

Zhao Qin

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

117
papers

4,271
citations

37
h-index

61
g-index

126
ext. papers

5,182
ext. citations

7.2
avg, IF

6.07
L-index

#	Paper	IF	Citations
117	Why mussel byssal plaques are tiny yet strong in attachment. <i>Matter</i> , 2022 , 5, 710-724	12.7	4
116	Design, manufacture, and testing of customized sterilizable respirator.. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2022 , 131, 105248	4.1	0
115	Strong fatigue-resistant nanofibrous hydrogels inspired by lobster underbelly. <i>Matter</i> , 2021 , 4, 1919-1934	12.7	13
114	Peptoid Residues Make Diverse, Hyperstable Collagen Triple-Helices. <i>Journal of the American Chemical Society</i> , 2021 , 143, 10910-10919	16.4	1
113	Material Function of Mycelium-Based Bio-Composite: A Review. <i>Frontiers in Materials</i> , 2021 , 8,	4	10
112	Mechanical Anisotropy in Two-Dimensional Selenium Atomic Layers. <i>Nano Letters</i> , 2021 , 21, 8043-8050	11.5	3
111	Multiscale understanding in fracture resistance of bamboo skin. <i>Extreme Mechanics Letters</i> , 2021 , 49, 101480	3.9	2
110	Multiscale Modeling and Applications of Bioinspired Materials with Gyroid Structures. <i>Springer Series in Materials Science</i> , 2021 , 629-644	0.9	0
109	Solvent Responsive Self-Folding of 3D Photosensitive Graphene Architectures. <i>Advanced Intelligent Systems</i> , 2020 , 2000195	6	2
108	Machine learning model for fast prediction of the natural frequencies of protein molecules.. <i>RSC Advances</i> , 2020 , 10, 16607-16615	3.7	2
107	Fatigue-resistant adhesion of hydrogels. <i>Nature Communications</i> , 2020 , 11, 1071	17.4	80
106	Artificial intelligence method to design and fold alpha-helical structural proteins from the primary amino acid sequence. <i>Extreme Mechanics Letters</i> , 2020 , 36, 100652	3.9	16
105	Multiscale structural insights of load bearing bamboo: A computational modeling approach. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2020 , 107, 103743	4.1	12
104	Silk-Based Hierarchical Materials for High Mechanical Performance at the Interface of Modeling, Synthesis, and Characterization 2020 , 1547-1574		
103	Electrospinning Piezoelectric Fibers for Biocompatible Devices. <i>Advanced Healthcare Materials</i> , 2020 , 9, e1901287	10.1	46
102	Nonlinear mechanics of lamin filaments and the meshwork topology build an emergent nuclear lamina. <i>Nature Communications</i> , 2020 , 11, 6205	17.4	17
101	Accumulation of collagen molecular unfolding is the mechanism of cyclic fatigue damage and failure in collagenous tissues. <i>Science Advances</i> , 2020 , 6, eaba2795	14.3	20

