

Dong Qian

List of Publications by Year in descending order

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121
papers

7,424
citations

76326

40
h-index

54911

84
g-index

126
all docs

126
docs citations

126
times ranked

7523
citing authors

#	ARTICLE	IF	CITATIONS
1	Mechanics of carbon nanotubes. <i>Applied Mechanics Reviews</i> , 2002, 55, 495-533.	10.1	983
2	Mechanical properties of atomically thin boron nitride and the role of interlayer interactions. <i>Nature Communications</i> , 2017, 8, 15815.	12.8	576
3	Mechanical properties of carbon nanotubes: theoretical predictions and experimental measurements. <i>Comptes Rendus Physique</i> , 2003, 4, 993-1008.	0.9	574
4	Hierarchically buckled sheath-core fibers for superelastic electronics, sensors, and muscles. <i>Science</i> , 2015, 349, 400-404.	12.6	447
5	Gradient nanostructure and residual stresses induced by Ultrasonic Nano-crystal Surface Modification in 304 austenitic stainless steel for high strength and high ductility. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2014, 613, 274-288.	5.6	258
6	Sheath-run artificial muscles. <i>Science</i> , 2019, 365, 150-155.	12.6	218
7	Moisture Sensitive Smart Yarns and Textiles from Self-Balanced Silk Fiber Muscles. <i>Advanced Functional Materials</i> , 2019, 29, 1808241.	14.9	200
8	The effect of resin uptake on the flexural properties of compression molded sandwich composites. <i>Wind Energy</i> , 2022, 25, 71-93.	4.2	187
9	Load transfer mechanism in carbon nanotube ropes. <i>Composites Science and Technology</i> , 2003, 63, 1561-1569.	7.8	177
10	Mechanics of C60 in Nanotubes. <i>Journal of Physical Chemistry B</i> , 2001, 105, 10753-10758.	2.6	161
11	A multiscale projection method for the analysis of carbon nanotubes. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2004, 193, 1603-1632.	6.6	149
12	Bridging scale methods for nanomechanics and materials. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2006, 195, 1407-1421.	6.6	135
13	Torsional refrigeration by twisted, coiled, and supercoiled fibers. <i>Science</i> , 2019, 366, 216-221.	12.6	133
14	A study on the tensile response and fracture in carbon nanotube-based composites using molecular mechanics. <i>Composites Science and Technology</i> , 2007, 67, 530-540.	7.8	126
15	Elastic response of a carbon nanotube fiber reinforced polymeric composite: A numerical and experimental study. <i>Composites Part B: Engineering</i> , 2010, 41, 414-421.	12.0	126
16	Artificial spider silk from ion-doped and twisted core-sheath hydrogel fibres. <i>Nature Communications</i> , 2019, 10, 5293.	12.8	123
17	Comparison of mechanisms of advanced mechanical surface treatments in nickel-based superalloy. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2013, 576, 346-355.	5.6	119
18	The Sandia Fracture Challenge: blind round robin predictions of ductile tearing. <i>International Journal of Fracture</i> , 2014, 186, 5-68.	2.2	115

