of Alâ€“NBO bonds, Alâ€“Oâ€“Al linkages and clusters in alkaline-earth aluminosilicate glasses based on molecular dynamics simulations. Physical Chemistry Chemical Physics, 2019, 21, 23966-23977.	1.3	20
49	Ionic Conductivity of Na₃Al₂P₃O₁₂ Glass Electrolytesâ€”Role of Charge Compensators. Inorganic Chemistry, 2021, 60, 12893-12905.	1.9	20
50	Redox Sensitive Self-Assembling Dipeptide for Sustained Intracellular Drug Delivery. Bioconjugate Chemistry, 2019, 30, 2458-2468.	1.8	19
51	Evidence of a two-dimensional glass transition in graphene: Insights from molecular simulations. Scientific Reports, 2019, 9, 4517.	1.6	19
52	Long-term creep deformations in colloidal calciumâ€“silicateâ€“hydrate gels by accelerated aging simulations. Journal of Colloid and Interface Science, 2019, 542, 339-346.	5.0	19
53	Finite element-based micromechanical modeling of the influence of phase properties on the elastic response of cementitious mortars. Construction and Building Materials, 2016, 127, 153-166.	3.2	18
54	Fracture response of metallic particulate-reinforced cementitious composites: Insights from experiments and multiscale numerical simulations. Cement and Concrete Composites, 2019, 97, 154-165.	4.6	18

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55	Elucidating the auxetic behavior of cementitious cellular composites using finite element analysis and interpretable machine learning. Materials and Design, 2022, 213, 110341.	3.3	18
56	Glass Fracture Upon Ballistic Impact: New Insights From Peridynamics Simulations. Frontiers in Materials, 2019, 6, .	1.2	17
57	Dynamic compressive behavior of metallic particulate-reinforced cementitious composites: SHPB experiments and numerical simulations. Construction and Building Materials, 2019, 227, 116668.	3.2	17
58	The effect of irradiation on the atomic structure and chemical durability of calcite and dolomite. Npj Materials Degradation, 2019, 3, .	2.6	17
59	Interpreting the optical properties of oxide glasses with machine learning and Shapely additive explanations. Journal of the American Ceramic Society, 2022, 105, 4046-4057.	1.9	17
60	Strain energy and process zone based fracture characterization of a novel iron carbonate binding material. Engineering Fracture Mechanics, 2016, 156, 1-15.	2.0	16
61	Influence of microencapsulated phase change materials (PCMs) on the chloride ion diffusivity of concretes exposed to Freeze-thaw cycles: Insights from multiscale numerical simulations. Construction and Building Materials, 2019, 212, 317-328.	3.2	16
62	Role of Electrochemical Surface Potential and Irradiation on Garnet-Type Almandineâ€™s Dissolution Kinetics. Journal of Physical Chemistry C, 2018, 122, 17268-17277.	1.5	15
63	Defect induced plasticity and failure mechanism of boron nitride nanotubes under tension. Journal of Applied Physics, 2014, 116, .	1.1	14
64	Spatial damage sensing ability of metallic particulate-reinforced cementitious composites: Insights from electrical resistance tomography. Materials and Design, 2019, 175, 107817.	3.3	14
65	Analytical model of the network topology and rigidity of calcium aluminosilicate glasses. Journal of the American Ceramic Society, 2021, 104, 3947-3962.	1.9	14
66	Simulating the Fracture of Notched Mortar Beams through Extended Finite-Element Method and Peridynamics. Journal of Engineering Mechanics - ASCE, 2019, 145, 04019049.	1.6	13
67	Buckling analysis of cylindrical thin-shells using strain gradient elasticity theory. Meccanica, 2017, 52, 1369-1379.	1.2	12
68	Elucidating the constitutive relationship of calciumâ€“silicateâ€“hydrate gel using high throughput reactive molecular simulations and machine learning. Scientific Reports, 2020, 10, 21336.	1.6	12
69	An adaptive, interacting, cluster-based model for predicting the transmission dynamics of COVID-19. Heliyon, 2020, 6, e05722.	1.4	12
70	New insights into the atomic structure of amorphous TiO2 using tight-binding molecular dynamics. Journal of Chemical Physics, 2018, 149, 094501.	1.2	11
71	Experimental and Numerical Investigation of Fracture Behavior of Particle-Reinforced Alkali-Activated Slag Mortars. Journal of Materials in Civil Engineering, 2019, 31, 04019043.	1.3	11
72	A Peridynamics-Based Micromechanical Modeling Approach for Random Heterogeneous Structural Materials. Materials, 2020, 13, 1298.	1.3	11