100	Probing the Role of Bone Lamellar Patterns through Collagen Microarchitecture Mapping, Numerical Modeling, and 3D-Printing. <i>Advanced Engineering Materials</i> , 2020 , 22, 2000387	3.5	5
99	Controllable Fabrication of Inhomogeneous Microcapsules for Triggered Release by Osmotic Pressure. <i>Small</i> , 2019 , 15, e1903087	11	12
98	The hidden structure of human enamel. <i>Nature Communications</i> , 2019 , 10, 4383	17.4	51
97	Natural hydrogel in American lobster: A soft armor with high toughness and strength. <i>Acta Biomaterialia</i> , 2019 , 88, 102-110	10.8	24
96	Molecular dynamics study of the mechanical properties of polydisperse pressure-sensitive adhesives. <i>International Journal of Adhesion and Adhesives</i> , 2019 , 92, 58-64	3.4	4
95	A Self-Consistent Sonification Method to Translate Amino Acid Sequences into Musical Compositions and Application in Protein Design Using Artificial Intelligence. <i>ACS Nano</i> , 2019 , 13, 7471-7482	16.7	53
94	Anisotropic Fracture Dynamics Due to Local Lattice Distortions. <i>ACS Nano</i> , 2019 , 13, 5693-5702	16.7	11
93	Analysis of the vibrational and sound spectrum of over 100,000 protein structures and application in sonification. <i>Extreme Mechanics Letters</i> , 2019 , 29,	3.9	11
92	Multiscale Design of Graphyne-Based Materials for High-Performance Separation Membranes. <i>Advanced Materials</i> , 2019 , 31, e1805665	24	21
91	Artificial intelligence design algorithm for nanocomposites optimized for shear crack resistance. <i>Nano Futures</i> , 2019 , 3, 035001	3.6	28
90	Reversible MoS Origami with Spatially Resolved and Reconfigurable Photosensitivity. <i>Nano Letters</i> , 2019 , 19, 7941-7949	11.5	33
89	Self-Folding Hybrid Graphene Skin for 3D Biosensing. <i>Nano Letters</i> , 2019 , 19, 1409-1417	11.5	36
88	Multiscale modeling of keratin, collagen, elastin and related human diseases: Perspectives from atomistic to coarse-grained molecular dynamics simulations. <i>Extreme Mechanics Letters</i> , 2018 , 20, 112-124	3.9	19
87	Materials-by-Design: Computation, Synthesis, and Characterization from Atoms to Structures. <i>Physica Scripta</i> , 2018 , 93,	2.6	23
86	Interlocking Friction Governs the Mechanical Fracture of Bilayer MoS. <i>ACS Nano</i> , 2018 , 12, 3600-3608	16.7	30
85	Mechanical exfoliation of two-dimensional materials. <i>Journal of the Mechanics and Physics of Solids</i> , 2018 , 115, 248-262	5	78
84	Predicting rates of in vivo degradation of recombinant spider silk proteins. <i>Journal of Tissue Engineering and Regenerative Medicine</i> , 2018 , 12, e97-e105	4.4	14
83	Hierarchical nanostructures for functional materials. <i>Nanotechnology</i> , 2018 , 29, 280201	3.4	4

82	Improving the performance of pressure sensitive adhesives by tuning the crosslinking density and locations. <i>Polymer</i> , 2018 , 154, 164-171	3.9	16
81	Sub-nanometre channels embedded in two-dimensional materials. <i>Nature Materials</i> , 2018 , 17, 129-133	27	75
80	Silk-Based Hierarchical Materials for High Mechanical Performance at the Interface of Modeling, Synthesis, and Characterization 2018 , 1-28		1
79	Imaging and analysis of a three-dimensional spider web architecture. <i>Journal of the Royal Society Interface</i> , 2018 , 15,	4.1	22
78	Combining In Silico Design and Biomimetic Assembly: A New Approach for Developing High-Performance Dynamic Responsive Bio-Nanomaterials. <i>Advanced Materials</i> , 2018 , 30, e1802306	24	23
77	The mechanics and design of a lightweight three-dimensional graphene assembly. <i>Science Advances</i> , 2017 , 3, e1601536	14.3	250
76	Protein-free formation of bone-like apatite: New insights into the key role of carbonation. <i>Biomaterials</i> , 2017 , 127, 75-88	15.6	48
75	Ion Effect and Metal-Coordinated Cross-Linking for Multiscale Design of Nereis Jaw Inspired Mechanomutable Materials. <i>ACS Nano</i> , 2017 , 11, 1858-1868	16.7	13
74	Nacre-inspired design of graphene oxide/polydopamine nanocomposites for enhanced mechanical properties and multi-functionalities. <i>Nano Futures</i> , 2017 , 1, 011003	3.6	30
73	Modeling and Experiment Reveal Structure and Nanomechanics across the Inverse Temperature Transition in Silk-Elastin-like Protein Polymers. <i>ACS Biomaterials Science and Engineering</i> , 2017 , 3, 2889-2899	5.5	16
72	Molecular level detection and localization of mechanical damage in collagen enabled by collagen hybridizing peptides. <i>Nature Communications</i> , 2017 , 8, 14913	17.4	111
71	Multiscale mechanics of the lateral pressure effect on enhancing the load transfer between polymer coated CNTs. <i>Nanoscale</i> , 2017 , 9, 5565-5576	7.7	5
70	Design and function of biomimetic multilayer water purification membranes. <i>Science Advances</i> , 2017 , 3, e1601939	14.3	161
69	Ultrathin thermoresponsive self-folding 3D graphene. <i>Science Advances</i> , 2017 , 3, e1701084	14.3	110
68	Experimental and theoretical studies on the morphogenesis of bacterial biofilms. <i>Soft Matter</i> , 2017 , 13, 7389-7397	3.6	17
67	Unusually low and density-insensitive thermal conductivity of three-dimensional gyroid graphene. <i>Nanoscale</i> , 2017 , 9, 13477-13484	7.7	33
66	Polymorphic regenerated silk fibers assembled through bioinspired spinning. <i>Nature Communications</i> , 2017 , 8, 1387	17.4	158
65	Quantitative Estimates of Bio-Remodeling on Coastal Rock Surfaces. <i>Journal of Marine Science and Engineering</i> , 2016 , 4, 37	2.4	10