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19	Effect of laser shock peening on residual stress, microstructure and fatigue behavior of ATI 718Plus alloy. <i>International Journal of Fatigue</i> , 2017, 102, 121-134.	5.7	109
20	Strong, Twist-Induced Stable Carbon Nanotube Yarns and Muscles by Tension Annealing at Extreme Temperatures. <i>Advanced Materials</i> , 2016, 28, 6598-6605.	21.0	100
21	Photothermal Bimorph Actuators with In-Built Cooler for Light Mills, Frequency Switches, and Soft Robots. <i>Advanced Functional Materials</i> , 2019, 29, 1808995.	14.9	88
22	A finite element study of thermal relaxation of residual stress in laser shock peened IN718 superalloy. <i>International Journal of Impact Engineering</i> , 2011, 38, 590-596.	5.0	85
23	Effect of Ultrasonic Nanocrystal Surface Modification on residual stress, microstructure and fatigue behavior of ATI 718Plus alloy. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2018, 711, 364-377.	5.6	82
24	Dynamic shear band propagation and micro-structure of adiabatic shear band. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2001, 191, 73-92.	6.6	81
25	Surface modification and ultrasonication effect on the mechanical properties of carbon nanofiber/polycarbonate composites. <i>Composites Part A: Applied Science and Manufacturing</i> , 2006, 37, 1270-1275.	7.6	78
26	Thermal relaxation of residual stress in laser shock peened Ti-6Al-4V alloy. <i>Surface and Coatings Technology</i> , 2012, 206, 4619-4627.	4.8	77
27	Simulation-based optimization of laser shock peening process for improved bending fatigue life of Ti-6Al-2Sn-4Zr-2Mo alloy. <i>Surface and Coatings Technology</i> , 2013, 232, 464-474.	4.8	72
28	Effect of laser shock peening on elevated temperature residual stress, microstructure and fatigue behavior of ATI 718Plus alloy. <i>International Journal of Fatigue</i> , 2017, 104, 366-378.	5.7	66
29	Mechanical Properties of Atomically Thin Tungsten Dichalcogenides: WS_2 , WSe_2 , and WTe_2 . <i>ACS Nano</i> , 2021, 15, 2600-2610.	14.6	65
30	Effects of laser shock peening on SCC behavior of Alloy 600 in tetrathionate solution. <i>Corrosion Science</i> , 2015, 90, 434-444.	6.6	62
31	Locked twist in multiwalled carbon-nanotube ribbons. <i>Physical Review B</i> , 2001, 64, .	3.2	61
32	Iterative thermomechanical processing of alloy 600 for improved resistance to corrosion and stress corrosion cracking. <i>Acta Materialia</i> , 2016, 113, 180-193.	7.9	61
33	Surface amorphization of NiTi alloy induced by Ultrasonic Nanocrystal Surface Modification for improved mechanical properties. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2016, 53, 455-462.	3.1	60
34	Surface grain boundary engineering of Alloy 600 for improved resistance to stress corrosion cracking. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2015, 648, 280-288.	5.6	59
35	Harvesting temperature fluctuations as electrical energy using torsional and tensile polymer muscles. <i>Energy and Environmental Science</i> , 2015, 8, 3336-3344.	30.8	57
36	A meshfree contact-detection algorithm. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2001, 190, 3271-3292.	6.6	53

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37	Molecular Mechanism of Polarization and Piezoelectric Effect in Super-Twisted Collagen. ACS Biomaterials Science and Engineering, 2016, 2, 929-936.	5.2	53
38	Tensile and torsional elastomer fiber artificial muscle by entropic elasticity with thermo-piezoresistive sensing of strain and rotation by a single electric signal. Materials Horizons, 2020, 7, 3305-3315.	12.2	51
39	Multiscale methods for mechanical science of complex materials: Bridging from quantum to stochastic multiresolution continuum. International Journal for Numerical Methods in Engineering, 2010, 83, 1039-1080.	2.8	47
40	Molecular-Induced Conformational Change in Boron Nitride Nanosheets with Enhanced Surface Adsorption. Advanced Functional Materials, 2016, 26, 8202-8210.	14.9	47
41	Multi-physics simulation of metal printing at micro/nanoscale using meniscus-confined electrodeposition: Effect of nozzle speed and diameter. Journal of Applied Physics, 2017, 121, .	2.5	41
42	A boundary element method for the analysis of CNT/polymer composites with a cohesive interface model based on molecular dynamics. Engineering Analysis With Boundary Elements, 2008, 32, 299-308.	3.7	39
43	Multi-physics simulation of metal printing at micro/nanoscale using meniscus-confined electrodeposition: Effect of environmental humidity. Journal of Applied Physics, 2017, 121, .	2.5	39
44	Disulfide-bridged cleavable PEGylation in polymeric nanomedicine for controlled therapeutic delivery. Nanomedicine, 2015, 10, 1941-1958.	3.3	38
45	Effect of ultrasonic nanocrystal surface modification on elevated temperature residual stress, microstructure, and fatigue behavior of ATI 718Plus alloy. International Journal of Fatigue, 2018, 110, 186-196.	5.7	37
46	Effective Models for Prediction of Springback In Flanging. Journal of Engineering Materials and Technology, Transactions of the ASME, 2001, 123, 456-461.	1.4	36
47	Multiscale boundary conditions in crystalline solids: Theory and application to nanoindentation. International Journal of Solids and Structures, 2006, 43, 6359-6379.	2.7	36
48	Design of Dendritic Large-Pore Mesoporous Silica Nanoparticles with Controlled Structure and Formation Mechanism in Dual-Templating Strategy. ACS Applied Materials & Interfaces, 2020, 12, 18823-18832.	8.0	36
49	A Virtual Atom Cluster Approach to the Mechanics of Nanostructures. International Journal for Multiscale Computational Engineering, 2004, 2, 277-290.	1.2	36
50	Effect of Interlayer Potential on Mechanical Deformation of Multiwalled Carbon Nanotubes. Journal of Nanoscience and Nanotechnology, 2003, 3, 185-191.	0.9	35
51	A MOVING-MESH GRADIENT SMOOTHING METHOD FOR COMPRESSIBLE CFD PROBLEMS. Mathematical Models and Methods in Applied Sciences, 2013, 23, 273-305.	3.3	35
52	Microfluidic manipulation by spiral hollow-fibre actuators. Nature Communications, 2022, 13, 1331.	12.8	34
53	Layer-Dependent Mechanical Properties and Enhanced Plasticity in the Van der Waals Chromium Trihalide Magnets. Nano Letters, 2021, 21, 3379-3385.	9.1	31
54	A Protein-Like Nanogel for Spinning Hierarchically Structured Artificial Spider Silk. Advanced Materials, 2022, 34, e2201843.	21.0	30