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73	Extracting processing and testing parameters from materials science literature for improved property prediction of glasses. Chemical Engineering and Processing: Process Intensification, 2022, 180, 108607.	1.8	11
74	Integrating multiscale numerical simulations with machine learning to predict the strain sensing efficiency of nano-engineered smart cementitious composites. Materials and Design, 2021, 209, 109995.	3.3	11
75	Irradiationâ€induced brittleâ€toâ€ductile transition in Î±â€quartz. Journal of the American Ceramic Society, 2020, 103, 3962-3970.	1.9	10
76	Dynamics of confined water and its interplay with alkali cations in sodium aluminosilicate hydrate gel: insights from reactive force field molecular dynamics. Physical Chemistry Chemical Physics, 2020, 22, 23707-23724.	1.3	10
77	Fracture toughness of sodium aluminosilicate hydrate (NASH) gels: Insights from molecular dynamics simulations. Journal of Applied Physics, 2020, 127, .	1.1	10
78	Realizing cool and warm white-LEDs based on color controllable (Sr,Ba)₂Al₃O₆F:Eu²⁺ phosphors obtained via a microwave-assisted diffusion method. Physical Chemistry Chemical Physics, 2021, 23, 15245-15256.	1.3	10
79	Modeling the nanoindentation response of silicate glasses by peridynamic simulations. Journal of the American Ceramic Society, 2021, 104, 3531-3544.	1.9	10
80	Structural percolation controls the precipitation kinetics of colloidal calciumâ€“silicateâ€“hydrate gels. Journal Physics D: Applied Physics, 2019, 52, 315301.	1.3	9
81	Towards understanding the scratchability in functional glasses. Ceramics International, 2021, 47, 20821-20843.	2.3	9
82	Elucidating the influences of compliant microscale inclusions on the fracture behavior of cementitious composites. Cement and Concrete Composites, 2018, 94, 13-23.	4.6	8
83	On the equivalence of vapor-deposited and melt-quenched glasses. Journal of Chemical Physics, 2020, 152, 164504.	1.2	7
84	Strain sensing efficiency of hierarchical nano-engineered smart twill-weave composites: Evaluations using multiscale numerical simulations. Composite Structures, 2021, 255, 112905.	3.1	7
85	Predicting the near field underwater explosion response of coated composite cylinders using multiscale simulations, experiments, and machine learning. Composite Structures, 2022, 283, 115157.	3.1	7
86	Elucidating the Crack Resistance of Alkaliâ€Activated Slag Mortars Using Coupled Fracture Tests and Image Correlation. Journal of the American Ceramic Society, 2016, 99, 273-280.	1.9	6
87	Effect of irradiation on the atomic structure of borosilicate glasses. Journal of the American Ceramic Society, 2021, 104, 6194-6206.	1.9	6
88	ElucidatingÂthe influence of structure and Ag+-Na+Âion-exchange on crack-resistance and ionic conductivity of Na3Al1.8Si1.65P1.8O12Âglass electrolyte. Acta Materialia, 2022, 227, 117745.	3.8	6
89	Rigidity theory of glass: Determining the onset temperature of topological constraints by molecular dynamics. Journal of Non-Crystalline Solids, 2021, 554, 120614.	1.5	5
90	Machine learning-aided cost prediction and optimization in construction operations. Engineering, Construction and Architectural Management, 2021, , .	1.8	5

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91	Disorder-induced expansion of silicate minerals arises from the breakage of weak topological constraints. Journal of Non-Crystalline Solids, 2021, 564, 120846.	1.5	5
92	Micromechanical Modeling for Material Design of Durable Infrastructural Materials: The Influence of Aggregate and Matrix Modification on Elastic Behavior of Mortars. , 2016, , .		5
93	The profiles of first and second SARS-CoV-2 waves in the top ten COVID-19 affected countries. Journal of Global Health Reports, 0, 5, .	1.0	5
94	Natural language processing-guided meta-analysis and structure factor database extraction from glass literature. Journal of Non-Crystalline Solids: X, 2022, 15, 100103.	0.5	5
95	Fracture response of wollastonite fiber-reinforced cementitious composites: Evaluation using micro-indentation and finite element simulation. Ceramics International, 2022, , .	2.3	4
96	Graphene Oxide Tribofilms Enhance the Scratch Resistance of Silica Glasses. ACS Applied Nano Materials, 2022, 5, 4812-4822.	2.4	4
97	Coaxial Boron-Nitride/Carbon Nanotubes as a Potential Replacement for Double-Walled Carbon Nanotubes for High Strain Applications. Journal of Nanoscience and Nanotechnology, 2017, 17, 5252-5260.	0.9	3
98	Role of steric repulsions on the precipitation kinetics and the structure of calcium-silicate-hydrate gels. Soft Matter, 2021, 17, 8902-8914.	1.2	3
99	A novel method for studying the buckling of nanotubes considering geometrical imperfections. Applied Physics A: Materials Science and Processing, 2014, 117, 945-953.	1.1	2
100	Finite Element-Based Numerical Simulations to Evaluate the Influence of Wollastonite Microfibers on the Dynamic Compressive Behavior of Cementitious Composites. Materials, 2021, 14, 4435.	1.3	2
101	Glass Transition and Crystallization in Hexagonal Boron Nitride: Crucial Role of Orientational Order. Advanced Theory and Simulations, 2020, 3, 1900174.	1.3	1
102	Reactive molecular simulation of shockwave propagation in calciumâ€“silicateâ€“hydrate gels. Journal of Non-Crystalline Solids, 2022, 590, 121677.	1.5	1
103	Mechanics of Metal-Nanocomposites at Multiple Length Scales: Case of Al-BNNT. Journal of Nanomechanics & Micromechanics, 2017, 7, 04017014.	1.4	0
104	Drift Response Evaluation of Buckling-Restrained Braced Frames (BRBFs) under Sequential Seismic Disturbances. IOP Conference Series: Materials Science and Engineering, 2020, 936, 012040.	0.3	0
105	Stochastic buckling analysis of carbon nanotubes. , 2014, , 833-836.		0
106	Quantifying the Densification and Shear Flow under Indentation Deformation in Borosilicate Glasses. International Journal of Applied Glass Science, 0, , .	1.0	0