64	Intercalated water layers promote thermal dissipation at bio-nano interfaces. <i>Nature Communications</i> , 2016 , 7, 12854	17.4	45
63	Molecular Modeling and Mechanics of Acrylic Adhesives on a Graphene Substrate with Roughness. <i>BioNanoScience</i> , 2016 , 6, 177-184	3.4	4
62	Printing of stretchable silk membranes for strain measurements. <i>Lab on A Chip</i> , 2016 , 16, 2459-66	7.2	80
61	Delivering Single-Walled Carbon Nanotubes to the Nucleus Using Engineered Nuclear Protein Domains. <i>ACS Applied Materials & Interfaces</i> , 2016 , 8, 3524-34	9.5	24
60	Three-Dimensional-Printing of Bio-Inspired Composites. <i>Journal of Biomechanical Engineering</i> , 2016 , 138, 021006	2.1	74
59	Bone-Inspired Materials by Design: Toughness Amplification Observed Using 3D Printing and Testing. <i>Advanced Engineering Materials</i> , 2016 , 18, 1354-1363	3.5	99
58	Optimization of Composite Fracture Properties: Method, Validation, and Applications. <i>Journal of Applied Mechanics, Transactions ASME</i> , 2016 , 83,	2.7	46
57	Atomically Sharp Crack Tips in Monolayer MoS and Their Enhanced Toughness by Vacancy Defects. <i>ACS Nano</i> , 2016 , 10, 9831-9839	16.7	91
56	Large Deformation Mechanisms, Plasticity, and Failure of an Individual Collagen Fibril With Different Mineral Content. <i>Journal of Bone and Mineral Research</i> , 2016 , 31, 380-90	6.3	40
55	Nonlinear Viscous Water at Nanoporous Two-Dimensional Interfaces Resists High-Speed Flow through Cooperativity. <i>Nano Letters</i> , 2015 , 15, 3939-44	11.5	37
54	Mechanical Properties and Failure of Biopolymers: Atomistic Reactions to Macroscale Response. <i>Topics in Current Chemistry</i> , 2015 , 369, 317-43		12
53	Structural optimization of 3D-printed synthetic spider webs for high strength. <i>Nature Communications</i> , 2015 , 6, 7038	17.4	107
52	Defect-Tolerant Bioinspired Hierarchical Composites: Simulation and Experiment. <i>ACS Biomaterials Science and Engineering</i> , 2015 , 1, 295-304	5.5	57
51	The tail domain of lamin B1 is more strongly modulated by divalent cations than lamin A. <i>Nucleus</i> , 2015 , 6, 203-11	3.9	4
50	Crumpling deformation regimes of monolayer graphene on substrate: a molecular mechanics study. <i>Journal of Physics Condensed Matter</i> , 2015 , 27, 345401	1.8	14
49	Molecular deformation mechanisms of the wood cell wall material. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2015 , 42, 198-206	4.1	57
48	Influence of cross-link structure, density and mechanical properties in the mesoscale deformation mechanisms of collagen fibrils. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2015 , 52, 1-13	4.1	205
47	Peeling Silicene From Model Silver Substrates in Molecular Dynamics Simulations. <i>Journal of Applied Mechanics, Transactions ASME</i> , 2015 , 82,	2.7	6