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55	Effect of the impact energy of various peening techniques on the induced plastic deformation region. Journal of Materials Processing Technology, 2012, 212, 1998-2006.	6.3	29
56	Improving the Mechanical Properties of Polycarbonate Nanocomposites with Plasma-Modified Carbon Nanofibers. Journal of Macromolecular Science - Physics, 2006, 45, 671-679.	1.0	25
57	Experimental and Finite Element Simulation Study of Thermal Relaxation of Residual Stresses in Laser Shock Peened IN718 SPF Superalloy. Experimental Mechanics, 2014, 54, 1597-1611.	2.0	25
58	Effect of temperature on microstructure and residual stresses induced by surface treatments in Inconel 718 SPF. Surface and Coatings Technology, 2018, 344, 93-101.	4.8	25
59	Application of laser shock peening for spinal implant rods. International Journal of Structural Integrity, 2011, 2, 101-113.	3.3	24
60	Effects of Ultrasonic Nanocrystal Surface Modification on the Residual Stress, Microstructure, and Corrosion Resistance of 304 Stainless Steel Welds. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2018, 49, 972-978.	2.2	23
61	High spatial resolution, high energy synchrotron x-ray diffraction characterization of residual strains and stresses in laser shock peened Inconel 718SPF alloy. Journal of Applied Physics, 2012, 111, .	2.5	22
62	Concurrent quantum/continuum coupling analysis of nanostructures. Computer Methods in Applied Mechanics and Engineering, 2008, 197, 3291-3323.	6.6	21
63	Nonlocal matching boundary conditions for non-ordinary peridynamics with correspondence material model. Computer Methods in Applied Mechanics and Engineering, 2018, 338, 463-490.	6.6	19
64	A General Approach for Buckled Bulk Composites by Combined Biaxial Stretch and Layer-by-Layer Deposition and Their Electrical and Electromagnetic Applications. Advanced Electronic Materials, 2019, 5, 1800817.	5.1	19
65	Enriched space-time finite element method: a new paradigm for multiscaling from elastodynamics to molecular dynamics. International Journal for Numerical Methods in Engineering, 2012, 92, 115-140.	2.8	18
66	Meshfree simulation of failure modes in thin cylinders subjected to combined loads of internal pressure and localized heat. International Journal for Numerical Methods in Engineering, 2008, 76, 1159-1184.	2.8	17
67	Designing bioinspired brick-and-mortar composites using machine learning and statistical learning. Communications Materials, 2020, 1, .	6.9	17
68	A multi-temporal scale approach to high cycle fatigue simulation. Computational Mechanics, 2014, 53, 387-400.	4.0	16
69	Simulation and Experimental Comparison of Laser Impact Welding with a Plasma Pressure Model. Metals, 2019, 9, 1196.	2.3	16
70	Prediction of Residual Stress Random Fields for Selective Laser Melted A357 Aluminum Alloy Subjected to Laser Shock Peening. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2019, 141, .	2.2	16
71	Bridging scale simulation of lattice fracture using enriched space-time Finite Element Method. International Journal for Numerical Methods in Engineering, 2014, 97, 819-850.	2.8	15
72	Controllable Preparation of Ordered and Hierarchically Buckled Structures for Inflatable Tumor Ablation, Volumetric Strain Sensor, and Communication via Inflatable Antenna. ACS Applied Materials & Interfaces, 2019, 11, 10862-10873.	8.0	15

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73	Computational Nanomechanics of Materials. Journal of Computational and Theoretical Nanoscience, 2008, 5, 970-996.	0.4	15
74	A simulation study on the significant nanomechanical heterogeneous properties of collagen. Biomechanics and Modeling in Mechanobiology, 2015, 14, 445-457.	2.8	13
75	Intrinsic elastic conductors with internal buckled electron pathway for flexible electromagnetic interference shielding and tumor ablation. Science China Materials, 2020, 63, 1318-1329.	6.3	13
76	Glycolytic preconditioning in astrocytes mitigates trauma-induced neurodegeneration. ELife, 2021, 10, .	6.0	13
77	Computational Nanomechanics of Noncollagenous Interfibrillar Interface in Bone. ACS Applied Materials & Interfaces, 2020, 12, 25363-25373.	8.0	12
78	Ductile fracture in thin sheet metals: a FEM study of the Sandia fracture challenge problem based on the Gursonâ€”Tvergaardâ€”Needleman fracture model. International Journal of Fracture, 2014, 186, 185-200.	2.2	11
79	Accelerated multiscale spaceâ€”time finite element simulation and application to high cycle fatigue life prediction. Computational Mechanics, 2016, 58, 329-349.	4.0	11
80	Clustering of hydroxyapatite on a super-twisted collagen microfibril under mechanical tension. Journal of Materials Chemistry B, 2017, 5, 2235-2244.	5.8	11
81	Bioinspired Multifunctional Ceramic Plateletâ€”Reinforced Piezoelectric Polymer Composite. Advanced Engineering Materials, 2017, 19, 1600570.	3.5	11
82	Ultrafast Pulsed Laser Induced Nanocrystal Transformation in Colloidal Plasmonic Vesicles. Advanced Optical Materials, 2018, 6, 1800726.	7.3	10
83	Lamellar Ceramic Semicrystallineâ€”Polymer Composite Fabricated by Freeze Casting. Advanced Engineering Materials, 2017, 19, 1700214.	3.5	8
84	Mechano-kinetic coupling approach for materials with dynamic internal structure. Philosophical Magazine Letters, 2010, 90, 471-480.	1.2	7
85	A domain-reduction approach to bridging-scale simulation of one-dimensional nanostructures. Computational Mechanics, 2011, 47, 31-47.	4.0	7
86	Simulation-based prediction of cyclic failure in rubbery materials using nonlinear space-time finite element method coupled with continuum damage mechanics. Finite Elements in Analysis and Design, 2018, 138, 21-30.	3.2	6
87	An efficient solution algorithm for spaceâ€”time finite element method. Computational Mechanics, 2019, 63, 455-470.	4.0	6
88	Deformation Mechanisms of â€œTwo-Partâ€”Natural Adhesive in Bone Interfibrillar Nano-Interfaces. ACS Biomaterials Science and Engineering, 2019, 5, 5916-5924.	5.2	6
89	Metamaterial-like aerogels for broadband vibration mitigation. Soft Matter, 2021, 17, 4496-4503.	2.7	6
90	Multiphysics modeling of in situ integration of directed energy deposition with ultrasonic nanocrystal surface modification. International Journal of Advanced Manufacturing Technology, 2022, 120, 5299-5310.	3.0	6