46	Molecular mechanics of polycrystalline graphene with enhanced fracture toughness. <i>Extreme Mechanics Letters</i> , 2015 , 2, 52-59	3.9	94
45	Mesoscale mechanics of twisting carbon nanotube yarns. <i>Nanoscale</i> , 2015 , 7, 5435-45	7.7	37
44	Mechanics of fragmentation of crocodile skin and other thin films. <i>Scientific Reports</i> , 2014 , 4, 4966	4.9	20
43	Protective role of Arapaima gigas fish scales: structure and mechanical behavior. <i>Acta Biomaterialia</i> , 2014 , 10, 3599-614	10.8	115
42	Molecular mechanics of mussel adhesion proteins. <i>Journal of the Mechanics and Physics of Solids</i> , 2014 , 62, 19-30	5	48
41	Tensile strength of carbyne chains in varied chemical environments and structural lengths. <i>Nanotechnology</i> , 2014 , 25, 371001	3.4	12
40	Effect of wrinkles on the surface area of graphene: toward the design of nanoelectronics. <i>Nano Letters</i> , 2014 , 14, 6520-5	11.5	77
39	Interfacial binding and aggregation of lamin A tail domains associated with Hutchinson-Gilford progeria syndrome. <i>Biophysical Chemistry</i> , 2014 , 195, 43-8	3.5	9
38	Biological materials by design. <i>Journal of Physics Condensed Matter</i> , 2014 , 26, 073101	1.8	17
37	Molecular mechanics and performance of crosslinked amorphous polymer adhesives. <i>Journal of Materials Research</i> , 2014 , 29, 1077-1085	2.5	18
36	Impact tolerance in mussel thread networks by heterogeneous material distribution. <i>Nature Communications</i> , 2013 , 4, 2187	17.4	57
35	Calcium causes a conformational change in lamin A tail domain that promotes farnesyl-mediated membrane association. <i>Biophysical Journal</i> , 2013 , 104, 2246-53	2.9	14
34	Structure and mechanism of maximum stability of isolated alpha-helical protein domains at a critical length scale. <i>European Physical Journal E</i> , 2013 , 36, 53	1.5	17
33	Effect of sodium chloride on the structure and stability of spider silk N-terminal protein domain. <i>Biomaterials Science</i> , 2013 , 1, 276-284	7.4	29
32	Bioinspired Graphene Nanogut. <i>Journal of Applied Mechanics, Transactions ASME</i> , 2013 , 80,	2.7	3
31	Viscoelastic relaxation time and structural evolution during length contraction of spider silk protein nanostructures. <i>MRS Communications</i> , 2013 , 3, 185-190	2.7	3
30	Computational and theoretical modeling of intermediate filament networks: Structure, mechanics and disease. <i>Acta Mechanica Sinica/Lixue Xuebao</i> , 2012 , 28, 941-950	2	6
29	Cooperativity governs the size and structure of biological interfaces. <i>Journal of Biomechanics</i> , 2012 , 45, 2778-83	2.9	8

28	Cooperative deformation of carboxyl groups in functionalized carbon nanotubes. <i>International Journal of Solids and Structures</i> , 2012 , 49, 2418-2423	3.1	13
27	Thickness of hydroxyapatite nanocrystal controls mechanical properties of the collagen-hydroxyapatite interface. <i>Langmuir</i> , 2012 , 28, 1982-92	4	85
26	Molecular mechanics of dihydroxyphenylalanine at a silica interface. <i>Applied Physics Letters</i> , 2012 , 101, 083702	3.4	24
25	Mechanical properties of crosslinks controls failure mechanism of hierarchical intermediate filament networks. <i>Theoretical and Applied Mechanics Letters</i> , 2012 , 2, 014005	1.8	5
24	Bioinspired design of functionalised graphene. <i>Molecular Simulation</i> , 2012 , 38, 695-703	2	14
23	Carbon dioxide enhances fragility of ice crystals. <i>Journal Physics D: Applied Physics</i> , 2012 , 45, 445302	3	7
22	Structural, Mechanical and Functional Properties of Intermediate Filaments from the Atomistic to the Cellular Scales 2011 , 117-166		1
21	Structure and stability of the lamin A tail domain and HGPS mutant. <i>Journal of Structural Biology</i> , 2011 , 175, 425-33	3.4	38
20	Structure and dynamics of human vimentin intermediate filament dimer and tetramer in explicit and implicit solvent models. <i>Journal of Molecular Modeling</i> , 2011 , 17, 37-48	2	21
19	Dynamic Failure of a Lamina Meshwork in Cell Nuclei under Extreme Mechanical Deformation. <i>BioNanoScience</i> , 2011 , 1, 14-23	3.4	4
18	Flaw tolerance of nuclear intermediate filament lamina under extreme mechanical deformation. <i>ACS Nano</i> , 2011 , 5, 3034-42	16.7	34
17	Coiled-coil intermediate filament stutter instability and molecular unfolding. <i>Computer Methods in Biomechanics and Biomedical Engineering</i> , 2011 , 14, 483-9	2.1	19
16	Plasticity of intermediate filament subunits. <i>PLoS ONE</i> , 2010 , 5, e12115	3.7	11
15	Molecular dynamics simulation of the Helix to Sheet transition in coiled protein filaments: evidence for a critical filament length scale. <i>Physical Review Letters</i> , 2010 , 104, 198304	7.4	107
14	Cooperative deformation of hydrogen bonds in beta-strands and beta-sheet nanocrystals. <i>Physical Review E</i> , 2010 , 82, 061906	2.4	34
13	A multi-scale approach to understand the mechanobiology of intermediate filaments. <i>Journal of Biomechanics</i> , 2010 , 43, 15-22	2.9	48
12	Intermediate filament-deficient cells are mechanically softer at large deformation: a multi-scale simulation study. <i>Acta Biomaterialia</i> , 2010 , 6, 2457-66	10.8	41
11	Hierarchical structure controls nanomechanical properties of vimentin intermediate filaments. <i>PLoS ONE</i> , 2009 , 4, e7294	3.7	129

10	ROBUSTNESS-STRENGTH PERFORMANCE OF HIERARCHICAL ALPHA-HELICAL PROTEIN FILAMENTS. <i>International Journal of Applied Mechanics</i> , 2009 , 01, 85-112	2.4	32
9	Nanomechanical properties of vimentin intermediate filament dimers. <i>Nanotechnology</i> , 2009 , 20, 425101	3.4	49
8	Atomistically Informed Mesoscale Model of Alpha-Helical Protein Domains. <i>International Journal for Multiscale Computational Engineering</i> , 2009 , 7, 237-250	2.4	12
7	Effect of Mechanical Milling on Photoluminescence of γ -Alumina Nanoparticles. <i>Journal of Nanoscience and Nanotechnology</i> , 2008 , 8, 1414-1416	1.3	7
6	Mechanical property of carbon nanotubes with intramolecular junctions: Molecular dynamics simulations. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2008 , 372, 6661-6666	2.3	89
5	Evaluation of Threshold Voltage for 30 nm Symmetric Double Gate (SDG) MOSFET and Its Variation with Process Parameters. <i>Journal of Computational and Theoretical Nanoscience</i> , 2008 , 5, 619-626	0.3	6
4	Influence of Water on the Frequency of Carbon Nanotube Oscillators. <i>Journal of Computational and Theoretical Nanoscience</i> , 2008 , 5, 1403-1407	0.3	7
3	Molecular dynamics simulations of deformation and rupture of super carbon nanotubes under tension. <i>Journal of Nanoscience and Nanotechnology</i> , 2008 , 8, 6274-82	1.3	1
2	Superior flexibility of super carbon nanotubes: Molecular dynamics simulations. <i>Applied Physics Letters</i> , 2007 , 91, 043108	3.4	33
1	Nonlinear mechanics of lamin filaments and the meshwork topology build an emergent nuclear lamina		1