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91	Coarse-grained modeling and simulation of graphene sheets based on a discrete hyperelastic approach. International Journal for Numerical Methods in Engineering, 2015, 102, 450-467.	2.8	5
92	Effect of the quenching residual stress on ductile fracture behavior of pre-stretched aluminum alloy plates. Journal of the Brazilian Society of Mechanical Sciences and Engineering, 2017, 39, 2259-2267.	1.6	5
93	A computational study on the microstructural evolution in near-surface copper grain boundary structures due to femtosecond laser processing. Computational Mechanics, 2018, 61, 105-117.	4.0	5
94	Photothermal Actuators: Photothermal Bimorph Actuators with In-Built Cooler for Light Mills, Frequency Switches, and Soft Robots (Adv. Funct. Mater. 27(2019)). Advanced Functional Materials, 2019, 29, 1970184.	14.9	5
95	A Computational Study on the Transversal Visco-Elastic Properties of Single Walled Carbon Nanotubes and Their Relation to the Damping Mechanism. Journal of Computational and Theoretical Nanoscience, 2011, 8, 820-830.	0.4	4
96	FOLDING MECHANICS OF BI-LAYER GRAPHENE SHEET. Nano LIFE, 2012, 02, 1240007.	0.9	4
97	A time-discontinuous peridynamic method for transient problems involving crack propagation. International Journal for Numerical Methods in Engineering, 2021, 122, 1824-1845.	2.8	4
98	Tensile Properties and Fracture Behavior of ATI 718Plus Alloy at Room and Elevated Temperatures. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2021, 52, 3553-3569.	2.2	4
99	Energy Loss in Carbon Nanotube Beam Oscillators due to Anelastic Relaxation. Journal of Engineering Materials and Technology, Transactions of the ASME, 2012, 134, .	1.4	3
100	Variable Damping Profiles Using Modal Analysis for Laser Shock Peening Simulation. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2018, 140, .	2.2	3
101	A high-performance multiscale space-time approach to high cycle fatigue simulation based on hybrid CPU/GPU computing. Finite Elements in Analysis and Design, 2019, 166, 103320.	3.2	3
102	Visco-elastic Properties of Carbon Nanotubes and Their Relation to Damping. Conference Proceedings of the Society for Experimental Mechanics, 2011, , 259-265.	0.5	3
103	A Constitutive Model for Nanomaterials Based on Spatial Secant. International Journal for Multiscale Computational Engineering, 2006, 4, 71-94.	1.2	3
104	Bent and Kinked Multi-Shell Carbon Nanotube - Treating the Interlayer Potential More Realistically. , 2002, , .		2
105	Energy Dissipation and Intrinsic Loss in Single Walled Carbon Nanotubes due to Anelastic Relaxation. Journal of Nanoscience and Nanotechnology, 2011, 11, 1267-1272.	0.9	2
106	Variable Damping Profiles for Laser Shock Peening Simulation Using Modal Analysis and the SEATD Method. , 2017, , .		2
107	Multiscale simulation of nanostructures based on spatial secant model: a discrete hyperelastic approach. Computational Mechanics, 2008, 42, 557-567.	4.0	1
108	Generalized Matching Boundary Conditions Based on Fourier Transform Technique. Journal of Nanomechanics & Micromechanics, 2014, 4, .	1.4	1

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109	2D Nanomaterials: Molecule-Induced Conformational Change in Boron Nitride Nanosheets with Enhanced Surface Adsorption (Adv. Funct. Mater. 45/2016). Advanced Functional Materials, 2016, 26, 8356-8356.	14.9	1
110	A Uniform Accurate Boundary Treatment for the One-Dimensional Non-Local Models. Journal of Peridynamics and Nonlocal Modeling, 2023, 5, 155-182.	2.9	1
111	Application of a Discrete Model for the Concurrent Simulation of Nanostructures. , 2005, , .		0
112	Special issue on Multiscale methods for nano- and bio-mechanics and materials. Computational Mechanics, 2008, 42, 483-484.	4.0	0
113	Multiscale Modeling of Nanoscale Systems Based on Space/Time Formulation. , 2008, , .		0
114	Domain Reduction Method for Periodic Nanostructure Modeling: Gold Nanorods, Carbon Nanotubes and Graphene Applications. , 2010, , .		0
115	A Multiscale Approach to the Influence of Geometry and Deformation on the Electronic Properties of Carbon Nanotubes. , 2013, , 247-255.		0
116	Effects of Ultrasonic Nano-Crystal Surface Modification on the Microstructure and Properties of 304 Austenitic Stainless Steel. , 2014, , .		0
117	Mechanics of Carbon Nanotubes1. The Electrical Engineering Handbook, 2007, , 23-1-23-63.	0.2	0
118	Coarse-Grained Modeling and Simulation of Nanoscale Systems Based on Discrete Hyper-Elastic Model. , 2008, , .		0
119	A Molecular Mechanics Study on the Effect of Surface Modification on the Interfacial Properties in Carbon Nanotube/Polystyrene Nanocomposites. International Journal for Multiscale Computational Engineering, 2010, 8, 151-165.	1.2	0
120	Concurrent Approach to Lattice Dynamics Based on Extended Space-Time Finite Element Method. , 2013, , .		0
121	Ductile Failure in Processed Thin Sheet Metals. , 2013, , .		0